Volume 1 – Draft EIR

NORCAL LOGISTICS CENTER

Draft Environmental Impact Report
(Project File No. P12-110)

Prepared for
City of Stockton
Community Development Department

September 2014

ESA

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NORCAL LOGISTICS CENTER
Executive Summary

Introduction

The applicant, Arch Road L.P., proposes to further subdivide approximately 325 acres ("project site") of its 495-acre property. The project site is comprised on two non-adjacent portions: an approximately 50-acre southern portion (at the southern end of the property) adjacent to Arch Road and an approximately 275-acre northern portion (at the north end of the property) adjacent to Mariposa Road. The entirety of applicant's property is presently zoned for the development of industrial uses, "as of right," within the City of Stockton (City). The proposed subdivision will not enlarge nor change the industrial development already allowed on the property. Therefore, the "project" consists of simply further subdividing the northern and southern portions of the project site: (i) the approximately 50-acre southern portion located along Arch Road would be subdivided into 6 new lots (total) (this parcel is 56 gross acres, however 6 acres are setback for Weber Slough and will be avoided by the project); and (ii) the approximately 275-acre northern portion located along Mariposa Road would be subdivided into 15 new lots (total). These two separate portions will involve two separate Vesting Tentative Maps (pursuant to Government Code section 66498.1, et seq), processed with the City under the Subdivision Map Act and local City Subdivision Ordinance. The Vesting Tentative Map for the southern portion of the project site adjacent to Arch Road is referred to as VTM 1. Again, VTM 1 is comprised of approximately 50 acres and will involve the creation of 6 new lots. The Vesting Tentative Map for the northern portion of the project site adjacent to Mariposa Road is referred to as VTM 2. Again, VTM 2 is comprised of approximately 275 acres and proposes the creation of 15 new lots. The Environmental Impact Report (EIR) will analyze the collective development of both VTM 1 and VTM 2. The lots resulting from VTM 1 and VTM 2 will allow greater user flexibility (ownership of the land versus leasing of the land), although the creation of these new lots on the project site will not change the Industrial uses allowed, nor the density or intensity of that Industrial use. The project will be phased to ensure the orderly development and timed implementation of on-site and off-site improvements required to serve the development.

Based on the net-acreage of 263 acres for the northern portion and 45 acres for the southern portion and a floor-area-ratio of up to 0.50 (below the allowable floor-area-ratio of 0.60 under the General Plan land use designation), up to 6,280,480 square feet of light industrial uses could be constructed on the new lots (southern and northern portions combined). This is no greater amount of development that could occur in the absence of the proposed subdivision map and lot creation. The project site is served by existing public utilities, which would be extended to the new lots.

The proposed project includes internal circulation improvements, including a new connection to Mariposa Road.

Issues of Controversy or Concern

Pursuant to CEQA Guidelines Section 15082(a), a NOP and Initial Study Checklist (see **Appendix A**) for the project were circulated for a 30-day public review period that began on October 31, 2012 and ended on December 3, 2012. The NOP was circulated to the public, as well as to interested parties, local, state, and federal agencies. The purpose of the NOP was to inform the interested parties that the project could have significant effects on the environment and to solicit their comments.

Based on the scoping comments, the following issues were found to be of local and regional concern:

- Airport Land Use Compatibility
- Traffic and Circulation
- Stormwater Management

Alternatives to the Proposed Project

The purpose of the alternatives analysis in an EIR is to describe a range of reasonable alternatives to the project that could feasibly attain the objectives of the project, and to evaluate the comparative merits of the alternatives (CEQA Guidelines Section 15126.6(a)).

Additionally, CEQA Guidelines Section 15126.6(b) requires consideration of alternatives that could avoid or substantially lessen any significant adverse environmental effects of the proposed project, including alternatives that may be more costly or could otherwise impede the project's objectives. The range of alternatives considered must include those that offer substantial environmental advantages over the proposed project and may be feasibly accomplished in a successful manner considering economic, environmental, social, technological, and legal factors.

The CEQA Guidelines recommend that an EIR should briefly describe the rationale for selecting the alternatives to be discussed, identify any alternatives that were considered by the lead agency but were rejected as infeasible, and briefly explain the reasons underlying the lead agency's determination (CEQA Guidelines Section 15126.6(c)).

The following alternatives are discussed and compared to the preferred project in Chapter 4, Alternatives:

- Alternative 1 – No Project Alternative
- Alternative 2 – Reduced Alternative (No Development North of Littlejohn's Creek)
- Alternative 3 – Reduced Alternative (No Development West of Newcastle)

Of the Alternatives, Alternative 3 is the Environmentally Superior Alternative. Several off-site locations were identified, but rejected as infeasible for the reasons described in Chapter 4.

Summary of Environmental Impacts

Table ES-1 presents a summary of project impacts and proposed mitigation measures that would further avoid or minimize potential impacts. It also indicates the level of significance of each environmental impact both before and after the application of the recommended mitigation measure(s).

For detailed discussions of all project impacts and mitigation measures, see Chapter 3, Environmental Setting, Impacts, and Mitigation Measures.

TABLE ES-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
3.1. AESTHETICS			
Impact 3.1.1: Implementation of the project does not have the potential to adversely impact a scenic vista.	Less than significant	None required.	Less than significant
Impact 3.1.2: Implementation of the project would not substantially damage scenic resources within a state scenic highway.	No impact	None required.	No impact
Impact 3.1.3: Implementation of the project has the potential to substantially degrade the existing visual character or quality of the site and its surroundings.	Less than significant	None required.	Less than significant
Impact 3.1.4: Implementation of the project has the potential to create new sources of substantial light or glare which could adversely affect day or nighttime views in the area.	Potentially significant	**Measure 3.1.1: Outdoor Lighting Requirements.** All proposed outdoor lighting will be required to meet applicable city standards regulating outdoor lighting in order to minimize any impacts resulting from outdoor lighting on adjacent properties. Lighting and glare guidelines provided in the City of Stockton's Municipal Codes for Design and Development require that all light sources be shielded and directed downwards so as to minimize trespass light and glare to adjacent residences. Additionally, all outdoor lighting sources of 1,000 lumens or greater shall be fully shielded.	Less than significant
3.2. AGRICULTURAL RESOURCES			
Impact 3.2.1: Implementation of the proposed project would result in the permanent conversion of land designated by the Department of Conservation FMMP as *Prime Farmland, Farmland of Statewide Importance or Unique Farmland*.	Potentially significant	**Measure 3.2.1: Compensate for Loss of Agricultural Lands.** The applicant will be subject to the City's Agricultural Land Mitigation Program fees. The Agricultural Land Mitigation Program applies to all projects under the jurisdiction of the City of Stockton that would result in the conversion of agricultural land to a non-agricultural use, including residential, commercial, and industrial development. The purpose of the Agricultural Land Mitigation Program is to mitigate for the loss of agricultural land in the City of Stockton through conversion to private urban uses, including residential, commercial and industrial development.	Significant and unavoidable
Impact 3.2.2: Industrial activities could result in offsite impacts to adjacent agricultural lands.	Less than significant	None required.	Less than significant
Impact 3.2.3: Implementation of the proposed project would contribute to the cumulative conversion of land in San Joaquin County designated by the Department of Conservation FMMP as *Prime Farmland, Farmland of Statewide Importance or Unique Farmland*.	Potentially significant	Implement Mitigation Measure 3.2.1, as more fully described above under Impact 3.2.1.	Less than cumulatively considerable.
3.3. AIR QUALITY			
Impact 3.3.1: Construction of the project would generate emissions of criteria air pollutants that could contribute to existing nonattainment conditions and degrade air quality.	Potentially significant	**Measure 3.3.1a: Implement Dust Control Measures During Construction Activities.** The applicant shall comply with Regulation VIII Rule 8011 and implement the following dust control measures during construction: • The applicant shall submit a Dust Control Plan subject to review and approval of the SJVAPCD at least 30 days prior to the start of any construction activity	Significant and unavoidable

TABLE ES-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		on a site that includes 40 acres or more of disturbed surface area. Specific control measures for construction, excavation, extraction, and other earthmoving activities required by the Valley Air District include: • All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover in order to comply with Regulation VIII's 20 percent opacity limitation. • All onsite unpaved roads and offsite unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. • When materials are transported offsite, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained. • All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. However, the use of blower devices is expressly forbidden, and the use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. • Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. • Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday. • Any site with 150 or more vehicle trips per day shall prevent carryout and trackout. Enhanced and additional control measures for construction emissions of PM10 shall be implemented where feasible. These measures include: • Limit traffic speeds on unpaved roads to 15 mph. • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. • Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site. • Install wind breaks at windward side(s) of construction areas. • Suspend excavation and grading activity when winds exceed 20 mph. • Limit area subject to excavation, grading, and other construction activity at any one time.	

TABLE ES-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		Measure 3.3.1b: Implement Construction-Related Exhaust Emission Reducing Measures. The applicant shall implement control measures during construction to mitigate exhaust emissions from construction equipment. • Contractor shall keep all diesel equipment tuned and maintained. • Use alternative fueled or catalyst equipped diesel construction equipment where feasible. • Minimize idling time to a maximum of 5 minutes. • Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set), where feasible. • Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways. • Implement activity management, such as rescheduling activities to reduce short-term impacts and limiting the hours of operation of heavy duty equipment and/or the amount of equipment in use. **Measure 3.3.1c: Implement Construction-Related Exhaust Emission Reducing Measures Consistent with Rule 9510 Indirect Source Review.** As part of future site development, the applicant shall comply with Rule 9510 Indirect Source Review. Compliance with Rule 9510 would require reductions of 20% of the NOx construction emissions and 45% of the PM10 construction exhaust emissions. If onsite (construction fleet) reductions are insufficient to meet these reduction targets, the applicant shall pay mitigation fees of $9,350/ton for NOx emissions for year 2008 and beyond, and $9,011/ton for PM10 emissions for year 2008 and beyond.	
Impact 3.3.2: Operation of the project would generate emissions of criteria air pollutants that could contribute to existing nonattainment conditions and degrade air quality.	Potentially significant	**Measure 3.3.2a: Implement Operation-Related Exhaust Emission Reducing Measures Consistent with Rule 9510 Indirect Source Review.** As part of future site development, the applicant shall comply with Rule 9510 Indirect Source Review. Compliance with Rule 9510 will require reductions of 33.3% of the NOx operational emissions and 50% of the PM10 operational emissions. These reductions shall be accomplished through onsite and offsite measures, and/or through the payment of mitigation fees of $9,350/ton for NOx emissions for year 2008 and beyond, and $9,011/ton for PM10 emissions for year 2008 and beyond. **Measure 3.3.2b: Interior and Exterior Coatings.** As part of future site development, the applicant shall require the use of low VOC paints for interior and exterior coatings. **Measure 3.6.2: Implement Operation-Related GHG Reduction and Energy Efficiency Measures.** The applicant shall require implementation of all feasible energy efficiency and GHG reduction measures during operations, including but not limited to the following: *On-site Mitigation* • Exceed Title 24 (15% improvement);	Significant and unavoidable

TABLE ES-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		• Install high-efficiency lighting (25% lighting energy reduction); • Install low-flow bathroom faucets (32% reduction in flow); • Install low-flow kitchen faucets (18% reduction in flow); • Install low-flow toilets (20% reduction in flow); • Install low-flow showers (20% reduction in flow); • Use water-efficient irrigation systems (6.1% reduction in flow); and • Institute recycling and composting services (50% reduction in waste disposed).	
Impact 3.3.3: Construction and/or operation of the project would not expose sensitive receptors to substantial pollutant concentrations.	Less than significant	None required.	Less than significant
Impact 3.3.4: Operation of the project would not create objectionable odors affecting a substantial number of people.	Less than significant	None required.	Less than significant
Impact 3.3.5: Construction and operation of the project could result in cumulatively considerable increases of criteria pollutant emissions.	Potentially significant	Implement Mitigation Measures 3.3.1a-c, 3.3.2a-c, and 3.6.2, as more fully described above under Impacts 3.3.1 and 3.3.2.	Significant and unavoidable
3.4. BIOLOGICAL RESOURCES			
Impact 3.4.1: The project could have a substantial adverse effect, either directly or through habitat modifications, on Swainson's hawks and other raptors.	Potentially significant	**Measure 3.4.1 Nesting Raptor Protection Measures:** To avoid and minimize impacts on tree-nesting raptors the following measures (consistent with the SJMSCP 2009 ITMMs) will be implemented: • If feasible, conduct all tree and shrub removal and grading activities during the non-breeding season (generally from October through February). • If grading and tree removal activities are scheduled to occur during the breeding season (generally from March through September), pre-construction surveys for Swainson's hawks and other tree-nesting raptors. The surveys shall be conducted by a qualified biologist in suitable nesting habitat within 1,000 feet of the project site for tree nesting raptors prior to project activities that will occur between March 15 and September 15 of any given year. If active nests are recorded within these buffers the project proponent shall consult with CDFW to determine and implement appropriate avoidance and mitigation measures. • If known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past three years or trees, such as large oaks, which the hawks prefer for nesting) are located on the project site, the project applicant has the option of retaining or removing known or potential nest trees (according to Section 5.2.4.11 of the SJMSCP).	Less than significant

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Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 3.4.2: The project would not have an adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS.	No impact	None required.	No impact
Impact 3.4.3: The project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means.	No impact	None required.	No impact
Impact 3.4.4: The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	No impact	None required.	No impact
Impact 3.4.5: The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	No impact	None required.	No impact
Impact 3.4.6: The project could conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.	Less than significant	None required.	Less than significant
Impact 3.4.7: The project could contribute to a significant cumulative impact to wildlife habitat.	Less than significant	None required.	Less than significant
3.5. CULTURAL RESOURCES			
Impact 3.5.1: The project may adversely affect historic architectural resources.	No impact	None required	No impact
Impact 3.5.2: Project construction could adversely affect currently unknown historical resources, including unique archaeological or paleontological resources.	Potentially significant	**Measure 3.5.1a: Stop Work in the Event of Cultural Resource Discovery.** If cultural resources are encountered, all activity in the vicinity of the find shall cease until it can be evaluated by a qualified archaeologist and a Native American representative. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or tool-making debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of	Less than significant

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Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		metal, glass, and/or ceramic refuse. If the archaeologist and Native American representative determine that the resources may be significant, they will notify the City of Stockton. An appropriate treatment plan for the resources should be developed. The archaeologist shall consult with Native American representatives in determining appropriate treatment for prehistoric or Native American cultural resources. In considering any suggested mitigation proposed by the archaeologist and Native American representative, the City will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed in other parts of the project area while mitigation for cultural resources is being carried out. **Measure 3.5.1b: Discovery of Human Remains.** If human remains are encountered unexpectedly during construction excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the San Joaquin County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC will then identify the person(s) thought to be the Most Likely Descendent, who will help determine what course of action should be taken in dealing with the remains.	
Impact 3.5.3: Project construction could result in damage to previously unidentified human remains.	Potentially significant	Implement Measures 3.5.1a and 3.5.1b as more fully described above under Impact 3.5.2.	Less than significant
3.6. CLIMATE CHANGE			
Impact 3.6.1: The project could conflict with implementation of state goals for reducing greenhouse gas emissions and thereby have a negative effect on global climate change.	Potentially significant	**Measure 3.6.1: Implement Construction-Related GHG Reduction Measures.** The applicant shall require implementation of all feasible GHG reduction measures during construction, including but not limited to the following: • Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard); • Limit idling time for commercial vehicles, including delivery and construction vehicles; and • Use low or zero-emission vehicles, including construction vehicles. **Measure 3.6.2: Implement Operation-Related GHG Reduction and Energy Efficiency Measures.** The applicant shall require implementation of all feasible energy efficiency and GHG reduction measures during operations, including but not limited to the following: *On-site Mitigation* • Exceed Title 24 (15% improvement); • Install high-efficiency lighting (25% lighting energy reduction);	Significant and unavoidable

TABLE ES-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		• Install low-flow bathroom faucets (32% reduction in flow); • Install low-flow kitchen faucets (18% reduction in flow); • Install low-flow toilets (20% reduction in flow); • Install low-flow showers (20% reduction in flow); • Use water-efficient irrigation systems (6.1% reduction in flow); and • Institute recycling and composting services (50% reduction in waste disposed).	
3.7. GEOLOGY, SOILS, AND SEISMICITY			
Impact 3.7.1: Implementation of the proposed project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides.	Less than significant	None required.	Less than significant
Impact 3.7.2: Construction of the proposed project could result in substantial soil erosion or the loss of topsoil.	Less than significant	None required.	Less than significant
Impact 3.7.3: The proposed project could be located on a geologic unit or soil that is unstable, or that could become unstable as a result of the proposed project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.	Less than significant	None required.	Less than significant
Impact 3.7.4: The presence of expansive and corrosive soils could result in structural damage to the proposed project facilities.	Potentially significant	**Measure 3.7.1: Conduct Geotechnical Study and Implement Design Recommendations.** The applicant shall conduct a design-level geotechnical investigation of the project site to identify the characteristics of project site soils. Recommendations identified by the geotechnical investigations shall be incorporated into the design of the proposed project structures prior to approval of the building permit. Due to the expansive and corrosive nature of the soils, the geotechnical report may include recommendations for foundation design and use of materials that would not be affected by the corrosive soils, the removal of the expansive soils, or mixing the expansive soil with a non-expansive material.	Less than significant
3.8. HAZARDS AND HAZARDOUS MATERIALS			
Impact 3.8.1: Implementation of the proposed project has the potential for existing and/or previously unidentified contamination to be encountered during project site preparation, construction activities, and mining activities.	Less than significant	None required.	Less than significant

TABLE ES-1
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Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 3.8.2: Implementation of the proposed project may create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Less than significant	None required.	Less than significant
Impact 3.8.3: Implementation of the proposed project will be located within an airport land use plan and would not result in a safety hazard for people residing or working in the project area.	Less than significant	None required.	Less than significant
Impact 3.8.4: The proposed project would not interfere with or impair any adopted emergency response plan or emergency evacuation plan.	Less than significant	None required.	Less than significant
Impact 3.8.5: Construction and operation of the proposed project may expose people or structures to a significant risk of loss or injury involving wildland fires.	Less than significant	None required.	Less than significant
3.9. HYDROLOGY AND WATER QUALITY			
Impact 3.9.1: Construction and operation of the proposed project would involve activities that have the potential to substantially degrade water quality and/or violate water quality standards.	Potentially significant	**Measure 3.9.1: Implement Best Management Practices from Stormwater Pollution Prevention Plan.** The applicant shall renew its existing Stormwater Pollution Prevention Plan (SWPPP) for construction and operation of the proposed project for compliance with required NPDES construction permitting, and to reduce the intensity of potential water quality impacts associated with operation of the proposed project. The SWPPP shall identify all pollutant sources that may affect the quality of stormwater discharge, and shall require the implementation of Best Management Practices (BMPs) to reduce pollutants in storm water discharges during construction and operation. BMPs may include, but would not be limited to: • Excavation and grading activities shall be scheduled for the dry season only (to October 14), to the extent possible. This will reduce the chance of severe erosion from intense rainfall and surface runoff. • If excavation occurs during the rainy season, storm runoff from the construction area shall be regulated through a storm water management/erosion control plan that shall include temporary onsite silt traps and/or basins with multiple discharge points to natural drainages and energy dissipaters. Stockpiles of loose material shall be covered and runoff diverted away from exposed soil material. If work stops due to rain, a positive grading away from slopes shall be provided to carry the surface runoff to areas where flow would be controlled, such as the temporary silt basins. Sediment basins/traps shall be located and operated to minimize the amount of off-site sediment transport. Any trapped sediment shall be removed from the basin or trap and placed at a suitable location on-site, away from concentrated flows, or	Less than significant

TABLE ES-1
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Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		removed to an approved disposal site. • Temporary erosion control measures (such as fiber rolls, staked straw bales, detention basins, check dams, geofabric, sandbag dikes, and similar measures) shall be provided until construction is complete or landscaping is established and can minimize discharge of sediment into nearby waterways. All storm drains shall be protected from sedimentation using such measures. • Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures. • No disturbed surfaces will be left without erosion control measures in place during the rainy season, from October 15th through April 30th. • Erosion protection shall be provided on all cut-and-fill slopes. Landscaping shall be initiated as soon as possible after completion of grading and prior to the onset of the rainy season (by October 15). • Construction-related stormwater BMPs selected and implemented for the project shall be in place and operational prior to the onset of major earthwork on the site. The construction phase facilities shall be maintained regularly and cleared of accumulated sediment as necessary. Operation-related stormwater BMPs shall be incorporated into project design and fully implemented prior to completion of construction and associated activities for the project. Effective mechanical and structural BMPs that could be implemented at the project site include the following: o Mechanical storm water filtration measures, including oil and sediment separators or absorbent filter systems such as the Stormceptor® system, can be installed within the storm drainage system to provide filtration of storm water prior to discharge. o Vegetative strips, high infiltration substrates, and grassy swales can be used where feasible throughout the development to reduce runoff and provide initial storm water treatment. o Drains shall discharge to natural surfaces, swales, or other stormwater retention features to avoid excessive peak stormwater flows. o The water quality detention basins during construction shall be designed to provide effective water quality control measures including the following: ▪ Maximize detention time for settling of fine particles; ▪ Establish maintenance schedules for periodic removal of sedimentation, excessive vegetation, and debris that may clog basin inlets and outlets; ▪ Maximize the detention basin elevation to allow the highest amount of	

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Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		infiltration and settling prior to discharge. • Hazardous materials such as fuels and solvents used on the construction sites shall be stored in covered containers and protected from rainfall, runoff, vandalism, and accidental release to the environment. All stored fuels and solvents will be contained in an area of impervious surface with containment capacity equal to the volume of materials stored. A stockpile of spill cleanup materials shall be readily available at all construction sites. Employees shall be trained in spill prevention and cleanup, and individuals shall be designated as responsible for prevention and cleanup activities. • Equipment shall be properly maintained in designated areas with runoff and erosion control measures to minimize accidental release of pollutants.	
Impact 3.9.2: Implementation of the proposed project could substantially deplete groundwater via increased withdrawal or substantial interference with groundwater recharge.	Less than significant	None required.	Less than significant
Impact 3.9.3: Implementation of the proposed project would result in increased drainage flows as a result of the introduction of impervious surfaces. Additional runoff generated by the proposed project could exceed the capacity of on- and off-site drainage systems, create localized flooding, and contribute to flooding in down-gradient locations.	Less than significant	None required.	Less than significant
Impact 3.9.4: According to current flood hazard maps (2002) prepared by FEMA, the project site is located inside the 100-year flood zone.	Less than significant	None required.	Less than significant
Impact 3.9.5: The project would not result in the increased exposure of people or structures risks associated with inundation by seiche, tsunami, or mudflow.	Less than significant	None required.	Less than significant
3.10. LAND USE			
Impact 3.10.1: The proposed project will not physically divide an established community.	No impact	None required.	No impact
Impact 3.10.2: The proposed project could conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project.	Potentially significant	**Measure 3.10.1: Incorporate Building Design Features Consistent with SJCALUP Guidance:** Any proposed structure over 200' above ground level; or construction which includes reflective material (other than traffic markings), unusual levels of lighting, or telecommunications equipment, shall be submitted to the FAA (San Francisco Airports District Office) for review (using Form 7460-1) to determine if the proposed construction would be a hazard to navigable airspace.	Less than significant

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Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
3.11. NOISE AND ACOUSTICS			
Impact 3.11.1: Project construction could expose persons to or generate temporary noise levels in excess of standards established in the City of Stockton and San Joaquin County General Plan and Noise Ordinance.	Potentially significant	**Measure 3.11.1: Construction-Related Noise Measures.** The City shall ensure that the project applicant or construction contractor will implement the following construction-related noise reducing measures: • Construction activities shall be limited to between 7:00 a.m. and 7:00 p.m. Monday through Saturday to avoid noise-sensitive hours of the day. Construction activities shall be prohibited on Sundays and holidays. • Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools. • Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby residences. • Signs will be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number with the City of Stockton in the event of problems. • An onsite complaint and enforcement manager shall track and respond to noise complaints.	Less than significant
Impact 3.11.2: Project operation could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Potentially significant	**Measure 3.11.2a: Measures to Reduce HVAC Equipment Noise.** The project applicant shall ensure that HVAC units on northwest buildings of Lot 7 (north map) shall be located away from nearby residences, on building rooftops, and properly shielded by either the rooftop parapet or within an enclosure that effectively blocks the line of site of the source from the nearest receivers. **Measure 3.11.2b: Measures to Reduce Loading Dock Noise.** The project applicant shall ensure that loading docks in northwest buildings of Lot 7 (north map) shall be located away from nearby residences (i.e., on south or east sides of buildings) or shall be shielded with appropriate wing walls that effectively block the line of site of the loading docks from the nearest receivers. **Measure 3.11.2c: Measures to Reduce Traffic Noise.** The applicant shall notify the homeowners along roadway segment 1 of the noise impacts associated with the traffic from project operations. With the homeowners' approval, the applicant shall construct 6-foot solid fences along the property line of affected residences. Alternatively, residential building facades can be upgraded to reduce interior noise levels (e.g., improved windows and doors). While these measures could substantially reduce the impact of increased traffic noise on the interior environment of existing noise-sensitive uses, no enforcement mechanism has been identified to ensure implementation of the measures nor has any related funding mechanism been identified.	Significant and unavoidable

TABLE ES-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 3.11.3: Project construction could expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.	Less than significant	None required.	Less than significant
Impact 3.11.4: The project, located within two miles of a public airport or private airstrip, could expose people residing working in the project area to excessive noise.	Less than significant	None required.	Less than significant
Impact 3.11.5: Increases in traffic from the project in combination with other development could result in cumulative noise increases.	Less than significant	None required.	Less than significant
3.12. PUBLIC SERVICES, UTILITIES, AND RECREATION			
Impact 3.12.1: Implementation of the project may increase the need for additional law enforcement and fire protection services from the local police and fire departments.	Less than significant	None required.	Less than significant
Impact 3.12.2: Implementation of the project may result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less than significant	None required.	Less than significant
Impact 3.12.3: Implementation of the project may impact water supplies.	Less than significant	None required.	Less than significant
Impact 3.12.4: The proposed project will be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	Less than significant	None required.	Less than significant
Impact 3.12.5: Implementation of the project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated.	No impact	None required.	No impact
Impact 3.12.6: Implementation of the proposed project would not exceed existing gas and electric supply or result in wasteful, inefficient, or unnecessary consumption of energy.	Less than significant	None required.	Less than significant

TABLE ES-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
3.13 TRAFFIC AND CIRCULATION			
Impact 3.13.1: Existing plus project traffic could result in impacts to study area intersections.	Potentially significant	**Measure 3.13.1: Restripe Arch Road to Provide Second Westbound Lane.** The applicant shall restripe Arch Road to provide a second westbound through lane on Arch Road from approximately 500 feet east of Newcastle Road to Fite Court.	Less than significant
Impact 3.13.2: Existing plus project traffic could result in impacts to study area freeway segments.	Potentially significant	**Measure 3.13.2: Project's Fair Share Contribution to SR99 Widening.** The applicant shall pay the Public Facilities Fees (PFF), which includes the Regional Transportation Impact, Street Improvements, and Traffic Signal Fees. Payment of these fees would constitute the Project's fair share contribution to on-going widening of SR 99 from SR 120 to the Crosstown Freeway to provide three travel lanes in each direction. This improvement is fully funded, including funding from Measure K as well as Regional Transportation Impact Fees. Construction is expected to be completed in 2015/2016.	Less than significant
Impact 3.13.3: Existing plus project traffic could result in freeway ramp merge/diverge impacts.	Potentially significant	Implement Mitigation Measure 3.13.2, as more fully described above under Impact 3.13.2.	Less than significant
Impact 3.13.4: Near-Term traffic could result in impacts to study area intersections.	Potentially significant	**Measure 3.13.3a: Project's Fair Share Contribution to Arch-Airport Road/Sperry Road Specific Road Plan Road Improvements.** The applicant shall pay the PFF which would constitute their fair share to the construction of planned improvements identified in the *Arch-Airport Road/Sperry Road Specific Road Plan* (August 2003), which includes the widening of Arch Road to provide two travel lanes in each direction as shown on Figure 3.13-6. **Measure 3.13.3b: Construct Westbound Right-Turn Only Lane at Arch Road/Newcastle Road Intersection.** The applicant shall construct 770 feet (500 feet plus 270 feet of taper) of a right-turn only lane for the westbound approach of the Arch Road/Newcastle Road Intersection.	Less than significant
Impact 3.13.5: Near-Term traffic could result in impacts to study area freeway segments.	Potentially significant	Implement Mitigation Measure 3.13.2, as more fully described above under Impact 3.13.2.	Less than significant
Impact 3.13.6: Near-Term traffic could result in ramp merge/diverge impacts.	Potentially significant	Implement Mitigation Measure 3.13.2, as more fully described above under Impact 3.13.2.	Less than significant
Impact 3.13.7: General Plan Buildout Project traffic would not result in impacts to study area roadway segments.	Less than significant	None required.	Less than significant
Impact 3.13.8: The project would not conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads and highways.	Less than significant	None required.	Less than significant
Impact 3.13.9: The project may increase traffic hazards due to a design feature (e.g. sharp curves	Potentially significant	**Measure 3.13.4a: Provide Adequate Vehicle Storage.** At Arch Road/Newcastle Road, the eastbound left-turn lane should be designed to provide approximately 350	Less than significant

TABLE ES-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
or dangerous intersections), incompatible uses (e.g. farm equipment), or result in inadequate emergency access.		feet of vehicle storage. At Arch Road/Logistics Drive, the eastbound left-turn lane should be designed to provide 300 feet of vehicle storage, and the southbound right-turn lane should be designed to provide 300 feet of vehicle storage. At Mariposa Road/Newcastle Road, the eastbound right-turn should be designed to provide 150 feet of vehicle storage and the northbound left-turn should be designed to provide 300 feet of storage. **Measure 3.13.4b: Provide Adequate Driveway Access on Newcastle Road.** The first driveway on Newcastle Road, serving Southern Lot 1 should be at least 300 feet from the Arch Road/Newcastle Road intersection, or restricted to right-in/right-out operation. **Measure 3.13.4c: Provide Adequate Emergency Vehicle Access.** For each developable lot, the applicant shall consult with the City of Stockton fire department to ensure that the site plan provides adequate emergency vehicle access.	
Impact 3.13.10: The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than significant	None required.	Less than significant

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CHAPTER 1
Introduction

1.1 Purpose of this Environmental Impact Report

This Draft Environmental Impact Report (Draft EIR) was prepared in order to provide decision makers, the public, and responsible and trustee agencies with information about the potential environmental effects of the proposed NorCal Logistics Center (proposed project) in Stockton, California.

This Draft EIR was prepared in compliance with the California Environmental Quality Act (Public Resources Code §§ 21000 et seq., (CEQA)), and the CEQA Guidelines (California Code of Regulations, Title 14). As described in CEQA Guidelines Section 15121(a), an EIR is a public informational document that assesses the potential environmental impacts of a proposed project and identifies feasible mitigation measures and alternatives to the proposed project that could minimize or avoid significant environmental impacts. CEQA requires that state and local government agencies consider the environmental consequences of projects over which they have discretionary authority. The EIR is an informational document used in the planning and decision-making process. It is not the purpose or intent of an EIR to recommend either approval or denial of a project.

CEQA requires that a lead agency neither approve nor carry out a project as proposed unless the significant environmental effects have been reduced to an "acceptable level," or unless specific findings are made attesting to the infeasibility of altering the project to reduce or avoid adverse environmental impacts (CEQA Guidelines Sections 15091 and 15092). An "acceptable level" is defined as eliminating, avoiding, or substantially lessening the significant effects. CEQA also requires that decision-makers balance the benefits of a proposed project against its unavoidable environmental risks. If environmental impacts are identified as significant and unavoidable, the project may still be approved if it is demonstrated that social, economic, or other benefits outweigh the unavoidable impacts. The lead agency would then be required to state in writing the specific reasons for approving the project based on information presented in the EIR, as well as other information in the record. This process is defined as a "Statement of Overriding Considerations" by CEQA Guidelines Section 15093.

1.2 Project Overview

The applicant, Arch Road L.P., proposes to further subdivide approximately 325 acres ("project site") of its 495-acre property. The project site is comprised on two non-adjacent portions: an approximately 50-acre southern portion (at the southern end of the property) adjacent to Arch

Road, and an approximately 275-acre northern portion (at the north end of the property) adjacent to Mariposa Road. The entirety of applicant's property is presently zoned for the development of industrial uses, "as of right," within the City of Stockton. The proposed subdivision will not enlarge nor change the industrial development already allowed on the property. Therefore, the "project" consists of simply further subdividing the northern and southern portions of the project site: (i) the approximately 50-acre southern portion located along Arch Road would be subdivided into 6 new lots (total) (this parcel is 56 gross acres, however 6 acres are setback for Weber Slough and will be avoided by the project); and (ii) the approximately 275-acre northern portion located along Mariposa Road would be subdivided into 15 new lots (total). These two separate portions will involve two separate Vesting Tentative Maps (pursuant to Government Code section 66498.1, et seq), processed with the City under the Subdivision Map Act and local City Subdivision Ordinance. The Vesting Tentative Map for the southern portion of the project site adjacent to Arch Road is referred to as VTM 1. Again, VTM 1 is comprised of approximately 50 acres and will involve the creation of 6 new lots. The Vesting Tentative Map for the northern portion of the project site adjacent to Mariposa Road is referred to as VTM 2. Again, VTM 2 is comprised of approximately 275 acres and proposes the creation of 15 new lots. The EIR will analyze the collective development of both VTM 1 and VTM 2. The lots resulting from VTM 1 and VTM 2 will allow greater user flexibility (ownership of the land versus leasing of the land), although the creation of these new lots on the project site will not change the Industrial uses allowed, nor the density or intensity of that Industrial use. The project will be phased to ensure the orderly development and timed implementation of on-site and off-site improvements required to serve the development.

Based on the net-acreage of 263 acres for the northern portion and 45 acres for the southern portion and a floor-area-ratio of up to 0.50 (below the allowable floor-area-ratio of 0.60 under the General Plan land use designation), up to 6,280,480 square feet of light industrial uses could be constructed on the new lots (southern and northern portions combined). This is no greater amount of development that could occur in the absence of the proposed subdivision map and lot creation. The project site is served by existing public utilities, which would be extended to the new lots. The proposed project includes internal circulation improvements, including a new connection to Mariposa Road.

The project site is located within an existing industrial area known as Arch Road Units 3 and 4. Arch Road Units 3 and 4 consists of eight industrially-zoned parcels covering 475 acres in the City of Stockton at Arch Road and Newcastle Road. This development has been the subject of several prior environmental studies including an EIR prepared in 1988, a supplemental EIR in 1995, and cultural survey in 2007 that was updated in 2008. The project site is located northwest of the intersection of Arch and Austin Roads. The project site is within the existing corporate boundaries of the City of Stockton. As discussed in greater detail below, the project site is currently designated by the City's General Plan as "Industrial" (I), and under the City's Zoning as "Industrial Limited" (IL). Under this designation and zoning, Industrial uses are permitted "as of right," the only City permit needed is a Building Permit, no City discretion is involved in the issuance of such Building Permits, and hence the California Environmental Quality Act (CEQA) does not normally apply. However, several ministerial planning reviews are required prior to any

submittal of a building permit application; these include site plan and architectural design review. As discussed below, the applicant, Arch Road L.P., has already developed a portion of the project site with Industrial uses. The applicant now proposes the subdivision of a portion of the project site to allow greater user flexibility (ownership of the land versus leasing of the land), although the creation of new lots on the project site will not change the Industrial uses allowed, nor the density or intensity of that Industrial use. However, because the approval of a subdivision map by the City is "discretionary," CEQA applies to the subdivision approval.

The project site has a City of Stockton General Plan designation of Industrial (I). This designation applies to a wide variety of industrial uses including uses with nuisance or hazardous characteristics, warehousing, construction contractors, light manufacturing, offices, retail sales, service businesses, public and quasi-public uses, and other similar and compatible uses. The proposed project is zoned Industrial Limited (IL) by the City of Stockton Zoning Ordinance. The IL zoning district is applied to areas appropriate for light manufacturing uses that may generate more nuisance impacts than acceptable in commercial zoning districts and whose operations are totally conducted indoors. Other uses permitted within the IL zoning district include ancillary office uses and warehousing. The IL zoning district is consistent with the Industrial land use designation of the General Plan. Unlike the Industrial General (IG) zoning designation, uses may not occur outdoors or be associated with nuisance or hazardous impacts in the IL zoning district.

1.3 Type of Environmental Impact Report

The CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This Draft EIR is prepared as a project level EIR pursuant to CEQA Guidelines Section 15163. The scope of this Draft EIR has been focused to only address issues identified by the City of Stockton to pose a potentially significant effect on the environment. This type of EIR focuses primarily on the changes in the environment that would occur as a result of project development, and examines all phases of a particular project (i.e., planning, construction, operation). Ultimately, the EIR will be used by the City of Stockton as a tool to evaluate the proposed project's environmental impacts and can be further used to modify, approve, or deny approval of the proposed project based on the analyses provided in the EIR.

1.4 Range of Alternatives

CEQA Guidelines Section 15126.6(a) requires that a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any significant effects of the project, be discussed in an EIR. This Draft EIR identifies and analyzes such a range of alternatives, discusses the environmental effects of each alternative, compares the environmental effects of each alternative with existing conditions and with impacts of the proposed project, and addresses the relationship of each alternative to the project objectives. In establishing this reasonable range of alternatives, the City took into account the fact that the project is already designated for "Industrial" uses by the City's General Plan. The determinations of the City of Stockton concerning the feasibility, acceptance, or rejection of the

alternatives considered in this EIR will be addressed and resolved in the City's findings, as required by CEQA. The alternatives consist of the following:

- Alternative 1 – No Project Alternative
- Alternative 2 – Reduced Alternative (No Development North of Littlejohn's Creek)
- Alternative 3 – Reduced Alternative (No Development West of Newcastle)

For a discussion of the components, basis for selection, and impacts of these alternatives, see Chapter 4, "Alternatives."

1.5 Use of this Environmental Impact Report

The City of Stockton has directed the preparation of this Draft EIR, to be used in conjunction with other information in the formal record, to act on the proposed project. In accordance with CEQA requirements, the City will determine the adequacy of the Final EIR and, if adequate, will certify the document.

This Draft EIR provides environmental information and evaluation which other responsible and trustee agencies may rely on to make informed decisions over issuance of specific permits related to the proposed project. In addition to City permits and approvals, other permits and approvals may be necessary from agencies, as identified in Chapter 2, "Project Description."

1.6 CEQA Environmental Impact Report Process

1.6.1 Notice of Preparation

In accordance with CEQA Guidelines Section 15082, the City circulated a Notice of Preparation (NOP) for this EIR on October 31, 2012 for a 30-day public review period that concluded on December 3, 2012. The NOP was circulated to the public, interested parties, and local, state, and federal agencies. Its purpose was to inform the interested parties that the proposed project could have significant effects on the environment and to solicit their comments. An Initial Study Checklist was included as an attachment to the NOP (see **Appendix A**). A public scoping meeting was held by the City on November 14, 2012 at the Cabral Agricultural Center.

Three comment letters from local and state agencies were received (**Table 1-1**) during the public review period (also see Appendix A).

TABLE 1-1
NOP SCOPING LETTERS RECEIVED

#	Date	Commenter
1	11/15/12	Central Valley Regional Water Quality Control Board
2	11/16/12	Environmental Health Department, San Joaquin County
3	11/19/12	Municipal Utilities Department, City of Stockton
4	11/21/12	San Joaquin Council of Governments – ALUC Review
5	11/21/12	San Joaquin Council of Governments- SJGOG Review
6	11/26/12	San Joaquin Valley Air Pollution Control District
7	12/03/12	California Department of Transportation
8	12/06/12	San Joaquin County Department of Public Works

Issues raised in response to the NOP were considered during preparation of the Draft EIR. Key environmental issues raised include the following:

- Traffic impacts to both the local and regional roadway network (including State Route 99).
- Air quality analysis to address criteria pollutants, nuisance odors, and health impacts (toxic air contaminants).
- ALUC comments regarding proposed structural height and bird strikes.

Additionally, several commenters (i.e., the County of San Joaquin, Central Valley Regional Water Quality Control Board) identified water quality, air quality, and flood control permitting requirements that may be applicable to implementation of the proposed project. These include a Construction Stormwater General Permit, MS4 Permit, Industrial Stormwater General Permit, Clean Water Act Section 404 Permit, Clean Water Act Section 401 Permit, and Waste Discharge Requirements.

1.6.2 Draft Environmental Impact Report

The Draft EIR contains a description of the project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives. The Draft EIR is circulated for a review period of at least 45 days.

1.6.3 Final EIR and EIR Certification

Written comments received in response to the Draft EIR will be addressed in a Response to Comments document which, together with the revised Draft EIR text, will constitute the Final EIR. After review of the project and the Final EIR, the Community Development Department, at

a public hearing, will recommend to the City Planning Commission whether to certify the Final EIR and approve or deny the proposed project. The City Planning Commission will then review the project, the Final EIR, City Community Development Department recommendations, and public testimony, and then decide whether to certify the EIR and approve or deny the project. A Statement of Overriding Considerations will need to be adopted by the Planning Commission for significant and unavoidable impacts identified in the EIR.

1.6.4 Mitigation Monitoring and Reporting Program

Section 21081.6 of the CEQA Guidelines requires lead agencies to "adopt a reporting and mitigation monitoring program for the changes to the project which it has adopted or made conditions of project approval in order to mitigate or avoid significant effects on the environment." Any mitigation measures adopted by the City as conditions of approval for the project will be included in a Mitigation Monitoring and Reporting Program (MMRP) to verify compliance. The MMRP required by CEQA is not required to be included in the EIR; however, the City of Stockton independently requires that the MMRP be included with the Draft EIR (see **Appendix B**).

1.7 Public Participation

The CEQA Statutes and Guidelines and the City of Stockton encourage public participation in the planning and environmental review processes. As described above, an NOP and Initial Study for the project were released on October 31, 2012 for a 30-day scoping period (which concluded on December 3, 2012). A public scoping meeting was held on November 14, 2012 at the Cabral Agricultural Center in Stockton. Environmental issues raised during the scoping process were considered in the preparation of the Draft EIR.

The public will have an opportunity to provide comments regarding the adequacy of the Draft EIR during a public review and comment period. Written public comments may be submitted to the City at any time during the 45-day public review and comment period. Comments on this Draft EIR can be submitted in writing to:

City of Stockton Community Development Department
Attn: Adam Brucker
345 N. El Dorado Street
Stockton, CA 95202-1997

Comments can also be submitted via electronic mail at: adam.brucker@stocktongov.com.

1.8 Organization of this Environmental Impact Report

This Draft EIR is organized into nine chapters as described below.

Executive Summary: Provides a summary of the proposed action, potential environmental impacts, proposed mitigation measures, project alternatives, and areas of controversy/issues to be resolved.

Chapter 1, Introduction: Provides an overview of the EIR process and describes the purpose and content of the Draft EIR.

Chapter 2, Project Description: Provides a description of the project site and its location, the project goals and objectives, the project setting, the project components, and a list of the project's necessary permits and approvals (pursuant to CEQA Guidelines Section 15124).

Chapter 3, Environmental Setting, Impacts, and Mitigation Measures: Describes the project's existing setting, discusses the environmental impacts of the project, and identifies mitigation measures for the environmental impacts identified in this Draft EIR (pursuant to CEQA Guidelines Sections 15125 and 15126). The environmental issue areas addressed in this EIR are land use, agriculture resources, traffic, air quality, climate change, noise, hydrology, biological resources, geology, public services and utilities, cultural resources, hazardous materials, and aesthetics. Reference materials used in preparation of the individual technical sections are included at the end of each section.

Chapter 4, Alternatives: Presents an analysis of a reasonable range of alternatives to the proposed project, presents the environmental impacts associated with each alternative, and compares the relative impacts of each alternative to those of the proposed project (pursuant to CEQA Guidelines Sections 15126(f) and 15126.6).

Chapter 5, Other CEQA Considerations: Presents discussions of the project's growth inducing effects (pursuant to CEQA Guidelines Section 15126(d), cumulative impacts (pursuant to CEQA Guidelines Section 15130), and significant unavoidable impacts.

Chapter 6, List of Preparers: Lists report preparers and identifies persons and organizations consulted during report preparation (pursuant to CEQA Guidelines Section 15129).

Appendices: The appendices are referenced in the Table of Contents.

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CHAPTER 2
Project Description

2.1 Introduction

The applicant, Arch Road L.P., proposes to further subdivide approximately 325 acres ("project site") of its 495-acre property. The project site is comprised on two non-adjacent portions: an approximately 50-acre southern portion (at the southern end of the property) adjacent to Arch Road, and an approximately 275-acre northern portion (at the north end of the property) adjacent to Mariposa Road. The entirety of applicant's property is presently zoned for the development of industrial uses, "as of right," within the City of Stockton. The proposed subdivision will not enlarge nor change the industrial development already allowed on the property. Therefore, the "project" consists of simply further subdividing the northern and southern portions of the project site: (i) the approximately 50-acre southern portion located along Arch Road would be subdivided into 6 new lots (total) (this parcel is 56 gross acres, however 6 acres are setback for Weber Slough and will be avoided by the project); and (ii) the approximately 275-acre northern portion located along Mariposa Road would be subdivided into 15 new lots (total). These two separate portions will involve two separate Vesting Tentative Maps (pursuant to Government Code section 66498.1, et seq), processed with the City under the Subdivision Map Act and local City Subdivision Ordinance. The Vesting Tentative Map for the southern portion of the project site adjacent to Arch Road is referred to as VTM 1. Again, VTM 1 is comprised of approximately 50 acres and will involve the creation of 6 new lots. The Vesting Tentative Map for the northern portion of the project site adjacent to Mariposa Road is referred to as VTM 2. Again, VTM 2 is comprised of approximately 275 acres and proposes the creation of 15 new lots. The EIR will analyze the collective development of both VTM 1 and VTM 2. The lots resulting from VTM 1 and VTM 2 will allow greater user flexibility (ownership of the land versus leasing of the land), although the creation of these new lots on the project site will not change the Industrial uses allowed, nor the density or intensity of that Industrial use. The project will be phased to ensure the orderly development and timed implementation of on-site and off-site improvements required to serve the development.

Based on the net-acreage of 263 acres for the northern portion and 45 acres for the southern portion and a floor-area-ratio of up to 0.50 (below the allowable floor-area-ratio of 0.60 under the General Plan land use designation), up to 6,280,480 square feet of light industrial uses could be constructed on the new lots (southern and northern portions combined). This is no greater amount of development that could occur in the absence of the proposed subdivision map and lot creation. The project site is served by existing public utilities, which would be extended to the new lots.

The proposed project includes internal circulation improvements, including a new connection to Mariposa Road.

The project site is located within an existing industrial area known as Arch Road Units 3 and 4. Arch Road Units 3 and 4 consists of eight industrially-zoned parcels covering 475 acres in the City of Stockton at Arch Road and Newcastle Road. This development has been the subject of several prior environmental studies including an EIR prepared in 1988, a supplemental EIR in 1995, and cultural survey in 2007 that was updated in 2008. The project site is located northwest of the intersection of Arch and Austin Roads. The project site is within the existing corporate boundaries of the City of Stockton. As discussed in greater detail below, the project site is currently designated by the City's General Plan as "Industrial" (I), and under the City's Zoning as "Industrial Limited" (IL). Under this designation and zoning, Industrial uses are permitted "as of right," the only City permit needed is a Building Permit, no City discretion is involved in the issuance of such Building Permits, and hence CEQA does not normally apply. However, several ministerial planning reviews are required prior to any submittal of a building permit application; these include site plan and architectural design review. As discussed below, the applicant, Arch Road L.P., has already developed a portion of the project site with Industrial uses. The applicant now proposes the subdivision of a portion of the project site to allow greater user flexibility (ownership of the land versus leasing of the land), although the creation of new lots on the project site will not change the Industrial uses allowed, nor the density or intensity of that Industrial use. However, because the approval of a subdivision map by the City is "discretionary," CEQA applies to the subdivision approval.

The project site has a City of Stockton General Plan designation of Industrial (I). This designation applies to a wide variety of industrial uses including uses with nuisance or hazardous characteristics, warehousing, construction contractors, light manufacturing, offices, retail sales, service businesses, public and quasi-public uses, and other similar and compatible uses. The proposed project is zoned Industrial Limited (IL) by the City of Stockton Zoning Ordinance. The IL zoning district is applied to areas appropriate for light manufacturing uses that may generate more nuisance impacts than acceptable in commercial zoning districts and whose operations are totally conducted indoors. Other uses permitted within the IL zoning district include ancillary office uses and warehousing. The IL zoning district is consistent with the Industrial land use designation of the General Plan. Unlike the Industrial General (IG) zoning designation, uses may not occur outdoors or be associated with nuisance or hazardous impacts in the IL zoning district.

2.1.1 Project Location

Located near the center of San Joaquin County, the City of Stockton (City) serves as the County seat. San Joaquin County is located at the northern end of the San Joaquin Valley. The City is located 83 miles east of the San Francisco Bay area and 40 miles south of Sacramento. Interstate 5 runs north-south near the western border of the City and State Route 99 runs north-south near the eastern border of the City. Both roadways provide access to other communities surrounding the City (including the City of Lodi to the north and the cities of Lathrop and Manteca to the south) and regional access to other parts of the State. The Primary Zone of the Sacramento/San Joaquin Delta

(Delta) is located to the west of the City. Much of the western most part of the City is located within the secondary zone of the Delta.

The project is located in southeast Stockton (see **Figure 2-1**), north of Arch Road, southwest of Mariposa road, and extending to either side of Newcastle Road (see **Figure 2-2**). The project consists of five parcels totaling 325± acres.

2.1.2 Environmental Setting

Project Site and Surrounding Land Uses

The project site consists of five separate parcels of the applicant's larger property located in southeast Stockton (see **Figure 2-3**), north of Arch Road, southwest of Mariposa road, and extending to either side of Newcastle Road (see **Figure 2-4**). The overall property consists of approximately 495 acres, whereas the project site portions of that larger property consists of approximately 325± acres. North Littlejohns Creek and Weber Slough run east to west through portions of the project site.

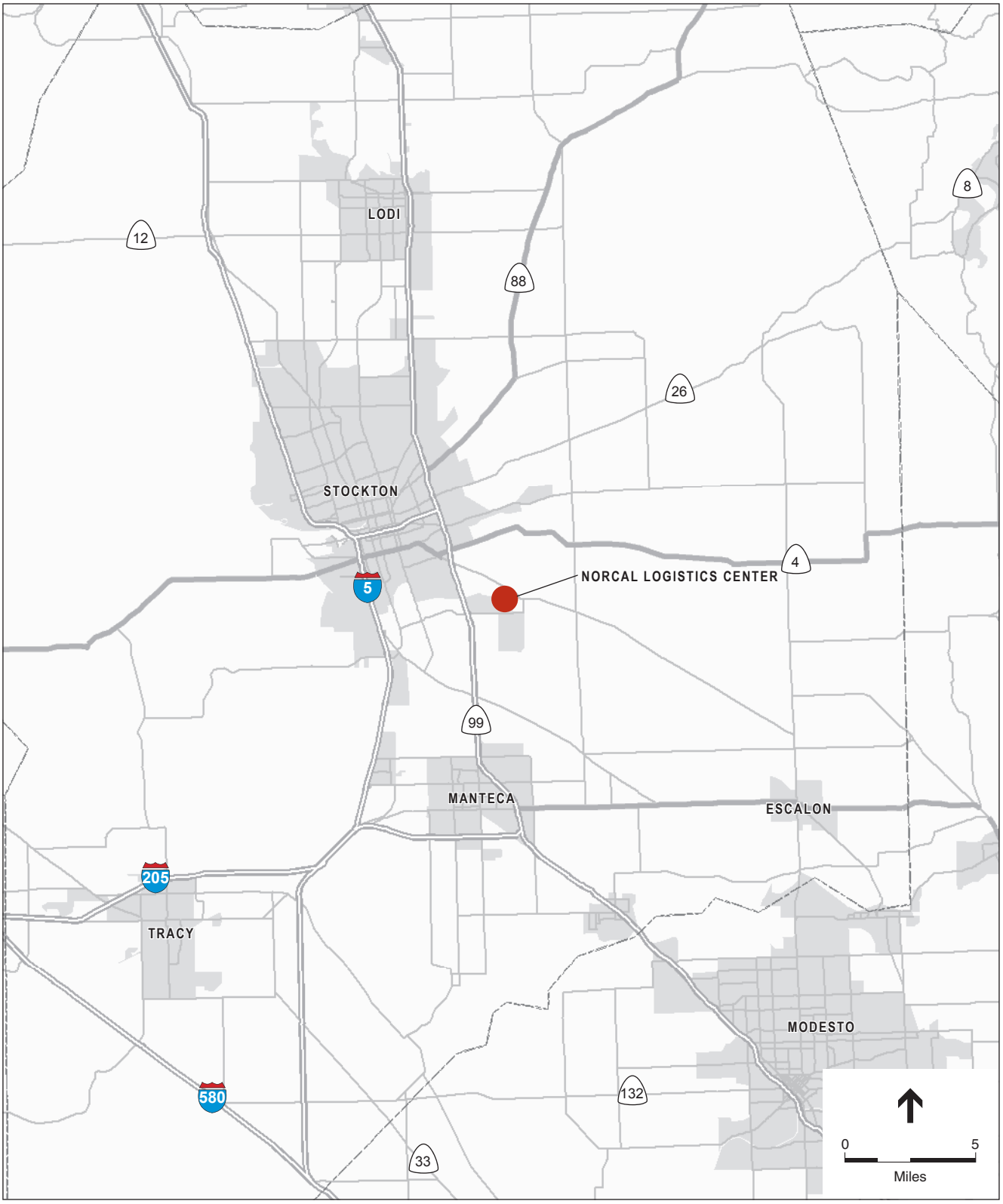
The land to the north of the project site is primarily agricultural, although it is designated for Industrial (north) and "Village J" (northeast of Mariposa Road) in the 2035 General Plan. The BNSF Intermodal Facility is to the east. Immediately south of the project site (across Arch Road) are fallow agricultural lands (designated for future industrial uses) and the Northern California Youth Correctional Center (NCYCC), located further to the south. The California Health Care Facility CDCR is located to the southeast of the project site. Existing industrial development is located on the project site and to the west of Newcastle Road.

Existing Land Uses

The project site is located on land historically utilized for agricultural uses. Project areas are a mix of vacant land (previously used for agriculture), and developed land (including similar proposed industrial uses). North Littlejohns Creek and Weber Slough run east to west through portions of the project site.

The entirety of the project site has a City of Stockton General Plan land use designation of Industrial (I). This designation applies to a wide variety of industrial uses including uses with nuisance or hazardous characteristics, warehousing, construction contractors, light manufacturing, offices, retail sales, service businesses, public and quasi-public uses, and other similar and compatible uses.

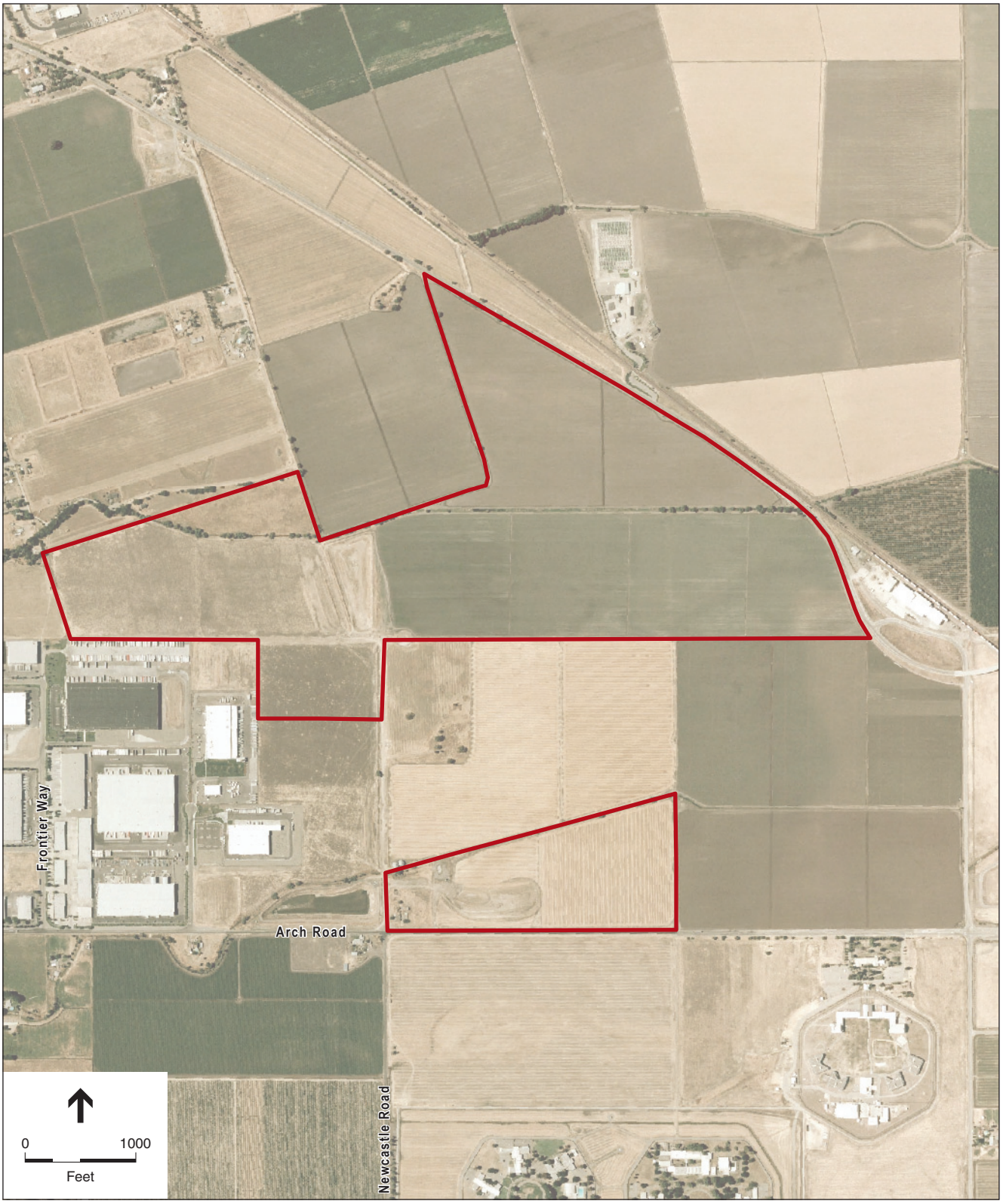
Additionally, the entirety of the proposed project is already zoned Industrial Limited (IL) by the City of Stockton Zoning Ordinance. The IL zoning district is applied to areas appropriate for light manufacturing uses that may generate more nuisance impacts than acceptable in commercial zoning districts and whose operations are totally conducted indoors. Other uses permitted within the IL zoning district include ancillary office uses and warehousing. The IL zoning district is consistent with the Industrial land use designation of the General Plan. Unlike the Industrial General (IG) zoning designation, uses may not occur outdoors or be associated with nuisance or hazardous impacts in the IL zoning district.



SOURCE: ESRI, 2007; and ESA, 2009

NorCal Logistics Center . 210506

Figure 2-1
Regional Locator



NorCal Logistics Center . 210506

SOURCE: USDA, 2006; and ESA, 2012

Figure 2-2
Project Site

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LEGEND

PROPOSED	EXISTING	
		FEMA FLOOD ZONE BOUNDARY
		EASEMENT AS NOTED
		ADJOINING BOUNDARY
		ASPHALT BERM
		BLOCK/RETAINING WALL
		BUILDING LINE
		CONCRETE CURB
		CONCRETE CURB & GUTTER
		CONTOUR LINE
		DRIVEWAY
		EDGE OF PAVEMENT
		FENCE LINE
		LOT LINE
		MONUMENT/MONUMENT LINE
		PROPERTY LINE
		FIBER OPTIC LINE
		GAS LINE
		OVERHEAD ELECTRIC LINE
		UNDERGROUND ELECTRIC LINE
		SANITARY SEWER-MANHOLE
		STORM DRAIN-MANHOLE & CATCH BASIN
		WATER LINE & VALVE
		JOINT TRENCH
		STREET RIGHT OF WAY
		SIDEWALK
		ELECTROLIER
		POWER POLE/JOINT POLE
		SPOT ELEVATION
		TRAFFIC SIGN
		TREES OR BUSHES
		TREE ON TREE TABLE
		UTILITY BOX
		FIRE HYDRANT
		BLOW OFF VALVE
		STUB
AD	AD	AREA DRAIN
B.N. & S.F.R.R.	B.N. & S.F.R.R.	BURLINGTON NORTHERN & SANTA FAY RAIL ROAD
BSI	BSI	BY SEPERATE INSTRUMENT
B/W	B/W	BOTTOM OF WALL
BL	BL	BUILDING LINE
CB	CB	CATCH BASIN
ESMT	ESMT	EASEMENT
C	C	CONCRETE
I.N.	I.N.	INSTRUMENT NUMBER
LLA	LLA	LOT LINE ADJUSTMENT
LLC	LLC	LIMITED LIABILITY COMPANY
O.R.	O.R.	OFFICIAL RECORD
PG&E	PG&E	PACIFIC GAS AND ELECTRIC
PM	PM	PARCEL MAP
PSDE	PSDE	PUBLIC STORM DRAIN EASEMENT
R/W	R/W	RIGHT OF WAY
RS	RS	RECORD OF SURVEY
SDMH	SDMH	STORM DRAIN MANHOLE
SDE	SDE	STORM DRAIN EASEMENT
SEC	SEC	SECTION
S.S.E	S.S.E	SANITARY SEWER EASEMENT
WLE	WLE	WATERLINE EASEMENT
		CONCRETE
		GRAVEL

NOTES

1) OWNER/SUBDIVIDERS NAME:
ARCH RD LP – CARE OF
WADE LAU
10350 BREN RD W.
MINNETONKA, MN. 55343

2) APPLICANT / LAND SURVEYOR:
KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS INC.
2850 COLLIER CANYON ROAD
LIVERMORE, CA 94551
ATTN: SETH H. IRISH, LS 5922
TELEPHONE: 925-245-8788

3) PURPOSE OF THE VESTING TENTATIVE MAP: TO SUBDIVIDE ONE EXISTING PARCEL INTO SIX (6) NEW COMMERCIAL/INDUSTRIAL LOTS

4) THE SUBJECT PROPERTY IS CURRENTLY ZONED: "IL" – INDUSTRIAL LIMITED
THE PROPOSED LAND USE IS: INDUSTRIAL

5) FLOOD ZONE INFORMATION:
THE SUBJECT PROPERTY IS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM), PANEL NO. 0677C0490F & 0677C0495F, COMMUNITY NUMBER 060302, DATED OCTOBER 16, 2009, AS BEING LOCATED IN FLOOD ZONES "A", "AO", "X-SHADED" AND "X" ACCORDING TO FEMA, ZONES "A", "AO", "X-SHADED" AND "X" ARE DEFINED AS:

ZONE AO: FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY SHEET FLOW ON SLOPING TERRAIN); AVERAGE DEPTHS DETERMINED. FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED.

ZONE X-SHADED: AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

6) SAN JOAQUIN COUNTY TAX ASSESSORS PARCEL NUMBER:

181-100-15

7) TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL SURVEY PERFORMED BY HAMMON, JENSEN & WALLEN PHOTOGRAMMETRY. SUPPLEMENTED BY A FIELD SURVEY. DATE OF PHOTOGRAPHY MAY 18, 2007.

8) THE SUBDIVIDER INTENDS TO FILE MULTIPLE PHASED FINAL MAPS PURSUANT TO GOVT. CODE 66463.1. THE MAXIMUM NUMBER OF MAPS SHALL BE SIX. ALL NECESSARY IMPROVEMENTS FOR EACH LOT TO BE CONSTRUCTED AT TIME OF FINAL MAP.

9) EXISTING TREES WITHIN THE DEVELOPABLE PORTION OF THE SUBJECT PROPERTY ARE SHOWN ON SHEET 2 OF THIS TENTATIVE MAP. THERE EXIST NUMEROUS TREES WITHIN THE UNDEVELOPABLE NORTH LITTLE JOHNS CREEK. SAID TREES WITHIN NORTH LITTLE JOHNS CREEK ARE NOT SHOWN HEREON.

10) PROPOSED UTILITIES FOR THIS SUBDIVISION OF LAND ARE SHOWN ON SHEET 2 OF THIS VESTING TENTATIVE MAP.

11) GROSS AREAS SHOWN HEREON INCLUDE THOSE PORTIONS OF LOGISTICS DRIVE, ARCH ROAD AND NEWCASTLE ROAD ADJOINING THE PROPOSED LOTS WITHIN THE HEAVY DISTINCTIVE BORDER SHOWN HEREON.

12) PARCEL A WEBER SLOUGH IS TO BE DEDICATED TO SAN JOAQUIN COUNTY IN FEE AS A FLOOD CONTROL RIGHT-OF-WAY.

13) *RIGHT OF INGRESS, EGRESS TO ARCH ROAD LIMITED TO RIGHT TURNS IN AND OUT ONLY.

LEGAL DESCRIPTION:

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF STOCKTON, COUNTY OF SAN JOAQUIN, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

BEING ALL OF THAT CERTAIN 4.55 ACRES GROSS PARCEL OF LAND SHOWN ON THAT CERTAIN RECORD OF SURVEY FILED FOR RECORD ON FEBRUARY 13, 1968, IN BOOK 17 OF SURVEYS, PAGE 35, OFFICIAL RECORDS SAN JOAQUIN COUNTY, AND A PORTION OF THAT CERTAIN 135.000 ACRES GROSS PARCEL OF LAND SHOWN ON THAT CERTAIN RECORD OF SURVEY FILED FOR RECORD ON FEBRUARY 5, 1969, IN BOOK 18 OF SURVEYS , PAGE 126, OFFICIAL RECORDS SAN JOAQUIN COUNTY, BEING SITUATE IN NORTHWEST ¼ OF SECTION 27, TOWNSHIP 1 NORTH, RANGE 7 EAST, MOUNT DIABLO BASE AND MERIDIAN AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE CENTER LINE OF NEWCASTLE ROAD AND THE MONUMENT LINE OF ARCH ROAD, SAID POINT BEING THE SOUTHWEST CORNER OF THE NORTHWEST ¼ OF SECTION 27, TOWNSHIP 1 NORTH, RANGE 7 EAST, MOUNT DIABLO BASE AND MERIDIAN , AS SHOWN ON SAID MAPS,

THENCE NORTHERLY ALONG SAID CENTERLINE, NORTH 0° 21' 46" WEST, 568.23 FEET;

THENCE LEAVING SAID CENTERLINE, NORTH 89° 38' 14" EAST, 36.00 FEET;

THENCE NORTH 74° 35' 18" EAST, 2637.41 FEET;

THENCE NORTH 89° 43' 57" EAST, 72.00 FEET TO THE EASTERLY LINE OF THE AFOREMENTIONED 135.000 ACRE PARCEL (18 M 126);

THENCE ALONG SAID EASTERLY LINE, SOUTH 00° 16' 03" EAST, 1268.95 FEET, TO THE SOUTHEAST CORNER OF SAID 135.000 ACRE PARCEL, SAID POINT ALSO BEING ON THE MONUMENT LINE OF THE AFOREMENTIONED ARCH ROAD;

THENCE ALONG SAID CENTERLINE, SOUTH 89° 59' 02" WEST, 2652.90 FEET TO THE POINT OF BEGINNING.

CONTAINING 2,449,975 S.F. OR 56.2437 ACRES, MORE OR LESS.

BASIS OF BEARINGS:

THE BEARING OF NORTH 0° 21' 46" WEST TAKEN ON THE CENTER LINE OF NEWCASTLE ROAD AS SHOWN ON THAT CERTAIN PARCEL MAP FILED FOR RECORD ON MAY 24, 2005, IN BOOK 23 OF PARCEL MAPS AT PAGE 118, OFFICIAL RECORDS OF SAN JOAQUIN COUNTY WAS TAKEN AS THE BASIS FOR ALL BEARINGS SHOWN HEREON.

FILED AS A VESTING TENTATIVE MAP THIS _____ DAY OF _____, 20__

FEE: _____

_____
CITY OF STOCKTON PLANNING COMMISSION

APPROVED BY THE CITY OF STOCKTON PLANNING COMMISSION
THIS _____ DAY OF _____, 20__

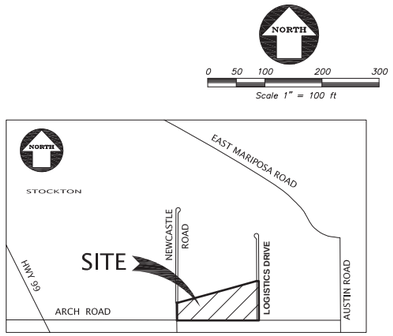
_____
CHAIRMAN

APPROVED BY THE CITY ENGINEER OF THE CITY OF STOCKTON
THIS _____ DAY OF _____, 20__

_____
CITY ENGINEER

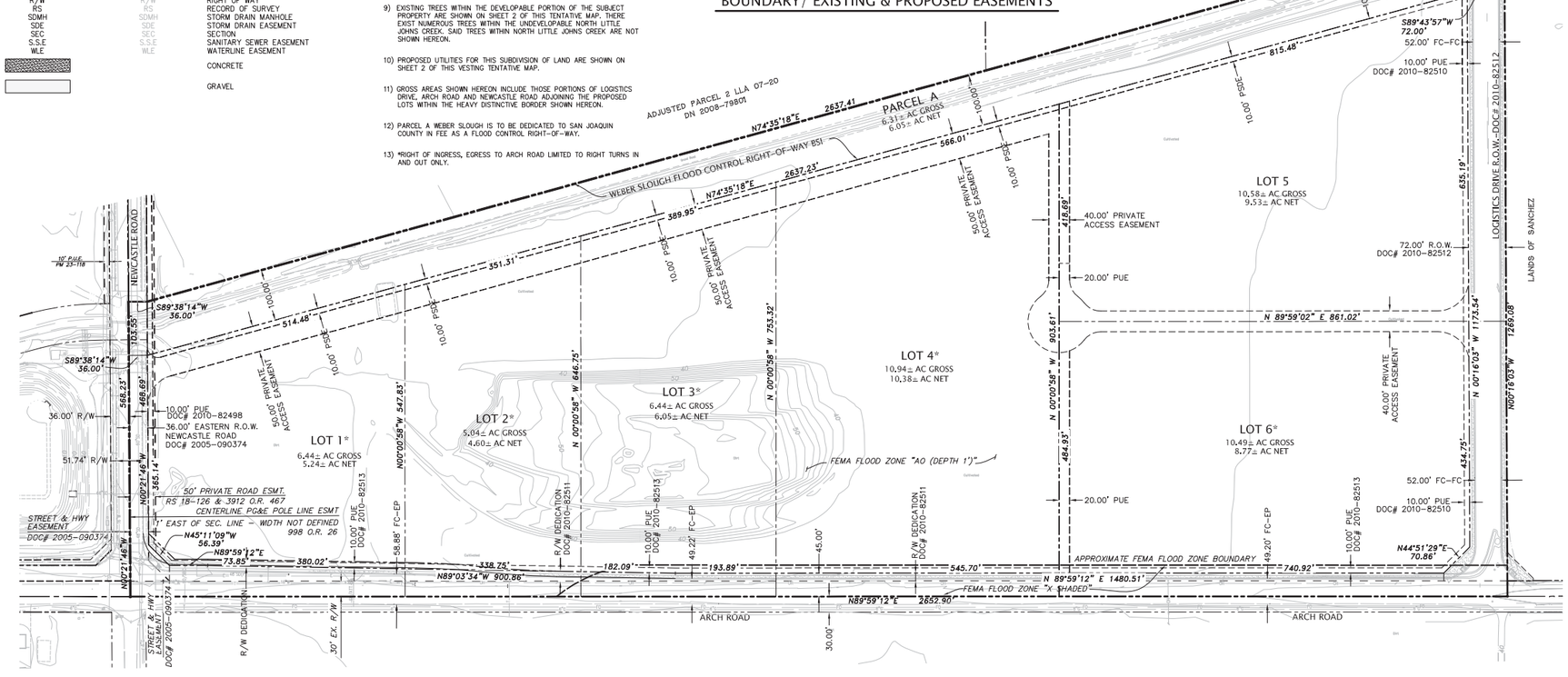
BENCHMARK:

CITY OF STOCKTON BENCHMARK NO. 327, A SAN JOAQUIN COUNTY BRASS DISK STAMPED "0-27.4" IN THE NORTHWEST CORNER OF BRIDGE NO. 1047 ON AUSTIN ROAD, APPROXIMATELY 580 FEET NORTH OF ARCH ROAD. ELEVATION=43.54 FEET. (CITY OF STOCKTON 1996 ADJUSTED) NGVD29.



VICINITY MAP
NOT TO SCALE

BOUNDARY/ EXISTING & PROPOSED EASEMENTS



SOURCE: Kier & Wright, 2012; and ESA, 2012

NorCal Logistics Center . 210506

Figure 2-3
Vesting Tentative Parcel Map 1

NOTES

1) OWNER/SUBDIVIDERS NAME:
ARCH RD LP – CARE OF
WADE LAU
10350 BREN RD W.
MINNETONKA, MN. 55343

2) APPLICANT / LAND SURVEYOR:
KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS INC.
2850 COLLIER CANYON ROAD
LIVERMORE, CA 94551
ATTN: SETH H. IRISH, LS 5922
TELEPHONE: 925-245-8788

3) PURPOSE OF THE VESTING TENTATIVE MAP: TO SUBDIVIDE EXISTING 274.79 ACRE PARCEL INTO FIFTEEN (15) NEW COMMERCIAL/INDUSTRIAL PARCELS

4) THE SUBJECT PROPERTY IS CURRENTLY ZONED: "IL" – INDUSTRIAL LIMITED
THE PROPOSED LAND USE IS: INDUSTRIAL

5) FLOOD ZONE INFORMATION:
THE SUBJECT PROPERTY IS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM), PANEL NO. 0677G1049DF & 0677G1049SF, COMMUNITY NUMBER 060302, DATED OCTOBER 16, 2009, AS BEING LOCATED IN FLOOD ZONES "A", "AO", "X-SHADED" AND "X" ACCORDING TO FEMA, ZONES "A", "AO", "X-SHADED" AND "X" ARE DEFINED AS:

ZONE A: NO BASE FLOOD ELEVATIONS DETERMINED.

ZONE AO: FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY SHEET FLOW ON SLOPING TERRAIN); AVERAGE DEPTHS DETERMINED. FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED.

ZONE X-SHADED: AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

ZONE X: AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

6) SAN JOAQUIN COUNTY TAX ASSESSORS PARCEL NUMBERS: 181-100-23, 27, 28, 30.

7) TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL SURVEY PERFORMED BY HAMMON, JENSEN & WALLEN PHOTOGRAMMETRY. SUPPLEMENTED BY A FIELD SURVEY. DATE OF PHOTOGRAPHY MAY 18, 2007.

8) THE SUBDIVIDER INTENDS TO FILE MULTIPLE PHASED FINAL MAPS PURSUANT TO GOVT. CODE 66463.1. THE MAXIMUM NUMBER OF MAPS SHALL BE FIFTEEN. ALL NECESSARY IMPROVEMENTS FOR EACH LOT TO BE CONSTRUCTED AT TIME OF FINAL MAP.

9) EXISTING TREES WITHIN THE DEVELOPABLE PORTION OF THE SUBJECT PROPERTY ARE SHOWN ON SHEETS 3,4 AND 5 OF THIS VESTING TENTATIVE MAP. THERE EXIST NUMEROUS TREES WITHIN THE UNDEVELOPABLE NORTH LITTLE JOHNS CREEK. SAID TREES WITHIN NORTH LITTLE JOHNS CREEK ARE NOT SHOWN HEREON.

11) PROPOSED UTILITIES FOR THIS SUBDIVISION OF LAND ARE SHOWN ON SHEETS 3, 4 AND 5 OF THIS VESTING TENTATIVE MAP. STREET WIDENING IMPROVEMENTS AND UTILITIES WITHIN NEWCASTLE ROAD SOUTH OF THE CUL-DE-SAC AND LOGISTICS DRIVE ARE BEING CONSTRUCTED BY SEPARATE PERMIT. IMPROVEMENTS WITHIN NEWCASTLE ROAD EAST AND NORTH OF THE CUL-DE-SAC ARE PROPOSED BY THIS TENTATIVE MAP.

12) GROSS AREAS SHOWN HEREON INCLUDE THOSE PORTIONS OF LOTS WITHIN EXISTING AND PROPOSED PUBLIC STREETS.

13) PARCEL C IS TO BE DEDICATED AS AN EASEMENT TO THE CITY OF STOCKTON FOR DRAINAGE AND FUTURE ROAD PURPOSES.

14) THAT PORTION OF NEWCASTLE ROAD AND FUTURE NEWCASTLE ROAD WITHIN THIS SUBDIVISION WILL BE DEDICATED AS AN EASEMENT FOR PUBLIC ROAD PURPOSES TO THE CITY OF STOCKTON.

15) PARCEL B WILL BE DEDICATED IN FEE TO THE CITY OF STOCKTON FOR DRAINAGE PURPOSES UPON COMPLETION OF THE FUTURE PUMPING FACILITIES.

16) ALL NEW IMPROVEMENTS AND EXTENSIONS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE ARCH ROAD INDUSTRIAL PARK NORTH (OPUS LOGISTICS CENTER) – MASTER WATER PLAN (APPROVED JUNE 6, 2008).

17) ALL NEW IMPROVEMENTS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE ARCH ROAD INDUSTRIAL PARK NORTH (OPUS LOGISTICS CENTER) – MASTER SANITARY SEWER PLAN (APPROVED JUNE 6, 2008).

18) THIS PROJECT MUST COMPLY WITH THE STORM WATER QUALITY CONTROL CRITERIA PLAN, PER THE STOCKTON MUNICIPAL CODE SECTION 13.20.010 AND AS OUTLINED IN THE CITY'S PHASE 1 STORM WATER NPDES PERMIT ISSUED BY THE CALIFORNIA WATER QUALITY BOARD, CENTRAL VALLEY REGION (ORDER NO. R5-2007-0173).

19) THE OWNERS, DEVELOPERS AND/OR SUCCESSORS-IN-INTEREST (ODS) MUST EXECUTE A MAINTENANCE AGREEMENT WITH THE CITY, PRIOR TO RECEIVING A CERTIFICATE OF OCCUPANCY, TO PROVIDE FUNDING FOR THE OPERATION, MAINTENANCE AND REPLACEMENT COSTS OF THE STORM WATER BEST MANAGEMENT PRACTICES.

20) ALL IMPROVEMENTS SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE ARCH ROAD INDUSTRIAL PARK EAST MASTER STORM DRAINAGE PLAN, REV. NO. 2.

LEGAL DESCRIPTION:

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF STOCKTON, COUNTY OF SAN JOAQUIN, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

BEING A PORTION OF THAT CERTAIN TRACT OF LAND LYING IN SECTIONS 69, 70, 79 AND 80 OF C.M. WEBER GRANT EL RANCHO DEL CAMPO DE LOS FRANCESES AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE NORTHERLY BOUNDARY LINE OF SECTION 27 AND 28, TOWNSHIP 1 NORTH, RANGE 7 EAST, MOUNT DIABLO BASE AND MERIDIAN, SAID POINT BEING DISTANT WESTERLY 243.20 FEET MEASURED ALONG SAID NORTHERLY BOUNDARY LINE FROM THE NORTHEAST CORNER OF SECTION 27; THENCE ALONG THE SOUTHWESTERLY LINE OF THAT CERTAIN 2.967 ACRE PARCEL OF LAND AS DESCRIBED IN DEED FROM WILLIAM LADD SALMON TO THE COUNTY OF SAN JOAQUIN RECORDED NOVEMBER 25, 1949 IN BOOK OF OFFICIAL RECORDS, BOOK 1083, PAGE 296, SAN JOAQUIN COUNTY RECORDS, THE FOLLOWING COURSES:

ALONG A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 1045.60 FEET THROUGH A CENTER ANGLE OF 56° 06' 21" [THE LONG CHORD OF WHICH BEARS NORTH 56° 59' 10" WEST 983.46 FEET] AN ARC DISTANCE OF 1023.89 FEET; THENCE NORTH 28° 56' 00" WEST 328.59 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 965.60 FEET THROUGH A CENTRAL ANGLE OF 19° 28' 32" [THE LONG CHORD OF WHICH BEARS NORTH 38° 40' 15" WEST 326.63 FEET] AN ARC DISTANCE OF 328.21 FEET, MORE OR LESS TO A POINT IN THE SOUTHWESTERLY RIGHT OF WAY LINE MARIPOSA ROAD [80 FEET WIDE] PER O.D.P.H. ON NOVEMBER 6, 1861; LAST SAID POINT BEING THE MOST WESTERLY CORNER OF SAID 2.967 ACRE PARCEL; THENCE ALONG LAST SAID SOUTHWESTERLY RIGHT OF WAY LINE NORTH 52° 59' 40" WEST 1155.00 FEET, MORE OR LESS; THENCE CONTINUING ALONG LAST SAID SOUTHWESTERLY RIGHT OF WAY LINE NORTH 60° 22' 40" WEST 3015.48 FEET; THENCE LEAVING LAST SAID RIGHT OF WAY LINE SOUTH 18° 26' 00" EAST 1975.71 FEET; THENCE SOUTH 71° 49' 30" WEST 1622.55 FEET; THENCE SOUTH 18° 26' 30" EAST 959.71 FEET TO A POINT IN SAID NORTHERLY BOUNDARY LINE OF SECTION 27 AND 28; THENCE ALONG SAID NORTHERLY BOUNDARY LINE NORTH 89° 39' 56" EAST 5343.87 FEET, MORE OR LESS TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM ALL THAT PORTION CONVEYED TO THE BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY, A DELAWARE CORPORATION BY GRANT DEED RECORDED DECEMBER 31, 2002, INSTRUMENT NO. 2002-237858, OFFICIAL RECORDS AND RE-RECORDED MARCH 17, 2004, INSTRUMENT NO. 2004-053393, OFFICIAL RECORDS COUNTY OF SAN JOAQUIN.

ALSO EXCEPTING THEREFROM THE FOLLOWING PARCEL OF LAND:

BEGINNING AT THE NORTHWEST CORNER OF SAID SECTION 27, THENCE ALONG THE NORTHERLY PROLONGATION OF THE WESTERLY LINE OF SAID SECTION 27, NORTH 00° 21' 46" WEST, 106.32 FEET;

THENCE NORTH 89° 38' 14" EAST, 2657.47 FEET TO A POINT ON THE NORTHERLY PROLONGATION OF THE EASTERLY LINE OF THE NORTHWEST 1/4 OF SAID SECTION 27;

THENCE ALONG SAID LINE, SOUTH 00° 16' 03" EAST, 125.50 FEET TO THE NORTHEAST CORNER OF THE NORTHWEST 1/4 OF SAID SECTION 27;

THENCE ALONG THE NORTHERLY LINE OF THE NORTHWEST 1/4 OF SAID SECTION 27, SOUTH 89° 56' 57" WEST, 2657.33 FEET TO THE POINT OF BEGINNING.

THE BASIS OF BEARINGS FOR THE ABOVE DESCRIBED EXCEPTION PARCEL WAS TAKEN AS NORTH 89° 56' 57" EAST ON THE NORTHERLY LINE OF THE NORTHWEST 1/4 OF SECTION

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF STOCKTON, COUNTY OF SAN JOAQUIN, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

BEING PORTIONS OF PARCEL ONE AND RAMOS DRIVE, AS SHOWN ON THAT CERTAIN PARCEL MAP FILED FOR RECORD ON MAY 24, 2005 IN BOOK 23 OF PARCEL MAPS AT PAGE 118, SAN JOAQUIN COUNTY RECORDS, AND ALL OF PARCEL "H", AS DESCRIBED IN THAT CERTAIN DOCUMENT RECORDED JULY 10, 2007 AS INSTRUMENT NUMBER 2007-125731, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A CITY OF STOCKTON MONUMENT IN THE INTERSECTION OF ARCH ROAD AND THE CENTERLINE OF NEWCASTLE ROAD, AS SHOWN ON SAID MAP;

THENCE NORTHERLY ALONG SAID CENTERLINE, NORTH 0°21'46" WEST, 1903.47 FEET, THE POINT OF BEGINNING;

THENCE, THROUGH PARCEL ONE NORTH 89°56'32" WEST, 1136.80 FEET;

THENCE, NORTH 0°04'58" EAST, 750.00 FEET

THENCE, NORTH 89°56'32" WEST, 1518.47 FEET;

THENCE, SOUTH 89°49'09" WEST, 177.56 FEET;

THENCE, NORTH 17°56'37" WEST, 838.78 FEET;

THENCE, NORTH 72°09'31" EAST, 2429.07 FEET;

THENCE, SOUTH 17°50'54" EAST, 1622.11 FEET TO A POINT IN THE CENTERLINE OF THE AFOREMENTIONED RAMOS DRIVE;

THENCE, ALONG SAID CENTERLINE SOUTH 89°56'32" EAST, 275.98 FEET TO A POINT IN THE CENTERLINE OF NEWCASTLE ROAD, SAID POINT ALSO BEING THE NORTHEAST CORNER OF THE AFOREMENTIONED PARCEL ONE;

THENCE, SOUTH 0°21'46" EAST 750.02 FEET TO THE POINT OF BEGINNING.

FILED AS A VESTING TENTATIVE MAP THIS _____ DAY OF _____, 20___

FEE:
_____

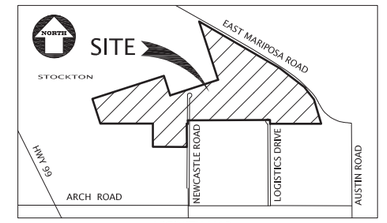
_____
CITY OF STOCKTON PLANNING COMMISSION

APPROVED BY THE CITY OF STOCKTON PLANNING COMMISSION
THIS _____ DAY OF _____, 20___

_____
CHAIRMAN

APPROVED BY THE CITY ENGINEER OF THE CITY OF STOCKTON
THIS _____ DAY OF _____, 20___

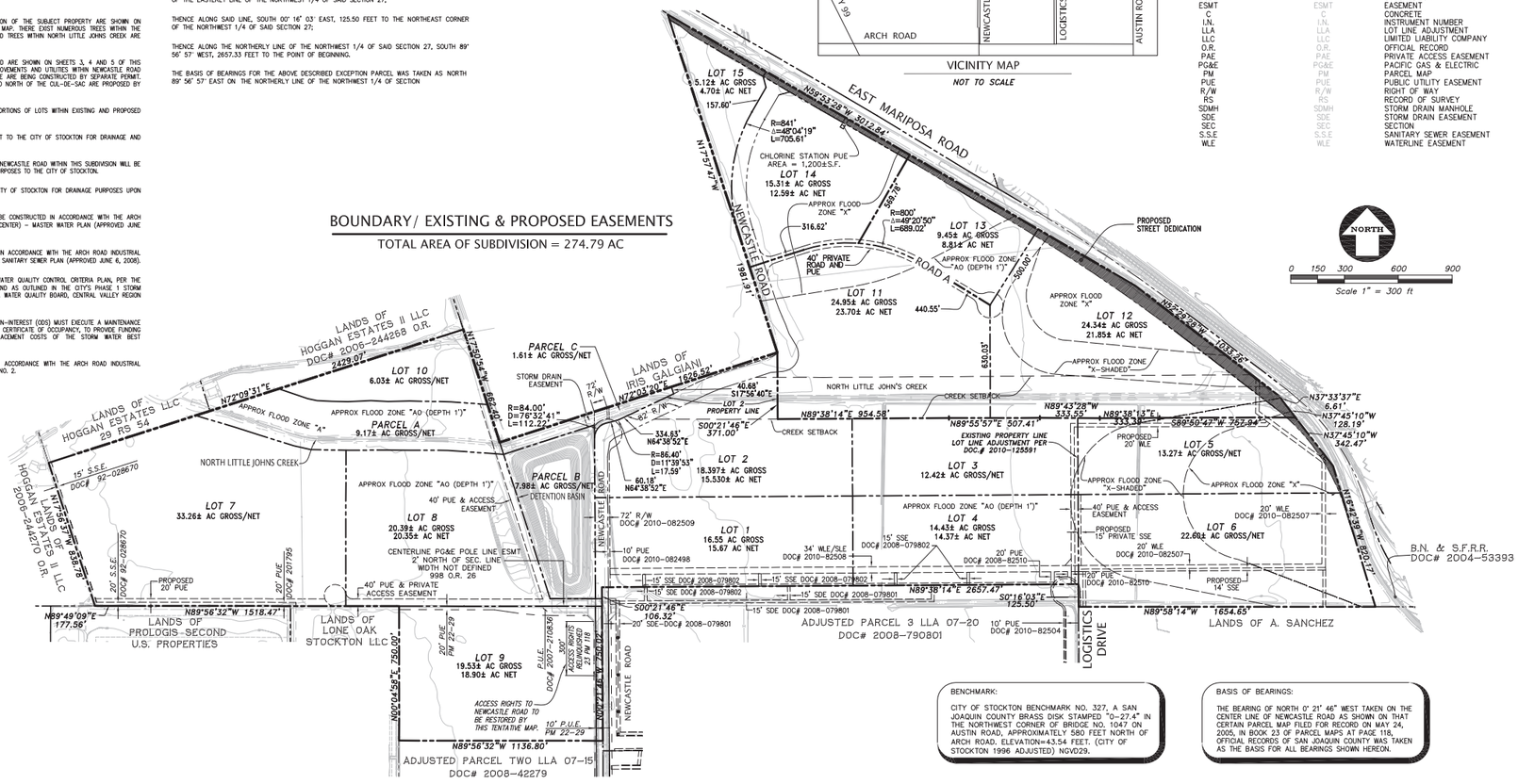
_____
CITY ENGINEER



VICINITY MAP
NOT TO SCALE

LEGEND

PROPOSED	EXISTING	
		FEMA FLOOD ZONE BOUNDARY
		EASEMENT AS NOTED
		ADJOINING BOUNDARY
		ASPHALT BERM
		BLOCK/RETAINING WALL
		BUILDING LINE
		CONCRETE CURB
		CONCRETE CURB & GUTTER
100	100	CONTOUR LINE
		DRIVEWAY
		EDGE OF PAVEMENT
		FENCE LINE
		LOT LINE
		MONUMENT/MONUMENT LINE
		PROPERTY LINE
FO	FO	FIBER OPTIC LINE
G	G	GAS LINE
OH	OH	OVERHEAD ELECTRIC LINE
UGE	UGE	UNDERGROUND ELECTRIC LINE
SS SSMH	SS SSMH	SANITARY SEWER-MANHOLE
SD SDMH CB	SD SDMH CB	STORM DRAIN-MANHOLE & CATCH BASIN
W WV	W WV	WATER LINE & VALVE
JT	JT	JOINT TRENCH
		STREET RIGHT OF WAY
		ELECTROLIER
		POWER POLE/JOINT POLE
100.00	100.00	SPOT ELEVATION
		TRAFFIC SIGN
		TREES OR BUSHES
		TREE ON TREE TABLE
		UTILITY BOX
		FIRE HYDRANT
		BLOW OFF VALVE
		STUB
AD		AREA DRAIN
B.N. & S.F.R.R.	B.N. & S.F.R.R.	BURLINGTON NORTHERN & SANTA FAY RAIL ROAD
B.S.I.	B.S.I.	INDICATES EASEMENT OR RIGHT-OF-WAY DEDICATION BY SEPARATE INSTRUMENT
B/W	B/W	BOTTOM OF WALL
BL	BL	BUILDING LINE
CB	CB	CATCH BASIN
ESMT	ESMT	EASEMENT
C	C	CONCRETE
I.N.	I.N.	INSTRUMENT NUMBER
LLA	LLA	LOT LINE ADJUSTMENT
LLC	LLC	LIMITED LIABILITY COMPANY
O.R.	O.R.	OFFICIAL RECORD
PAE	PAE	PRIVATE ACCESS EASEMENT
PG&E	PG&E	PACIFIC GAS & ELECTRIC
PM	PM	PARCEL MAP
PUE	PUE	PUBLIC UTILITY EASEMENT
R/W	R/W	RIGHT OF WAY
RS	RS	RECORD OF SURVEY
SDMH	SDMH	STORM DRAIN MANHOLE
SDE	SDE	STORM DRAIN EASEMENT
SEC	SEC	SECTION
S.S.E	S.S.E	SANITARY SEWER EASEMENT
WLE	WLE	WATERLINE EASEMENT



SOURCE: Kier & Wright, 2012; and ESA, 2012

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Figure 2-4

Vesting Tentative Parcel Map 2

The Department of Conservation's Farmland Mapping and Monitoring Program has designated land located on the project site as "Prime Farmland" and "Farmland of Statewide Importance." However, in practice, the land comprising the project site has not been farmed for years, is designated for Industrial development by the City's land use regulations, and is currently either vacant or in Industrial use. "Prime Farmland" is defined as farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. "Farmland of Statewide Importance" is defined as farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. The parcels included in the proposed project are not zoned or otherwise designated for agricultural land uses.

2.1.3 Project Objectives

CEQA Guidelines Section 15124(b) requires that the project description contain a clearly written statement of project objectives, including the underlying purpose of the project. The statement of project objectives is an important determinant for the lead agency when it develops a reasonable range of alternatives to evaluate in the EIR. The project applicant's objectives for the proposed project include the following:

- To provide the industrial development contemplated by, and consistent with, the City's General Plan;
- To provide for flexibility of number of users and size of structures and legal parcels (large and small), thereby maximizing the industrial development potential of the land by providing additional legal parcels that can be sold to different users and upon which parcels industrial structures of varying sizes can be located;
- To develop industrial uses in this particular location to take advantage of existing General Plan and related regulations, available or easily supplemented industrial-ready infrastructure, such as adjacent highways, roadways, wastewater, water, drainage, rail, and similar services and facilities, and applicant's ownership of this land;
- To place new industrial development in areas where impacts to sensitive natural resources can be reduced and/or avoided, and where other impacts can be reduced and/or avoided through site design, phasing and landscaping.

2.1.4 Proposed Subdivision

The project is the "subdivision" of the portions of the larger applicant property that comprises the project site to allow greater user flexibility (allowing different sized lots to attract a wider range of Industrial users), although the creation of such new lots on the project site will not change the Industrial uses already allowed, nor will it increase or decrease the density or intensity of that existing Industrial use. Because the approval of a subdivision map by the City is "discretionary," CEQA applies to the subdivision approval. However, it is important to note that if no subdivision

maps were proposed (and approved) on the project site, the same level of Industrial use development already allowed on the project site could and likely would take place, the only permits needed to develop the project site with such Industrial uses would be building permits, and that no additional CEQA review would take place in that scenario, since no discretionary development permits would be involved (building permits are ministerial).

The proposed subdivision maps (and the lots that they will create when the lots appear on a recorded final map) will involve two separate areas of the project site: land immediately adjacent to Arch Road, and land adjacent to Mariposa Road. These two separate portions of the project site will involve two separate Vesting Tentative Maps, processed with the City under the Subdivision Map Act and local City Subdivision Ordinance. The Vesting Tentative Map for the land adjacent to Arch Road (between Newcastle Road and Logistics Drive) is referred to as "VTM 1." VTM 1 is comprised of approximately 56 acres and proposes the creation of 6 new lots. The Vesting Tentative Map for the land adjacent to Mariposa Road is referred to as "VTM 2." VTM 2 is comprised of approximately 275 acres and proposes the creation of 15 new lots. VTM 1 and VTM 2 will have a combined total size of approximately 325± acres, yielding approximately 6,280,480 square-feet of future industrial use (assuming a 0.5 floor area ratio) and will result in the creation of 21 new developable lots (see Figures 2-3 and 2-4). Some of these lots may be adjusted (and/or merged) to provide the ultimate industrial user with the most efficient site plan. Consistent with the IL zoning, the site would provide for warehouse, light industrial, and ancillary office uses. This EIR analyzes the collective development of both VTM 1 and VTM 2, again with the "baseline" being the level of industrial development already allowed without the proposed VTM 1 and VTM 2.

2.1.5 Infrastructure

Roadway Infrastructure

The project includes an extension of Newcastle Road (a two-lane road north of Arch Road) to Mariposa Road. The extended Newcastle Road will provide access to the northern parcels, and will alleviate traffic on Austin Road by providing another direct connection between Mariposa Road and Arch Road. Logistics Drive ends in a cul-de-sac and is located north of Arch Road between the proposed project and the Sanchez property (the parcel northwest of the intersection of Arch Road and Austin Road). The project will also provide street improvements (1/2 road section and frontage improvements) on Mariposa Road.

Utility (Storm Drain, Water, and Wastewater) Infrastructure

Implementation of the proposed project will require the extension or construction of new utility (e.g., storm drain, water and, wastewater) lines and other infrastructure (including a pump station at Drainage Basin N3). A description of anticipated utility infrastructure necessary for the proposed project is provided below and summarized in **Table 2-1**. The necessary infrastructure will be constructed by the project applicant (or subsequent property owners, developers, and/or successors) as necessary and will be completed consistent with City Standards and Specifications necessary for the improvements to function properly.

TABLE 2-1
UTILITY INFRASTRUCTURE FOR THE PROPOSED PROJECT

Infrastructure Description	Location
Storm Drain Infrastructure	
48-inch storm drain	Along southern PL of Lot 8, heading east, and then along eastern PL of Lot 8, heading NW to outfall
18-inch storm drain	Extends south from the southern PL of Lot 10 along eastern PL of Parcel A & Lot 8 to outfall
42-inch storm drain	Within New Castle Rd., heading south from Road A along western PL of Lot 11 and then heading SW along northern PL of Lot 2
30-inch storm drain	Along the eastern PL of Lot 4, heading south from the southern PL of Lot 3 to Logistics Dr.
30-inch storm drain	Within Road A along northern PL of Lot 11 and then within New Castle Rd. along the western PL of Lot 14
24-inch storm drain	Within East Mariposa Rd, connecting to 30" storm drain in New Castle Dr.
30-inch storm drain	Extends along southern PL of Lot 7, heading east from 24" storm drain within Lot 7 to eastern PL of Lot 7
24-inch storm drain	Externs along southern PL of Lot 7, heading east from Hoggan Estates to 30" storm drain within Lot 7
Water Supply Infrastructure	
12-inch water line	Within New Castle Rd, heading south along the Western PL of Lot 11 & 14
12-inch water line	Within Road A along the northern PL of Lot 11 and then along the NW PL of Lot 12
16-inch water line	Extends south from the southern PL of Lot 10 along eastern PL of Parcel A & Lot 8 to southern PL of Lot 8
16-inch water line	Within New Castle Rd, heading SW along northern PL of Lot 2
12-inch water line	Creates a loop along the eastern PL of Lot 3 & 4 and northern PL of Lot 5 with existing 24" line
24-inch water line	Within East Mariposa Rd, then heading south to existing 24" line that lies within Lot 5, 6 & 12
Wastewater Infrastructure	
8-inch sanitary sewer line	Extends south from the southern PL of Lot 10 along eastern PL of Parcel A & Lot 8 to southern PL of Lot 8
8-inch sanitary sewer line	Within Road A along northern PL of Lot 11 and then within New Castle Rd. along the western PL of Lot 14
18-inch sanitary sewer line	Extends existing 18" line, heading east through Lot 6
15-inch sanitary sewer line	Extends from 18" line in Lot 6, heading south to Lands of A. Sanchez
12-inch sanitary sewer line	Within New Castle Rd, along the western PL of Lot 11 and then the northern PL of Lot 2

Sanitary sewer is provided for the project by connecting to the existing sewer lines in Newcastle Road which then connects to an east-west main sewer line. Existing water lines near the project site extend from Arch Road, Fite Court, and Carpenter Road as well as internal locations within Arch Road Units 3 and 4. Development of the project will require additional water lines to be constructed on Mariposa Road, Austin Road, the extension of Newcastle Drive, Logistics Drive, and Arch Road between Newcastle and Austin Road. Sanitary sewer service to the southern parcel (VTM 1) will be provided by a new sewer trunk line on Arch Road. Sewer will be discharged into the new trunkline and then will head west to the Arch Road Regional Sanitary Sewer Pump Station. This sewer trunkline is scheduled to start construction in the spring of 2014.A Storm Drainage Master Plan has been prepared for the proposed project (see **Figure 2-5**).

The Master Plan defines the area that the runoff detention basins would serve and the general location of the storm drain system. The Storm Drain Master Plan area covers approximately 611 acres, comprised of two drainage basins, N3 and W3. This plan area includes the 325-acre project site. Two detention basins have been constructed that would serve the Master Plan area and the project site. The drainage basin (N3) located just south of North Littlejohns Creek has a capacity of 113 acre feet (ac-ft) and primarily collects runoff from the northern portion of the project site and discharges to North Littlejohns Creek. Ultimately, the drainage system for Basin N3 will include a pump station, with the entire drainage system dedicated to the City. These storm drain improvements will be completed before 50 percent of the watershed area is developed.

The drainage basin (W3) located west of Newcastle Road and north of Arch Road has a capacity of 108 ac-ft and collects runoff from the southern section of the project site. Basin W3 is maintained by the City of Stockton and discharges stormwater to Weber Slough.

2.1.6 List of Permits and Approvals

This EIR provides the environmental information and analysis necessary for the range of development evaluated in this EIR. This EIR provides the foundational CEQA compliance documentation upon which the City's, responsible agencies' and all other applicable agencies' consideration of and action on all necessary and/or desirous permits, approvals, and other grants of authority (collectively, "approvals") shall be based. This includes without limitation all those approvals set forth in this EIR, as well as any additional approvals necessary and/or desirous to such project planning, development, construction, operation and maintenance (e.g., any and all discretionary plans and approvals).

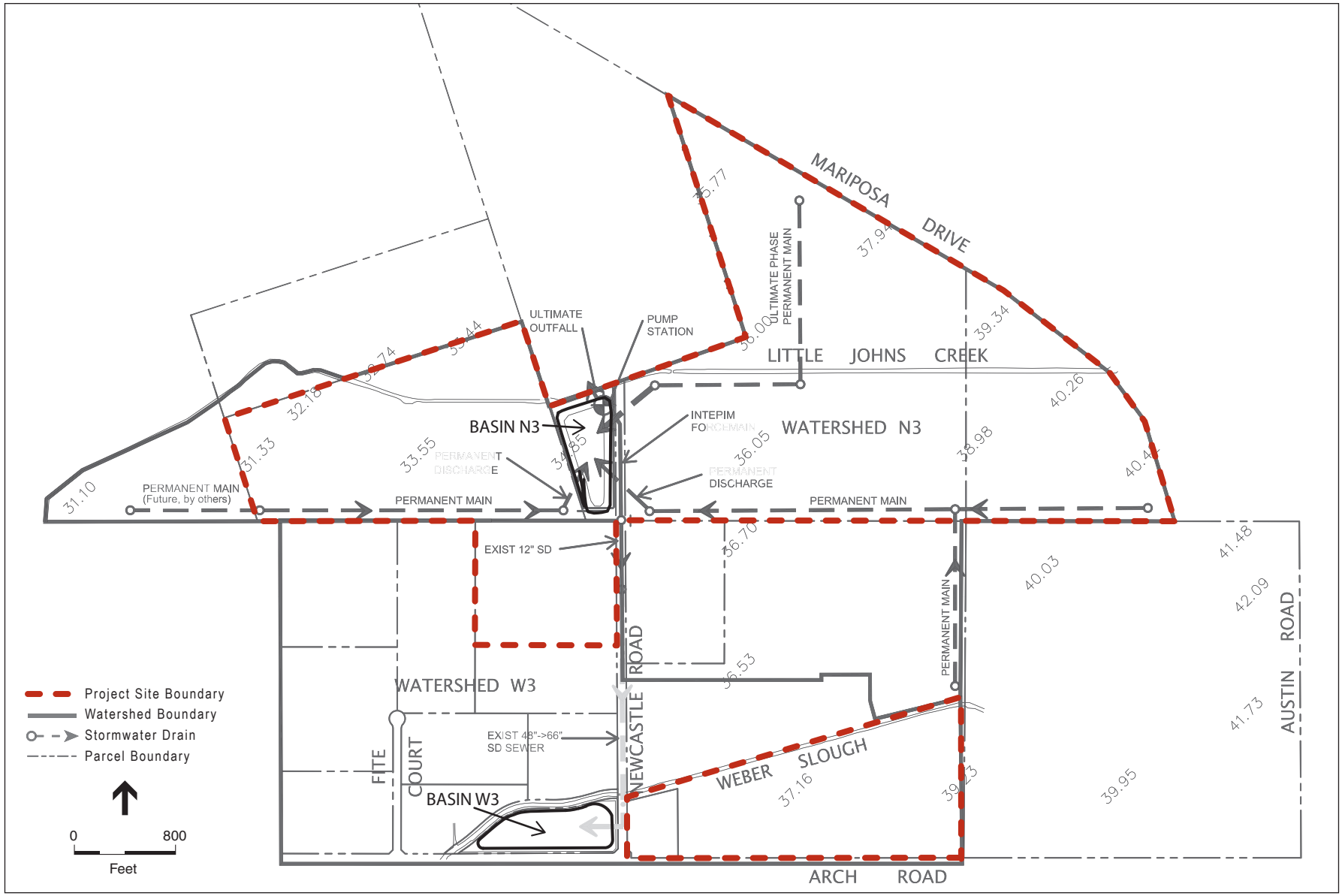
Lead Agency Approvals

The project requires the following discretionary approval from the City of Stockton:

- **Subdivision Maps.** The creation of lots on the project site would require the approval of vesting tentative subdivision map(s) and final subdivision maps.

Other ministerial approvals for the implementation of the project will include site plan review, architectural design review, the issuance of building permits, and encroachment permits for work within City right-of-way. Additional review by other City departments (such as the City Fire Marshall) will be required to ensure conformance with other City codes and policies (such as site access and turning radii requirements consistent with the City's Fire Code).

The City Municipal Utilities Department will also review for compliance with the City's Storm Water Quality Control Criteria Plan (SWQCCP)



SOURCE: Kier & Wright, 2007; and ESA, 2009

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Figure 2-5
NorCal Logistics Center
Storm Drain Master Plan

Other Agency Approvals

The following discretionary approvals/permits from other public agencies may be required for implementation of the project.

- **Regional Water Quality Control Board (RWQCB)** – The proposed project will require grading of an area greater than one acre; therefore, an NPDES Permit from the RWQCB and preparation of a Storm Water Pollution Prevention Plan (SWPPP) will be required. The RWQCB may also issue Waste Discharge Requirements (WDRs) for discharge from Basin N3 into North Little Johns Creek. If a 404 Clean Water Act permit (see below) is required, a Section 401 water quality certification would be required from the RWQCB.
- **San Joaquin Valley Air Pollution Control District (SJVAPCD)** – As a major industrial development, the project may be subject to Indirect Source Review (ISR) by the SJVAPCD. The storm drainage pump station for Basin N3 may require an authority to construct and a permit to operate for the natural gas engine generator.

Permits Acquired

The following approvals/permits have already been obtained by the project applicant:

- **U.S. Army Corps of Engineers (ACOE)** – Construction within North Littlejohns Creek and/or Weber Slough required a Section 404 Clean Water Act permit from the ACOE.
- **California Department of Fish and Game (CDFG)** – For any modification of the bank or channel of North Littlejohns Creek and/or Weber Slough, a 1602 Streambed Alteration Agreement with CDFG was required.
- **San Joaquin Council of Governments** – Approval of work within or adjacent to North Littlejohns Creek and/or Weber Slough required compliance with the ITMMs issued under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP).

CHAPTER 3
Environmental Setting, Impacts, and Mitigation Measures

Introduction

Chapter 3 of this Draft EIR presents a discussion of the potential project-specific environmental impacts of implementing the proposed project described in Chapter 2. Each section of this chapter describes the existing environmental setting of the proposed project study area, the potential environmental effects of the proposed project, and feasible mitigation measures that would reduce or substantially avoid potentially significant impacts.

The environmental setting normally constitutes the baseline physical condition by which the lead agency determines whether an impact is significant. The baseline is typically the conditions at the time the Notice of Preparation (NOP) was released. In accordance with CEQA Guidelines Section 15082, the City circulated an NOP on October 31, 2012 for a 30-day public review period that concluded on December 3, 2012. Consequently, for the purposes of this EIR, the baseline year is 2012. Where data limitations exist, the most recent data will be used (and so noted in the setting description). Each section also includes regulatory background pertinent to that resource.

The environmental impact analyses focus on changes in the existing physical conditions. Impacts are described as "No impact", "Less than Significant", or "Potentially Significant." If feasible mitigation measures and project alternatives would not substantially reduce or avoid a "potentially significant" impact, that impact is described as "significant and unavoidable." Impacts include direct effects and reasonably foreseeable indirect effects. Impacts may also be cumulative – effects that are individually insignificant, but may be significant considered together.

Feasible mitigation measures are discussed for each potentially significant impact. "Mitigation" includes:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

- Compensating for the impact by replacing or providing substitute resources or environments.

"Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors (CEQA Guidelines §15364). This Draft EIR includes mitigation measures that have been identified by staff as potentially feasible. Ultimately, "feasibility" must be determined by the decision-making body of the lead agency (in this case, the Planning Commission) prior to project approval.

The following environmental topics are addressed in this chapter:

- Section 3.1 "Aesthetics".
- Section 3.2 "Agricultural Resources".
- Section 3.3 "Air Quality".
- Section 3.4 "Biological Resources".
- Section 3.5 "Cultural Resources".
- Section 3.6 "Climate Change".
- Section 3.7 "Geology, Soils, and Seismicity".
- Section 3.8 "Hazards and Hazardous Materials".
- Section 3.9 "Hydrology and Water Quality".
- Section 3.10 "Land Use".
- Section 3.11 "Noise and Acoustics".
- Section 3.12 "Public Services, Utilities, and Recreation".
- Section 3.13 "Traffic and Circulation".

3.1 Aesthetics

3.1.1 Introduction

This section addresses the visual quality issues related to the project. The existing visual character of the region and project site is addressed, along with the sensitive visual receptors and sensitive visual resources known to be present. Applicable City policies related to visual resources are presented. The impact analysis presents the standards used to evaluate impacts to visual quality and addresses potential effects of the project on the visual quality of the area.

3.1.2 Setting

Visual Character

The City of Stockton is located near the center of San Joaquin County and serves as the seat of county government. It is located 60 miles east of San Francisco and 40 miles south of Sacramento. To the east is the Sierra Nevada mountain range and to the west is the Delta of the San Joaquin and Sacramento Rivers. The Delta is an area of 750 square miles where several Sierra rivers meet the Pacific Ocean; the largest of these rivers are the San Joaquin and Sacramento Rivers. Downstream of Stockton, the rivers split to become a multitude of interlaced channels. Channels and extensive flood control systems created a complex of islands, many of which are below sea level. The Delta provides a natural barrier to the westerly urban expansion of the City.

The visual context of the area surrounding the proposed project site consists of agricultural lands and facilities, some industrial facilities, scattered rural residences, two large scale institutional facilities ((NCYCC and the California Health Care Facility CDCR) to the south, an intermodal cargo facility to the east, and existing local roadways. Typical views of the project site are shown in **Figures 3.1-1a** and **b**.

Scenic Roadways

According to the Caltrans Map of Designated Scenic Routes, there are no official state-designated or eligible scenic routes in the Stockton metropolitan area; however there are two officially designated state scenic highways within the San Joaquin County. These highways are located in the southwest portion of San Joaquin County and are not in the vicinity of the proposed project.

Light and Glare

The project site is currently undeveloped and contains no sources of light or glare. Current sources of light and glare in the project area are from existing industrial and commercial operations, institutional uses (including the NCYCC and the California Health Care Facility CDCR), scattered rural residences, and from nighttime motorists traveling on Arch Road and Newcastle Road.

PHOTOGRAPH 1. Littlejohns Creek Facing Southwest

PHOTOGRAPH 2. Littlejohns Creek Facing West

SOURCE: ESA, 2009

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Figure 3.1-1a

Project Site Photographs

PHOTOGRAPH 3. Littlejohns Creek Facing East from Center of Parcel

PHOTOGRAPH 4. Weber Slough Facing East

SOURCE: ESA, 2009

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Figure 3.1-1b
Project Site Photographs

Viewer Groups

The project vicinity is largely agricultural and industrial, so the number of sensitive viewers is minimal. Portions of the project site are visible from several major roadways: Arch Road, Austin Road, and Mariposa Road. Some rural residential residences are located near the project site. Several houses are located on Marfargoa Road west of the project site, with the closest approximately 75 feet from the project site. There are two residences on Arch Road near the site, with the closest 325 feet west of the project area. Institutional land uses (including the NCYCC and the California Health Care Facility CDCR) are located approximately 1/3 to 1/2 of a mile south of the project site.

Regulatory Setting

Federal

Bureau of Land Management – Visual Resource Management System

The Bureau of Land Management (BLM) visual resource management rating system (Manual H 8410-1) (BLM, 2001) is a means to objectively evaluate the visual appeal of a tract of land. The BLM visual resource inventory provides objective rating criteria for defining the distance zones, sensitivity levels, and scenic quality of the views that would be experienced by sensitive observers. The BLM visual resource management rating system is being employed as a method of analysis for this project due to the abundance of open space lands in the project area.

The Visual Resources Inventory delineates distance zones, a sensitivity level, and a scenic quality rating. The distance zone is often used to determine the sensitivity level and scenic quality. Three distance zones are used in the BLM system: the Foreground-Middleground Zone, the Background Zone, and the Seldom-Seen Zone. The Foreground-Middleground Zone is the area that can be viewed for a distance of 3 to 5 miles, with the outer boundary defined at the point where the texture and form of individual plants on the landscape is no longer apparent. The Background Zone is the remaining area that can be seen up to 15 miles. The final zone is the Seldom-Seen Zone, which are areas visible beyond the Background Zone. The Foreground-Middleground Zone is more visible to the public and, therefore, changes are more noticeable and more likely to cause public concern.

The sensitivity level analysis is a measure of public concern for preserving the scenic quality of an area. It is based on the types of users, the amount of use of an area, the existing public interest, and adjacent land uses.

The third component in the Visual Resources Inventory is the scenic quality of an area, which is broken down into units from various viewsheds. It measures the visual appeal of each unit from seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modification. In essence, greater diversity in these categories corresponds to a greater degree of visual quality, whereas muted or uniform landscapes usually equate with lower visual quality. The following are the detailed descriptions of each rating criterion as it relates to scenic quality (BLM, 2001).

Scenic Quality – Explanation of Rating Criteria

Landform. The BLM manual considers that topography becomes more interesting as it gets steeper or more massive, or more severely or universally sculptured. Outstanding landforms may be monumental, or they may be exceedingly artistic and subtle as certain badlands, pinnacles, arches, and other extraordinary formations. The project site is mostly flat and does not contain an interesting landscape in terms of topography and landform diversity, and would therefore receive below average quality rating for this category.

Vegetation. This category gives primary consideration to the variety of patterns, forms, and textures created by plant life. In addition, smaller scale vegetation features which add striking and intriguing detail elements to the landscape (e.g., gnarled or windbeaten trees, and Joshua trees). The project area contains some variation in vegetation, including grasslands, riparian areas, and oak trees, and would therefore receive an average quality rating for this category.

Water. This category considers water an ingredient that adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score. In the case of the project area, Weber Slough and North Littlejohn Creek are minor irrigation ditches which contain only sporadic flows of irrigation tail water. These ditches are not visible from the areas outside the project area due to the extreme flatness of the land and the distance of the ditches to nearby roads. Given the nature of these watercourses, they would not increase the rating.

Color. The BLM manual considers the overall color(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.) as they appear during seasons or periods of high use. Key factors to use when rating "color" are variety, contrast, and harmony. The project area contains little variation in color, with muted color schemes throughout; therefore the area would receive a lower than average rating for this category.

Adjacent Scenery. This category considers the degree to which scenery outside the scenery unit being rated enhances the overall impression of the scenery within the rating unit. The distance which adjacent scenery would influence scenery within the rating unit would normally range from 0 to 5 miles, depending upon the characteristics of the topography, the vegetative cover, and other such factors. Land use and topography within a five-mile radius of the site is similar to the site itself (flat farm and industrial land); thus, the site would receive a below-average rating for this category.

Scarcity. This factor provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique or rare within one physiographic region. There may also be cases where a separate evaluation of each of the key factors does not give a true picture of the overall scenic quality of an area. Often it is a number of not so spectacular elements in the proper combination that produces the most pleasing and memorable scenery - the scarcity factor can be used to recognize this type of area and give it the added emphasis it needs. The project site would be considered similar to most of the landscape within San Joaquin County and would therefore receive a below-average scarcity rating.

Cultural Modifications. Cultural modifications in the landform/water, vegetation, and addition of structures should be considered and may detract from the scenery in the form of a negative intrusion or complement or improve the scenic quality of a unit. Existing man-made structures within the project area include dirt roads, power lines, and drainage ditches. Therefore the site would receive a below-average rating for this category.

State

California Scenic Highway Program

Many state highways are located in areas of outstanding natural beauty. California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change which would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in Section 263 of the Streets and Highways Code. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

According to the Caltrans list of designated scenic highways under the California Scenic Highway Program, there are only two officially designated state scenic highways within San Joaquin County. Interstate 5 (I-5) from the Stanislaus County Line to Interstate 580 (0.7 miles) and Interstate 580 from I-5 to the Alameda County Line (15.4 miles) are officially designated state scenic highways. These highways are located in the southwest portion of San Joaquin County and are not in the vicinity of the proposed project.

Local

City of Stockton General Plan

The City of Stockton General Plan includes the following goals, objectives and policies regarding scenic resources:

Goal CD-1	To improve the overall visual quality of the urban environment.
Policy CD-1.2	The citywide design framework shall heighten the contrast between rural, natural, and urban areas as one enters and travels through the community.
Policy CD-1.4	Transitions between urban and rural areas at the edge of the community shall not diminish the visual quality of open space. Soundwalls and utilitarian edges of developments shall not be allowed as an interface between development and rural landscapes.
Policy CD-1.7	The City shall work with transportation agency partners and private property owners to improve maintenance, code enforcement, screening, and landscaping of view sheds along rail transit corridors in Stockton.
Goal NCR-6	To provide and maintain open space resources in Stockton and surrounding areas.

Policy NCR-6.1 The City shall ensure that development incorporate open space areas that provide community and neighborhood identity and insulate conflicting land uses and noise generators.

3.1.3 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The evaluation of aesthetic effects is ultimately a subjective analysis. There are no adopted standards or guidelines applicable to the project that will ultimately determine the scenic quality and value of the project site. However, in the absence of any applicable standards for determining visual quality of the project site, the significance criteria for aesthetic impacts incorporates the scenic quality evaluation criteria in the BLM visual resource management rating system.

Impact Analysis

Impact 3.1.1: Implementation of the project does not have the potential to adversely impact a scenic vista. ***(Less-than-Significant)***

The proposed project site is located on flat, vacant agricultural land. The project site contains average to below average visual resources (per the BLM methodology). The site is in a largely undeveloped area where the adjacent land uses include agricultural lands and institutional land uses. According to both the San Joaquin County and City of Stockton General Plan's there are no designated scenic vistas and no notable geographic features in the vicinity of the proposed project; as a result, the proposed project would not have an effect on a scenic vista. Therefore, this impact is ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.1.2: Implementation of the project would not substantially damage scenic resources within a state scenic highway. ***(No Impact)***

As discussed in Section 3.1.2, above, a review of the current Caltrans Map of Designated Scenic Routes indicates that there are two officially designated state scenic highways within San Joaquin County, neither of which is in the vicinity of the proposed project. Furthermore, Arch Road and Newcastle Road, the closest streets to the proposed project site are not identified as a scenic roadway by any County or State planning document. Therefore, the proposed project would have ***no impact*** on scenic resources associated with a scenic highway or roadway, and no mitigation is required.

Mitigation Measures

None required.

Impact 3.1.3: Implementation of the project has the potential to substantially degrade the existing visual character or quality of the site and its surroundings. ***(Less-than-Significant)***

The visual context of the area surrounding the proposed project site consists of agricultural lands, some industrial facilities, scattered rural residences, institutional land uses, and existing local roadways. The project site is visible to motorists traveling along Arch and Newcastle Roads, visitors and workers of the NCYCC and the California Health Care Facility (CDCR), and a few rural residences and businesses located in the area, none of which is considered to be a sensitive viewer.

Construction of the proposed project would result in temporary changes in local visual conditions during construction, such as clearing and grading at the project site. However given the relatively short-term nature of these construction-related activities, construction-related visual impacts are considered less-than-significant.

Overall, buildout of the proposed project would result in some permanent changes to existing views. The proposed project will be visually similar to other projects in the vicinity. Landscaping will be installed to shield parking and storage areas. Viewers will include those who frequently travel along Arch and Newcastle Roads (primarily commuters and area employees). Visitors to the NCYCC and the California Health Care Facility (CDCR) may also have views of the proposed project. These viewer groups are not considered to be sensitive viewers. This impact is therefore ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.1.4: Implementation of the project has the potential to create new sources of substantial light or glare which could adversely affect day or nighttime views in the area. *(Potentially Significant)*

The project site is located within an urban setting where lighting currently exists and is characteristic of typical nighttime city views. Street traffic on Arch and Newcastle Roads and lighting from the NCYCC and the California Health Care Facility (CDCR), as well as general commercial and residential land uses in the area contribute to existing urbanized nighttime light sources and daytime glare in the vicinity of the project. The proposed project is consistent with commercial land uses in the area; however, because the site itself is currently vacant and is without any existing lighting, any lighting associated with the proposed project will create an additional light source. Consequently, this impact is considered ***potentially significant***.

While residential land uses are particularly sensitive to new light sources, so it should be noted that there are very few residences adjacent to the proposed project site. Additionally, proposed landscaping provided by the proposed project will help to screen the additional lighting created by the proposed project.

Mitigation Measures

> **Measure 3.1.1 Outdoor Lighting Requirements:** All proposed outdoor lighting will be required to meet applicable city standards regulating outdoor lighting in order to minimize any impacts resulting from outdoor lighting on adjacent properties. Lighting and glare guidelines provided in the City of Stockton's Municipal Codes for Design and Development require that all light sources be shielded and directed downwards so as to minimize trespass light and glare to adjacent residences. Additionally, all outdoor lighting sources of 1,000 lumens or greater shall be fully shielded.
>
> **Impact Significance after Mitigation:** Design standards adhering to the City's developmental regulations and guidelines for industrial lighting (as provided in mitigation measure 3.1.1) would reduce glare and the amount of light trespass to ***less-than-significant*** levels.

3.1.4 References

Bureau of Land Management, 2001. Manual H 8410-1.

California Department of Transportation (Caltrans), 2008. California Scenic Highway Program, www.dot.ca.gov/hq/LandArch/scenic/scpr.htm.

City of Stockton, 2007. *2035 General Plan*, December 2007.

San Joaquin County, 1992. *2010 General Plan*, July 1992.

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3.10 Land Use

3.10.1 Introduction

This section describes land uses of the project site and surrounding properties. Applicable land use plans and policies are presented, and potential land use planning conflicts are identified.

3.10.2 Setting

Existing Conditions

The proposed project is located in southeast Stockton, north of Arch Road, southwest of Mariposa road, and extending to either side of Newcastle Road. The project is located within the City of Stockton and is bounded on several sides by the Stockton city limit line. The project site consists of five parcels (Assessor's Parcels Numbers 179-220-27, 179-220-28, 179-220-30, 181-110-23, and 181-100-15) of land totaling approximately 331± net acres.

While the entire project site was once used primarily for agricultural activities, the project site is currently designated as "Industrial" under the City's existing general plan, with a majority of the site currently fallow/disturbed with grading and existing industrial develop occurring The project site largely consists of nearly flat agricultural land which is currently fallow. Grading activities have already begun on portions of the site. The project site does not contain any residences or structures or any kind. North Littlejohns Creek runs through a portion of the northwest part of the project site. Weber Slough borders the northern boundary of the southern portion of the site. Existing industrial (warehouse) development separates the northern and southern parcels of the project site.

The land to the north is primarily agricultural, although it is designated for Industrial (north) and "Village J" (northeast of Mariposa Road) in the 2035 General Plan. The Burlington Northern and Santa Fe (BNSF) Intermodal Facility is to the east. Several institutional uses (including the NCYCC and the California Health Care Facility CDCR) are located to the south, along with some fallow agricultural lands designated for future Industrial and Institutional land uses. Existing industrial development is to the west.

Regulatory Setting

Local

City of Stockton General Plan 2035

The Stockton General Plan 2035 sets out a hierarchy of goals, policies, and implementation programs to guide future development in the city, encouraging infill development and providing guidance for the orderly expansion of the city.

The entire project site has a City of Stockton General Plan land use designation of Industrial (I). This designation applies to a wide variety of industrial uses including uses with nuisance or hazardous characteristics, warehousing, construction contractors, light manufacturing, offices, retail sales, service businesses, public and quasi-public uses, and other similar and compatible uses. The maximum floor area ratio (FAR) allowed for the Industrial designation is 0.6.

The following General Plan Land Use policies are relevant to the proposed project:

Policy LU-1.1	The City shall utilize and maintain the Land Use Diagram to designate the location and extent of each land use designation within the Planning Area.
Policy LU-1.6	The City shall regulate the levels of building intensity and population density according to the standards and land use designations set out in the Land Use Element and the City's Development Code.
Policy LU-5.1	The City shall encourage industrial activities to locate where municipal services are available including adequate sanitary, storm drainage and water facilities as well as easy access to multiple modes of transportation.
Policy LU-5.2	The City shall encourage the clustering of industrial uses into areas that have common needs and are compatible in order to maximize their efficiency.
Policy LU-5.4	The City shall discourage industrial development in locations where access conflicts with neighboring land uses.
Policy LU-5.5	The City shall ensure an adequate separation between sensitive land uses (residential, educational, healthcare) and industrial land uses to minimize land use incompatibility associated noise, odors, and air pollutant emissions from industrial uses.

For applicable policies related to other environmental issue areas, see the appropriate sections of this EIR.

City of Stockton Development Code

The purpose of the City's Development Code is to implement the Stockton General Plan by classifying and regulating the uses of land and structures within the City of Stockton; by protecting and promoting the public health, safety, and general welfare; and by preserving and enhancing the aesthetic quality of the City. To fulfill these purposes, the intent of this Development Code is to:

A. Provide standards for the orderly growth and development of the City, and promote a stable pattern of land uses;

B. Implement the uses of land designated by the Stockton General Plan and avoid conflicts between land uses;

C. Maintain and protect the value of property;

D. Conserve and protect the natural resources of the City, including its surrounding agricultural lands;

E. Protect the character and social and economic stability of residential, commercial, and industrial areas;

F. Assist in maintaining a high quality of life without causing unduly high public or private costs for development or unduly restricting private enterprise, initiative, or innovation in design; and

G. Provide regulations for the subdivision of land in compliance with the Subdivision Map Act (California Government Code Sections 66410 et seq.).

The proposed project is zoned Industrial Limited (IL) by the City of Stockton Development Code. The IL zoning district is applied to areas appropriate for light manufacturing uses that may generate more nuisance impacts than acceptable in commercial zoning districts and whose operations are totally conducted indoors. Other uses permitted within the IL zoning district include ancillary office uses and warehousing. The IL zoning district is consistent with the Industrial land use designation of the General Plan. Unlike the Industrial General (IG) zoning designation, uses may not occur outdoors or be associated with nuisance or hazardous impacts in the IL zoning district (Stockton Municipal Code Section 16-210.020 (C) (1)). The maximum building height allowed in the IL district is sixty (60) feet, and the maximum allowable site coverage is sixty (60) percent (Municipal Code Section 16-230.020).

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (San Joaquin Council of Governments, 2000) provides a strategy for balancing the need to conserve open space and the need to convert open space to non-open space use while providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the federal or state ESA. The SJMSCP is a 50-year plan and will be in effect until the year 2049. The SJMSCP is implemented by a Joint Powers Authority (JPA). The JPA is responsible for conducting all required preconstruction surveys, informing an applicant of "Incidental Take" minimization measures, confirming that "Incidental Take" minimization measures have been implemented prior to site-disturbance, and collecting development fees. Development fees are determined by the type and area of habitat converted to development.

Participation in the SJMSCP is voluntary for local jurisdictions and independent project proponents, and allows a participant to conduct permitted activities that result in or may result in "Incidental Take" of listed species covered by the SJMSCP. Participation in the SJMSCP may facilitate or expedite the approval of development projects since participants would avoid having to obtain required permits separately or authorizations directly from the regulating agencies. The JPA has obtained permits and authorizations for the conversion of a predetermined amount of open space habitat to development. These permits and authorization would cover a participant in the SJMSCP.

San Joaquin County Airport Land Use Plan (SJCALUP)

The proposed project site is located less than two miles from the nearest runway at the Stockton Metropolitan Airport. Consequently, the project site falls within the Stockton Metropolitan Airport's Area of Influence boundary. The project site is specifically located under the Conical and Horizontal Zones around the airport as identified in the San Joaquin County's Airport Land Use Plan

(SJCALUP) (SJCOG 1993). Land uses within these zones are subject to land use restrictions established in the ALUP. According to the ALUP, few restrictions are necessary in the Conical and Horizontal Zones. These restrictions and guidelines include:

- Reflective materials are not permitted to be used in structures or signs (excluding traffic directing signs), to avoid distracting pilots.
- Power lines must be undergrounded if necessary to prevent hazard to aircraft.
- Proposed communications towers and other very tall structures should be evaluated to ensure that they will not be aircraft hazards.
- Proposed dumps, landfills, and waterways should be evaluated to ensure that they will not present a bird hazard to aircraft.
- No transmissions which would interfere with aircraft communications or navigation are permitted. Power lines must be undergrounded if necessary to prevent hazard to aircraft.

Federal Aviation Regulations (FAR) Part 77, *Objects Affecting Navigable Airspace*, provides guidance for the height of objects that may affect normal aviation operations. These regulations require that FAA be notified of proposals related to the construction of potentially hazardous structures. For example, tall structures, trees, other objects, or high terrain on or near airports, may constitute hazards to aircraft. FAA conducts "aeronautical studies" of proposed projects to determine whether they would pose risks to aircraft, but it does not have the authority to prevent their creation. Furthermore, deviation from the Part 77 standards does not necessarily mean that a proposed object is prohibited from construction, only that the offending object must be evaluated by the FAA and that mitigating actions, such as marking or lighting may be required.

FAA Advisory Circular 150/5200-33B addresses hazardous wildlife attractants on or near airports (2007). This Advisory Circular is intended to provide guidance on locating certain land uses having the potential to attract hazardous wildlife to or in the vicinity of public-use airports. In this Advisory Circular, the FAA recommends against "land use practices that attract or sustain populations of hazardous wildlife within the vicinity of airports or cause movement of wildlife onto, into, or across the approach or departure airspace, aircraft movement area, loading ramps, or aircraft parking area of airports." The Advisory Circular recommends a separation distance of 5,000 feet between airports using piston-powered aircraft and any hazardous wildlife attractants, including water storage facilities. For airports using turbine-powered aircraft, the FAA recommends a separation distance of 10,000 feet from the airport and the hazardous wildlife attractant. For projects that are located outside the 5,000/10,000-foot criteria but within five statute miles of the airport's air operations area[1], the FAA may review development plans, proposed land use changes, operational changes, or wetland mitigation plans to determine if such changes present potential wildlife hazards to aircraft operations.

[1] Any area of an airport used or intended to be used for landing, takeoff, or surface maneuvering of aircraft. An air operations area includes such paved areas or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiways, or apron.

For land use planning near airports, the California Airport Land Use Planning Handbook states that light fixtures must be placed and aimed to minimize objectionable glare to aircraft pilots (Caltrans 2002).

3.10.3 Impacts and Mitigation Measures

Significance Criteria

The land use analysis presented below evaluates the consistency of the proposed project with the type and intensities of the existing and planned land uses surrounding the project site. A potential conflict with applicable land use plans and/or regulations is not itself an environmental impact, but it may result in environmental effects, such as, for example, the generation of objectionable noise or odors. Potential land use conflicts resulting from the effects of the proposed project are discussed below. Noise, traffic, air quality, public service, and other environmental effects of the proposed project are discussed in detail in other relevant sections of the EIR.

Consistent with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan and zoning ordinance) adopted for the purpose of avoiding or mitigating a significant environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

Potential conflicts with the San Joaquin Multi-Species Habitat Conservation and Open Space Plan are described in **Section 3.4** "Biological Resources" of this EIR. The reader of this EIR is directed to Section 3.4 for further information describing potential conflicts with an applicable habitat conservation plan/natural community conservation plan and this issue is not described further in this section.

Impacts and Mitigation Measures

Impact 3.10.1: The proposed project will not physically divide an established community. *(No Impact)*

As previously described, the proposed project consists of subdividing five parcels zoned for industrial use within the City of Stockton. The proposed project would be located in an area historically used for agriculture; however, developing industrial land uses exist throughout the project area. Furthermore, the proposed project site is designated for industrial uses in the City of Stockton General Plan. The project will not divide an established community; therefore there is ***no impact***.

Mitigation Measures

None required.

Impact 3.10.2: The proposed project could conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project. *(Potentially Significant)*

A comprehensive review of applicable policies and development standards of the City of Stockton General Plan and Zoning Ordinance (cited above) indicates that the proposed project would be consistent with said policies and standards (see Table 3.10-1).

TABLE 3.10-1
PROJECT CONSISTENCY WITH RELEVANT CITY OF STOCKTON GENERAL PLAN POLICIES

Policy	Consistent with General Plan	Analysis
Policy LU-1.1: The City shall utilize and maintain the Land Use Diagram to designate the location and extent of each land use designation within the Planning Area.	Yes	The NorCal Logistics Center is an industrial use on land designated for industrial uses on the City's adopted Land Use Diagram.
Policy LU-1.6: The City shall regulate the levels of building intensity and population density according to the standards and land use designations set out in the Land Use Element and the City's Development Code.	Yes	The proposed project is consistent with the existing General Plan and Development Code development standards and use restrictions for the project site.
Policy LU-5.1: The City shall encourage industrial activities to locate where municipal services are available including adequate sanitary, storm drainage and water facilities as well as easy access to multiple modes of transportation.	Yes	The proposed project area is located within the City of Stockton's Urban Services Boundary (USB) and will connect to these services pending approval/annexation.
Policy LU-5.2: The City shall encourage the clustering of industrial uses into areas that have common needs and are compatible in order to maximize their efficiency.	Yes	The proposed project would be located in an area designated for industrial uses and where existing industrial facilities are currently located.
Policy LU-5.4: The City shall discourage industrial development in locations where access conflicts with neighboring land uses.	Yes	Industrial development in the vicinity of the project site currently exists and the addition of the proposed project will not create access conflicts with neighboring land uses.
Policy LU-5.5: The City shall ensure an adequate separation between sensitive land uses (residential, educational, healthcare) and industrial land uses to minimize land use incompatibility associated noise, odors, and air pollutant emissions from industrial uses.	Yes	The proposed project would be located in an area designated for industrial uses. Sensitive land uses will be adequately separated from the industrial uses proposed as part of the project.

The proposed use (light industrial/warehousing) is consistent with the San Joaquin County Airport Land Use Plan, as discussed above in Section 3.10.2. The project would not construct or expand facilities that would attract hazardous wildlife, such as waterfowl (the project storm drainage system relies upon existing facilities). Allowable uses under the light industrial zoning on the project site would not conflict with height, noise or safety restrictions as described in the San Joaquin County Airport Land Use Plan. While the normal light industrial height limit of 60' is below the area of concern, it is possible that auxiliary structures (such as towers) could be constructed above that

height or include lighting/reflective material that could conflict with the SJCALUP. To avoid this ***potentially significant*** impact, the project will implement mitigation consistent with existing regulations.

Mitigation Measures

> **Measure 3.10.1: Incorporate Building Design Features Consistent with SJCALUP Guidance.** Any proposed structure over 200' above ground level; or construction which includes reflective material (other than traffic markings), unusual levels of lighting, or telecommunications equipment, shall be submitted to the FAA (San Francisco Airports District Office) for review (using Form 7460-1) to determine if the proposed construction would be a hazard to navigable airspace.
>
> **Impact Significance after Mitigation:** With implementation of Mitigation Measure 3.10.1, this impact is reduced to a ***less than significant*** level.

3.10.4 References

California Department of Conservation, 2006. *Farmland Mapping and Monitoring Program*.

California Department of Transportation, Division of Aeronautics (Caltrans), 2002. *California Airport Land Use Planning Handbook*. January 2002.

City of Stockton, 2007. *2035 General Plan*, December 2007.

Federal Aviation Administration (FAA), 2007. *FAA Advisory Circular 150/5200-33B: Hazardous Wildlife Attractants on or Near Airports*, August 28, 2007.

San Joaquin Council of Governments, 2000. *San Joaquin County Multi-Species Habitat Conservation and Open Space Plan*, Stockton, California, November 14, 2000.

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3.11 Noise and Acoustics

This section provides an overview of the existing noise environment at the project site and surrounding area, the regulatory framework, an analysis of potential noise impacts that would result from implementation of the project, and mitigation measures where appropriate.

3.11.1 Noise Setting

Noise principles and descriptors

Introduction

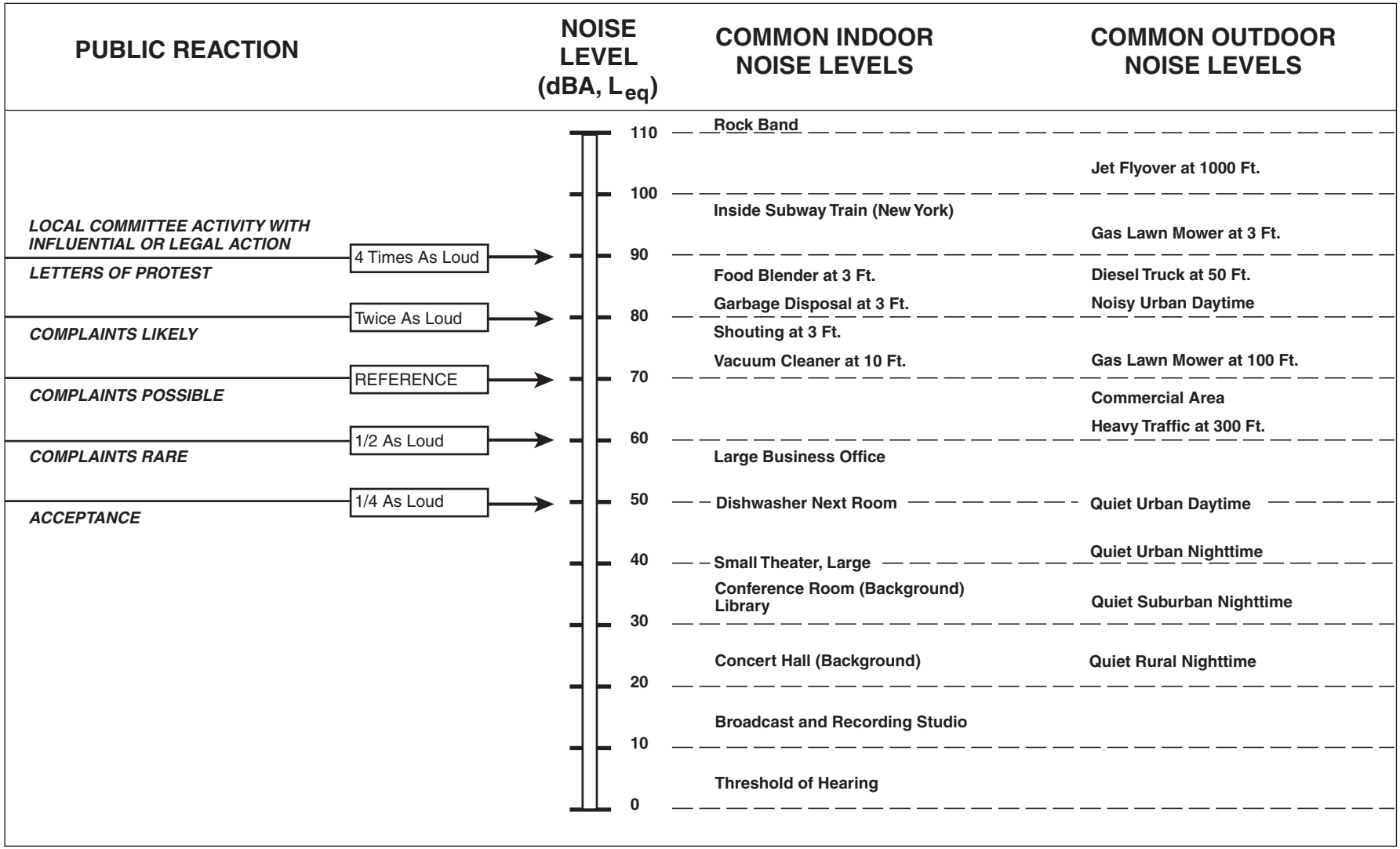
Noise is defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) which is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ears decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements. Some representative noise sources and their corresponding A-weighted noise levels are shown in **Figure 3.11-1**.

Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. The noise levels presented in **Figure 3.11-1** are representative of measured noise at a given instant in time, however, they rarely persist consistently over a long period of time. Rather, community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. What makes community noise



SOURCE: ESA, 2007

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Figure 3.11-1

Effect of Noise on People

constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment varies the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: the equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L_{eq} is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{max}: the instantaneous maximum noise level for a specified period of time.

L50: the noise level that is equaled or exceeded 50 percent of the specified time period. The L50 represents the median sound level.

L90: the noise level that is equaled or exceeded 90 percent of the specified time period. The L90 is sometimes used to represent the background sound level.

DNL: 24-hour day and night A-weighted noise exposure level which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.

Ldn: See DNL, the Ldn is the same as the DNL.

CNEL: similar to the DNL the Community Noise Equivalent Level (CNEL) adds a 5-dBA "penalty" for the evening hours between 7:00 p.m. and 10:00 p.m. in addition to a 10-dBA penalty between the hours of 10:00 p.m. and 7:00 a.m.

As a general rule, in areas where the noise environment is dominated by traffic, the L_{eq} during the peak-hour is generally equivalent to the DNL at that location (Caltrans, 1998).

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning; and
- physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction.

A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- a change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- a 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver such as parking lots or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans, 1998).

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. As described in the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment* (FTA, 2006), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some

common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile driving and operating heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the affect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly and sick), and vibration sensitive equipment.

Existing Noise Environment and Sensitive Receptors

ESA used Metrosonics Model db3080 sound level meters for the short-term noise measurements. The meters were calibrated to ensure the accuracy of the measurements. Short-term (ST) noise level measurements were taken in the vicinity of the site to determine the existing noise level in the area in 2007 and 2008, and were updated with additional measurements in 2013. The data gathered from the meters includes all noise (background and intermittent noises) at the microphone and does not separate different audible sources. The noise measurement locations are shown on **Figure 3.11-2** and the results are presented below in **Table 3.11-1**.

Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, and parks and other outdoor recreation areas generally are more sensitive to noise than are commercial (other than lodging facilities) and industrial land uses. As depicted on **Figure 3.11-2**, the nearest sensitive receptors to the project site are residences located northwest of the project (these are along Marfargoa Road) and southwest of the project along Arch Road. The closest residences are 75 feet, 160 feet (both along Marfargoa Road) and 325 feet (on Arch Road) from the project boundaries, respectively. In regards to potential distances to project buildings, the residences on Marfargoa Road would be approximately 260 feet and 380 feet from likely buildings on Lot 7 of the north map, and the residence on Arch Road would be approximately 350 feet from any buildings on Lot 1 of the south map.

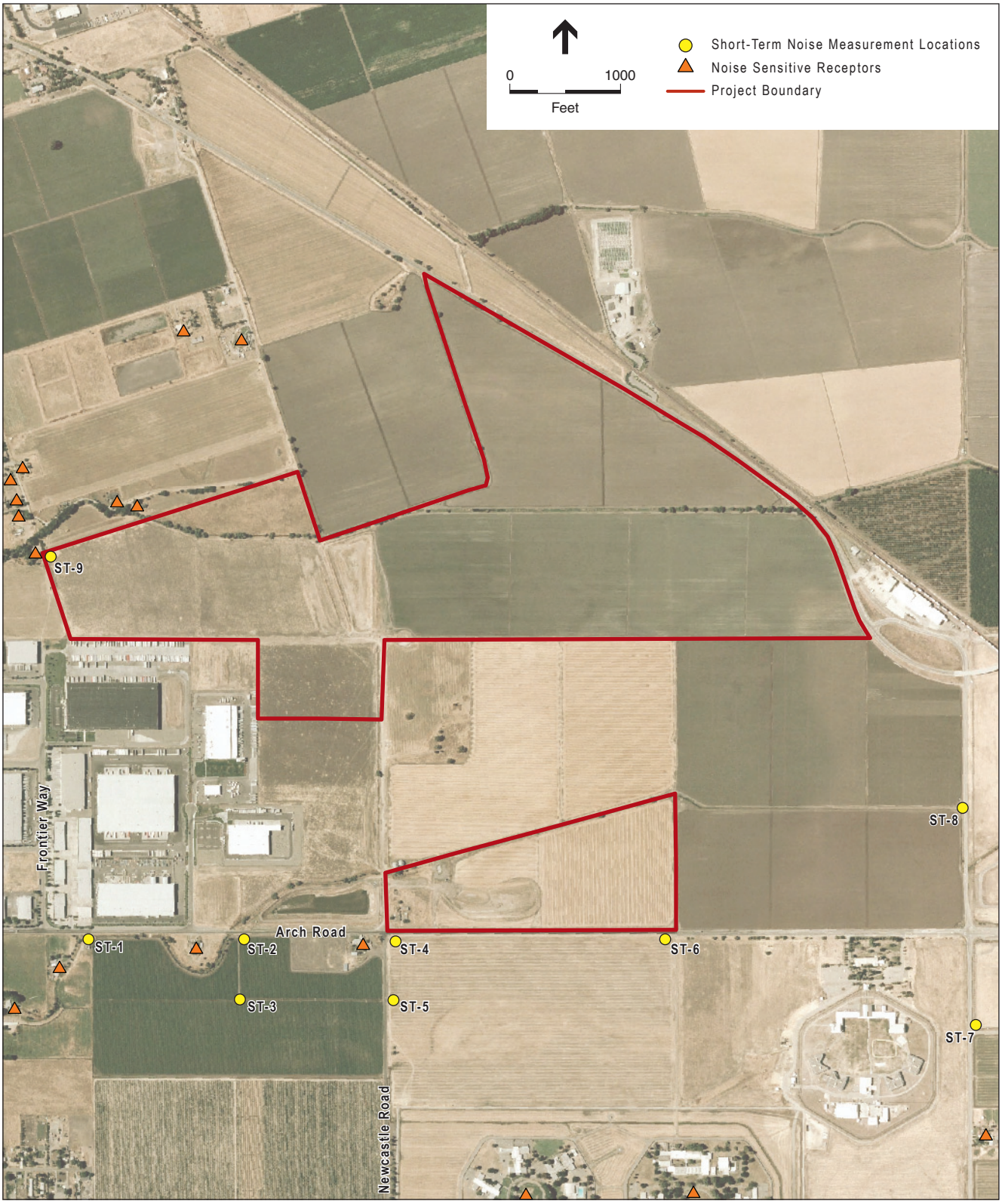
TABLE 3.11-1
EXISTING NOISE ENVIRONMENT IN THE PROJECT VICINITY

Location	Time Period	Leq (dB)	Noise Sources
ST-1: Near driveway of residence located at 4310 Arch Road, 15 feet from Arch Road centerline	5 Minutes (Wednesday, September 3, 2008 at 3:15pm)	75	* Traffic on Arch Road - heavy trucks and autos * Birds chirping
	5 Minutes (Thursday, February 28, 2013 at 9:10am)	77	* Traffic on Arch Road * Birds chirping * Utility building south of Arch Road * Waste truck across Arch
ST-2: 50 feet south of Arch Road centerline	5 Minutes (Wednesday, September 3, 2008 at 3:37pm)	65	* Traffic on Arch Road * Backup beepers at industrial facility across Arch Road * Wind through grasses
	5 Minutes (Thursday, February 28, 2013 at 9:48am)	75	* Vehicles on Arch Road * Birds chirping * Fighter jet takeoff in distance and flyover
ST-3: 600 feet south of Arch Road centerline	5 Minutes (Wednesday, September 3, 2008 at 3:26pm)	51	* Traffic on Arch Road * Crickets * Wind through grasses * Small airplane flyovers (63 dB)
	5 Minutes (Thursday, February 28, 2013 at 9:20am)	49	* Traffic on Arch Road * Birds chirping
ST-4: 50 ft from intersection of Arch Road and Newcastle	5 Minutes (Wednesday, July 25, 2007 at 9:04am)	56	* Traffic * Idling truck across St. 48 dB * Rooster across Newcastle
	5 Minutes (Thursday, February 28, 2013 at 9:40am)	70	* Traffic on Arch Road and Newcastle * Birds chirping
ST-5: 50 ft from Newcastle Road and 600 feet south of Arch Road centerline	5 Minutes (Wednesday, July 25, 2007 at 8:49am)	48	* Traffic * Truck 52 dB
	5 Minutes (Thursday, February 28, 2013 at 9:33am)	57	* Traffic on Newcastle and Arch Rd * Birds chirping
ST-6: East of Newcastle Road along Arch Road, 50 feet from Arch Road centerline	5 Minutes (Wednesday, July 25, 2007 at 8:36am)	80	* Traffic on Arch Rd. * Trucks 75-83 dB. * Pump Across St. 54 dB.
	5 Minutes (Thursday, February 28, 2013 at 9:58am)	70	* Traffic on Arch Road * Fighter jet flyover * Tractor in field across Arch * Birds chirping

TABLE 3.11-1
EXISTING NOISE ENVIRONMENT IN THE PROJECT VICINITY

Location	Time Period	Leq (dB)	Noise Sources
ST-7: Intersection of Austin Road and Burnham Road, 60 feet from Austin Road centerline	5 Minutes (Wednesday, September 3, 2008 at 4:31pm)	62	* Traffic on Austin Road * Traffic on Arch Road * Wind
	5 Minutes (Thursday, February 28, 2013 at 10:08am)	73	* Traffic on Austin and Arch Roads * Aircraft in distance * Freight train horn * Birds chirping
ST-8: Austin Road north of Arch Road, 20 feet from Austin Road centerline	5 Minutes (Wednesday, September 3, 2008 at 4:50pm)	68	* Traffic on Austin Road * Wind * Sirens in distance
ST-9: Northwest property line, near residence off of Marfargoa Road	5 Minutes (Wednesday, September 3, 2008 at 4:12pm)	43	* Dog barking * Birds chirping * Rooster crowing in distance * Backup beepers in distance
	5 Minutes (Thursday, February 28, 2013 at 10:28am)	48	* Dogs barking * Roosters crowing * Birds chirping * Backup beepers in distance * Vehicle traffic in distance

SOURCE: ESA 2007, 2008, and 2013



SOURCE: USDA, 2006; and ESA, 2008

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Figure 3.11-2

Noise Meter and Sensitive Receptor Locations

Regulatory Setting

Detailed below is a discussion of the relevant regulatory setting and noise regulations, plans, and policies.

Federal

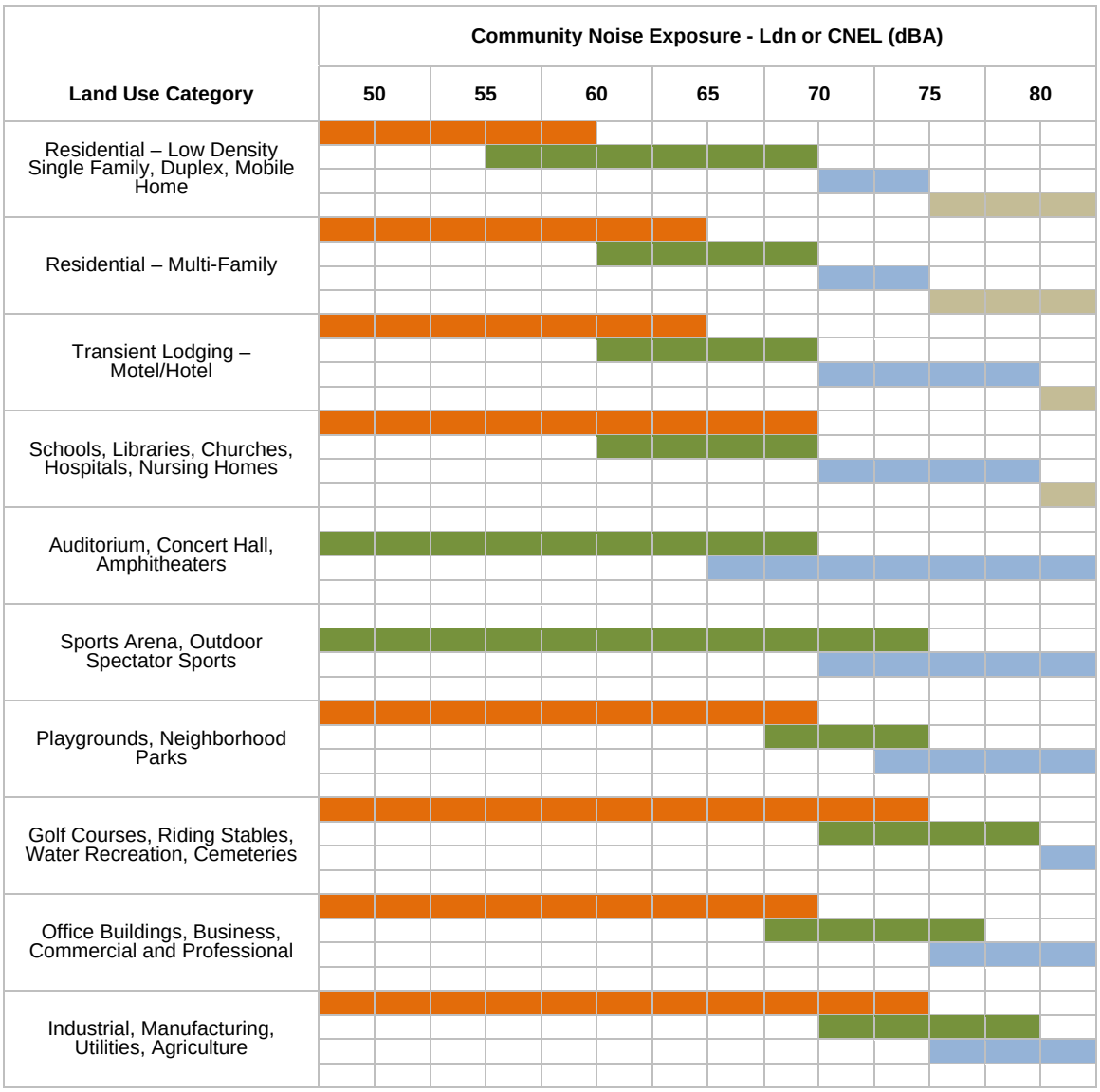
Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 Code of Federal Regulations (CFR), Part 205, Subpart B. The federal truck pass-by noise standard is 80 dBA at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inches per second PPV and human annoyance response ground-borne vibration threshold level of 80 RMS (FTA, 2006).

State

The State has guidelines for evaluating the compatibility of various land uses as a function of community noise exposure, as shown in **Figure 3.11-3**. The State of California also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dB. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by state and local law enforcement officials.

The State has also established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of DNL 45 dBA in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than DNL 60 dBA. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.



	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New construction or development generally should not be undertaken.

SOURCE: State of California, Governor's Office of Planning and Research, 2003. *General Plan Guidelines*.

NorCal Logistics Center. 210506

Figure 3.11-3

Land Use Compatibility For Community Noise Environment

Local

In California, local regulation of noise involves implementation of General Plan policies and Noise Ordinance standards. Local General Plans identify general principles intended to guide and influence development plans, and Noise Ordinances set forth the specific standards and procedures for addressing particular noise sources and activities.

General Plans recognize that different types of land uses have different sensitivities toward their noise environment; residential areas are considered to be the most sensitive type of land use to noise and industrial/commercial areas are considered to be the least sensitive.

San Joaquin County General Plan

The San Joaquin County General Plan Public Health and Safety Element (San Joaquin County, 1992) identifies community noise objectives and establishes policies to reduce noise pollution. The General Plan objective and policies applicable to the project include:

Objective 1 To ensure acceptable noise environments for each land use.

Policy 1 The following noise levels shall be considered acceptable:

(a) The maximum allowable noise exposure from transportation noise sources for outdoor activity areas shall be 65 dB for residential development, transient lodging, hospitals, nursing homes, and similar health-related facilities, churches, meeting halls, and similar community assembly facilities.

(b) The maximum allowable noise exposure from transportation noise sources for indoor spaces shall be 45 dB Ldn for residential development, transient lodging, hospitals, nursing homes, and similar health-related facilities, churches, meeting halls, and similar community assembly facilities, office buildings, schools, libraries, museums, and day-care centers.

(c) The hourly equivalent sound level from stationary noise sources shall be 50 dB during the daytime and 45 dB during the nighttime for outdoor activity areas for residential development, transient lodging, hospitals, nursing homes, and similar health-related facilities, churches, meeting halls, and similar community assembly facilities, office buildings, schools, libraries, museums, and day-care centers.

(d) The maximum sound level from stationary noise sources shall be 70 dB during the daytime and 65 dB during the nighttime for outdoor activity areas for residential development, transient lodging, hospitals, nursing homes, and similar health-related facilities, churches, meeting halls, and similar community assembly facilities, office buildings, schools, libraries, museums, and day-care centers.

Development shall be planned and designed to minimize noise impacts on neighboring noise sensitive areas and to minimize noise interference from outside sources.

San Joaquin County Development Title

Chapter 9, Section 1025.9 of the San Joaquin County Development Title includes maximum allowable noise exposure levels for transportation and stationary sources, as shown in **Table 3.11-2**, Parts I and II.

TABLE 3.11-2
MAXIMUM ALLOWABLE NOISE EXPOSURE

Noise Sensitive Land Use (Use Types)	Outdoor Activity Areas[1] (dBA DNL)	Interior Spaces (dBA DNL)
Part I: Transportation Noise Sources		
Residential	65	45
Administrative Office	-	45
Child Care Services, Child Care Centers	-	45
Community Assembly	65	45
Cultural & Library Services	-	45
Educational Services: General	-	45
Funeral & Interment Services – Undertaking	65	45
Lodging Services	65	45
Medical Services	65	45
Professional Services	-	45
Public Services (Excluding Hospitals)	-	45
Hospitals	65	45
Recreation – Indoor Spectator	-	45

	Outdoor Activity Areas[1]	
Part II: Stationary Noise Sources	Daytime[2] (7:00 AM to 10:00 PM)	Nighttime[2] (10:00 PM to 7:00 AM)
Hourly Equivalent Sound Level (L_{eq}), dBA	50	45
Maximum Sound Level (L_{max}), dBA	70	65

1 Where the location of outdoor activity areas is unknown or is not applicable, the noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or other property line noise mitigation measures.
2 Each of the noise level standards specified shall be reduced by 5 dBA for impulsive noise, single-tone noise, or noise consisting primarily of speech or music.

SOURCE: San Joaquin County, San Joaquin County Development Title, Chapter 9-1025.9 Noise, 2002.

The San Joaquin County Development Title also includes the following provisions, which are applicable to this project:

(a)(2) Private development projects that include the development of new transportation facilities or the expansion of existing transportation facilities shall be required to mitigate the noise levels from these transportation facilities so that the resulting noise levels on noise sensitive land uses within and adjacent to said development projects do not exceed the standards specified in **Table 3.11-2**, Part I.

(b)(2) Proposed projects that will create new stationary noise sources or expand existing stationary noise sources shall be required to mitigate the noise levels from these stationary noise sources so as not to exceed the noise level standards specified in **Table 3.11-2**, Part II.

(c)(3) Noise associated with construction, provided such activities do not take place before 6:00 AM or after 9:00 PM on any day, shall be exempt from the noise provisions in **Table 3.11-2**.

(d) The Review Authority shall require the preparation of an acoustical study in instances where it has determined that a project may expose existing or proposed noise sensitive land uses to noise levels exceeding the noise standards specified in **Table 3.11-2**. This determination shall be based on the existing or future 65 dBA DNL contour in the San Joaquin County General Plan, the proximity of new noise-sensitive land uses to known noise sources, or the knowledge that a potential for adverse noise impacts exists.

Both the San Joaquin County Noise Element and the San Joaquin Development Title institute a standard of 65 dBA DNL for transportation at residential uses.

City of Stockton General Plan

The City's General Plan recognizes noise pollution as a significant source of environmental degradation. The *City of Stockton General Plan 2035 Goals and Policies Report* (City of Stockton, 2007) identifies community noise goals and establishes policies to reduce noise pollution. The General Plan goals and policies applicable to the project include:

Goal HS-2 To protect the community from health hazards and annoyance associated with excessive noise levels.

Policy HS-2.1 Sensitive Receptors. The City shall prohibit the development of new commercial, industrial, or other noise-generating land uses adjacent to existing residential uses, and other sensitive noise receptors such as schools, health care facilities, libraries, and churches if noise levels are expected to exceed 70 dBA Community Noise Equivalent (CNEL) (decibels on A-weighted scale CNEL) measured at the property line of the noise sensitive land use.

Policy HS-2.2 Noise Compatibility Guidelines. The City shall allow the development of noise sensitive land uses (which include, but are not limited to, residential neighborhoods, schools, and hospitals) only in areas where existing or projected noise levels are "acceptable" according to Table HS-11.1 "Land Use Compatibility for Community Noise Environments." Noise mitigation measures may be required to reduce noise in outdoor activity areas and interior spaces to achieve these levels.

Policy HS-23. Noise Analysis. The City shall require noise analysis of proposed development projects as part of the environmental review process and to require mitigation measures to reduce noise impacts to acceptable levels. The acoustical analysis shall:

a. Be the responsibility of the applicant.

b. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.

c. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

d. Estimate existing and projected (20 years) noise levels in terms of Ldn/CNEL and compare the levels to the adopted policies of the Public Health and Safety Element.

e. Recommend appropriate mitigation to achieve compatibility with the adopted noise policies and standards of the Public Health and Safety Element. Where the noise source in question consists of intermittent single events, the acoustical analysis must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.

f. Estimate noise exposure after the prescribed mitigation measures have been implemented. If the project does not comply with the adopted standards and policies of the Public Health and Safety Element, the analysis must provide acoustical information for a statement of overriding considerations for the project.

g. Describe a post-project assessment program, which could be used to evaluate the effectiveness of the proposed mitigation measures.

Policy HS-2.4 Conduct Noise Monitoring. The City shall establish an ongoing noise monitoring program to enforce City noise standards.

Policy HS-2.6 Controlling Truck Traffic Noise. The City shall control noise sources in residential areas and other noise-sensitive areas by restricting truck traffic to designated truck routes.

Policy HS-2.7 Coordinate with Caltrans. The City shall work with Caltrans to mitigate noise impacts on sensitive receptors near State roadways, by requiring noise buffering or insulation in new construction.

Policy HS-2.10 Construction Noise. The City shall seek to limit the potential noise impacts of construction activities on surrounding land uses.

Policy HS-2.11 Limiting Construction Activities1. The City shall limit construction activities to the hours of 7am to 7pm, Monday through Saturday. No construction shall occur on Sundays or national holidays without a written permit from the City.

Policy HS-2.12 Sound Attenuation Features. The City shall require sound attenuation features such as walls, berming, heavy landscaping between commercial, industrial, and residential uses to reduce noise and vibration impacts.

Policy HS-2.15 California Vehicle Code Standards. The City shall actively support enforcement of California Vehicle Code sections relating to vehicle mufflers and modified exhaust systems.

Policy HS-2.18 Noise Easements. The City shall grant exceptions to the noise standards for commercial and industrial uses only if a record noise easement is conveyed by the affected property owners.

[1] The City shall limit construction activities to the hours of 7am to 7pm, Monday through Saturday. No construction shall occur on Sundays or national holidays without a written permit from the City.

City of Stockton Noise Ordinance

The City of Stockton noise ordinance is codified in Chapter 16, Article III, Division 16-340 of the City's Municipal Code (City of Stockton, 2004). The following sections present prohibited activities and noise standards applicable to the project.

Activities Deemed Violations of This Division: The following acts are a violation of this Division and are therefore prohibited.

A. **Construction noise.** Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work between the hours of 10:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

B. **Loading and unloading operations.** Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects on private property between the hours of 10:00 p.m. and 7:00 a.m. in a manner to cause a noise disturbance.

E. **Refuse Collection Vehicles.**

1. Operating or allowing the operation of the compacting mechanism of any motor vehicle that compacts refuse and that creates, during the compacting cycle, a sound level in excess of 85 dBA when measured at 50 feet from any point of the vehicle.

2. Collecting refuse, or operating or allowing the operation of the compacting mechanism of any motor vehicle that compacts refuse in a residential zoning district between the hours of 5:00 p.m. and 5:00 a.m. the following day.

F. **Sweepers and Associated Equipment.** Operating or allowing the operation of sweepers or associated sweeping equipment (e.g., blowers) on private property between the hours of 10:00 p.m. and 7:00 a.m. the following day in, or adjacent to, a residential zoning district.

Standards: The following provisions shall apply to all uses and properties, as described below, and shall establish the City's standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses and transportation-related sources:

B. **Standards for proposed noise-generating land uses and transportation-related sources.** Excluding noise-generating projects on infill sites, the following shall apply:

1. **Transportation-related noise sources (except infill sites).** Transportation-related projects that include the development of new transportation facilities or the expansion of existing transportation facilities shall be required to mitigate their noise levels so that the resulting noise:

   a. Does not adversely impact noise-sensitive land uses; and

   b. Does not exceed the standards in **Table 3.11-3**, Part 1.

   Noise levels shall be measured at the property line of the nearest site, which is occupied by, and/or zoned or designated to allow the development of, noise-sensitive land uses.

TABLE 3.11-3
MAXIMUM ALLOWABLE NOISE EXPOSURE FOR NOISE-SENSITIVE LAND USES

Noise-Sensitive Land Use Type	Outdoor Activity Areas	Indoor Spaces
Part I: Transportation-Related Noise Standards, Maximum Allowable Noise Exposure (Ldn dB)		
Residential (all types)	65	45
Child care	--	45
Educational facilities	--	45
Libraries and museums	--	45
Live-work facilities	65	45
Lodging	65	45
Medical services	--	45
Multi-use (with residential)	65	45
Noise Descriptor	**Daytime (7:00 a.m. to 10:00 p.m.)**	**Nighttime (10:00 p.m. to 7:00 a.m.)**
Part II: Land Use-Related Noise Standard, Outdoor Activity Areas		
Hourly Equivalent Sound Level (Leq), dB	55	45
Maximum Sound Level (Lmax), dB	75	65

1. The noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or other property line noise mitigation measures.
2. Each of the noise level standards specified shall be increased by 5 for impulse noise, simple tone noise, or noise consisting primarily of speech or music.

SOURCE: City of Stockton, 2004.

2. **Commercial, industrial, and other land use-related noise sources (except infill sites).**

a. **New and expanded noise sources.** Land use-related projects that will create new noise sources or expand existing noise sources shall be required to mitigate their noise levels so that the resulting noise:

1. Does not adversely impact noise-sensitive land uses; and

2. Does not exceed the standards specified in **Table 3.11-3**, Part 2.

Noise levels shall be measured at the property line of the nearest site which is occupied by, zoned for, and/or designated on the City's General Plan Diagram to allow the development of, noise-sensitive land uses.

b. **Maximum sound level.**

2. **Industrial**.

a. The maximum sound level (Lmax) produced by industrial land uses or by other permitted noise-generating activities on any industrial (IL, IG or PT) or public facilities (PF) zoning district shall not exceed 80 dB; and

b. The hourly equivalent sound level (Leq) from these land uses shall not exceed 70 dB during daytime or nighttime hours as measured at the property line of any other adjoining IL, IG, PT, or PF district.

c. **Adjacent to other uses.** If commercial, industrial, or public facilities land uses are adjacent to any noise-sensitive land uses or vacant residential (RE, RL, RM, or RH) or open space (OS) zoning districts, these uses shall comply with the performance standards contained in [**Table 3.11-3]** Part 2.

3.11.3 Impacts and Mitigation Measures

Significance criteria

Consistent with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- Expose persons to or generate noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies;
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels without the project;
- Expose people residing or working in the project area to excessive noise levels if the project is located within an area covered by an airport land use plan, or where such plan has not been adopted, within two miles of a public airport or public use airport;
- Expose people residing or working in the project area to excessive noise levels if the project is located in the vicinity of a private airstrip; or
- Expose persons to or generation of excessive ground-borne vibration or ground-borne noise levels.

More specifically, the proposed project would result in significant noise impacts if it would generate noise or vibration levels in excess of the following thresholds:

- **Construction Noise.** The project would result in a significant construction impact if construction activity would occur outside of the daytime hours permitted by the City and County noise ordinances.
- **Vibration.** The project would result in a significant vibration impact if buildings would be exposed to the FTA building damage ground-borne vibration threshold level of 0.2 PPV or if sensitive individuals would be exposed to the FTA human annoyance response ground-borne vibration threshold level of 80 RMS.
- **Stationary Noise.** For the nearest sensitive receptors in San Joaquin County (i.e., along Marfargoa Road), a resulting offsite noise level from stationary non-transportation sources that exceeds 50 dBA Leq or 70 dBA Lmax in the daytime (7:00 a.m. to 10:00 p.m.) or 45 dBA Leq or 65 dBA Lmax in the nighttime (10:00 pm to 7:00 a.m.) at outdoor activity areas of the receiving land use would be considered significant. For the nearest sensitive receptors in the City of Stockton (i.e., along Arch Road), a resulting offsite noise level from stationary non-transportation sources that exceeds 55 dBA Leq or 75 dBA Lmax in the daytime (7:00 a.m. to 10:00 p.m.) or 45 dBA Leq or 65 dBA Lmax in the nighttime (10:00 pm to 7:00 a.m.) at outdoor activity areas of the receiving land use would be considered significant.

- **Traffic Noise.** The significance of project-related noise impacts can be determined by comparing estimated project-related noise levels to existing noise levels. An increase of at least 3 dBA is usually required before most people will perceive a change in noise levels, and an increase of 5 dBA is required before the change will be clearly noticeable. A common practice is to assume that minimally perceptible to clearly noticeable increases of 3–5 dB represent a significant increase in ambient noise levels. A sliding scale is commonly used to identify the significance of noise increases, allowing greater increases at lower absolute sound levels than at higher sound levels. This approach is based on research that relates changes in noise to the percentage of individuals that would be highly annoyed by the change. The significance criteria for changes in noise from project operations are as follows:

    1. A 3 dBA DNL increase in noise as a result of project operations if the existing noise level already exceeds the "normally acceptable range" for the land use (60 dBA DNL or less for residential uses).

    2. A 5 dBA DNL increase in noise as a result of project operations if the existing noise level is in the "normally acceptable range" and the resulting level is within the "normally acceptable range" for the land use.

Methodology and Assumptions

Noise impacts are assessed based on a comparative analysis of the noise levels resulting from construction and the noise levels of existing conditions. Analysis of temporary construction noise effects is based on typical construction phases and equipment noise levels and attenuation of those noise levels due to distances between the construction activity and the sensitive receptors in the site vicinity.

Vibration from construction can be evaluated for potential impacts at sensitive receptors. Typical activities evaluated for potential building damage due to construction vibration include demolition, pile driving, and drilling or excavation in close proximity to structures. The ground-borne vibration can also be evaluated for perception to eliminate annoyance. Vibration propagates according to the following expression, based on point sources with normal propagation conditions:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

Where PPV (equip) is the peak particle velocity in in/sec of the equipment adjusted for distance, PPV (ref) is the reference vibration level in in/sec at 25 feet, and D is the distance from the equipment to the receiver. The peak particle velocity (PPV) is defined as the maximum instantaneous positive or negative peak of the vibration and is often used in monitoring of vibration because it is related to the stresses experienced by structures.

In order to determine potential for annoyance, the RMS vibration level (Lv) at any distance (D) shall be estimated based on the following equation:

$$L_v(D) = L_v(25\ ft) - 30\log(D/25)$$

Impacts and Mitigation Measures

Impact 3.11.1: Project construction could expose persons to or generate temporary noise levels in excess of standards established in the City of Stockton and San Joaquin County General Plan and Noise Ordinance. ***(Potentially Significant)***

Construction activity noise levels at and near the construction areas would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Construction-related material haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. **Table 3.11-4** shows typical noise levels during different construction stages. **Table 3.11-5** shows typical noise levels produced by various types of construction equipment. No pile driving is proposed for this project.

TABLE 3.11-4
TYPICAL CONSTRUCTION NOISE LEVELS

Construction Phase	Noise Level (dBA, Leq) [a]
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

a. Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

SOURCE: U.S. Environmental Protection Agency, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, 1971.

TABLE 3.11-5
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, Leq at 50 feet)
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Jack Hammer	88
Dozer	87
Paver	89
Generator	76
Pile Driver	101
Backhoe	85

SOURCE: Cunniff, Environmental Noise Pollution, 1977.

Noise from construction activities generally attenuates at a rate of 6 to 7.5 dBA per doubling distance. Based on the project site layout and terrain, an attenuation of 6 dBA will be assumed. The closest residences are 75 feet, 160 feet (both along Marfargoa Road) and 325 feet (on Arch Road) from potential excavation and finishing during project construction, respectively. These residences would experience noise levels at about 86 dBA, 79 dBA, and 73 dBA, respectively. Construction noise at these levels would be substantially greater than existing noise levels at nearby sensitive receptor locations. Subsequent exposure to construction noise by individual residences could be lessened over time due to attenuation of noise by project structures built in the interim.

Noise generated during short-term construction activities of the proposed project would result in a substantial increase in noise at the nearest residences and is considered ***potentially significant***.

Mitigation Measures

Measure 3.11.1: Construction-Related Noise Measures. The City shall ensure that the project applicant or construction contractor will implement the following construction-related noise reducing measures:

- Construction activities shall be limited to between 7:00 a.m. and 7:00 p.m. Monday through Saturday to avoid noise-sensitive hours of the day. Construction activities shall be prohibited on Sundays and holidays.
- Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools.
- Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby residences.
- Signs will be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number with the City of Stockton in the event of problems.
- An onsite complaint and enforcement manager shall track and respond to noise complaints.

Impact Significance after Mitigation: With implementation of Mitigation Measure 3.11.1, noise associated with project construction would be reduced to a ***less-than-significant*** level.

Impact 3.11.2: Project operation could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. *(Potentially Significant)*

Heating, Ventilating, and Air Conditioning (HVAC) Equipment Noise

The HVAC system for maintaining comfortable temperatures within the proposed buildings will consist of packaged rooftop air conditioning systems. Such rooftop HVAC units typically generate noise levels of approximately 55 dB at a reference distance of 100 feet from the operating units

during maximum heating or air conditioning operations. The nearest residences on Marfargoa Road would be approximately 260 feet and 380 feet from likely buildings on Lot 7 of the north map, and the residence on Arch Road would be approximately 350 feet from any buildings on Lot 1 of the south map. If HVAC units are on the edge of any buildings nearest the sensitive receptors, resultant noise levels would be about 47 dBA, 43 dBA, and 44 dBA, respectively. These noise levels would not exceed the City of Stockton or San Joaquin daytime standards. However, the noise level at the nearest residence along Marfargoa Road would exceed the San Joaquin County nighttime standard for stationary equipment. Consequently, this impact is considered ***potentially significant***.

Loading Dock Noise

To assess loading dock activity noise impacts at the nearest potentially affected noise-sensitive land uses, reference noise levels of 80 dB Lmax and 60 dB Leq at a distance of 50 feet were used. These data include noise generated by truck arrivals and departures from the unloading area, trucks backing into the docks (including backup beepers), air brakes, and other related truck unloading noise. As mentioned above, the nearest residences on Marfargoa Road would be approximately 260 feet and 380 feet from likely buildings on Lot 7 of the north map, and the residence on Arch Road would be approximately 350 feet from any buildings on Lot 1 of the south map. If loading docks are on the edge of any buildings nearest the sensitive receptors, resultant noise levels would be about 46 dBA Leq and 66 dBA Lmax, 42 dBA Leq and 62 dBA Lmax, and 43 dBA Leq and 63 dBA Lmax, respectively. Projected noise levels at the nearest residence on Marfargoa Road would exceed the San Joaquin County nighttime standards of 45 dBA Leq and 65 dBA Lmax. Consequently, this impact is considered ***potentially significant***.

Traffic Noise

Arch road is the predominant noise source in the area. Operation of the proposed project would result in an increase of 21,500 new daily vehicle trips on the roadway network, respectively. Using the FHWA Highway Traffic Noise Prediction Model, traffic noise levels were analyzed for the 9 roadway segments with adjacent sensitive receptors in the proposed project vicinity. The segments analyzed and results of the modeling are shown in **Table 3.11-6.** Estimated noise levels shown in **Table 3.11-6** correspond to a distance of approximately 65 feet from the centerline of applicable roadway segments.

A noise increase less than 3 dBA would have a negligible effect on noise levels along the respective roadways. However, the 3.9 dBA increase in traffic noise at the residences along roadway segment 1 (Arch Rd. west of Newcastle Rd.) would be noticeable and is considered ***potentially significant***.

Mitigation Measures

> **Measure 3.11.2a: Measures to Reduce HVAC Equipment Noise.** The project applicant shall ensure that HVAC units on northwest buildings of Lot 7 (north map) shall be located away from nearby residences, on building rooftops, and properly shielded by either the rooftop parapet or within an enclosure that effectively blocks the line of site of the source from the nearest receivers.

TABLE 3.11-6
EXISTING AND PROJECTED PM PEAK-HOUR TRAFFIC NOISE LEVELS ALONG ROADWAYS IN THE PROJECT VICINITY

	Peak-Hour Noise Level, dBA, Leq[1]							
Roadway Segment	Existing	Existing Plus Project	Incremental Increase	Significant? (Yes or No)[2]	Cumulative Near Term No Project	Cumulative Near Term Plus Project	Incremental Increase	Cumulatively Significant? (Yes or No)[2]
1. Arch Rd west of Newcastle Rd	71.2	75.1	**3.9**	Yes	76.0	77.4	1.4	No
2. Arch Rd east of Newcastle Rd	69.8	72.4	2.6	No	74.0	75.0	1.0	No
3. Arch Rd west of Austin Rd	70.3	71.3	1.0	No	75.0	75.1	0.1	No
4. Austin Rd south of Arch Rd	63.5	65.3	1.8	No	73.0	73.5	0.5	No
5. E Mariposa Rd west of W Frontage Rd	69.2	70.4	1.2	No	70.0	71.0	1.0	No
6. E Mariposa Rd west of E Frontage Rd	70.1	71.5	1.4	No	71.0	71.9	0.9	No
7. E Mariposa Rd east of E Frontage Rd	69.7	71.8	2.1	No	70.0	72.1	2.1	No
8. E Mariposa Rd west of future Newcastle Rd	68.2	70.9	2.7	No	69.0	71.2	2.2	No
9. E Mariposa Rd east of future Newcastle Rd	68.2	68.6	0.4	No	69.0	69.1	0.1	No

BOLD values show potentially significant noise increases prior to any mitigation.
1. Noise levels were determined using FHWA Traffic Noise Prediction Model (FHWA RD-77-108).
2. Traffic noise is considered significant if the incremental increase in noise is greater than 5 dBA Leq in a noise environment of 60 dBA CNEL or less and the resultant noise level is also 60 dBA CNEL or less, or an increase of 3 dBA L_{eq} in a noise environment already greater than 60 dBA CNEL.

Measure 3.11.2b: Measures to Reduce Loading Dock Noise. The project applicant shall ensure that loading docks in northwest buildings of Lot 7 (north map) shall be located away from nearby residences (i.e., on south or east sides of buildings) or shall be shielded with appropriate wing walls that effectively block the line of site of the loading docks from the nearest receivers.

Measure 3.11.2c: Measures to Reduce Traffic Noise. The applicant shall notify the homeowners along roadway segment 1 of the noise impacts associated with the traffic from project operations. With the homeowners' approval, the applicant shall construct 6-foot solid fences along the property line of affected residences. Alternatively, residential building facades can be upgraded to reduce interior noise levels (e.g., improved windows and doors). While these measures could substantially reduce the impact of increased traffic noise on the interior environment of existing noise-sensitive uses, no enforcement mechanism has been identified to ensure implementation of the measures nor has any related funding mechanism been identified.

Impact Significance after Mitigation: For existing residences along roadway segment 1, there may be instances where fences would not be feasible due to space constraints or driveways, and facade upgrades would not reduce exterior noise levels. Consequently, even with implementation of all traffic noise reducing measures identified under Mitigation Measure 3.11.2c, increases in noise from project traffic along this roadway segment would be a ***significant unavoidable*** impact.

Impact 3.11.3: Project construction could expose persons to or generate excessive ground-borne vibration or ground-borne noise levels. ***(Less-than-Significant)***

As shown in **Table 3.11-7,** use of heavy equipment for project construction generates vibration levels up to 0.089 PPV or 87 RMS at a distance of 25 feet. Assuming a large bulldozer would be used 75 feet from the nearest residence during construction and loaded trucks would pass by at 50 feet from the nearest residences along traversed roadways, vibration levels at the nearest sensitive receptor would be about 73 RMS and 0.02 PPV from the bulldozer and 77 RMS and 0.03 PPV from the trucks. Other sensitive receptors in the project vicinity would be exposed to vibration levels at incrementally lower levels. Therefore, equipment operation during project construction would generate ground-borne vibration and noise levels that would not exceed the FTA criteria of 0.2 PPV for structural damage and 80 RMS for human annoyance. This impact is considered ***less-than-significant***.

TABLE 3.11-7
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Equipment/Activity	PPV at 25 ft (inches/second)[a]	PPV at nearest receptor	RMS at 25 ft (Vdb)[c]	RMS at nearest receptor
Large Bulldozer	0.089	0.02	87	73
Loaded Trucks	0.076	0.03	86	77

a. Buildings can be exposed to ground-borne vibration levels of 0.2 PPV without experiencing structural damage.
b. The nearest receptor for the large bulldozer and small bulldozer were assumed to be 75 feet. The loaded trucks were set at 50 feet.
c. The human annoyance response level is 80 RMS.

SOURCE: ESA, 2008; Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

Mitigation Measures

None required.

Impact 3.11.4: The project, located within two miles of a public airport or private airstrip, could expose people residing working in the project area to excessive noise. *(Less-than-Significant)*

The project is located approximately 1.5 miles northeast of the Stockton Metropolitan Airport, but not within 2 miles of private airstrip. According to the City of Stockton *General Plan Background Report* (City of Stockton, 2006), the project is located outside the 60 dBA CNEL contour of the airport, and would therefore be exposed to less than 60 dBA CNEL from airport operations. As shown in **Figure 3.11-3**, this noise environment would be "normally acceptable" for an industrial land use. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.11.5: Increases in traffic from the project in combination with other development could result in cumulative noise increases. *(Less-than-Significant)*

A cumulative impact arises when two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant impacts, meaning that the project's incremental effects must be viewed in connection with the effects of past, current, and probable future projects. Based on the traffic analysis prepared for this report, the project would generate approximately 21,500 daily vehicle trips that would enter the project site and would be distributed over the local street network and affect roadside noise levels.

To assess the cumulative impact of project traffic on roadside noise levels, noise level projections were made using the FHWA Noise Prediction Model. Estimated noise levels shown in **Table 3.11-6** above correspond to a distance of approximately 65 feet from the centerline of applicable roadway segments. Although the project in conjunction with near term development would result in substantial increases in noise on many of the modeled roadways compared to existing conditions, the project itself would not be cumulatively considerable. The Cumulative Near Term Plus Project scenario would not increase noise levels by 3 dBA or more in comparison to the Cumulative Near Term No Project scenario on any of the roadway segments. Thus, it is considered to have a ***less-than-significant*** cumulative impact.

Mitigation Measures

None required.

3.11.4 References

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3.12 Public Services, Utilities, and Recreation

3.12.1 Introduction

This chapter describes the public services and utilities currently occurring within the project area, the appropriate regulatory framework, and provides an analysis of the potential public services and utilities impacts that could result from implementation of the project. Where appropriate, mitigation measures are identified.

3.12.2 Setting

Existing Conditions

The project would be constructed in the southeastern portion of Stockton. The following provides a brief summary of the existing service and utility providers that may be affected through implementation of the project.

Law Enforcement

Law enforcement services will be the responsibility of the Stockton Police Department. The Stockton Police Department is comprised of 408 authorized sworn positions and 224 civilian positions. The staffing level for the department is determined each year by the Stockton City Council and is subject to change as the Council, City Manager, and Chief of Police determine the needs of the City. Stockton has over 400 sworn police officers serving about 280,000 citizens for an average ratio of sworn staff to population of approximately 1:700. Compared with other cities of similar size and location in the Central Valley, the Stockton Police Department's ratio of sworn staff to population is better than Modesto, but not as good as Sacramento or Fresno.

The Stockton Police Department is comprised of 26 departments, two divisions, and seven districts coordinated out of two facilities. The Main Precinct, located at 22 East Market Street, is where field services are located. Central Services, located at 22 East Webber Street, located at 22 East Webber Street, houses investigations and support services. Capital costs of Police Department expansion are accounted for by the City's Public Facilities Fee program.

Fire Protection and Emergency Medical Response

The project site will be served by the Stockton Fire Department (SFD). The SFD provides fire protection, fire prevention services, and paramedic emergency medical services to all areas of the City of Stockton. Specific services provided by the Fire Department include fire-fighting, fire prevention, fire dispatch, hazardous materials intervention, and weed abatement services, with fire hydrant maintenance provided by the City's Municipal Utilities Department. The department is led by the fire chief, who reports to the city manager. Currently there are 169 sworn personnel working for the department, supported by 24 civilian employees and 12 part time employees. The department presently operates 12 fire stations housing 12 engine companies and 3 truck companies.

The Stockton Fire Department has a "Class 3" rating from the Insurance Services Office. The nearest SFD station to the project site is Station #12, located at 4010 East Main Street, approximately 4 miles from the proposed project site. Capital costs of Fire Department expansion are accounted for by the City's Public Facilities Fee program.

The City of Stockton is served by several different private ambulance companies that are dispatched on a common radio channel. The three major hospitals that provide medical service in Stockton are Dameron Hospital, St. Joseph's Medical Center, and the San Joaquin General Hospital.

Water Supply

The project would receive water service from the City of Stockton Municipal Utilities Department, Water Division. The project would require an extension of the existing water service in the area. A 12-inch water line at the intersection of Arch Road and Newcastle Road would be extended north along Newcastle Road to serve the project site. In addition, the project would require extension of the 12-inch line along the internal roads serving the project site.

Water for the Stockton area comes from a combination of groundwater and surface water sources. Until 1977, groundwater was the sole source of domestic water for the Stockton area. A surface water supply was established in 1977, when the Stockton East Water District (SEWD) Treatment plant began operation. This plant currently has the capacity to treat up to 50,400 acre-feet per year, and produces an average of 41,100 acre-feet per year of treated surface water from the Calaveras and Stanislaus Rivers (City of Stockton, 2007). The project site is part of the South Stockton Storage and Distribution System. The South Stockton water system, on average, pumps approximately 5.2 MGD from groundwater wells and receives no surface water from the SEWD WTP at this time. There are seven groundwater wells with pump design flows ranging from 900 to 2,500 gpm. The entire system is one pressure zone with the lowest elevation (5 feet above mean sea level) on the western side of the system and the highest elevation (30 feet above mean sea level) on the eastern side of the system. Additionally, there are two 3 MG tank located near the Weston Ranch Subdivision. Remaining onsite water supply infrastructure necessary to implement the proposed project is described in Chapter 2 "Project Description" (see Table 2-1) of this Draft EIR.

Construction and operation of the project could generate increased demand for water. As a condition of approval for the project, the City would need to certify that they have adequate water to supply the project's needs. The project would be required to comply with all applicable plans, including the City's 2008 Water Master Plan. A water supply assessment, consistent with SB 610 has been prepared for the proposed project and can be found in Appendix D of this Draft EIR.

For information on the hydraulic effects of groundwater pumping, stream-aquifer interactions, and groundwater impacts, please refer to Section 3.9, "Hydrology and Water Quality."

Wastewater

Municipal wastewater collection and treatment will be provided by the City of Stockton. The site is within the City Urban Service Area and has been included in the City's Wastewater Collection System Master Plan. This plan has anticipated the extension of municipal wastewater collection

and treatment service for the project site. Certain unit processes within the City's wastewater treatment facility are approaching their functional capacity, and expansion of the treatment facility to meet anticipated demands resulting from growth in Stockton is the subject of an ongoing planning and engineering effort. The treatment plant has adequate capacity to serve anticipated short-term development within the City, and expansion plans provide for creation of additional capacity over time to meet anticipated demands generated from the proposed project and other growth areas of the City. Remaining onsite wastewater infrastructure necessary to implement the proposed project is described in Chapter 2 "Project Description" (see Table 2-1) of this Draft EIR.

Solid Waste Disposal

The City of Stockton Public Works Department is responsible for the administration of the City's solid waste management franchise system, the industrial waste permit system, and garbage/recycling services and programs. The franchise system provides garbage and recycling service to residential and commercial sectors. Green waste and food waste collection is included as part of the basic service. The City's solid waste is disposed at the Forward Landfill, Foothill Sanitary Landfill, and North County Sanitary Landfill. Recyclables are processed at East Stockton Transfer Facility and at Central Valley Waste Services. Green Waste and food waste are composted at Forward Resource Recovery and Harvest Power. Industrial wastes are collected and hauled by permitted haulers.

When transporting solid waste, franchised haulers currently authorized to haul commercial waste in the City include Republic Services and Waste Management, Inc. Waste haulers permitted to collect and haul industrial waste in the City are Republic Services, Waste Management Inc., and Cal-Waste Recovery Systems. These companies are equipped to provide containers and hauling services for solid waste, recyclables, green waste/food waste, and construction/demolition waste.

Electricity and Natural Gas Service

With a relatively mild Mediterranean climate and strict energy efficiency and conservation requirements, California has lower energy consumption rates than other parts of the country. According to the Department of Energy (DOE), per capita energy use in California is approximately 70 percent of the national average, the third lowest state in the nation. California has the lowest annual electrical consumption rates per person of any state and uses 20 percent less natural gas per person. Per capita transportation energy use in the state is near the national average. According to the California Energy Commission (CEC), petroleum supplies about 54 percent of the State's energy, natural gas about 33 percent, and imported electricity contributes 13 percent of total energy use.

The City of Stockton is located within the Northern California Central Valley (Climate Zone 12), situated just inland of the San Francisco Bay Area. This climate zone experiences cooler winters and hotter summers than Climate Zone 3 (Bay Area). Winter rains fall from November to April. Tule fog is common in the winter east of Mount Diablo. Some lower areas receive frost on winter nights.

Pacific Gas and Electric Company (PG&E) is the electrical service provider for the City of Stockton. PG&E delivers approximately 81, 923 million kilowatt hours (kWh) of electricity to its 13 million customers throughout its 70,000 square-mile-service area in northern and central California. PG&E would provide service to the project site via two overhead power lines that travel north/south just east of the project site. An overhead power line continues (east to west) along Arch Road and transitions to underground utility lines near the intersection of Arch Road and Logistics Drive. All construction and maintenance activities for electrical services and facilities are the responsibility of PG&E. Project-related extensions to the site would be coordinated directly between PG&E, the City, and the project applicant.

PG&E is the natural gas service provider for the City of Stockton. Approximately 887 million cubic per day of natural gas is delivered to the City through portions of PG&Es 43,000 mile of natural gas pipeline system. Existing PG&E utility infrastructure is located near the intersection of Arch Road and Newcastle Road. Project-related extensions to the site would be coordinated directly between PG&E, the City, and the project applicant.

Energy consumption in the City of Stockton includes electricity and natural gas usage for residential, commercial, and industrial buildings. The City's Draft Climate Action Plan provides a summary of recent energy consumption by building sector category, with residential and commercial buildings using the most energy by building sector (see **Table 3.12-1**).

TABLE 3.12-1
ELECTRICITY AND NATURAL GAS CONSUMPTION – 2005

Building Sector	Electricity (kWh)	Natural Gas (therms)
Residential	633,260,860	38,401,223
Commercial	699,836,120	40,018,337
Industrial	222,230,294	2,098,110

SOURCE: ICF International, Climate Action Plan, 2014.

Regulatory Setting

State

Central Valley Regional Water Quality Control Board

Within the project area, the Central Valley Regional Water Quality Control Board (CVRWQCB) is responsible for the protection of beneficial uses of water resources. Designation of beneficial uses defines the resources, services, and qualities of the aquatic system that are the ultimate goals of protecting and achieving high water quality. The CVRWQCB uses planning, permitting, and enforcement authorities to meet this responsibility, and has adopted the Central Valley Region Water Quality Control Plan (Basin Plan) to implement plans, policies, and provisions for water quality management. Beneficial uses of surface waters are described in the Basin Plan and are designated for major surface waters and their tributaries. In addition to identification of beneficial uses, the Basin Plan also contains water quality objectives that are intended to protect the beneficial

uses of the Basin. The CVRWQCB has region-wide and water body/beneficial use-specific water quality objectives.

Beneficial uses of the surface waters of the Delta include municipal, agricultural, industrial, and recreational uses, freshwater habitat, migration, spawning, wildlife habitat, and navigation. Beneficial uses for all groundwater resources in the Central Valley region include or potentially include municipal, agricultural, and industrial uses.

The CVRWQCB has set water quality objectives for all surface waters in the region concerning bacteria, bioaccumulation, biostimulatory substances, color, dissolved oxygen, floating material, oil and grease, population and community ecology, pH, salinity, sediment, settleable material, suspended material, sulfide, tastes and odors, temperature, toxicity, turbidity, and ammonia. Water quality objectives for groundwater include standards for bacteria, chemical constituents, radioactivity, tastes and odors, and toxicity.

The CVRWQCB also administers the NPDES stormwater permitting program for both construction and industrial activities. NPDES requirements for these two activities are more fully described below.

California State Water Resources Control Board

Responsibility for administering California water rights procedures lies with the California State Water Resources Control Board (SWRCB), which also is responsible for managing and administering various federal and state water quality control programs. Procedures are provided by statute, but the board has the authority to establish rules and regulations to help it carry out its work. All board activities are governed by state water policy and are administered in accordance with policies and procedures in the California Water Code.

California Energy Commission - California Code of Regulations Title 24

The State of California regulates energy consumption under Title 24 of the California Code of Regulations. The Title 24 Building Energy Efficiency Standards were developed by the California Energy Commission (CEC) and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and non-residential buildings. The latest update to the Title 24 standards became effective on July 1, 2014 and incorporates the California Green Building Standards Code (also known as CALGreen, see description below). Improved measures within the Standards for non-residential land uses include the following:

- High performance windows, sensors and controls that allow buildings to use "daylighting".
- Efficient process equipment in supermarkets, computer data centers, commercial kitchens, laboratories, and parking garages.
- Advanced lighting controls to synchronize light levels with daylight and building occupancy, and provide demand response capability.
- Solar-ready roofs to allow businesses to add solar photovoltaic panels at a future date.
- Cool roof technologies.

Green Building Standards Code

In January 2010, the State of California adopted the California Green Building Standards Code (CALGreen) that establishes mandatory green building standards for all buildings in California. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. These standards include a mandatory set of minimum guidelines, as well as more rigorous voluntary measures, for new construction projects to achieve specific green building performance levels. This Code went into effect as part of local jurisdictions' building codes on January 1, 2011.

Local

City of Stockton General Plan 2035

The Stockton General Plan governs the placement and subsequent extension of the public infrastructure within the project area. The following goals and polices relate to public facilities and services on and near the project site.

Public Facilities and Services Element

Goal PFS-1 To ensure the provision of adequate facilities and services that maintain service levels are adequately funded and allocated strategically.

Policy PFS-1.1 Maintain Existing Levels of Services. The City shall give priority to providing services to existing urban areas in order to prevent the deterioration of existing levels-of-service.

Policy PFS-1.4 Development Impacts to Existing Infrastructure. The City shall ensure that proposed developments do not create substantial adverse impacts on existing infrastructure and that the necessary infrastructure will be in place to support the development.

Policy PFS-1.5 Funding for Public Facilities. The City shall continue to utilize developer fees, the City's public facilities fees, and other methods (i.e., grant funding and assessment districts) to finance public facility design, construction, operation, and maintenance.

Policy PFS-1.8 Impact Mitigation. The City shall review development proposals for their impacts on infrastructure (i.e., sewer, water, fire stations, libraries, streets) and require appropriate mitigation measures if development reduces service levels.

Policy PFS-1.9 Development Guidelines. During the development review process, the City shall not approve new development unless the following guidelines are met:

- The applicant provides acceptable documentation demonstrating infrastructure capacity will be available to serve the project prior to occupancy;
- The applicant can demonstrate that all necessary infrastructure to serve the project is adequately financed and will be installed prior to occupancy;
- Infrastructure improvements are consistent with City or other service provider's infrastructure master plans; and

- Infrastructure improvements incorporate a range of feasible measures that can be implemented to reduce all public safety and/or environmental impacts associated with the construction, operation, or maintenance of any required improvement.

Goal PFS-2 To ensure the adequate, reliable, and safe provision of water to all existing and future City of Stockton development, even through drought periods.

Policy PFS-2.6 Level of Service. The City shall maintain adequate levels of water service by preserving, improving, and replacing infrastructure as necessary.

Policy PFS-2.7 Water Supply for New Development. The City shall ensure that water supply capacity and infrastructure are in place prior to granting building permits for new development.

Policy PFS-2.8 Delta Water Supply. The City shall not approve new development that relies on water from the Delta Water Supply Project until this Delta water is allocated through a water right to the City by the State of Water Resources Control Board or a replacement water supply is secured.

Policy PFS-2.9 Water Facility Sizing. The City shall ensure through the development review process that public facilities and infrastructure are designed to meet ultimate capacity needs, pursuant to a master plan, to avoid the need for future replacement to achieve upsizing. For facilities subject to incremental sizing, the initial design shall include adequate land area and any other elements not easily expanded in the future.

Goal PFS-3 To ensure adequate collection, treatment, and safe disposal of wastewater.

Policy PFS-3.1 Sanitary Sewer Service Area. The City shall require that all new urban development is served by an adequate collection system to avoid possible contamination of groundwater from onsite wastewater disposal (septic) systems.

Policy PFS-3.4 Wastewater Facility Sizing. The City shall ensure through the development review process that public facilities and infrastructure are designed and constructed to meet ultimate capacity needs, pursuant to a master plan, to avoid the need for future replacement to achieve upsizing. For facilities subject to incremental upsizing, initial design shall include adequate land area and any other elements not easily expanded in the future.

Goal PFS-4 To manage stormwater in a manner that is safe and environmentally sensitive to protect people and property and to maintain the quality of receiving waters.

Policy PFS-4.1 Creek and Slough Capacity. The City shall require detention storage with measured release to ensure that the capacity of downstream creeks and sloughs will not be exceeded. To this end:

- Outflow to creeks and sloughs shall be monitored and controlled to avoid exceeding downstream channel capacities;
- Storage facilities shall be coordinated and managed to prevent problems caused by timing of storage outflows.

Policy PFS-4.2 Watershed Drainage Plans. The City shall require the preparation of watershed drainage plans for proposed developments within the urban services boundary. These plans shall define needed drainage improvements

and estimate construction costs for these improvements. The plans will also identify a range of feasible measures that can be implemented to reduce all public safety and/or environmental impacts associated with the construction, operation, or maintenance of any required drainage improvements (i.e., drainage basins, etc.).

Policy PFS-4.3 Best Management Practices. The City shall require, as part of watershed drainage plans, Best Management Practices (BMPs), to reduce pollutants to the maximum extent practicable.

- As of November 25, 2003, the City shall require that all new development and redevelopment projects to comply with the post-construction Best Management Practices (BMPs) called for in the Stormwater Quality Control Criteria Plan (SWQCCP), as outlined in the City's Phase 1 Stormwater NPDES permit issued by the California Water Quality Control Board, Central Valley Region (Order No. R5-20020-0181). Also the owners, developers, and/or successors must establish a maintenance entity acceptable to the City to provide funding for the operation, maintenance, and replacement costs of all post-construction BMPs.
- The City shall require, as part of its Storm Water NPDES Permit and ordinances, to implement the Grading Plan, Erosion Control Plan, and Pollution Prevention Plan (SWPPP) during construction activities of any improvement plans, new development and redevelopment projects for reducing pollutants to the maximum extent practicable.

Goal PFS-5 To ensure the safe and efficient disposal or recycling of solid and hazardous waste.

Policy PFS-5.2 Recycling Program. The City shall continue to require recycling in public and private operations to reduce demand for solid waste disposal capacity.

Policy PFS-5.5 Recycling of Hazardous Materials. The City shall require the proper disposal and recycling of hazardous materials.

Policy PFS-5.6 Recycling of Construction Debris. The City shall require the recycling of construction debris.

Policy PFS-5.7 Development Requirements. The City shall ensure that all new development has appropriate provisions for solid waste storage, handling, and collection pickup.

Goal PFS-6 To provide adequate gas and electric services for city residents.

Goal PFS-7 To provide protection to the public through adequate police staffing and related resources, effective law enforcement, and the incorporation of crime prevention features in new development, as approved by the Police Department.

Goal PFS-8 To provide protection to the public through effective fire protection services and the incorporation of fire safety features in new development.

City of Stockton Municipal – Green Building Standards

Chapter15.72 "GREEN BUILDING STANDARDS" from the City's municipal code provides guidance on the design and construction of buildings through concepts that incorporate a variety of energy reducing measures.

3.12.3 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- Result in a substantial adverse physical impact associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: fire protection and police protection;
- Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Have insufficient water supplies available to serve the project from existing or permitted entitlements, or require new or expanded entitlements;
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waster disposal needs;
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated; or
- Result in wasteful, inefficient, or unnecessary consumption of energy.

Impacts and Mitigation Measures

Impact 3.12.1: Implementation of the project may increase the need for additional law enforcement and fire protection services from the local police and fire departments. *(Less-than-Significant)*

Law enforcement services for the proposed project will be the responsibility of the Stockton Police Department. The operation of a new industrial/warehouse facility would not significantly increase the need for law enforcement services and is not expected to place any additional burden on the local police department. The capital costs of law enforcement services are accounted for by the City's Public Facilities Fee program. All Police Station Expansion Fees will be paid as required at the time they are due; therefore this impact is considered ***less-than-significant***.

Operation of a new industrial/warehouse facility would require fire protection services provided by the Stockton Fire Department. Construction and operation of the project may introduce potential

sources for fire and could increase the demand for fire protection services. Specific services provided by the Fire Department include fire-fighting, fire prevention, training, fire dispatch, hazardous materials intervention, and weed abatement services. The nearest SFD station is #12, located at 4010 East Main Street, approximately 4 miles from the proposed project site. The capital costs of Fire Department expansion are accounted for by the City's Public Facilities Fee program. All Fire Station Expansion Fees will be paid as required at the time they are due; therefore this impact is considered ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.12.2: Implementation of the project may result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. *(Less-than-Significant)*

Municipal wastewater collection and treatment will be provided by the City of Stockton. The site is within the City Urban Service Area and has been included in the City's Wastewater Collection System Master Plan. This plan has anticipated the extension of municipal wastewater collection and treatment service for the project site. Certain unit processes within the City's wastewater treatment facility are approaching their functional capacity, and expansion of the treatment facility to meet anticipated demands resulting from growth in Stockton is the subject of an ongoing planning and engineering effort. The treatment plant has adequate capacity to serve anticipated short-term development within the City, and expansion plans provide for creation of additional capacity over time to meet anticipated demands generated from the annexation area and other growth areas of the City. For the reasons discussed above, impacts on waste waster and the existing sewer system will be ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.12.3: Implementation of the project may impact water supplies. *(Less-than-Significant)*

As noted above, due to the project's geographic location, it will be served entirely by water from the City of Stockton Municipal Utilities District (COSMUD). The project is an industrial development greater than 40 acres, which may result in over 650,000 square feet of industrial space. Therefore, a water supply assessment (WSA) (also known as an SB610 assessment) has been prepared for the project by the COSMUD, and is incorporated by reference (see Appendix D).

COSMUD's water demand for 2007/2008 was 39,115 acre-feet per year (afy). COSMUD's existing water supplies are surface waters provided through COSMUD's share of the 60 million gallon per day (mgd) Stockton East Water District (SEWD) Water Treatment Plant (WTP), and from groundwater. In the year 2035 (the last projected year analyzed in the WSA), projected water demand for the COSMUD is 60,393 afy (this figure accounts for existing demand plus demand from the proposed project and demand from other foreseeable projects). The WSA concludes that the COSMUD, under existing supply conditions, cannot serve the water demands for existing uses (including existing pending developments shown in WSA Exhibit "C"), the project, and all reasonably foreseeable planned future uses in normal rainfall years and in dry years. Nor could COSMUD meet its projected water demand in the year 2035, again in both normal rainfall years and in dry years.

Given the insufficiency of water available for all planned future uses, particularly in critically dry years, the WSA evaluated alternative future water supplies, specifically the finance and construction of the 33,600 afy (30 mgd assuming constant diversion over one year) Delta Water Supply Project (DWSP) Phase 1 (completed), with its associated water treatment plant (WTP), supply and distribution lines, and water rights. Once fully completed, the DWSP would provide up to 125,900 afy of water, but only the 33,600 afy for Phase 1 is relied upon in the WSA. Other future water supplies relied upon in the WSA are 6,500–13,000 afy of surface water supplies through the Woodbridge Irrigation District (to be routed through the DWSP WTP and used in times when Delta water deliveries are curtailed for fish protection purposes), and conjunctive use of groundwater supplies (using groundwater only for higher demand months and cutting back surface water use in dry periods).

With implementation of COSMUD's DWSP Phase 1 WTP, the existing use of COSMUD's share of the 60 mgd SEWD WTP, and continued improvements on groundwater capacity (GP Policy PFS-2.3) and water use efficiency, water supplies are deemed sufficient to meet existing water demands and the water demands of the Project and all reasonably foreseeable planned future uses in wet and above-normal hydrologic years and in dry and critical years and under sustained drought conditions out to the year 2035. Therefore, the impacts related to water supplies are considered ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.12.4: The proposed project will be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. *(Less-than-Significant)*

The Stockton municipal code requires mandatory collection of municipal refuse which includes residential and commercial customers. Garbage, recycling, and green waste/food waste collection is part of the basic service for both residential and commercial customers. Industrial customers (manufacturers, food processors, factories) are served by Industrial Permit Holders. There are currently three permitted haulers for industrial waste- Republic Services, Waste Management, and

Cal-Waste Recovery Systems. Solid waste is disposed at the Forward Landfill, Foothill Sanitary Landfill, and North County Landfill. There is no shortage of landfill capacity under current conditions. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.12.5: Implementation of the project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. ***(No Impact)***

The proposed project site is currently fallow agricultural land that is designated for industrial uses. The proposed project will not contribute to an increase in the local population and no additional demand on existing neighborhood and regional parks would be created. Furthermore, warehouse/low density projects are exempt from Parkland Public Facilities Fees. The proposed project would have ***no impact*** on the use of existing neighborhood and regional parks.

Mitigation Measures

None required.

Impact 3.12.6: Implementation of the proposed project would not exceed existing gas and electric supply or result in wasteful, inefficient, or unnecessary consumption of energy. ***(Less-than-Significant)***

The proposed project would intensify development (i.e., warehousing, industrial, large-scale commercial uses) on the project site, thereby increasing demand for gas and electric service. On-site employment and uses, such as warehousing/distributing activities, would use gas and electricity and require extensions/connections to existing distribution facilities with capacity to serve the project site.

The energy building consumption demands of the proposed project would conform to the State's Title 24 energy conservation standards such that the development would not wastefully use gas and electricity. The proposed project would also be designed to include several energy conservation features consistent with the City's Green Building Code (i.e., regional sourcing of building materials, higher solar reflectivity metal wall panels, or reflective roof materials).

Energy service to the project site would be provided to meet the needs of the proposed project as required by the California Public Utilities Code, which obligates electric utility providers to provide service to existing and potential customers. With access to Arch Road, the proposed project is also intended to minimize energy consumption from mobile sources by locating the

proposed project (and its associated warehousing/industrial uses) near close proximity to a variety of transportation systems (including the BNSF line, Stockton Municipal Airport, State Route 99, etc.) intended to efficiently provide access to and serve the proposed project.

Since the proposed project would comply with Title 24 conservation standards, implement additional energy consumption features (consistent with City Green Building Standards), and have access to existing utility systems, the proposed project would not directly require the construction of new energy generation or supply facilities, or result in wasteful, inefficient, or unnecessary consumption of energy. Consequently, the impact would be ***less than significant***.

Mitigation Measures

None required.

3.12.4 References

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3.13 Traffic and Circulation

3.13.1 Introduction

This section of the EIR describes the transportation and circulation conditions in the area surrounding the project site and identifies transportation impacts associated with development of the project. The analysis focuses on potential impacts to off-site intersections and freeway segments, as well as internal site circulation. Significant impacts are identified and, if necessary, mitigation measures are recommended to reduce or avoid impacts. Three traffic scenarios are analyzed, with project traffic added to each scenario to evaluate the effects: Existing conditions, Near-Term conditions, and General Plan build-out. This section relies on the Traffic Impact Analysis (TIA) prepared by Fehr & Peers (February 2013) in consultation with the City of Stockton traffic engineering staff, San Joaquin County, the San Joaquin Council of Governments, and Caltrans. The TIA and all supporting data are included in **Appendix E**.

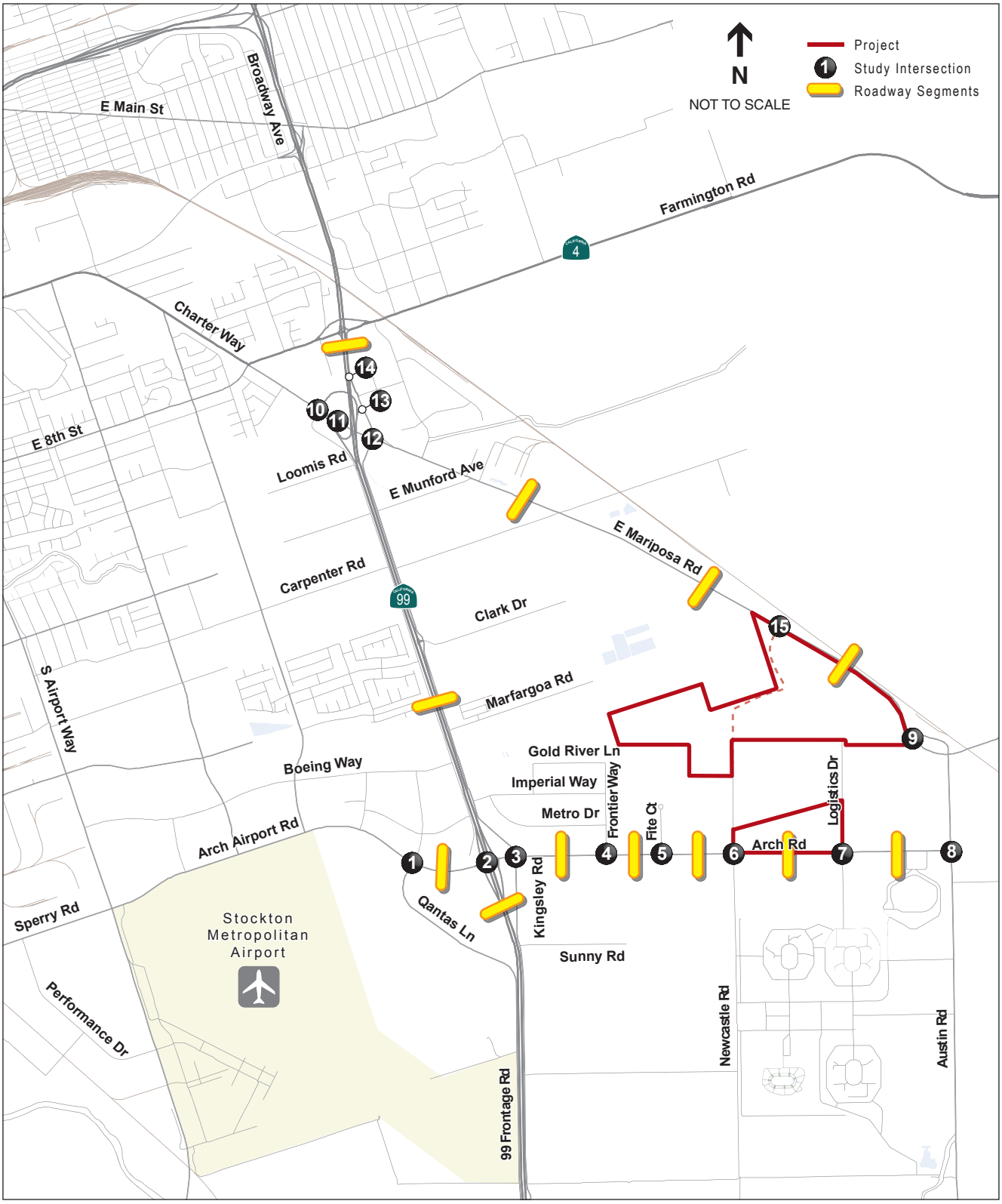
3.13.2 Setting

As described in Chapter 2.0, Project Description, the 325± acre project site is located north of Arch Road and south of Mariposa Road in Stockton, California. The currently vacant project site is zoned for industrial use and is proposed to be developed with light industrial/warehousing uses. Regional access to the site would be provided from the Arch Road and Mariposa Road interchanges with State Route 99. Site access is proposed from Arch Road and Mariposa Road. The site location and major roadways near the project site are illustrated on **Figure 3.13-1**, while the proposed parcel layout and access (per the vesting tentative map application) are shown on **Figure 2-3 and 2-4** (Project Description).

Existing Roadway System

Regional vehicular access to the project site is provided from the Arch Road and Mariposa Road interchanges with State Route 99 (SR 99). Site access would be provided from Newcastle Road, which will ultimately be extended through the project site connecting Mariposa Road and Arch Road, and from Logistics Drive. The existing lane configurations and traffic control at the study intersections are presented on **Figure 3.13-2**.

State Route 99 (SR 99) is a north-south freeway that traverses the central valley of California. It originates south of Bakersfield, branching off of I-5 and continues north to Sacramento, where it reconnects with I-5. SR 99 runs through the eastern portion of the City of Stockton, west of the project site. Two to three mixed-flow lanes are provided in each direction on SR 99 in the vicinity of the project site. According to information from Caltrans, daily volumes on SR 99 in the vicinity of the project site are approximately 78,000 vehicles.



SOURCE: FEHR & PEERS, 2013; and ESA, 2013

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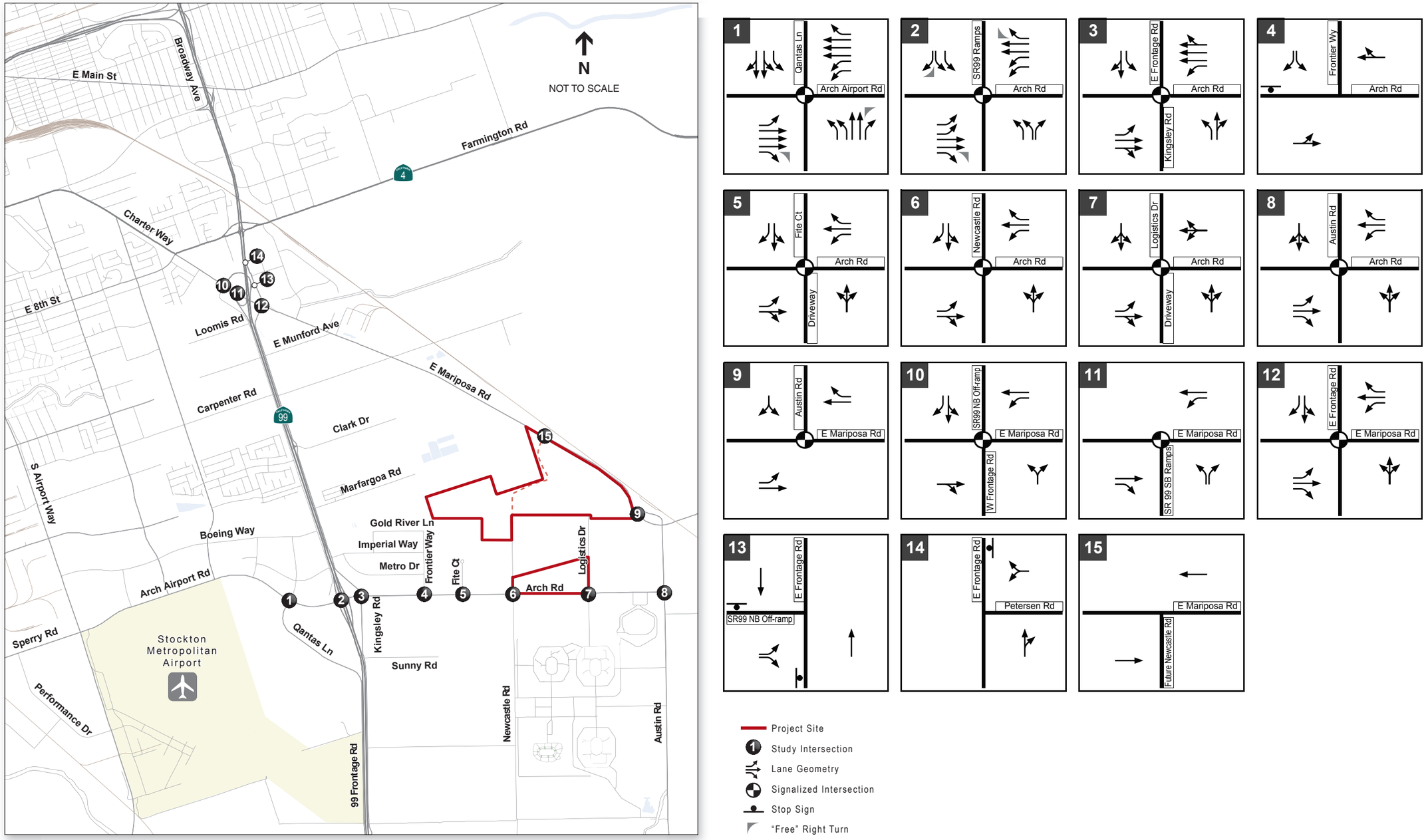
Figure 3.13-1
Project Study Area



SOURCE: FEHR & PEERS, 2013; and ESA, 2013

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Figure 3.13-2
Existing Lane Configurations

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Sperry Road/Arch-Airport Road/Arch Road is an east-west roadway, stretching from McKinley Avenue in the west and extending east to SR 99, where it becomes Arch Road. In the study area, Arch Road is generally a two-lane roadway with a posted speed limit of 45 miles per hour. A second westbound travel lane is provided for a short roadway segment west of Newcastle Drive. Additional lanes are also provided around the SR 99 interchange. Arch Road is currently undergoing improvements with some segments widened to provide additional travel capacity, although not yet striped to accommodate additional traffic. A sidewalk was recently installed on the north side of the street from Logistics Drive to approximately 100 feet east of Fite Court. There are no bicycle facilities on Arch-Airport Road/Arch Road in the project study area.

Qantas Lane is a north-south roadway that begins at Boeing Way to the north. South of Arch-Airport Road, Qantas Lane turns into the southbound West Frontage Road running alongside SR 99. North of Arch-Airport Road, Qantas Lane is a two-lane roadway, while four travel lanes are provided south of Arch- Airport Road. Limited pedestrian facilities and no bicycle facilities are provided along Qantas Lane within the project study area.

SR 99 East Frontage Road runs parallel to and east of SR 99. The facility ends at Petersen Road, where it merges with northbound SR 99. South of Arch Road, the Frontage Road becomes Kingsley Road and merges with northbound SR 99 before reaching French Camp Road. The SR 99 East Frontage Road is a two-lane roadway with limited pedestrian facilities and no bicycle facilities in the project study area.

Frontier Way is a north-south roadway that runs north from Arch Road, curves west to become Gold River Lane, and then curves south to become Arkansas Place before intersecting with Imperial Way. This is a two-lane roadway with a center two-way left-turn lane providing access to industrial and warehouse uses. On-street parking is permitted on both sides of the street. There are limited pedestrian facilities and no bicycle facilities on Frontier Way.

Fite Court is a north-south cul-de-sac extending north from Arch Road and providing access to existing industrial developments. This is a two-lane roadway with limited pedestrian facilities. No pedestrian or bicycle facilities are provided at the intersection with Arch Road.

Newcastle Road is a north-south roadway that extends south from Arch Road, and ends before reaching a riverbed roughly halfway between Arch Road and French Camp Road. Construction of a north leg of Newcastle Road from Arch Road has been completed, with a new signal installed and operating at the Newcastle Road/Arch Road intersection. South of Arch Road, the two-lane roadway has a posted speed limit of 45 miles-per-hour. North of Arch Road, sidewalks are provided in addition to curb and gutter. A center two-way left-turn lane is also provided to facilitate access to adjacent parcels. A crosswalk and pedestrian signals with pedestrian push buttons and pedestrian countdown signal heads have been installed along the southbound leg of the intersection with Arch Road. There are no bicycle facilities on Newcastle Road. No parking is permitted on Newcastle Road.

Logistics Drive is a north-south roadway extending north from Arch Road to provide access to industrial parcels. The two-lane roadway is approximately ½-mile long with a two-way center

left-turn lane provided along much of its length. Sidewalks are provided on both sides of Logistics Drive for its entire length.

Austin Road is a north-south roadway that extends south from Mariposa Road, and passes through Manteca before terminating at Caswell Memorial State Park. Within the project study area, Austin Road is a two-lane roadway with no pedestrian or bicycle facilities.

Mariposa Road is an east-west roadway connecting E. Charter Way in south Stockton with Escalon Bellota Road in the east. In the study area, Mariposa Road is a two-lane roadway with a 45 mph posted speed limit. Mariposa Road runs roughly parallel to a railroad track with a grade-separated railroad crossing located just east of the intersection with Austin Road. Limited pedestrian and no bicycle facilities are provided along the roadway within the study area.

Level of Service Criteria

The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the best operating conditions, to LOS F, with the worst operating conditions. LOS E represents "at-capacity" operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions. Level of service D is the limit of acceptable operations in the City of Stockton, except where Level of Service exceptions have been identified in the General Plan. The City of Stockton Transportation Impact Study Guidelines specifies the use of the analysis methods outlined in the 2000 *Highway Capacity Manual* (HCM), Transportation Research Board. Although the Transportation Research Board has recently published the 2010 HCM, the City of Stockton has not yet adopted the analysis procedures prescribed in the 2010 HCM.

Signalized Intersection Analysis

The level of service method approved by the City of Stockton analyzes a signalized intersection's operation based on average control vehicular delay, as calculated using the method described in Chapter 16 of the *2000 Highway Capacity Manual* (*HCM*) by the Transportation Research Board. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections was calculated and is correlated to a LOS designation as shown in **Table 3.13-1**. Operations of the closely-spaced signalized interchange ramp terminal intersections on Arch Road and Mariposa Road were evaluated using the Synchro 7.0 software programs; all other intersection operations were analyzed using the TRAFFIX 8.0 traffic analysis software program, as required by the City of Stockton Transportation Analysis Guidelines (July 2003).

TABLE 3.13-1
LEVEL OF SERVICE DEFINITIONS SIGNALIZED INTERSECTIONS

Level of Service	Description	Average Control Delay (Seconds/Vehicle)
A	Very low delay. Most vehicles do not stop.	≤ 10.0
B	Slight delay. Generally good signal progression.	10.1 – 20.0
C	Increased number of stopped vehicles. Fair signal progression.	20.1 - 35.0
D	Noticeable congestion. Large proportion of vehicles stopped.	35.1 – 55.0
E	Operating conditions at or near capacity. Frequent cycle failure.	55.1 - 80.0
F	Oversaturation. Forced or breakdown flow. Extensive queuing.	> 80.0

SOURCE: Highway Capacity Manual (Transportation Research Board, 2000).

Unsignalized Intersection Analysis

Operations of the unsignalized intersections were evaluated using the method contained in Chapter 17 of the 2000 *Highway Capacity Manual*. The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (**Table 3.13-2**). At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left-turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. For all-way stop controlled locations, LOS is computed for the intersection as a whole.

TABLE 3.13-2
LEVEL OF SERVICE DEFINITIONS UNSIGNALIZED INTERSECTIONS

Level of Service	Description	Average Control Delay (Seconds/Vehicle)
A	Little or no conflicting traffic for minor movements.	< 10.0
B	Drivers on minor movements begin to notice absence of available gaps.	10.1 – 15.0
C	Drivers on minor movements begin to experience delays waiting for adequate gaps.	15.1 – 25.0
D	Queuing occurs on minor movements due to a reduction in available gaps.	25.1 – 35.0
E	Extensive minor movement queuing due to insufficient gaps.	35.1 – 50.0
F	Insufficient gaps of adequate size to allow minor movement traffic demand to be accommodated.	> 50.0

SOURCE: Highway Capacity Manual (Transportation Research Board, 2000).

Freeway Mainline Analysis

For the freeway mainline segments, LOS was calculated using the 2000 *HCM* method. This method takes into consideration peak hour traffic volumes, free-flow speeds, percentage of heavy vehicles, and number of travel lanes. These factors are used to determine the vehicle density, measured in passenger cars per mile per lane. **Table 3.13-3** summarizes the relationship between vehicle density and LOS for mainline freeway segments.

TABLE 3.13-3
LEVEL OF SERVICE (LOS) CRITERIA FOR FREEWAY MAINLINE

Level of Service	Description	Density Range (pc/mi/ln)
A	Free-flow operations in which vehicles are relatively unimpeded in their ability to maneuver within the traffic stream. Effects of incidents are easily absorbed.	0 to 11
B	Relative free-flow operations in which vehicle maneuvers within the traffic stream are slightly restricted. Effects of minor incidents are easily absorbed.	> 11 to 18
C	Travel is still at relative free-flow speeds, but freedom to maneuver within the traffic stream is noticeably restricted. Minor incidents may be absorbed, but local deterioration in service will be substantial. Queues begin to form behind significant blockages.	> 18 to 26
D	Speeds begin to decline slightly and flows and densities begin to increase more quickly. Freedom to maneuver is noticeably limited. Minor incidents can be expected to create queuing as the traffic stream has little space to absorb disruptions.	> 26 to 35
E	Operation at capacity. Vehicles are closely spaced with little room to maneuver. Any disruption in the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow. Any incident can be expected to produce a serious disruption in traffic flow and extensive queuing.	> 35 to 45
F	Breakdown in vehicle flow.	> 45

PC/MI/LN = passenger cars per mile per lane.
SOURCE: Highway Capacity Manual (Transportation Research Board 2000).

Freeway Interchange Merge/Diverge

Freeway ramp merging and diverging operations were analyzed using the 2000 *HCM* Method. This method correlates the LOS ratings to projected (computed) vehicle densities (passenger cars per mile per lane). **Table 3.14-4** summarizes the relationship between vehicular density and LOS for freeway ramps.

TABLE 3.13-4
FREEWAY RAMP MERGE/DIVERGE LOS CRITERIA

Level of Service	Density
A	≤10
B	10.1 to 20.0
C	20.1 to 28.0
D	28.1 to 35.0
E	> 35.1
F	Demand Exceeds Capacity

SOURCE: Highway Capacity Manual (Transportation Research Board, 2000).

Roadway Segment Analysis

Roadway segment service levels were calculated by comparing the daily roadway volumes to the LOS thresholds developed as part of the Background Report for the City of Stockton General Plan Update (Fehr & Peers, 2004), as provided in **Table 3.15-5**.

TABLE 3.13-5
DAILY ROADWAY SEGMENT LOS THRESHOLDS

Number of Lanes	Facility Type	LOS A	LOS B	LOS C	LOS D	LOS E
2	Arterial	10,000	11,100	14,000	17,500	20,600
4	Arterial	23,300	25,800	32,600	40,700	47,900
6	Arterial	33,000	37,000	46,600	58,300	68,600
8	Arterial	41,100	45,700	57,600	72,000	84,700
4	Freeway	27,600	45,200	63,600	77,400	86,400
6	Freeway	41,400	67,800	95,400	116,100	129,600
8	Freeway	55,200	90,400	127,200	154,800	172,800
10	Freeway	69,000	113,000	159,000	193,500	216,000
12	Freeway	82,800	135,600	190,800	232,200	259,200

Roadway segment level of service thresholds reflects new roadway standards.
SOURCE: Background Report for the *City of Stockton General Plan Update*, Fehr & Peers, 2004.

Existing Traffic Volumes

Weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period intersection turning movement counts were conducted at the study intersections on clear days with area schools in normal session. For each intersection, the highest hourly traffic volume during the two count periods was identified. The existing peak hour volumes are shown in **Figure 3.13-3**. Classification counts were also conducted at all the study intersections to determine the percentage of total traffic comprised of heavy trucks in the area. The existing traffic counts are provided in Appendix A of the TIA (see Appendix E of this Draft EIR).

Trucks behave differently than passenger vehicles because they take longer to accelerate, decelerate, and negotiate turns and therefore affect intersection operations. The existing truck percentages were used in the analysis of intersection operations. In addition to truck percentages, peak hour factors1 were used to account for the variation in traffic volumes during the peak hour. Peak hour factors based on the existing traffic counts were used for all study intersections, with a minimum peak hour factor of 0.85 used in the analysis.

Existing Intersections Level of Service

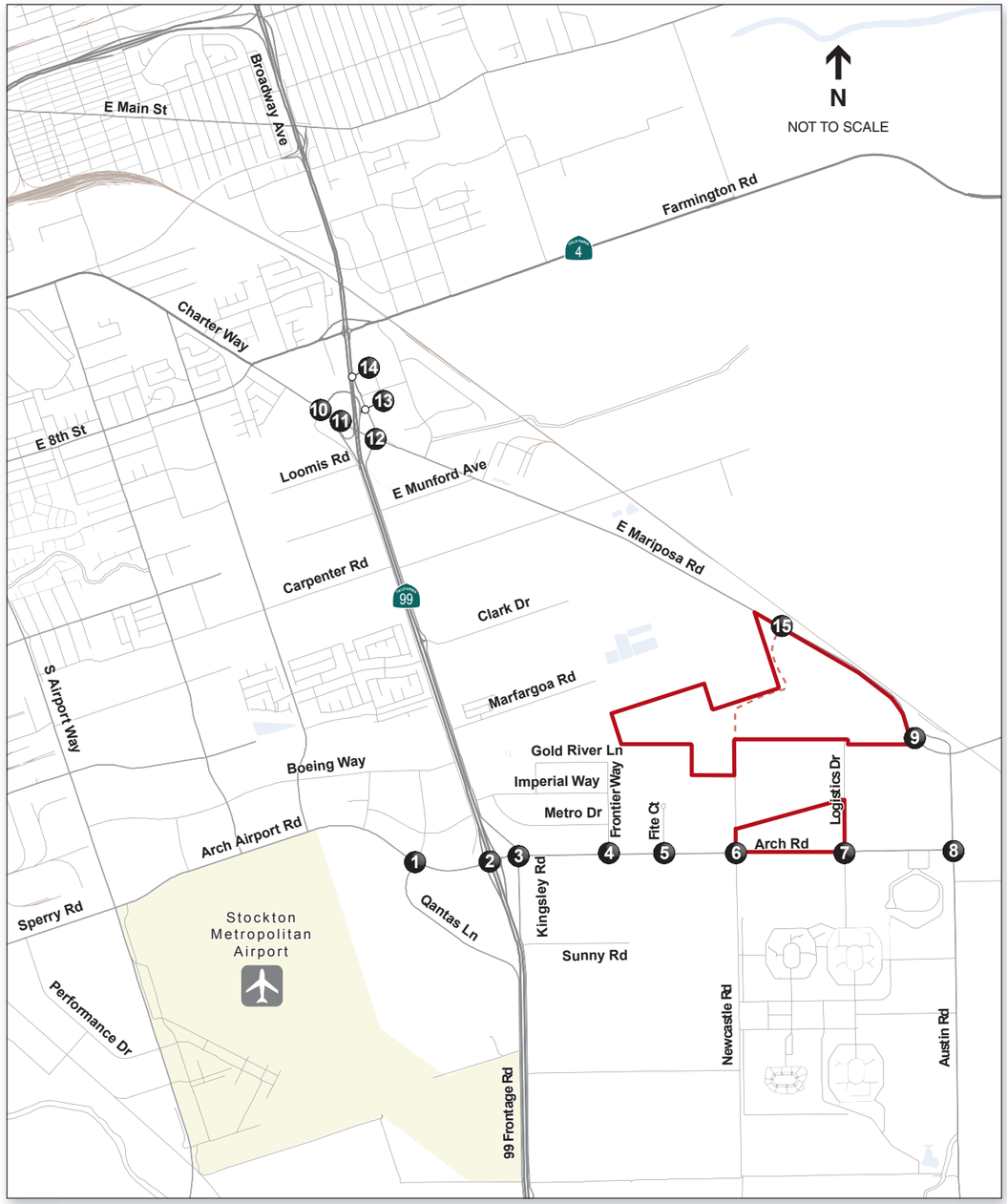
Existing intersection lane configurations and traffic control, signal timings, peak-hour turning movement volumes, truck percentages, and peak-hour factors were used as inputs for the level of service (LOS) calculations. The results of the LOS analysis for Existing Conditions are presented in **Table 3.13-6**.

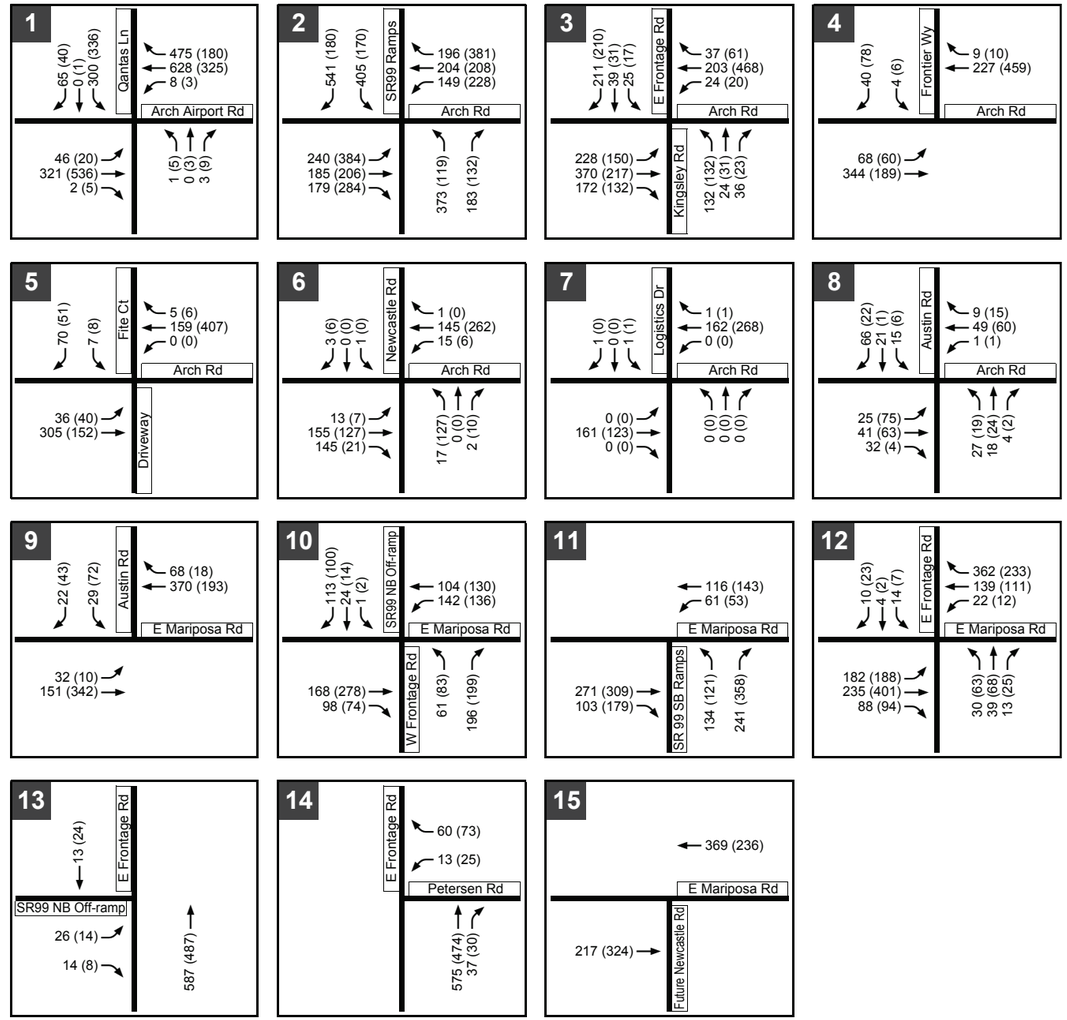
TABLE 3.13-6
INTERSECTION LEVEL OF SERVICE EXISTING CONDITIONS

Intersection	Control Type[1]	Peak Hour	Delay[2,3]	LOS[4]
1. Arch-Airport Road/Qantas Lane	Signal	AM PM	23 21	C C
2. Arch-Airport Road/ SR99	Signal	AM PM	12 10	B A
3. Arch Road/Frontage Road	Signal	AM PM	27 28	C C
4. Arch Road/Frontier Way	SSSC	AM PM	2 (12) 2 (14)	A (B) A (B)
5. Arch Road/Fite Court	Signal	AM PM	13 10	B A
6. Arch Road/Newcastle Road	Signal	AM PM	9 21	A C
7. Arch Road/Logistics Drive	Signal	AM PM	3 3	A A
8. Arch Road/Austin Road	Signal	AM PM	21 21	C C
9. Austin Road/Mariposa Road	Signal	AM PM	9 14	A B
10. SR99 NB Off-Ramp/Mariposa Road/SR99 West Frontage Road/SR99 SB On-Ramp	Signal	AM PM	34 32	C C
11. SR99 SB Ramps/Mariposa Road	Signal	AM PM	22 21	C C
12. SR99 East Frontage Road/Mariposa Road	Signal	AM PM	23 24	C C
13. SR99 NB Mariposa Off-Ramp/SR99 East Frontage Road	SSSC	AM PM	1 (13) 1 (11)	A (B) A (B)
14. SR99 East Frontage Road/Peterson Road	SSSC	AM PM	2 (16) 2 (13)	A (C) A (B)

1 Signal = Signalized Intersection, SSSC = Side-Street Stop-Controlled.
2 Average control delay (seconds/vehicle).
3 SSSC intersection delay: intersection average and (worst approach) control delay per vehicle.
4 LOS = Level of service. SSSC intersection shows average and (worst) LOS.
* Shading denotes an unacceptable level of service.

Measured against the City of Stockton level of service standards, which is LOS D, the signalized study intersections operate within an acceptable range. Existing intersection operations are also within the standards set in the CMP. The unsignalized intersections also operate at overall LOS C or better. Peak hour signal warrants were also reviewed for the unsignalized intersections and the peak-hour warrants are not satisfied at the existing unsignalized intersections. LOS calculation sheets also present estimates of 95th percentile vehicle queues. The results were reviewed for the ramp terminal and adjacent intersections and the existing queues do not exceed the storage lengths of the existing turn pockets. Appendix C of the Traffic Impact Analysis (see Appendix E of this Draft EIR) contains the Signal Warrant Worksheets.





Project Site

1 Study Intersection

XX(YY) AM (PM) Peak Hour Traffic Volumes

SOURCE: FEHR & PEERS, 2013; and ESA, 2013

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Figure 3.13-3

Existing Intersection Volumes

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Freeway Mainline Operations

The SR 99 freeway mainline segments from north of Mariposa Road to south of Arch Road were analyzed based on the peak hour volumes shown in **Table 3.13-7** and the LOS criteria shown in **Table 3.13-3**. The analysis results indicate that northbound SR 99, north of Mariposa Road, operates at LOS E during the AM peak hour, and southbound SR 99 from north of Mariposa Road to south of Arch Road operates at LOS E during the PM peak hour, which exceeds the standards set by Caltrans and SJCOG. Detailed calculations are provided in Appendix E of the Traffic Impact Analysis (included in Appendix E of this Draft EIR).

TABLE 3.13-7
EXISTING PEAK HOUR FREEWAY MAINLINE ANALYSIS

Segment	Direction of Travel	AM Peak Hour			PM Peak Hour		
		Volume	Density	LOS	Volume	Density	LOS
SR99 south of Arch Road	Northbound	3,380	31.8	D	2,340	20.9	C
SR99 between Arch Road and Mariposa Road	Northbound	3,260	30.2	D	2,850	25.7	C
SR99 north of Mariposa Road	Northbound	3,720	**37.4**	**E**	3,260	30.2	D
North of Mariposa Road	Southbound	2,690	24.1	C	3,940	**42.3**	**E**
SR99 between Arch Road and Mariposa Road	Southbound	2,480	22.2	C	3,690	**36.8**	**E**
SR99 south of Arch Road	Southbound	1,860	16.7	B	3,850	**40.2**	**E**

BOLD indicates level of service standard exceeded. Traffic volumes from Caltrans.
1 Density measured in passenger cars per mile per lane.
2 Mainline segment level of service based on vehicle density, according to the *Highway Capacity Manual* (Transportation Research Board 2000).

SOURCE: Fehr & Peers, 2013.

Freeway Ramp Operations

Ramp merge and diverge operations were evaluated for the SR 99/Arch-Airport Road and SR 99/Mariposa Road interchanges. As summarized in **Table 3.13-8**, the on-ramp at Arch-Airport Road to southbound SR 99 operates at LOS E during the evening peak hour. At the Mariposa Road interchange, the northbound onramp operates at LOS E during the AM peak hour and the southbound off-ramp operates at LOS E during the evening peak hour. The LOS E operations exceed the standards set by Caltrans and SJCOG. The remaining merge/diverge areas operate at LOS D or better during peak hours.

TABLE 3.13-8
EXISTING PEAK HOUR FREEWAY RAMP ANALYSIS

Ramp	Peak Hour	Density[1]	LOS[2]
SR99 at Arch-Airport Road Northbound Off-Ramp	AM PM	31.2 23.8	D C
SR99 at Arch-Airport Road Northbound On-Ramp	AM PM	20.9 16.6	C B
SR99 at Arch-Airport Road Southbound Off-Ramp	AM PM	13.6 20.7	B C
SR99 at Arch-Airport Road Southbound On-Ramp	AM PM	18.4 **36.1**	B **E**
SR99 at Mariposa Road Northbound Off-Ramp	AM PM	33.3 29.6	D D
SR99 at Mariposa Road Northbound On-Ramp	AM PM	**35.2** 31.0	**E** D
SR99 at Mariposa Road Southbound Off-Ramp	AM PM	23.9 **35.3**	C **E**
SR99 at Mariposa Road Southbound On-Ramp	AM PM	23.5 34.5	C D

Bold indicates level of service standard exceeded.
1 Density measured in passenger cars per mile per lane.
2 Ramp merge and diverge area LOS based on vehicle density, according to the Highway Capacity Manual (TRB, 2000).
SOURCE: Fehr & Peers, 2013.

Bicycle, Pedestrian and Transit

Bicycle and pedestrian facilities can be classified into several general types, including:

- **Class I Bicycle Paths** – These facilities are located off-street and can serve both bicyclists and pedestrians. Recreational trails can be considered Class I facilities. Class I paths are typically 8 to 10 feet wide, excluding shoulders, and are generally paved.
- **Class II Bicycle Lanes** – These facilities provide a dedicated area for bicyclists within the paved street width through the use of striping and appropriate signage. These facilities are typically 4 to 6 feet wide.
- **Class III Bicycle Routes** – These facilities are found along streets that do not provide sufficient width for dedicated bicycle lanes. In such cases, the street is designated as a bicycle path through the use of signage informing drivers of bicyclists.
- **Sidewalks** – The exclusive realm of pedestrians, sidewalks provide pedestrian access and circulation. Sidewalks can vary in width from 5 to 20 feet; wider sidewalks are typically found in heavily urbanized and downtown areas.

Within the study area, limited pedestrian facilities are provided along Arch Road, Frontage Road, Frontier Way, Newcastle Road, and Mariposa Road. Crosswalks are provided at some of the intersections within the study area, such as at Newcastle Road/Arch Road. Some of the signalized intersections are not equipped with pedestrian signal heads and call buttons, such as at Qantas Lane/Arch Road. Sidewalks are provided at various intervals along Arch Road. There are no existing bicycle facilities in the study area.

Limited transit service is provided in the study area, with the closest transit stop approximately 2 miles from the project site at the Qantas Lane/Arch-Airport Road intersection. San Joaquin RTD lines 85 and 390, with service to Downtown Stockton and locations in between, serve this stop. The stop is marked by a sign, however there are no pedestrian or bicycle facilities at the stop location.

Regulatory Setting

Local

The City of Stockton 2035 General Plan sets forth goals and policies to guide development within the City, including policies regarding the operation of the road system. The following goals and policies provide relevant guidance with respect to this analysis:

Goal TC-1 To develop an integrated transportation system that provides for the safe and efficient movement of people and goods.

Policy TC-1.2 Integrated Transportation System. The City shall continue to work cooperatively with the various local, State, and Federal transportation agencies (i.e., San Joaquin County, SJCOG, Caltrans, San Joaquin Regional Transit District, the Altamont Commuter Express, and Amtrak) to maintain a multimodal transportation system that is well-integrated and interconnected in terms of service, scheduling, and capacity, and that effectively accommodates planned land uses and related transportation needs, and that promotes the safe movement of people and goods and the efficient use of limited public resources.

Policy TC-1.3 Multi-Modal Network. The City shall work with its transportation partners to create and maintain a transportation system as a multi-modal network design to effectively accommodate planned land uses and related transportation needs.

Policy TC-1.4 Transportation Improvement Financing. The City shall continue to utilize the City's capital improvement program, developer dedications and the City's public facilities fees and other mechanisms to finance transportation needs and improvements.

Policy TC-1.7 Road Improvements. Land use planning and transportation decisions shall be correlated so that planned land uses are supported by the appropriate types of circulation service, levels of service, and the timing of transportation improvements. Wherever practicable, road improvements shall complement regional needs and initiatives. The City's highest priority for road improvement funding shall be regional and local roads servicing infill development, existing community areas, and other areas shown on the General Plan for urban development, which are designed to achieve the City's regional housing allocation and affordable housing goals.

Policy TC-1.8 Improvement of Existing Roadways. The City shall prioritize improvements to the roadway system, ensuring that allocation of funding for transportation, maintenance and improvement projects serving anticipated growth areas as specified by applicable environmental documents.

Policy TC-1.9 Demand Reduction and Capacity Expansion. Strategies to reduce vehicle demand on City roadways shall be given consideration in conjunction with planned vehicle capacity expansion projects where they are demonstrated to achieve the same or similar outcome. The City shall plan and consider financial assistance for Bus Rapid Transit and other non-auto related circulation systems as a way to address peak hour congestion within the City. The City shall ensure that all planned arterial and regional road capacity projects (including lane widening) are justified based on environmental documentation in compliance with CEQA and cost efficiency.

Policy TC-1.10 Provision of Transportation Infrastructure and Cost Sharing. All new development projects shall be required to pay their fair share of the cost of constructing needed transportation and transit facilities, and contributing to ongoing operations and services. This shall include costs associated with mitigating new development impacts on the capacity of existing transportation facilities and services. All essential facilities and services will be installed prior to or concurrent with such new development or phased as specified in the applicable environmental documents. This requirement shall be made a condition of project approval.

Goal TC-2 To develop a street and highway system that promotes safe, efficient and reliable movement of people and goods by multiple transportation modes and routes, and that reduces air quality impacts.

Policy TC-2.1 Level-of-Service Standards. To assist in ensuring efficient traffic operating conditions, evaluating the effects of new development, determining mitigation measures and impact fees, and developing capital improvement programs, the City shall require that Level of Service (LOS) D or better be maintained for both daily and peak hour conditions.

Policy TC-2.3 Roadway Standards. The City shall require City-maintained streets and roads to be designed and constructed according to the standards set out in this General Plan and City of Stockton Standard Plans and Specifications.

Policy TC-2.4 Dual Access. The City shall require at least two (2) independent access routes for all major development areas.

Policy TC-2.5 Multiple Transportation Modes. The City shall require that significant trip-generating land uses be served by roadways and transit connections adequate to provide efficient access by multiple transportation modes with a minimum of delay.

Policy TC-2.10 Freeway Interchanges. The City shall seek to improve freeway interchanges along State Route 99, State Route 4, and Interstate 5 to current design standards as required by the traffic demands of new development, within funding constraints.

Policy TC-2.13 Environmental Impacts of Roadway Projects. The City shall ensure that construction of new roadways and expansion of existing streets mitigates impacts on air quality, noise, historic resources, sensitive biological areas, and other resources.

Policy TC-2.14 Roadway Dedications. The City shall require right-of-way dedications for major public streets and highways, highway interchanges, and other major roadway improvements (i.e., arterial and collector streets and related bridges or railroad crossings) at the initial stage of development.

Policy TC-2. 20 Parking Supply. The City shall require a sufficient supply of off-street parking for all land uses in order to reduce congestion, improve overall operation, and ensure land use compatibility.

Policy TC-2.21 Shared Parking. To minimize land consumption and paving, the City shall promote shared parking among land uses whose demand for parking peaks at different times.

3.13.3 Impacts and Mitigation Measures

Significance Criteria

This section outlines the significance criteria used in this analysis relating to roadway system impacts. The criteria are based on California Environmental Quality Act (CEQA) guidelines, City of Stockton Guidelines (City of Stockton Transportation Impact Analysis Guidelines, July 30, 2003), and guidance from Caltrans and SJCOG.

City of Stockton Facilities

The following thresholds of significance have been developed and used in the City of Stockton for transportation impact studies. Conditions without and with the project are compared to identify significant impacts to City of Stockton facilities according to the following criteria:

A. Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

   a. If a signalized intersection is projected to operate acceptably (i.e., LOS D or better with an average control delay of equal to or less than 55 seconds per vehicle) without the project and the project is expected to cause the facility to operate at an unacceptable LOS (LOS E or F), the impact is considered significant.

b. If an intersection is projected to operate unacceptably (i.e., LOS E or F) without the project, and the project is expected to increase the average control delay by more than 5 seconds, the impact is considered significant.

c. If an intersection is projected to operate at an unacceptable LOS E without the project and the project is expected to cause the facility to operate at an unacceptable LOS F, but the average control delay does not increase by more than 5 seconds, City staff would determine whether the project has a significant impact.

d. If the operations of an unsignalized study intersection is projected to decline from acceptable to unacceptable with the addition of project traffic, and if the installation of a traffic signal based on the *Manual on Uniform Traffic Control Devices* (MUTCD) Peak Hour Signal Warrant (Warrant 3) would be warranted, the impact is considered significant;

B. Would the project conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads and highways;

C. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks;

D. Would the project substantially increase traffic hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment);

E. Would the project result in inadequate emergency access; or

F. Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

As the project would not result in a change in air traffic patterns, this effect is not addressed in this section. Consistency with the airport land use compatibility plan, and associated safety hazards, is addressed in Section 3.10, Land Use, of the DEIR.

Caltrans Facilities

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway facilities (*Guide for the Preparation of Traffic Studies*, Caltrans, December 2002); however, Caltrans recognizes that achieving LOS C/LOS D may not always be feasible. Consistent with the City of Stockton level of service policy for the intersections in the study area, a standard of LOS D or better on a peak hour basis was used as the planning objective for the evaluation of potential freeway impacts of this development. The following criteria were used to evaluate potential freeway impacts:

- If a Caltrans facility (ramp terminal intersection, freeway mainline, ramp merge/diverge area) is projected to operate acceptably (i.e., LOS D or better) without project and the project is expected to cause the facility to operate at an unacceptable service level (i.e., LOS E or worse), the impact is considered significant.
- If a Caltrans facility is projected to operate unacceptably (i.e., LOS E or worse) without project and the project is expected to increase delay or density, the impact is considered significant.

San Joaquin Council of Governments

San Joaquin Council of Governments (SJCOG) is the designated Congestion Management Agency (CMA) for San Joaquin County. As such, they are required to maintain the state-mandated Regional Congestion Management Program (RCMP) for roadways within the County. Within the study area for this Project, Arch Road west of SR 99, Mariposa Road and SR 99 are designated RCMP facilities. Study intersections that are also RCMP facilities include:

- Arch-Airport Road/State Route (SR) 99
- SR 99 NB Off-Ramp/Mariposa Road/SR 99 West Frontage Road/SR 99 SB On-Ramp
- SR 99 Southbound Ramps/Mariposa Road
- SR 99 East Frontage Road/Mariposa Road
- SR 99 NB Mariposa Off-Ramp/SR 99 East Frontage Road

Similar to the City of Stockton, the LOS standard for RCMP facilities has been set at LOS D. However, there are exceptions for facilities that currently operate at LOS E or F.

Methodology

Because of the large size and unique nature of modern light industrial/warehousing uses, care must be taken in determining appropriate trip generation rates that reflect current local conditions to the greatest extent possible. Fehr & Peers reviewed several sources of trip generation information for light industrial and warehousing land uses. Sources include the Institute of Transportation Engineers' (ITE) *Trip Generation*, 8th Edition (2008), the *Inland Empire Study* produced at the request of San Bernardino Associated Governments (SANBAG) in 2005, and the *Truck Trip Generation Study* for the City of Fontana, County of San Bernardino and the State of California in 1992 and 2003. Fehr & Peers also conducted a study of the trip generating characteristics of industrial uses in Stockton in September 2007. For that study, Fehr & Peers surveyed over 4,500,000 square-feet of industrial uses in the south Stockton area.

Trip generation rates for light industrial and warehouse/distribution centers range widely. The rates contained in ITE's *Trip Generation* reflect average results for a series of data collection exercises at various locations throughout the United States over the last four decades, and may not reflect recent advances in the logistics industry which dictate the operation of many warehouse/distribution facilities. Recent data collection efforts from Southern California reflect warehouse distribution centers that generate significantly fewer peak hour trips than the centers included in ITE's *Trip Generation*.

Industrial trip generation rates from the City of Stockton's travel demand model fall between those from ITE and the Southern California surveys, and are consistent with the findings of the City of Stockton industrial trip generation study.

In consultation with city staff, it was determined that the City of Stockton Trip Generation Study provided the best source of current local information on the trip-generating characteristics of land

uses similar to those in the proposed Project. The Stockton trip generation study rates were applied to the potential development area of the project to calculate daily and peak hour driveway volumes for the proposed industrial uses. These rates are within the mid-range of other documented rates, have been validated by a Stockton-specific trip generation study, and are reflective of the same type of uses being proposed. As summarized in **Table 3.13-9**, the proposed project is expected to generate approximately 21,500 daily trips, including 1,130 AM and 1,380 PM peak hour trips.

TABLE 3.13-9
PROJECT TRIP GENERATION

			"Net New" Trips					
			AM Peak Hour			PM Peak Hour		
Land Use	Size (Square Feet)	Daily Trips	In	Out	Total	In	Out	Total
Light Industrial	6,280,481	21,500	690	439	1,129	502	879	1,382

SOURCE: Fehr & Peers 2013.

Trip Distribution

Estimates of project trip distribution were developed based on the City of Stockton traffic model for both Near-term and General Plan Build-out scenarios, existing traffic volumes at the study intersections, and the location of complementary land uses. The trips generated by the project were assigned to the roadway system based on the directions of approach and departure analyzed in the TIA (Section 3.3), included as Draft EIR Appendix E. The resulting project trip assignments (peak-hour) for both the existing and near-term scenarios are shown in **Figure 3.13-4** project trip distribution.

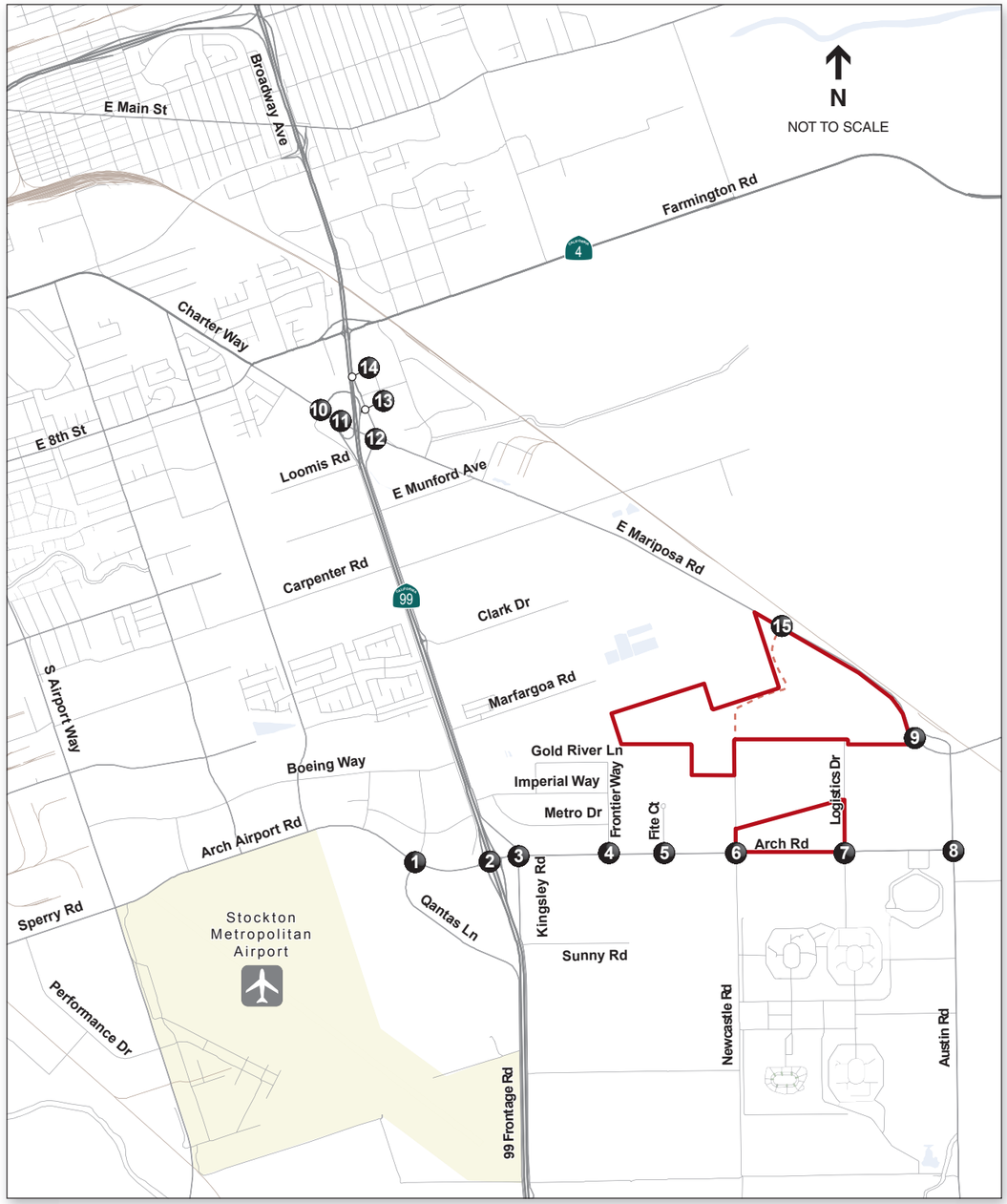
Existing Plus Project Analysis

The project traffic volumes (Figure 3.13-4) were added to the existing peak hour traffic volumes (Figure 3.13.-3) to estimate the Existing Plus Project peak hour traffic volumes, as shown in **Figure 3.13-5**. No roadway improvements were assumed, except for the new roadway connection to Mariposa Road that would be constructed as part of the project.

Intersection Operations

Level of service calculations were conducted for the study intersections to evaluate their operations under Existing Plus Project conditions using the methods described above. No adjustments were made to the peak hour factors or heavy vehicle percentages for the analysis of Existing Plus Project conditions. The results of the LOS analysis are presented in **Table 3.13-10**.

The intersection of Arch Road/Newcastle Road is projected to degrade to LOS E with the addition of project traffic in the Existing condition. The remaining study intersections are expected to continue operating within level of service standards set by the City of Stockton, Caltrans and SJCOG (for RCMP intersections). The LOS calculation worksheets are in Appendix B of the TIA. Peak hour signal warrants would not be satisfied at the unsignalized study intersections with the addition of project traffic.



Project Site

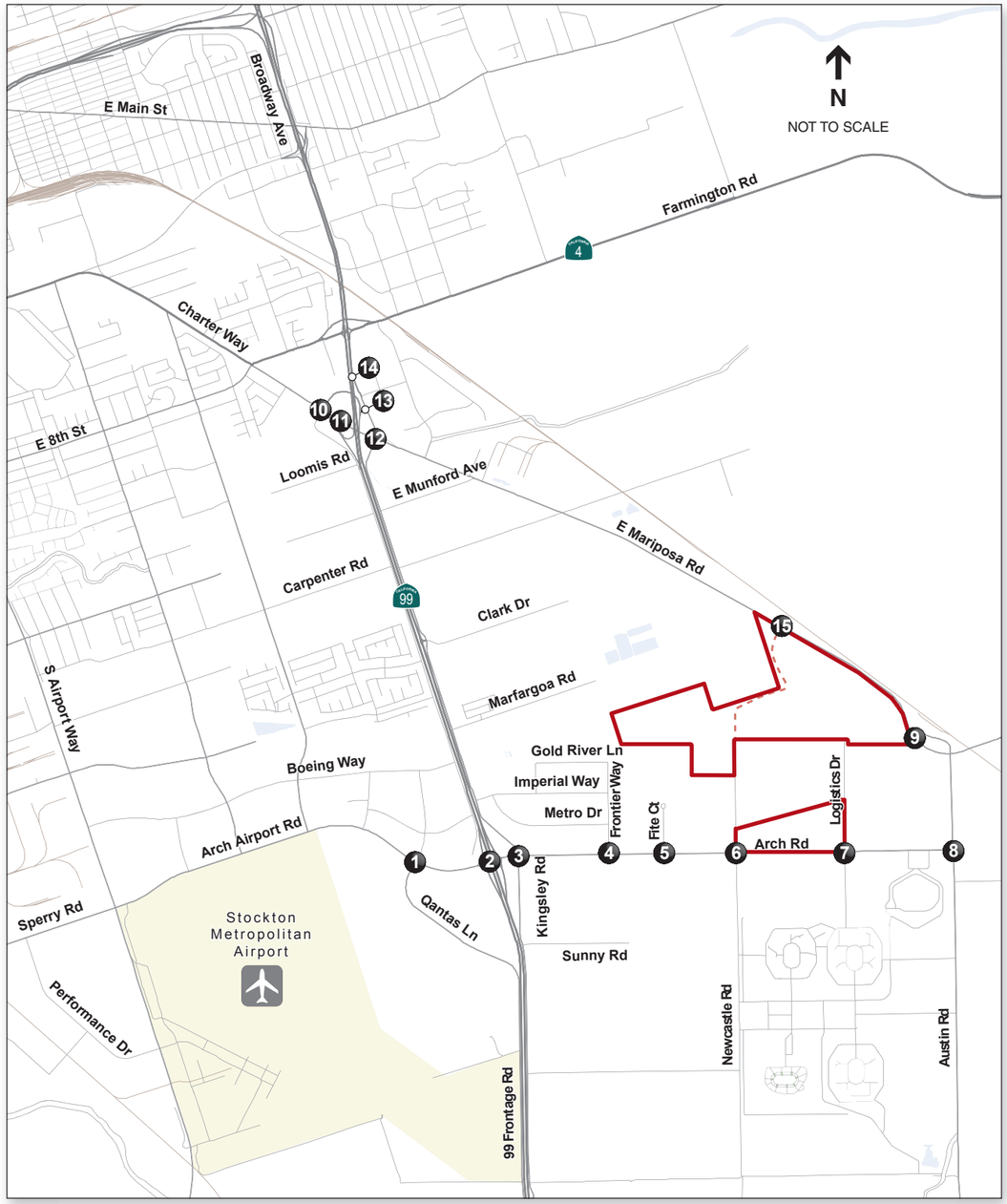
1 Study Intersection

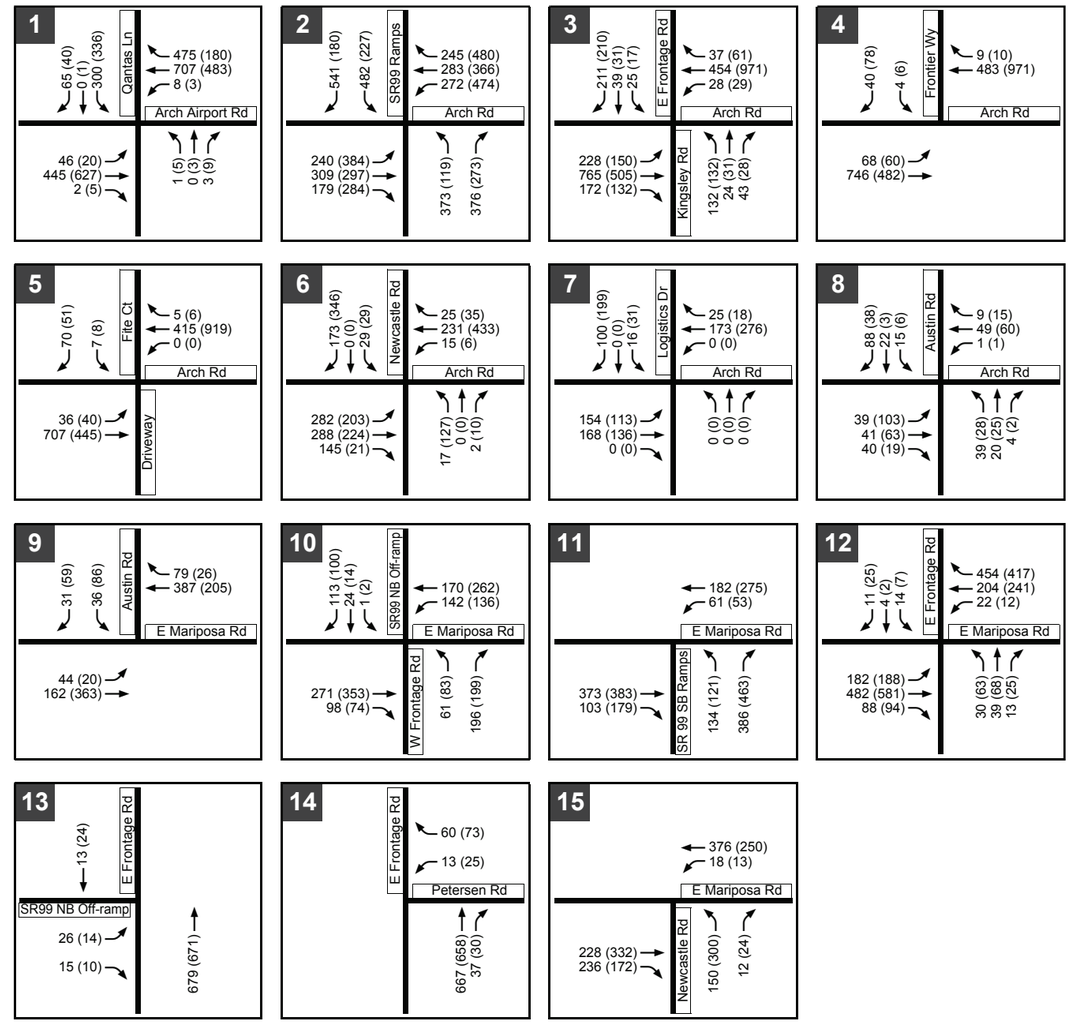
XX(YY) AM (PM) Peak Hour Traffic Volumes

SOURCE: FEHR & PEERS, 2013; and ESA, 2013

Figure 3.13-4

Project Trip Assignment – Existing & Near-Term





Project Site

1 Study Intersection

XX(YY) AM (PM) Peak Hour Traffic Volumes

SOURCE: FEHR & PEERS, 2013; and ESA, 2013

Figure 3.13-5

Existing Plus Project Intersection Volumes

TABLE 13.3-10
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection	Control Type	Peak Hour[1]	Existing		Existing + Project	
			Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]
1. Arch-Airport Road/Qantas Lane	Signal	AM	23	C	23	C
		PM	21	C	21	C
2. Arch-Airport Road/SR99	Signal	AM	12	B	18	B
		PM	10	A	12	B
3. Arch Road/Frontage Road	Signal	AM	27	C	32	C
		PM	28	C	29	C
4. Arch Road/Frontier Way	Side-Street Stop-Controlled	AM	2 (12)	A (B)	1 (17)	A (C)
		PM	2 (14)	A (B)	2 (34)	A (D)
5. Arch Road/Fite Court	Signal	AM	13	B	16	B
		PM	10	A	32	C
6. Arch Road/Newcastle Road	Signal	AM	9	A	29	C
		PM	21	C	***70***	***E***
7. Arch Road/Logistics Drive	Signal	AM	3	A	16	B
		PM	3	A	24	C
8. Arch Road/Austin Road	Signal	AM	21	C	22	C
		PM	21	C	21	C
9. Austin Road/ Mariposa Road	Signal	AM	9	A	11	B
		PM	14	B	15	B
10. SR99 NB Off-Ramp/Mariposa Rd/SR99 W. Frontage Rd/SR 99 SB On-Ramp	Signal	AM	34	C	41	D
		PM	32	C	33	C
11. SR99 Southbound Ramps/Mariposa Road	Signal	AM	22	C	22	C
		PM	21	C	21	C
12. SR99 East Frontage Road/Mariposa Road	Signal	AM	23	C	23	C
		PM	24	C	24	C
13. SR99 NB Mariposa Off-Ramp/SR99 E. Frontage	All-Way Stop-Controlled	AM	1 (13)	A (B)	1 (14)	A (B)
		PM	1 (11)	A (B)	1 (12)	A (B)
14. SR99 East Frontage Road/Peterson Road	All-Way Stop-Controlled	AM	2 (16)	A (C)	2 (17)	A (C)
		PM	2 (13)	A (B)	2 (16)	A (B)
15. Newcastle Road/Mariposa Road	Signal	AM	--	--	11	B
		PM	--	--	17	B

Bold denotes locations where the level of service threshold is exceeded. ***Bold italics*** indicate a potentially significant impact.

1 AM = morning peak hour, PM = evening peak hour.
2 Signalized intersection level of service based on weighted average control delay per vehicle, according to the 2000 Highway Capacity Manual.
3 Side-street stop and all way stop control intersection level of service intersection average and (worst approach) control delay per vehicle, according to the 2000 Highway Capacity Manual.
4 LOS = level of service. LOS calculations conducted using the TRAFFIX 8.0 software except for 1-3 and 10-13 which were analyzed with Synchro 7.0 software.

SOURCE: Fehr & Peers, 2013.

With the addition of project traffic in the existing condition, vehicle queues for the eastbound through movement at the Arch Road/Frontage Road intersection could spillback to the SR 99/Arch Road interchange intersection. Although vehicle queues are not expected to impact the operations of the adjacent intersections, monitoring of signal timing to provide optimal flow through the interchange area could reduce vehicle queue spillback. A vehicle queue summary is provided in Appendix D of the TIA for intersections 1 through 3, and 10- through 14.

Freeway Mainline Operations

Project traffic expected to use SR 99 in the project vicinity was added to the existing freeway volumes based on the trip generation/distribution shown previously and the expected travel routes to the site. SR 99 freeway mainline segments were analyzed based on the peak hour volumes shown in **Table 13.3-11**. The addition of project traffic would worsen the operation of segments that currently operate at deficient levels:

- SR 99 Northbound, North of Mariposa Road (AM peak hour)
- SR 99 Southbound, North of Mariposa Road to South of Arch Road (PM peak hour)

The addition of project traffic would not cause any new segments to operate at a deficient level.

Freeway Ramp Operations

Ramp merge and diverge operations were evaluated for Existing Plus Project conditions at the SR-99 Arch-Airport Road and Mariposa Road interchanges, as presented in **Table 13.3-12**. The addition of project traffic would worsen the operation of the ramp merge/diverge areas that currently operate at a deficient level:

- SR-99 at Arch-Airport Road Southbound On-Ramp (AM peak hour)
- SR-99 at Mariposa Road Northbound On-Ramp (AM peak hour)
- SR-99 at Mariposa Road Southbound Off-Ramp (PM peak hour)

No merge/diverge areas that currently operate at acceptable levels would degrade with the addition of project traffic.

TABLE 3.13-11
EXISTING PLUS PROJECT FREEWAY ANALYSIS

Segment	Direction of Travel	Peak Hour[1]	Existing			Existing Plus Project			Percent Increase
			Volume	Density	LOS	Volume	Density	LOS	
1. SR99 South of Arch Road	Northbound	AM	3,380	31.8	D	3,573	34.7	D	6%
		PM	2,340	20.9	C	2,477	22.2	C	6%
2. SR99 between Arch Road and Mariposa Road	Northbound	AM	3,260	30.2	D	3,309	30.8	D	2%
		PM	2,850	25.7	C	2,949	26.7	D	3%
3. SR99 North of Mariposa Road	Northbound	AM	3,720	**37.4**	**E**	3,857	**40.4**	**E**	4%
		PM	3,260	30.2	D	3,540	34.2	D	9%
4. SR99 North of Mariposa Road	Southbound	AM	2,690	24.1	C	2,913	26.3	D	8%
		PM	3,940	**42.3**	**E**	4,099	--	**F**	4%
5. SR99 between Arch Road and Mariposa Road	Southbound	AM	2,480	22.2	C	2,557	22.9	C	3%
		PM	3,690	**36.8**	**E**	3,747	**38.0**	**E**	2%
6. SR99 South of Arch Road	Southbound	AM	1,860	16.7	B	1,985	17.8	B	7%
		PM	3,850	**40.2**	**E**	4,098	--	**F**	6%

Bold denotes locations where the level of service threshold is exceeded. ***Bold italics*** indicate a potentially significant impact.
Density measured in passenger cars per mile per lane.
Mainline segment level of service based on vehicle density, according to the 2000 Highway Capacity Manual.

SOURCE: Fehr & Peers, 2013.

TABLE 3.13-12
EXISTING PLUS PROJECT FREEWAY RAMP ANALYSIS

Ramp	Peak Hour	Existing		Existing Plus Project	
		Density	LOS	Density	LOS
SR99 Arch Road Northbound Off-Ramp	AM	31.2	D	31.2	D
	PM	23.8	C	23.8	C
SR99 Arch Road Northbound On-Ramp	AM	20.9	C	21.3	C
	PM	16.6	B	17.5	B
SR99 Arch Road Southbound Off-Ramp	AM	13.6	B	14.0	B
	PM	20.7	C	20.7	C
SR99 Arch Road Southbound On-Ramp	AM	18.4	B	19.5	B
	PM	**36.1**	**E**	--	***F***
SR99 at Mariposa Road Northbound Off-Ramp	AM	33.3	D	33.8	D
	PM	29.6	D	30.6	D
SR99 at Mariposa Road Northbound On-Ramp	AM	**35.2**	**E**	***36.5***	***E***
	PM	31.0	D	33.4	D
SR99 at Mariposa Road Southbound Off-Ramp	AM	23.9	C	24.6	C
	PM	**35.3**	**E**	***35.9***	***E***
SR99 at Mariposa Road Southbound On-Ramp	AM	23.5	C	24.2	C
	PM	34.5	D	34.9	D

Bold denotes locations where the level of service threshold is exceeded. ***Bold italics*** indicate a potentially significant impact.
Density measured in passenger cars per mile per lane.
Ramp merge and diverge area LOS based on vehicle density, according to the 2000 HCM.

SOURCE: Fehr & Peers 2013.

Impacts and Mitigation Measures

Impact 3.13.1: Existing plus project traffic could result in impacts to study area intersections. *(Potentially Significant)*

The signalized intersection of Arch Road/Newcastle Road (Intersection 6) operates at acceptable levels prior to the addition of project traffic. The addition of proposed project traffic would result in LOS E conditions during the PM peak hour. This impact is projected to occur when the proposed project is approximately 85 percent complete, with the connection to Mariposa Road constructed. This impact is considered ***potentially significant***.

Mitigation Measures

Measure 3.13.1: Restripe Arch Road to Provide Second Westbound Lane. The applicant shall restripe Arch Road to provide a second westbound through lane on Arch Road from approximately 500 feet east of Newcastle Road to Fite Court.

Impact Significance after Mitigation: With implementation of Mitigation Measure 3.13.1, this intersection would operate at an acceptable level during AM and PM peak hours, as shown in **Table 3.13-13**, reducing the proposed project's impact to a ***less-than-significant*** level.

TABLE 3.13-13
EXISTING PLUS PROJECT MITIGATED INTERSECTION LEVEL OF SERVICE

			Existing		Existing Plus Project		Existing Plus Project with Mitigation	
Intersection	**Control Type**	**Peak Hour[1]**	**Delay[2]**	**LOS[4]**	**Delay[2]**	**LOS[4]**	**Delay[2]**	**LOS[3]**
6. Arch Road/Newcastle Road	Signal	AM	9	A	29	C	27	C
		PM	21	C	***70***	***E***	42	D

Bold denotes locations where the level of service threshold is exceeded. ***Bold italics*** indicate a potentially significant impact.
1 AM = morning peak hour, PM = evening peak hour.
2 Signalized intersection level of service based on weighted average control delay per vehicle, according to the 2000 Highway Capacity Manual.
3 LOS = level of service.

SOURCE: Fehr & Peers, 2013.

Impact 3.13.2: Existing plus project traffic could result in impacts to study area freeway segments. *(Potentially Significant)*

The addition of project traffic would contribute to already unacceptable peak AM, PM (or both) service levels at the following four (4) freeway mainline segments:

- SR99 Northbound, North of Mariposa Road;
- SR99 Southbound, North of Mariposa Road;
- SR99 Northbound, between Arch Road and Mariposa Road; and
- SR99 Southbound, South of Arch Road.

This impact is considered ***potentially significant***.

Mitigation Measures

Measure 3.13.2: Project's Fair Share Contribution to SR99 Widening. The applicant shall pay the Public Facilities Fees (PFF), which includes the Regional Transportation Impact, Street Improvements, and Traffic Signal Fees. Payment of these fees would constitute the Project's fair share contribution to on-going widening of SR 99 from SR 120 to the Crosstown Freeway to provide three travel lanes in each direction. This improvement is fully funded, including funding from Measure K as well as Regional Transportation Impact Fees. Construction is expected to be completed in 2015/2016.

Impact Significance after Mitigation: With implementation of Mitigation Measure 3.13.2, the identified freeway segments would operate at an acceptable level during both peak hours, as shown **in Table 3.13-14**, reducing the project's impact to a ***less-than-significant*** level.

TABLE 3.13-14
EXISTING PLUS PROJECT PLUS MITIGATION PEAK HOUR FREEWAY ANALYSIS

Segment	Direction of Travel	Peak Hour[1]	Existing		Existing Plus Project		Existing Plus Project Plus Mitigation	
			Density	LOS	Density	LOS	Density	LOS
SR99 South of Arch Road	Northbound	AM	31.8	D	34.7	D	21.4	C
		PM	20.9	C	22.2	C	14.8	B
SR99 between Arch Road and Mariposa Road	Northbound	AM	30.2	D	30.8	D	19.8	C
		PM	25.7	C	26.7	D	17.6	B
SR99 North of Mariposa Road	Northbound	AM	**37.4**	**E**	***40.4***	***E***	23.0	C
		PM	30.2	D	34.2	D	21.2	C
North of Mariposa Road	Southbound	AM	24.1	C	26.3	D	17.4	B
		PM	**42.3**	**E**	--	***F***	24.5	C
SR99 between Arch Road and Mariposa Road	Southbound	AM	22.2	C	22.9	C	15.3	B
		PM	**36.8**	**E**	***38.0***	**E**	22.4	C
SR99 South of Arch Road	Southbound	AM	16.7	B	17.8	B	11.9	B
		PM	**40.2**	**E**	--	***F***	24.5	C

Bold denotes locations where the level of service threshold is exceeded. ***Bold italics*** indicate a potentially significant impact.
Density measured in passenger cars per mile per lane.
Mainline segment level of service based on vehicle density, according to the 2000 Highway Capacity Manual.
SOURCE: Fehr & Peers, 2013.

Impact 3.13.3: Existing plus project traffic could result in freeway ramp merge/diverge impacts. *(Potentially Significant)*

The addition of project traffic would contribute to already unacceptable peak AM, PM (of both) service levels at the following three (3) freeway ramps:

- SR99 Southbound Arch Road On-Ramp;
- SR99 Northbound Mariposa Road On-Ramp;
- SR99 Southbound Mariposa Road Off-Ramp.

This impact is considered ***potentially significant***.

Mitigation Measures

Measure 3.13.2: Project's Fair Share Contribution to SR99 Widening. The reader is directed above to Impact 3.13.2 for a complete description of this mitigation measure.

Impact Significance after Mitigation: With implementation of Mitigation Measure 3.13.2, the ramp segments would operate at acceptable levels of service, as shown in **Table 3.13-15**, reducing the project's impacts to a ***less-than-significant*** level.

TABLE 3.13-15
EXISTING PLUS PROJECT PLUS MITIGATION FREEWAY RAMP ANALYSIS

Ramp	Peak Hour	Existing		Existing Plus Project		Existing Plus Project Plus Mitigation	
		Density	LOS	Density	LOS	Density	LOS
SR99 Arch-Airport Road Southbound On-Ramp	AM	18.4	B	19.5	B	13.8	B
	PM	**36.1**	**E**	--	***F***	25.9	C
SR99 at Mariposa Road Northbound On-Ramp	AM	**35.2**	**E**	**36.5**	**E**	24.9	C
	PM	31.0	D	33.4	D	23.0	C
SR99 at Mariposa Road Southbound Off-Ramp	AM	23.9	C	24.6	D	18.3	B
	PM	**35.3**	**E**	**35.9**	**E**	24.9	C

Bold denotes locations where the level of service threshold is exceeded. ***Bold italics*** indicate a potentially significant impact.
Density measured in passenger cars per mile per lane.
Ramp merge/diverge LOS based on vehicle density, 2000 HCM.

SOURCE: Fehr & Peers 2013.

Near-Term Analysis

The Near-Term analysis includes existing traffic plus traffic generated from surrounding projects that have been approved but not yet constructed or occupied, as well as the traffic that could be generated by vacant industrial buildings in the project study area should they be re-occupied. The Near-Term scenario is a cumulative impact scenario.

Near-Term Roadway Improvements

No roadway improvements were assumed for the preliminary analysis of near-term conditions because the timing of some planned improvements is uncertain. A secondary analysis of intersection operations assumes certain planned improvements, including the roadway improvements specified in the *Arch-Airport Road/Sperry Road Specific Road Plan* (August 2003), reconstruction of the Mariposa Road interchange, and widening of SR 99 from SR 120 to the Crosstown Freeway (SR 4) to a six lane facility was performed. Reconstruction of the Mariposa Road interchange and the SR 99 widening between Arch Road and the Crosstown Freeway is scheduled to be completed by 2015/2016. Widening of SR 99 to a six-lane facility between SR 120 in Manteca and Arch Road is scheduled to be completed by 2015. Roadway construction along the SR 99 corridor is underway. Intersection configurations with planned improvements are shown in **Figure 3.13-6**.

Near-Term Traffic Volume Forecasts

This scenario includes existing traffic volumes and traffic from developments that are approved and/or under construction within the study area. For the approved projects, only those that have the likelihood of being developed within the foreseeable future (the next five to ten years) were included in the analysis; these included the light industrial parcels on the south side of Arch Road at Newcastle Road and the California Health Care Facility, which is currently under construction on Austin Road. Traffic from the approved Mariposa Lakes and Tidewater development projects were not included in the analysis because the timing of development of those projects is uncertain. Given the high rate of vacant industrial space within the area, traffic that could be generated by the reoccupation of approximately 1.9 million square feet of vacant industrial properties was accounted for in the analysis. The resulting traffic estimates (without project) are shown in **Figure 3.13-7**.

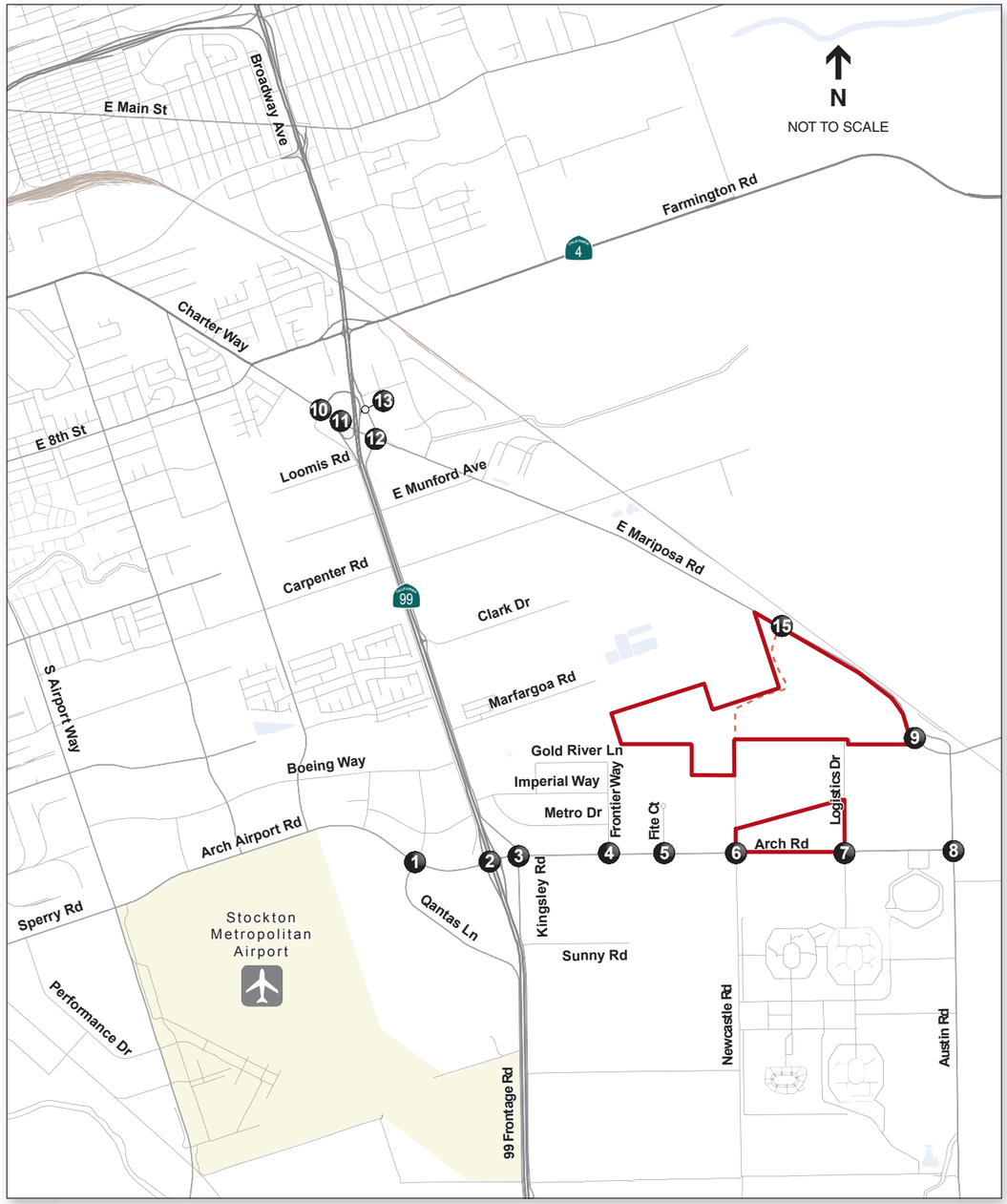
Intersection Operations

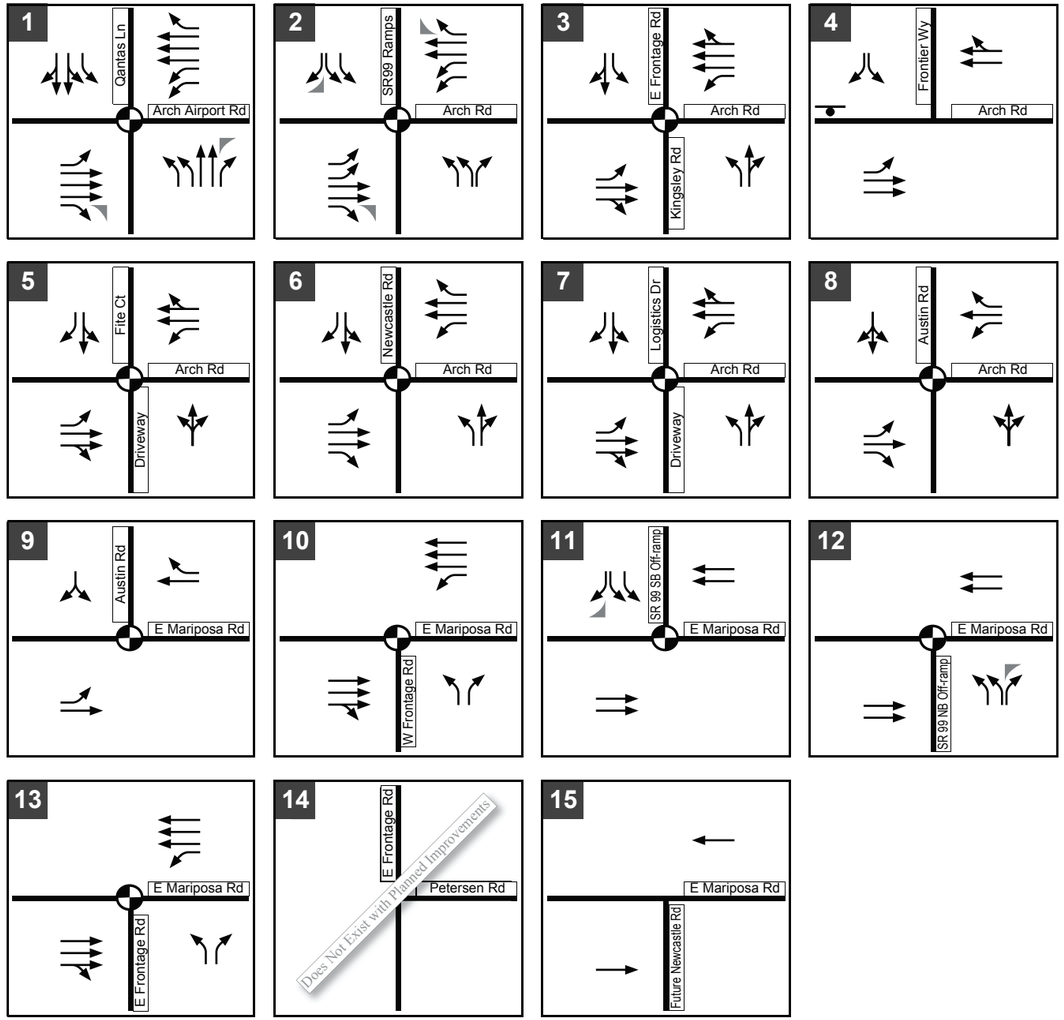
Project traffic volumes, shown in Figure 3.13-4, were added to the Near-Term (without project) volumes shown in Figure 3.13-7. The resulting intersection volumes for Near-Term Plus Project are shown in **Figure 3.13-8**. Operations were evaluated using the lane configurations shown in Figures 3.13-2 and 3.13-6.

For intersections 4 through 9, and 15, where significant traffic volumes increases are projected, the heavy vehicle percentages for through movements on the major roadways were adjusted to 22 percent during the morning peak hour and 17 percent during the evening peak hour; this reflects the existing observed percentages on Arch Road near SR 99 where traffic volumes are the highest in the existing condition. For movements from the side-streets serving industrial uses, heavy vehicle factors were adjusted to 25 percent in the morning and 22 percent in the evening to reflect the vehicle trip generation profile of the industrial uses served by those roadways. This adjustment to the heavy vehicle percentages recognizes that much of the new traffic to be generated by uses in this area will be passenger vehicles. Where observed peak hour factors in the existing condition were less than 0.92, the peak hour factor was increased to 0.92. The results of the LOS analysis are presented in **Table 3.13-16**.

In the near-term condition prior to the addition of project traffic, the study intersections are projected to operate at acceptable service levels, although delay is expected to increase with added traffic from approved projects and re-occupancy of vacant uses. Operations at several intersections along Arch Road would worsen to unacceptable levels with the addition of project traffic, including:

- Arch Road/Frontier Way
- Arch Road/Fite Court
- Arch Road/Newcastle Road
- Arch Road/Logistics Drive





SOURCE: FEHR & PEERS, 2013; and ESA, 2013

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Figure 3.13-6
Near-Term Lane Configurations

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TABLE 3.13-16
NEAR-TERM INTERSECTION LEVELS OF SERVICE

	Intersection	Control Type	Peak Hour[1]	Without Project		With Project No Improvements		With Project With Improvements	
				Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]
1.	Arch-Airport Road/Qantas Lane	Signal	AM PM	21 21	C C	21 21	C C	-- --	-- --
2.	Arch-Airport Road/SR99	Signal	AM PM	25 12	C B	49 16	D B	-- --	-- --
3.	Arch Road/Frontage Road	Signal	AM PM	32 31	C C	46 41	D D	-- --	-- --
4.	Arch Road/Frontier Way	Side-Street Stop-Controlled	AM PM	1 (18) 4 (48)	A (C) A (E)	1 (37) 12 ***(>200)***	A (E) B ***(F)***	1 (21) 3 **(52)**	A (C) A **(F)**
5.	Arch Road/Fite Court	Signal	AM PM	19 20	B B	***84*** ***118***	***F*** ***F***	12 11	B B
6.	Arch Road/Newcastle Road	Signal	AM PM	40 51	D D	***70*** ***124***	***E*** ***F***	25 43	C D
7.	Arch Road/Logistics Drive	Signal	AM PM	14 15	B B	26 ***57***	C ***E***	22 31	C C
8.	Arch Road/Austin Road	Signal	AM PM	36 29	D C	38 31	D C	-- --	-- --
9.	Austin Road/Mariposa Road	Signal	AM PM	14 18	B B	15 19	B B	-- --	-- --
10.	SR99 NB Off-Ramp/Mariposa Road/SR99 West Frontage Road/SR99 SB On-Ramp	Signal	AM PM	34 33	C C	39 37	D D	14 11	B B
11.	SR99 SB Ramps/Mariposa Road	Signal	AM PM	22 20	C B	22 20	C B	16 15	B B
12.	SR99 East Frontage Road/Mariposa Road	Signal	AM PM	22 24	C C	22 25	C C	22 21	C C
13.	SR99 NB Mariposa Off-Ramp/SR99 East Frontage Road	Side-Street Stop-Controlled	AM PM	1 (12) 1 (11)	A (B) A (B)	1 (13) 1 (11)	A (B) A (B)	6 7	A A
14.	SR99 East Frontage Road/Peterson Road	Side-Street Stop-Controlled	AM PM	2 (14) 2 (14)	A (B) A (C)	2 (17) 2 (17)	A (C) A (C)	Intersection would not exist with interchange improvements	
15.	Project Driveway/Mariposa Road	Signal	AM PM	-- --	-- --	12 17	B B	-- --	-- --

Bold denotes locations where the level of service threshold is exceeded. ***Bold italics*** indicate a potentially significant impact.
1 AM = morning peak hour, PM = evening peak hour.
2 Signalized intersection level of service based on weighted average control delay per vehicle, according to the 2000 Highway Capacity Manual.
3 Side-street stop and all way stop control intersection level of service intersection average and (worst approach) control delay per vehicle, according to the 2000 Highway Capacity Manual.
4 LOS = level of service. LOS calculations conducted using the TRAFFIX 8.0 level of service analysis software package, except for intersections 1-3 and 10-13, which were analyzed with the Synchro 7.0 level of service software package.
SOURCE: Fehr & Peers, 2013.

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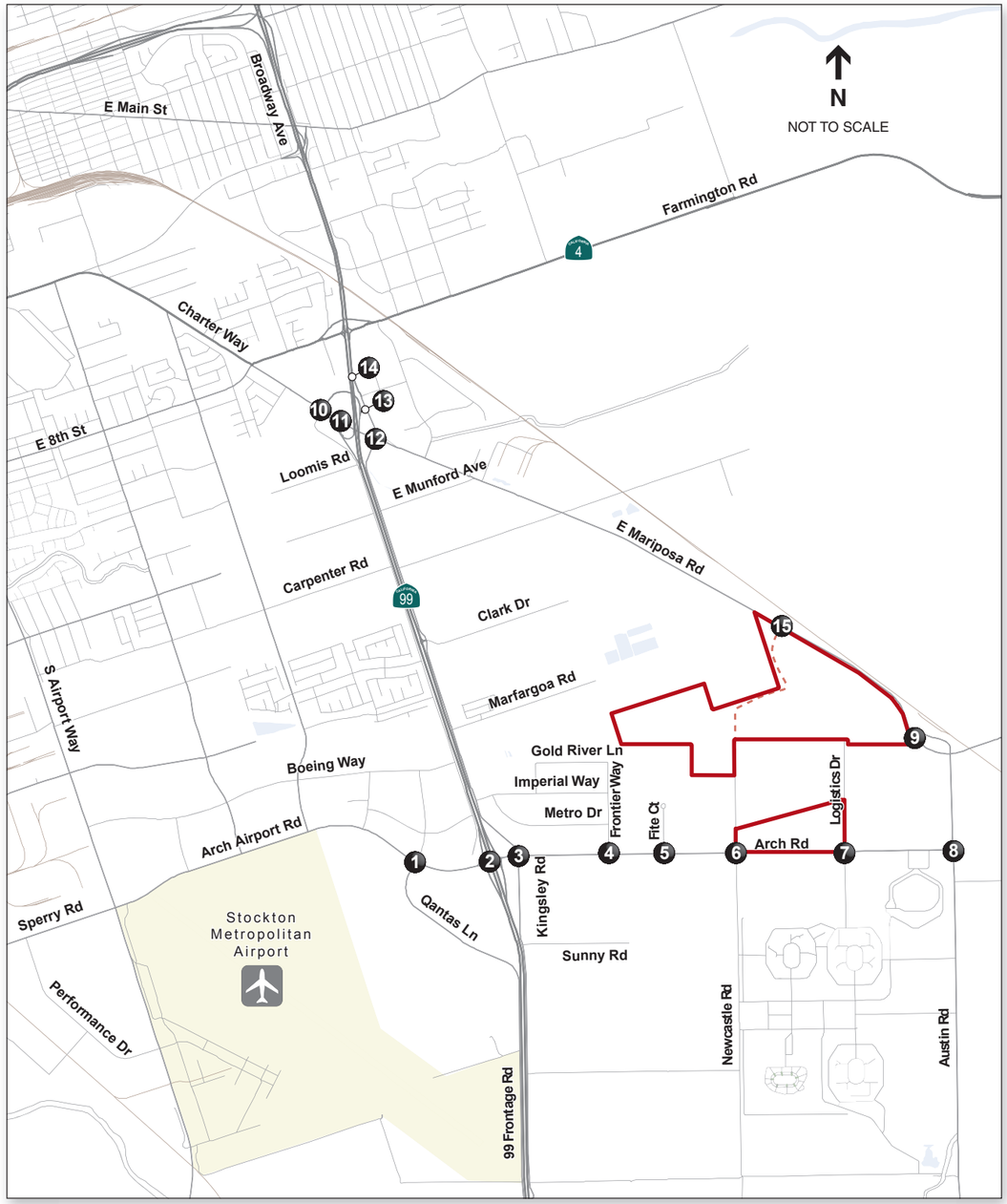
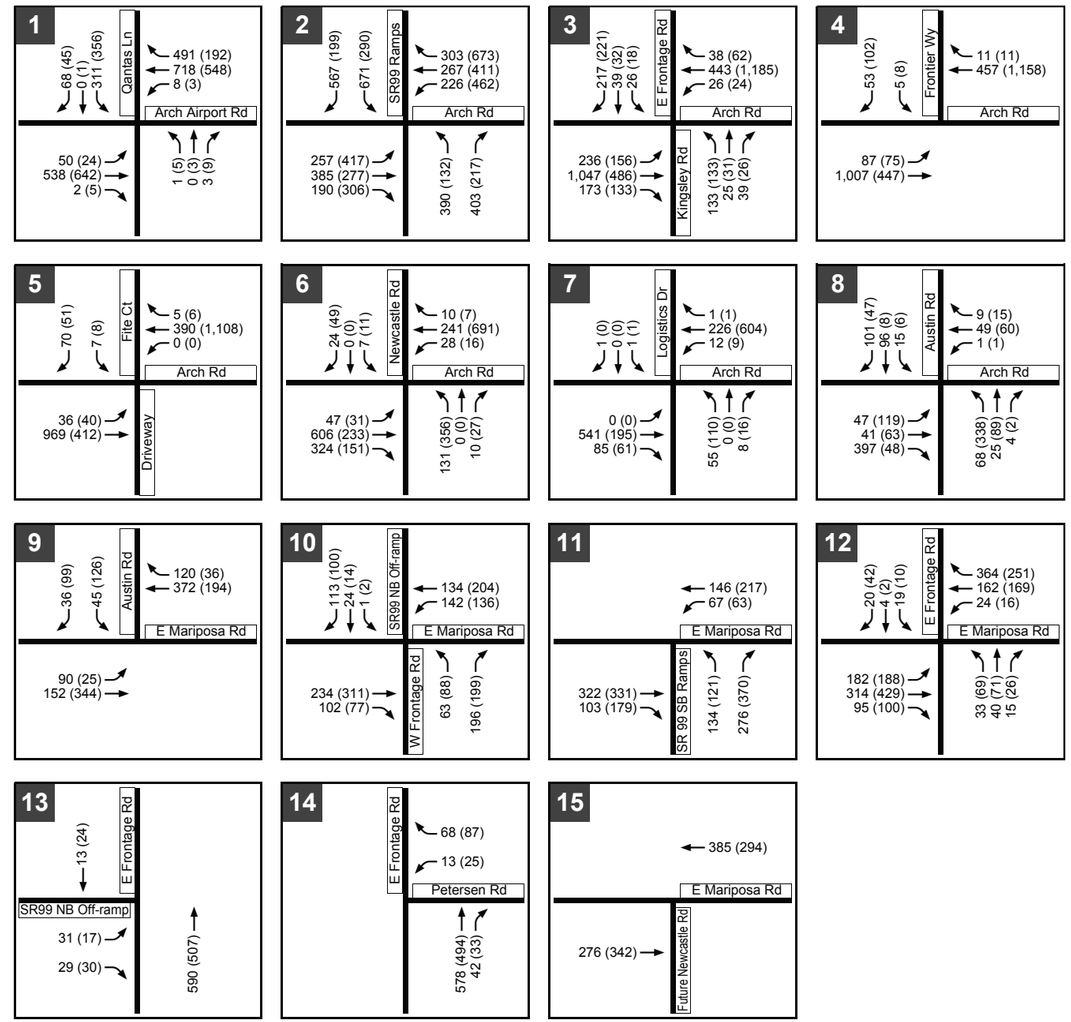




Project Site

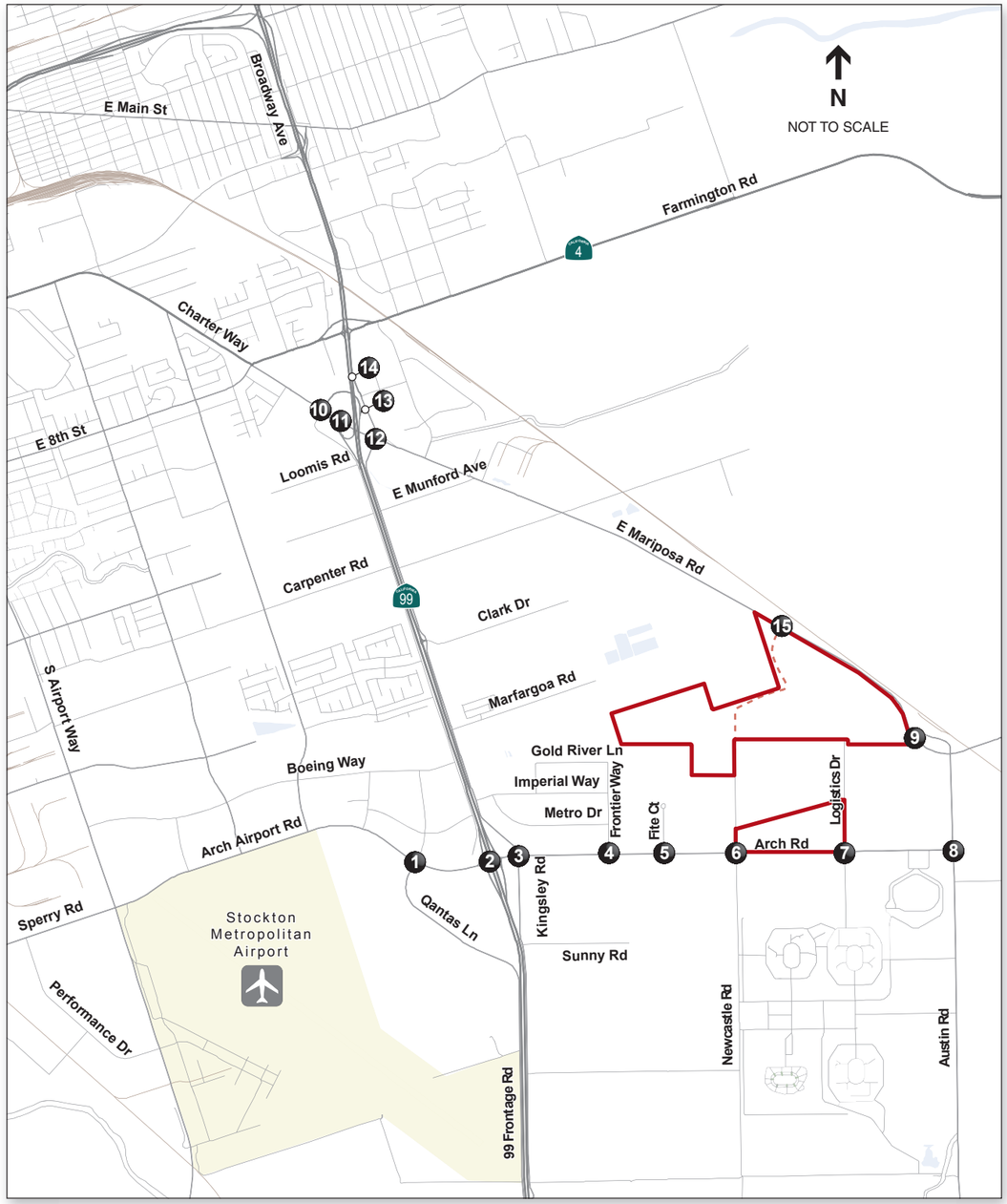
1 Study Intersection

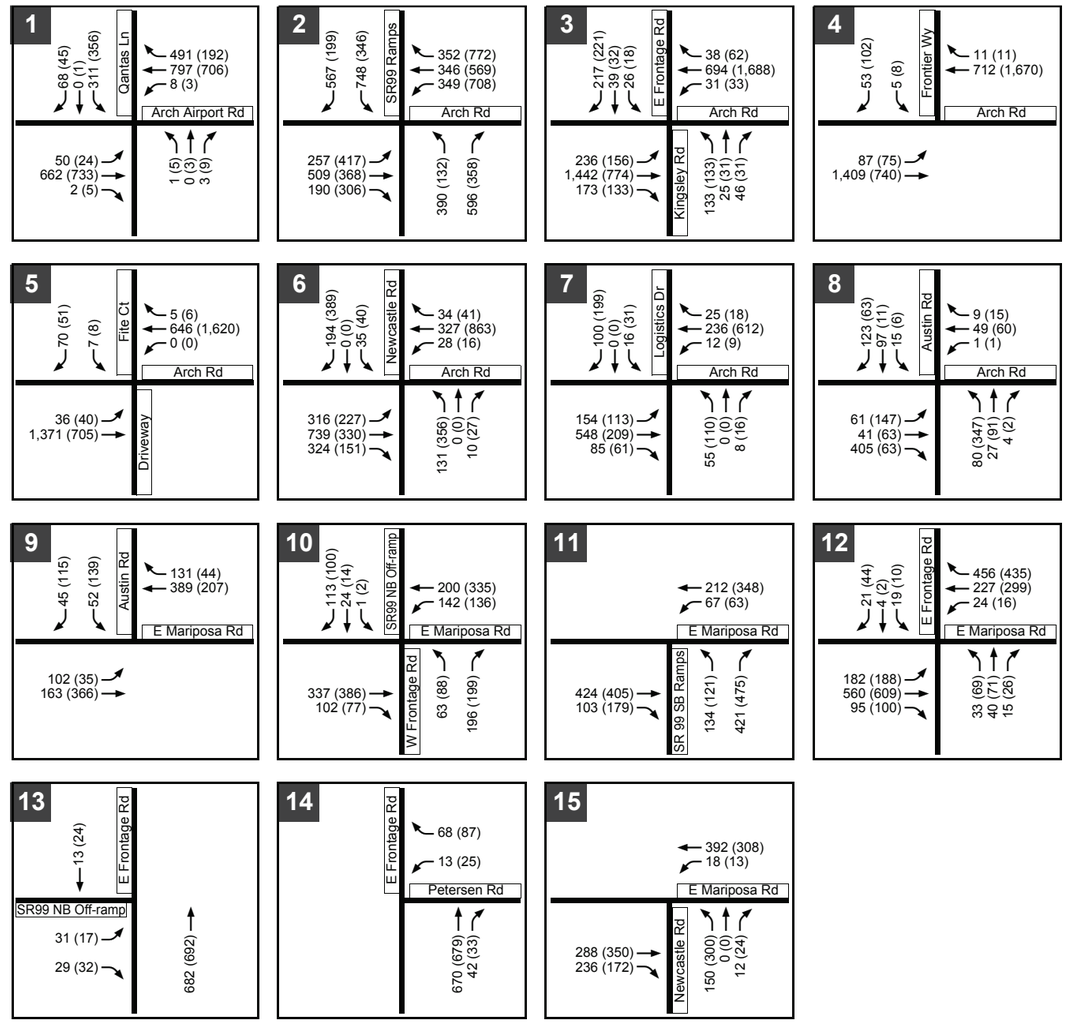
XX(YY) AM (PM) Peak Hour Traffic Volumes

SOURCE: FEHR & PEERS, 2013; and ESA, 2013

Figure 3.13-7

Near-Term Intersection Volumes (Without Project)





Project Site

1 Study Intersection

XX(YY) AM (PM) Peak Hour Traffic Volumes

SOURCE: FEHR & PEERS, 2013; and ESA, 2013

Figure 3.13-8

Near-Term Plus Project Intersection Volumes

The LOS calculation worksheets are in Appendix B of the TIA. With the construction of planned improvements along the Arch Road corridor, the intersections noted above are projected to operate at acceptable service levels and no improvements beyond those previously planned would be required. The project would be required to contribute their fair share to planned corridor and intersection improvements through the payment of all local and regional transportation impact fees.

Vehicle queues were also reviewed for the ramp terminal intersections and adjacent intersections. The 95th percentile vehicle queues at the Mariposa Road ramp terminal intersections are projected to be accommodated within the available vehicle storage. At the Arch Road interchange, vehicle queues are expected to increase for the eastbound through movement at the Arch Road/Frontage Road intersection, spilling back to the Arch-Airport Road/SR 99 intersection and for the northbound right-turn movement at the Arch-Airport Road/SR 99 intersection. Vehicle queues at the off-ramp are not expected to spill-back to the freeway mainline. Monitoring of signal timings could optimize traffic flow through the area, minimizing vehicle queue spillback.

Freeway Mainline Operations

The SR 99 freeway mainline segments from north of Mariposa Road to south of Arch-Airport Road were analyzed based on the peak hour volumes shown in **Table 3.13-17**, which includes traffic from approved projects in the study area and traffic that could be generated by the reoccupation of vacant parcels in the area. The analysis results indicate that in the study area, SR 99 is expected to degrade to deficient LOS E or LOS F conditions during either one or both the AM and PM peak hours in the Existing Plus Approved Projects scenario prior to the addition of project traffic. With the addition of project traffic the vehicle density per mile would increase on the following deficient segments:

- SR 99 Northbound, North of Mariposa Road
- SR 99 Southbound, From North of Mariposa Road to South of Arch Road
- SR 99 Northbound, South of Arch Road

Freeway Ramp Operations

Ramp merge and diverge operations were evaluated for Near-Term conditions Without and With Project conditions at the Arch Road and Mariposa Road interchanges. The following ramp junctions are projected to operate deficiently in the near-term prior to the addition of project traffic:

- SR-99 at Arch-Airport Road southbound on-ramp (PM peak hour)
- SR-99 at Mariposa Road northbound off-ramp (AM peak hour)
- SR-99 at Mariposa Road northbound on-ramp (AM peak hour)
- SR-99 at Mariposa Road southbound off-ramp (PM peak hour)
- SR-99 at Mariposa Road southbound on-ramp (PM peak hour)

The addition of project traffic would worsen the operation of these merge/diverge areas, and would result in deficient conditions at the Mariposa Road northbound on and off-ramps during the PM peak hour. Freeway Ramp level of service results are presented in **Table 3.13-18**.

TABLE 3.13-17
NEAR-TERM FREEWAY ANALYSIS

Segment	Direction of Travel	Peak Hour	Without Project Volume	Without Project Density	Without Project LOS	With Project Volume	With Project Density	With Project LOS	With Project With SR99 Improvements Density	With Project With SR99 Improvements LOS	% Increase
1. SR99 South of Arch Road	Northbound	AM	3,626	**35.7**	**E**	3,819	***39.5***	***E***	22.8	C	5.3%
		PM	2,441	21.9	C	2,582	23.1	C	15.4	B	5.8%
2. SR99 between Arch Road and Mariposa Road	Northbound	AM	3,393	32.0	D	3,442	32.7	D	20.6	C	1.4%
		PM	3,182	29.2	D	3,281	30.5	D	19.6	C	3.1%
3. SR99 North of Mariposa Road	Northbound	AM	3,841	**40.0**	**E**	3,982	***43.5***	***E***	23.8	C	3.7%
		PM	3,600	**35.2**	**E**	3,882	***40.9***	***E***	23.2	C	7.8%
4. North of Mariposa Road	Southbound	AM	3,018	27.4	D	3,240	29.9	D	19.4	C	7.4%
		PM	4,088	**>45**	**F**	4,250	**>45**	***F***	25.5	C	4.0%
5. SR99 between Arch Road and Mariposa Road	Southbound	AM	2,778	25.0	C	2,855	25.7	C	17.1	B	2.8%
		PM	3,839	**39.9**	**E**	3,896	***41.3***	***E***	23.3	C	1.5%
6. SR99 South of Arch Road	Southbound	AM	1,956	17.5	B	2,079	18.6	C	12.4	B	6.3%
		PM	4,118	**>45**	**F**	4,365	**>45**	***F***	26.3	D	6.0%

Bold denotes locations where the level of service threshold is exceeded. ***Bold italics*** indicate a potentially significant impact.
Density measured in passenger cars per mile per lane.
Mainline segment level of service based on vehicle density, according to the 2000 Highway Capacity Manual.

SOURCE: Fehr & Peers, 2013.

TABLE 3.13-18
NEAR-TERM FREEWAY RAMP ANALYSIS

			Near-Term without Project		Near-Term with Project (No Freeway Improvements)		Near-Term with Project (With Freeway Improvements)	
Segment	**Direction of Travel**	**Peak Hour**	**Density**	**LOS**	**Density**	**LOS**	**Density**	**LOS**
SR99 at Arch-Airport Road Off-Ramp	Northbound	AM	39.2	E	>45	F	29.7	D
		PM	27.4	C	28.8	D	21.6	C
SR99 at Arch-Airport Road On-Ramp	Northbound	AM	22.1	C	22.5	C	11.4	B
		PM	19.4	B	20.2	C	12.1	B
SR99 at Arch-Airport Road Off-Ramp	Southbound	AM	20.8	C	21.6	C	25.4	C
		PM	23.5	C	23.9	C	29.1	D
SR99 at Arch-Airport Road On-Ramp	Southbound	AM	19.4	B	20.3	C	14.7	B
		PM	**>45**	**F**	***>45***	***F***	28.2	D
SR99 at Mariposa Road Off-Ramp	Northbound	AM	**36.5**	**E**	***36.9***	***E***	25.6	C
		PM	34.3	D	***35.3***	***E***	24.6	C
SR99 at Mariposa Road On-Ramp	Northbound	AM	**36.4**	**E**	***>45***	***F***	25.7	C
		PM	34.0	D	***36.5***	***E***	25.0	C
SR99 at Mariposa Road Off-Ramp	Southbound	AM	30.9	D	33.1	D	23.3	C
		PM	**>45**	**F**	***>45***	***F***	28.8	D
SR99 at Mariposa Road On-Ramp	Southbound	AM	26.2	C	26.9	C	17.2	B
		PM	**35.7**	**E**	***36.2***	***E***	23.0	C

Bold denotes locations where the level of service threshold is exceeded. ***Bold italics*** indicate a potentially significant impact.
Density measured in passenger cars per mile per lane.
Mainline segment level of service based on vehicle density, according to the 2000 Highway Capacity Manual.

SOURCE: Fehr & Peers, 2013.

Impact 3.13.4: Near-Term traffic could result in impacts to study area intersections. ***(Potentially Significant)***

The project would contribute to an unacceptable level of service at the following four (4) study intersections during peak AM, PM (or both) hours:

- Arch Road/Frontier Way;
- Arch Road/Fite Court;
- Arch Road/Newcastle Road; and
- Arch Road/Logistics Drive.

This impact is considered ***potentially significant***.

Mitigation Measures

Measure 3.13.3a: Project's Fair Share Contribution to Arch-Airport Road/Sperry Road Specific Road Plan Road Improvements. The applicant shall pay the PFF which would constitute their fair share to the construction of planned improvements identified in the *Arch-Airport Road/Sperry Road Specific Road Plan* (August 2003), which includes the widening of Arch Road to provide two travel lanes in each direction as shown on Figure 3.13-6.

Measure 3.13.3b: Construct Westbound Right-Turn Only Lane at Arch Road/Newcastle Road Intersection. The applicant shall construct 770 feet (500 feet plus 270 feet of taper) of a right-turn only lane for the westbound approach of the Arch Road/Newcastle Road Intersection.

Impact Significance after Mitigation: With implementation of the improvements required in Mitigation Measures 3.13.3a and 3.13.3b4, these intersections would operate at an acceptable level during the AM and PM peak hours, reducing the project's impact to a ***less-than-significant*** level.

Impact 3.13.5: Near-Term traffic could result in impacts to study area freeway segments. ***(Potentially Significant)***

The addition project traffic would contribute to already unacceptable peak AM, PM (of both) service levels at the following five (5) freeway mainline segments:

- SR99 Northbound, South of Arch Road;
- SR99 Northbound, North of Mariposa Road;
- SR99 Southbound, North of Mariposa Road;
- SR99 Northbound, between Arch Road and Mariposa Road;
- SR99 Southbound, South of Arch Road.

This impact is considered ***potentially significant***.

Mitigation Measures

> **Measure 3.13.2: Project's Fair Share Contribution to SR99 Widening.** The reader is directed above to Impact 3.13.2 for a complete description of this mitigation measure.
>
> **Impact Significance after Mitigation:** With implementation of Mitigation Measure 3.13.2, the identified freeway segments would operate at an acceptable level during both peak hours, reducing the project's impact to a ***less-than-significant*** level.

Impact 3.13.6: Near-Term traffic could result in ramp merge/diverge impacts. *(Potentially Significant)*

The addition of project traffic would contribute to already unacceptable peak AM, PM (or both) service levels at the following five (5) freeway ramps:

- SR99 Southbound Arch Road On-Ramp;
- SR99 Northbound Mariposa Road Off-Ramp;
- SR99 Northbound Mariposa Road On-Ramp;
- SR99 Southbound Mariposa Off-Ramp;
- SR99 Southbound Mariposa On-Ramp.

This impact is considered ***potentially significant***.

Mitigation Measures

> **Measure 3.13.2: Project's Fair Share Contribution to SR99 Widening.** See the discussion provided above under Impact 3.13.2 for a description of Mitigation Measure 3.13-2.
>
> **Impact Significance after Mitigation:** With implementation of the improvements required in Mitigation Measure 3.13.2 the ramp segments would operate at acceptable levels of service, reducing the project's impacts to a ***less-than-significant*** level.

Impact 3.13.7: General Plan Buildout project traffic would not result in impacts to study area roadway segments. *(Less-than-Significant)*

The 2035 General Plan Update was adopted in December 2007. The 2035 General Plan Update envisions a citywide population of over 600,000 (with 210,000 residential units and 200 million square feet of non-residential uses citywide) after build-out of the plan. In the 2035 General Plan Update, substantial new development activity is anticipated in the areas west of I-5 and south of French Camp Road, as well as the areas east of SR 99. In addition, the 2035 General Plan Update

accounts for continued growth outside of Stockton to the year 2035. For the assessment of potential project impacts in the cumulative condition, daily roadway segment volumes have been compared to the segment capacities presented in the General Plan.

Several major roadway improvements in the study area are being considered as part of the 2035 General Plan Update, including a new interchange on SR 99 between Arch Road and French Camp Road and a new east-west arterial, south of Arch Road, connecting Austin Road to Airport Road via the new interchange. Widening of Arch Road to provide 6 travel lanes from east of the Frontage Road to Newcastle Road was also assumed. Widening of SR 99 to provide 8 travel lanes south of Mariposa Road and 10 travel lanes north to Eight Mile Road was also assumed.

General Plan Buildout Without and With project intersection traffic forecasts were developed using the General Plan Update travel demand model as of August 2008. The model allows the analysis to account for the likely interactions between the large amounts of proposed development within the site specifically and the South Stockton area generally. The model land use inputs were modified to better reflect current development proposals and roadway modifications for the South Stockton Area, including Mariposa Lakes and Tidewater. Traffic forecasts from the model were adjusted using the delta method.

The projected roadway segment volumes with General Plan build-out were compared to the segment capacity for each roadway type and a LOS was assigned, as presented in **Table 3.13-19**. With the roadway improvements assumed in the General Plan Build-out network, the roadway segments in the vicinity of the project site are expected to have sufficient capacity to accommodate the anticipated vehicle traffic from build-out of the General Plan land uses, including development on the project site. Therefore, this impact is considered ***less than significant***.

TABLE 3.13-19
CUMULATIVE ROADWAY SEGMENT ANALYSIS

			Cumulative Without Project		Cumulative with Project			
Roadway Segment	**Facility Type**	**No. of Lanes**	**Daily Volume**	**LOS**	**Daily Volume**	**Total Volume**	**LOS**	**Project %**
Arch-Airport Rd btw SR 99 and Quantas Ln	Arterial	8	48,080	C	3,870	51,950	C	7
Arch Rd east of SR 99 Frontage Rd	Arterial	6	20,816	A	11,414	32,230	A	35
Arch Rd east of Frontier Way	Arterial	6	28,096	A	11,414	39,510	C	29
Arch Rd east of Fite Ct	Arterial	6	25,266	A	11,414	36,680	B	31
Arch Rd east of Newcastle Rd (F)	Arterial	4	17,640	A	5,340	22.980	A	23
Arch Rd east of Logistics Dr	Arterial	4	13,882	A	1,688	15,570	A	11
Mariposa Rd west of Austin Rd	Arterial	6	20,214	A	1,076	21,290	A	5

TABLE 3.13-19
CUMULATIVE ROADWAY SEGMENT ANALYSIS

			Cumulative Without Project		Cumulative with Project			
Roadway Segment	Facility Type	No. of Lanes	Daily Volume	LOS	Daily Volume	Total Volume	LOS	Project %
Mariposa Rd west of Project Driveway	Arterial	6	28,184	A	5,786	33,970	B	17
Mariposa Rd west of Carpenter Rd	Arterial	6	38,044	C	5,786	43,830	C	13
SR 99 north of Mariposa Rd	Freeway	10	175,080	D	5,590	180,670	D	3
SR 99 north of Arch-Airport Rd	Freeway	8	145,186	D	1,954	147,140	D	1
SR 99 south of Arch-Airport Rd	Freeway	8	120,774	C	5,376	126,150	C	4

SOURCE: Fehr & Peers, 2013.

Mitigation Measures

None required.

Impact 3.13.8: The project would not conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads and highways. *(Less-than-Significant)*

The TIA analysis incorporates the Regional Congestion Management Program (RCMP) for roadways within the County, including the City of Stockton. RCMP facilities include:

- Arch-Airport Road/State Route (SR) 99
- SR 99 NB Off-Ramp/Mariposa Road/SR 99 West Frontage Road/SR 99 SB On-Ramp
- SR 99 Southbound Ramps/Mariposa Road
- SR 99 East Frontage Road/Mariposa Road
- SR 99 NB Mariposa Off-Ramp/SR 99 East Frontage Road

As described above, with mitigation incorporated, none of these facilities would be adversely impacted by the proposed project. The impact is ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.13.9: The project may increase traffic hazards due to a design feature (e.g. sharp curves or dangerous intersections), incompatible uses (e.g. farm equipment), or result in inadequate emergency access. *(Potentially Significant)*

Access to the project site would be provided from driveways on Newcastle Road and Logistics Drive. Newcastle Road would be extended through the site and connect to Mariposa Road (on the north end of the site). It is recommended that all driveways serving the project site be designed to accommodate STAA trucks.

To accommodate project traffic at the signalized intersection of Arch Road/Newcastle Road, the eastbound left-turn lane should be designed to provide approximately 350 feet of vehicle storage. The 95th percentile southbound vehicle queue on Newcastle Road approaching Arch Road is expected to be approximately 225 feet. Based on the expected vehicle queues, it is recommended that the first driveway on Newcastle Road, serving Southern Lot 1 be at least 300 feet from the Arch Road/Newcastle Road intersection, or be restricted to right-in/right-out operation.

To accommodate project traffic at the signalized intersection of Arch Road/Logistics Drive, the eastbound left-turn lane should be designed to provide 300 feet of vehicle storage, and the southbound right-turn lane should be designed to provide 300 feet of vehicle storage.

To accommodate project traffic at the signalized intersection of Mariposa Road/Newcastle Road, the eastbound right-turn should be designed to provide 150 feet of vehicle storage and the northbound left-turn should be designed to provide 300 feet of storage.

Factors such as number of access points, roadway widths, and proximity to fire stations determine whether a project provides sufficient emergency vehicle access. The project provides multiple points of entry from Arch Road and one point of entry off of Mariposa Road. If one of these roadways or entrances is blocked or obstructed, an emergency vehicle could use the other roadway or an alternate entrance to access the site. Since the site plan has not yet been developed, the internal project roadways should be designed to provide adequate lane widths for emergency vehicle circulation. The applicant should consult with the City of Stockton fire department to ensure that the site plan provides adequate emergency vehicle access. The potential safety impact regarding operational and emergency vehicle access is ***potentially significant***.

Mitigation Measures

> **Measure 3.13.4a: Provide Adequate Vehicle Storage.** At Arch Road/Newcastle Road, the eastbound left-turn lane should be designed to provide approximately 350 feet of vehicle storage. At Arch Road/Logistics Drive, the eastbound left-turn lane should be designed to provide 300 feet of vehicle storage, and the southbound right-turn lane should be designed to provide 300 feet of vehicle storage. At Mariposa Road/Newcastle Road, the eastbound right-turn should be designed to provide 150 feet of vehicle storage and the northbound left-turn should be designed to provide 300 feet of storage.
>
> **Measure 3.13.4b: Provide Adequate Driveway Access on Newcastle Road.** The first driveway on Newcastle Road, serving Southern Lot 1 should be at least 300 feet from the Arch Road/Newcastle Road intersection, or restricted to right-in/right-out operation.

Measure 3.13.4c: Provide Adequate Emergency Vehicle Access. For each developable lot, the applicant shall consult with the City of Stockton fire department to ensure that the site plan provides adequate emergency vehicle access.

Impact Significance after Mitigation: With implementation of Mitigation Measures 3.13.4a through 3.13.4c, the potential traffic safety impact would be reduced to ***less-than-significant***.

Impact 3.13.10: The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. ***(Less-than-Significant)***

As described in the Existing Setting, Section 3.13.2, there is minimal transit, bicycle or pedestrian facilities in the project area. Within the project area, Arch Road is identified as a Class III Bicycle Route (signage, no dedicated lanes) in the General Plan. Arch Road is also designated as a BRT Type 1bus facility (enhanced speed and reliability, shared lanes). This is the lowest transit designation in the general plan. The project would not interfere with the implementation of the bicycle or transit route designations and would contribute, through the payment of fees, to the ultimate buildout of Arch Road consistent with General Plan circulation policies. Therefore, this impact is considered ***less-than-significant.***

Mitigation Measures

None required.

3.13.5 References

City of Stockton, 2007. *City of Stockton General Plan 2035*, December 2007.

Fehr and Peers, 2013. *Transportation Impact Analysis, NorCal Logistics Center*, January 2013.

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3.2 Agricultural Resources

3.2.1 Introduction

This section provides a description of local agricultural resources on the project site and within the project vicinity. A general overview of applicable State and local regulations is also provided. The impact analysis evaluates the project's potential to adversely affect existing agricultural resources, and mitigation is identified, where appropriate, to reduce project impacts.

3.2.2 Setting

Regional Overview

The City of Stockton is located within San Joaquin County, which is one of California's leading agricultural centers. San Joaquin County typically ranks in the top 10 of the 58 counties in California in gross value agricultural production. Much of the County contains highly productive soils. These soils, along with available irrigation water and a favorable growing season, combine to produce large areas of farmlands ideally suited for agriculture. Nearly two-thirds of the acreage (approximately 99,000 acres) within the City's planning boundary is designated as "Important Farmland", with an estimated 74,500 acres designated as "Prime Farmland" according to the California Department of Conservation's Farmland Mapping and Monitoring Program. Additionally, over 930 parcels within the Study Area are under Williamson Act Contract (City of Stockton, 2007).

In 2010, San Joaquin County earned approximately $1.96 billion in the production of agricultural goods, see **Table 3.2-1** (San Joaquin County Agricultural Commissioner, 2010). This represents a roughly 2.02% decrease in gross revenue from 2009. The decrease was mainly due to adverse weather conditions resulting in lower yields for many San Joaquin County crops. Fruit and nut crops remained the top commodities in San Joaquin County, grossing approximately $935 million in 2010.

TABLE 3.2-1
SAN JOAQUIN COUNTY AGRICULTURAL PRODUCTION SUMMARY, 2009–2010

	Value of Production	
Industry	**2009**	**2010**
Fruit & Nut Crops	951,004,000	935,155,000
Field Crops	202,872,000	208,729,000
Vegetable Crops	368,327,000	256,261,000
Nursery Products	75,844,000	76,951,000
Apiary Products	25,059,000	13,349,000
Livestock and Poultry with Products	274,207,000	369,003,000
Seed Crops	4,813,000	5,628,000
Total Value in Dollars	**$2,000,473,000**	**$1,960,086,000**

SOURCE: San Joaquin County Agricultural Commissioner's Office, 2010. Agricultural Crop Report.

California Farmland Mapping and Monitoring Program

The California Department of Conservation, under the Division of Land Resource Protection, has set up the Farmland Mapping and Monitoring Program (FMMP). The FMMP monitors the conversion of the state's farmland to and from agricultural use. The map series identifies eight classifications and uses a minimum mapping unit size of 10 acres. The FMMP also produces a biannual report on the amount of land converted from agricultural to non-agricultural use. The FMMP maintains an inventory of state agricultural land and updates its "Important Farmland Series Maps" every two years (Department of Conservation, 2004).

Important Farmland maps show categories of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-up Land, Other Land, and Water. Prime Farmland and Farmland of Statewide Importance map categories are based on qualifying soil types, as determined by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), as well as current land use (irrigated agriculture). These map categories are defined by the Department of Conservation's FMMP as follows:

- ***Prime Farmland:*** Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- ***Farmland of Statewide Importance:*** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- ***Unique Farmland:*** Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- ***Farmland of Local Importance:*** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- ***Grazing Land:*** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres. Due to variations in soil quality, smaller units of Grazing Land may appear within larger irrigated pastures.
- ***Urban and Built-up Land:*** Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- ***Other Land:*** Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable

for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

- ***Water:*** Perennial water bodies with an extent of at least 40 acres.

Table 3.2-2 shows the acres of farmland in San Joaquin County, as well as the amount of recent farmland conversions.

TABLE 3.2-2
FARMLAND CONVERSION FROM 2006–2008 IN SAN JOAQUIN COUNTY

	Total Acres Inventoried		2006–2008 Acreage Changes		
Land Use Category	**2006**	**2008**	**Acres Lost**	**Acres Gained**	**Net Change**
Prime Farmland	407,609	396,985	11,941	1,317	-10,624
Farmland of Statewide Importance	89,274	86,299	3,517	542	-2,975
Unique Farmland	63,232	66,624	1,658	5,050	3,392
Farmland of Local Importance	59,965	65,788	5,356	11,179	5,823
Grazing Land	144,933	142,460	2,709	236	-2,473
Agricultural Land Subtotal	**765,013**	**758,156**	**25,181**	**18,324**	**-6,857**

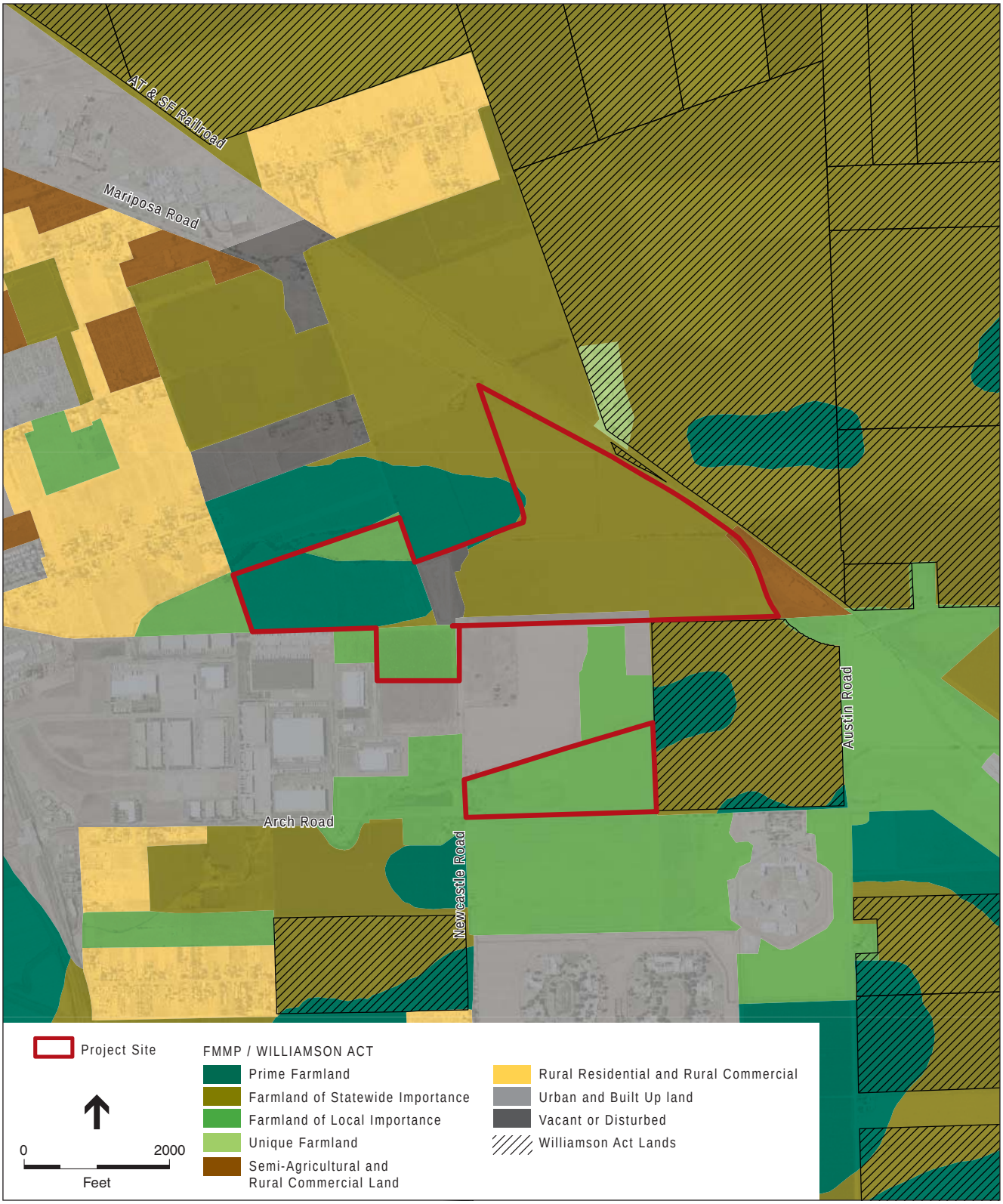
SOURCE: California Department of Conservation, 2008. Table A-30.

Local Agricultural Resources

While the project site and surrounding properties have historically been used for agricultural production, a majority of the project site is currently under development, with a limited number of undeveloped areas currently identified as fallow agricultural fields. Highway 99 and existing agricultural operations border the site to the north and east. To the west, existing industrial operations border the project site. The Northern California Youth Correctional Center (NCYCC) and land pending annexation and industrial zoning are located to the south. The 2010 FMMP data for San Joaquin County indicates that the project site is currently mapped as 55 acres of *Prime Farmland,* 176 acres of *Farmland of Statewide Importance,* and approximately 79 acres of *Farmland of Local Importance* (see **Figure 3.2-1**).

Soil Types

The United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) conducts soil surveys and creates maps representing the location and type of soil in order to aid in land use decisions. According to the soil survey conducted by ESA, the project site consists of two soil mapping units, which includes, Jacktone clay (0 to 2 percent slopes), and Stockton clay (0 to 2 percent slopes).



NorCal Logistics Center . 210506

SOURCE: FMMP, 2006; NAIP, 2006; ESRI, 2007 and ESA, 2012

Figure 3.2-1
FMMP and Williamson Act Lands

The Jacktone clay series is the dominant soil located on the project site and meets the criteria for farmland of statewide importance as outlined in the USDA's land inventory and monitoring project for the San Joaquin County Soil Survey (USDA NRCS, 2005). The Jacktone series consists of somewhat poorly drained soils in basins that are moderately deep to a hardpan. These soils formed in alluvium derived from mixed rock sources and are fine, montmorillonitic, thermic Typic Pelloxererts. Typically, the surface layer is very dark gray clay about 22 inches thick.

The Stockton clay series also consists of somewhat poorly drained soils in basins, however it meets the criteria for prime farmland as outlined in the USDA's land inventory and monitoring project for the San Joaquin County Soil Survey (USDA NRCS, 2005). The Stockton clay series is deep to hardpan and formed in alluvium derived from mixed rock sources. Like the Jacktone clay series, soils of the Stockton series are fine, montmorillonitic, thermic Typic Pelloxererts. Typically, the surface layer is dark gray clay about 29 inches thick.

Land Capability Classifications

The San Joaquin County Soil Survey also provides a land capability classification for all soils. A land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit.

Capability classes are designated by numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. Capability subclasses are soil groups within one class, designated by adding a small letter (e, w, s, or c) to the class numeral. Lastly, capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral (1 through 10) to the subclass symbol. Table 3.2-3 provides descriptions of all capability classes, subclasses, and units.

The Jacktone clay (0 to 2 percent slopes) soil is classified as IIIs-8, irrigated, and IVs-8, non-irrigated, indicating that most of the soil on the site has limitations affecting the how it can be used. Jacktone clay is suited for irrigated row, field, orchard, and vineyard crops. The main limitations are the slow permeability and depth to the hardpan. Stockton clay (0 to 2 percent slopes) soil is classified as capability unit IIs-5, irrigated and IVs-5, non-irrigated, indicating that the soil has some limitations affecting how it can be used. Stockton clay is suited for irrigated row, field, or orchard crops. Limitations are the slow permeability and depth to the hardpan.

TABLE 3.2-3
LAND CAPABILITY CLASSIFICATION DEFINITIONS

Capability Classes	
Class I	Soils have few limitations restricting their use
Class II	Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices
Class III	Soils have severe limitations that reduce the choice of plants or that require moderate conservation practices, or both
Class IV	Soils have very severe limitations that reduce the choice of plants or that require very careful management, or both
Class V	Soils are not likely to erode but have other limitations, impractical to remove, that limit their use
Class VI	Soils have severe limitations that make them generally unsuitable for cultivation
Class VII	Soils have very severe limitations that make them unsuitable for cultivation
Class VIII	Soil and miscellaneous areas have limitations that nearly preclude their use for commercial crop production
Capability Subclasses	
e	Main hazards is the risk of erosion unless close-growing plant cover is maintained
w	Water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage)
s	The soil is limited mainly because it is shallow, droughty, or stony
c	The chief limitation is climate that is very dry
Capability Units	
0	Indicates limitations caused by stony, cobbly, or gravelly material in the substratum
1	Indicates limitations caused by slope or by an actual or potential erosion hazard
2	Indicates a limitation of wetness caused by poor drainage or flooding
3	Indicates a limitation of slow or very slow permeability in a clayey subsoil or a semiconsolidated substratum
4	Indicates a low available water capacity in sandy or gravelly soils
5	Indicates limitations caused by a fine textured or very fine textured surface layer
6	Indicates limitations caused by salts or alkali
7	Indicates limitations caused by stony, cobbly, or gravelly material in the surface layer
8	Indicates that the soil has a very low or low available water capacity because the root zone generally is less than 40 inches deep over massive bedrock
9	Indicates that limitations caused by very low or low fertility, acidity, or toxicity cannot be overcome by adding normal amounts of fertilizer, lime, or other amendments
10	Indicates that the soil has a high content of organic material, such as peat and muck

SOURCE: USDA NRCS, 1998.

Regulatory Setting

State

California Land Conservation Act (Williamson Act)

Under the provisions of the Williamson Act (Sections 51200 *et seq*. of the Government Code), landowners contract with the City or County to maintain agricultural or open space use of their lands in return for a reduced property tax assessment. In 1994, the Williamson Act was amended to include specific language regarding "conditional compatibility" (Government Code Section

51238.1), mining compatibility (Section 51238.2) and grandfather provisions (Section 51238.3).

No property contained in the proposed project is under a Williamson Act contract.

Local

City of Stockton General Plan 2035

The City of Stockton General Plan designates the entire project site as land for *Industrial* use. The Industrial land use designation provides for a wide variety of industrial uses including uses with nuisance or hazardous characteristics, warehousing, construction contractors, light manufacturing, offices, retail sales, service businesses, public and quasi-public uses, and other similar and compatible uses. Residential uses are prohibited.

The following General Plan policies are relevant to the proposed project:

Policy LU-2.1 The City shall limit the wasteful and inefficient sprawl of urban uses into agricultural lands.

Policy LU-2.2 The City shall support the establishment of a permanent agricultural/open space buffer along the ultimate edge of the Urban Service Area. Buffer or setback areas would follow along parcel boundary lines and be established with a minimum width of 100 feet.

Policy LU-2.3 The City shall discourage the premature conversion of agricultural land to urban uses within the Urban Service Area.

Policy NCR-4.1 The City shall promote the continuation of existing agricultural operations until such time that areas are needed for planned urban expansion.

Policy NCR-4.2 The City shall review its right to farm ordinance to insure its compatibility with the County's ordinance and promote the protection of farming operations through disclosure to all prospective buyers.

Policy NCR-4.3 The City shall support policies adopted by San Joaquin County to promote the viability of agriculture in the county.

Policy NCR-4.4 The City shall support an Agricultural Conservation Program (ACP) for the protection and conservation of agricultural lands. The ACP shall include the collection of an agricultural mitigation fee for acreage converted from agricultural to urban use, outside of the Enterprise Zone, Free Trade Zone, or Redevelopment Area, taking into consideration all fees collected for agricultural loss (i.e., AB1600). The mitigation fee collected shall fund agricultural conservation easements, fee title acquisition, and research, the funding of agricultural education and local marketing programs, other capital improvement projects that clearly benefit agriculture (i.e., groundwater recharge projects) and administrative fees through an appropriate entity ("Administrative Entity") pursuant to an administrative agreement. The conservation easements and fee title acquisition of conservation lands shall be used for lands determined to be of statewide

	significance, or sensitive and necessary for the preservation of agricultural land, including land that may be part of a community separator as part of a comprehensive program to establish community separators.
Policy NCR-4.5	The mitigation fees collected by the City shall be transferred to the Central Valley Farmland Trust or other qualifying entity, which will arrange the purchase of conservation easements. The City shall encourage the Trust or other qualifying entity to pursue a variety of funding sources (grants, donations, taxes, or other funds) to fund implementation of the ACP.
Policy NCR-5.1	The City shall encourage the conservation of agricultural soils to provide a base for agricultural productivity and the city's economy.

3.2.3 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, a Williamson Act contract, or any other adopted agricultural-related plan or policy; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural uses.

No property that comprises the project site is under a Williamson Act contract. Therefore, impacts associated with a potential conflict with existing agricultural zoning or uses (including a Williamson Act contract) are not discussed further in this section.

Impact Analysis

Impact 3.2.1: Implementation of the proposed project would result in the permanent conversion of land designated by the Department of Conservation FMMP as *Prime Farmland, Farmland of Statewide Importance or Unique Farmland*. (*Potentially Significant*)

While the project site and surrounding properties have historically been used for agricultural production, the project site is currently under varying degrees of development. However, lands within the proposed project area are currently designated by the Department of Conservation FMMP as *Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance.* The City of Stockton's recently updated General Plan designates the project area for industrial uses and significant unavoidable environmental impacts resulting from conversion of agricultural land in the project site have been addressed in the General Plan EIR. Nevertheless, implementation of the proposed project would result in the direct and permanent conversion of

approximately 231± acres of land currently designated as important farmland to a non-agricultural use, including approximately 55 acres of *Prime Farmland* and 176 acres of *Farmland of Statewide Importance*; therefore this impact is considered ***potentially significant***.

Mitigation Measures

Measure 3.2.1: Compensate For Loss of Agricultural Lands. The Applicant will be subject to the City's Agricultural Land Mitigation Program fees. The Agricultural Land Mitigation Program applies to all projects under the jurisdiction of the City of Stockton that would result in the conversion of agricultural land to a non-agricultural use, including residential, commercial, and industrial development. The purpose of the Agricultural Land Mitigation Program is to mitigate for the loss of agricultural land in the City of Stockton through conversion to private urban uses, including residential, commercial and industrial development.

Impact Significance after Mitigation: Although the Applicant will compensate for the loss of agricultural lands resulting from the proposed project by complying with the requirements of the Agricultural Land Mitigation Program (Mitigation Measure 3.2.1), implementation of the proposed project will still result in a net loss of important farmland. Consequently, this impact remains ***significant and unavoidable***.

Impact 3.2.2: Industrial activities could result in offsite impacts to adjacent agricultural lands. ***(Less-than-Significant)***

Land uses adjacent to the proposed project site include important agricultural lands. Because the proposed project site is currently vacant, it is possible that development of the site may have some minor impacts on adjacent agricultural lands (e.g. dust generation); however it is unlikely that uses associated with the proposed project would have any permanent detrimental impact to the adjacent farmlands. Because IL zoning requires nuisance generating uses to be indoors; this impact would be ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.2.3: Implementation of the proposed project would contribute to the cumulative conversion of land in San Joaquin County designated by the Department of Conservation FMMP as *Prime Farmland, Farmland of Statewide Importance or Unique Farmland.* *(Potentially Significant)*

As shown in Table 3.2-2, the County has seen the ongoing conversion of Important Farmland. This project, and others identified in the Stockton General Plan EIR, would contribute to this cumulatively significant impact.

Mitigation Measures

Measure 3.2.1: Compensate For Loss of Agricultural Lands. The reader is directed above to Impact 3.2.1 for a complete description of this mitigation measure.

Impact Significance after Mitigation: The purpose of the Agricultural Land Mitigation Program referenced in Mitigation Measure 3.2.1 is to mitigate for the loss of agricultural land in the City of Stockton through conversion to private urban uses, including residential, commercial and industrial development. As such, it is a regional program which seeks to reduce the effects of cumulative conversion of important farmland through the acquisition of equivalent farmland resources. This mitigation does not fully compensate for the direct loss of the agricultural land on the project site and the loss of important farmland would remain cumulatively considerable; therefore this cumulative impact is considered ***significant and unavoidable***.

3.2.4 References

California Department of Conservation, 2010. Farmland Mapping and Monitoring Program.

City of Stockton, 2007. *2035 General Plan*, December 2007.

Natural Resources Conservation Service (NRCS), 2008. United States Department of Agriculture. Web Soil Survey, websoilsurvey.nrcs.usda.gov, accessed August 25, 2008.

United States Department of Agriculture, National Resource Conservation Service, 1998. Land Use Capability Classification Definitions.

United States Department of Agriculture, National Resource Conservation Service, 2005. Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance San Joaquin County.

San Joaquin County Agricultural Crop Report, 2010. San Joaquin County Agricultural Commissioner's Office.

3.3 Air Quality

3.3.1 Introduction

This section provides an overview of the existing air quality at the project site and surrounding region, the regulatory framework, an analysis of potential impacts to air quality that would result from implementation of the project, and identification of mitigation measures.

3.3.2 Setting

Existing Air Quality Conditions

General Meteorology and Topography

The primary factors that determine air quality are the locations of air pollutant sources and the amounts of pollutants emitted. Meteorological and topographical conditions, however, also are important. Factors such as wind speed and direction, and air temperature gradients interact with physical landscape features to determine the movement and dispersal of criteria air pollutants.

The project lies within the San Joaquin Valley Air Basin (SJVAB), basically a flat area bordered on the east by the Sierra Nevada Mountains; on the west by the Coast Ranges; and to the south by the Tehachapi Mountains. Airflow in the SJVAB is primarily influenced by marine air that enters through the Carquinez Straits where the San Joaquin-Sacramento Delta empties into the San Francisco Bay (SJVAPCD, 2002). The region's topographic features restrict air movement through and out of the basin. As a result, the SJVAB is highly susceptible to pollutant accumulation over time (SJVAPCD, 2002). Frequent transport of pollutants into the SJVAB from upwind sources also contributes to poor air quality.

Wind speed and direction play an important role in dispersion and transport of air pollutants. During summer periods, winds usually originate from the north end of the San Joaquin Valley and flow in a south-southeasterly direction through the valley, through the Tehachapi pass and into the neighboring Southeast Desert Air Basin. During winter months, winds occasionally originate from the south end of the valley and flow in a north-northwesterly direction. Also, during winter months, the valley experiences light, variable winds, less than 10 miles per hour (mph). Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high concentrations of certain air pollutants.

The SJVAB has an inland Mediterranean climate that is characterized by warm, dry summers and cooler winters. Summer high temperatures often exceed 100 degrees Fahrenheit (°F), averaging from the low 90s in the northern part of the valley to the high 90s in the south. The daily summer temperature variation can be as high as 30 degrees °F. Winters are for the most part mild and humid. Average high temperatures during the winter are in the 50s, while the average daily low temperature is approximately 45 degrees °F.

The vertical dispersion of air pollutants in the valley is limited by the presence of persistent temperature inversions. Air temperatures usually decrease with an increase in altitude. A reversal

of this atmospheric state, where the air temperature increases with height, is termed an inversion. Air above and below an inversion does not mix because of differences in air density thereby restricting air pollutant dispersal.

Existing Air Quality in the Study Area Vicinity

The San Joaquin Valley Air Pollution Control District's (SJVAPCD) regional air quality monitoring network provides information on existing ambient concentrations of criteria air pollutants. Monitored ambient air pollutant concentrations reflect the number and strength of emissions sources and the influence of topographical and meteorological factors. **Table 3.3-1** presents a three-year summary of air pollutant (concentration) data collected at the monitoring station in the vicinity of the project area on Hazelton Street in Stockton. The Hazelton Street station measures concentrations of several air pollutants, including the three for which the SJVAB remains "nonattainment", ozone, PM10, and PM2.5. Pollutant concentrations measured at this station should be representative of background air pollutant concentrations at the project site. In **Table 3.3-1**, these measured air pollutant concentrations are compared with state and national ambient air quality standard.

TABLE 3.3-1
AIR QUALITY DATA SUMMARY (2009-2011) – HAZELTON STREET STATION, STOCKTON

	Monitoring Data by Year		
Pollutant	**2009**	**2010**	**2011**
Ozone			
Highest 1 Hour Average (ppm)[b]	**0.116**	**0.120**	0.089
Days over State Standard (0.09 ppm)[a]	2	2	0
Highest 8 Hour Average (ppm)[b]	**0.096**	**0.095**	0.068
Days over National Standard (0.075 ppm)[a]	2	2	0
Days over State Standard (0.07 ppm)[a]	4	3	0
Particulate Matter (PM10)			
Highest 24 Hour Average – State/National ($\mu g/m^3$)[b]	**58.8**/58.7	**55.4**/54.3	**70.1**/66.1
Estimated Days over National Standard (150 $\mu g/m^3$)[a,c]	0	0	0
Estimated Days over State Standard (50 $\mu g/m^3$)[a,c]	18.2	6.1	24.4
State Annual Average (State Standard 20 $\mu g/m^3$)[a,b]	**23.6**	19.9	**24.1**
Particulate Matter (PM2.5)			
Highest 24 Hour Average ($\mu g/m3$)[b] – National Measurement	**48.4**	**41.0**	**60.0**
Estimated Days over National Standard (35 $\mu g/m^3$)[a,c]	15.9	5.3	11.0
State Annual Average (12 $\mu g/m3$)[b]	**13.4**	NA	NA

a. Generally, state standards and national standards are not to be exceeded more than once per year.
b. ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.
c. PM10 and PM2.5 is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.

NA = Not Available. Values in **Bold** exceed the respective air quality standard.

SOURCE: California Air Resources Board, 2013. *Summaries of Air Quality Data*, 2009-2011, www.arb.ca.gov/adam/cgi-bin/db2www/polltrendsb.d2w/start, accessed January 7, 2013.

Sensitive Receptors

Land uses such as schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because infants and children, the elderly, and people with health afflictions, especially respiratory ailments, are more susceptible than the general public. Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Industrial and commercial districts are less sensitive to poor air quality because exposure periods are shorter and workers in these districts are, in general, the healthier segment of the public. The nearest sensitive receptors to the boundaries of the project site are residences located northwest of the project (these are along Marfargoa Road) and southwest of the project along Arch Road. The closest residences are 75 feet, 160 feet (both along Marfargoa Road) and 325 feet (on Arch Road) from the project boundaries, respectively.

Criteria Air Pollutants

These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria set forth in the Federal Clean Air Act (FCAA). California has adopted more stringent ambient air quality standards for the criteria air pollutants (referred to as State Ambient Air Quality Standards, or state standards) and has adopted air quality standards for some pollutants for which there is no corresponding national standard.

Ozone

Short-term exposure to ozone can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Ozone, the main component of photochemical smog, is primarily a summer and fall pollution problem. Ozone is not emitted directly into the air but is formed through a complex series of chemical reactions involving other compounds that are directly emitted. These directly emitted pollutants (also known as ozone precursors) include reactive organic gases (ROG) and nitrogen oxides (NOx). The time period required for ozone formation allows the reacting compounds to spread over a large area, producing a regional pollution problem. Ozone problems are the cumulative result of regional development patterns rather than the result of a few significant emission sources. Once formed, ozone remains in the atmosphere for one or two days. Ozone is then eliminated through chemical reaction with plants (reacts with chemicals on the leaves of plants); rainout (attaches to water droplets as they fall to earth) and washout (absorbed by water molecules in clouds and later falls to earth with rain).

Carbon Monoxide

Ambient carbon monoxide concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distributions of vehicular traffic. Wind speed and atmospheric mixing also influence carbon monoxide concentrations. Under inversion conditions, carbon monoxide concentrations may be distributed more uniformly over an area that may extend some distance from vehicular sources. When inhaled at high concentrations, carbon monoxide combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is

especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses.

Carbon monoxide concentrations have declined dramatically in California due to existing controls and programs and most areas of the state including the Station Area Plan region have no problem meeting the carbon monoxide state and federal standards. CO measurements and modeling were important in the early 1980's when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling have not been a priority in most California air districts due to the retirement of older polluting vehicles, fewer emissions from new vehicles and improvements in fuels. The clear success in reducing CO levels is evident in the first paragraph of the executive summary of the California Air Resources Board *2004 Revision to the California State Implementation Plan for Carbon Monoxide Updated Maintenance Plan for Ten Federal Planning Areas* (ARB, 2004), shown below:

> "The dramatic reduction in carbon monoxide (CO) levels across California is one of the biggest success stories in air pollution control. Air Resources Board (ARB or Board) requirements for cleaner vehicles, equipment and fuels have cut peak CO levels in half since 1980, despite growth. All areas of the State designated as non-attainment for the federal 8-hour CO standard in 1991 now attain the standard, including the Los Angeles urbanized area. Even the Calexico area of Imperial County on the congested Mexican border had no violations of the federal CO standard in 2003. Only the South Coast and Calexico continue to violate the more protective State 8-hour CO standard, with declining levels beginning to approach that standard."

Suspended Particulate Matter (PM10 and PM2.5)

PM10 and PM2.5 consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively (a micron is one-millionth of a meter). PM10 and PM2.5 represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Some sources of particulate matter, such as wood burning in fireplaces, demolition, and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility. Large dust particles (diameter greater than 10 microns) settle out rapidly and are easily filtered by human breathing passages. This large dust is of more concern as a soiling nuisance rather than a health hazard. The remaining fraction, PM10 and PM2.5, are a health concern particularly at levels above the federal and state ambient air quality standards. PM2.5 (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus, are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Recent studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air. Children are more susceptible to the health risks of PM10 and PM2.5 because their immune and respiratory systems are still developing.

Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of particulate matter in the air. Despite

important gaps in scientific knowledge and continued reasons for some skepticism, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health (Dockery and Pope 2006). The ARB has estimated that achieving the ambient air quality standards for PM10 could reduce premature mortality rates by 6,500 cases per year (ARB, 2002).

Nitrogen Dioxide (NO_2)

NO_2 is a reddish brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, nitrogen dioxide can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels.

Sulfur dioxide (SO_2)

SO_2 is a combustion product of sulfur or sulfur-containing fuels such as coal and diesel. SO_2 is also a precursor to the formation of atmospheric sulfate, particulate matter and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain. The maximum SO_2 concentrations recorded in the project area are well below federal and state standards. Accordingly, the region is in attainment status with both federal and state SO_2 standards.

Lead

Ambient lead concentrations meet both the federal and state standards in the project area. Lead has a range of adverse neurotoxin health effects, and was formerly released into the atmosphere primarily via leaded gasoline products. The phase-out of leaded gasoline in California resulted in dramatically reduced levels of atmospheric lead. The proposed project would not introduce any new sources of lead emissions; consequently, lead emissions are not required to be quantified and are not further evaluated in this analysis.

Non-Criteria Air Pollutants

Toxic Air Contaminants (TACs)

Non-criteria air pollutants or TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, diesel engines, dry cleaners, industrial operations, and painting operations. TACs are regulated separately from the criteria air pollutants at both federal and state levels. At the federal level these airborne substances are referred to as Hazardous Air Pollutants (HAPs). The state list of TACs identifies 243 substances and the federal list of HAPs identified 189 substances.

Diesel particulate matter (DPM) is the most complex of diesel emissions. Diesel particulates, as defined by most emission standards, are sampled from diluted and cooled exhaust gases. This definition includes both solids and liquid material that condenses during the dilution process. The basic fractions of DPM are heavy hydrocarbons derived from the fuel and lubricating oil and hydrated sulfuric acid derived from the fuel sulfur. DPM contains a large portion of the polycyclic aromatic hydrocarbons (PAH) found in diesel exhaust. Diesel particulates include small nuclei

mode particles of diameters below 0.04µm and their agglomerates of diameters up to 1µm. Ambient exposures to diesel particulates in California are significant fractions of total TAC exposure levels in the State.

Odorous Emissions

Because offensive odors rarely cause any physical harm and no requirements for their control are included in state or national air quality regulations, the SJVAPCD has no rules or standards related to odor emissions, other than its nuisance rule. Any actions related to odors are based on citizen complaints to local government agencies including the SJVAPCD. The SJVAPCD uses screening distances to determine the potential for odor impacts from various land uses.

Regulatory Setting

Regulation of air pollution is achieved through both national and state ambient air quality standards and through emissions limits on individual sources of air pollutants. Local Air Quality Management Districts (AQMD's) and Air Pollution Control Districts (APCD's) are responsible for demonstrating attainment with state air quality standards through the adoption and enforcement of Attainment Plans.

Federal

The FCAA requires the U.S. Environmental Protection Agency (U.S. EPA) to identify National Ambient Air Quality Standards (NAAQS), or (national standards) to protect public health and welfare. National standards have been established for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, respirable particulate matter (PM10 and PM2.5), and lead. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria set forth in the FCAA. California has adopted more stringent ambient air quality standards for the criteria air pollutants (referred to as State Ambient Air Quality Standards, or state standards) and has adopted air quality standards for some pollutants for which there is no corresponding national standard. **Table 3.3-2** presents current national and state ambient air quality standards and provides a brief discussion of the related health effects and principal sources for each pollutant.

Pursuant to the 1990 Federal Clean Air Act Amendments (FCAAA), the U.S. EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether or not the NAAQS had been achieved. **Table 3.3-3** shows the current attainment status of the project area.

TABLE 3.3-2
STATE AND NATIONAL CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 hour	0.09 ppm	---	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROG) and nitrogen oxides (NO_X) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
	8 hours	0.07 ppm	0.075 ppm		
Carbon Monoxide	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Nitrogen Dioxide	1 hour	0.18 ppm	100 ppb	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	Annual Avg.	0.030	0.053 ppm		
Sulfur Dioxide	1 hour	0.25 ppm	75 ppb	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	3 hours	---	0.5 ppm		
	24 hours	0.04 ppm	0.14 ppm		
	Annual Avg.	---	0.03 ppm		
Respirable Particulate Matter (PM10)	24 hours	50 ug/m^3	150 ug/m^3	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Avg.	20 ug/m^3	---		
Fine Particulate Matter (PM2.5)	24 hours	---	35 ug/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO_X, sulfur oxides, and organics.
	Annual Avg.	12 ug/m^3	12 ug/m^3		
Lead	Monthly Ave.	1.5 ug/m^3	---	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	---	1.5 ug/m^3		
Hydrogen Sulfide	1 hour	0.03 ppm	No National Standard	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Geothermal Power Plants, Petroleum Production and refining
Sulfates	24 hour	25 ug/m^3	No National Standard	Breathing difficulties, aggravates asthma, reduced visibility	Produced by the reaction in the air of SO2.
Visibility Reducing Particles	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, and discourages tourism.	See PM2.5.

ppm = parts per million; ug/m^3 = micrograms per cubic meter.
The US EPA lowered the federal primary PM2.5 annual standard from 15 ug/m^3 to 12 ug/m^3 on December 14, 2012, which will become effective 60 days after publication of the Federal Register.

SOURCE: California Air Resources Board, 2012. *Air Quality Standards and Area Designations,* www.arb.ca.gov/desig/desig.htm, page reviewed December 21, 2012. California Air Resources Board, 2009. *ARB Fact Sheet: Air Pollution Sources, Effects and Control,* www.arb.ca.gov/research/health/fs/fs2/fs2.htm, page last reviewed December 2, 2009.

TABLE 3.3-3
SAN JOAQUIN VALLEY ATTAINMENT STATUS

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – one hour	No Federal Standard[1]	Nonattainment/Severe
Ozone – eight hour	Nonattainment/Extreme[2]	Nonattainment
PM10	Attainment[3]	Nonattainment
PM2.5	Nonattainment[4]	Nonattainment
CO	Unclassified/Attainment	Unclassified/Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified/Attainment	Attainment
Lead	No Designation	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Vinyl Chloride	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

1. Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.
2. Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).
3. On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.
4. The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009.

SOURCE: SJVAPCD, 2013, *Ambient Air Quality Standards and Valley Attainment Status*, www.valleyair.org/aqinfo/attainment.htm, accessed January 19, 2013.

The FCAA required each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The FCAAA added requirements for states containing areas that violate the NAAQS to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The U.S. EPA has responsibility to review all state SIPs to determine if they conform to the mandates of the FCAAA and will achieve air quality goals when implemented. If the U.S. EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area and may impose additional control measures. Failure to submit an approvable SIP or to implement the plan within mandated timeframes can result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

Regulation of Toxic Air Contaminants (TACs), termed Hazardous Air Pollutants (HAPs) under federal regulations, is achieved through federal, State and local controls on individual sources. The SJVAPCD regulates toxic air contaminants in District Policies 1905 and 1910, and in regulation VII. The district recognizes all TAC's as defined by the State. The district recognizes federal Maximum Achievable Control Technology (MACT) standards for HAP's in District Rule 4002. The 1977 Clean Air Act Amendments required the U.S. EPA to identify National Emission Standards for Hazardous Air Pollutants (NESHAPs) to protect public health and welfare. These substances

include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals.

State

The ARB manages air quality, regulates mobile emissions sources, and oversees the activities of county Air Pollution Control Districts and regional Air Quality Management Districts. ARB establishes state ambient air quality standards and vehicle emissions standards.

California has adopted ambient standards that are more stringent than the federal standards for the criteria air pollutants. These are shown in **Table 3.3-2.** Under the California Clean Air Act (CCAA) patterned after the FCAA, areas have been designated as attainment or nonattainment with respect to the state standards. **Table 3.3-3** summarizes the attainment status with California standards in the project area.

Toxic Air Contaminants (TACs)

The State Air Toxics Program was established in 1983 under Assembly Bill (AB) 1807 (Tanner). A total of 243 substances have been designated TACs under California law; they include the 189 (federal) hazardous air pollutants (HAPs) adopted in accordance with AB 2728. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources; however, AB 2588 does not regulate air toxics emissions. Toxic air contaminant emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment and, if specific thresholds are violated, are required to communicate the results to the public in the form of notices and public meetings.

In August of 1998, ARB identified particulate emissions from diesel-fueled engines (diesel particulate matter, or DPM) as TACs. ARB subsequently developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (ARB, 2000a). The document represents proposals to reduce diesel particulate emissions, with the goal of reducing emissions and associated health risks by 75 percent in 2010 and by 85 percent in 2020. The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra low sulfur diesel fuel on diesel-fueled engines.

ARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB, 2005) with the goal of providing information that will help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution. The handbook highlights recent studies that have shown that public exposure to air pollution can be substantially elevated near freeways and certain other facilities. However, the health risk is greatly reduced with distance. For that reason, ARB provided some general recommendations aimed at keeping appropriate distances between sources of air pollution and sensitive land uses, such as residences.

Local

The SJVAPCD is the primary local agency responsible for protecting human health and property from the harmful effects of air pollution in the San Joaquin Valley Air Basin, and has jurisdiction over most stationary source air quality matters in the SJVAB, including the NSPS program. The

SJVAPCD includes all of Merced, San Joaquin, Stanislaus, Madera, Fresno, Kings and Tulare counties, and the Valley portion of Kern County.

The SJVAPCD is responsible for developing attainment plans for the SJVAB, for inclusion in California's SIP, as well as establishing and enforcing air pollution control rules and regulations. The attainment plans must demonstrate compliance with federal and state ambient air quality standards, and must first be approved by ARB before inclusion into the SIP. The SJVAPCD regulates, permits, and inspects stationary sources of air pollution. Among these sources are industrial facilities, gasoline stations, auto body shops, MSW landfills and dry cleaners to name a few. While the state is responsible for emission standards and controlling actual tailpipe emissions from motor vehicles, the SJVAPCD is required to regulate emissions associated with stationary sources such as agricultural burning and industrial operations. The SJVAPCD also works with eight local transportation planning agencies to implement transportation control measures, and to recommend mitigation measures for new growth and development designed to reduce the number of cars on the road. The SJVAPCD promotes the use of cleaner fuels, and funds a number of public and private agency projects that provide innovative approaches to reducing air pollution from motor vehicles.

While all criteria pollutants are a concern of the SJVAPCD, a project's air quality impacts are considered significant if they would violate any of the state air quality standards. Ozone precursors, PM10 emissions and toxic air contaminants are emphasized in the review of applications for an Authority to Construct / Permit to Operate. Federal and state air quality regulations also require regions designated as nonattainment to prepare plans that either demonstrate how the region will attain the standard or that demonstrate reasonable improvement in air quality conditions. As noted, the SJVAPCD is responsible for developing attainment plans for the SJVAB for inclusion in California's SIP.

The SJVAPCD's primary means of implementing air quality plans is by adopting and enforcing rules and regulations. Stationary sources within the jurisdiction are regulated by the District's permit authority over such sources and through its review and planning activities. In 2001, the SJVAPCD revised its Regulation VIII-Fugitive PM Prohibitions, in response to commitments made in the 1997 PM10 Attainment Plan to incorporate best available control measures (BACM). The revision also includes new rules for open areas and agricultural operations. The provisions of the revised regulation took effect in May 2002. Regulation VIII consists of a series of dust control rules that emphasize reducing fugitive dust as a means of achieving attainment of the federal standards for PM10.

Regulation VIII specifically addresses the following activities:

- Rule 8011: General Requirements;
- Rule 8021: Construction, Demolition, Excavation, Extraction and other Earthmoving Activities;
- Rule 8031: Bulk Materials;
- Rule 8041: Carryout and Trackout;

- Rule 8051: Open Areas;
- Rule 8061: Paved and Unpaved Roads; and
- Rule 8071: Unpaved Vehicle/Equipment Traffic Areas.

Also, District Rule 9510 Indirect Source Review (ISR) was adopted December 15, 2005. ISR was adopted to fulfill the District's emission reduction commitments in the PM10 and Ozone Attainment Plans. ISR requires submittal of an Air Impact Assessment (AIA) application no later than the date on which application is made for a final discretionary approval from the public agency. The AIA will be the information necessary to calculate both construction and operational emissions of a development project. The project qualifies as a development project under Rule 9510 because it contains more than 25,000 square feet of light industrial space. The proposed project consists of two independent phases (development of one phase is not contingent on the development of the other).

Section 6.0 of the Rule outlines general mitigation requirements for developments that include reduction in construction emissions of 20% of the total construction NOx emissions, and 45% of the total construction PM10 exhaust emissions. Section 6.0 of the Rule also requires the project to reduce operational NOx emissions by 33.3% and operational PM10 emissions by 50%. Section 7.0 of the Rule includes fee schedules for construction or operational excess emissions of NOx or PM10; those emissions above the goals identified in Section 6.0 of the Rule. Section 7.2 of the Rule identifies fees for excess emissions that are $9,350/ton for NOx emissions for year 2008 and beyond, and $9,011/ton for PM10 emissions for year 2008 and beyond.

Other SJVAPCD Rules and Regulations that may apply to the project, but not limited to, Rule 4102 (Nuisance), Rule 4641(Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations), Rule 2010 (Permits Required), and Rule 2201 (New and Modified Stationary Source Review).

City of Stockton General Plan

The City of Stockton General Plan Goals and Policies Report (City of Stockton, 2007) contains goals and policies that encourage emission reduction strategies from mobile, stationary, and area sources that comply with state and federal standards. Goals and policies that may be applicable to the project are listed below:

Goal HS-4.	To improve air quality and to minimize the adverse effects of air pollution on human health and the economy.
Policy HS-4.1	Cooperation with Local and Regional Agencies;
Policy HS-4.2	Regional Agency Review;
Policy HS-4.3	Regional Air Quality Project Review;
Policy HS-4.4	Support Regional Air Quality Attainment Plans;
Policy HS-4.5	City Review of Development Proposals;
Policy HS-4.6	CEQA Compliance and Air Quality Mitigation;
Policy HS-4.7	Air Quality Mitigation Fees;

Policy HS-4.8	Transportation Demand Management Programs;
Policy HS-4.9	Dust Suppression Measures;
Policy HS-4.10	Travel Demand Measures;
Policy HS-4.12	Employment-Intensive Development;
Policy HS-4.13	Location of Support Services
Policy HS-4.16	Planning Programs;
Policy HS-4.18	Design for Transportation Alternatives;
Policy HS-4.19	Transportation Management Associations;
Policy HS-4.20	Develop Policies Requiring Minimizing of Greenhouse Gas Emissions;
Policy HS-4.21	Support SJVAPCD Air Quality Guidance and Recommendations.

3.4.3 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any nonattainment pollutant (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

Criteria Pollutants

For construction impacts, the pollutant of greatest concern to the District is PM10.[1] The SJVAPCD recommends that significance be based on a consideration of the control measures to be implemented during project construction (SJVAPCD, 2002). Compliance with Regulation VIII, Rule 8011, and implementation of appropriate mitigation measures to control respirable particulate matter (PM10) emissions are considered by the SJVAPCD to be sufficient to render a project's construction-related impacts less-than-significant. The SJVAPCD *Guide for Assessing and Mitigating Air Quality Impacts* (*GAMAQI*) contains a list of feasible control measures for construction-related PM10 emissions.

The SJVAPCD's *GAMAQI* also includes significance criteria for evaluating operational-phase emissions from direct and indirect sources associated with a project. Indirect sources include motor vehicle traffic resulting from the project and do not include stationary sources covered under permit

[1] Construction equipment emits carbon monoxide and ozone precursors. The SJVAPCD has determined that these emissions would cause a significant air quality impact only in the case of a very large or very intense construction project (SJVAPCD, 2002).

with the SJVAPCD. For this analysis, the project would be considered to have a significant effect on the environment if it would exceed the following thresholds:

- Cause a net increase in pollutant emissions of reactive organic gases (ROG) or NO_X exceeding 10 tons per year.
- Cause a violation of state CO concentration standards. The level of significance of CO emissions from mobiles sources is determined by modeling the ambient concentration under project conditions and comparing the resultant 1- and 8-hour concentrations to the respective state CO standards of 20.0 and 9.0 parts per million.
- Cause "visible dust emissions" due to onsite operations and thereby violate SJVAPCD Regulation VIII.[2].

Although the SJVAPCD *GAMAQI* recognizes that PM10 is a major air quality issue in the basin, it has not established quantitative thresholds for potential impact significance. However, in the SJVAPCD comment letter on the NOP, the District recommended a PM10 emission threshold of 15 tons per year from project construction and operations.

Stationary sources that comply, or that would comply, with SJVAPCD Rules and Regulations are generally not considered to have a significant air quality impact.

Toxic Air Contaminants

The operation of any project with the potential to expose sensitive receptors to substantial levels of TACs would be deemed to have a potentially significant impact. More specifically, proposed development projects that have the potential to expose the public to TACs in excess of the following thresholds would be considered to have a significant air quality impact:

- Probability of contracting cancer for the Maximally Exposed Individual[3] (MEI) exceeds 10 in one million.
- Ground-level concentrations of non-carcinogenic TACs would result in a Hazard Index greater than 1 for the MEI.

Impacts and Mitigation Measures

Impact 3.3.1: Construction of the project would generate emissions of criteria air pollutants that could contribute to existing nonattainment conditions and degrade air quality. *(Potentially Significant)*

Construction related emissions arise from a variety of activities including (1) grading, excavation, and other earth moving activities; (2) travel by construction equipment and employee vehicles, especially on unpaved surfaces; (3) exhaust from construction equipment; (4) architectural coatings; and (5) asphalt paving.

2 Visible dust is defined by the SJVAPCD as "visible dust of such opacity as to obscure an observer's view to a degree equal to or greater than an opacity of 40 percent, for a period or periods aggregating more than three minutes in any one hour."

3 MEI represents the worst-case risk estimate based on a theoretical person continuously exposed for 70 years at the point of highest compound concentration in air.

PM10 and PM2.5 emissions from construction would vary greatly from day to day depending on the level of activity, the equipment being operated, silt content of the soil, and the prevailing weather. Larger-diameter dust particles (i.e., greater than 30 microns) generally fall out of the atmosphere within several hundred feet of construction sites, and represent more of a soiling nuisance than a health hazard. Smaller-diameter particles (e.g., PM10 and PM2.5) are associated with adverse health effects and generally remain airborne until removed from the atmosphere by moisture. Therefore, unmitigated construction dust emissions could result in significant local effects. For all construction projects, implementation of all Regulation VIII fugitive dust control measures are required by law. Based on the size of the construction area and proximity to receptors, additional measures may be required, as described below. Construction equipment and construction-worker commute vehicles would also generate criteria air pollutant emissions. Criteria pollutant emissions of ROG and NOx from these emissions sources would incrementally add to regional atmospheric loading of ozone precursors during the construction period. Also, since the project includes more than 25,000 square feet of light industrial space, the project would need to comply with District Rule 9510. Compliance with District Rule 9510 would further reduce emissions of NOx and PM10 during project construction. Construction emissions were modeled using the California Emission Estimator Model (CalEEMod), version 2011.1.1, and are depicted below in **Table 3.3-4**.

TABLE 3.3-4
PROJECT CONSTRUCTION EMISSIONS (TONS PER YEAR)

Pollutant	SJVAPCD Thresholds (tons/yr)	Unmitigated Project Construction Emissions (tons/yr)[a]				
		Year 2013	Year 2014	Year 2015	Year 2016	Year 2017
ROG	10	<1	1	**19**	**25**	**12**
NOx	10	4	8	**26**	**23**	**11**
PM10	15	2	3	10	9	4
PM 2.5	NA	1	2	2	1	1
CO	NA	2	5	46	44	20

a. Emission factors were generated by CalEEMod for San Joaquin County. Construction was assumed to proceed over a period of four years, starting in July 2013. Additional information is provided in Appendix C.

NOTE: Bold values are in excess of applicable standard. The SJVAPCD established thresholds for ROG and NOx are 10 tons per year, whereas CO and PM2.5 do not have an established emissions threshold of significance. As described in the Significance Criteria section above, the SJVAPCD recommended a PM10 threshold of 15 tons per year.

As depicted in **Table 3.3-4**, the estimated emissions from construction during the years 2015 through 2017 would result in significant ROG and NOx emissions without mitigation. Therefore, this impact is considered ***potentially significant***.

Mitigation Measures

Measure 3.3.1a: Implement Dust Control Measures During Construction Activities. The applicant shall comply with Regulation VIII Rule 8011 and implement the following dust control measures during construction:

- The applicant shall submit a Dust Control Plan subject to review and approval of the SJVAPCD at least 30 days prior to the start of any construction activity on a site that includes 40 acres or more of disturbed surface area.

Specific control measures for construction, excavation, extraction, and other earthmoving activities required by the Valley Air District include:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover in order to comply with Regulation VIII's 20 percent opacity limitation.
- All onsite unpaved roads and offsite unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported offsite, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. However, the use of blower devices is expressly forbidden, and the use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

Enhanced and additional control measures for construction emissions of PM10 shall be implemented where feasible. These measures include:

- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.
- Install wind breaks at windward side(s) of construction areas.
- Suspend excavation and grading activity when winds exceed 20 mph.
- Limit area subject to excavation, grading, and other construction activity at any one time.

Measure 3.3.1b: Implement Construction-Related Exhaust Emission Reducing Measures. The applicant shall implement control measures during construction to mitigate exhaust emissions from construction equipment.

- Contractor shall keep all diesel equipment tuned and maintained.

- Use alternative fueled or catalyst equipped diesel construction equipment where feasible.
- Minimize idling time to a maximum of 5 minutes.
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set), where feasible.
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.
- Implement activity management, such as rescheduling activities to reduce short-term impacts and limiting the hours of operation of heavy duty equipment and/or the amount of equipment in use.

Measure 3.3.1c: Implement Construction-Related Exhaust Emission Reducing Measures Consistent with Rule 9510 Indirect Source Review. As part of future site development, the applicant shall comply with Rule 9510 Indirect Source Review. Compliance with Rule 9510 would require reductions of 20% of the NOx construction emissions and 45% of the PM10 construction exhaust emissions. If onsite (construction fleet) reductions are insufficient to meet these reduction targets, the applicant shall pay mitigation fees of $9,350/ton for NOx emissions for year 2008 and beyond, and $9,011/ton for PM10 emissions for year 2008 and beyond.

Impact Significance after Mitigation: Implementation of the above mitigation measures (Mitigation Measures 3.3.1a through 3.3.1c) would ensure that fugitive dust emissions from construction would be ***less-than-significant***. NOx emissions would be substantially reduced, but not to a less-than-significant level (a 20% reduction would reduce the ROG impact to less than significant for estimated year 2017, but not for 2015 and 2016). The payment of SJVAPCD mitigation fees may not provide the demonstrable off-site reductions necessary to avoid the impact. ROG emissions would be reduced by the measures described above, but not to a less-than-significant level. Therefore, construction air quality impacts (ROG and NOx emissions) would remain ***significant and unavoidable***.

Impact 3.3.2: Operation of the project would generate emissions of criteria air pollutants that could contribute to existing nonattainment conditions and degrade air quality. (*Potentially Significant*)

Over the long-term, the project would result in an increase in emissions primarily due to related motor vehicle trips. Onsite stationary sources and area sources would result in lesser quantities of criteria pollutant emissions.

Operational emissions for project operations in the year 2017 were calculated using CalEEMod and the traffic data described in the Transportation and Traffic section of this document. The estimates shown in **Table 3.3-5** are based on 21,500 daily vehicle trips generated by 6,280,481 square feet of light industrial uses. These trip generation estimates are included in the traffic report for this project.

TABLE 3.3-5
PROJECT OPERATIONAL EMISSIONS (TONS PER YEAR)

Pollutant	SJVAPCD Thresholds (tons/yr)	Operation Emissions (tons/yr)[a] Unmitigated Year 2017	Mitigated Year 2017	Significant (Yes or No)?
ROG	10	**52**	**52**	**Yes**
NO_x	10	**92**	**91**	**Yes**
PM10	15	**45**	**45**	**Yes**
PM 2.5	NA	6	6	NA
CO	NA	219	218	NA

a. Emission factors were generated using CalEEMod for San Joaquin County. The mitigated condition includes measures described in Mitigation Measure 3.3.2a as well as Mitigation Measure 3.3.2b. Additional information is provided in Appendix C.

NA No Applicable thresholds have been established for the emission of these pollutants.

NOTE: **Bold** values are in excess of applicable standard. The SJVAPCD established thresholds for ROG and NOx are 10 tons per year, whereas CO and PM2.5 do not have an established emissions threshold of significance. As described in the Significance Criteria section above, the SJVAPCD recommended a PM10 threshold of 15 tons per year.

Based on the estimates shown in **Table 3.3-5**, estimated build out operational emissions would result in ***potentially significant*** ROG, NOx and PM10 emissions.[4] The mitigated scenario in Table 3.3-5 includes implementation of Mitigation Measure 3.3.2b, which requires the use of low VOC architectural coatings, as well as Mitigation Measure 3.6.2 (see Section 3.6 "Climate Change"), which requires energy, water, and solid waste reductions.

Mitigation Measures

Measure 3.3.2a: Implement Operation-Related Exhaust Emission Reducing Measures Consistent with Rule 9510 Indirect Source Review. As part of future site development, the applicant shall comply with Rule 9510 Indirect Source Review. Compliance with Rule 9510 will require reductions of 33.3% of the NOx operational emissions and 50% of the PM10 operational emissions. These reductions shall be accomplished through onsite and offsite measures, and/or through the payment of mitigation fees of $9,350/ton for NOx emissions for year 2008 and beyond, and $9,011/ton for PM10 emissions for year 2008 and beyond.

Measure 3.3.2b: Interior and Exterior Coatings. As part of future site development, the applicant shall require the use of low VOC paints for interior and exterior coatings.

Measure 3.6.2: Implement Operation-Related GHG Reduction and Energy Efficiency Measures. The reader is directed to Section 3.6 "Climate Change" of this EIR for a complete description of this measure.

Impact Significance after Mitigation: Implementation of Mitigation Measures 3.3.2b and 3.6.2 would result in a negligible reduction in criteria air pollutants. Implementation of Measure 3.3.2a would substantially reduce the NOx and PM10, but not to a less-than-significant level. The payment of SJVAPCD mitigation fees may not provide the demonstrable off-site reductions necessary to avoid the impact. Operational air quality

[4] The environmental effects of PM2.5 and CO, while not identified as potentially significant in Impact 3.3.2 (criteria air pollutants), are assessed in Impact 3.3.3.

impacts, including NOx, PM10, and ROG emissions, would remain ***significant and unavoidable***.

Impact 3.3.3: Construction and/or operation of the project would not expose sensitive receptors to substantial pollutant concentrations. ***(Less-than-Significant)***

Carbon Monoxide (CO) Hotspots

CO is a localized pollutant of concern. Due to the distance between construction activities and sensitive receptors, construction would not emit CO in quantities that could pose health concerns. Also, due to the existing low concentrations[5] of CO in the area that are projected to further decline in the future, project operations would not be anticipated to result in or contribute to CO concentrations that exceed the California 1-hour or 8-hour ambient air quality standards. Thus, mobile-source emissions of CO would not be anticipated to result in or contribute substantially to an air quality violation. The short-term construction and long-term operational mobile-source impact of the project on CO concentrations would be less-than-significant and no mitigation is required.

Toxic Air Contaminants

The greatest potential for TAC emissions would be related to diesel particulate emissions associated with heavy equipment during grading, excavation, and diesel truck usage during operations. Health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime would contract cancer, based on the use of standard risk-assessment methodology. The ARB determined that the chronic impact of diesel particulate was of more concern than acute impact in its *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines* (ARB 2000b). In this document, the ARB noted that "Our analysis shows that the potential cancer risk from inhalation is the critical path when comparing cancer and noncancer risk. In other words, a cancer risk of 10 per million from the inhalation of diesel PM will result from diesel PM concentrations that are much less than the diesel PM or TAC concentrations that would result in chronic or acute noncancer hazard index values of 1 or greater." Consequently, any analysis of diesel TAC should focus on the long-term, chronic cancer risk posed by the diesel exhaust. As mentioned above, chronic cancer risk is normally measured by assessing what risk to an exposed individual from a source of TAC would be if the exposure occurred over 70 years.

The short-term increase in diesel exhaust emissions associated with construction of the project would be insignificant over the 70 year health risk assessment period. According to the *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB 2005), ARB recommends siting sensitive land uses (including residences) no closer than 500 feet from major diesel emissions sources, such as freeways, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. Arch Road is considered an urban road – an arterial roadway within the City limits. Cumulative traffic volumes on Arch Road are below 100,000 vehicles (and in the vicinity of the

[5] See air quality setting information above that discusses the current success statewide in reducing CO levels.

project site, between Austin Road and SR 99, are below 50,000 vehicles). The project is not considered a sensitive receptor. In addition, the project would not, directly or cumulatively, contribute to traffic volumes over 100,000 vehicles per day in the vicinity of the project site. Therefore, the impact is considered ***less than significant***.

Mitigation Measures

None required.

Impact 3.3.4: Operation of the project would not create objectionable odors affecting a substantial number of people. ***(Less-than-Significant)***

While offensive odors rarely cause any physical harm, they can still be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source, the wind speed and direction, and the sensitivity of the receptor. Generally, increasing the distance between the receptor and the source will mitigate odor impacts. Types of land uses that typically pose potential odor problems include agriculture, wastewater treatment plants, food processing and rendering facilities, chemical plants, composting facilities, landfills, waste transfer stations, and dairies. The project does not include any of these land uses or similar land uses. Therefore, the project would not create objectionable odors that would affect a substantial number of people, and odor impacts are considered to be ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.3.5: Construction and operation of the project could result in cumulatively considerable increases of criteria pollutant emissions. ***(Potentially Significant)***

According to the SJVAPCD guidelines, a cumulative impact occurs when two or more individual effects, considered together, are considerable or would compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant impacts, meaning that the project's incremental effects are considerable when viewed in connection with the effects of past, current, and probable future projects. Notably, a project that has direct air quality impacts is considered to significantly contribute to a cumulative air quality impact.

Construction and operational emissions from the project would result in the generation of air pollutants in the project area and in the immediate vicinity, and would incrementally add to cumulative emissions. The project would also add to ozone precursor emissions on a regional basis and would incrementally add to PM10 and CO emissions on a local basis. Project construction

and operational activities would result in significant emissions of ROG, NOx, and PM10 and would be cumulatively considerable without mitigation.

Mitigation Measures

Measure 3.3.1a: Implement Dust Control Measures During Construction Activities. The reader is directed above to Impact 3.3.1 for a complete description of this mitigation measure.

Measure 3.3.1b: Implement Construction-Related Exhaust Emission Reducing Measures. The reader is directed above to Impact 3.3.1 for a complete description of this mitigation measure.

Measure 3.3.1c: Implement Construction-Related Exhaust Emission Reducing Measures Consistent with Rule 9510 Indirect Source Review. The reader is directed above to Impact 3.3.1 for a complete description of this mitigation measure.

Measure 3.3.2a: Implement Operation-Related Exhaust Emission Reducing Measures Consistent with Rule 9510 Indirect Source Review. The reader is directed above to Impact 3.3.2 for a complete description of this mitigation measure.

Measure 3.3.2b: Interior and Exterior Coatings. The reader is directed above to Impact 3.3.2 for a complete description of this mitigation measure.

Measure 3.6.2: Implement Operation-Related GHG Reduction and Energy Efficiency Measures. The reader is directed to Section 3.6 "Climate Change" of this EIR for a complete description of this measure.

Impact Significance after Mitigation: With implementation of the above mitigation, which includes requirements of Rule 9510, the cumulative air quality emissions of NOx and PM10 would be substantially reduced, but not to less-than-significant levels. Emissions of ROG, NOx, and PM10 would remain cumulatively considerable; therefore this cumulative impact is considered ***significant and unavoidable***.

3.4.4 References

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San Joaquin County, 1992. *San Joaquin County General Plan, Resources Element.* July 1992.

San Joaquin Valley Air Pollution Control District (SJVAPCD), 2002. *Guide for Assessing and Mitigating Air Quality Impacts.* Adopted August 20, 1998; January 10, 2002 revision.

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3.4 Biological Resources

3.4.1 Introduction

This section provides an overview of existing biological resources which are known to occur within the project site and surrounding region, including a review of potentially occurring special-status species, wildlife habitats, vegetation communities, and jurisdictional waters of the U.S. This section assesses the potential of the project to result in impacts to sensitive biological resources and identifies mitigation measures designed to eliminate or reduce potential project-related impacts. The results of this assessment are based upon field reconnaissance of the project site, literature searches, and database queries.

The sources of reference data reviewed for this section included the following:

- Stockton East, California USGS 7½ quadrangle map (USGS, 2009);
- Color aerial photographs (GlobeXplorer, 2006);
- California Natural Diversity Database (CNDDB), Rarefind 3 computer program (CDFG, 2009c);
- California Native Plant Society (CNPS), Electronic Inventory computer program (CNPS, 2009);
- Special Animals List (CDFG, 2009a);
- Special Plants List (CDFG, 2009b); and
- Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Stockton East USGS 7½ minute quad (USFWS, 2009).

3.4.2 Setting

Environmental Setting

The project site is located in southeastern Stockton and is surrounded by a mix of uses, including agricultural, rural residential and larger scale commercial and industrial development. Regionally, the project site is located in the Great Valley ecological region, Delta Basin subsection (U.S. Forest Service [USFS], 1998). The Great Valley is a vast, flat, low-lying plain almost entirely surrounded by mountains. The valley parallels the general north-south trend of the Sierra Nevada Mountains on the east and the California Coast Ranges on the west. The northern half of the Central Valley is known as the Sacramento Valley, and the southern half is known as the San Joaquin Valley. Natural plant communities of the region include Needlegrass grasslands, emergent aquatic communities in the low areas along the edge of the Delta, and Fremont cottonwood riparian communities along streams. Mean annual temperatures for the region range from 59 to 62 degrees Fahrenheit and average annual precipitation is approximately 16 to 18 inches (Miles and Goudey, 1997).

Within the project site, the topography is relatively level with a gentle westerly slope. Elevation on the site ranges from 35 to 40 feet above mean sea level. Historically, the surrounding area has been heavily farmed which is evident in the lack of natural vegetation types. Within the project site there are two drainages; North Littlejohns Creek and Weber Slough. North Littlejohns Creek flows west through the northern-central part of the site. Weber Slough is located south of North Littlejohns Creek and flows west through the project site. North Littlejohns Creek and Weber Slough both flow into French Camp Slough which ultimately flows to the San Joaquin River (located approximately 7 miles west of the project site). Both of these drainages have intermittent flows from either stormwater runoff or irrigation tail water.

Vegetative Communities and Wildlife Habitats

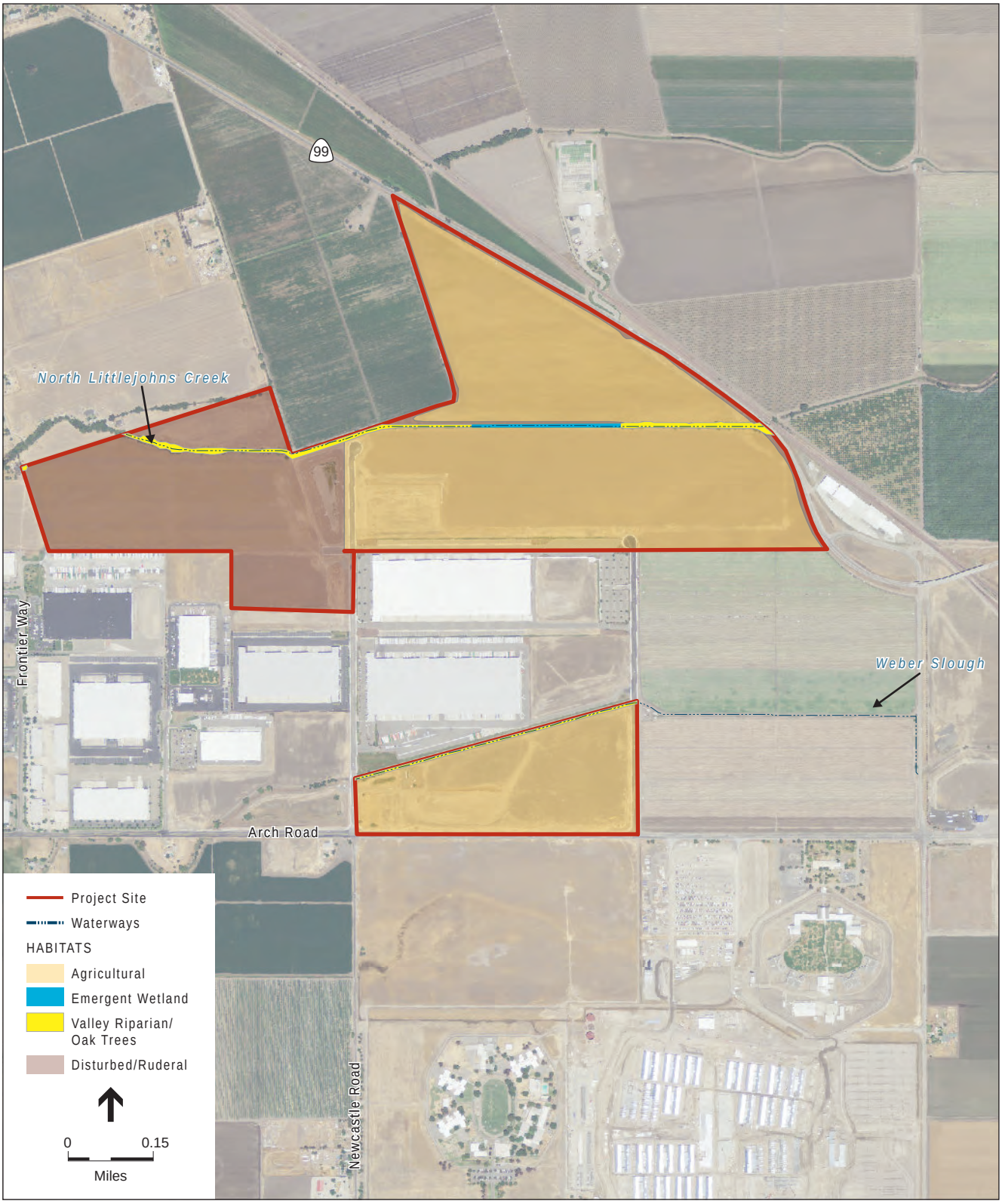
Wildlife habitats are classified using the California Department of Fish and Wildlife's (formerly California Department of Fish and Game) (CDFW) *A Guide to Wildlife Habitats* (Mayer and Laudenslayer, 1988). Wildlife habitats generally correspond to vegetation or plant communities. Plant communities are assemblages of plant species that occur together in a given area and are defined by species composition and relative abundance. The vegetative community descriptions and nomenclature generally follow the classification system provided in Sawyer and Keeler-Wolf's A Manual of California Vegetation (1995), and the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979). The vegetative communities within the project site include; agricultural, disturbed/ruderal, valley foothill riparian, and emergent wetland (refer to **Figure 3.4-1**).

TABLE 3.4-1
PROJECT SITE VEGETATION COMMUNITIES

Vegetation Community	Project (Acres)
Agricultural	229
Disturbed/Ruderal	95
Freshwater Emergent Wetland	0.92
Riparian	6
TOTAL:	**331**[1]

1. Riparian and freshwater emergent wetland areas are associated with North Littlejohns Creek and Weber Slough. These habitats have been buffered to address biological resource concerns and will not be directly affected by development on the project site. However, due to their location within the overall project site, they account for the additional acreage within the project site.

SOURCE: ESA, 2009.



SOURCE: USDA, 2006; and ESA, 2009

NorCal Logistics Center . 210506

Figure 3.4-1

Habitats Within the Project Site

Upland Vegetative Communities

Agricultural Land

The majority of the project site is comprised of disturbed or fallow agricultural land (Refer to Figure 3.4-1 and Table 3.4-1) which covers a total of approximately 229 acres. The land was previously utilized for planting row crops such as tomatoes, peppers, spinach and onions, but at the time of the field survey appeared to have been recently disked. Due to the heavily disturbed nature of this habitat type, only those wildlife species which have adapted to intensive disturbance regimes associated with farming are likely to occur in agricultural land.

Wildlife species which may occur in these areas include American crow (*Corvus brachyrhyncos*), northern mockingbird (*Mimus polyglottos*), western scrub jay (*Aphelocoma coerulescens*), Brewer's blackbird (*Euphagus cyanocephalus*), Swainson's hawk (*Buteo swainsoni)*, house mouse (*Mus musculus*), black rat (*Rattus rattus*), Norway rat (*Rattus norvegicus*), striped skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*) and coyote (*Canis latrans*).

Disturbed/Ruderal Communities

The predominant non-agricultural vegetation communities found within the project site consists of ruderal communities of introduced annual and perennial grasses and forbs associated with highly disturbed habitats. These communities, which cover a total of 95 acres, can be found primarily along roadside and other disturbed areas such as at the edges of urbanized areas. Many of these communities are patchy or linear in nature (especially along the roads and irrigation canals) depending on the degree of disturbance. Density and composition of these community types vary with site factors such as topography, agricultural practices, and degree of disturbance.

The more commonly observed plant species included Bermuda grass (*Cynodon dactylon*), Johnson grass (*Sorghum halapense*), wild radish (*Raphanus sativus*), Italian thistle (*Carduus pycnocephalus*), yellow star-thistle (*Centaurea solstitialis*), wild mustard (*Brassica* spp.), prickly lettuce (*Lactuca serriola*), bitter lettuce (*Lactuca virosa*), milk thistle (*Silybum marianum*), common knotweed (*Polygonum arenastrum*), cheeseweed (*Malva* spp.), field bindweed (*Convolvulus arvensis*), goosefoot (*Chenopodium* spp.), pigweed (*Amaranthus* spp.), horseweed (*Conyza canadensis*), and prickly sow-thistle (*Sonchus asper*). Wildlife species found in this habitat type would be similar to those found within agricultural habitats.

Valley Foothill Riparian

Isolated patches of Valley Foothill Riparian habitat (approximately 6 acres) occurs on the project site along sections of the banks of North Littlejohns Creek and the western portion of Weber Slough (see Figure 3.4-1). This habitat is intentionally avoided as part of the Project and will not be disturbed. Dominant species in this habitat include valley oak (*Quercus lobata*), cottonwood (*Populus fremontii ssp. fremontii*), willows (*Salix spp.*), and Himalayan blackberry (*Rubus discolor*). The herbaceous layer consists mostly of annual grasses such as perennial ryegrass (*Lolium perenne*), and Bromus diandrus (*Bromus hordeaceus*).

Riparian communities provide foraging, migration, dispersal, and breeding habitat for many wildlife species, including at least 50 amphibians and reptiles. Within the project site, common species may include Pacific chorus frog (*Pseudacris regilla*), western toad (*Bufonidae boreas*), mourning dove (*Zenaida macroura*), and the yellow-rumped warbler (*Dendroica coronata*).

Aquatic Plant Communities and Habitats

Fresh Emergent Wetland

Fresh emergent wetland habitat types occur in approximately 0.9 acres of the project site. These wetland types are characterized by erect, rooted herbaceous hydrophytes and may occur in association with terrestrial or aquatic habitats such as riverine, lacustrine, and wet meadows. Within the project site, emergent wetland habitat is present along a short segment of North Littlejohns Creek along the northern border of the site. The creek is approximately 20 to 25 feet wide, 6 feet deep and supports a narrow section of riparian vegetation along the east and west segments of the project boundaries. In the central portion of the creek within the project site, vegetation is only present on the creek bed and consists of dense stands of cattail (*Typha latifolia*).

Wildlife using the freshwater emergent marsh largely includes wading birds and waterfowl species such as great blue heron, great egret, American coot, and mallard. Red-winged blackbirds (*Agelaius phoeniceus*), along with aquatic reptiles and amphibians such as garter snake (*Thamnophis* sp.), pond turtle (*Clemmys marmorata*), and Pacific chorus frogs may also use this habitat, although are typically found in larger extents of this habitat type.

Migration Paths and Corridors

Movements of wildlife generally fall into three basic categories: a) movements along corridors or habitat linkages associated with home range activities such as foraging, territory defense, and breeding; b) dispersal movements—typically one-way movements (e.g., juvenile animals leaving their natal areas or individuals colonizing new areas), and; c) temporal migration movements—these movements are essentially dispersal actions which involve a return to the place of origin (e.g., deer moving from winter grounds to summer ranges and fawning areas).

Within the site, North Littlejohns Creek and Weber Slough provide marginal quality movement corridor. This habitat is not considered to be ideal given that these areas do not provide the essential habitat components for this species namely, adequate water, sufficient emergent vegetation, and appropriate upland habitat.

Wetlands and Other Waters of the U.S.

The project site is drained primarily by North Littlejohns Creek which runs east to west across the central section of the site, and Weber Slough which runs through the southern portion of the site. No additional waterways or wetlands are present on the project site. Both of these features are highly maintained and only support small patches of natural vegetation within their bed and banks. These features are fed seasonally throughout the year by a combination of surface water derived from direct precipitation along with agricultural and stormwater runoff. Within the

project site, North Littlejohns Creek covers a total length of approximately 7,000 feet, while there are approximately 2,650 linear feet of Weber Slough. A wetland delineation identifying these features was submitted to the U.S. Army Corps of Engineers (Corps). A concurrence letter was received from the Corps, identifying these two water features as Waters of the U.S (a defined water body under the jurisdiction of the Corps), on June 26, 2008.

Special Status Species

Definitions of Special Status Species

Special-status species are plants and animals that are legally protected under state and federal Endangered Species Acts (ESAs) or other regulations and species that are considered sufficiently rare by the scientific community to qualify for such listing. These species are in the following categories:

- Plants or animals listed or proposed for listing as threatened or endangered under the federal ESA (50 Code of Federal regulations [CFR] 17.12 [listed plants], 17.11 [listed animals] and various notices in the Federal Register [FR] [proposed species]).
- Plants or animals that are candidates for possible future listing as threatened or endangered under the federal ESA (61 FR 40, February 28, 1996);
- Plants or animals listed or proposed for listing by the State of California as threatened or endangered under the California ESA (14 California Code of Regulations [CCR] 670.5);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
- Plants that meet the definitions of rare and endangered under CEQA (State CEQA Guidelines, Section 15380);
- Plants considered under the California Native Plant Society (CNPS) to be "rare, threatened or endangered in California" (Lists 1A, 1B, and 2 in CNPS 2007);
- Plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in CNPS 2007), which may be included as special-status species on the basis of local significance or recent biological information; and
- Animals fully protected in California (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Potentially Affected Listed and Proposed Species

A list of special-status plant and animal species that have the potential to occur within the vicinity of the project site was compiled based on data in the California Natural Diversity Database (CNDDB) (CDFG, 2009), California Native Plant Society literature (CNPS, 2009), and the USFWS List of Federal Endangered and Threatened Species that may be Affected by Projects in the Lodi South, Waterloo, Linden, Stockton West, Stockton East, Peters, Lathrop, Manteca, and Avena 7½ Minute Quads (USFWS, 2009). Conclusions regarding habitat suitability and species occurrence are based

on a reconnaissance-level area assessment conducted by ESA biologists, as well as existing literature and databases described previously.

Table 3.4-2 lists special-status plants and animals with the potential to occur within the project site. Additionally, **Table 3.4-2** indicates the project's potential to impact each species listed. **Figure 3.4-2** identifies locations of sensitive habitats for special-status plant and animal species within the project site. ESA identified 29 species with an unlikely potential, 3 species with a medium potential, 6 species with a low potential for the project to impact, and no species with a high potential, and. The "Potential for Project to Impact" category is defined as follows:

Unlikely: The project site and/or immediate area do not support suitable habitat for a particular species. The project site is outside of the species' known range.

Low Potential: The project site and/or immediate area only provide limited habitat for a particular species. In addition, the known range for a particular species may be outside of the project site.

Medium Potential: The project site and/or immediate area provide suitable habitat for a particular species, and the project may directly or indirectly affect suitable habitat, though no known populations would be affected.

High Potential: The project site and/or immediate area provide ideal habitat conditions for a particular species and suitable habitat would be directly affected. Known populations may be affected.

TABLE 3.4-2
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name Common Name	Listing Status USFWS/ CDFW/CNPS	General Habitat	Potential for Project to Impact
Invertebrates			
Andrena subapasta a vernal pool andrenid bee	--/--/--	Native bee. Collects pollen primarily from *Arenaria californica* but also butter-and-eggs (*Tryphysaria eriantha*) and goldfields (*Lasthenia* sp.). Nests in uplands near vernal pools.	Unlikely. Suitable habitat is not present within the project site.
Branchinecta lynchi vernal pool fairy shrimp	FT/--/--	Lifecycle restricted to vernal pools.	Unlikely. Suitable habitat is not present within the project site.
Branchinecta mesovallensis Midvalley fairy shrimp	--/--/--	Lifecycle restricted to vernal pools.	Unlikely. Suitable habitat is not present within the project site.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT/--/--	Breeds and forages exclusively on elderberry shrubs (*Sambucus mexicana*) typically associated with riparian forests, riparian woodlands, elderberry savannas, and other Central Valley habitats. Occurs only in the Central Valley of California.	Unlikely. Elderberry shrubs are not present within the project site.
Lepidurus packardi vernal pool tadpole shrimp	FE/--/--	Lifecycle restricted to vernal pools.	Unlikely. Suitable habitat is not present within the project site.

TABLE 3.4-2
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name Common Name	Listing Status USFWS/ CDFW/CNPS	General Habitat	Potential for Project to Impact
Linderiella occidentalis California linderiella	--/--/--	Lifecycle restricted to vernal pools.	Unlikely. Suitable habitat is not present within the project site.
Lytta moesta Moestan blister beetle	--/--/--	Vernal pools and grasslands in the San Joaquin Valley.	Unlikely. Suitable habitat is not present within the project site.
Fish			
Acipenser medirostris Green sturgeon	FT/CSC/--	Spawns in the Klamath River and Sacramento River Watersheds. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	Unlikely. Suitable habitat is not present within the project site.
Hypomesus transpacificus Delta smelt	FT/ST/--	Open surface waters in the Sacramento/San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Found in Delta estuaries with dense aquatic vegetation and low occurrence of predators. May be affected by downstream sedimentation.	Unlikely. Suitable habitat is not present within the project site.
Oncorhynchus mykiss Central Valley steelhead	FT/--/--	This ESU enters the Sacramento and San Joaquin Rivers and their tributaries from July to May; spawning from December to April. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.	Unlikely. Suitable habitat is not present within the project site.
Oncorhynchus mykiss Central Valley spring-run Chinook salmon	FT/ST/--	This ESU enters the Sacramento and San Joaquin Rivers and tributaries March to July; spawning from late August to early October. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.	Unlikely. Suitable habitat is not present within the project site.
Oncorhynchus mykiss Winter-run Chinook salmon	FE/SE/--	This ESU enters the Sacramento River December to May; spawning peaks May and June. Upstream movement occurs more quickly than in spring run population. Young move to rearing areas in and through the Sacramento River, Delta, and San Pablo and San Francisco.	Unlikely. Suitable habitat is not present within the project site.
Amphibians			
Ambystoma californiense California tiger salamander (central population)	FT/CSC/--	Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Needs underground refuges and vernal pools or other seasonal water sources.	Unlikely. Suitable habitat is not present within the project site.
Rana aurora draytonii California red-legged frog	FT/CSC/--	Breeds in slow moving streams, ponds, and marshes with emergent vegetation; forages in nearby uplands within about 200 feet.	Unlikely. Limited available habitat within project site; however, this species is thought to be extirpated from the valley floor.

TABLE 3.4-2
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name Common Name	Listing Status USFWS/ CDFW/CNPS	General Habitat	Potential for Project to Impact
Reptiles			
Thamnophis gigas Giant garter snake	FT/ST/--	Preferred habitat consists of freshwater marsh and low gradient streams, however does occur in drainage canals and irrigation ditches.	**Medium.** Species could potentially occur in the drainages within the project site, however neither of these provide high quality habitat.
Birds			
Agelaius tricolor tricolored blackbird	--/CSC/--	Largely endemic to California, most numerous in the Central Valley and nearby vicinity. Typically requires open water, protected nesting substrate, and foraging grounds within vicinity of the nesting colony. Nests in dense thickets of cattails, tules, and willow.	Low. Emergent wetland vegetation within the project site drainages is not likely dense enough to support this species. In addition, the site location is subject to human disturbance.
Athene cunicularia burrowing owl (burrow sites and some wintering sites)	--/CSC/--	Forages in open plains, grasslands, and prairies; typically nests in abandoned small mammal burrows.	Low. Some suitable foraging habitat is present in the agricultural and annual grassland areas, however the soils are highly disturbed due to regularly disking and planting activities in past growing seasons. Further, no large rodent burrows (ex: created by *Spermophilus sp*.) were observed during field survey that might provide nesting habitat for this species.
Buteo swainsoni Swainson's hawk (nesting)	--/ST/--	Forages in open plains, grasslands, and prairies; typically nests in trees or large shrubs generally associated with riparian systems.	**Medium.** Suitable foraging habitat is present within the agricultural, fallow and grassland areas of the project site. A few tall trees both within and adjacent to the project site could provide nesting habitat.
Elanus leucocephalus White tailed kite (nesting)	--/CFP/--	Forages in open plains, grasslands and prairies. Typically nests in isolated, trees with dense canopies located near foraging area.	**Medium.** Suitable foraging habitat is present within the agricultural, fallow and grassland areas of the project site. A few tall trees both within and adjacent to the project site could provide nesting habitat.
Xanthocephalus xanthocephalus Yellow-headed blackbird (nesting)	--/CSC/--	Nests in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds.	Low. Emergent wetland vegetation within project site drainages is not likely dense enough to support this species. In addition, the site location is subject to human disturbance.
Mammals			
Antrozous pallidus Pallid bat	--/CSC/--	Day roosts are mainly in caves, crevices, and abandoned mines. Forages in open lowland areas.	Low. Suitable roosting sites are absent from the project site.

TABLE 3.4-2
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name Common Name	Listing Status USFWS/ CDFW/CNPS	General Habitat	Potential for Project to Impact
Sylvilagus bachmani riparius Riparian brush rabbit	FE/SE/--	Habitat consists of dense thickets of wild rose, willows, and blackberries. Regionally found in riparian areas on the San Joaquin River in northern Stanislaus County.	Unlikely. Suitable habitat is not present within the project site.
Vulpes macrotis mutica San Joaquin kit fox	FE/ST/--	Occurs in native valley and foothill grasslands and chenopod scrub communities of the valley floor and surrounding foothills. Prefers open level areas with loose-textured soils supporting scattered, shrubby vegetation and little human disturbance.	Low. May pass through project site, but cover is limited and subject to high human disturbance.
Plants			
Astragalus tener var. tener Alkali milk-vetch	--/--/1B.2	Occurs in alkali flats, flooded lands in annual grassland or in playas or vernal pools. Blooms March to June. Found below 170 meters in elevation.	Unlikely. Suitable habitat is not present within the project site.
Atriplex joaquiniana San Joaquin spearscale	--/--/1B.2	Occurs in seasonal alkali wetlands or alkali sink scrub with distichilis spicata, frankenia species. Blooms April to October. Found below 250 meters in elevation.	Unlikely. Suitable habitat is not present within the project site.
California macrophylla Round-leaved filaree	--/--/1B.1	Found on clay soils in cismontane woodland, valley and foothill grasslands. Blooms March to May. Occurs between 15 and 1200 meters in elevation.	Unlikely. Suitable habitat is not present within the project site.
Cirsium crassicaule Slough thistle	--/--/1B.1	Occurs on sloughs, riverbanks and in marshy areas. Blooms May to August. Found below 100 meters in elevation.	Unlikely. Suitable habitat is not present within the project site.
Cordylanthus palmatus Palmate-bracted bird's-beak	--/--/1B.1	Found on Pescadero silty clay soils in chenopod scrub, marshes, swamps, or riparian scrub habitats, between 5 and 155 meters in elevation. Blooms May to October.	Unlikely. Suitable habitat is not present within the project site.
Delphinium recurvatum Recurved larkspur	--/--/1B.2	Occurs on alkaline soils, often in valley saltbush or valley chenopod scrub, between 3 and 750 meters in elevation. Blooms March to June.	Unlikely. Suitable habitat is not present within the project site.
Eryngium racemosum Delta button-celery	--/--/1B.1	Found on clay soils in seasonally inundated floodplain, between 3 and 75 meters in elevation. Blooms June to September.	Unlikely. Suitable habitat is not present within the project site.
Hibiscus lasiocarpos Woolly rose-mallow	--/--/2.2	Found on moist, freshwater-soaked river banks and low peat islands in sloughs. Occurs below 150 meters in elevation. Blooms June to September.	Unlikely. Suitable habitat is not present within the project site.
Lathyrus jepsonii var. jepsonii Delta tule pea	--/--/1B.2	Occurs in freshwater and brackish marshes below 4 meters in elevation. Blooms May to September.	Unlikely. Suitable habitat is not present within the project site.

TABLE 3.4-2
REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

Scientific Name Common Name	Listing Status USFWS/ CDFW/CNPS	General Habitat	Potential for Project to Impact
Lilaeopsis masonii Mason's lilaeopsis	--/SR/1B.1	Occurs in tidal zones on muddy or silty soil formed through river deposition or river bank erosion. Found below 10 meters in elevation. Blooms May to October.	Unlikely. Suitable habitat is not present within the project site.
Limosella subulata *Delta mudwort*	--/--/2.1	Occurs under wet conditions in tidal freshwater marsh habitat below 3 meters in elevation. Blooms May to August.	Unlikely. Suitable habitat is not present within the project site.
Sagittaria sanfordii Sanford's arrowhead	--/--/1B.2	Found in standing or slow-moving freshwater ponds, marshes or ditches. Occurs below 610 meters in elevation. Blooms May to October.	Low. Project site drainages only provides marginal quality habitat for this species. Closest known CNDDB occurrence is approximately 4 miles from the Project site.
Symphyotrichum lentum Suisun Marsh Aster	--/--/1B.2	Found along brackish and freshwater sloughs or in marshes and swamps below 3 meters in elevation. Blooms May to November.	Unlikely. Suitable habitat is not present within the project site.
Trichocoronis wrightii var. wrightii Wright's trichocoronis	--/--/2.1	Found on mud flats of vernal lakes, drying river beds and alkali meadows between 5 and 435 meters in elevation. Blooms May to September.	Unlikely. Suitable habitat is not present within the project site.
Tuctoria greenei Greene's tuctoria	FE/SR/1B.1	Occurs on the dry bottoms of vernal pools in grassland habitats between 30 and 1065 meters in elevation. Blooms May to July.	Unlikely. Suitable habitat is not present within the project site.

SOURCE: CNPS, 2009; CDFG, 2009; USFWS, 2009; ESA, 2009

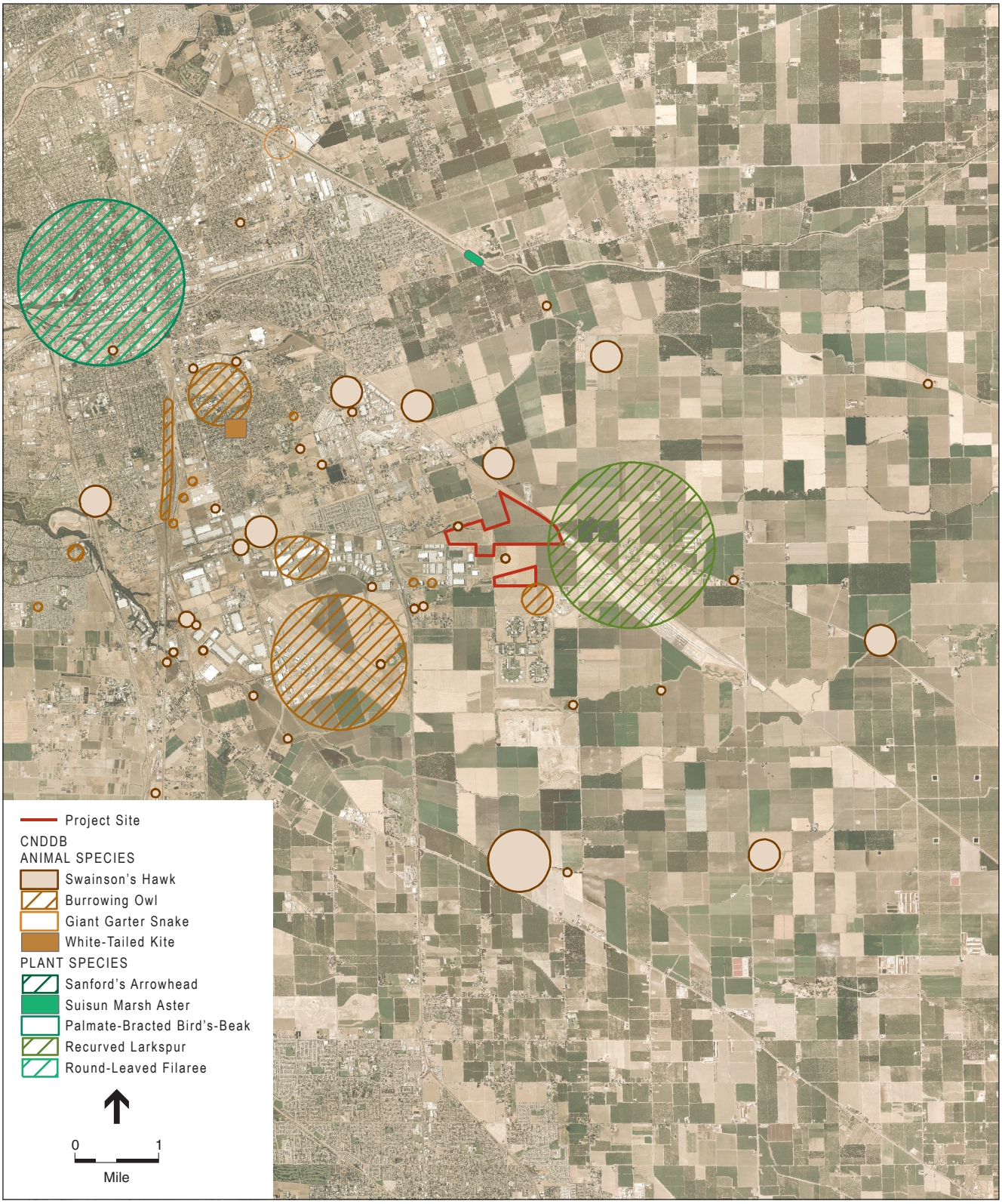
STATUS CODES:

FEDERAL (U.S. Fish and Wildlife Service):
BEPA = Bald Eagle Protection Act
FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government
FPD = Proposed for De-listing
FPE = Proposed for Listing as Endangered
FPT = Proposed for Listing as Threatened
FC = Candidate for Federal listing

STATE (California Department of Fish and Wildlife):
SE = Listed as Endangered by the State of California
ST = Listed as Threatened by the State of California
SR = Listed as Rare by the State of California (plants only)
CSC = California species of special concern
CFP = California fully protected bird species

California Native Plant Society (CNPS):
List 1A = Plants believed extinct
List 1B = Plants rare, threatened, or endangered in California and elsewhere
List 2 = Plants rare, threatened, or endangered in California but more common elsewhere
List 3 = Plants about which more information is needed
List 4 = Plants of limited distribution

CNPS Code Extensions
.1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered in California (less than 20% of occurrences threatened or no current threats known)



SOURCE: USDA, 2006; and ESA, 2009

NorCal Logistics Center . 210506

Figure 3.4-2
CNDDB Map

Reptiles

Giant Garter Snake (*Thamnophis gigas*)

The giant garter snake (GGS) is a large, mostly aquatic snake that inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, rice fields, managed marsh areas, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. During the active season, the giant garter snakes require adequate water in order to provide food and cover, and emergent, herbaceous wetland vegetation such as cattails and bulrushes for escape cover and foraging habitat. The giant garter snake needs grassy banks and openings in waterside vegetation for basking, and higher elevation uplands for cover and refuge from flood waters during the snake's dormant season. This species is typically absent from larger rivers because of lack of suitable habitat and emergent vegetative cover, and from wetlands with sand, gravel, rock substrates, and from riparian woodlands (USFWS, 2007).

The giant garter snake is active in the early spring through mid-fall (mid March through October), breeds from March through April, bears live young from July to September, and is dormant in the winter (Zeiner et al., 1988–1990). The giant garter snake feeds primarily on small fish and amphibians. Historically, the range of this snake was the San Joaquin Valley from the vicinity of Sacramento and Antioch southward to Buena Vista and the Tulare Lake Basin. The current distribution extends from near Chico in Butte County, to the vicinity of Burrel in Fresno County (CDFG, 2000).

The drainages which flow through the project site, North Littlejohns Creek and Weber Slough, do not provide permanent aquatic habitat and only support small discontinuous patches of emergent vegetative cover and are therefore only considered marginally suitable habitat for GGS.

During previous environmental permitting activities conducted by the Corps for the project site, the project applicant prepared and submitted a biological assessment (June 19, 2008) to the United States Fish and Wildlife Service (USFWS) and the Corps to address impacts to the federally listed GGS. The conclusion contained in the biological assessment indicated that implementation of the proposed project is not likely to adversely affect GGS for the following reasons:

- Historical records and the 1999 Draft Recovery Plan for the Giant Garter Snake confirm that the GGS has not been found anywhere near the site for decades.
- There is no suitable GGS upland habitat along North Littlejohns Creek or Weber Slough. Surrounding areas consist of historically farmed land areas, with current uses comprised of disturbed/developed uses and some limited agricultural use.
- Weber Slough is not identified in the SJCMCP as "potential" GGS habitat.
- North Littlejohn Creek is considered unsuitable habitat for GGS primarily due to: 1) its ephemeral flow regime, 2) lack of adjacent uplands that provide cover and estivation habitat, and 4) lack of a prey base required by GGS.

On July 30, 2008, the Corps withdrew their request (dated January 28, 2008) for consultation under Section 7 of the Endangered Species Act for the proposed project. The request to withdraw

consultation was based on information contained in the biological assessment and the Corps determination that the Federally-listed GGS would not be affected by work authorized under the Corps permit for discharge of dredged or fill material into waters of the United States.

Birds

Swainson's Hawk (*Buteo swainsoni*)

The Swainson's hawk is a long-distance migrant species. The Central Valley population winters primarily in Mexico and arrives on their breeding grounds in the Central Valley in mid-March to early April. Nests are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures, but the species will also nest in tall shrubs and trees in proximity to developments near foraging habitat. Prey species mainly include small mammals, reptiles, and insects. Egg-laying generally occurs in April and young hatch in May and June. Most young have fledged the nest by the end of July and are relatively independent of parental protection. However, fledged young remain with their parents until they migrate in the fall. Migration to the wintering grounds generally occurs around September. Some individuals or small groups may winter in California (Zeiner et al., 1988–1990).

The agricultural fields and ruderal vegetation communities within the project site represent suitable foraging habitat for Swainson's hawk. Nesting habitat is limited to a few tall trees along the project site drainages; however, additional habitat is present on adjacent lands.

White-tailed kite (*Elanus leucurus*)

The white tailed kite is a year-round resident in central California. It typically nests in oak woodlands or trees, especially along marshes or river margins and may use any suitable tree or shrub that is of moderate height. Its nesting season may begin as early as February and extends into August. This raptor forages during the day for rodents, especially voles, in wet or dry grasslands and fields (Zeiner et al., 1988–1990). White-tailed kites forage characteristically by hovering over the location of a potential prey item.

The agricultural fields and ruderal vegetation communities within the project site represent suitable foraging habitat for white-tailed kite. Nesting habitat is limited to a few tall trees along the project site drainages; however, additional habitat is present on adjacent lands.

Regulatory Setting

Federal

Federal Endangered Species Act

Under the Federal Endangered Species Act (FESA), the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 United States Code [USC] 1533[c]). FESA prohibits the "take" of endangered or threatened fish and wildlife species on private property, and from the "take" of endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under the FESA, the definition of "take" is to "harass,

harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take. If a project would result in take of a federally listed species, either an incidental take permit, under Section 10(a) of the FESA, or a federal interagency consultation, under Section 7 of the FESA, is required prior to the take occurring. Such a permit typically requires various types of mitigation to compensate for or to minimize the take.

Pursuant to Section 7, a federal agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species, or species proposed for federal listing may be present in the project site and determine whether the proposed project will have a potentially significant impact on such species. In addition, the federal agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]). Substantial adverse project impacts on these species or their habitats would be considered potentially significant in this EIR.

The USFWS administers FESA for all terrestrial species and the NMFS administers FESA for marine fish species, including anadromous salmonids such as steelhead. Projects for which a federally listed species and/or its habitat are present must receive authorization from either USFWS or NMFS. Authorization may involve a letter of concurrence that the project will not result in the potential take of a listed species and/or its habitat or it may result in the issuance of a Biological Opinion that describes measures that must be undertaken in order to minimize the likelihood of an incidental take of a listed species. A Section 10(a) Endangered Species Incidental Take Permit would be necessary when the "taking" or harming of a species is incidental to the lawful operation of a project.

The USFWS also publishes a list of candidate species. Species on this list receive "special attention" from federal agencies during environmental review, although they are not otherwise protected under FESA. Candidate species are taxa for which the USFWS has sufficient biological information to support a proposal to list as endangered or threatened. In addition, the USFWS maintains a list of species of concern. Federal species of concern receive no legal protection under FESA but may meet CEQA criteria for being considered rare or endangered (see below).

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 imposes criminal and civil penalties for persons in the U.S. or within U.S. jurisdiction lands who take, possess, sell, purchase, barter, offer to sell or purchase or barter, transport, export or import a bald or golden eagle, alive or dead, or any part, nest, or egg of these eagles; or violates any permit or regulations issued under the Act, without the permission of the Secretary of the Interior. Bald eagles (*Haliaeetus leucocephalus*) may not be taken for any purpose unless the Secretary issues a permit prior to the taking.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 USC, Sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary

of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Birds of prey are protected in California under the State Fish and Game Code, Section 3503.5 (1992). Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact. Project impacts to these species would not be considered significant unless they are known or have a high potential to nest in the project site or to rely on it for primary foraging.

State

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the California Fish and Game Code, a permit from the CDFW is required for projects that could result in the take of a state-listed threatened or endangered species (i.e., species listed under CESA),. Under CESA, the definition of "take" is understood to apply to an activity that would directly or indirectly kill an individual of a species, but the state definition does not include "harm" or "harass," as the federal definition does. As a result, the threshold for take under the CESA is typically higher than that under the FESA. Under CESA, CDFW maintains a list of threatened species and endangered species (California Fish and Game Code 2070). The CDFW also maintains two additional lists: (1) List of candidate species that are species CDFW has formally noticed as being under review for addition to either the list of endangered species or the list of threatened species; and (2) List of "species of special concern" which serve as "watch lists."

Consistent with the requirements of CESA, a state agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project site and determine whether the proposed project will have a potentially significant impact on such species.

California Environmental Quality Act

CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. Thus, CEQA provides lead agencies the ability to protect a species from potential project impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

CEQA Guidelines also consider the protection of other locally or regionally significant resources, including sensitive natural communities (such as riparian, oak woodland habitats). Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if there will be substantial losses (Guidelines Section 15065). Natural communities listed by CNDDB as

sensitive are considered by CDFW to be significant resources and would therefore fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general plans and natural community conservation plans (NCCPs) often identify these resources as well.

California Fish and Game Code

Fully Protected Species

The California Fish and Game Code provides protection from take for a variety of species. Certain species are considered *fully protected*, meaning that the code explicitly prohibits all take of individuals of these species except for take permitted for scientific research. Section 5050 lists fully protected amphibians and reptiles, Section 5515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals. It is possible for a species to be protected under the California Fish and Game Code, but not fully protected. For instance, mountain lion (*Puma concolor*) is protected under Section 4800 et seq., but is not a fully protected species.

Protection of Birds and Their Nests

Eggs and nests of all birds are protected under Section 3503, nesting birds (including raptors and passerines) under Sections 3503.5 and 3513, and birds of prey under Section 3503.5. Migratory nongame birds are protected under Section 3800 and other specified birds under Section 3505.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (Fish and Game Code Section 1900 – 1913) is intended to preserve, protect, and enhance endangered or rare native plants in California and gives the CDFW authority to designate state endangered, threatened, and rare plants and provides specific protection measures for identified populations. The Act also directs the California Fish and Game Commission to adopt regulations governing taking, possessing, propagation, and sale of any endangered or rare native plant.

Oak Woodlands Conservation Act

California State Senate Bill 1334, the Oak Woodlands Conservation Act, became law on January 1, 2005 and was added to the CEQA statutes as 21083.4. This statute requires that a county must determine whether or not a project will result in a significant impact on oak woodlands and, if it is determined that a project may result in a significant impact on oak woodlands then the County shall require one or more of the following mitigation measures:

1. Conserve oak woodlands through the use of conservation easements;
2. Plant an appropriate number of trees, including maintenance of plantings and replacement of failed plantings;
3. Contribute funds to the Oak Woodlands Conservation Fund for the purpose of purchasing oak woodlands conservation easements;
4. Other mitigation measures developed by the county.

This law protects oak woodlands that are not protected under the State Forest Practice Act.

Local

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (San Joaquin Council of Governments, 2000) provides a strategy for balancing the need to conserve open space and the need to convert open space to non-open space use while providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the federal or state ESA. The SJMSCP is a 50-year plan and will be in effect until the year 2049. The SJMSCP is implemented by a Joint Powers Authority (JPA). The JPA is responsible for conducting all required preconstruction surveys, informing an applicant of "Incidental Take" minimization measures, confirming that "Incidental Take" minimization measures (ITMMs) have been implemented prior to site-disturbance, and collecting development fees. Development fees are determined by the type and area of habitat converted to development.

Participation in the SJMSCP is voluntary for local jurisdictions and independent project proponents, and allows a participant to conduct permitted activities that result in or may result in "Incidental Take" of listed species covered by the SJMSCP. Participation in the SJMSCP may facilitate or expedite the approval of development projects since participants would avoid having to obtain required permits separately or authorizations directly from the regulating agencies. The JPA has obtained permits and authorizations for the conversion of a predetermined amount of open space habitat to development. These permits and authorization would cover a participant in the SJMSCP.

City of Stockton General Plan

Through its General Plan, the City has adopted several Natural and Cultural Resources Policies to protect natural resources within the City's plan area. All Natural and Cultural Resources Policies (NCR), with the exception of NCR 2.15-2.17 are applicable to the Proposed Project and are presented below.

Policy NCR-2.1 Protect Sensitive Habitats. The City shall support preservation, restoration, and enhancement of habitats of State of Federally-listed rare, threatened, endangered and/or other sensitive and special status species.

Policy NCR-2.2 Management of Wetlands. The City shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats. Where possible and appropriate, such communities shall be restored or expanded.

Policy NCR-2.3 Management of Sensitive Habitats. The City shall favor sensitive habitat protection and enhancement of contiguous areas over small-segmented remainder parcels.

Policy NCR-2.4 Impacts of Sensitive Habitats. The City shall consider the loss of sensitive habitats due to development to be a significant environmental impact. All development that is proposed to disturb or remove sensitive habitat shall demonstrate mitigation for this loss.

Policy NCR-2.5 SJCOG Multi-Species Habitat Conservation and Open Space Plan. The City shall continue to coordinate with the San Joaquin Council of Governments and comply with the terms of the Multi Species Habitat Conservation and Open Space Plan to protect critical habitat areas that support endangered species and other special-status species.

Policy NCR-2.6 New Development in Sensitive Areas. The City shall require careful planning of new development in areas that are known to have particular value for biological resources to maintain sensitive vegetation and wildlife habitat.

Policy NCR-2.7 Development Review. The City shall review development proposals against the California NDDB to assist in identifying potential conflicts with sensitive habitats or special status species.

Policy NCR-2.8 Development Review. The City shall review development proposals in accordance with applicable Federal, State, and local statues protecting special-status species and jurisdictional wetlands.

Policy NCR-2.9 Appropriate Mitigation Measures. The City, in its lead agency role, shall take into consideration mitigation standards and policies of resource and regulatory agencies with jurisdiction over biological resources (e.g., USFWS, CDFG, etc.).

Policy NCR-2.10 Wetland Resources. The City shall require that a wetland delineation be prepared using the protocol defined by the U.S. Army Corps of Engineers. On development sites with the potential to contain wetland resources, a report on the findings of this survey shall be submitted to the City as part of the application process.

Policy NCR-2.11 Maintain Biological Resource Database. The City shall maintain a current database of biological resources, including maps that identify the locations of specific environmentally-sensitive habitats and lists of special-status species.

Policy NCR-2.12 Requirements of Biological Studies. On sites that have the potential to contain critical or sensitive habitats or special-status species or are within 100 feet of such areas, the City shall require the project applicant to have the site surveyed by a qualified biologist. A report on the findings of this survey shall be submitted to the City as part of the application process.

Policy NCR-2.13 Encouraging Planting of Native Vegetation. The City shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation, and ensure that a maximum number and variety of well-adapted plants are maintained.

Policy NCR-2.14 Protect Delta Habitats. The City shall approve only those activities in the Delta and related waterways that are consistent with the sensitive environmental characteristics of these areas.

Policy NCR-2.15 Levee Vegetation. The City shall require disturbance of levee vegetation be minimized and vegetation replacement be consistent with flood control and reclamation district constraints.

Policy NCR-2.16 Fisheries and Riparian Habitat. The City shall protect the fisheries and riparian habitat of the Delta and waterways from damage caused by the operation of marinas or the Port of Stockton.

Policy NCR-2.17 Development of the Primary Zone of the Delta. The City shall ensure that the future changes to the City's General Plan and Development Code for lands in the city located within the Primary Zone of the Delta, as defined by the Delta Protection Act of 1992, be consistent with the goals of, and comply with, the Land Use and Resources Management Plan for the Primary Zone of the Delta adopted pursuant to Section 29763.5 of the Delta Protection Act of 1992.

Policy NCR-2.18 Minimize Lighting Impacts. The City shall ensure that lighting associated with new development or facilities (including street lighting, recreational facilities, and parking) shall be designed to prevent artificial lighting from illuminating adjacent natural areas at a level greater than one foot candle above ambient conditions.

Policy NCR-2.19 Interim SJMSCP Compliance for Biological Resources. Until a Major Amendment to the existing SJMSCP is adopted to incorporate all areas of the City's proposed Sphere of Influence into the SJMSCP coverage area, the City shall use the requirements of the SJMSCP to ensure effective protection of natural resources and compliance with applicable Federal, State, and City policies and regulations. This process is intended to mirror exactly, the existing SJMSCP requirements for all areas proposed to be included within the City of Stockton SOI, but not currently located in the SJMSCP coverage area. For impacts to biological resources outside the SJMSCP's current coverage area, the City shall require mitigation of these impacts in a manner fully consistent with the current SJMSCP requirements. These requirements would include: 1) the collection of fees (to be used for the acquisition of habitat preserves) equivalent to those specified in the current SJMSCP; 2) the imposition of SJMSCP ITMMs; and 3) consultation with resource agencies regarding incidental take coverage.

City of Stockton Tree Preservation

Heritage trees are fully protected under the City's Municipal Code (see Chapter 16.130 "Heritage Tree Permit'). Heritage trees are defined as any valley oak, coast live oak, and interior live oak trees which are located on public or private property, and which have a trunk diameter of sixteen inches or more, measured at twenty-four inches above actual grade. It is unlawful to remove heritage trees within city limits without first obtaining a permit from the City's Public Works Department.

Previous Regulatory Activity Related to the Proposed Project

Formal consultation between the Corps and the USFWS has occurred during the initial planning phases for the proposed project. Consultation (as part of regulatory permitting) was originally conducted in 2005 through 2007 for construction of a storm drain outfall structure, two box culverts, and utility crossings on Weber Slough, with additional consultation occurring in 2007/2008 for similar in-channel work.

This prior work was authorized under Nationwide Permits Nos. 7, 12, and 14 (Corps #199800613), Clean Water Act Section 401 Water Quality Certification (California Regional Water Quality Control Board WDID#5B39CR00095A), and a 1602 Streambed Alteration Agreement (California Department of Fish and Game Notification #1600-2005-0317-R2).

On November 23, 2005, formal consultation with the USFWS was initiated pursuant to section 7(a) of the Endangered Species Act. In a letter dated June 19, 2006, the USFWS declared that the Section 7 consultation between the Corps and USFWS regarding potential effects of the proposed project on GGS was streamlined through participation in the SJMSCP. The USFWS also found that the non-jeopardy determination for the GGS in the USFWS' internal biological opinion (USFWS File 1-1-00F-0231) regarding the SJMSCP and associated incidental take permit issued to San Joaquin County remained valid. Therefore, the USFWS concluded that any take of the GGS by the project applicant was authorized through the San Joaquin County Incidental Take Permit and no further analysis or action was required.

The June 2006 biological opinion directed the (previous) project applicant to pay the SJMSCP fees and implement the ITMMs for construction of the infrastructure components described above.

Additional agency consultation occurred in 2007/2008 for similar in-channel work to complete the proposed project's required drainage infrastructure. As part of that consultation, a biological assessment for the Federally-listed GGS was prepared and submitted to the Corps as part of their request to consult with the USFWS under Section 7 of the Endangered Species Act for the proposed project. Based on information provided in the biological assessment, the Corps determined that further consultation with USFWS was not necessary, as no affects to GGS were anticipated as a result of permitted work on the project site. As part of this effort, work buffers were established for areas surrounding both Weber Slough and North Littlejohns Creeks.

3.4.3 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW, USFWS, or NMFS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

Methodology

This analysis is based upon field reconnaissance of the project site, literature searches, and database queries. The sources of reference data reviewed for this assessment included the following:

- California Natural Diversity Database (CNDDB), Rarefind 3 computer program for the following USGS quadrangles: Lodi South, Waterloo, Linden, Stockton West, Stockton East, Peters, Lathrop, Manteca, and Avena (CDFG, 2009).
- California Native Plant Society (CNPS), Electronic Inventory computer program for the following 7.5-minute USGS quadrangles: Lodi South, Waterloo, Linden, Stockton West, Stockton East, Peters, Lathrop, Manteca, and Avena (CNPS, 2009).
- Federal Endangered and Threatened Species that occur in or may be Affected by Projects in the Stockton East USGS 7½ Minute Quad (USFWS, 2009).
- Stockton East, California U.S. Geological Survey (USGS) 7½ quadrangle (USGS, 2009).
- Color aerial photographs (GlobeXplorer, 2006).

The impact analysis focuses on foreseeable changes to the baseline condition in the context of the significance criteria presented above. In conducting the following impact analysis, three principal components of the Guidelines outlined above were considered:

- Magnitude of the impact (e.g., substantial/not substantial)
- Uniqueness of the affected resource (i.e., rarity of the resource)
- Susceptibility of the affected resource to perturbation (i.e., sensitivity of the resource)

The evaluation of the significance of the following impacts considered the interrelationship of these three components. For example, a relatively small magnitude impact to a state or federally listed species would be considered significant because the species is very rare and is believed to be very susceptible to disturbance. Conversely, a plant community such as California annual grassland is not necessarily rare or sensitive to disturbance. Therefore, a much larger magnitude of impact would be required to result in a significant impact.

Impacts and Mitigation

Impact 3.4.1: The project could have a substantial adverse effect, either directly or through habitat modifications, on Swainson's hawks and other raptors. *(Potentially Significant)*

The proposed project is anticipated to affect approximately 230 acres of former agricultural and disturbed/ruderal habitats which provide limited foraging habitat for Swainson's hawks and other raptors. Additionally, riparian areas located along North Littlejohns Creek and Weber Slough may provide nesting habitat. Without protective measures, impacts to these wildlife species are considered ***potentially significant***.

Mitigation Measures

Measure 3.4.1: Nesting Raptor Protection Measures. To avoid and minimize impacts on tree-nesting raptors the following measures (consistent with the SJMSCP 2009 ITMMs) will be implemented:

- If feasible, conduct all tree and shrub removal and grading activities during the non-breeding season (generally from October through February).
- If grading and tree removal activities are scheduled to occur during the breeding season (generally from March through September), pre-construction surveys for Swainson's hawks and other tree-nesting raptors. The surveys shall be conducted by a qualified biologist in suitable nesting habitat within 1,000 feet of the project site for tree nesting raptors prior to project activities that will occur between March 15 and September 15 of any given year. If active nests are recorded within these buffers the project proponent shall consult with CDFW to determine and implement appropriate avoidance and mitigation measures.
- If known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past three years or trees, such as large oaks, which the hawks prefer for nesting) are located on the project site, the project applicant has the option of retaining or removing known or potential nest trees (according to Section 5.2.4.11 of the SJMSCP).

Impact Significance after Mitigation: Implementation of the nesting raptor protection measures outlined above in mitigation measure 3.4.1 would result in a ***less than significant*** impact.

Impact 3.4.2: The project would not have an adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS. *(No Impact)*

Through compliance with the various regulatory permitting activities (including ITMMs) described above, work buffers and construction setbacks have been established for portions of North Littlejohns Creek and Weber Slough within the project area. Adherence to these requirements (including maintenance of setbacks and construction buffers) would result in ***no impacts*** to riparian habitat.

Mitigation Measures

None required.

Impact 3.4.3: The project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means. (*No Impact)*

Development of the proposed project is not likely to result in the additional loss of waters of the U.S., including wetlands, beyond those previously addressed as part of past activities on the project site and permitted through past regulatory actions with the Corps. Through compliance with the various regulatory permitting activities (including ITMMs) described above, work buffers and construction setbacks have been established for portions of North Littlejohns Creek and Weber Slough within the project area. Adherence to these requirements (including maintenance of setbacks and construction buffers) would result in ***no impacts*** to wetlands.

Mitigation Measures

None required.

Impact 3.4.4: The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. *(No Impact)*

Within the site, North Littlejohns Creek and Weber Slough provide marginal quality movement corridors. However, these watercourses are not considered ideal areas for wildlife (such as GGS) as they do not provide the essential habitat components namely, adequate water, sufficient emergent vegetation, and appropriate upland habitat. Through compliance with the various regulatory permitting activities (including ITMMs) described above, work buffers and construction setbacks have been established for portions of North Littlejohns Creek and Weber Slough within the project area. Adherence to these requirements (including maintenance of setbacks and construction buffers) would result in ***no impacts*** to these wildlife corridors.

Mitigation Measures

None required.

Impact 3.4.5: The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. *(No Impact)*

A number of trees (including valley oak) meet the City's requirements as Heritage Oaks and are protected by the City. These trees comprise the Valley Foothill Riparian habitat occurring along sections of the banks of North Littlejohns Creek and Weber Slough (see Figure 3.4-1). As described above on pages 3.4-20 and 3.4-21, these portions of the project area are intentionally avoided and Heritage Oaks will not be disturbed. Consequently, the proposed project is not anticipated to conflict with any current local policies or ordinances protecting biological resources. ***No impact*** is expected.

Mitigation Measures

None required.

Impact 3.4.6: The project could conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan. *(Less-than-Significant)*

The project site is located within the SJMSCP area and subject to the provisions set forth in that document. Under the SJMSCP the project site is separated into two pay zones to compensate for impacted lands. A total of 322.2 acres of the project site is zoned as Agricultural Habitat Open Spaces/Category C, and 8.9 acres is zoned as Natural Lands Habitat/Category D (Pay Zone B [Natural]). The project applicant will participate in the SJMSCP pursuant to the in-place 2009 ITMMs. With implementation of the ITMMs, this impact is considered ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.4.7: The project could contribute to a significant cumulative impact to wildlife habitat. (*Less-than-significant*)

The proposed project could have an impact on special status species and their habitats, as described in the biological resources impact analysis and mitigation. This project site is located in San Joaquin County, and as such falls under the SJMSCP. The SJMSCP is intended to comprehensively minimize and mitigate impacts to plant, fish and wildlife habitat. SJMSCP participants under the SJMSCP may conduct SJMSCP permitted activities that result in or could result in "incidental take" of listed species and other species protected under the plan. All of the potentially impacted species presented in Section 3.4 are covered under the SJMSCP, and mitigation through participation in the approved 2009 ITMMs will address both direct and cumulative impacts associated with the proposed project.

Mitigation Measures

None required.

3.4.4 References

CDFG, 2009a. Endangered, Threatened, and Rare Plants List. California Department of Fish and Game, Biogeographic Data Branch, Sacramento, CA. Data dated January 2009.

CDFG, 2009b. Endangered and Threatened Animals List. California Department of Fish and Game, Biogeographic Data Branch, Sacramento, CA. Data dated February 2009.

CDFG, 2009c. California Natural Diversity Database (CNDDB) Rarefind 3 computer program. California Department of Fish and Game, Biogeographic Data Branch. Sacramento, CA. Data dated January 2009.

California Native Plant Society (CNPS), 2009. Inventory of Rare and Endangered Plants (online edition, v7-09a 1-13-09). California Native Plant Society, Sacramento, California, www.cnps.org/inventory, accessed on February 18, 2008

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. *Classification of wetlands and deepwater habitats of the United States*. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online, www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm, accessed on February 3, 2009:.

Mayer, Kenneth E., and W.F. Laudenslayer, Jr. 1988. *A Guide to Wildlife Habitats of California*. State of California Resources Agency, Department of Fish and Game. Sacramento, CA, www.dfg.ca.gov/biogeodata/cwhr/cawildlife.asp, accessed on February 3, 2009

Miles, S.R. and C.B. Goudey, 1997. *Ecological Subregions of California: Section and Subsection Descriptions*. USDA Forest Service, Pacific Southwest Region Publication R5-EM-TP-005. San Francisco, CA.

U.S. Forest Service (USFS), in cooperation with NRCS and Bureau of Land Management. 1998. *Ecological Subregions of California: Section and Subsection Descriptions*.

USFWS, 2009. Federal Endangered and Threatened Species that may be Affected by projects in the Lodi South, Waterloo, Linden, Stockton West, Stockton East, Peters, Lathrop, Manteca, and Avena California 7.5-Minute Topographic Quadrangles.

USFWS, 2009. Endangered Species Accounts. Prepared by Endangered Species Division of the Sacramento Fish & Wildlife Office, sacramento.fws.gov/es/spp_info.htm, accessed on February 18, 2009.

U.S. Geological Survey (USGS), 1980. 7.5-Minute Topographic Quadrangle, Stockton East, California.

Zeiner, D.C., W.F. Laudenslayer, and K.E. Mayer. 1988-1990. California's Wildlife. Vols I, II, and III. California Statewide Wildlife Habitat Relationships System. California Department of Fish and Game. Sacramento, California.

3.5 Cultural Resources

3.5.1 Introduction

The assessment of project impacts on cultural resources under CEQA (CEQA Guidelines, Section 15064.5) is a two-step process: (1) determine whether the project site contains cultural resources (defined as prehistoric archaeological, historic archaeological, or historic architectural resources). If the site is found to contain a cultural resource: (2) determine whether the project would cause a substantial adverse change to the resource. The setting discussion describes the existing properties identified within the project area and assesses whether the properties contain cultural resources for the purposes of CEQA. The impact discussion reviews the criteria for significant impacts on cultural resources and assesses the impact of the project on cultural resources. This document is based on the Phase 1 Cultural Resources Assessment completed by Michael Brandman Associates (MBA) for the proposed project and the Cultural Resources Investigation complete by ASI for the proposed project.

3.5.2 Setting

Regulatory Setting

CEQA requires that public or private projects financed or approved by public agencies must assess the effects of the project on unique or significant archaeological or historical resources. Historical resources are defined as buildings, sites, structures, objects or districts, each of which may have historical, architectural, archaeological, cultural, or scientific significance (Public Resources Code 21083.2; California Code of Regulations 15064.5). A "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person. (Public Resources Code 21083.2.)

CEQA requires that if a project results in an effect that may cause a substantial adverse change in the significance of a cultural resource, then alternative plans or mitigation measures must be considered; however, only significant cultural resources need to be addressed.

Therefore, prior to the assessment of effects or the development of mitigation measures, the significance of cultural resources must first be determined. The steps that are normally taken in a cultural resources investigation for CEQA compliance are as follows:

- Identify potential historical resources and unique archaeological resources
- Evaluate the eligibility of historical resources
- Evaluate the effects of a project on all eligible historical resources

Natural Setting

The project area is located in the northern San Joaquin Valley within basin-type physiography. Basins are common in the San Joaquin Valley, and are commonly associated with hardpans and high clay content. San Joaquin County is located in the central region of the Central Valley. Historically, this region supported extensive annual grasslands intermixed with a variety of vegetative communities including oak woodland, wetland, and riparian woodland. Intensive agricultural and urban development has resulted in large losses and conversion of these habitats. The remaining native vegetative communities exist as isolated remnant patches within urban and agricultural landscapes, or in areas where varied topography has made urban and/or agricultural development difficult.

The majority of the project site is classified as agriculture, most recently planted with corn, other grain crops, and tomatoes. Row crops may provide suitable foraging habitat and cover for some wildlife, including coyote, California ground squirrel, and black-tailed jackrabbit. Common birds that may occur in the study area include scrub jay, common raven, house finch, and barn owl. Burrowing owl and Swainson's hawk have also been documented in the general project region. There are two watercourses within the project area: North Littlejohns Creek and Weber Slough.

Paleontological Setting

Paleontological resources consist of the fossilized remains of plants and animals, including vertebrates (animals with backbones) and invertebrates (e.g., starfish, clams, ammonites, and coral). Fossils of microscopic plants and animals, or microfossils, are also considered in this analysis. The age and abundance of fossils depend on the location, topographic setting, and particular geologic formation in which they are found. The geologic formations containing the majority of fossils in the county are considered geologically young; the oldest fossil-bearing formation dates to the Paleocene epoch (65 million years old). Most of the fossil-bearing geologic units in the county were formed in ancient marine environments such as inland embayments, coastal areas, and extensive inland seas.

Paleontological resources in the San Joaquin Region are most prevalent in geologic formations located along the western margin of the San Joaquin Valley, miles away from the project site. These formations include the marine sandstone, mudstone, siltstone, and shale of the San Pablo Formation, various undivided conglomerate, sandstone, and siltstone units, and the Moreno Formation. The Moreno Formation, which is present along the western margin of the Great Valley as an elongated and continuous, northwest-trending unit, consists of shale, sandstone, and siltstone that were once deposited in a deep-marine environment.

The University Of California Museum Of Paleontology Collections Database lists 83 fossil localities in San Joaquin County; the majority of these sites are along the western boundary of the San

Joaquin Valley. Several fossil localities are grouped in the San Pablo and Moreno Formations west of Vernalis near the Tesla Portal of the Hetch Hetchy Aqueduct (UCMP, 2008). These fossils include an extinct horse, mammoth, and boney fish dating to the Pleistocene epoch, about 1.8 million years ago. Only a few fossil localities have been identified in the younger alluvial deposits throughout the central portion of the San Joaquin Valley. Fossil localities appear again on the east side of the San Joaquin Valley near Oakdale, where the Hetch Hetchy Aqueduct extends through the Mehrten Formation, a non-marine formation ranging in age from 24 to 5 million years old (Miocene). Fossils found at sites in the Mehrten Formation near Oakdale include early (Miocene age) turtles, tortoises, kangaroo rats, single-hoofed horses, and mammoths.

Prehistoric Setting

Fredrickson (1973) identified three general patterns of resource use for the time period between 4,500 B.P. and A.D. 1,500: the Windmiller, Berkeley, and Augustine patterns. A pattern is a general mode of life characterized archaeologically by technology, particular artifacts, economic systems, trade, burial practices, and other aspects of culture.

The Windmiller Pattern (4,500 B.P. to 2,500 B.P.) demonstrates evidence of a mixed economy that focused on game procurement and the use of wild plant foods. The archaeological record contains numerous projectile points with a wide range of faunal remains. Hunting was not limited to terrestrial animals, as is evidenced by the Windmiller toolkit, which included fishing hooks and spears, with the remains of sturgeon, salmon, and other fish (Moratto 1984). Plant resources were also used, as indicated by ground stone artifacts and clay balls that were used for boiling acorn mush. Settlement strategies during the Windmiller period reflect a seasonal adaptation. Habitation sites in the valley were occupied during the winter months, but populations moved into the foothills during the summer (Moratto 1984).

The Windmiller Pattern ultimately changed to a more specialized adaptation labeled the Berkeley Pattern (2,500 B.P. to A.D.500). A reduction in the number of manos and metates and an increase in mortars and pestles indicate a greater dependence on acorns. Although gathered resources grew in importance during this period, the continued presence of projectile points and atlatls in the archaeological record indicates that hunting was still an important activity (Fredrickson 1973).

The Berkeley Pattern was superseded by the Augustine Pattern around A.D. 500. The Augustine Pattern reflects a change in subsistence and land use patterns to those of the ethnographically known people of the historic era. This pattern exhibits a great elaboration of ceremonial and social organization, including the development of social stratification. Exchange became well developed, and an even more intensive emphasis was placed on the use of the acorn, as is evidenced by the presence of shaped mortars and pestles and numerous hopper mortars in the archaeological record. Other notable elements of the artifact assemblage associated with the Augustine Pattern include flanged tubular smoking pipes, harpoons, clam shell disc beads, and an especially elaborate baked clay industry, which included figurines and pottery vessels (Cosumnes Brownware). The presence of small projectile point types, referred to as Gunther Barbed series, suggests the use of the bow and arrow. Other traits associated with the Augustine Pattern include the introduction of pre-interment burning of offerings in a grave pit during mortuary ritual, increased village sedentism, population

growth, and incipient monetary economy in which beads were used as a standard of exchange (Moratto 1984.)

Ethnographic Setting

At the time of European contact, the study area was inhabited by the Northern Valley Yokuts. Because aboriginal populations in the San Joaquin Valley were decimated early, most information regarding the Northern Valley Yokuts is gleaned from accounts of Spanish military men and missionaries that have been translated. A summary of these sources has been compiled by W. J. Wallace (1978), and it is upon this work that this brief ethnographic setting is based.

Northern Valley Yokuts territory is defined roughly by the crest of the Diablo Range on the west, and the foothills of the Sierra Nevada on the east. The southern boundary is located approximately where the San Joaquin River bends northward, and the northern boundary is roughly half way between the Calaveras and Mokelumne Rivers. The Yokuts may have been fairly recent arrivals in the San Joaquin Valley, perhaps being pushed out of the foothills about 500 years ago.

Population estimates for the Northern Valley Yokuts vary from 11,000 to more than 31,000 individuals. Populations were concentrated along waterways and on the more hospitable east side of the San Joaquin River. Villages, or clusters of villages, made up “miniature tribes” (tribelets) lead by headmen. The number of tribelets is estimated at 30 to 40; each tribe spoke their own dialect of the Yokuts language. Combined with the Southern Valley Yokuts and the Foothill Yokuts dialects, these tongues formed the Yokutsan linguistic family of the Penutian Stock (Shipley 1978).

Principal settlements were located on the tops of low mounds, on or near the banks of the larger watercourses. Settlements were composed of single family dwellings, sweathouses, and ceremonial assembly chambers. Dwellings were small and lightly constructed, semi-subterranean and oval. The public structures were large and earth covered.

Subsistence among the Northern Valley Yokuts revolved around the waterways and marshes of the lower San Joaquin Valley. Fishing with dragnets, harpoons, and hook and line, yielded salmon, white sturgeon, river perch, and other species of edible fish. Waterfowl and small game attracted to the water also provided a source of protein. The contribution of big game to the diet was probably minimal. Vegetal staples included acorns, tule roots, and seeds.

Goods not available locally were obtained through trade. Paiute and Shoshone groups on the eastern side of the Sierra were suppliers of obsidian (volcanic glass used for tools). Shell beads and mussels were obtained from Salinan and Coastanoan groups. Trading relations with Miwok groups yielded baskets and bows and arrows. Overland transport was facilitated by a network of trails, and tule rafts were used for water transport.

Most Northern Valley Yokuts groups had their first contact with Europeans in the early 1800s, when the Spanish began exploring the Delta. The gradual erosion of Yokuts culture began during the mission period. Epidemics of European diseases played a large role in the decimation of the native population. With the secularization of the mission and the release of neophytes, tribal and territorial

adjustments were set in motion. People returned to other groups, and a number of polyglot “tribes” were formed. The final blow to the aboriginal population came with the Gold Rush and its aftermath. In the rush to the southern mines, native populations were pushed out of the way, and out of their existing territories. Ex-miners settling in the fertile valley applied further pressure to the native groups, and altered the landforms and waterways of the valley. Many Yokuts resorted to wage labor on farms and ranches. Others were settled on land set aside for them on the Fresno and Tule River Reserves.

Historic Setting

Spanish explorers and missionaries made up the earliest Euro-American presence in the study area. Lieutenant Gabriel Moraga was the first European to explore what is now the interior valley of California. In 1808 Moraga explored the Central Valley in order to scout for potential future mission sites and pursue neophytes that had escaped from the coastal missions. During his exploration, Moraga named a small creek after Saint Joachim, father of Mary. Saint Joachim translates, in Spanish, to "San Joaquin," and when it was later discovered that the creek fed into a larger river, the major waterway and surrounding valley became known as the San Joaquin River and Valley.

Euro-American trappers, including Jedediah Strong Smith, entered the region in the 1820s, attracted by the fur bearing animals that inhabited the Central Valley. Prior to the Gold Rush, the study area was devoted to grazing and hunting, as immense herds of cattle and some horses roamed the valley. In 1844, Charles Weber and William Gulnac obtained the Rancho del Campo de los Franceses and organized the first party of non-native settlers intending to occupy the Central Valley. In 1847, Weber laid out a new town on the south side of what would be the Stockton Channel. This community was officially named Stockton in 1849 and with the discovery of gold in 1848 Weber developed the town as a supply station for the southern mines. Many of San Joaquin County’s communities developed along former transportation and trade routes. With the resulting influx of population during the Gold Rush, the production of food was needed to support the mines, and the San Joaquin Valley developed to become an agricultural supplier. Some of the miners, disappointed in the search for gold, turned to farming in the fertile swamp lands in the San Joaquin Valley. In 1850 California achieved statehood, and San Joaquin County was formed as one of the 27 original counties.

In 1850, the City of Stockton was incorporated and by 1854, the City had grown to 7,000 inhabitants, making it the fourth largest city in the State. However, in the later half of the 19th century and as gold mining waned, disenchanted miners turned to agriculture, with Stockton becoming a major shipping point for overseas grain trade. Agriculture was also the catalyst for other related industry such as flourmills, shipyards, agricultural machinery, financial institutions and tannery. A notable event in the history of Stockton’s developing agricultural economy was the invention of the first commercially successful track-type tractor by Benjamin Holt, who in 1883 founded the Stockton Wheel Company (City of Stockton, 2007).

Methodology

Archival Methods

A records search of all pertinent survey and site data was conducted at the Central California Information Center at California State University, Stanislaus on May 30, 2007 (IC#6723L) and September 16, 2008 (IC # 7179L). The records were accessed by utilizing the East Stockton U.S. Geological Survey (USGS) 7.5-minute quadrangle maps in San Joaquin County. The review included the proposed project footprint as well as a ¼ mile around the proposed project locations. The records search included a review of the *Directory of Properties in the Historic Property Data File for San Joaquin County* for information on sites of recognized historical significance within the *National Register of Historic Places*, the *California Register of Historic Resources*, the *California Inventory of Historic Resources* (1976), the *California Historical Landmarks* (1996), the *California Points of Historical Interest* (1992), the Caltrans State and Local Bridge Survey (1989), and the *Survey of Surveys* (1989).

Field Methods

An archaeological survey of the project area was undertaken by MBA on May 31, 2007, by walking in a zigzag pattern using 10- to 15-meter transects, when possible, to ensure proper coverage. The vast majority of the project area was planted with corn, other grain crops, and tomatoes. Two watercourses traversed the project area: North Littlejohns Creek and Weber Slough.

Native American Heritage Commission

The Native American Heritage Commission (NAHC) was contacted in September, 2008 and requested to search their Sacred Lands File and to provide a list of Native American that should be contacted concerning the Proposed Project. The NAHC's October, 2008 response stated that a record search of the sacred lands file failed to indicate the presence of Native American cultural resources in the area, but cautioned that the absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in the project area. The NAHC response also included three contacts who have requested information on projects such as this and who may have knowledge of cultural resources within the study area. A letter was sent to each individual or organization on the list in October, 2008.

Results

Archival

Results of the CCIC records search indicate that four cultural resource studies have been completed within the project area, and eight cultural resource studies have been completed within a one-quarter mile radius of the project area.

TABLE 3.5-1
PREVIOUSLY COMPLETED CULTURAL RESOURCE STUDIES
WITHIN ¼ MILE OF THE PROJECT AREAS

CCIC Identification Number	Year	Author	In Project Area? (y/n)
Project Area			
SJ-736	1987	deBarros	No
SJ-742	1987	Foster	Yes
SJ-770	1984	Napton	No
SJ-1431	1992	Napton	Yes
SJ-2551	1994	Teixeira and Werner	No
SJ-2800	1996	Napton	No
SJ-3601	1999	Davis-King	No
SJ-5059	2002	McKale	No
SJ-5170	2001	Love and Tang	No
SJ-5181	2003	P. Jensen	Yes
SJ-5206	2003	Marvin and Brejla	Yes
SJ-5619	2004	P Jensen	No

SOURCE: CCIC 2007, 2008

One previously identified resource has been recorded within the project area: P-39-004397, the Ira Ladd Ranch/Salmon Ranch at 5467 Arch Road. This residence was torn down in 2004.

Field

No prehistoric resources were discovered during the course of field survey of the project area in 2007. Remnant of historic resources in the form of small glass fragments, metal, and ceramic shards were discovered during the field survey at the former Ira Ladd Ranch location (Michael Brandman Associates, 2007). These resources were subsequently evaluated in 2008 by ASI and determined to be ineligible for listing in the National Register of Historic Places (ASI, 2008).

3.5.3 Impacts and Mitigation Measures

Significance Criteria

Consistent with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- A substantial adverse change in the significance of a historical resource that is either listed or eligible for listing on the National Register of Historic Places, the California Register of Historical Resources, or a local register of historic resources;
- A substantial adverse change in the significance of a unique archaeological resource;
- Disturbance or destruction of a unique paleontological resource or site or a unique geologic feature; or

- Disturbance of any human remains, including those interred outside of formal cemeteries.

CEQA provides that a project may result in a significant environmental effect if it would cause a substantial adverse change in the significance of a historical resource (Public Resources Code, Section 21084.1). CEQA Guidelines Section 15064.5, subdivision (b) (1), defines a "substantial adverse change" in the significance of a historical resource to mean "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired."

CEQA Guidelines, Section 15064.5, subdivision (b) (2), defines "materially impaired" for purposes of the definition of "substantial adverse change…" as follows:

The significance of an historical resource is materially impaired when a project:

A. demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

B. demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

C. demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Historic resources are usually 50 years old or older and must meet at least one of the criteria for listing in the California Register (such as association with historical events, important people, or architectural significance), in addition to maintaining a sufficient level of physical integrity (CEQA Guidelines Section 15064.5[a] [3]).

Approach to Analysis

If a project would cause a substantial adverse change in the significance of a historical resource or would cause significant effects on a unique archaeological resource, CEQA requires that alternative plans or mitigation measures be considered. Therefore, prior to the assessment of effects or the development of mitigation measures, the significance of cultural resources must first be determined. The steps that are normally taken in a cultural resources investigation for CEQA compliance are as follows:

- Identify potential historical resources and unique archaeological resources
- Evaluate the significance of historical resources, and
- Evaluate the effects of a project on all eligible historical resources.

Impacts Discussion

Impact 3.5.1: The project may adversely affect historic architectural resources. ***(No Impact)***

Results from the archival search as well as the field reconnaissance by MBA and ESA staff identified no standing historical structures that are located within or adjacent to the project area. Therefore, the proposed project would have ***no impact*** (direct or indirect) on historic architectural resources, and no mitigation is required.

Mitigation Measures

None required.

Impact 3.5.2: Project construction could adversely affect currently unknown historical resources, including unique archaeological or paleontological resources. ***(Potentially Significant)***

Neither the archival search nor the field reconnaissance resulted in the identification of recorded or unrecorded prehistoric or historic-era archaeological resources within the immediate project area. However, archaeological materials can be revealed unexpectedly during excavation throughout the Central Valley. Therefore, the possibility still exists for the discovery of cultural resources as a result of proposed project activities. Potential features or artifacts could include, but are not limited to, hearths, midden or shell deposits, lithic reduction flakes, projectile points, milling stations, historic-period structural foundations for houses, auxiliary buildings, roads, irrigation or watering systems, and trash scatters. Therefore, this impact is considered ***potentially significant***.

Mitigation Measures

Measure 3.5.1a: Stop Work in the Event of Cultural Resource Discovery. If cultural resources are encountered, all activity in the vicinity of the find shall cease until it can be evaluated by a qualified archaeologist and a Native American representative. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or tool-making debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the archaeologist and Native American representative determine that the resources may be significant, they will notify the City of Stockton. An appropriate treatment plan for the resources should be developed. The archaeologist shall consult with Native American representatives in determining appropriate treatment for prehistoric or Native American cultural resources. In considering any suggested mitigation proposed by the archaeologist and Native American representative, the City will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design,

costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed in other parts of the project area while mitigation for cultural resources is being carried out.

Measure 3.5.1b: Discovery of Human Remains. If human remains are encountered unexpectedly during construction excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the San Joaquin County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC will then identify the person(s) thought to be the Most Likely Descendent, who will help determine what course of action should be taken in dealing with the remains.

Impact Significance after Mitigation: Implementation of Mitigation Measures 3.5.1a and 3.5.1b which consist of several measures designed to address the discovery of previously unidentified cultural resources would result in a ***less-than-significant*** impact to currently unknown cultural resources in the project site.

Impact 3.5.3: Project construction could result in damage to previously unidentified human remains. *(Potentially Significant)*

There is no indication, either from the archival research results or the archaeological survey, that any particular location in the project area has been used for human burial purposes in the recent or distant past. Therefore, it is unlikely that human remains would be encountered during construction of the proposed project. However, in the unlikely event that human remains were discovered during subsurface activities, including those interred outside of formal cemeteries, the human remains could be inadvertently damaged. Therefore, this impact is considered ***potentially significant***.

Mitigation Measures

Measure 3.5.1a: Stop Work in the Event of Cultural Resource Discovery. The reader is directed above to Impact 3.5.2 for a complete description of this mitigation measure.

Measure 3.5.1b: Discovery of Human Remains. The reader is directed above to Impact 3.5.2 for a complete description of this mitigation measure.

Impact Significance after Mitigation: Implementation of Mitigation Measure 3.5.1a and 3.5.1b would result in a ***less-than-significant*** impact.

3.5.4 References

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3.6 Climate Change

3.6.1 Introduction

This section provides an analysis of the current environmental and regulatory framework related to climate change in California. Impacts related to greenhouse gases (GHGs) and climate change are analyzed and mitigation measures are provided for any potentially significant impacts.

3.6.2 Setting

Climate Change Overview

Various gases in the earth's atmosphere, classified as GHGs, play a critical role in determining its surface temperature. Solar radiation enters earth's atmosphere from space, and a portion of the radiation is absorbed by the earth's surface. Earth re-radiates this energy back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation (that otherwise would have escaped back into space) is now retained in the atmosphere, and results in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are CO_2, CH_4, N_2O, HFCs, CFCs, PFCs, and SF_6. Much of the scientific literature suggests that human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of earth's climate, known as global climate change or global warming. While there is some debate regarding this issue, it is unlikely that global climate change of the past 50 years can be explained without contribution from human activities (IPCC, 2007).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one year to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 54 percent is sequestered through ocean uptake, uptake by northern hemisphere forest regrowth, and other terrestrial sinks within 1 year, whereas the remaining 46 percent of human-caused CO_2 emissions remains stored in the atmosphere (Seinfeld and Pandis, 1998).

As discussed previously, impacts of GHGs are borne globally, as opposed to localized air quality effects of criteria air pollutants and toxic air contaminants. While the quantity of GHGs that it

takes to ultimately result in climate change is not precisely known, it is clear that no single project would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climates. Thus, from the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

Greenhouse Gas Emission Sources

According to much of the scientific literature on this topic, emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors (ARB, 2010). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB, 2010). Emissions of CO_2 are byproducts of fossil fuel combustion. Methane, a highly potent GHG, results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Nitrous oxide is also largely attributable to agricultural practices and soil management. Carbon dioxide sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution, respectively, two of the most common processes of CO_2 sequestration.

California is the 12th to 16th largest emitter of CO_2 in the world (CEC, 2006). California produced 478 million gross metric tons of CO_2 equivalent (CO_2e) in 2008 (ARB, 2010). CO_2e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. Expressing emissions in CO_2e takes the contributions to the greenhouse effect of all GHG emissions and converts them to the equivalent effect that would occur if only CO_2 were being emitted. This measurement, known as the global warming potential (GWP) of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, as described in Appendix C, Calculation References, of the General Reporting Protocol of the California Climate Action Registry (CCAR), one ton of CH_4 has the same contribution to the greenhouse effect as approximately 21 tons of CO_2 (CCAR, 2009). Therefore, CH_4 is a much more potent GHG than CO_2.

Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2008, accounting for 37 percent of total GHG emissions in the state (ARB, 2010). This sector was followed by the electric power sector (including both in-state and out-of-state sources) (25 percent) and the industrial sector (20 percent) (ARB, 2010).

Regulatory Setting

Federal

The federal Clean Air Act (CAA) requires the United States Environmental Protection Agency (EPA) to define national ambient air quality standards to protect public health and welfare in the U.S. The CAA does not specifically regulate GHG emissions; however, on April 2, 2007, the U.S. Supreme Court in *Massachusetts v. U.S. Environmental Protection Agency*, determined that

GHGs are pollutants that can be regulated under the CAA. Currently, there are no federal regulations that establish ambient air quality standards for GHGs.

On December 7, 2009, EPA adopted its Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the CAA (Endangerment Finding). The Endangerment Finding is based on Section 202(a) of the CAA, which states that the administrator (of EPA) should regulate and develop standards for "emission[s] of air pollution from any class or classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." The rule addresses Section 202(a) in two distinct findings. The first addresses whether the concentrations of the six key GHGs (carbon dioxide [CO_2], methane [CH_4], nitrous oxide [N_2O], hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]) in the atmosphere threaten the public health and welfare of current and future generations. The second addresses whether the combined emissions of GHGs from new motor vehicles and motor vehicle engines contribute to atmospheric concentrations of GHGs and, therefore, contribute to the threat of climate change.

The Administrator of EPA found that atmospheric concentrations of GHGs endanger the public health and welfare within the meaning of Section 202(a) of the CAA. The evidence supporting this finding consists of human activity resulting in "high atmospheric levels" of GHG emissions, which are likely responsible for increases in average temperatures and other climatic changes. Furthermore, the observed and projected results of climate change (e.g., higher likelihood of heat waves, wildfires, droughts, sea level rise, and higher intensity storms) are a threat to the public health and welfare. Therefore, GHGs were found to endanger the public health and welfare of current and future generations.

The Administrator of EPA also found that GHG emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHGs fit within the CAA definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements but, rather, allow USEPA to finalize the GHG standards proposed earlier in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation. These standards would be applicable to the Proposed Project and are described in detail in the next section. All mobile sources, including trips generated by the Proposed Project, would be required to comply with these regulations as they are implemented.

State

The California Air Resources Board (ARB) is the agency responsible for coordination and oversight of state and local air pollution control programs in California. Various statewide and local initiatives to reduce the State's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and economic effects in the long term. Because every nation emits GHGs and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help to slow or stop

the human-caused increase in average global temperatures and associated changes in climatic conditions.

There are currently no state regulations in California that establish ambient air quality standards for GHGs. However, California has passed laws directing ARB to develop actions to reduce GHG emissions, and several state legislative actions related to climate change and GHG emissions have come into play in the past decade.

Assembly Bill 1493

In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493. AB 1493 requires that ARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the State."

To meet the requirements of AB 1493, in 2004, ARB approved amendments to the California Code of Regulations (CCR) adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 (13 CCR 1900, 1961), and adoption of Section 1961.1 (13 CCR 1961.1) require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily for the transportation of persons), beginning with the 2009 model year. For passenger cars and light-duty trucks with a loaded vehicle weight (LVW) of 3,750 pounds or less, the GHG emission limits for the 2016 model year are approximately 37 percent lower than the limits for the first year of the regulations, the 2009 model year. For light-duty trucks with LVW of 3,751 pounds to gross vehicle weight (GVW) of 8,500 pounds, as well as medium-duty passenger vehicles, GHG emissions would be reduced approximately 24 percent between 2009 and 2016.

On September 15, 2009, EPA and the Department of Transportation's National Highway Safety Administration (NHTSA) proposed a national program to reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States. The combined EPA and NHTSA standards that make up the proposed national program would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon (mpg). Under the proposed national program, automobile manufacturers would be able to build a single light-duty national fleet that satisfies all requirements under both the national program and the standards of California and other states, while ensuring that consumers still have a full range of vehicle choices. In order to promote the adoption of the national program, ARB has adopted amendments to the GHG emissions standards for new passenger vehicles from 2009 through 2016. In December 2011, NHTSA and EPA issued a joint proposal to extend the National Program to further improve fuel economy and reduce GHG emissions for passenger and light-duty vehicles for model years 2017 to 2025. This would be accomplished through new proposed Corporate Average Fuel Economy (CAFE) standards by NHTSA and new GHG emission standards by EPA. The proposed CAFE standards are projected

to require, on an average industry-fleet-wide basis for cars and trucks combined, 40.1 mpg in model year 2021, and 49.6 mpg in model year 2025. EPA's proposed GHG standards, which would be harmonized with NHTSA's CAFE standards, are projected to require 163 grams/mile (54.5 mpg) of CO_2 in model year 2025. All mobile sources, including trips generated by the Proposed Project, would be required to comply with these regulations as they are phased in.

Executive Order S-3-05

Executive Order S-03-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the Secretary of California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the Governor and State Legislature describing progress made toward reaching the emission targets, impacts of global warming on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Secretary of CalEPA created the California Climate Action Team (CCAT) made up of members from various state agencies and commissions. CCAT released its first report in March 2006. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government, and community actions, as well as through State incentive and regulatory programs.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

In September 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires ARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. According to ARB's *Climate Change Scoping Plan* (ARB, 2008), the 2020 target of 427 million metric tons (MMT) of CO_2e requires

the reduction of 169 $MMTCO_2e$, or approximately 28.4 percent, from the state's projected 2020 business-as-usual (BAU) emissions level of 596 $MMTCO_2e$. However, ARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. In August 2011, the *Scoping Plan* was re-approved by the Board and includes the *Final Supplement to the Scoping Plan Functional Equivalent Document* (ARB, 2011). This document includes expanded analysis of project alternatives as well as updates the 2020 emission projections in light of the current economic forecasts. Considering the updated 2020 BAU estimate of 507 $MMTCO_2e$, a 16 percent reduction below the estimated BAU levels would be necessary to return to 1990 levels by 2020. The document also excludes one measure identified in the 2008 *Scoping Plan* that has been adopted and one measure that is no longer under consideration by ARB (ARB, 2011).

Senate Bill 1368

SB 1368 (Perata, Chapter 598, Statutes of 2006) is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 required the California Public Utilities Commission (CPUC) to establish a GHG emission performance standard for baseload generation from investor-owned utilities. CPUC adopted a GHG Emissions Performance Standard in January 2007. The California Energy Commission (CEC) adopted consistent regulations for implementing and enforcing SB 1368 for the state's publicly-owned utilities in August 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and CEC.

Executive Order S-1-07

Executive Order S-1-07, which was signed by then-Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020. This order also directs ARB to determine whether this low carbon fuel standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009, ARB approved the proposed regulation to implement the LCFS. The LCFS will reduce GHG emissions from the transportation sector in California by about 16 MMT in 2020. The LCFS is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. One standard is established for gasoline and the alternative fuels that can replace it. A second similar standard is set for diesel fuel and its replacements.

However, the issuance of regulations by California under the LCFS has resulted in several lawsuits that were brought on by industry trade organizations representing ethanol producers, refiners, and

truckers. These lawsuits allege that California acted in violation of the U.S. Constitution because the LCFS are inherently discriminatory against commerce taking place outside of the state of California, since more carbon emissions would always result from the transportation of fuels to California from areas outside of the state when compared to the carbon emissions generated by fuel producers in California who would be able to transport their fuel over shorter distances. In addition, the lawsuit also alleged that California was making an attempt to impermissibly regulate conduct outside of the state and contended that California's LCFS should be preempted by the Renewable Fuel Standards passed on the federal level. In response, the state has indicated that the provisions found within the CCAA provide the authority for California to control air pollution and that its regulation is a permissible act of state sovereignty. Nonetheless, a federal judge issued a preliminary injunction in December 2011, that prevented California from implementing the LCFS on the grounds that California's regulations were in violation of the Commerce Clause in the United States Constitution. CARB appealed the decision and is currently allowed to enforce the LCFS while the appeal is pending.

Senate Bill 97

SB 97, signed August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. The bill directed the California OPR to prepare, develop, and transmit to the California Natural Resources Agency, guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify or adopt those guidelines by January 1, 2010. On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the *CEQA Guidelines* for GHG emissions, as required by SB 97. On February 16, 2010, the Office of Administrative Law approved the amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The amendments became effective on March 18, 2010.

Senate Bills 1078 and 107 and Executive Order S-14-08

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, then-Governor Schwarzenegger signed Executive Order S-14-08, which expands the State's Renewables Energy Standard to 33 percent renewable power by 2020. In April 2011, Governor Jerry Brown signed SB 2X, that created a legislative mandate codifying the 33 percent Renewables Portfolio Standard into law.

Senate Bill 375

In addition to policy directly guided by AB 32, the legislature in 2008 passed SB 375, which provides for regional coordination in land use and transportation planning and funding to help meet the AB 32 GHG reduction goals. SB 375 aligns regional transportation planning efforts, regional GHG emissions reduction targets, and land use and housing allocations. SB 375 requires Regional Transportation Plans (RTPs) developed by the state’s 18 metropolitan planning organizations (MPOs) to incorporate a “sustainable communities strategy” (SCS) that will

achieve GHG emission reduction targets set by the CARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects, such as transit-oriented development. SB 375 would be implemented over the next several years.

The San Joaquin Council of Governments' (SJCOG) recently completed the draft 2014 Regional Transportation Plan and Sustainable Communities Strategy. This represents the first Regional Transportation Plan (RTP) in San Joaquin County to contain a Sustainable Communities Strategy (SCS), the result of the Sustainable Communities and Climate Protection Act of 2008 (i.e. SB-375). The SCS coordinates future transportation investments with local land use strategies to provide a balanced package of transportation projects and programs to enhance travel in our region - including transit, active transportation options such as biking and walking, and maintenance of existing roads out to the year 2040. The draft EIR prepared for the RTP is currently out for public/agency review and comment. ARB Early Action Measures

In June 2007, ARB directed staff to pursue 37 early actions for reducing GHG emissions under AB 32 (California Health and Safety Code Division 25.5, Sections 38500 - 38599). The broad spectrum of strategies to be developed—including a LCFS, regulations for refrigerants with high global warming potential, guidance and protocols for local governments to facilitate GHG reductions, and green ports—reflects the government's responsive actions to immediately address GHGs. In addition to approving the 37 GHG reduction strategies, ARB directed staff to further evaluate early action recommendations made at the June 2007 meeting, and to report back to ARB within six months. ARB's approach suggested a desire to try to pursue greater GHG emissions reductions in California in the near-term. ARB staff evaluated all recommendations submitted by several stakeholders and several internally-generated staff ideas, and published a draft list of early action measures in September 2007. The list was expanded to 44 measures in October 2007 (ARB, 2007). The Board has also identified nine Discrete Early Action measures to date, including potential regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations, and other sources.

ARB Climate Change Scoping Plan

ARB's *Scoping Plan* (ARB, 2008) calculates 2020 BAU emissions as the emissions that would be expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors, i.e., transportation, electrical power, commercial, residential, industrial etc. ARB used three-year average emissions, by sector, for 2002-2004 to forecast emissions to 2020. At the time ARB's *Scoping Plan* process was initiated, 2004 was the most recent year for which actual data was available. The measures described in ARB's *Scoping Plan* are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32 (discussed above).

ARB's *Scoping Plan* also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. ARB's Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e);
- The LCFS (15.0 MMT CO_2e);
- Energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems (26.3 MMT CO_2e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO_2e).

ARB has identified a GHG reduction target of 5 MMT (of the 174 MMT total) for local land use changes (Table 2 of ARB's Scoping Plan), by Implementation of Reduction Strategy T-3 regarding Regional Transportation-Related GHG Targets. Additional land use reductions may be achieved as SB 375 is implemented. ARB's Scoping Plan states that successful implementation of the plan relies on local governments' land use, planning, and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. ARB's *Scoping Plan* does not include any direct discussion about GHG emissions generated by construction activity.

ARB's *Scoping* Plan expands the list of nine Discrete Early Action Measures to a list of 39 Recommended Actions contained in Appendices C and E of ARB's *Scoping Plan*. These measures are presented in **Table 3.6-1**.

OPR's 2008 Technical Advisory

On June 19, 2008, OPR published a technical advisory on *CEQA and Climate Change* (OPR, 2008). The advisory provided OPR's perspective on the emerging role of CEQA in addressing climate change and GHG emissions, while recognizing that approaches and methodologies for calculating GHG emissions and addressing environmental impacts through CEQA review are rapidly evolving. The advisory recognized that OPR would develop amendments to the CEQA Guidelines pursuant to SB 97 as was done in 2010. The Natural Resources Agency would then adopt these amendments. The technical advisory pointed out that neither CEQA nor the CEQA Guidelines prescribe quantitative thresholds of significance or particular methodologies for performing an impact analysis by stating, "This is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable" (OPR, 2008). This deference to lead agencies was memorialized in the CEQA Guidelines Section 15064.4 as discussed below. OPR recommended, at the time, that "the global nature of climate change warrants investigation of a statewide threshold of significance for GHG emissions" (OPR, 2008).

TABLE 3.6-1
RECOMMENDED ACTIONS FROM ARB CLIMATE CHANGE SCOPING PLAN

ID #	Sector	Strategy Name
T-1	Transportation	Pavley I and II – Light-Duty Vehicle GHG Standards
T-2	Transportation	LCFS (Discrete Early Action)
T-3	Transportation	Regional Transportation-Related GHG Targets
T-4	Transportation	Vehicle Efficiency Measures
T-5	Transportation	Ship Electrification at Ports (Discrete Early Action)
T-6	Transportation	Goods-movement Efficiency Measures
T-7	Transportation	Heavy Duty Vehicle GHG Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)
T-8	Transportation	Medium and Heavy-Duty Vehicle Hybridization
T-9	Transportation	High Speed Rail
E-1	Electricity and Natural Gas	Increased Utility Energy efficiency programs More stringent Building and Appliance Standards
E-2	Electricity and Natural Gas	Increase Combined Heat and Power Use by 30,000GWh
E-3	Electricity and Natural Gas	Renewables Portfolio Standard
E-4	Electricity and Natural Gas	Million Solar Roofs
CR-1	Electricity and Natural Gas	Energy Efficiency
CR-2	Electricity and Natural Gas	Solar Water Heating
GB-1	Green Buildings	Green Buildings
W-1	Water	Water Use Efficiency
W-2	Water	Water Recycling
W-3	Water	Water System Energy Efficiency
W-4	Water	Reuse Urban Runoff
W-5	Water	Increase Renewable Energy Production
W-6	Water	Public Goods Charge (Water)
I-1	Industry	Energy Efficiency and Co-benefits Audits for Large Industrial Sources
I-2	Industry	Oil and Gas Extraction GHG Emission Reduction
I-3	Industry	GHG Leak Reduction from Oil and Gas Transmission
I-4	Industry	Refinery Flare Recovery Process Improvements
I-5	Industry	Removal of CH_4 Exemption from Existing Refinery Regulations
RW-1	Recycling and Waste Management	Landfill CH_4 Control (Discrete Early Action)
RW-2	Recycling and Waste Management	Additional Reductions in Landfill CH_4 – Capture Improvements
RW-3	Recycling and Waste Management	High Recycling/Zero Waste
F-1	Forestry	Sustainable Forest Target
H-1	High GWP Gases	Motor Vehicle Air Conditioning Systems (Discrete Early Action)
H-2	High GWP Gases	SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)
H-3	High GWP Gases	Reduction in Perfluorocarbons in Semiconductor Manufacturing (Discrete Early Action)
H-4	High GWP Gases	Limit High GWP Use in Consumer Products (Discrete Early Action, Adopted June 2008)
H-5	High GWP Gases	High GWP Reductions from Mobile Sources
H-6	High GWP Gases	High GWP Reductions from Stationary Sources
H-7[a]	High GWP Gases	Mitigation Fee on High GWP Gases
A-1	Agriculture	CH_4 Capture at Large Dairies

a This original measure in the 2008 Scoping Plan was subsequently excluded by ARB in the Final Supplement to the Scoping Plan Functional Equivalent Document in 2011, as ARB staff concluded that implementation of this measure would not be feasible.

SOURCE: ARB, 2008.

Until such a standard is established, OPR advises that each lead agency should develop its own approach to performing analyses for projects that generate GHG emissions (OPR, 2008). Agencies should then assess whether the emissions are "cumulatively considerable" even though a project's GHG emissions may be individually limited. OPR states, "Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment" (OPR, 2008). Based on this, individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice (OPR, 2008).

If the lead agency determines emissions are a cumulatively considerable contribution to a significant cumulative impact, then the lead agency must investigate and implement ways to mitigate the emissions (OPR, 2008). OPR states that "Mitigation measures will vary with the type of project being contemplated, but may include alternative project designs or locations that conserve energy and water, measures that reduce vehicle miles traveled (VMT) by fossil-fueled vehicles, measures that contribute to established regional or programmatic mitigation strategies, and measures that sequester carbon to offset the emissions from the project" (OPR, 2008). OPR concludes that "a lead agency is not responsible for wholly eliminating all GHG emissions from a project; the CEQA standard is to mitigate to a level that is "less than significant" (OPR, 2008). The technical advisory includes a list of mitigation measures that can be applied on a project-by-project basis.

CEQA Guidelines Revisions

In 2007, the State Legislature passed SB 97, which required amendment of the CEQA Guidelines to incorporate analysis of, and mitigation for, GHG emissions from projects subject to CEQA. The California Natural Resources Agency adopted these amendments on December 30, 2009. They took effect on March 18, 2010, after review by the Office of Administrative Law and filing with the Secretary of State for inclusion in the California Code of Regulations.

The Guidelines revisions include a new section (Sec. 15064.4) that specifically addresses the potential significance of GHG emissions. Section 15064.4 calls for a "good-faith effort" to "describe, calculate or estimate" GHG emissions. Section 15064.4 further states that the analysis of the significance of any GHG impacts should include consideration of the extent to which the project would increase or reduce GHG emissions; exceed a locally applicable threshold of significance; and comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The new guidelines also state that a project may be found to have a less-than-significant impact on GHG emissions if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (Sec. 15064(h)(3)). Importantly, however, the CEQA Guidelines do not require or recommend a specific analytical methodology or provide quantitative criteria for determining the significance of GHG emissions.

No quantitative significance threshold is included in the Amendments. The CEQA Guidelines afford the customary deference provided to lead agencies in their analysis and methodologies. OPR emphasizes the necessity of having a consistent threshold available to analyze projects, and the analyses should be performed based on the best available information. For example, if a lead

agency determines that GHGs may be generated by a proposed project, the agency is responsible for assessing GHG emissions by type and source. The CEQA Guidelines Amendments provide the following recommendations for determining the significance of GHG emissions under Section 15064.4:

(a) The determination of the significance of GHG emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

    (1) Use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

    (2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency may consider the following when assessing the significance of impacts from GHG emissions on the environment:

    (1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;

    (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

    (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The Amendments also include a new Subdivision 15064.7(c) which clarifies that in developing thresholds of significance, a lead agency may appropriately review thresholds developed by other public agencies, or recommended by other experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.

In addition, the Amendments include a new Section 15183.5 that provides for tiering and streamlining the analysis of GHG emissions. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of GHG emissions in the region over a specified time period.

Finally, the Amendments add a new set of environmental checklist questions (VII. Greenhouse Gas Emissions) to the CEQA Guidelines Appendix G.

Local

The City of Stockton General Plan does not include a specific section or element focused on GHG production or climate change. However, policies located in the Energy Resources section of the General Plan apply to GHGs and climate change issues (City of Stockton, 2007). These policies are included below.

City of Stockton General Plan - Natural and Cultural Resources Element

Energy Resources

Policy NCR-8.1	All new development, including major rehabilitation, renovation, and redevelopment, shall incorporate energy conservation and green building practices to the maximum extent feasible and as appropriate to the project proposed. Such practices include, but are not limited to: building orientation and shading, landscaping, and the use of active and passive solar heating and water systems. The City may implement this policy by adopting and enforcing a green Building Ordinance.
Policy NCR-8.2	The City shall encourage the planting of shade trees along all City streets to reduce radiation heating.
Policy NCR-8.9	The City shall require prioritized parking within commercial and retail areas for electric vehicles, hybrid vehicles, and alternative fuel vehicles as will as provide electric charging stations.
Policy NCR-8.10	The City shall encourage the use of passive and active solar devices such as solar collectors, solar cells, and solar heating systems into the design of local buildings.
Policy NCR-8.11	The City shall encourage building and site design that takes into account the solar orientation of buildings during design and construction. The incorporation of energy-efficient site design shall be incorporated into City-wide master planning efforts when feasible.
Policy NCR-8.12	The City will encourage the development of energy-efficient buildings and communities.
Policy NCR-8.13	The City will promote voluntary participation in incentive programs to increase the use of solar photovoltaic systems in new and existing residential, commercial, institutional, and public buildings.
Policy NCR 8.14	The City will explore offering incentives such as density bonus, expedited process, fee reduction/waiver to property owners and developers who exceed California Title 24 energy efficiency standards.

City of Stockton Draft Climate Action Plan (CAP)

The City of Stockton originally published the *City of Stockton Draft Climate Action Plan* (City of Stockton, 2012) in February 2012. This *Draft CAP* includes measures that would, if fully implemented, result in year 2020 City-wide GHG emissions approximately 10.7% below year 2005 levels. This would be consistent with the level of reductions needed at the state level to meet the AB 32 goal, compared to statewide year 2005 levels. The *Draft CAP* includes existing and proposed state and local measures. State measures were described in the above Regulatory Setting. Local measures include programs that improve building energy efficiency, increased

alternatives to vehicular transportation, increased use of renewable energy, reduced water usage, reduced solid waste generation, and other measures. Carbon offsets are also considered as an alternative method for GHG reductions. The *Draft CAP* also includes the City's Climate Impact Study Process (CISP) as Appendix F, which presents a point-based approach to GHG reduction measures that would be required to achieve a 29% reduction compared to business-as-usual (BAU) conditions. This reduction is functionally equivalent to the City's interim GHG reduction target and is consistent with the San Joaquin Valley Air Pollution Control District guidance (described below). A revised draft of the CAP was just released in February 2014; the EIR comment period for this Draft CAP closes on April 7, 2014

San Joaquin Valley Air Pollution Control District - District Policy

The San Joaquin Valley Air Pollution Control District (SJVAPCD) published the *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* (SJVAPCD, 2009) in December 2009. This *District Policy* applies to projects for which the District has discretionary approval authority over the project and serves as lead agency for CEQA purposes. The *District Policy* establishes an approach to streamline the determination of project GHG emissions significance through the incorporation of Best Performance Standards (BPS). According to the SJVAPCD, BPS are defined as the most effective means of reducing or limiting GHG emissions from a GHG emissions source. According to the SJVAPCD, projects implementing BPS would be determined to have a less than significant individual and cumulative impact on global climate change and would not require GHG quantification. Projects exempt from the requirements of CEQA, and projects complying with an approved GHG emission reduction plan or mitigation program would also be determined to have a less than significant individual and cumulative impact on global climate change and would not require project specific quantification of GHG emissions (SJVAPCD, 2009). Quantification of project specific GHG emissions would be required for projects not implementing BPS. Such projects must be determined to have reduced or mitigated operational GHG emissions by 29% from BAU, consistent with GHG reduction targets established in AB 32, in order to be considered to have a less than significant individual and cumulative impact for GHGs.

3.6.3 Impacts and Mitigation Measures

Significance Criteria

According with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment;
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Methodology

The project's construction-related (temporary, short-term) and operation-related (long-term) emissions of GHGs and whether they would result in a cumulatively considerable contribution to global climate change are described below. This EIR does discuss, for consideration by decision makers, estimated GHG emissions of the project, project-related activities that could contribute to the generation of increased GHG emissions, the project design features that would avoid or minimize those emissions, and the approaches to further reduce those emissions.

Pursuant to CEQA Guidelines Section 15064.7(c), the EIR is employing both quantitative and qualitative thresholds of significance.

The quantitative threshold is used to answer the first GHG criterion of the CEQA Guidelines identified above (i.e., will the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment). According to SJVAPCD, quantification of project specific GHG emissions would be required for projects not implementing BPS. Such projects must be determined to have reduced or mitigated operational GHG emissions by 29% from BAU, which is consistent with the City's CISP and with GHG reduction targets established in AB 32, in order to be considered to have a less than significant individual and cumulative impact for GHGs. In order to determine whether the project operations would achieve 29% reduction versus BAU, emissions were calculated using California Emissions Estimator Model (CalEEMod) version 2011.1.1. CalEEMod is a computer program that can be used to estimate anticipated emissions associated with land development projects in California. With respect to construction-related GHG impacts, the SJVAPCD does not have an adopted threshold of significance for construction-related GHG emissions. However, this EIR has quantified and disclosed GHG emissions that would occur during construction.

A qualitative threshold is used to answer the second GHG criterion of the CEQA Guidelines identified above (i.e., will the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs). The City of Stockton has a *Draft CAP*. Generally, if a project implements reduction strategies identified in AB 32, the Governor's Executive Order S-3-05, or other strategies to help reduce GHGs to the level proposed by the governor, it could reasonably follow that the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. That said, the analysis in this EIR considers that, because the quantifiable threshold was formulated based on AB 32 reduction strategies, a project cannot exceed the numeric threshold and fully comply with the second of the GHG criterion and not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Therefore, if the project does not meet the first threshold and results in a significant cumulative impact because it exceeds the numeric threshold, the project would also result in a significant cumulative impact under the second threshold, even though the project may incorporate measures and have features that would reduce its contribution to cumulative GHG emissions.

It should be noted that there are limitations to the analysis of mobile source GHG emissions, which are an important component of the overall GHG emissions for the project (see below).

Mobile source CO_2e emissions are based on the revised "net new trips" identified in the transportation and circulation section of this EIR (see Chapter 3.10). When assessing the impacts of traffic on the transportation system, including local streets and intersections used by project-related traffic, net new trips is an appropriate measure. Similarly, air quality and noise impacts based on increases in local traffic are analyzed based on net new trips. However, when discussing an issue that is global in nature, and is being assessed and regulated on the state, federal and international level, the concept of net new trips does not translate easily into a project-level impact. It is reasonable to assume that at least some of the "new trips" associated with the industrial project are currently occurring elsewhere. In other words, in a regional sense, the "net new trips" are probably far lower than indicated in the traffic analysis. The proposed project would undoubtedly change the length and frequency of many trips. However, since some trips, for employees and cargo, are already occurring, it is an over-estimation to state the baseline vehicle trips as zero for purposes of GHG emissions. Nevertheless, for informational purposes the analysis assumes that the number of baseline trips is zero.

As explained above, although calculating the project's approximate GHG emissions (as done above) is possible; the emissions calculations have significant limitations. For instance, as explained above, the analysis does not take into consideration the shifting of drivers from already existing locations to the project area, which may be longer or shorter than existing trips, as such the analysis assumes a baseline of zero trips. Thus, and importantly, the GHG emissions calculations presented here only evaluate aggregate CO_2e emissions, they do not demonstrate, with respect to a global impact, how much of these aggregate emissions are in fact "new" emissions specifically attributable to the proposed project. No analytical methodology exists to reliably estimate the extent to which such emissions are "new" emissions, as opposed to emissions that would occur in any event.

Impact Analysis

Impact 3.6.1: The project could conflict with implementation of state goals for reducing greenhouse gas emissions and thereby have a negative effect on global climate change. *(Potentially Significant)*

The project site is approximately 325 acres, most of which would require grading for the development of 6,280,480 square feet of light industrial uses. Although the project is relatively large, GHG impacts are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008). The emission estimates presented below include annual CO_2e GHG emissions from off-road equipment, trucks, and workers during construction and area sources, energy, on-road vehicles, solid waste, and water usage (associated with water/wastewater conveyance) associated with project operations. Appendix C (of this Draft EIR) contains information regarding assumptions and emissions calculations used in this analysis.

The project would result in a considerable increase in GHG emissions if it were to conflict with the state goals for reducing GHG emissions. While consideration of all applicable BPS measures have been considered for this project (see Measure 3.6.2, below), this analysis has been prepared to be consistent with SJVAPCD *District Policy*, which recommends that thresholds of significance for GHG emissions should be related to AB 32's GHG reduction goals (reduction of statewide GHG

emissions to 1990 levels by 2020; approximately a 29 percent reduction from projected 2020 emissions). To determine whether the project could conflict with the state goals for reducing GHG emissions, GHGs will be compared to BAU to determine whether they achieve a 29 percent reduction in GHG emissions versus the BAU scenario, per AB 32 goals.

Project construction would result in approximately 22,075 metric tons CO_2e over the total duration of construction. Construction emissions are not included in the BAU comparison for operations to determine significance. However, Mitigation Measure 3.6.1 has been included to reduce construction GHGs to the extent feasible.

As shown in **Table 3.6-2**, GHG emissions from mitigated operations of the project would result in a total of 13 percent improvement over BAU. Therefore, the project would be 16 percent short of reaching the 29 percent reduction goal specified by SJVAPCD and the City's CISP, consistent with the goals of AB 32. The project would result in a cumulatively considerable increase in GHG emissions such that the project would contribute to impairment of the state's ability to implement AB 32. Consequently, this impact is considered ***potentially significant***.

TABLE 3.6-2
OPERATIONAL GREENHOUSE GAS EMISSIONS COMPARISON

Source	Greenhouse Gas Emissions CO_2e (metric tons/year)[1]		% Improvement Over BAU
	BAU	Mitigated Project	
Area	0	0	0%
Energy	23,582	20,652	12%
Mobile	45,377	39,463	13%
Waste	3,543	2,834	20%
Water	14	12	14%
Total (Annual Emissions)	**72,516**	**62,961**	**13%**

1. Emissions were modeled using CalEEMod with inputs and outputs included in Appendix C. The BAU scenario represents project operations without Pavley, LCFS, or the on-site measures to reduce GHGs from implementation of Mitigation Measure 3.6.1. These reduction measures were included in the mitigated project scenario.

Mitigation Measures

Measure 3.6.1: Implement Construction-Related GHG Reduction Measures. The applicant shall require implementation of all feasible GHG reduction measures during construction, including but not limited to the following:

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard);
- Limit idling time for commercial vehicles, including delivery and construction vehicles; and
- Use low or zero-emission vehicles, including construction vehicles.

Measure 3.6.2: Implement Operation-Related GHG Reduction and Energy Efficiency Measures. The applicant shall require implementation of all feasible energy efficiency and GHG reduction measures during operations, including but not limited to the following:

On-site Mitigation

- Exceed Title 24 (15% improvement);
- Install high-efficiency lighting (25% lighting energy reduction);
- Install low-flow bathroom faucets (32% reduction in flow);
- Install low-flow kitchen faucets (18% reduction in flow);
- Install low-flow toilets (20% reduction in flow);
- Install low-flow showers (20% reduction in flow);
- Use water-efficient irrigation systems (6.1% reduction in flow); and
- Institute recycling and composting services (50% reduction in waste disposed).

Impact Significance after Mitigation: Even with implementation of all feasible energy efficiency and GHG reduction measures identified under Mitigation Measures 3.6.1 and 3.6.2, the project would still result in substantial GHG emissions and would not achieve the 29% reduction compared to BAU. Consequently, the project would generate GHG emissions that may have a significant impact on the environment and would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. This impact would remain ***significant and unavoidable***.

3.6.4 References

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3.7 Geology, Soils, and Seismicity

3.7.1 Introduction

This section identifies and evaluates the potential effects of the NorCal Logistics Center project related to geology, soil resources, and seismicity. The section describes local topography, geology, soil resources and regional seismicity, and summarizes applicable state, local and regional plans and programs, associated goals, and objectives, as relevant to geology, soils, and seismicity. This section provides a discussion of impacts that could result from implementing the proposed project, a determination of the significance level of those impacts, and mitigation measures that would reduce the intensity of identified impacts.

3.7.2 Setting

Topography

San Joaquin County is located in the central portion of the Great Valley geomorphic province of California. This geomorphic province is characterized as a northwestward-trending trough that formed between the Coast Range Mountains to the west and the Sierra Nevada Mountains to the east. The Great Valley is about 50 miles wide and extends for 400 miles through the center of California. The northern and southern portions of the Great Valley are referred to as the Sacramento Valley and San Joaquin Valley, respectively; with the Sacramento River draining areas to the north and the San Joaquin River draining areas to the south. The topography of the Great Valley is relatively level, with elevations ranging from a few feet to a few hundred feet above mean sea level (msl) (CGS, 2002a).

The topography of the project site gently slopes downward to the west, with an elevation ranging from 35 feet above mean sea level (msl) on the west to approximately 40 feet above msl on the east. The project site is relatively level, as a result of years of cultivation.

Regional Geology

The Central Valley formed as a consequence of the accumulation of sediments that eroded from the Sierra Nevada Mountains to the east, and were deposited in this region approximately 65 million years ago. This geologic unit is commonly referred to as the Great Valley Sequence. Sediments deposited in the vicinity of Stockton were derived from Sierra Nevada bedrock, and from volcanic activity that occurred in the Sierra Nevada region during the Holocene to Tertiary periods (3 to 38 million years ago). These Tertiary-aged sediments form the principal groundwater aquifers of the Central Valley. The most recent deposits in the area are floodplain deposits consisting of clay, silt, and some sand (City of Stockton, 2007).

Soils

The characterization of soils on the project site is based on a review of Countywide mapping by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) and

National Cooperative Soil Survey (NCSS). Soils information data is available via the NCSS, either as an online database or as archived documents. Based on the generalized mapping, soils present within the project site include the following types (NCSS, 2009):

- Jacktone clay, on 0 to 2 percent slopes.
- Stockton clay, on 0 to 2 percent slopes.

Jacktone and Stockton clay soils are very similar in nature. Each was formed in alluvium from mixed rock sources. These soils have slow permeability and poor drainage. Shrink-swell potential for these soil types is high. There are no significant erosion hazards associated with these soils. These soils pose some limitations on construction of the proposed project. Construction limitations include the potential for water and/or wind erosion, subsidence, shrink-swell behavior, and corrosion as described below.

Seismicity

The seismicity of the San Joaquin Valley is influenced by activity on the San Andreas Fault System, which is expressed as a series of northwest-trending faults (Jennings, 1994). The project site is located over 60 miles east of the Bay Area. The estimated maximum earthquake magnitudes represent characteristic earthquakes on particular faults (Table 3.7-1). The project site may be affected by regionally occurring earthquakes; however, impacts resulting from such an event would be less in nature than those experienced in the Bay Area.

Earthquake magnitudes are expressed as "moment magnitude" (Mw), which is related to the physical size of a fault rupture and movement across a fault. The other well known earthquake measurement, the Richter magnitude scale, reflects the maximum amplitude of a particular type of seismic wave (CGS, 2002b). While the magnitude is a measure of the energy released in an earthquake, intensity is a measure of the ground shaking effects at a particular location. Shaking intensity can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material.

TABLE 3.7-1
ACTIVE FAULTS IN THE VICINITY OF THE PROPOSED NORCAL LOGISTICS CENTER

Fault	Approximate Distance	Recency of Faulting[a]	Probably Maximum Moment Magnitude[b]
Marsh Creek-Greenville	30 miles northwest	Historic	5.8
Concord	45 miles west	Historic	6.9
Calaveras	47 miles southwest	Historic	6.8
Hayward	52 miles west	Historic	6.9
San Andreas (Peninsula and Golden Gate Segments)	70 miles west	Historic	7.3

a. Recency of faulting from Jennings (1994).
b Wakabayashi and Smith (1994).

SOURCE: Jennings, 1994.

Figure 3.7-1 illustrates the regional proximity of these active and other potentially active faults in relation to the project site. The nearest faults to the project site exhibiting historic displacement (activity within the last 200 years) are the Marsh Creek-Greenville, Concord, Calaveras, and Hayward faults, located approximately 30 to 52 miles west of the project site (Jennings, 1994). Some potentially active and inactive faults closest to the project site include the Tracy-Stockton (< 10 miles west), Vernalis (15 miles southwest), Black Butte (20 miles southwest), and Livermore (35 miles southwest) faults.

Geologic and Seismic Hazards

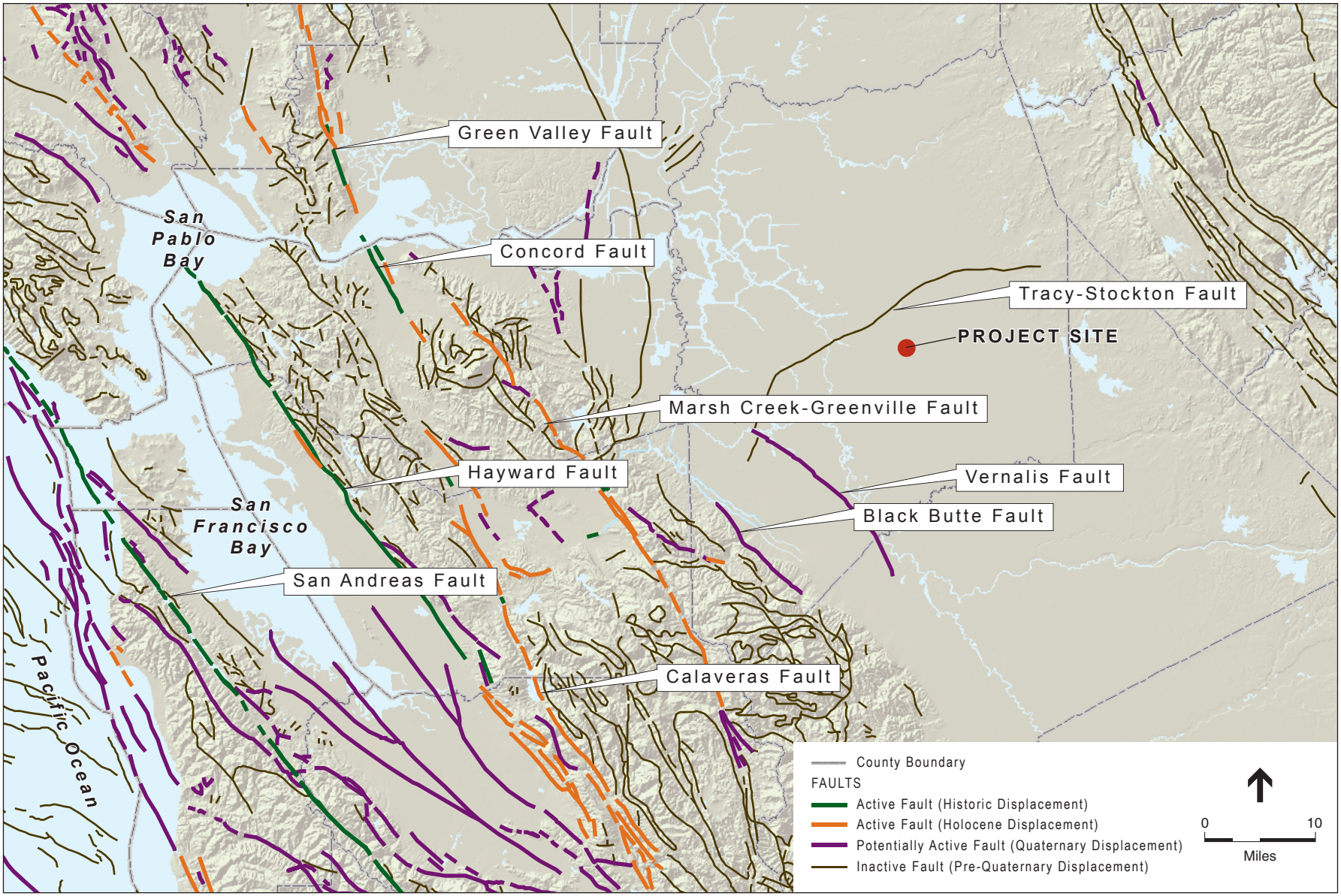
The project site could experience the effects of a major earthquake from one of the active or potentially active faults located in its vicinity. The four major hazards associated with earthquakes are ground motion (or ground shaking), fault surface rupture (ground displacement), ground failure (e.g., liquefaction), and differential settlement. These potential geologic hazards are discussed in the following text.

Surface Fault Rupture

Fault rupture is displacement at the Earth's surface resulting from fault movement associated with an earthquake. Surface expression of fault rupture is typically observed and is expected on or within close proximity to the causative fault. The project site is neither located within, nor crosses, a delineated Alquist-Priolo Earthquake Fault Zone and the nearest active fault is approximately 30 miles northwest of the project site (CDMG, 1997). For this reason the risk of surface fault rupture at the project site is considered low.

Groundshaking

The California Geological Survey (CGS) has determined the probability of earthquake occurrences and their associated peak ground accelerations throughout the State of California. A probabilistic seismic hazard map shows the hazards from earthquakes that geologists and seismologists agree could occur in California. The map is probabilistic in the sense that the analysis takes into consideration the uncertainties in the size and location of earthquakes and the resulting ground motions that can affect a particular site. Maps are typically expressed in terms of probability of exceeding a certain ground motion. Current maps produced by the CGS are based on 10 percent exceedance in 50 years. This probability level allows engineers to design buildings for larger ground motions than those that geologists and seismologists think will occur during a 50-year interval. These levels of ground shaking are used primarily for formulating building codes and for designing buildings. The maps can also be used for estimating potential economic losses and preparing for emergency response. The peak ground acceleration (PGA) at the project site, based on a 10 percent exceedance in 50 years, could range from approximately 0.1 to 0.3g, where g represents 32.1 feet per second per second, or the acceleration due to gravity (CGS, 2009). PGA values of this intensity could lead to considerable damage to specially designed structures, partial collapse of ordinary structures, shifting of building foundations, and underground pipe breakage.



SOURCE: CDMG, 2006; ESRI, 2007; and ESA, 2009

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Figure 3.7-1
Regional Faults

TABLE 3.7-2
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Acceleration (% g[a])
I	Not felt except by a very few persons under especially favorable circumstances.	< 0. 17
II	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	0.17–1.4
III	Felt noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly, vibration similar to a passing truck.	0.17–1.4
IV	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	1.4–3.9
V	Felt by nearly everyone, many awakened. Some dishes and windows broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles may be noticed. Pendulum clocks may stop.	3.5–9.2
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; and fallen plaster or damaged chimneys. Damage slight.	9.2–18
VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving.	18–34
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.	34–65
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked. Underground pipes broken.	65–124
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed over banks.	> 124
XI	Few, if any, masonry structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 124
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 1.24

a. g (gravity) = 980 centimeters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

SOURCE: CGS, 2002b.

Liquefaction and Lateral Spreading

Liquefaction is the sudden temporary loss of shear strength in saturated, loose to medium dense, granular sediments subjected to ground motion. Liquefaction can cause foundation failure of buildings and other facilities due to the reduction of foundation bearing strength.

The potential for liquefaction depends on the duration and intensity of earthquake shaking, particle size distribution of the soil, density of the soil, and elevation of the groundwater. Areas at risk of liquefaction are typified by a high groundwater table and underlying loose to medium-dense,

granular sediments, particularly younger alluvium and artificial fill. Clayey type soils are generally not subject to liquefaction.

The probability of soil liquefaction taking place at the project site is considered to be a low to moderate hazard, due to the distance from active fault zones.

Earthquake-Induced Landslides

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces.

The susceptibility for native and engineered slopes to fail depends on the gradient and localized geology as well as the amount of rainfall, excavation, or seismic activities. Steep slopes and down-slope creep of surface materials characterize areas that are most susceptible to failure. Engineered slopes have a higher tendency to fail if not properly designed, constructed, or compacted. As the project site is generally level, hazards associated with landslides are minimal.

Earthquake-Induced Settlement

Settlement of the ground surface can be accelerated by earthquakes. During an earthquake, settlement can occur as a result of the relatively rapid compaction and settling of subsurface materials (e.g., loose, non-compacted, and variable sandy sediments) due to the rearrangement of soil particles during prolonged ground shaking. Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different rates). Typically, areas underlain by artificial fills, unconsolidated alluvial sediments, slope wash, and areas with improperly engineered construction fills, unconsolidated alluvial sediments, slope wash, and areas with improperly engineered construction fills are susceptible to this type of settlement. The project site has historically been utilized for agriculture. Given the presence of expansive clays on the project site, this issue may affect construction of proposed project facilities.

Other Geologic Hazards

Soil Erosion

Soil erosion is the process whereby soil materials are worn away and transported to another area either by wind or water. Rates of erosion can vary depending on the soil texture, structure, and amount of organic matter. Soil containing high amounts of silt can be easily erodible while sandy soils are less susceptible. The corresponding slope, length, and degree of steepness are also prime factors in determining the potential for soil erosion. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, asphalt, or vegetation. For the proposed project, erosion potential would be highest during the construction phase due to the major earthwork and grading planned as part of construction. Erosion potential would be lowest during proposed project operation because soils are covered with impervious surfaces such as asphalt, concrete, and buildings.

Based on the characteristics of these soils, they pose some limitations on construction of the proposed project. Construction limitations include the potential for water and/or wind erosion, subsidence, shrink-swell behavior, and corrosion as described below.

Subsidence

Subsidence is the lowering of the land surface due to loss or compaction of underlying materials. Subsidence can occur as the result of hydrocompaction; groundwater, gas, or oil extraction; or the decomposition of highly organic soils. Outside of the Delta, subsidence is generally attributed to consistent and long-term overdraft of the groundwater basin. Within the Delta, subsidence can be caused by oxidation, anaerobic decomposition, shrinkage, and wind erosion. The project site is located east of the Delta and depth to groundwater is approximately 90 feet below ground surface. The likelihood of subsidence occurring at the project site is low.

Expansive Soils

Expansive soils are soils that exhibit a "shrink-swell" behavior. "Shrink-swell" is the cyclical expansion and contraction that occurs in fine-grained clay sediments from wetting and drying. Structures located on soils with this characteristic may be damaged over a long period of time, usually as the result of inadequate foundation engineering. Shrink-swell potential for soil types located on the project site is high (NCSS, 2009).

Corrosive Soils

Corrosive soils can damage underground utilities including pipelines and cables, and can weaken roadway structures. Rates of steel corrosion of uncoated steel are related to soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. Soils on the project site present a high risk of corroding or weakening uncoated steel. These soils present a low hazard of corroding concrete (NCSS, 2009).

Regulatory Setting

State

Alquist-Priolo Earthquake Fault Zoning Act

Alquist-Priolo Earthquake Fault Zoning Act requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazard of fault rupture, and to prohibit the location of most structures for human occupancy across these traces. Cities and counties must regulate certain development projects within the zones, and may withhold permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement. Surface fault rupture is not necessarily restricted to the area within an Alquist-Priolo Zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) was developed to protect the public from the effects of strong groundshaking, liquefaction, landslides, or other ground failure, and from other hazards

caused by earthquakes. The act requires the State Geologist to delineate various seismic hazard zones and require cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site has to be conducted and appropriate mitigation measures incorporated into the design of the project. Designation of earthquake hazard zones under the SHMA is conducted by the CGS on a priority basis in earthquake prone areas of California (i.e. southern California counties and the San Francisco Bay Area). Therefore, because the earthquake risks are less in the San Joaquin Valley the area containing the project site has not been mapped under the SHMA.

California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The CBC is based on the International Building Code. The 2007 CBC is based on the 2006 International Building Code (IBC) published by the International Code Conference. In addition, the CBC contains necessary California amendments which are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

Local

Stockton General Plan 2035

The Health and Safety Element of the City of Stockton's General Plan contains goals and policies pertinent to geology, soils and seismicity issues, including:

Goal HS-1 To protect the community from injury and damage resulting from natural catastrophes and hazardous conditions.

Policy HS-1.1	Development Constraints. The City shall permit development only in areas where the potential danger to the health and safety of people can be mitigated to an acceptable level.
Goal HS-3	To protect the community from the hazards of expansive soils, seismic dangers, including threats from liquefaction potential of soils, and other geologic activity.
Policy HS-3.1	Seismic Safety of Structures and Public Facilities. The City shall require that new structures intended for human occupancy, public facilities (i.e., treatment plants and pumping stations, major communication lines, evacuation routes, etc.), and emergency/disaster facilities (i.e., police and fire stations, etc.) are designed and constructed to minimize risk to the safety of people due to ground shaking.
Policy HS-3.4	Uniform Building Code. The City shall require that alterations to existing buildings and all new buildings be built according to the seismic requirements of the Uniform Building Code.

3.8.3 Impacts and Mitigation Measures

Methodology

The impact analysis identifies specific impacts of the change caused by subdividing and construction of existing large industrial lots at the project site and the effects on existing geologic, soil, and seismic conditions that could result through implementation of the proposed project. The analysis of proposed project impacts is based on the significance criteria listed below.

Significance Criteria

Consistent with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
    - Strong seismic groundshaking
    - Seismic-related ground failure, including liquefaction
    - Landslides
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence (i.e., settlement), liquefaction, or collapse;

- Be located on expansive soil, as defined in Table 18-1-B of the 1994 Uniform Building Code, creating substantial risks to life or property; or
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Based on construction of the proposed project, implementation of the proposed project would not result in impacts related to wastewater disposal. No impact discussion is provided for this topic for the following reasons:

- *Wastewater Disposal*. While the project site does contain soils that have limitations for septic systems, the proposed project would connect to the City of Stockton's wastewater collection system.

Impacts and Mitigation Measures

Impact 3.7.1: Implementation of the proposed project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides. *(Less-than-Significant)*

The proposed project involves the development of industrial land uses in the southeastern portion of the City of Stockton. The project site is not located within a delineated Alquist-Priolo Earthquake Fault Zone. No known active faults pass through the project site. The project site is in an area of low surface rupture potential and fault-related surface disturbance, including groundshaking. The nearest active fault is 30 miles northwest of the project site. Although the project site may be subjected to an earthquake during the life of the project, the magnitude of the earthquake would be low and, therefore, not result in ground shaking capable of causing structural collapse, especially considering compliance with existing building codes. The flat topography of the project site and its distance to an active fault preclude the likelihood of earthquake-induced slope failure in the event of strong ground shaking. The probability of soil liquefaction from strong ground shaking is considered to be a low to moderate hazard because the predicted earthquake ground motion is low and the project site is underlain by soils that contain clay, which is not susceptible to liquefaction. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.7.2: Construction of the proposed project could result in substantial soil erosion or the loss of topsoil. *(Less-than-Significant)*

The proposed land use would include structures and landscaping that would minimize exposing bare soil to erosion. Construction activities associated with the proposed project could involve backfilling, earthmoving, grading, and compaction. Exposed soil from construction activities

could be subject to erosion. However, the project site's clayey soils have low potential for wind and water erosion. Additionally, compliance with all applicable erosion control measures outlined in the City of Stockton grading ordinance (Sec. 13-501 of the Municipal Code) would minimize construction impacts relating to top soil erosion. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.7.3: The proposed project could be located on a geologic unit or soil that is unstable, or that could become unstable as a result of the proposed project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. ***(Less-than-Significant)***

The project site and the surrounding areas are generally flat, which greatly minimizes the potential for landslides to occur. Soils on the project site and the depth to the groundwater also provide little potential for liquefaction ground failures such as lateral spreading, subsidence, or ground collapse to occur. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.7.4: The presence of expansive and corrosive soils could result in structural damage to the proposed project facilities. ***(Potentially Significant)***

Information obtained through the NRCS soil survey for the area, indicates that Jacktone clay and Stockton clay soils, located on the proposed project site, contain expansive soil properties. Expansion and contraction of these soils, depending on the season and the amount of surface water infiltration, could exert enough pressure on structures to result in cracking, settlement, and uplift. The main limitations of these expansive soil materials are difficulties in achieving efficient compaction and reduced load capacity during excavation.

Additionally, the Jacktone clay and Stockton clay soils located on the project site have a moderate to high hazard of corroding uncoated steel. If left unprotected, these soils could damage underground utilities, including pipelines and cables, and can weaken roadway structures. Impacts associated with the presence of expansive and corrosive soils are considered ***potentially significant***.

Mitigation Measures

Measure 3.7.1: Conduct Geotechnical Study and Implement Design Recommendations. The applicant shall conduct a design-level geotechnical investigation of the project site to identify the characteristics of project site soils. Recommendations identified by the geotechnical investigations shall be incorporated into the design of the proposed project structures prior to approval of the building permit. Due to the expansive and corrosive nature of the soils, the geotechnical report may include recommendations for foundation design and use of materials that would not be affected by the corrosive soils, the removal of the expansive soils, or mixing the expansive soil with a non-expansive material.

Impact Significance after Mitigation: With the implementation of current engineering practices and modern building materials and Mitigation Measure 3.7.1, the effects of expansion and corrosive soils would be reduced to a ***less-than-significant*** level.

3.7.4 References

California Department of Conservation, California Geological Survey (CGS), 2009. Probabilistic Seismic Hazards Assessment - Peak Ground Acceleration Maps, www.consrv.ca.gov/CGS/rghm/psha/Pages/pga.aspx, accessed February 6, 2009.

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California Division of Mines and Geology (CDMG), 1997. Alquist-Priolo Earthquake Fault Zones.

City of Stockton, 2007. Stockton General Plan 2035 Background Report, December 2007.

Jennings, C. W., 1994. Fault Activity Map of California (with Appendix), California Division of Mines and Geology, Geologic Data Map No. 6. 1994.

National Cooperative Soil Survey (NCSS), 2009. Web Soil Survey, websoilsurvey.nrcs.usda.gov/app/, accessed on February 5, 2009.

Wakabayashi, John and D. L. Smith, 1994. Assessment of Recurrence Intervals, Characteristic Earthquakes, and slip Rates Associated with Thrusting along the Coast Range-Central Valley Geomorphic Boundary, California. Bulletin of the Seismological Society of America, Vol. 84, No. 6, pages 1960-1970, December 1994.

3.8 Hazards and Hazardous Materials

3.8.1 Introduction

This section addresses the hazardous materials and public safety issues related to the project site and surrounding area. Issues addressed here include hazardous materials, hazardous waste, and wildland fire hazards. Applicable policies and hazardous materials regulations are discussed. The impact analysis presents the standards used to evaluate hazards and hazardous materials impacts and addresses potential effects of the proposed project from hazards and hazardous materials.

The project site is located within the Airport Influence Area of the Stockton Metropolitan Airport. Refer to Section 3.1, Land Use, which provides setting information pertaining to the San Joaquin County Airport Land Use Plan.

In response to the Notice of Preparation (NOP), the San Joaquin County Environmental Health Department (SJCEHD) provided a comment regarding the proposed project. SJCEHD stated that any existing wells that are proposed to be abandoned shall be destroyed under permit and inspection by SJCEHD. This comment is addressed as part of the discussion of potential impacts under **Section 3.8.3**, below.

3.8.2 Setting

Definition of Hazardous Materials and Hazardous Wastes

A material may be considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. Factors that influence the health effects of exposure to hazardous materials include the dose to which the person is exposed, the frequency of exposure, the exposure pathway, and individual susceptibility.

The California Code of Regulations (CCR) defines a hazardous material as a substance that, because of physical or chemical properties, quantity, concentration, or other characteristics, may either: (1) cause an increase in mortality or an increase in serious, irreversible, or incapacitating, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed (CCR, Title 22, Division 4.5, Chapter 10, Article 2, Section 66260.10).

Hazardous wastes are defined in a similar manner. Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, discharged, spilled, contaminated, or are being stored prior to proper disposal. Hazardous materials and hazardous wastes are classified according to four properties: toxicity, ignitability, corrosivity, and reactivity (CCR, Title 22, Chapter 11, Article 3), which are defined in the CCR, Title 22, Sections 66261.20-66261.24.

Existing Conditions

A Phase I and Screening Level Phase II (Phase I/II) were prepared for the project site (GeoTrans, Inc., 2007a). No Recognized Environmental Conditions were identified on the project site. However, there were several significant findings identified in the Phase I and Phase II reports.

The following were identified as key findings in the Phase I/II Environmental Site Assessment Report for the proposed project site (GeoTrans, Inc., 2007a):

- 5365 Arch Road (APN 181-10-05) is listed on the HAZNET database. The listing indicates 2.18 tons of unspecified oil containing waste was transported from the property to a Treatment, Storage, and Disposal (TSD) facility in Yolo County.
- Due to existing and former agricultural uses of this site, agricultural pesticide and chemical use has occurred on the property.
- Household debris, oil containers, and empty pesticide/herbicide containers are found in various locations throughout the property. Additionally, soil staining was found in conjunction with some of the locations of oil containers and pesticide/herbicide containers. The soil was sampled and tested as part of the Phase II.
- Three large soil stockpiles are located on the property. Soil sampling and testing of the soil stockpiles was conducted as part of the Phase II.
- The potential for elevated pesticide concentrations in on-site soils is considered low.

The Screening Level Phase II Environmental Site Assessment Report for the project site identified the following results from soil sampling and testing conducted for the proposed project site:

- Seven oil-stained areas and a collection of empty agricultural chemical containers were identified at the abandoned farm site on APN 181-10-02 (Parcel 2) and APN 181-10-05 (Parcel 5), located at the northeast corner of the intersection of Arch Road and Newcastle Road. One soil sample from Parcel 5 contained motor oil concentrations in the soil of 5,100 mg/kg motor oil and another sample taken from Parcel 2 showed concentrations of motor oil at 1,100 mg/kg. The Environmental Screening Level (ESL) for motor oil is 1,000 mg/kg. No evidence of soil impact was found in connection with the three soil stockpiles or beneath the empty agricultural chemical containers (GeoTrans, Inc., 2007a).

GeoTrans conducted additional soil sampling upon completion of the Phase I/II prepared for the for the project site (GeoTrans, Inc., 2008). Nine soil-stained areas on Parcels 2 and 5 were excavated, screened with an organic vapor monitor (OVM), and sampled for total petroleum hydrocarbons in the gasoline (TPH-g), diesel (TPH-d) and motor oil (TPH-mo) ranges; and volatile organic compounds (VOCs), including benzene, toluene, ethyl benzene and xylenes (BTEX). The sample results showed low concentrations of hydraulic oil range hydrocarbons in five of the excavations located on Parcel 5. These trace concentrations of hydraulic oil range hydrocarbons are not considered an environmental concern as the concentrations are well below the 1,000 mg/Kg action level. Samples extracted from the soil stockpile on Parcel 5 showed elevated levels of hydraulic oil and methylnaphthalene. The soil stockpile was removed and disposed of at

Forward Landfill in Manteca. GeoTrans concluded that the soil remediation work is complete (GeoTrans, Inc., 2008).

As part of preparation of the Phase I documents, a regulatory agency database search and a site reconnaissance were conducted in order to identify potential hazardous conditions at the project site. The database search was conducted within a one-mile radius to identify sites within the regulatory agency databases listed in **Table 3.8-1**. It should be noted that potential sites of past historic hazardous materials usage, storage, and/or contamination might have occurred prior to the activation of agency maintained databases.

TABLE 3.8-1
REGULATORY AGENCY DATABASES

Database	Type of Record	Agency
NPL	National Priority List	U.S. EPA
NPL LIENS	Federal Superfund Liens	U.S. EPA
CONSENT	Superfund (CERCLA) Consent Decrees	U.S. Department of Justice
CORRACTS[1]	RCRA[2] Corrective Actions	U.S. EPA
CERCLIS[3]	Sites currently or formerly under review by U.S. EPA	U.S. EPA
CERCLIS-NFRAP[4]	CERCLIS No Further Remedial Action Planned	U.S. EPA
RCRA-TSDF	RCRA permitted treatment, storage, disposal facilities	U.S. EPA
RCRA-LQG	RCRA registered large generators of hazardous waste	U.S. EPA
RCRA-SQG	RCRA registered small generators of hazardous waste	U.S. EPA
RAATS[5]	RCRA violations/ enforcement actions	U.S. EPA
FINDS	Facility information and “pointers” to other sources that contain more detail	U.S. EPA
ERNS	Emergency Response Notification System of Spills	U.S. EPA
HMIRS[6]	Hazardous Material Spill Incidents Reports	U.S. Department of Transportation
MINES	Mines Master Index Database	U.S. Dept. of Labor, Mine Safety and Health Administration
MLTS[7]	List of sites which possess or use radioactive materials and are subject to NRC licensing requirements	U.S. Nuclear Regulatory Commission
TRIS/TSCA[8]	Facilities which release toxic chemicals to air, water and land/Facilities that manufacture or import chemical substances	U.S. EPA
PADS[9]	Generators, transporters, commercial storers of PCBs	U.S. EPA
FUDS	Formerly used defense sites	U.S. Army Corps of Engineers
US BROWNFIELDS	A listing of Brownfields Sites	U.S. EPA
ROD	Record of Decision	U.S. EPA
ODI	Open Dump Inventory	U.S. EPA
FTTS	FIFRA[10]/TSCA Tracking System	U.S. EPA
SSTS	Section 7 Tracking Systems for FIFRA	U.S. EPA
LUST	Leaking Underground Storage Tanks	State Water Resources Control Board
CA WDS[11]	List of sites which have been issued waste discharge requirements	State Water Resources Control Board
SWF/LF[12]	Active, closed and inactive landfills	Integrated Waste Management Board
WMUDS/SWAT[13]	Waste management units	State Water Resources Control Board

TABLE 3.8-1
REGULATORY AGENCY DATABASES

Database	Type of Record	Agency
DEED[14]	Sites with deed restrictions	Department of Toxic Substance Control
CORTESE[15]	State index of properties with hazardous waste	California EPA, Office of Emergency Services
TOXIC PITS	Toxic pits cleanup facilities	State Water Resources Control Board
CHMIRS[16]	Reported hazardous material incidents	Office of Emergency Services
NOTIFY 65[17]	Reported releases that could impact drinking water	State Water Resources Control Board
HAZNET[18]	Facilities that generate hazardous waste	California EPA
CA BOND EXP. PLAN	Bond Expenditure Plan	Department of Health Services
SCH	School Property Evaluation Program	Department of Toxic Substances Control
SWRCY	Recycler Database	Department of Conservation
HIST UST	Hazardous Substance Storage Container Database	State Water Resources Control Board
CDL [19]	Listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.	Department of Toxic Substances Control
RESPONSE	State response sites at which the cleanup had DTSC as the lead or oversight agency	Department of Toxic Substances Control
EMI [20]	Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.	California Air Resources Board
ENVIROSTOR	Database that identifies known contamination or sites for which there may be reasons to investigate	Department of Toxic Substances Control
SLIC	Listings include unauthorized discharges from spills and leaks other than from underground storage tanks, or other regulated sites.	State Water Resources Control Board
UST/AST	Registered underground and aboveground storage tanks	State Water Resources Control Board/ County

1 CORRACTS Corrective Action Report System, an EPA database of corrective actions taken at a RCRA Regulated site.
2 RCRA Resource Conservation and Recovery Act
3 CERCLIS Comprehensive Environmental Response, Compensation & Liability Information System
4 NFRAP No Further Remedial Action Planned (archived CERCLIS sites)
5 RAATS RCRA Administration Tracking System
6 HMIRS Hazardous Materials Information Reporting System
7 MLTS Material Licensing Tracking System
8 TRIS/TSCA Toxic Chemical Release Inventory System/Toxic Substances Control Act
9 PADS PCB Activity Database System
10 FIFRA Federal Insecticide, Fungicide, and Rodenticide Act
11 WDS Waste Discharge System
12 SWF/LF Solid Waste Information System
13 WMUDS/SWAT Waste Management Database
14 DEED List of Deed Restrictions
15 CORTESE: Based on input from 14 state databases
16 CHMIRS California Hazardous Material Incident Report System
17 NOTIFY 65 Proposition 65 Records
18 HAZNET Hazardous Waste Information System
19 CDL Clandestine Drug Labs
20 EMI Emissions Inventory Data

SOURCE: GeoTrans, Inc., 2007a and 2007b.

The agency database search identified a portion of the project site (5365 Arch Road) as listed on the HAZNET database. Table 3.8-2 below shows sites within one mile of the project site that were listed.

TABLE 3.8-2
LISTED SITES IN THE VICINITY OF THE PROJECT

Property	Location	Database
Buzz Oates Mgmt Services	5365 Arch Road (project site)	HAZNET
DOC – Northern California Women's Facility	7150 Arch Road (410 feet south)	HAZNET; EMI; FINDS
Not listed	6540 Austin Road (598 feet east)	ERNS; CHMIRS; HIMRS
ITS Technologies & Logistics LLC	6540 Austin Road (598 feet east)	HAZNET
Burlington Northern Santa Fe Railway Com	6540 Austin Road (633 feet east)	EMI
Overnite Transportation Co	6540 S. Austin Road (633 feet east)	HAZNET
JB Hunt	6540 Austin Road (633 feet east)	HAZNET
Yellow Freight Systems	6540 Austin Road (633 feet east)	HAZNET
Alliance Shippers Inc.	6540 Austin Road (633 feet east)	HAZNET
Faldspar Inc	6540 Austin Road (633 feet east)	HAZNET
The Balstar Corp (Scott Eirith)	6540 Austin Road (633 feet east)	HAZNET
US Express	6540 Austin Road (633 feet east)	HAZNET
N C H Corp	6540 Austin Road (633 feet east)	HAZNET
Schneider National Inc	6540 Austin Road (633 feet east)	HAZNET
Stockton Rubber Mfg Co Inc	7367-B E. Mariposa Road (643 feet north)	HAZNET; FINDS; EMI
Aqua Pool & Spa, Inc.	7367 E. Mariposa Road (643 feet north)	HAZNET
Correctional Training Center Annex/Plant Operation	7150 Arch Road (656 feet SE)	EMI
Not listed	7119 E. Mariposa Road (3,085 feet ENE)	CDL
Earthgrains Bakery	Stockton, CA (3,648 feet west)	ERNS
Exel Inc.	4512 Frontier Way (3,729 feet west)	HAZNET
Not listed	4512 Frontier Way (3,729 feet west)	CHMIRS
Chief Auto Parts	4547 Frontier Way (3,771 feet WSW)	RCRA-SQG; FINDS
Denny Osenga General Manager	4547 Frontier Way (3,771 feet WSW)	HAZNET; CA WDS
GATX Logistics	4547 Frontier Way (3,771 feet WSW)	HAZNET
JB Management L P	4101 Arch Road (4,845 feet SW)	FINDS; HAZNET; RCRA-LQG

SOURCE: GeoTrans, Inc., 2007a and 2007b.

Hazardous Materials

The purpose of the site reconnaissance is to observe potential locations of hazardous substances or petroleum products, to locate current aboveground storage tanks, to observe evidence of

underground tanks, and to examine for obvious physical indications of improper hazardous substances or petroleum product disposal such as stained soil or asphalt and stressed vegetation.

A site reconnaissance was conducted as part of preparation of each of the Phase I documents prepared for the project site. A site reconnaissance was completed for the project site on May 10, 2007.

Agricultural Chemical Use

The San Joaquin County Agricultural Commissioner's office maintains records of restricted pesticide use by growers in San Joaquin County. As part of preparation of the Phase I ESAs for the project site, a request for records of past pesticide use was submitted to the Commissioner's office on May 15, 2007 and September 10, 2007. The Commissioner had records of past use of restricted, as well as unrestricted, pesticides on the project site. The restricted pesticides have been applied to the Phase 2 portion of the project site. These pesticides included 2,4-D Amine (herbicide), zinc phosphide (rodenticide), and the pesticides Sevin, Guthion, Methomyl, Methyl Parathion, Paraquat, Monitor, Di-Syston, MCPA-dimethylamine, Metasystox-R, Chlorpicrin, and Lindane (GeoTrans, Inc., 2007b). The Phase I ESAs indicated that no agricultural chemicals were applied in violation of their permit requirements, or disposed of or discarded on the project site (GeoTrans, Inc., 2007a and 2007b).

Potential Receptors

The sensitivity of potential receptors in the areas of known or potential hazardous materials contamination is dependent on several factors, the primary factor being an individual's potential pathway for exposure. Employees located at the project site would have the highest potential for exposure to groundwater and/or soil contamination. The project site is located within a primarily industrial and agricultural area. Both the (NCYCC and the California Health Care Facility (CDCR) are located approximately 1,850 to 2,640 feet from the project site. A number of rural residences are located around the project site, with the nearest residences located 75 feet, 160 feet (both along Marfargoa Road) and 325 feet (on Arch Road) from the project boundaries, respectively. Figure 3.5-2 shows sensitive receptors near the project site.

Venture Academy is the nearest school at just over one mile west of the project site. Venture Academy is a charter school that serves grades K-12. The NCYCC houses wards that range in age from 12-25 years old. The NCYCC consists of three separate correctional facilities: DeWitt Nelson Youth Correctional Facility, N.A. Chaderjian Youth Correctional Facility, and O.H. Close Youth Correctional Facility (DJJ, 2008).

Wildland Fire Hazards

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP) identifies fire threat based on a combination of two factors: 1) fire frequency, or the likelihood of a given area burning, and 2) potential fire behavior (hazard). These two factors are combined to create the following threat classes:

- Little or No Threat
- Moderate

- High
- Very High
- Extreme

The project site is primarily characterized by little or no fire threat. Three small patches in the southern and western portions of the project site are characterized by a moderate fire threat. The areas surrounding the project site are characterized with a similarly low fire threat (Cal Fire, 2008). The project site has recently been in fallow agriculture, which has little potential to serve as a source of significant fire fuels. The land surrounding the project site is somewhat urbanized containing industrial land uses, rural residences, and correctional facilities as well as agricultural land.

Regulatory Setting

Federal

Federal regulatory agencies include the U.S. Environmental Protection Agency (USEPA), the OSHA, the Nuclear Regulatory Commission (NRC), the Department of Transportation (DOT) and the National Institute of Health (NIH). The following represent federal laws and guidelines governing hazardous substances.

- Pollution Prevention Act (42 US Code Section 13101 et seq. / 40 Code of Federal Regulations)
- Clean Water Act (33 US Code Section 1251 et seq. / 40 Code of Federal Regulations)
- Oil Pollution Act (33 US Code Section Sections 2701-2761 / 30, 33, 40, 46, 49 Code of Federal Regulations)
- Clean Air Act (42 US Code Section 7401 et seq. / 40 Code of Federal Regulations)
- Occupational Safety and Health Act (SFHA; 29 US Code Sections 651 et seq. / 29 Code of Federal Regulations)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA; 7 US Code Section 136 et seq. / 40 Code of Federal Regulations)
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA; 42 US Code Section 9601 et seq. / 29, 40 Code of Federal Regulations)
- Superfund Amendments and Reauthorization Act Title III (42 US Code Section 9601 et seq. / 29, 40 Code of Federal Regulations)
- Resource Conservation and Recovery Act (RCRA; 42 US Code Section 6901 et seq. / 40 Code of Federal Regulations)
- Safe Drinking Water Act (42 US Code Section 300f et seq. / 40 Code of Federal Regulations)
- Toxic Substances Control Act (15 US Code Section 2601 et seq. / 40 Code of Federal Regulations)

At the federal level, the principal agency regulating the generation, transport and disposal of hazardous substances is the U.S. EPA, under the authority of the RCRA. The RCRA established a federal hazardous substance "cradle-to-grave" regulatory program that is administered by the U.S. EPA. Under the RCRA, the U.S. EPA regulates the generation, transportation, treatment, storage and disposal of hazardous substances. The RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle-to-grave" system of regulating hazardous substances. The HSWA specifically prohibits the use of certain techniques for the disposal of some hazardous substances. Under the RCRA, individual states may implement their own hazardous substance management programs as long as they are consistent with, and at least as strict as, the RCRA. The U.S. EPA must approve state programs intended to implement the RCRA requirements.

The U.S. EPA regulates hazardous substance sites under the CERCLA. The CERCLA, commonly referred to as Superfund, was enacted on December 11, 1980. The purpose of the CERCLA was to provide authorities the ability to respond to uncontrolled releases of hazardous substances from inactive hazardous waste sites that endanger public health and the environment. The CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at such sites, and established a trust fund to provide for cleanup when no responsible party could be identified. In addition, the CERCLA provided for the revision and republishing of the National Contingency Plan (NCP) that provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also provides for the National Priorities List (NPL), a list of national priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action.

The Superfund Amendments and Reauthorization Act (SARA) amended the CERCLA on October 17, 1986. This amendment increased the size of the Hazardous Response Trust Fund, expanded U.S. EPA's response authority, strengthened enforcement activities at Superfund sites; and broadened the application of the law to include federal facilities. In addition, new provisions were added to the law that dealt with emergency planning and community right to know. SARA also required U.S. EPA to revise the Hazard Ranking System to ensure that it accurately assesses the relative degree of risk to human health and the environment posed by sites and facilities subject to review for listing on the NPL.

Hazardous Substances Worker Safety Requirements

The Federal Occupational Safety and Health Administration (Fed/OSHA) is the agency responsible for ensuring worker safety. Fed/OSHA sets federal standards for implementation of training in the workplace, exposure limits, and safety procedures in the handling of hazardous substances (as well as other hazards). Fed/OSHA also establishes criteria by which each state can implement its own health and safety program.

Hazardous Materials Transportation

The DOT regulates the interstate transport of hazardous materials and wastes through implementation of the Hazardous Materials Transportation Act. This act specifies driver-training requirements, load

labeling procedures, and container design and safety specifications. Transporters of hazardous wastes must also meet the requirements of additional statutes such as the RCRA.

State

The California Environmental Protection Agency (Cal/EPA) and the Office of Emergency Services (OES) of the State of California establish rules governing the use of hazardous substances. The State Water Resources Control Board (SWRCB) primary responsibility is to protect water quality and supply.

The Cal/EPA was created in 1991 to better coordinate state environmental programs, reduce administrative duplication, and address the greatest environmental and health risks. The Cal/EPA unifies the state's environmental authority under a single accountable, Cabinet-level agency. The Secretary for Environmental Protection oversees the following agencies: Air Resources Board, Integrated Waste Management Board, Department of Pesticide Regulation, State Water Resources Control Board, Department of Toxic Substances Control, and Office of Environmental Health Hazard Assessment.

Applicable State laws include the following:

- Porter Cologne Water Quality Control Act (California Water Code Section 13000-14076 / 23 California Code of Regulations)
- California Accidental Release Prevention Law (California Health and Safety Code Section 25531 et seq. / 19 California Code of Regulations)
- California Building Code (California Health and Safety Code Section 18901 et seq. / 24 California Code of Regulations)
- California Fire Code (California Health and Safety Code Section 13000 et seq. / 19 California Code of Regulations)
- California Occupational Safety and Health Act (California Labor Code Section 6300-6718 / 8 California Code of Regulations)
- Hazardous Materials Handling and Emergency Response "Waters Bill" (California Health and Safety Code Section 25500 et seq. / 19 California Code of Regulations)
- Hazardous Waste Control Law (California Health and Safety Code Section 25100 et seq. / 22 California Code of Regulations)
- Carpenter-Presley-Tanner Hazardous Substance Account Act "State Superfund" (California Health and Safety Code Section 25300 et seq. / California Revenue and Tax Code Section 43001 et seq.)
- Hazardous Substances Act (California Health and Safety Code Section 108100 et. seq.)
- Safe Drinking Water and Toxic Enforcement Act "Proposition 65" (California Health and Safety Code Sections 25180.7, 25189.5, 25192, 25249.5-25249.13 / 8, 22 California Code of Regulations)

- California Air Quality Laws (California Health and Safety Code Section 39000 et seq. / 17 California Code of Regulations)
- Aboveground Petroleum Storage Act (California Health and Safety Code Section 25270 et. seq.)
- Pesticide Contamination Prevention Act (California Food and Agriculture Code Section 13141 et. seq. / 3 California Code of Regulations)
- Underground Storage Tank Law "Sher Bill" (California Health and Safety Code Section 25280 et. seq. / 23 California Code of Regulations)

Within Cal/EPA, the DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the state agency, for the generation, transport and disposal of hazardous substances under the authority of the Hazardous Waste Control Law (HWCL). Regulations implementing the HWCL list 791 hazardous chemicals and 20 or 30 more common substances that may be hazardous; establish criteria for identifying, packaging and labeling hazardous substances; prescribe management of hazardous substances; establish permit requirements for hazardous substances treatment, storage, disposal and transportation; and identify hazardous substances that cannot be deposited in landfills.

Under both the federal RCRA and the HWCL, the generator of a hazardous substance must complete a manifest that accompanies the waste from the point of generation to the ultimate treatment, storage or disposal location. The manifest describes the waste, its intended destination, and other regulatory information about the waste. Copies must be filed with the DTSC. Generators must also match copies of waste manifests with receipts from the treatment, storage or disposal facility to which it sends waste.

Emergency Response to Hazardous Materials Incidents

California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government and private agencies. Response to significant hazardous materials incidents is one part of this plan. The plan is administered by the state OES, which coordinates the responses of other agencies including the Cal/EPA, the California Highway Patrol, California Department of Fish and Game (CDFG), the RWQCB, local environmental health departments, and local fire departments.

Local

San Joaquin County Public Health Services, Environmental Health Department

The Unified Hazardous Waste and Hazardous Management Regulatory Program (SB 1082, 1993) is a state and local effort to consolidate, coordinate, and make consistent existing programs regulating hazardous waste and hazardous materials management. Cal/EPA adopted implementing regulations for the Unified Program (CCR, Title 27, Division 1, Subdivision 4, Chapter 1) in January 1996. The Unified Program is implemented at the local level by a Certified Unified Program Agency (CUPA).

The San Joaquin County Public Health Services, Environmental Health Department (SJCEHD) is the CUPA for all cities and unincorporated areas within San Joaquin County. The CUPA was

created by the California legislature to minimize the number of inspections and different fees for businesses. The SJCEHD provides the management and record keeping of hazardous materials and underground storage tank (UST) sites for San Joaquin County, including the City of Stockton. Through the Hazardous Materials Program, the SJCEHD inspects businesses for compliance with the Hazardous Waste Control Act. Hazardous waste is subject to storage time limits, disposal requirements and labeling requirements on containers.

The SJCEHD also issues permits to businesses that handle quantities of hazardous materials/ waste greater than or equal to 55 gallons, 500 pounds, or 200 cubic feet of a compressed gas at any time. Businesses who handle these quantities of hazardous materials/wastes are required to submit a Hazardous Materials Management Plan (HMMP) to the SJCEHD. The HMMP includes an inventory of hazardous materials and hazardous wastes, as well as an emergency response to incidents involving those hazardous materials and wastes.

Above-ground storage tanks over 660 gallons that contain petroleum products are inspected by the SJCEHD and are required to prepare a Spill Prevention Control and Countermeasures Plan (SPCCP). The SPCCP is kept on-site and is subject to inspection by the SWRCB. The SPCCP includes a requirement to prepare a response to a release of hazardous materials from above-ground storage tanks and to prevent a release. The SPCCP also identifies the requirement for secondary containment and mitigation measures.

Under a contract with the SWRCB, the SJCEHD conducts the Local Oversight Program to oversee the abatement and cleanup of releases of hazardous substances onto the ground or from USTs in San Joaquin County that do not involve chemical releases to water. The CVRWQCB is the lead agency responsible for chemical releases to water throughout the County. The Cal/EPA and the DTSC are responsible for overseeing the cleanup of hazardous waste sites in California.

San Joaquin County Office of Emergency Services

The San Joaquin County Office of Emergency Services (OES) is responsible for effective planning for emergencies including those related to hazardous material incidents. The OES coordinates planning, response to emergencies, improves procedures for incident notification and provides training and equipment to safety personnel (City of Stockton, 1990). The California Health and Safety Code Section 25500 requires the OES to: (1) prepare an inventory and information system for the storage and location of hazardous materials in the County; (2) oversee the preparation and collection of plans for those businesses that use hazardous substances; (3) prepare area response plans that would incorporate inventory data, training for emergency responses and evacuation plans; and (4) present an inspection plan and data management plan for approval to the State.

San Joaquin County Plans and Policies

San Joaquin County prepared a Hazardous Waste Management Plan (HWMP) in November 1988. The HWMP is intended to serve as the primary planning document for hazardous waste management in the County. The HWMP analyzes the hazardous waste situation within the County and makes recommendations. The recommendations within the HWMP encourage a variety of administrative programs to monitor and encourage hazardous waste reduction and to educate and inform hazardous

waste generators and the public concerning hazardous waste problems. The HWMP also recommends that any Use Permit for a hazardous waste generator require the generator to implement a waste reduction program.

City of Stockton General Plan 2035

The City of Stockton General Plan 2035 includes the following goals and policies regarding hazardous wastes and materials and fire safety:

Policy LU-5.5 Compatible Land Use. The City shall ensure an adequate separation between sensitive land uses (residential, educational, healthcare) and industrial land uses to minimize land use incompatibility associated noise, odors, and air pollutant emissions from industrial uses.

Policy LU-5 Adjacent Major Transit Uses. The City shall guide industrial uses near the Stockton Metropolitan Airport and the Port of Stockton by the policies of the Airport Land Use Commission and the Port of Stockton Master Development Plan, respectively.

Goal LU-6 To ensure land use compatibility around the Stockton Municipal Airport, thereby protecting public safety and supporting continued operation of the airport.

Policy LU-6.1 Airport Influence Area. The City of Stockton will utilize the AIA adopted by the County Airport Land Use Commission for the Stockton Metropolitan Airport. In general, the AIA should be defined to encompass all lands that, due to their proximity to the airport, are subject to a materially greater level of safety risk and/or adverse environmental effect (e.g., noise) from present or foreseeable future airport operations than lands more distant from the airport, and all lands in the vicinity of the airport on which certain land uses (e.g., residential or educational) could inhibit present or foreseeable airport operations due to the increased safety risks or adverse environmental effects (e.g., noise) on sensitive receptors that could result from such land uses.

Policy LU-6.2 Consistency with Airport Land Use Commission Policies. The City will protect the Airport and related aviation facilities from encroachment by potentially incompatible land uses. The City shall ensure that the General Plan and all future development within the AIA will be consistent with the policies adopted by the San Joaquin County Airport Land Use Commission (ALUC), except where pursuant to Public Utilities Code Sections 21676 and 21676.5, the City Council, pursuant to a two-thirds vote, exercises its option to conclude that, notwithstanding a negative recommendation from the ALUC, the Council's proposed action is consistent with the purposes of providing for the orderly development of the Airport and the areas surrounding the airport while protecting the public health, safety, and welfare by minimizing the public's exposure to excessive noise and safety hazards).

Policy LU-6.6 Adjacent Major Transportation Hubs. The City shall direct industrial uses to areas in or near the Stockton Metropolitan Airport, the Port of Stockton, and the BNSF Intermodal Facility consistent with the policies of the Airport Land Use Commission, the Port of Stockton Master Development Plan, and BNSF respectively.

Goal HS-5	To minimize the risk to City residents and property associated with the transport, distribution, use, and storage of hazardous materials.
Policy HS-5.2	Hazardous Materials. The City shall require that hazardous materials are used, stored, transported, and disposed of within the city in a safe manner and in compliance with local, State, and Federal safety standards.
Policy HS-5.3	Designated Routes for Hazardous Materials Transport. The City shall restrict transport of hazardous materials within the city to routes that have been designated for such transport.
Policy HS-5.5	Hazardous Materials Inventory. The City shall require, as appropriate and as a component of the environmental review process, a hazardous materials inventory for project sites, including an assessment of materials and operations for any development applications. Particular attention should be paid to land that previously contained agricultural uses.
Policy HS-5.8	Compatibility with Surrounding Land Uses. The City shall use the development review process to ensure compatibility between hazardous material users and surrounding land use.
Policy HS-5.9	Hazardous Materials Studies. The City shall ensure that the proponents of new development projects address hazardous materials concerns through the preparation of Phase I or Phase II hazardous materials studies for each identified site as part of the design phase for each project. Recommendations satisfying Federal or State cleanup standards outlined in the studies will be implemented as part of the construction phase for each project.

3.8.3 Impacts and Mitigation Measures

Significance Criteria

Impacts associated with hazardous materials on the project site were assessed based on information provided by the Phase I and Phase II documents prepared for the project site. The discussion below also addresses the potential for discovery of unreported hazardous materials releases. Analysis of the proposed project's potential to release hazardous materials has been conducted by identifying the potential hazardous materials that could be used for the proposed project and ascertaining the risk of a release.

Consistent with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Be located within an airport land use plan or, where such a plan has not been adopted within two miles of a public airport, would the project result in a safety hazard for people residing or working in the project area;

- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss or injury involving wildland fires.

Impacts Analysis

Impact 3.8.1: Implementation of the proposed project has the potential for existing and/or previously unidentified contamination to be encountered during project site preparation, construction activities, and mining activities. *(Less-than-Significant)*

Review of the Phase I and Phase II documents revealed very limited use, storage and disposal of hazardous materials having occurred on the project site. As the project site was formerly used for agricultural activities, a number of pesticides were likely applied to the project site over the years. As stated above, a soil stockpile on Parcel 5 that contained elevated levels of hydraulic oil and methylnaphthalene was removed and properly disposed of at a landfill. GeoTrans, Inc. concluded that all soil remediation of identified contaminated soils is complete. They also concluded that no agricultural chemicals were applied in violation of their permit requirements or disposed of or discarded on the project site. Any previously identified contamination on site has either been removed or is only present in benign levels that do not require any action and would not result in a significant adverse human health or environmental impact.

Prior to operation of the proposed project, the project applicant will be required to file their Hazardous Materials Business Plan with the SJCEHD to describe the types and amounts of hazardous materials stored on the project site. Significant risks to the public or workers are not expected with the assumption that these products are used, transported and disposed of properly in accordance with the handling instructions on their labels and in accordance with state and federal regulations. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measures

None Required.

Impact 3.8.2: Implementation of the proposed project may create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. *(Less-than-Significant)*

During excavation, grading, and construction activities of the proposed facilities, it is anticipated that limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, etc. would be brought onto, used, and stored at the project site. Additionally, due to the nature of the future uses under the Industrial Limited zoning designation a number of different hazardous materials would likely be transported to and stored on the project site. As with any liquid and solid, during handling and transfer from one container to another, the potential for an accidental release exists. Depending on the relative hazard of the

material, if a spill were to occur of significant quantity, the accidental release could pose both a hazard to on-site employees as well as to the environment.

As described above under Impact 3.8.1, prior to operations, the project applicant will be required to file their Hazardous Materials Business Plan with the SJCEHD to describe the types and amounts of hazardous materials stored on the project site. Significant risks to the public or workers are not expected with the assumption that these products are used, transported and disposed of properly in accordance with the handling instructions on their labels and in accordance with state and federal regulations. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measures

None Required.

Impact 3.8.3: Implementation of the proposed project will be located within an airport land use plan and would not result in a safety hazard for people residing or working in the project area. ***(Less-than-Significant)***

Impact 3.10.2 in Section 3.10, "Land Use," shows that the proposed project is consistent with the San Joaquin County Airport Land Use Plan. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.8.4: The proposed project would not interfere with or impair any adopted emergency response plan or emergency evacuation plan. ***(Less-than-Significant)***

The proposed project would not interfere with an emergency response plan or emergency evacuation plan. Prior to approval, the applicant would be required to demonstrate compliance with all emergency access requirements and other emergency standards in place in the City of Stockton. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measure

None required.

Impact 3.8.5: Construction and operation of the proposed project may expose people or structures to a significant risk of loss or injury involving wildland fires. ***(Less-than-Significant)***

The project site is located in an area of the City that contains some urban uses and several other land uses, including industrial uses, rural residential, agricultural uses, and a correctional facility. As stated above, the project site is primarily characterized as having little or no threat of wildland fire hazards. There are small portions of the project site characterized with a moderate wildland fire hazard. As part of the proposed project, the project site would be developed for future industrial use, which implies that the project site will be graded and any surface fuels would be removed. Consequently, wildland fire threat on the project site will diminish with development of the project. Additionally, the proposed project has little threat of being exposed to wildland fires from the surrounding land because it is either developed or being used for agriculture, both of which do not contain significant surface fuels associated with wildland fires. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measures

None required.

3.8.4 References

California Department of Forestry and Fire Protection (Cal Fire), 2008. *Fire Threat,* frap.fire.ca.gov/data/frapgisdata/download.asp?spatialdist=1&rec=fthrt, accessed September 10, 2008.

California Department of Juvenile Justice (DJJ), 2008. Youth Correctional Facilities, cdcr.ca.gov/Divisions_Boards/DJJ/About_DJJ/Locations/Youth_Facilities.html, accessed September 10, 2008.

City of Stockton, 2007. 2035 General Plan. December 2007.

GeoTrans, Inc, 2007a. Phase I and Screening Level Phase II Environmental Site Assessment Report, 460-Acre Property Arch Road at Newcastle Road, Stockton, California. Prepared for Opus West Corporation. July 5, 2007.

GeoTrans, Inc, 2007b. Phase I Environmental Site Assessment Report, 149-Acre Sanchez Property 6001 South Austin Road, Stockton, California. Prepared for Opus West Corporation. October 17, 2007.

GeoTrans, Inc, 2008. Soil Excavation Oversight and Sampling Report, 5959 Arch Road (Parcel 2) and 5365 Arch Road (Parcel 5), Stockton, California. January 8, 2008.

3.9 Hydrology and Water Quality

3.9.1 Introduction

This section describes the hydrologic and water quality characteristics of surface water and groundwater resources as they relate to the proposed project. This section presents existing conditions by describing the climate, surface water and groundwater conditions, and water quality issues. The regulatory background section describes the pertinent federal, state, and local laws related to hydrology and water quality for the proposed project. The impacts and mitigations subsection defines the significance criteria, presents a discussion of the impacts, and where necessary, provides applicable mitigation measures. Water supply and wastewater services for the proposed project are addressed in Section 3.12, "Public Services, Utilities, and Recreation."

3.9.2 Setting

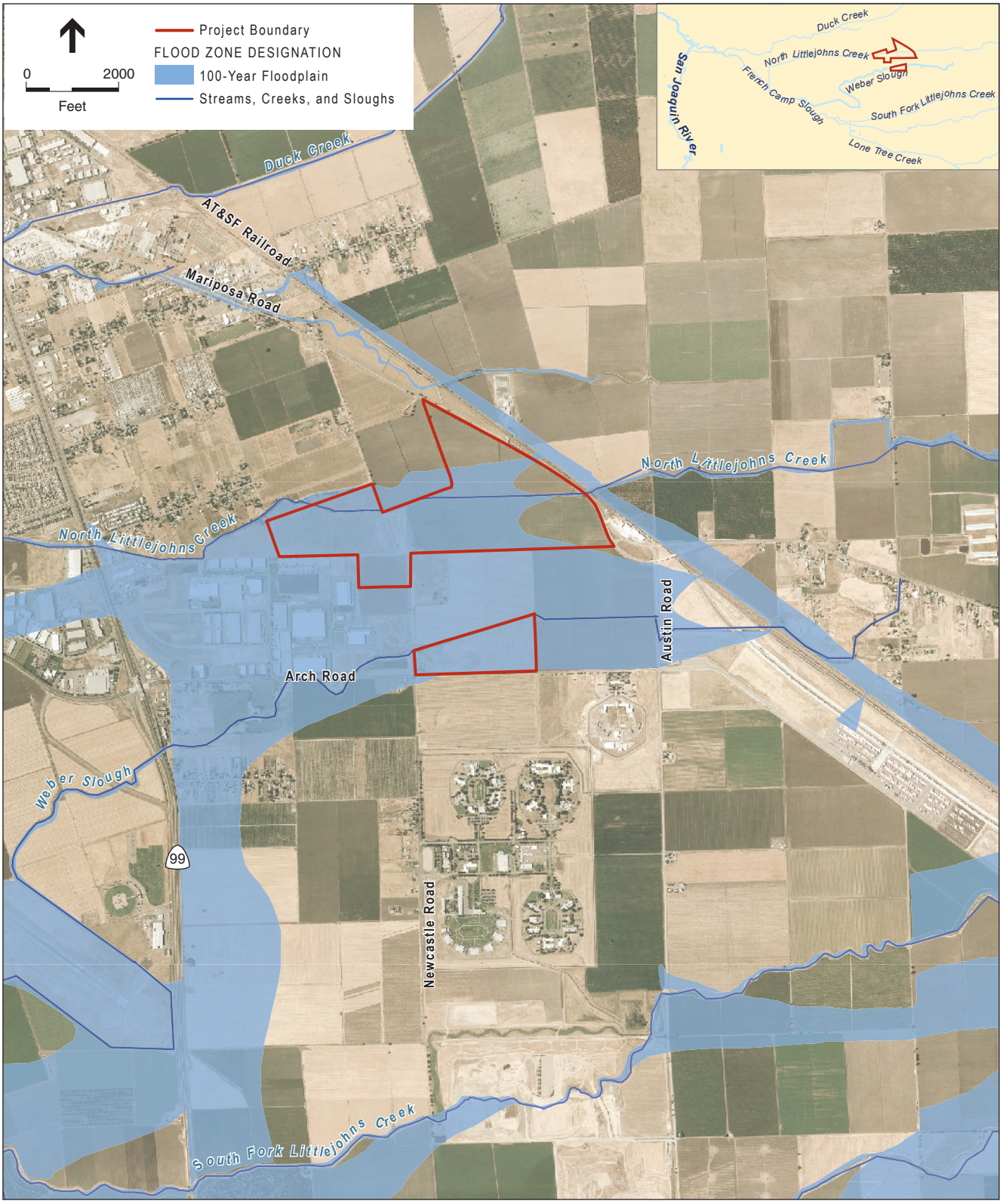
The project area is located in southeast Stockton along the edge of the developed urbanized area. The project site is east of State Route 99 in an area that has a mix of land uses consisting of light industrial, open space and agricultural, rural residential, and a state juvenile detention facility.

Surface Water Hydrology and Water Quality

The project area is characterized by a typical Mediterranean climate with wet, cold winters, and warm, dry summers. The majority of annual precipitation falls during the months of November through April. The mean annual rainfall in the project vicinity was approximately 14.0 inches between 1948 and 2007 (Western Regional Climate Center [WRCC], 2008). Water supply for the City of Stockton comes from both groundwater aquifers and surface water supplies. Most of the rivers entering San Joaquin County have been altered, with reservoirs providing both flood control and water supply for commercial, agricultural, municipal, and freshwater habitat use.

The topography of the project site is relatively level, and gently slopes downward to the west. Elevation on site ranges from 32 feet above mean sea level (msl) on the west to approximately 40 feet above msl on the east. The project area is located southeast of the Sacramento-San Joaquin Delta in the San Joaquin Valley Floor Hydrologic Unit. North Littlejohns Creek flows west through the northern half of the project site. Weber Slough is located south of North Littlejohns Creek in the southern half of the project site. North Littlejohns Creek and Weber Slough flow into French Camp Slough west of the Stockton Metropolitan Airport. French Camp Slough continues to flow west into the San Joaquin River upstream from the Stockton Deepwater Shipping Channel. The project site is over 6.5 miles east of the San Joaquin River. **Figure 3.9-1** shows the locations of these waterways.

North Littlejohns Creek flows through the northern portion of the project site. North Littlejohns Creek is a drainage that originates as Littlejohns Creek in the foothills. Flood flows in Littlejohns Creek are held at the Farmington Flood Control Basin, which is over 10 miles east of the project site. The North Littlejohns Creek watershed drains 5,414 acres starting where North Littlejohns



SOURCE: FEMA, 2005; NAIP, 2006; ESRI, 2007; and ESA, 2009

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Figure 3.9-1
Floodplains and Waterways in the Vicinity of the Project Site

Creek diverges from the mainstem of Littlejohns Creek, which is approximately 8 miles east of the project site. The outlet of the watershed flows into French Camp Slough. North Littlejohns Creek is intermittent and mostly conveys floodflows during and after winter storms. In summer months, the creek receives irrigation tail water on an occasional basis.

Weber Slough is an unlined agricultural ditch that flows through the southern half of the project site. Weber Slough only receives intermittent flows, associated with flooding and excess agriculture irrigation water.

Sacramento-San Joaquin Delta

The Sacramento-San Joaquin Delta (Delta) is formed by the confluence of the state's two largest rivers, the Sacramento and San Joaquin Rivers. The Sacramento flows south from its headwaters near Mt. Shasta while the San Joaquin River originates in the southern Sierra Nevada. The Mokelumne and Cosumnes Rivers, located between Stockton and Sacramento, are also included in the Delta's watershed. The Delta watershed drains nearly 50 percent of the state's runoff and serves as one of the state's most valuable fresh water resources. The Delta is highly engineered with numerous leveed islands and tracts, many of which are located west of the City of Stockton. Due to the nature of the Delta as the confluence for a number of waterways, as well as tidal influence within the Delta, flooding is a concern for development in the vicinity of the Delta. Meeting water quality standards within Delta waterways is a major concern in management of the Delta, as it supplies municipal water to a majority of California's population. The project site does not fall within the Primary or Secondary Zones of the Delta, although the waterways that flow from the Project Area eventually discharge to the Delta (City of Stockton, 2007).

San Joaquin River

The San Joaquin River is heavily managed, and is the primary receiving water body for several rivers and streams that flow from the east out of the Sierra Nevada and northward towards the Delta. Its headwater tributaries, the south and middle forks, rise from glacial lakes in the southern Sierra Nevada and flow west toward the Central Valley and then north into the Delta. Regional tributaries that flow from the east and join the main stem include Pixley Slough, Bear Creek, Five Mile Slough, Calaveras River, Mormon Slough, Walker Slough, and French Camp Slough (City of Stockton, 2007). French Camp Slough, which receives flows from North Littlejohns Creek and Weber Slough, flows into the San Joaquin River west of the project site.

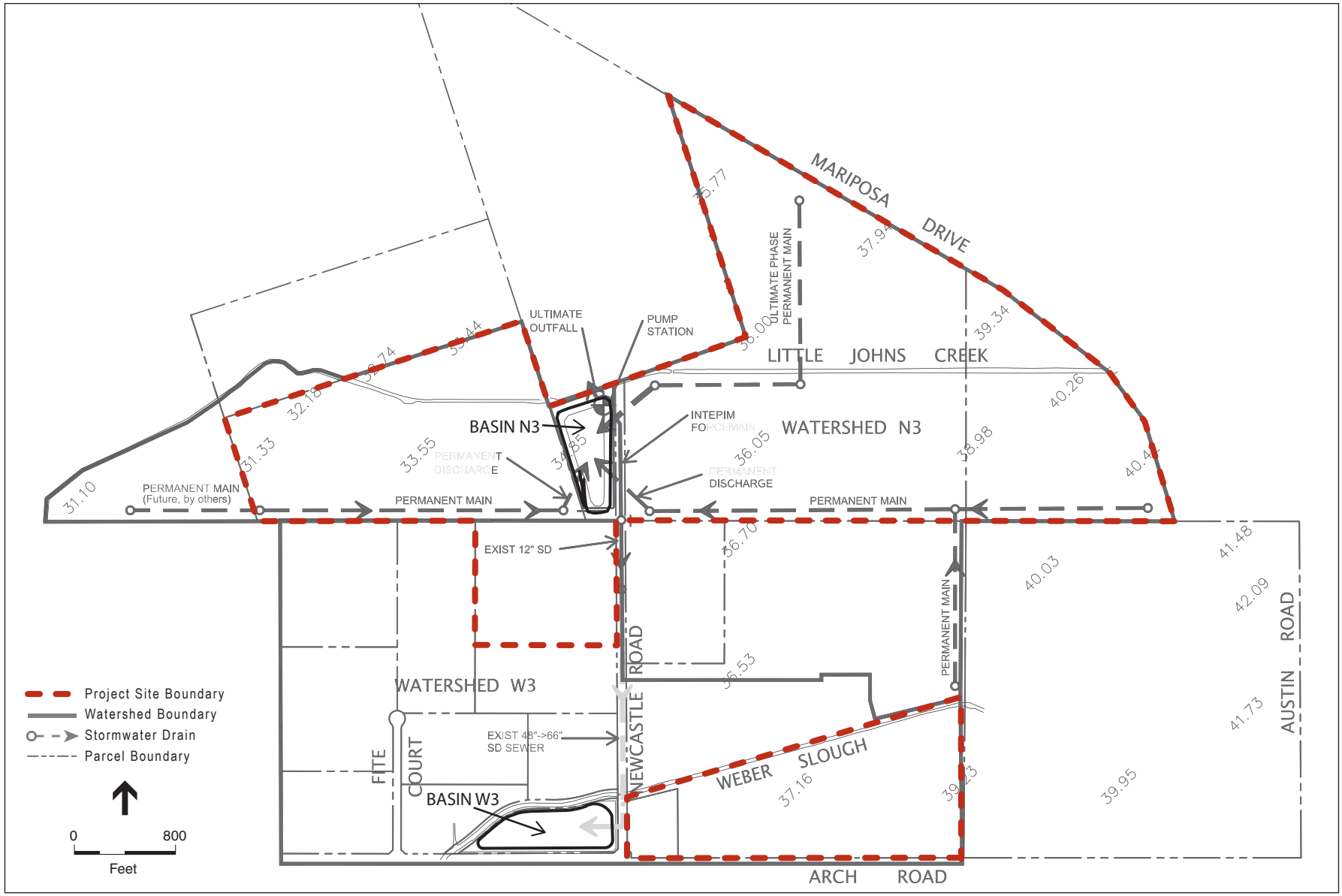
Stormwater Drainage

Urban stormwater drainage in the City of Stockton is provided by a storm drain system that is separate from the municipal sewer system. Storm drain facilities include surface canals and stormwater retention basins, as well as a network of underground gravity and force mains (pipelines), pump stations, and outfalls into rivers, creeks, and the Delta, including outfalls to the San Joaquin River, Bear Creek, Pixley Slough, Mosher Slough, Five Mile Slough, Fourteen Mile Slough, Calaveras River and Stockton Diverting Canal, Smith Canal, French Camp Slough, Walker Slough, Weber Slough, North Littlejohns Creek, and Duck Creek.

As cited in the Storm Drain Master Plan prepared by Kier and Wright (2007), the proposed project is located within two drainage watersheds that were originally defined in the *North Little Johns Creek Study* prepared by Ensign and Buckley (1993) and later amended by A.R. Sanguinetti and Associates (2003). As part of the Storm Drain Master Plan for the NorCal Logistics Center, Kier and Wright amended the boundaries of these watersheds (2007). The two watersheds are denoted as Watershed N3 and Watershed W3. Watershed N3 covers 365 acres and Watershed W3 covers 246 acres. The final boundaries of these watersheds along with the other components of the Storm Drain Master Plan are shown in **Figure 3.9-2**. Existing storm drain facilities currently located on the project site include:

- A pump station that conveys the outflow from Detention Basin W3 into Weber Slough.
- Detention Basin N3 is located at the north end of Newcastle Road and south of North Littlejohns Creek. Currently, Retention Basin N3 is just an excavation with no visible outlet or inlet. Basin N3 will be constructed as part of the proposed project per City Standards and Specifications when development exceeds 50 percent of the developed area.
- A storm drain sewer along Newcastle Road starts at the north end of Newcastle Road with a diameter of 12," increases in diameter to 48"and discharges into Detention Basin W3 through a 66" pipe.

The Storm Drain Master Plan proposes to use some of the existing facilities for ultimate operations of the proposed project. As part of the Master Plan, Retention Basin N3 would be modified as a detention basin and sized to be able to receive runoff from the 365-acre Watershed N3. Its outflow would discharge directly into North Littlejohns Creek. Development is expected to occur within the majority of Watershed N3, except for the riparian corridor along North Littlejohns Creek. Consequently, the watershed area that Detention Basin N3 would serve is effectively 344 acres. The ultimate storage volume for Detention Basin N3 is 113 ac-ft based on maximum water 28.8. This is maximum water surface accommodates future development of the far western portion of watershed. The pump station at Detention Basin N3 would be designed to empty the 113 ac-ft stored volume in 48 hours with an average flow rate of 28 cubic feet per second (cfs). As cited in the Storm Drain Master Plan, the *North Littlejohns Creek Study* prepared by Ensign and Buckley stated that the N3 pump station along with the final designs for Watershed N5 would only allow maximum allowable discharges into North Littlejohns Creek. At the time of peak flows, flows within the Creek would be approximately 66 cfs and 28 cfs at the time of the peak flow within the Creek originating as Watershed N3 runoff (Kier and Wright, 2007). The pump station will be designed with telemetry to shut down when flows exceed 207 cfs in Littlejohns Creek.



SOURCE: Kier & Wright, 2007; and ESA, 2009

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Figure 3.9-2
NorCal Logistics Center
Storm Drain Master Plan

Detention basin (W3) is located adjacent to the project site at the northwest corner of the intersection of Arch Road and Newcastle Road **(see Figure 3.9-2)**. **T**his basin collects drainage from Watershed W3. Currently, the basin is not working at its ultimate capacity, since Watershed W3 is only partially developed and only a portion of its runoff reaches the basin. The detention basin currently has a capacity of 82 ac-ft which accommodates the ultimate watershed of 246 acres. The flow rate, 36 cfs, is designed to empty the basin in 27.6 hours now and 36.3 hours for the ultimate condition. The existing pump station at Detention Basin W3 into Weber Slough is designed to shut down temporarily when the flow in Weber Slough reaches 64 cfs. Weber Slough has a maximum capacity of 100 cfs (Kier and Wright, 2007). Additional storm drain infrastructure necessary to implement the proposed project is described in Chapter 2 "Project Description" (see Table 2-1) of this Draft EIR.

Surface Water Supply

The project site receives water supplies from the City of Stockton Municipal Utilities Department (COSMUD). COSMUD pays for and receives all of its surface water through the wholesale purchase of treated water from Stockton East Water District (SEWD). Surface water supplies for COSMUD comes from several surface water resources in addition to groundwater supplies from the aquifer that lies below the City of Stockton Municipal Area (COSMA). Surface water sources include water from New Hogan Reservoir, New Melones Reservoir, and the Stanislaus River through contracts with Oakdale Irrigation District and South San Joaquin Irrigation District. These sources are conveyed to COSMUD through Stockton East Water District (SEWD). Groundwater supplies are further discussed below under "Groundwater Resources" (COSMUD, 2009).

Delta Water Supply Project

The Delta Water Supply Project (DWSP) includes an application to the State Water Resources Control Board (SWRCB) to divert up to 125,900 AF/year from the Delta, as well as to construct necessary diversion, conveyance, and treatment facilities. On March 8, 2006, the SWRCB issued a water right permit for diversions from the Delta of up to 33,600 AF/year (or 30 million gallons per day (mgd)) from the Delta by COSMUD for use within the Place of Use (1990 General Plan Urban Services Boundary) identified in the Water Right Application. Construction and implementation of Phase 1 of the DWSP has been completed. The DWSP is funded by customer user rates, development fees, and potential federal and state grants. While this infrastructure project does not supply water directly to the project site, the COSMUD identifies it as an important source of water supply the City can depend on (COSMUD, 2009).

Flooding and Dam Inundation

Flood protection for the City is provided by a combination of constructed levees and flood walls. Maintenance of flood prevention infrastructure and related projects is conducted through the San Joaquin Area Flood Control Agency, which is a Joint Powers Authority between the City, San Joaquin County, and San Joaquin County Flood Control and Water Conservation District.

At present, portions of the City have been mapped by FEMA as being within the 100-year floodplain. The project site is almost entirely located within 100-year floodplains for North Littlejohns Creek

and Weber Slough, as shown on **Figure 3.9-1**. Flood depths on the project site range from one to three feet (FEMA, 2002). The project site is also located within the dam inundation areas for Camanche Dam and New Hogan Dam. Consequently, the project site could be exposed to flooding in the unlikely event of dam failure at Camanche or New Hogan Reservoirs (SJCOES, 2003). Based on a review of the Department of Water Resources (DWR) Best Available Maps, the project area has not yet been subject to DWR mapping for the 200-year floodplain. The closest mapped 200-year floodplain to the project is located approximately 4.25 miles to the southwest of the project, along I-5.

Surface Water Quality

Surface water quality is greatly influenced by local land uses, which have historically included rural residential and agricultural uses on the project site. Pollutant sources within the project area include past waste disposal practices (e.g., illicit waste disposal on the project site), urban stormwater runoff, and chemicals and fertilizers applied to agricultural lands. Additionally, oils, grease and other hydrocarbons from agricultural equipment used on the project site could also contribute as pollutant sources from the project site. Typical contaminants include sediment, hydrocarbons and metals, pesticides, nutrients, and litter. Irrigation of the project site, in addition to storm events, likely transported these pollutants into North Littlejohns Creek and Weber Slough.

The State Water Resources Control Board (SWRCB), in compliance with the Clean Water Act, Section 303(d) has prepared a list of impaired water bodies in the State of California (SWRCB 2003). The project site, via North Littlejohns Creek, Weber Slough, and French Camp Slough, indirectly drains into the San Joaquin River. The San Joaquin River, from the Merced River to the south Delta Boundary, is listed as impaired for boron, chlorpyrifos, DDT, diazinon, electrical conductivity, Group A pesticides[1], mercury, and unknown toxicity. These sources of pollution are mainly attributed to agriculture and resource extraction. Downstream waterways within the Delta are also designated as impaired for a variety of contaminants, including pesticides (chlorpyrifos, DDT, diazinon, and Group A pesticides), resulting from agricultural and urban runoff/storm sewers), mercury (from abandoned mine drainage), organic enrichment/low dissolved oxygen (municipal point sources and urban runoff/storm sewers), electrical conductivity, and unknown toxicity (unknown cause) (SWRCB, 2003).

Groundwater Resources

The San Joaquin Valley Groundwater Basin is divided into nine subbasins in the region (DWR, 2003). The project site is located within the Eastern San Joaquin Subbasin. The Eastern San Joaquin Subbasin is bound by the Mokelumne River on the north and northwest, San Joaquin River to the west, the Stanislaus River on the south, and the Sierra Nevada to the east. The project site lies within the area defined by the Eastern San Joaquin Subbasin. The City of Stockton utilizes both surface and groundwater supplies to meet its water supply needs.

[1] Group A Pesticides could include aldrin, deldrin, chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexane (including lindane), endosulfan, and toxaphane.

Groundwater Levels

Groundwater levels in the Eastern San Joaquin Subbasin have been on a relatively continuous decline over the past 40 years with an average loss of 1.7 feet per year. It is estimated that groundwater overdraft during the past 40 years has reduced storage in the basin by as much as two million acre feet (DWR, 2003). Groundwater recharge in the basin occurs in the Delta and along active stream channels where sand and gravel deposits are found. Near the project site, the highest groundwater elevations are generally found near the Delta and the San Joaquin River. Depth to the water table is greater than 5 feet below the ground surface. Additionally, the project site is underlain by a hardpan layer approximately 2 to 3.5 feet below the ground surface (NCSS, 2009).

Since the late 1940s and early 1950s, groundwater extraction to meet agricultural and urban demands has created two pronounced pumping depressions. The larger depression is between the Mokelumne and Stanislaus Rivers. The center of this depression is east of Stockton, where groundwater levels can be more than 70 feet below ground surface level following the irrigation season. This pumping depression has caused poorer water quality from the Delta to migrate toward the City of Stockton. As a result, several municipal wells in west Stockton have been abandoned because of the decline in groundwater quality. The other groundwater depression is between the Cosumnes and Mokelumne Rivers (DWR, 1998).

A conjunctive use program was implemented between Stockton East Water District (SEWD) and COSMUD in the 1970s to address the rapid decline of groundwater elevations and the advancement of salt water intrusion from the west. The water retailers, including COSMUD, within the City of Stockton Metropolitan Area (COSMA) use of groundwater is dependent on the availability of surface water supplies that are treated at the SEWD water treatment plant. In wet years, COSMUD maximizes use of surface water supplies and limits use of groundwater for higher demand months. In dry years, surface water supplies are cut back and reliance on groundwater increases (COSMUD, 2009).

Groundwater Demand

During dry years when surface water availability is limited, groundwater pumping increases to meet municipal demands. In contrast, during average and wet years, the rate of groundwater pumping decreases. In water year 2004, total water use in the Stockton Metropolitan Area was approximately 69,000 AF, with groundwater accounting for approximately 27,000 AF/yr (City of Stockton, 2007). Total groundwater production from the City's South Stockton wells has increased significantly over the last ten years, from about 1,000 AF/yr in 1990 to approximately 5,338 AF/yr in 2003 (City of Stockton, 2007b).

Groundwater level information in the South Stockton area is generally limited, however, the available data suggests that groundwater levels declined from 1988 to 1992, corresponding to a period of drought, and generally recovered in the following years. Thus, from a volumetric perspective, current pumping levels are considered to be within the safe perennial yield. However, this is absent water quality concerns associated with the eastern migration of the saline front[2]. In areas southeast

[2] The saline front refers to saline water intrusion that has been actively occurring along the eastern edge of the groundwater basin, in the vicinity of the City of Stockton, as a consequence continued overdraft. Results from

and outside of the City, groundwater levels are much lower as compared to 40 years ago indicating continued over-pumping, possibly by agricultural and private wells (City of Stockton, 2004). Conservative groundwater extraction practices implemented within COSMUD's service area boundary rely on groundwater to meet maximum day demands and fireflow requirements, and ensure that groundwater is available for use during dry years. In accordance with the City's General Plan and associated technical studies, groundwater extractions are targeted to not go above the long-term operational yield of the basin, which is 0.75 AF/ac/yr in any one year and no more than 0.60 AF/ac/yr over a long term average (COSMUD, 2009).

Groundwater Quality

The majority of the groundwater in the basin is characterized by calcium-magnesium bicarbonate or calcium-sodium bicarbonate types. Large areas of chloride type water occur along the western margin of the subbasin along the San Joaquin River. Based on analyses of 174 water supply wells in the subbasin, total dissolved solids (TDS) ranges from 30 to 1,632 mg/L and averages approximately 310 mg/L. Specific conductance of groundwater ranged from 78 to 5,390 µmhos/cm, with a mean value of 685 and a median of 356. Some of the highest specific conductance values were found along the western part of the subbasin and San Joaquin River alignment (DWR, 2003).

Saline intrusion threatens the groundwater quality in the Stockton area, especially in dry years when groundwater is used more heavily. As a result of declining water levels, a cone of depression has formed creating a gradient that allows saline water underlying the Delta region to migrate northeast within the southern portions of Stockton. Additionally, large areas of elevated nitrate in groundwater exist within the subbasin located southeast of Lodi, south of Stockton, and east of Manteca extending towards the San Joaquin-Stanislaus County line (DWR, 2003). According to the *2007 Drinking Water Quality Report* prepared for the City, drinking water from groundwater meets all drinking water standards set by the state and federal government (City of Stockton, 2007a).

Regulatory Setting

Federal

Clean Water Act

Under the Clean Water Act (CWA) of 1977, the U.S. Environmental Protection Agency (USEPA) seeks to restore and maintain the chemical, physical, and biological integrity in the nation's waters. The statute employs a variety of regulatory and nonregulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The CWA authorizes the USEPA to implement water quality regulations. The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402(p) of the CWA controls water pollution by regulating stormwater discharges into the waters of the U.S. California has an approved state NPDES program. The USEPA has delegated authority for water permitting to the California State Water Resources Control Board (SWRCB), which has nine regional boards. The Central Valley Regional Water Quality Control Board (RWQCB) regulates water quality in the project area.

groundwater monitoring have indicated increased salinity in the City's western wells, and estimated that the eastward movement of the saline front, from 1985 to 1998, was nearly one mile.

Under the requirements of the CWA of 1977 (and the associated NPDES permit program), the City developed a Stormwater Quality Control Criteria Plan (SQCCP) in 2003. The SQCCP is incorporate under the City's Municipal Code and is more fully described below under the "Local Regulatory Setting" section.

State

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act, as revised in December 2007, provides for protection of the quality of all waters of the state for use and enjoyment by the people of California. It further provides that all activities that may affect the quality of waters of the state shall be regulated to obtain the highest water quality that is reasonable, considering all demands being made and to be made on those waters. The Act also establishes provisions for a statewide program for the control of water quality, recognizing that waters of the state are increasingly influenced by interbasin water development projects and other statewide considerations, and that factors such as precipitation, topography, population, recreation, agriculture, industry, and economic development vary regionally within the state. The statewide program for water quality control is therefore administered most effectively on a local level, with statewide oversight. Within this framework, the Act authorizes the State Water Resources Control Board and regional boards to oversee responsibility for the coordination and control of water quality within California.

State Water Resources Control Board and Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) administers water rights, water pollution control, and water quality functions throughout the state, while the Regional Water Quality Control Board (RWQCB) conducts planning, permitting, and enforcement activities. The project would be subject to review under provisions of the RWQCB. The project site lies within the jurisdiction of the Central Valley RWQCB (Region 5 or the CVRWQCB).

Basin Plan

The Central Valley RWQCB has prepared a Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins. The Basin Plan identifies water quality standards that are based on identified beneficial uses, the water quality objectives based on those uses. Beneficial uses listed for surface water bodies in the vicinity of the project site include municipal and domestic supply, agriculture supply, wildlife habitat, warm and cold freshwater habitat, contact and non-contact recreation, warm and cold water migration of aquatic organisms, warm and cold water spawning, industrial process and service supply, and groundwater recharge.

Water quality objectives for all surface waters in the region have been set concerning bacteria, bioaccumulation, biostimulatory substances, color, dissolved oxygen, floating material, oil and grease, population and community ecology, pH, salinity, sediment, settleable material, suspended material, sulfide, tastes and odors, temperature, toxicity, turbidity, and ammonia. Water quality objectives for groundwater include standards for bacteria, chemical constituents, radioactivity, tastes and odors, and toxicity (RWQCB, 1998).

Construction Activity Permitting

The CVRWQCB administers the National Pollution Discharge Elimination System (NPDES) storm water permitting program in the Central Valley region. Construction activities of one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The project applicant must submit a Notice of Intent (NOI) to the SWRCB to be covered by the General Permit prior to the beginning of construction. The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) before construction begins. Required elements of a SWPPP include:

1. Site description addressing the elements and characteristics specific to the site;
2. Descriptions of Best Management Practices (BMPs) for erosion and sediment controls;
3. BMPs for construction waste handling and disposal;
4. Implementation of approved local plans;
5. Proposed post-construction controls; and
6. Non-stormwater management.

A SWPPP generally includes specifications for BMPs that would be implemented during project construction to control contamination of surface flows through measures to prevent the potential discharge of pollutants from the construction area. A SWPPP may also describe measures to prevent or control pollutants in runoff after construction is complete and identify a plan to inspect and maintain these facilities or project elements. Plan implementation starts with the commencement of construction and continues though the completion of the project.

Consistent with Plan and City of Stockton requirements, the project applicant (or subsequent property owners) will be required to file an NOI with the SWRCB prior to commencement of all construction activity. Upon receipt of the completed NOI the property owner will be sent a receipt letter containing the Waste Discharger's Identification Number (WDID). The City requires Waste Discharger's Identification Number (WDID) from the SWRCB to be submitted prior to issuance of a Grading Permit or plan approval. An Erosion Control plan is also required to be incorporated into the project plans and/or grading plans prior to approval. The SWPPP is required to be available on the job-site at all times.

SB 610

Under Senate Bill 610 (codified as California Water Code, Section 10910-10915), each public water system responsible for serving proposed projects meeting specific criteria (e.g., residential projects of more than 500 residential dwelling units or industrial park projects occupying more than 40 acres) must prepare a Water Supply Assessment (WSA) to evaluate whether the water system's "total projected water supplies . . . will meet the projected water demand associated with the proposed project," together with existing and other foreseeable planned future uses over a twenty-year horizon. If, as a result of its assessment, the public water system concludes that its water supplies are not sufficient, the assessment must detail its plans in acquiring the necessary water supplies.

A Water Supply Assessment was prepared for the proposed project, and is included in this document as **Appendix D**.

Senate Bill 5 (200-Year Floodplain Requirements)

Senate Bill 5 (SB 5) was signed into law in October, 2007. SB 5 updates the California Health & Safety Code to require DWR to propose updated requirements to the California Building Standards Code. Under the requirement, proposed construction must consider the 200-year flood event (i.e., 0.5% chance of annual recurrence) within certain Central Valley geographies, including the project area. The California Building Standards Commission (BSC) has promulgated updated requirements for areas where flood depths during a 200-year flood event would exceed 3 feet in depth. BSC's updated requirements are contained in the California Building Standards Code, as applicable.

Local

City of Stockton General Plan 2035

The City of Stockton General Plan 2035 includes the following goals and policies regarding water resources, water quality, drainage, and flooding:

Goal LU-5 To encourage, facilitate, and assist the location of new industry, and the expansion of existing industry.

Policy LU-5.1 The City shall encourage industrial activities to locate where municipal services are available including adequate sanitary, storm drainage and water facilities as well as easy access to multiple modes of transportation.

Goal PFS-4 To manage stormwater in a manner that is safe and environmentally sensitive to protect people and property and to maintain the quality of receiving waters.

Policy PFS-4.1 Creek and Slough Capacity. The City shall require detention storage with measured release to ensure that the capacity of downstream creeks and sloughs will not be exceeded.

To this end:

- Outflow to creeks and sloughs shall be monitored and controlled to avoid exceeding downstream channel capacities;
- Storage facilities shall be coordinated and managed to prevent problems caused by timing of storage outflows.

Policy PFS-4.2 Watershed Drainage Plans. The City shall require the preparation of watershed drainage plans for proposed developments within the urban services boundary. These plans shall define needed improvements and estimate construction costs for these improvements. The plans will also identify a range of feasible measures that can be implemented to reduce all public safety and/or environmental impacts associated with the construction, operation, or maintenance of any required drainage improvements (i.e., drainage basins, etc.).

Policy PFS-4.3 Best Management Practices. The City shall require, as part of watershed drainage plans, Best Management Practices (BMPs), to reduce pollutants to the maximum extent practicable.

- As of November 25, 2003, the City shall require that all new development and redevelopment projects to comply with the post-construction Best Management Practices (BMPs) called for in the Stormwater Quality Control Criteria Plan (SWQCCPP), as outlined in the City's Phase 1 Stormwater NPDES permit issued by the California Water Quality Control Board, Central Valley Region (Order No. R5-20020-0181). Also the owners, developers, and/or successors-in-interest must establish a maintenance entity acceptable to the City to provide funding for the operation, maintenance, and replacement costs of all post-construction BMPs.
- The City shall require, as part of its Storm Water NPDES Permit and ordinances, to implement the Grading Plan, Erosion Control Plan, and Pollution Prevention Plan (SWPPP) during construction activities of any improvement plans, new development and redevelopment projects for reducing pollutants to the maximum extent practicable.

Policy PFS-4.7 Storm Water Discharge. The City shall require for new development within the horizontal surface boundary of the Stockton Metropolitan Airport that any storm water detention basin be designed to discharge as rapidly as possible to minimize the attraction of birds in the vicinity of the airport.

Policy PFS-4.8 Low Impact Development. The City shall incorporate low impact development (LID) alternatives for stormwater quality control into development requirements. LID alternatives will include: (1) conserving natural areas and reducing imperviousness, (2) runoff storage, (3) hydro-modification (to mimic pre-development runoff volume and flow rate), and (4) public education.

Goal HS-6 To minimize the risk to the community from flooding.

Policy HS-6.1 New Urban Development. The City shall approve new urban development only when the project is shown to be protected from a 100-year flood.

Policy HS-6.3 Preservation of Floodway and Floodplains. The City shall preserve floodways and floodplains for non-urban uses, except that development may be allowed in a floodplain with mitigation measures that are in conformance with the City's floodplain management program.

City of Stockton Stormwater Quality Control Criteria Plan

In 2002, the City and urbanized portions of the County received a Phase I municipal NPDES permit (Order No: R5-2002-0181) issued by the (RWQCB) for stormwater discharges from the Stockton Urbanized Area, which encompasses the stormwater drainage system operated by the City, the urbanized areas of the County that are enclosed within the City, and the urbanized areas of the County that surround the City.

The 2002 NPDES permit required the City and the County to develop, administer, implement, and enforce a Planning and Land Development Program to reduce pollutants in runoff from new development and redevelopment to the maximum extent practicable (MEP). To address this requirement, the City and the County developed separate SWQCCPs in 2003. The City's SWQCCP was revised in 2005 and again in 2008.

In 2009, a joint SWQCCP for the City and County of San Joaquin (County) was prepared to reflect new municipal stormwater NPDES permit requirements with a special emphasis on the implementation of low impact development (LID) strategies. The 2009 SWQCCP was prepared to accomplish the following goals:

- Protect the waters of the City of Stockton and County of San Joaquin from the adverse impacts of urban stormwater runoff;
- Ensure that the implementation of the measures in the 2009 SWQCCP is consistent with NPDES permit and other State requirements;
- Provide clear development standards for developers, design engineers, agency engineers, and planners to use in the selection and implementation of appropriate stormwater control measures;
- Integrate LID strategies; and
- Provide maintenance procedures to ensure that the selected control measures will be maintained to provide effective, long-term pollution control.

The proposed project is defined as a development project that is subject to the various stormwater control measures outlined in the SWQCCP. The control measures, often termed Best Management Practices or BMPs, described in the 2009 SWQCCP have been developed to optimize post-construction, on-site stormwater pollution control. All Priority New Development and Significant Redevelopment Projects must apply all four categories of stormwater pollution controls measures:

- Site Design Controls (conservation of natural areas, protect slopes/channels, and minimize impervious surface);
- Source Controls (storm drain messaging, outdoor vehicle storage/fueling/washing design);
- Volume Reduction Measures (examples include: rain gardens, vegetated roof, grassy channel, and interception trees); and
- Treatment Controls (examples include: LID and conventional treatment controls, bio-retention, constructed wetlands, detention basins, etc.).

Consistency with the City's SWQCCP water quality regulations requires that project applicants/owners address all four categories of storm water pollution control measures and ensure the future maintenance of the Storm Water Best Management Practices. If necessary, project applicants/owners shall enter into an access and maintenance agreement with the City and pay all associated storm water fees prior to building occupancy.

City of Stockton Flood Damage Prevention Ordinance, Chapter 13 Part IV

The Flood Damage Prevention Ordinance contains specific requirements for development in flood prone areas of the City. Where existing development and urban land use designations are located in a flood plain, the following are some of the methods intended to minimize hazards to life and property:

- New construction and improvements shall be constructed so that there are adequate drainage paths around structures on slopes to guide flood waters around and away from proposed structures;
- In an AO Zone, structures shall be elevated at least two feet above the highest adjacent grade to a height equal to or exceeding the depth number specified in feet on the FIRM or elevated at least four feet above the highest adjacent grade if no depth number is specified;
- All new construction shall be certified by a registered professional engineer or architect that the standards of the Ordinance are satisfied and such certification shall be provided to the Floodplain Administrator; and
- All new construction and substantial improvements with fully enclosed areas below the lowest floor (excluding basements) that are used solely for parking of vehicles, building access or storage, and which are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwater.

3.9.3 Impacts and Mitigation Measures

Methodology

This section addresses impacts related to hydrology, groundwater, water quality, and drainage/floodplains that could result from implementing the proposed project. The analysis focuses on foreseeable changes to baseline conditions, in accordance with significance criteria listed below. Potential for flooding was assessed using FEMA flood insurance rate maps, in combination with local investigations of flood heights. A Water Supply Assessment was prepared for the proposed project, which determined whether or not sufficient water supplies would be available for buildout of the proposed project. The Water Supply Assessment is included in this document as **Appendix D**.

Significance Criteria

Consistent with Appendix G of the CEQA *Guidelines* and the professional judgment of City staff and the EIR consultant, the project would result in a significant impact if it would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater water quality;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would decline to a level which would not support existing land uses or planned uses for which permits have been granted);

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or offsite;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, cause flooding on- and off-site, or provide substantial additional sources of polluted runoff;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map;
- Expose people or structures to a significant risk of loss, injury or death including flooding as a result of the failure of a levee or dam;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows; or
- Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

Impacts and Mitigation

Impact 3.9.1: Construction and operation of the proposed project would involve activities that have the potential to substantially degrade water quality and/or violate water quality standards. *(Potentially Significant)*

Proposed project construction involves development of industrial land uses (including utility and roadway infrastructure) on approximately 308 acres. Implementation of the proposed project could result in development of up to 6.3 million square feet of building space. The proposed project would also create approximately 252 acres of impervious surfaces as paved areas where there is currently open space and agricultural lands. Impervious surfaces prevent infiltration of stormwater runoff, and can contribute additional sediment, oils, and other residues or pollutants to stormwater. Without protective measures, these pollutants could be routinely discharged into the project site's drainage system and ultimately to natural waters, resulting in a potentially significant level of water quality degradation.

Construction would include scraping, grading, earth moving, and other construction related activities. These actions, if not properly managed, could generate stormwater or other runoff that is polluted with debris, sediment, oils, greases, heavy metals, fuels, and other potential pollutants associated with construction activities. These potential pollutants could then migrate with runoff from the site and result in contamination or sedimentation in receiving waters, including North Littlejohns Creek and Weber Slough which connect to French Camp Slough and, eventually, the San Joaquin River. Urban pollutants are a source of pollutants that contribute to impairment of Delta waterways. Existing stormwater flows on the project site would most likely contain sediments and traces of agricultural chemicals, such as pesticides and fertilizers. During operation of the proposed project, contaminants in storm water runoff from the project site are expected to be similar to pollutant concentrations

typical of urban development, including transportation-related pollutants such as oil and fuels, brake dust, and settled particulates; leaching of oils or other chemicals from paved surfaces; increased sediment; and trash.

Two detention basins already in place serve the project site. These detention basins (see "Stormwater Drainage" above) capture all stormwater runoff that originates on the project site. With these existing drainage facilities, the proposed project will not result in discharges of polluted or potentially polluted water to Weber Slough. Without protective measures during construction and operation of the proposed project, water quality impacts associated with discharge of stormwater runoff from project facilities is considered ***potentially significant***.

Mitigation Measures

Measure 3.9.1: Implement Best Management Practices from Stormwater Pollution Prevention Plan. The applicant shall renew its existing Stormwater Pollution Prevention Plan (SWPPP) for construction and operation of the proposed project for compliance with required NPDES construction permitting, and to reduce the intensity of potential water quality impacts associated with operation of the proposed project. The SWPPP shall identify all pollutant sources that may affect the quality of stormwater discharge, and shall require the implementation of Best Management Practices (BMPs) to reduce pollutants in storm water discharges during construction and operation.

BMPs may include, but would not be limited to:

- Excavation and grading activities shall be scheduled for the dry season only (to October 14), to the extent possible. This will reduce the chance of severe erosion from intense rainfall and surface runoff.
- If excavation occurs during the rainy season, storm runoff from the construction area shall be regulated through a storm water management/erosion control plan that shall include temporary onsite silt traps and/or basins with multiple discharge points to natural drainages and energy dissipaters. Stockpiles of loose material shall be covered and runoff diverted away from exposed soil material. If work stops due to rain, a positive grading away from slopes shall be provided to carry the surface runoff to areas where flow would be controlled, such as the temporary silt basins. Sediment basins/traps shall be located and operated to minimize the amount of off-site sediment transport. Any trapped sediment shall be removed from the basin or trap and placed at a suitable location on-site, away from concentrated flows, or removed to an approved disposal site.
- Temporary erosion control measures (such as fiber rolls, staked straw bales, detention basins, check dams, geofabric, sandbag dikes, and similar measures) shall be provided until construction is complete or landscaping is established and can minimize discharge of sediment into nearby waterways. All storm drains shall be protected from sedimentation using such measures.
- Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures.
- No disturbed surfaces will be left without erosion control measures in place during the rainy season, from October 15th through April 30th.

- Erosion protection shall be provided on all cut-and-fill slopes. Landscaping shall be initiated as soon as possible after completion of grading and prior to the onset of the rainy season (by October 15).
- Construction-related stormwater BMPs selected and implemented for the project shall be in place and operational prior to the onset of major earthwork on the site. The construction phase facilities shall be maintained regularly and cleared of accumulated sediment as necessary. Operation-related stormwater BMPs shall be incorporated into project design and fully implemented prior to completion of construction and associated activities for the project. Effective mechanical and structural BMPs that could be implemented at the project site include the following:
    - Mechanical storm water filtration measures, including oil and sediment separators or absorbent filter systems such as the Stormceptor® system, can be installed within the storm drainage system to provide filtration of storm water prior to discharge.
    - Vegetative strips, high infiltration substrates, and grassy swales can be used where feasible throughout the development to reduce runoff and provide initial storm water treatment.
    - Drains shall discharge to natural surfaces, swales, or other stormwater retention features to avoid excessive peak stormwater flows.
    - The water quality detention basins during construction shall be designed to provide effective water quality control measures including the following:
        - Maximize detention time for settling of fine particles;
        - Establish maintenance schedules for periodic removal of sedimentation, excessive vegetation, and debris that may clog basin inlets and outlets;
        - Maximize the detention basin elevation to allow the highest amount of infiltration and settling prior to discharge.
- Hazardous materials such as fuels and solvents used on the construction sites shall be stored in covered containers and protected from rainfall, runoff, vandalism, and accidental release to the environment. All stored fuels and solvents will be contained in an area of impervious surface with containment capacity equal to the volume of materials stored. A stockpile of spill cleanup materials shall be readily available at all construction sites. Employees shall be trained in spill prevention and cleanup, and individuals shall be designated as responsible for prevention and cleanup activities.
- Equipment shall be properly maintained in designated areas with runoff and erosion control measures to minimize accidental release of pollutants.

Impact Significance after Mitigation: Implementation of the best management practices outlined in mitigation measure 3.9.1 would result in potential discharges of pollutants during runoff events being substantially reduced. Additionally, these practices would minimize the load of contaminants released to receiving waters. Therefore, the residual water quality impact during construction and operation of the proposed project would be ***less than significant***.

Impact 3.9.2: Implementation of the proposed project could substantially deplete groundwater via increased withdrawal or substantial interference with groundwater recharge. *(Less-than-Significant)*

As discussed above, water supply for the project site is provided by COSMUD. COSMUD receives water supplies from surface water and groundwater sources. The WSA prepared for the proposed project concluded that the proposed project's water demand would be met by existing water supplies in addition to water supply obtained through the DWSP. Assuming that the proposed project would use less than 0.75 AF/ac/yr, the WSA concluded that the proposed project would not have a negative effect on regional groundwater elevations as a result of increased withdrawal of water. Additionally, as the proposed project would simply subdivide existing lots already approved for industrial development, no additional impervious surfaces, beyond those currently approved, are associated with the proposed project. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measures

None required**.**

Impact 3.9.3: Implementation of the proposed project could result in increased drainage flows as a result of the introduction of impervious surfaces. Additional runoff generated by the proposed project could exceed the capacity of on- and off-site drainage systems, create localized flooding, and contribute to flooding in down-gradient locations*. (Less-than-Significant)*

The proposed project includes construction of approximately 6.3 million square feet of building space for Phase 1, and a total of approximately 252 acres of impervious surfaces (e.g., pavement, concrete, and asphalt) on existing open space and agricultural land. As identified in Chapter 2, "Project Description," and discussed above under "Stormwater Drainage", the proposed project would utilize existing detention and drainage facilities to detain stormwater runoff from the project site. Releases from these facilities into the receiving waters, Weber Slough and North Littlejohns Creek, are designed to not exceed the capacity of these waterways. Release rates to North Littlejohns Creek and Weber Slough from the detention basins are designed to ensure no increased risk of downstream flooding by use of telemetry and reducing pumped flows during peak flow events within Weber Slough and North Littlejohns Creek. The hydrologic modeling that was completed for the Stormwater Master Plan incorporated flood flows along these waterways. The construction of buildings and improvements in the waterway will need to comply with FEMA Zone AO flood requirements, by not decreasing existing flood volume storage from existing conditions. Consequently, this impact is considered ***less- than- significant***.

Mitigation Measures

None required**.**

Impact 3.9.4: According to current flood hazard maps (2002) prepared by FEMA, the project site is located inside the 100-year flood zone. ***(Less-than-Significant)***

A majority of the project site is located in FEMA designated Zone AO, where flood depths can reach one or more feet deep. The project site is also located within the dam inundation zone for Camanche Dam and New Hogan Dam. As discussed above, the City of Stockton has adopted a Flood Damage Prevention Ordinance, which outlines specific requirements for new development within floodplain areas. The proposed project would be constructed in compliance with the City of Stockton Flood Damage Prevention Ordinance. All building finished floor elevations would be designed and constructed to be at least two feet above the highest adjacent grade to a height equal to or exceeding the flood depth number specified in feet on the FEMA floodplain map. The floodplain map identifies flood levels on the project site to range from one to three feet.

Construction of the proposed project, in order to comply with City of Stockton requirements, would require the import of substantial amounts of fill to raise the proposed facilities out of the existing flood zone. In the event of flooding associated with a 100-year event, the fill associated with the proposed facilities would be anticipated to displace or redirect flood flows. As a result, flood flows could be routed into adjacent areas that are currently located outside of the existing floodplain, and additional people or structures outside of the project site could be exposed to flooding. Contributions of additional stormwater discharge associated with impervious surfaces for Phase 2 could exacerbate this problem. As discussed previously, 200-year floodplain mapping has not been completed for the project area.

As discussed above, the Stormwater Master Plan prepared for the proposed project would minimize the potential flooding impacts from introducing impervious surfaces and buildings in the floodplain by creating detention basins that would detain additional stormwater runoff from the project site. Consequently, this impact is considered ***less-than-significant***.

Mitigation Measures

None required.

Impact 3.9.5: The project would not result in the increased exposure of people or structures risks associated with inundation by seiche, tsunami, or mudflow. ***(Less-than-Significant)***

Tsunamis originating in the Pacific Ocean would dissipate in the San Francisco Bay, and therefore pose a negligible hazard to the project site. The probability of a seiche occurring in the San Joaquin River or in one of the many upstream reservoirs is considered minimal. Given the geologic context of the project area, if such an event were to occur, the likelihood of it exposing project facilities or people to a significant risk of injury or death is considered low since the project site is approximately 3 miles from the San Joaquin River and is not located adjacent to an existing reservoir, lake, or other large standing water body. Finally, the project site is nearly level, with little or no risk of mudflow. Based on these findings, impacts associated with these hazards are considered ***less-than-significant***.

Mitigation Measures

None required.

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CHAPTER 4
Alternatives

4.1 Introduction

The purpose of the alternatives analysis in an EIR is to describe a range of reasonable alternatives to the project or to the project location that could feasibly attain most of the project's objectives, but would avoid or substantially lessen any of the significant effects of the project, and to evaluate the comparative merits of the alternatives (CEQA Guidelines Section 15126.6(a)).

Additionally, CEQA Guidelines Section 15126.6(b) requires consideration of alternatives that could reduce to a less-than-significant level or eliminate any significant adverse environmental effects of the proposed project, including alternatives that may be more costly or could otherwise impede to some degree the attainment of the project's objectives. The range of alternatives considered must include those that offer substantial environmental advantages over the proposed project and may be feasibly accomplished in a successful manner considering economic, environmental, social, technological, and legal factors.

4.1.1 Factors in Selection of Alternatives

The CEQA Guidelines suggest, but do not explicitly require, that an EIR should briefly describe the rationale for selecting the alternatives to be discussed, identify any alternatives that were considered by the lead agency but were rejected as infeasible, and briefly explain the reasons underlying the lead agency's determination (CEQA Guidelines Section 15126.6(c)).

The alternatives addressed in this EIR were selected in consideration of one or more of the following factors:

- The extent to which the alternative would accomplish most of the basic goals and objectives of the project (See Chapter 2, "Project Description");
- The extent to which the alternative would avoid or lessen any of the identified significant environmental effects of the project;
- The feasibility of the alternative, taking into account site suitability, economic viability, availability of infrastructure, General Plan consistency, and consistency with other applicable plans and regulatory limitations;
- The appropriateness of the alternative in contributing to a "reasonable range" of alternatives necessary to permit a reasoned choice; and

- The requirement of the CEQA Guidelines to consider a "no project" alternative and to identify an "environmentally superior" alternative in addition to the no project alternative (CEQA Guidelines Section 15126.6(e)).

While consideration was given to the development of a range of feasible alternatives for analysis in this EIR, it is important to note the unique nature of this project. As more fully described in Chapter 2 "Project Description" of this EIR, the project site is currently designated by the City's General Plan as "Industrial" (I), and under the City's Zoning as "Industrial Limited" (IL). Under this designation and zoning, Industrial uses are permitted "as of right," the only City permit needed is a Building Permit, no City discretion is involved in the issuance of such Building Permits, and hence compliance with (CEQA) does not normally apply. However, several ministerial planning reviews are required prior to any submittal of a building permit application; these include site plan and architectural design review. The project applicant has already developed a portion of the project site with Industrial uses. The applicant now proposes the subdivision of a portion of the project site to allow greater user flexibility (ownership of the land versus leasing of the land), although the creation of new lots on the project site will not change the Industrial uses allowed, nor the density or intensity of that Industrial use.

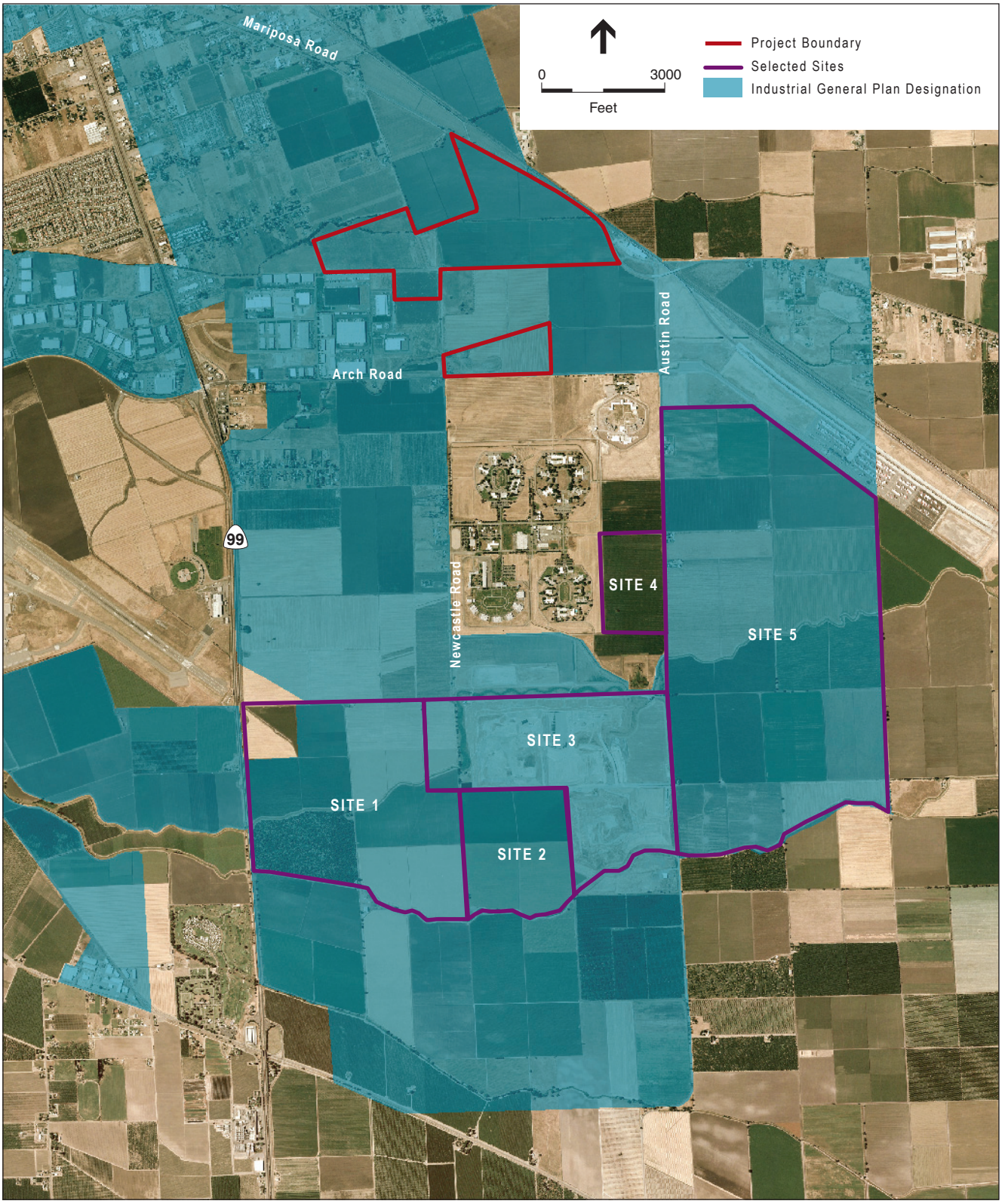
4.1.2. Alternatives Identified but Rejected as Infeasible

A lead agency may make an initial determination as to which alternatives are feasible and merit in-depth consideration and which do not. Alternatives that are remote or speculative or the effects of which cannot be reasonably predicted need not be considered. However, alternatives may not be rejected merely because they are beyond an agency's authority, would require new implementing legislation, or would be too costly (CEQA Guidelines Section 15126(f) (2)). The following alternatives were considered by the Lead Agency but rejected as infeasible.

Offsite Alternative

In the process of identifying feasible alternatives, five alternative locations were considered (see **Figure 4-1** for the location of offsite alternatives examined). These sites were selected on the basis of location (south Stockton), street access, for being within the 2035 General Plan area, and a lack of existing development. However, each offsite alternative was found infeasible due to the following:

- The parcels contained within Site 1 are designated for industrial uses in the City of Stockton General Plan and appear to be available for development. However, the north and south forks of South Littlejohns Creek traverse the site, creating biological impacts equal to or more severe than the proposed project. No other significant impacts would be reduced under this alternative.
- Site 2 is under currently Williamson Act contract, removal of which would create potentially significant impacts. In addition, the site is not large enough to meet project objectives. Site 2 is therefore considered infeasible.



SOURCE: NAIP, 2006; ESRI, 2007; and ESA, 2009

NorCal Logistics Center . 210506

Figure 4-1
Offsites Examined

- Site 3 is outside the City limits, and would require an annexation. This may be difficult, as the site is not contiguous to the City, the site is separated by the correctional facility, and there have been recent concerns expressed at LAFCO regarding fire response service to large annexations in that area.
- Site 4 is designated for Institutional uses in the City of Stockton General Plan and would therefore require a General Plan Amendment (GPA) prior to development. Alternatives that would require a change in land use policy by the lead agency are considered infeasible.
- The parcels which comprise Site 5 are outside the City of Stockton's Sphere of Influence (SOI). Similar to Site 4, above, this site would acquire an amendment to a land use policy, by making parcels available for development before land within the SOI has been developed in an orderly fashion. Therefore, Site 5 is considered infeasible.

Additionally, it is important to note, that the project applicant has ownership of the proposed project site and does not have ownership of the offsite parcels considered above.

4.2 Alternatives Evaluated in the EIR

4.2.1 Alternative 1 – No Project Alternative

Description

The No Project Alternative is defined as the continuation of the existing condition (baseline) and trends in the project area. This alternative would involve no discretionary action on the part of the City of Stockton for development of the project site. As discussed in the project description, the project site is currently designated by the City's General Plan as "Industrial" (I), and under the City's Zoning as "Industrial Limited" (IL). Under this designation and zoning, light industrial uses are permitted "as of right," the only City permit needed is a Building Permit, no City discretion is involved in the issuance of such Building Permits, and hence the California Environmental Quality Act (CEQA) does not apply. Under this alternative, industrial development would still occur on the project site; however, the proposed property subdivision would not take place, as described in Chapter 2, "Project Description."

Basis for Selection

The No Project Alternative is included in this EIR because CEQA Guidelines Section 15126.6(e) (1) requires that an EIR evaluate a "no project" alternative along with its impact in order to provide a comparison of the impacts of approving the proposed project with the impacts of not approving the proposed project. Pursuant to CEQA Guidelines Section 15126.6(e) (3) (b), the No Project Alternative discusses "the property remaining in its existing state."

Distinctive Environmental Characteristics

The following summarizes potential impacts of the "No Project" alternative and compares them to the impacts of the proposed project:

Aesthetics

Under the No Project Alternative, new industrial uses would still occur on the project site; therefore visual impacts would be similar to that of the proposed project.

Agricultural Resources

Under the No Project Alternative, the permanent conversion of land designated by the Department of Conservation FMMP would still occur. Agricultural operations have ceased on the project site; therefore, there would be no change in the agricultural productivity of the project site under this alternative. Because the project site is designated for industrial uses in the City's General Plan it was anticipated that agricultural operations would no longer continue on the project site.

Air Quality

Under the No Project Alternative, air emissions from the proposed operation, including haul trucks, would still occur. Therefore, ongoing air quality impacts would not be avoided under the No Project Alternative.

Biological Resources

The potential for onsite impacts to biological resources under the No Project Alternative would be similar to those associated with the proposed project due to the physical changes to the site.

Cultural Resources

The No Project Alternative would allow continued industrial development on the property. Soil disturbance would likely occur at depth beyond past agricultural practices. Therefore, the potential for damage to archaeological and historic resources from deep excavations could occur under the No Project Alternative.

Climate Change

Under the No Project Alternative, energy use within the project site would continue to increase due to the development of new industrial land uses. Similar to the proposed project, additional energy use and associated greenhouse gas emissions (onsite, mobile, and indirect) would occur.

Geology and Soils

Because new industrial development would still occur under the No Project Alternative, impacts to the site's geology, topography, and soils would be similar to that of the proposed project.

Hazards and Hazardous Materials

Similar to the proposed project, the new industrial development that would still occur under the No Project Alternative would require the use of fuels, lubricants and solvents for construction and machinery maintenance. Therefore this impact would be similar to that of the proposed project.

Hydrology and Water Quality

The potential for hydrology and water quality impacts under the No Project Alternative would be similar to the proposed project, as some alteration of existing drainage would occur, and new discharge sources would be created.

Land Use

As discussed above, the project site is currently designated by the City's General Plan as "Industrial" (I), and under the City's Zoning as "Industrial Limited" (IL). Under this designation and zoning, Industrial uses are permitted "as of right," the only City permit needed is a Building Permit, no City discretion is involved in the issuance of such Building Permits, and hence CEQA does not apply. Under the No Project Alternative, new industrial land uses would also occur on the project site. The only difference between the No Project Alternative and the proposed project is that land subdivision would not occur under the No Project Alternative.

Noise

Under the No Project Alternative, some degree of new development (consistent with the industrial land use/zoning) would occur. Consequently, traffic and stationary noise sources would likely be similar to those identified for the proposed project.

Public Services, Utilities and Recreation

Under the No Project Alternative, there would be no change in impacts to public services, utilities (including energy consumption and use), and recreation/park facilities. Industrial uses resulting under the No Project Alternative or from the proposed project will require new and expanded public services and utilities.

Transportation and Circulation

Under the No Project Alternative, trip generation and distribution to/from the project site would be similar to that of the proposed project. However, internal roadways and site access may be different due to the lack of parcel subdivision and no connection between Arch Road and Mariposa Road would be created, which could increase congestion in the surrounding road network, especially the intersection of Austin Road and Arch Road.

4.2.2 Alternative 2 – No Development North of Littlejohn's Creek

Description

Alternative 2 would provide for an industrial development south of Littlejohn's Creek only. This Alternative would eliminate the extension of Newcastle Road and its future connection to Mariposa Road.

Basis for Selection

This alternative is included in the EIR to provide a basis for comparing the impacts of a smaller industrial development on the project site which eliminates the need to connect Newcastle Road to Mariposa Road, while maintaining the industrial uses allowed under the existing zoning.

Distinctive Environmental Characteristics

Aesthetics

With a smaller development footprint under this alternative, impacts under this alternative would be similar (although slightly reduced) compared to the proposed project. Light and glare impacts would be slightly reduced (still significant and unavoidable) under this alternative.

Agricultural Resources

Approximately 230 acres of Important Farmland would be converted to industrial uses with implementation of the proposed project. Although Alternative 2 would reduce the project's footprint, agricultural lands would still be converted under this alternative; therefore this impact would be substantially reduced, but still significant.

Air Quality

The elimination of development north of Littlejohn's Creek would reduce construction and operation related emissions by approximately 30%, however the reduced project would still result in significant emissions of criteria pollutants including ROG, NOx, and PM10; therefore, air quality impacts resulting from this alternative development would remain significant.

Biological Resources

Impacts to Biological Resources are considered less than significant under the proposed project. Impacts would be reduced under this alternative and are also considered less than significant.

Cultural Resources

Although the affected area would be reduced under Alternative 2, impacts to Cultural Resources (accidental discovery of unknown underground resources) would remain similar (although slightly reduced) compared to those of the proposed project.

Climate Change

Alternative 2 would reduce the net new building square footage as well as the vehicle trip generation and therefore would reduce the project's annual greenhouse gas emissions by approximately 30%, to approximately 51,000 metric tons of CO2 per year. Greenhouse gas emissions would remain potentially significant.

Geology and Soils

The total building area would be reduced under the Alternative 2. As the soil and geological conditions on are similar under this alternative, impacts to Geology and Soils would be similar to those of the proposed project.

Hazards and Hazardous Materials

Hazards and Hazardous Materials related impacts would be similar, although slightly less due to reduced building area (and therefore reduced industrial activity) to those of the proposed project.

Hydrology and Water Quality

These impacts would be similar to those of the proposed project; however because the project's footprint would be smaller there would be a reduced need for stormwater detention.

Land Use

Both the proposed project and Alternative 2 are consistent with the Stockton 2035 General Plan. Land use impacts, which are less-than-significant (with mitigation) for the proposed project, would be similar under this alternative.

Noise

Noise related impacts would likely be similar to those of the proposed project; however they may be reduced due to the elimination of vehicle trips generated by this alternative.

Public Services, Utilities and Recreation

Impacts to public services, utilities (including energy consumption and use), and recreation/park facilities are considered less than significant under Alternative 2 (similar to the proposed project). Water supply and all other utility demands (including energy use and consumption) would be reduced under Alternative 2 (compared to the proposed project) due to an anticipated reduction in development and project square footage that would reduce impacts to public services and utility systems.

Transportation and Circulation

Impacts to roadway segments, intersections, and freeway on and off-ramps are considered less than significant under the proposed project, with mitigation. This Alternative would reduce vehicle trips associated with the project by approximately 30%; therefore, this impact would remain less than significant. Project related trips would be reduced under this alternative, due to the decrease in developed area. Under this alternative, unacceptable peak hour operations would be avoided on Arch Road west of Newcastle Road thereby eliminating the need to widen Arch Road west of Newcastle Road. However, the Newcastle to Mariposa connection would still be required, as an offsite improvement, when 70% of the project is built out. This improvement is therefore delayed, but not eliminated, in Alternative 2.

4.2.3 Alternative 3 – No Development West of Newcastle Road

Description

Under this alternative scenario, no development will occur west of Newcastle Road. This alternative would reduce the project's footprint by approximately 80 acres. Thus, the total building footprint would likely be reduced, due to the need for parking and circulation on a smaller area. However, total square footage may not be reduced, particularly if some two-story structures (for accessory office uses, for example) were constructed to make up for the lack of ground floor area.

Basis for Selection

This alternative was selected to avoid potentially significant impacts related to noise by increasing the distance to sensitive receptors, and to reduce overall vehicle traffic, and associated mobile air emissions (including GHG).

Distinctive Environmental Characteristics

The following summarizes potential impacts of the offsite alternative and compares it to the impacts of the proposed project.

Aesthetics

Some project related structures would be reduced in size and/or eliminated under this alternative. Visual impacts are less-than-significant under the proposed project. Light and glare impacts would be slightly reduced (still significant and unavoidable) under this alternative. Overall, impacts under Alternative 3 would be similar (although slightly reduced) compared to the proposed project.

Agricultural Resources

While the development footprint would be smaller, this alternative would not provide a feasible opportunity to retain agricultural operations onsite. Thus this impact is still considered potentially significant.

Air Quality

The No Development West of Newcastle Road Alternative would reduce construction and operation related emissions by approximately 25%. However, air quality impacts would remain significant.

Biological Resources

Under this alternative, Swainson's hawk foraging habitat (agricultural fields) would still be lost. Overall, biological impacts would be substantially reduced, but impact to Swainson's hawk would remain potentially significant (less than significant with mitigation).

Cultural Resources

Although the affected area would be reduced under the No Development West of Newcastle Road Alternative, impacts to Cultural Resources (accidental discovery of unknown underground resources) would remain similar to those of the proposed project.

Climate Change

The No Development West of Newcastle Road Alternative would reduce the net new building square footage and associated vehicle trip generation. The project's annual greenhouse gas emissions may be reduced by approximately 25%, to approximately 54,000 metric tons CO_2e, but would remain potentially significant.

Geology and Soils

The developable area would be reduced under the No Development West of Newcastle Road Alternative. For the remaining buildable area impacts for Geology and Soils would be similar to those of the proposed project.

Hazards and Hazardous Materials

Hazards and Hazardous Materials related impacts would be similar, although slightly less due to reduced developed area, to those of the proposed project.

Hydrology and Water Quality

These impacts would be similar to those of the proposed project; however because the project's footprint would be smaller there would be a reduced need for stormwater detention, and more permeable open space would be available for stormwater runoff.

Land Use

Both the proposed project and the No Development West of Newcastle Road Alternative are consistent with the Stockton 2035 General Plan. Land use impacts, which are less-than-significant (with mitigation) for the proposed project, would be similar under this alternative.

Noise

Stationary noise impacts to sensitive receptors (residences near the western-most parcel) would be reduced to less than significant as would construction noise impacts. However, mobile (traffic) noise impacts along Arch Road would be reduced but not to a less-than significant level.

Public Services, Utilities and Recreation

Impacts to public services, utilities (including energy consumption and use), and recreation/park facilities are considered less than significant under Alternative 3 (similar to the proposed project). Water supply and all other utility demands (including energy use and consumption) would be reduced under Alternative 3 (compared to the proposed project) due to an anticipated reduction in development and project square footage that would reduce impacts to public services and utility systems.

Transportation and Circulation

Impacts to roadway segments, intersections, and freeway on and off-ramps are considered less than significant under the proposed project, with mitigation. This Alternative would reduce vehicle trips associated with the project by approximately 25%; therefore, this impact would remain less than significant. Project related trips would be reduced under this alternative, due to the decrease in developed area. Under this alternative, unacceptable peak hour operations would be avoided on Arch Road west of Newcastle Road thereby eliminating the need to widen Arch Road west of Newcastle Road. However, the Newcastle to Mariposa connection would still be required, as an offsite improvement, when 67% of the project is built out. This improvement is therefore delayed, but not eliminated, in Alternative 2.

4.3 Environmentally Superior Alternative

Table 4-1 provides a summary of the evaluation of the alternatives compared to the proposed project. As shown in Table 4-1, the No Project Alternative would still result in significant impacts as industrial development would still be allowed on the project site.

Alternatives 2 and 3 would reduce the developable area, and thus reduce traffic, air quality, and noise impacts. Both impacts would avoid short term impacts to the intersection of Arch Road/Newcastle Road. Other traffic impacts are reduced (or delayed) but not fully avoided. In addition, Alternative 3 would reduce the impacts of stationary noise to receptors (and reduce but not avoid transportation-related noise impacts). Alternative 3 is therefore considered the environmentally superior alternative.

TABLE 4-1
COMPARISON OF ALTERNATIVES

Environmental Impact	Proposed Project (Prior to Mitigation)	Alternative 1: No Project	Alternative 2: No Development North of Littlejohn's Creek	Alternative 3: No Development West of Newcastle Road
3.1. Aesthetics				
3.1.4: Implementation of the project has the potential to create new sources of substantial light or glare which could adversely affect day or nighttime views in the area.	PS	PS	PS-	PS-
3.2. Agricultural Resources				
3.2.1: Implementation of the proposed project would result in the permanent conversion of land designated by the Department of Conservation FMMP as *Prime Farmland, Farmland of Statewide Importance or Unique Farmland*.	PS	PS	PS	PS
3.2.3: Implementation of the proposed project would contribute to the cumulative conversion of land in San Joaquin County designated by the Department of Conservation FMMP as *Prime Farmland, Farmland of Statewide Importance or Unique Farmland*.	PS	PS	PS	PS
3.3. Air Quality				
3.3.1: Construction of the project would generate emissions of criteria air pollutants that could contribute to existing nonattainment conditions and degrade air quality.	PS	PS	PS-	PS
3.3.2: Operation of the project would generate emissions of criteria air pollutants that could contribute to existing nonattainment conditions and degrade air quality.	PS	PS	PS-	PS
3.3.5: Construction and operation of the project could result in cumulatively considerable increases of criteria pollutant emissions.	PS	PS	PS-	PS

Legend: PS Potentially significant - Impacts less than proposed project + Impacts greater than proposed project

TABLE 4-1
COMPARISON OF ALTERNATIVES

Environmental Impact	Proposed Project (Prior to Mitigation)	Alternative 1: No Project	Alternative 2: No Development North of Littlejohn's Creek	Alternative 3: No Development West of Newcastle Road
3.4. Biological Resources				
3.4.1: The project could have a substantial adverse effect, either directly or through habitat modifications, on Swainson's hawks and other raptors.	PS	PS	PS-	PS
3.5. Cultural Resources				
3.5.2: Project construction could adversely affect currently unknown historical resources, including unique archaeological or paleontological resources.	PS	PS	PS-	PS-
3.5.3: Project construction could result in damage to previously unidentified human remains.	PS	PS	PS-	PS-
3.6. Climate Change				
3.6.1: The project could conflict with implementation of state goals for reducing greenhouse gas emissions and thereby have a negative effect on global climate change.	PS	PS	PS-	PS
3.7. Geology, Soils, and Seismicity				
3.7.4: The presence of expansive and corrosive soils could result in structural damage to the proposed project facilities.	PS	PS	PS	PS
3.9. Hydrology and Water Quality				
3.9.1: Construction and operation of the proposed project would involve activities that have the potential to substantially degrade water quality and/or violate water quality standards.	PS	PS	PS-	PS-
3.10. Land Use				
3.10.1: The proposed project could conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project.	PS	PS	PS-	PS-

Legend: PS Potentially significant - Impacts less than proposed project + Impacts greater than proposed project

TABLE 4-1
COMPARISON OF ALTERNATIVES

Environmental Impact	Proposed Project (Prior to Mitigation)	Alternative 1: No Project	Alternative 2: No Development North of Littlejohn's Creek	Alternative 3: No Development West of Newcastle Road
3.11. Noise and Acoustics				
3.11.1: Project construction could expose persons to or generate temporary noise levels in excess of standards established in the City of Stockton and San Joaquin County General Plan and Noise Ordinance.	PS	PS	PS-	LS-
3.11.2: Project operation could result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	PS	PS	PS-	PS-
3.13. Traffic and Circulation				
3.13.1: Existing plus project traffic could result in impacts to study area intersections.	PS	PS	PS	PS
3.13.2: Existing plus project traffic could result in impacts to study area freeway segments.	PS	PS	PS	PS
3.13.3: Existing plus project traffic could result in freeway ramp merge/diverge impacts.	PS	PS	PS	PS
3.13.4: Near-Term traffic could result in impacts to study area intersections.	PS	PS	PS-	PS
3.13.5: Near-Term traffic could result in impacts to study area freeway segments.	PS	PS	PS-	PS
3.13.6: Near-Term traffic could result in ramp merge/diverge impacts.	PS	PS	PS-	PS
3.13.9: The project may increase traffic hazards due to a design feature (e.g., sharp curves or dangerous intersections), incompatible uses (e.g., farm equipment), or result in inadequate emergency access.	PS	PS	PS	PS

Legend: PS Potentially significant - Impacts less than proposed project + Impacts greater than proposed project

CHAPTER 5
Other CEQA Considerations

5.1 Growth-Inducing Impacts

5.1.1 Introduction

CEQA Guidelines (Section 15126.2(d)) require that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by CEQA as an impact that fosters economic or population growth, or the construction of additional housing, either directly or indirectly. Direct growth inducement would result, for example, if a project involved the construction of new housing. Indirect growth inducement would result if a project established substantial new permanent employment opportunities (e.g., new commercial, industrial, or governmental enterprises) or if it would remove obstacles to population growth (e.g., an expansion of public services that could allow more construction in the service area).

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans set forth growth goals, objectives, and policies that guide orderly urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer services, and solid waste services. A project that would induce "disorderly" growth (i.e., conflict with local land use plans) could directly or indirectly cause additional adverse environmental impacts and other public services impacts. An example of this would be the redesignation of property planned for agricultural uses to urban uses, possibly resulting in the development of services and facilities that encourage the transition of additional land in the vicinity to more intense urban uses. Another example would be the extension of urban services to a non-urban site, thereby encouraging conversion of non-urban lands to urban lands.

5.1.2 Growth-Inducing Setting and Impacts

The project site is located in an area of southeast Stockton (designated for industrial uses under the 2035 General Plan) that has been developing as industrial parks and distribution centers for the past several years. The land to the north is primarily agricultural, although it is designated for Industrial (north) and "Village J" (northeast of Mariposa Road) in the 2035 General Plan. The BNSF Intermodal Facility is to the east. The Northern California Youth Correctional Center (NCYCC) is to the south (designated as Institutional in the 2035 General Plan), along with some fallow agricultural lands designated for future Industrial and Institutional land uses. The land to

the west is primarily industrial, and Highway 99 and Interstate 5 are also located to the west. To the west are some fairly large light industrial parks developed in the past 10 years, Highway 99, and the Stockton Airport.

Grading activities have already begun on portions of the project site, which is already entitled for light industrial development. The project site does not contain any residences or structures of any kind. The five parcels comprising the proposed project site are zoned Industrial Limited (IL) by the City of Stockton Development Code. The IL zoning district is applied to areas appropriate for light manufacturing uses that may generate more nuisance impacts than acceptable in commercial zoning districts and whose operations are totally conducted indoors. Other uses permitted within the IL zoning district include ancillary office uses and warehousing. The IL zoning district is consistent with the Industrial land use designation of the General Plan. Unlike the Industrial General (IG) zoning designation, uses may not occur outdoors or be associated with nuisance or hazardous impacts in the IL zoning district.

Industrial development may induce growth indirectly if it would attract significant numbers of new employees to the area, creating a demand for additional housing. However, given the high unemployment rate in San Joaquin County, 15.4% for April 2012 (EDD, 2012), it is anticipated that most of the project's employment needs could be filled locally. In addition, current demand for housing is low, as indicated by the median housing price of $155,000 (March, 2012), compared to six years ago ($436,500 in March 2006) (EDD, 2012).

A project may also induce growth by removing barriers to development by building additional infrastructure. The proposed project would require construction of several infrastructure improvements (i.e., roadway, drainage, and sewer) in the vicinity of the project site. These improvements are designed to address overall development in the vicinity of the project site. However, this development is consistent with the Stockton General Plan 2035 and it's associated EIR (SCH # 2004082066). The other approved industrial project that would be served by these improvements, the Arch Road Industrial Project (First Industrial Realty-Trust) has also been the subject of CEQA review in the form of a mitigated negative declaration (SCH #2008042102).

No additional growth-related environmental impacts (either direct or indirect) would occur as a result of the proposed project and associated infrastructure.

5.2 Cumulative Impacts

5.2.1 Introduction

CEQA Guidelines Section 15130(a) requires that an EIR discuss the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable," meaning that the project's incremental effects are considerable when viewed in connection with the effects of past, current, and probable future projects. A consideration of actions included as part of a cumulative impact scenario can vary by geographic extent, timeframe, and scale. They are defined according to environmental resource issue and the specific significance level associated with potential impacts.

CEQA Guidelines 15130(b) requires that discussions of cumulative impacts reflect the severity of the impacts and their likelihood of occurrence. The CEQA Guidelines note that the cumulative impacts discussion does not need to provide as much detail as is provided in the analysis of project-only impacts and should be guided by the standards of practicality and reasonableness. The analysis should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impacts.

In addition, CEQA Guidelines Section 15130(b) provides that the following elements are necessary for an adequate cumulative analysis:

- A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the Lead Agency (i.e., the list approach); or a summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions (i.e., the plan approach). Any such planning document shall be referenced and made available to the public at a location specified by the Lead Agency.
- Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.
- A summary of expected environmental effects to be produced by those projects. The summary shall include specific reference to additional information stating where that information is available, such as the City of Stockton General Plan Environmental Background Report.
- A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable options for mitigating or avoiding any significant cumulative effects of a proposed project.

The analysis of cumulative effects focuses on the effects of concurrent implementation of the project with other spatially and temporally proximate projects. The analysis also addresses the long-term cumulative effects of the project within the context of past, present and reasonably foreseeable future projects. As discussed in Chapter 3**,** the impacts associated with the project would most likely occur after construction of the proposed new industrial development has been completed and the new businesses are fully operational.

5.2.2 Approach for Cumulative Impacts Analysis

This EIR uses projections based on the City's currently adopted General Plan. This approach incorporates regional projections in order to more fully address potentially significant effects in combination with the proposed industrial development.

Geographic Scope

The potential for project-generated impacts to contribute to a significant cumulative impact would arise if they are located within the same geographic area. This geographic area may vary depending on the resource area discussed. For example, the geographic area associated with construction noise

impacts would be limited to areas directly affected by construction noise, whereas the geographic area that could be affected by construction related air emissions may include the larger air basin.

Plan Approach

This analysis describes the projections from the applicable general plan pertaining to specific resources in the project area. Cumulative impacts are expected to be primarily associated with the future operations of the project.

City of Stockton General Plan 2035

The City of Stockton General Plan EIR (December, 2006) identified several resource areas for which buildout of the General Plan would result in a significant impact even when feasible mitigation is implemented. For these resource topics, General Plan buildout impacts could potentially contribute in a cumulatively significant amount. The impacts found to be significant and unavoidable for buildout of the City of Stockton 2035 General Plan include:

Aesthetics

- General Plan buildout would substantially degrade the existing visual character or quality of the site and its surroundings.
- General Plan buildout would have a substantial adverse effect on a scenic vista or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
- General Plan buildout would create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.
- Contribute to a cumulative significant and unavoidable aesthetic impact.

Agricultural Resources

- General Plan buildout could result in the substantial conversion of important farmland to non-agricultural uses.
- Contribute to a cumulative significant and unavoidable agricultural resource impact.

Air Quality

- General Plan buildout would result in a cumulatively considerable net increase of criteria pollutants. Future growth in accordance with General Plan buildout would exceed the daily SJVAPCD thresholds for NOx and ROG.
- General Plan buildout would conflict with or obstruct implementation of an applicable air quality plan.
- General Plan buildout would generate emissions above the daily SJVAPCD significance thresholds for NOx and ROG, primarily due to emissions related to increased traffic.
- General Plan buildout would expose sensitive receptors to substantial pollutant concentrations.

- General Plan buildout would result in a cumulatively considerable net increase of greenhouse gas emissions that would contribute to global warming conditions.
- Contribute to a cumulative significant and unavoidable air quality impact.

Biological Resources

- General Plan buildout would have a substantial adverse effect, either directly or through habitat modifications, on any fish or wildlife species including those officially designated species identified as an endangered, threatened, candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.
- General Plan buildout would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- General Plan buildout would have a substantial adverse effect on "federally protected" sensitive wetland habitats (including, but not limited to marsh, vernal pool, etc.) through direct removal, filing, hydrological interruption, or other means.
- General Plan buildout would interfere substantially with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Contribute to a cumulative significant and unavoidable biological resource impact.

Cultural Resources

- General Plan buildout would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.
- General Plan buildout would cause a substantial adverse change in the significance of a unique archaeological resource as defined in Section 15064.5, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside of formal cemeteries.
- Contribute to a cumulative significant and unavoidable impact to historic resources impact.

Hazards and Hazardous Materials

- General Plan buildout could result in development located within an airport land use plan area or/and could result in a safety hazard for people residing or working the project area.
- General Plan buildout could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Hydrology and Water Quality

- General Plan buildout would expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Contribute to a cumulative significant and unavoidable flooding impact.

Land Use and Planning

- Development proposed under the Draft General Plan would conflict with an adopted applicable land use plan, policy or regulation of any agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.
- Contribute to a cumulative significant and unavoidable impact associated with a regional plan that has been adopted for the purpose of avoiding or mitigating an environmental effect (in this case air quality).

Noise

- General Plan buildout would result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; or would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- General Plan buildout will result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- General Plan buildout will be located within an airport land use plan area or within the vicinity of a private airstrip and could expose people residing or working within the project area to excessive noise levels.
- Contribute to a cumulative significant and unavoidable noise impact.

Public Services and Utilities

- General Plan buildout would require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- General Plan buildout would require new or expanded water supply entitlements.
- General Plan buildout would require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- General Plan buildout would require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- General Plan buildout would produce substantial amounts of solid waste that would exceed the permitted capacity of a landfill serving the Study Area.
- General Plan buildout may require the construction or expansion of additional energy infrastructure facilities, the construction of which could cause significant environmental effects.
- General Plan buildout would include fire protection/law enforcement facilities or require the construction or expansion of facilities which would have an adverse physical effect on the environment.

- General Plan buildout would include libraries facilities or require the construction or expansion of facilities which could have an adverse physical effect on the environment.
- General Plan buildout would include recreational facilities or require the construction or expansion of recreational facilities which would have an adverse physical effect on the environment.
- Construction or operation of new public service/utility infrastructure may contribute considerably to a cumulatively significant environmental impact (i.e., biological resource, noise, aesthetics, etc.).
- Stormwater runoff may contribute to a considerably significant and unavoidable cumulative impact to surface water quality.

Traffic and Transportation

- General Plan buildout would result in a substantial increase in vehicular traffic.
- General Plan buildout would result in a substantial increase in public transit usage.
- General Plan buildout would result in a substantial increase in bicycle and pedestrian activity.
- General Plan buildout would result in substantial changes in accessibility to Stockton-area railroad terminals and cargo transfer points.
- General Plan buildout would result in a substantial change in the accessibility to the Port of Stockton.
- General Plan buildout would result in a substantial change in the accessibility to the Stockton Municipal Airport.
- Contribute to a cumulative significant and unavoidable transportation impact.

5.2.3 Cumulative Impacts

The project applicant has requested the necessary entitlements to enable industrial uses on the project site. Because land uses are expected to change with implementation of the project, environmental issues such as effects on traffic and air quality are expected to change accordingly. This EIR addresses the environmental impacts associated with potential project construction and operation, focusing on issues such as agricultural, biological, and cultural resources. The proposed project also may make incremental contributions to such impacts on a cumulative basis.

The following provides a discussion of cumulative impacts related to the proposed project by environmental topic.

Aesthetics

The aesthetic impacts of the project are discussed in Section 3.1, “Aesthetics.” Light and glare is considered a cumulative effect as individual parcels are developed or development is intensified over time. However, the proposed project (with mitigation designed to address outdoor lighting requirements) is located within a largely developed industrial area designated for

industrial uses. Therefore, the project's contribution to visual impacts would not be cumulative considerable.

Agricultural Resources

Impacts to agricultural resources resulting from implementation of the project are discussed in Section 3.2, "Agricultural Resources." Per Impact 3.2.3, implementation of the proposed project would contribute to the cumulative conversion of land in San Joaquin County designated by the Department of Conservation FMMP as Prime Farmland, Farmland of Statewide Importance or Unique Farmland. Conversion of this farmland would contribute to the cumulative loss of agricultural resources identified in the General Plan. The City has developed an Agricultural Land Mitigation Program to mitigate for the loss of agricultural land in the City of Stockton through conversion to private urban uses, including residential, commercial and industrial development. As such, it is a regional program which seeks to reduce the effects of cumulative conversion of important farmland through the acquisition of equivalent farmland resources. Participation in this program, as required in Mitigation Measure 3.2.1, would reduce the project's contribution to a cumulative impact. However, the mitigation does not fully compensate for the direct loss of the agricultural land on the project site and the loss of important farmland would remain cumulatively considerable; therefore this cumulative impact is considered ***significant and unavoidable***.

Air Quality

The air quality impacts of the project are discussed in Section 3.3, "Air Quality." Cumulative air quality impacts are described in Impact 3.3.5. Construction and operation of the project could result in cumulatively considerable increases of criteria pollutant emissions. With implementation of Mitigation Measures 3.3.1a through 3.3.1c, 3.3.2a through 3.3.2b, and 3.6.2 which includes the requirements of Rule 9510, the cumulative fugitive dust emissions from construction is considered ***less-than-significant***. However, emissions of ROG from construction and operational emissions of ROG, NOx, and PM10 would remain cumulatively considerable; therefore this cumulative impact is considered ***significant and unavoidable***.

Biological Resources

The proposed project could have an impact on special status species and their habitats, as discussed in Section 3.4, "Biological Resources." This project site is located in San Joaquin County, and as such falls under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Loss of habitat is a significant cumulative issue in San Joaquin County. The SJMSCP is intended to comprehensively minimize and mitigate cumulative impacts to plant, fish and wildlife habitat. SJMSCP participants under the SJMSCP may conduct SJMSCP permitted activities that result in or could result in "incidental take" of listed species and other species protected under the plan. All of the potentially impacted species presented in Section 3.4 are covered under the SJMSCP, and mitigation through participation in this plan will reduce both direct and cumulative impacts associated with the proposed project to a level that is ***less than cumulatively considerable***.

Cultural Resources

The cultural resources impacts of the project are discussed in Section 3.5, "Cultural Resources." Impact 3.5.2 identifies the project's potential impact on unknown significant cultural resources, including unique archaeological resources as a potentially significant impact. Mitigation Measures 3.5.1a and 3.5.1b would reduce the impact to a less than significant level. Impact 3.5.3 identifies the project's potential to result in damage to previously unidentified human remains during project construction as a potentially significant impact. Mitigation Measures 3.5.1a and 3.5.1b would also reduce the impact to a less than significant level. These effects are considered site specific, as there are no known historical resources on the site which may be associated with cultural resources elsewhere. In addition, with mitigation the project's potentially significant direct and cumulative impacts would be ***less than significant***.

Climate Change

The climate change impacts of the project are discussed in Section 3.6, "Climate Change." Impact 3.6.1 describes the project's potential conflict with the state goal of reducing greenhouse gas emissions in California to 1990 levels by 2020 and identifies this as a potentially significant impact. Climate change impacts are inherently cumulative in nature as an individual project is not likely to impact global climate on its own. Mitigation Measures 3.6.1 and 3.6.2 would substantially reduce the impact, but not to a less-than-significant level. Thus, greenhouse gas emissions would remain a ***significant and unavoidable*** cumulative impact.

Geology, Soils, and Seismicity

Regional development would increase the number of people and structures subject to geologic and soils-related risks. Compliance with the policies contained in the City's General Plan, along with compliance with federal, State and local regulations addressing building construction, run-off and erosion, reduce the potential project-level impact associated with geology and soils to a less-than-significant level. As a result, conformance with adopted California building codes and other measures to protect people and structures from geologic hazards, would reduce this impact to a less-than-significant level. The project's incremental contribution to these impacts will be ***less than cumulatively considerable***.

Hazards and Hazardous Materials

Hazardous materials impacts are generally site-specific and not affected by cumulative development in the project's regional area. As described in Chapter 3.8, "Hazards and Hazardous Materials," during construction of the proposed project it is anticipated that limited quantities of miscellaneous hazardous substances would be brought onto the project site. In addition, the proposed project operations may include limited use of fuels and other hazardous materials typically associated with equipment use and servicing. Because compliance with state and federal regulations for the transport, use, or disposal of hazardous materials are required, the increase in the potential exposure to public health and safety hazards would not be significantly increased with cumulative

development. Therefore, the project's incremental contribution to these impacts will be ***less than cumulatively considerable***.

Hydrology and Water Quality

The water quality and drainage impacts of the proposed project are discussed in Section 3.9, "Hydrology and Water Quality." Two intermittent channelized irrigation ditches; North Littlejohns Creek and Weber Slough lie within the project site, with each of these waterways flowing in a (generally) westerly direction into French Camp Slough, which drains into the San Joaquin River. The convergence of French Camp Slough and the San Joaquin River is approximately 6.5 miles west of the project site. The San Joaquin River eventually flows into the Delta and the San Francisco Bay. The Central Valley Regional Water Quality Control Board's 2002 Clean Water Act Section 303(D) List of Water Quality Limited Segment document (approved by the USEPA in July 2003) shows that neither North Littlejohns Creek nor Weber Slough are listed as impaired. However, the San Joaquin River downstream from the project site is listed for boron, chlorpyrifos, DDT, diazinon, electrical conductivity, Group A Pesticides, mercury, and unknown toxicity from agricultural operations and urban runoff (SWRCB, 2003).

The following impact in Section 3.9 is identified as a potentially significant impact to water quality.

- Impact 3.9.1: Construction and operation of the proposed project would involve activities that have the potential to substantially degrade water quality and/or violate water quality standards.

However, implementation of the best management practices outlined in "Mitigation Measure 3.9.1: Implement Best Management Practices from Stormwater Pollution Prevention Plan" would result in potential discharges of pollutants during runoff events being substantially reduced. Additionally, these practices would minimize the load of contaminants released to receiving waters. Therefore, the residual water quality impact during construction and operation of the proposed project would be less than significant.

As discussed in Section 3.9, implementation of the proposed project would result in the creation of a substantial amount of impervious surfaces on existing open space lands, which could affect local groundwater recharge and/or result in an increase in stormwater runoff and associated drainage impacts to receiving waters. However, these and flooding-related impacts were determined to be less than significant. Therefore, the project's incremental contribution to these impacts will be ***less than cumulatively considerable***.

Land Use

The Initial Study prepared for this project determined that the project would not divide an established community. This EIR includes a discussion of the project's potential to conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (see Impact 3.10.2 of Section 3.10, "Land Use"). The project is consistent with the City's General Plan and would also comply with the SJMSCP. Additionally, the proposed project includes

Mitigation Measure 3.10.2, which will incorporate building design features designed to address airport safety issues consistent with SJCALUP Guidance. Therefore, the project's incremental contribution to these impacts will be ***less than cumulatively considerable***.

Noise and Acoustics

Potentially significant cumulative noise impacts are discussed in Impact 3.11.5. Increases in traffic from the project in combination with other development could result in cumulative noise increases. However, as described under Impact 3.11.5, this impact would be ***less than cumulative considerable***.

Public Services and Utilities

The public services and utilities impacts of the project are discussed in Section 3.12, "Public Services and Utilities." With regard to services, Impact 3.12.1 identifies the project's potential to result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered police and fire protection facilities as a potentially significant impact. Payment of required City of Stockton Public Facility Fees would reduce the impact to a less than significant level. With regards to water, the Water Supply Assessment conducted for the project considers approved and future development. Water supply impacts were determined to be less than significant, per Impact 3.12.3. Therefore, the project's contribution to public services and utilities impacts also would be ***less than cumulatively considerable***.

Traffic and Circulation

The traffic analysis has been conducted as a cumulative analysis. The reader is directed to Section 3.13 of this Draft EIR.

5.3 Significant Unavoidable Adverse Impacts

5.3.1 Introduction

CEQA requires that an EIR identify any significant and unavoidable effect on the environment (Pub. Res. Code § §21100(b) (2) and Guidelines § 15126.2(b)). Significant and unavoidable environmental impacts are those that cannot be mitigated, or those that can be mitigated, but not to a less-than-significant level. If the lead agency approves a project which will result in significant unavoidable impacts, the agency shall state in writing the specific reasons to support its action (CEQA Guidelines §15093(b)). This "Statement of Overriding Considerations" must set forth the specific economic, legal, social, technological, or other benefits of the project that outweigh the significant and unavoidable environmental effects of the project (CEQA Guidelines §15093(a)).

A list of significant and unavoidable impacts identified in this EIR is provided in Table ES-1 (see Executive Summary).

5.4 Significant Irreversible Environmental Changes

CEQA Guidelines sections 15126(c) and 15126.2(c) require that an EIR consider significant irreversible changes to the environment resulting from the implementation of the project. Significant irreversible environmental changes include the proposed project's direct and indirect effects that will commit nonrenewable resources to uses that future generations would most likely be unable to reverse.

- Impact 3.2.1, the conversion of Important Farmland, is considered to be a significant, irreversible environmental change caused by the project.

No other significant irreversible environmental changes are expected as a result of the project.

5.5 Effects Found To Be Less than Significant

As required by CEQA, this EIR focuses on expected significant or potentially significant environmental effects (CEQA Guidelines 15143). A Notice of Preparation was prepared for the project to identify issues to be evaluated in this EIR (Appendix A). Comments received on the Notice of Preparation that helped to further refine the list of environmental issues to be evaluated in this EIR are also included in Appendix A.

Impacts related to the environmental topic "Population and Housing" were eliminated from further consideration during the scoping process.

An explanation of all of the impacts analyzed in this EIR, including those considered to be less than significant, are summarized in Table ES-1 (see Executive Summary) of this EIR.

CHAPTER 6
List of Preparers

6.1 Lead Agency

City of Stockton Community Development Project

Steve Chase - Director
Adam Brucker - Senior Planner

6.2 Consultants

Environmental Science Associates

Ray Weiss - Project Manager
Aaron Hecock, AICP - Deputy Project Manager

Technical Staff and Sections

Aesthetics:	Aaron Hecock
Agricultural Resources:	Aaron Hecock
Air Quality:	Matt Morales
Biological Resources:	Stephanie Parsons
Cultural Resources:	Kathy Anderson and Heidi Koenig
Climate Change	Matt Morales
Geology, Soils, and Seismicity:	Aaron Hecock
Hazards and Hazardous Materials:	Aaron Hecock
Hydrology and Water Quality:	Robert Eckard
Land Use:	Aaron Hecock
Noise and Acoustics:	Matt Morales
Public Services, Utilities and Recreation:	Aaron Hecock
Alternatives:	Aaron Hecock
GIS and Document Production:	Bradley Allen, Thomas Wyatt, and Logan Sakai

Traffic Impact Analysis

Fehr & Peers Transportation Consultants

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Volume 2 – Appendices

NORCAL LOGISTICS CENTER

Draft Environmental Impact Report
(Project File No. P12-110)

Prepared for
City of Stockton
Community Development Department

September 2014

ESA

Volume 2 – Appendices

NORCAL LOGISTICS CENTER

Draft Environmental Impact Report
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Prepared for
City of Stockton
Community Development Department

September 2014

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Appendix A
NOP and Scoping Comment Letters

ESA

CITY OF STOCKTON
NOTICE OF PREPARATION

ASSESSOR RECORDER
COUNTY CLERK
KENNETH W. BLAKEMORE
2012 OCT 31 AM 8:38
SAN JOAQUIN COUNTY
BY Kelley Mathys
DEPUTY

October 31, 2012

To: (See attached list)

From: Lead Agency
City of Stockton
c/o Community Development Dept.
Planning Division
425 North El Dorado Street
Stockton, CA 95202-1997

SUBJECT: **NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT PURSUANT TO PUB. RES. CODE SEC. 21080.4 AND CAL. CODE OF REGULATIONS TITLE 14, SEC 15082(a) FOR THE NORCAL LOGISTICS CENTER PROJECT (P12-110)**

The City of Stockton will be the Lead Agency and will prepare a Draft Environmental Impact Report (EIR) for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project.

The project description, location and the probable environmental effects are discussed within the Initial Study which may be viewed at the following web address: http://www.stocktongov.com/government/departments/communityDevelop/cdPlanEnv.html or is alternatively available for purchase at the Community Development Department at the above-noted address.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice. **We respectfully request that you return your comments to the above-noted Lead Agency address by December 3, 2012**. If no comments are received by the date indicated, it will be assumed that the document is acceptable.

Scoping Meeting: A public scoping meeting will be held from 4:00 to 6:00 PM on November 14, 2012 at the Robert J. Cabral Agricultural Center, located at 2101 E. Earhart Avenue, Suite 100 in Stockton. Responsible agencies and members of the public are invited to attend and provide input on the scope of the EIR. All interested parties are welcome to attend the scoping meeting.

If you have any questions regarding this matter, please contact Adam Brucker, Senior Planner at (209) 937-7564 or by email at Adam.Brucker@stocktongov.com

PROJECT TITLE: NorCal Logistics Center Project
PROJECT FILE #: P12-110
APPLICANT: Arch Road LTD PTP
APN(s): 179-220-27, 28, 30; 181-110-23; 181-100-15

PROJECT DESCRIPTION/LOCATION: The project site is located on the north side of Arch Road, west of Austin Road and south of Mariposa Road. Regional access to the approximately 331-acre project site is provided by Highway 99. The applicant proposes to subdivide five parcels zoned for industrial use within the City of Stockton. The southern parcel is 56 acres and would be subdivided into 6 lots. The northern four parcels total approximately 275 acres and would be subdivided into 14 lots. The site is served by existing public utilities, which would be extended to the new lots. The proposed project includes internal circulation improvements, including the extension of Newcastle Road to a connection with Mariposa Road.

STEVE CHASE, DIRECTOR
COMMUNITY DEVELOPMENT DEPARTMENT

By Adam Brucker
Adam Brucker, Senior Planner

Date: October 31, 2012

AFFIDAVIT OF MAILING AND POSTING

I declare that on 10/31/2012, I deposited in the United States mail facilities in the City of Stockton, State of California, a true copy of the above Notice of Preparation (NOP) with any attachments, with the postage thereon prepaid, addressed to each public agency and other interested parties on the attached distribution list. A copy of the NOP has also been mailed or delivered to the San Joaquin County Clerk who is required to post said NOP for a period of 30 days in accordance with Public Resources Code Section 21092.3.

Kelley Mathys
Signature

COUNTY CLERK
Title

11/30/2012
Posting Period Ending Date

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NORCAL LOGISTICS CENTER

Initial Study
(Project File No. P12-110)

Prepared for
City of Stockton
Community Development Department

October 2012

ESA

NORCAL LOGISTICS CENTER

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Woodland Hills

210506

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NorCal Logistics Center Initial Study

ENVIRONMENTAL CHECKLIST
Initial Study

1. Project Title:	NorCal Logistics Center File # P12-110
2. Lead Agency Name and Address:	City of Stockton 345 N. El Dorado Street Stockton, CA 95202
3. Contact Person and Phone Number:	Adam Brucker, Senior Planner (209) 937-8266
4. Project Location:	North of Arch Road and west of Austin Road Stockton, CA 95215
5. Project Sponsor's Name and Address:	Arch Road L.P. 10350 Bren Road W. Minnetonka, MN 55343
6. General Plan Designation(s):	Industrial (I)
7. Zoning Designation(s):	Industrial, Limited (IL)

8. Description of Project:

Introduction

The applicant, Arch Road L.P., proposes to develop light industrial and warehouse uses within the City of Stockton. The project consists of subdividing five parcels zoned for industrial use within the City of Stockton. The southern parcel is 56 acres and would be subdivided into 6 lots. The northern parcels cover 275 acres, and would be subdivided into 15 lots. The site is served by existing public utilities, which would be extended to the new lots. The proposed project includes internal circulation improvements, including a new connection to Mariposa Road.

The project site is located within an existing industrial area known as Arch Road Units 3 and 4. Arch Road Units 3 and 4 consists of eight industrially-zoned parcels covering 475 acres in the City of Stockton at Arch Road and Newcastle Road. This development has been the subject of several prior environmental studies including an EIR prepared in 1988, a supplemental EIR in 1995, and cultural survey in 2007 that was updated in 2008. The project site is located northwest of the intersection of Arch and Austin Roads. The project site is within the existing corporate boundaries of the City of Stockton. As discussed in greater detail below, the project site is currently designated

by the City's General Plan as "Industrial" (I), and under the City's Zoning as "Industrial Limited" (IL). Under this designation and zoning, Industrial uses are permitted "as of right," the only City permit needed is a Building Permit, no City discretion is involved in the issuance of such Building Permits, and hence the California Environmental Quality Act (CEQA) does not normally apply. However, several ministerial planning reviews are required prior to any submittal of a building permit application, these include site plan and architectural design review. As discussed below, the applicant, Arch Road L.P., has already developed a portion of the project site with Industrial uses. The applicant now proposes the subdivision of a portion of the project site to allow greater user flexibility (ownership of the land versus leasing of the land), although the creation of new lots on the project site will not change the Industrial uses allowed, nor the density or intensity of that Industrial use. However, because the approval of a subdivision map by the City is "discretionary," CEQA applies to the subdivision approval. The proposed subdivision and lot creation will involve two separate areas of the project site: land immediately adjacent to Arch Road, and land adjacent to Mariposa Road. These two separate portions of the project site will involve two separate Vesting Tentative Maps, processed with the City under the Subdivision Map Act and local City Subdivision Ordinance. The Vesting Tentative Map for the parcel adjacent to Arch Road is referred to as VTM 1. VTM 1 is comprised of approximately 56 acres and proposed the creation of 6 lots. The Vesting Tentative Map for the parcel adjacent to Mariposa Road is referred to as VTM 2. VTM 2 is comprised of approximately 275 acres and proposes the creation of 15 lots. The EIR will analyze the collective development of both VTM 1 and VTM 2. The project includes a phasing plan that will provide for orderly development and timed implementation of on-site and off-site improvements required to serve the development.

The project site has a City of Stockton General Plan designation of Industrial (I). This designation applies to a wide variety of industrial uses including uses with nuisance or hazardous characteristics, warehousing, construction contractors, light manufacturing, offices, retail sales, service businesses, public and quasi-public uses, and other similar and compatible uses. The proposed project is zoned Industrial Limited (IL) by the City of Stockton Zoning Ordinance. The IL zoning district is applied to areas appropriate for light manufacturing uses that may generate more nuisance impacts than acceptable in commercial zoning districts and whose operations are totally conducted indoors. Other uses permitted within the IL zoning district include ancillary office uses and warehousing. The IL zoning district is consistent with the Industrial land use designation of the General Plan. Unlike the Industrial General (IG) zoning designation, uses may not occur outdoors or be associated with nuisance or hazardous impacts in the IL zoning district.

Surrounding Land Uses and Setting

Located near the center of San Joaquin County, the City of Stockton (City) serves as the County seat. San Joaquin County is located at the northern end of the San Joaquin Valley. The City is located 83 miles east of the San Francisco Bay area and 40 miles south of Sacramento. Interstate 5 runs north-south near the western border of the City and State Route 99 runs north-south near the eastern border of the City. Both roadways provide access to other communities surrounding the City (including the City of Lodi to the north and the cities of Lathrop and Manteca to the south) and regional access to other parts of the State. The Primary Zone of the Sacramento/San Joaquin Delta (Delta) is located to the west of the City. Much of the western most part of the City is located

within the secondary zone of the Delta. Rural residential, industrial, and agricultural uses are the primary land uses within the City.

The project site is five separate parcels of the applicant's larger property located in southeast Stockton (see **Figure 1**), north of Arch Road, southwest of Mariposa road, and extending to either side of Newcastle Road (see **Figure 2**). The overall property consists of approximately 495 acres, whereas the project site portions of that larger property consists of approximately 331± acres. North Littlejohns Creek and Weber Slough run east to west through portions of the project site.

Existing Land Uses

The project site is located on land historically utilized for agricultural uses. Project areas are a mix of vacant land (previously used for agriculture), and developed land. North Littlejohns Creek and Weber Slough run east to west through portions of the project site.

The entirety of the project site has a City of Stockton General Plan land use designation of Industrial (I). This designation applies to a wide variety of industrial uses including uses with nuisance or hazardous characteristics, warehousing, construction contractors, light manufacturing, offices, retail sales, service businesses, public and quasi-public uses, and other similar and compatible uses.

Additionally, the entirety of the proposed project is already zoned Industrial Limited (IL) by the City of Stockton Zoning Ordinance. The IL zoning district is applied to areas appropriate for light manufacturing uses that may generate more nuisance impacts than acceptable in commercial zoning districts and whose operations are totally conducted indoors. Other uses permitted within the IL zoning district include ancillary office uses and warehousing. The IL zoning district is consistent with the Industrial land use designation of the General Plan. Unlike the Industrial General (IG) zoning designation, uses may not occur outdoors or be associated with nuisance or hazardous impacts in the IL zoning district.

The Department of Conservation's Farmland Mapping and Monitoring Program has designated land located on the project site as "Prime Farmland" and "Farmland of Statewide Importance." However, in practice, the land comprising the project site has not been farmed for years, is designated for Industrial development by the City's land use regulations, and is currently either vacant or in Industrial use. "Prime Farmland" is defined as farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. "Farmland of Statewide Importance" is defined as farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. The parcels included in the proposed project are not zoned or otherwise designated for agricultural land uses.

The land to the north of the project site is primarily agricultural, although it is designated for Industrial (north) and "Village J" (northeast of Mariposa Road) in the 2035 General Plan. The BNSF Intermodal Facility is to the east. The Northern California Youth Correctional Center (NCYCC) is to the south (designated as Institutional in the 2035 General Plan), along with some fallow

agricultural lands designated for future Industrial and Institutional land uses. Existing industrial development is to the west.

Project Objectives

CEQA Guidelines Section 15124(b) requires that the project description contain a clearly written statement of project objectives, including the underlying purpose of the project. The statement of project objectives is an important determinant for the lead agency when it develops a reasonable range of alternatives to evaluate in the EIR. The project applicant's objectives for the proposed project include the following:

- To provide the industrial development contemplated by, and consistent with, the City's General Plan;
- To provide for flexibility of number of users and size of structures and legal parcels (large and small), thereby maximizing the industrial development potential of the land by providing additional legal parcels that can be sold to different users and upon which parcels industrial structures of varying sizes can be located;
- To develop additional industrial uses in this particular location to take advantage of existing General Plan and related regulations, available or easily supplemented industrial-ready infrastructure, such as adjacent highways, roadways, wastewater, water, drainage, rail, and similar services and facilities, and applicant's ownership of this land;
- To place new industrial development in areas where impacts to sensitive natural resources can be reduced and/or avoided, and where other impacts can be reduced and/or avoided through site design, phasing and landscaping.

Proposed Subdivision

The project is the "subdivision" of the portions of the larger applicant property that comprises the project site to allow greater user flexibility (allowing different sized lots to attract a wider range of Industrial users), although the creation of such new lots on the project site will not change the Industrial uses already allowed, nor will it increase or decrease the density or intensity of that existing Industrial use. Because the approval of a subdivision map by the City is "discretionary," CEQA applies to the subdivision approval. However, it is important to note that if no subdivision maps were proposed (and approved) on the project site, the same level of Industrial use development already allowed on the project site could and likely would take place, the only permits needed to develop the project site with such Industrial uses would be building permits, and that no additional CEQA review would take place in that scenario, since no discretionary development permits would be involved (building permits are ministerial).

The proposed subdivision maps (and the lots that they will create when the lots appear on a recorded final map) will involve two separate areas of the project site: land immediately adjacent to Arch Road, and land adjacent to Mariposa Road. These two separate portions of the project site will involve two separate Vesting Tentative Maps, processed with the City under the Subdivision Map Act and local City Subdivision Ordinance. The Vesting Tentative Map for the land adjacent to Arch Road and [other locator] is referred to as "VTM 1." VTM 1 is comprised of approximately 56 acres and proposes the creation of 6 new lots. The Vesting Tentative Map for the land adjacent to Mariposa Road is referred to as "VTM 2." VTM 2 is comprised of approximately 275 acres

and proposes the creation of 15 new lots. VTM 1 and VTM 2 will have a combined total size of approximately 331± acres, yielding approximately 6,337,980 square-feet of future industrial use (assuming a 0.5 floor area ratio) and will result in the creation of 21 new developable lots (see Figure 3 and Figure 4). Some of these lots may be adjusted (and/or merged) to provide the ultimate industrial user with the most efficient site plan. Consistent with the IL zoning, the site would provide for warehouse, light industrial, and ancillary office uses. This EIR analyzes the collective development of both VTM 1 and VTM 2, again with the "baseline" being the level of industrial development already allowed without the proposed VTM 1 and VTM 2.

Infrastructure

The project includes an extension of Newcastle Road (a two-lane road north of Arch Road) to Mariposa Road. The extended Newcastle Road will provide access to the northern parcels, and will alleviate traffic on Austin Road by providing another direct connection between Mariposa Road and Arch Road. Logistics Drive ends in a cul-de-sac and is located north of Arch Road between the proposed project and the Sanchez property (the parcel northwest of the intersection of Arch Road and Austin Road). The project will also provide street improvements (1/2 road section and frontage improvements) on Mariposa Road.

Sanitary sewer is provided for the project by connecting to the existing sewer lines in Newcastle Road which then connects to an east-west main sewer line. Existing water lines near the project site extend from Arch Road, Fite Court, and Carpenter Road as well as internal locations within Arch Road Units 3 and 4. Development of the project will require additional water lines to be constructed on Mariposa Road, Austin Road, the extension of Newcastle Drive, Logistics Drive, and Arch Road between Newcastle and Austin Road. Sanitary sewer service to the southern parcel (VTM 1) will be provided by a new sewer trunk line on Arch Road. Sewer will be discharged into the new trunkline and then will head west to the Arch Road Regional Sanitary Sewer Pump Station. This sewer trunkline is scheduled to state construction in the spring of 2013.

A Storm Drainage Master Plan was prepared for the proposed project. The Master Plan defines the area that the runoff detention basins would serve and the general location of the storm drain system. The Storm Drain Master Plan area covers approximately 611 acres, comprised of two drainage basins, N3 and W3. This plan area includes the 331-acre project site. Two detention basins have been constructed that would serve the Master Plan area and the project site. The drainage basin (N3) located just south of North Littlejohns Creek has a capacity of 113 acre feet (ac-ft) and primarily collect runoff from the northern portion of the project site. The drainage basin (W3) located west of Newcastle Road and north of Arch Road has a capacity of 108 ac-ft and collect runoff from the southern section of the project site. Basin N3 would discharge stormwater to North Littlejohns Creek and Basin W3 would discharge stormwater to Weber Slough. The drainage system for Basin N3 would include a pump station with an emergency natural gas engine generator.

9. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement. Indicate whether another agency is a responsible or trustee agency.)

This EIR provides the environmental information and analysis necessary for the range of development evaluated in this EIR. This EIR provides the foundational CEQA compliance documentation upon which the City's, responsible agencies' and all other applicable agencies' consideration of and action on all necessary and/or desirous permits, approvals, and other grants of authority (collectively, "approvals") shall be based. This includes without limitation all those approvals set forth in this EIR, as well as any additional approvals necessary and/or desirous to such project planning, development, construction, operation and maintenance (e.g., any and all discretionary plans and approvals).

Lead Agency Approvals

The project requires the following discretionary approval from the City of Stockton:

- **Subdivision Maps.** The creation of lots on the project site would require the approval of vesting tentative subdivision map(s) and final subdivision maps.

Other ministerial approvals for the implementation of the project will include site plan review, architectural design review, the issuance of building permits, and encroachment permits for work within City right-of-way.

Other Agency Approvals

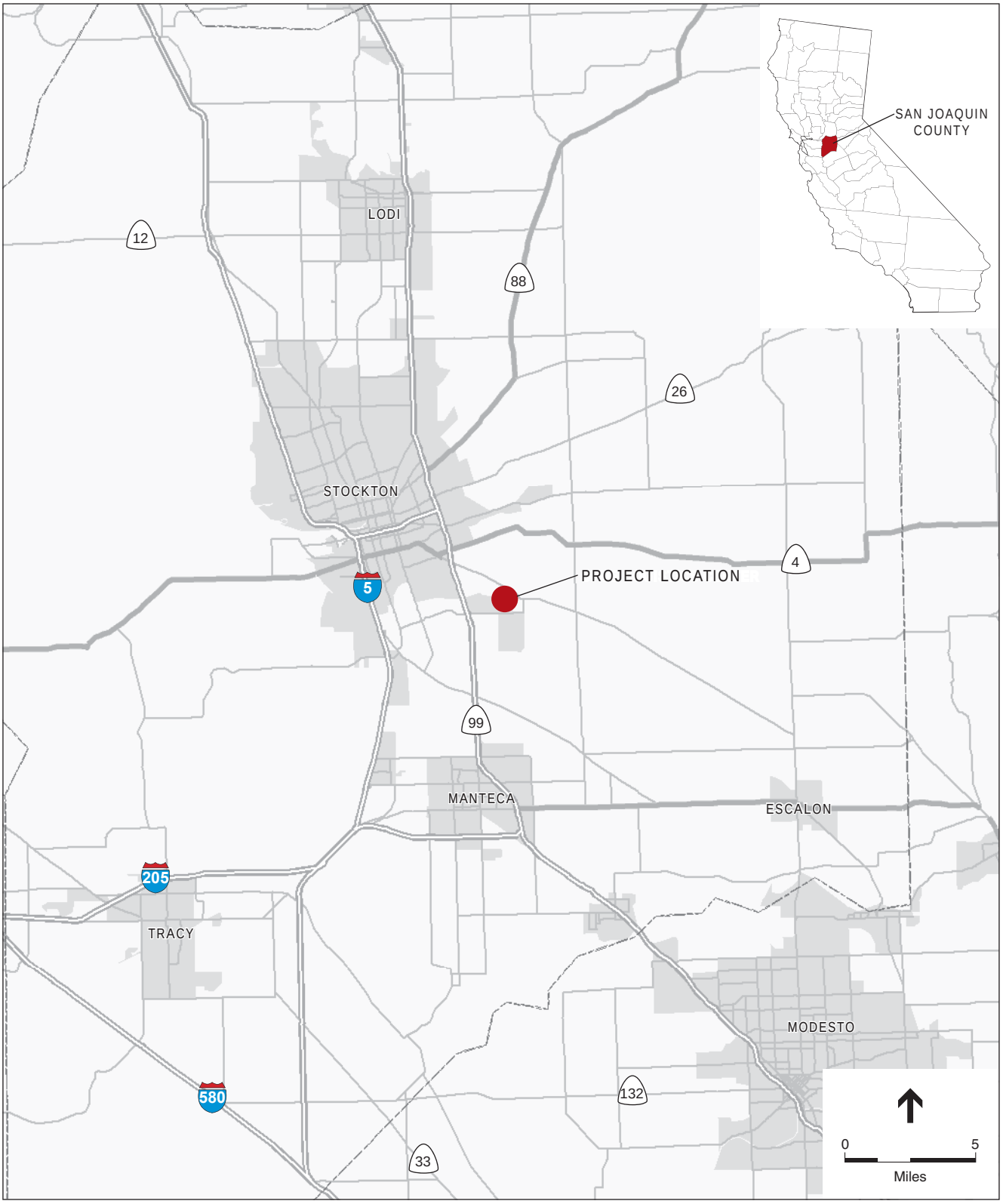
The following discretionary approvals/permits from other public agencies may be required for implementation of the project.

- **Regional Water Quality Control Board (RWQCB)** – The proposed project will require grading of an area greater than one acre; therefore, an NPDES Permit from the RWQCB and preparation of a Storm Water Pollution Prevention Plan (SWPPP) will be required. The RWQCB may also issue Waste Discharge Requirements (WDRs) for discharge from Basin N3 into North Little Johns Creek. If a 404 Clean Water Act permit (see below) is required, a Section 401 water quality certification would be required from the RWQCB.
- **San Joaquin Valley Air Pollution Control District (SJVAPCD)** – As a major industrial development, the project may be subject to Indirect Source Review (ISR) by the SJVAPCD. The storm drainage pump station for Basin N3 may require an authority to construct and a permit to operate for the natural gas engine generator.

Permits Acquired

The following approvals/permits have already been obtained by the project applicant:

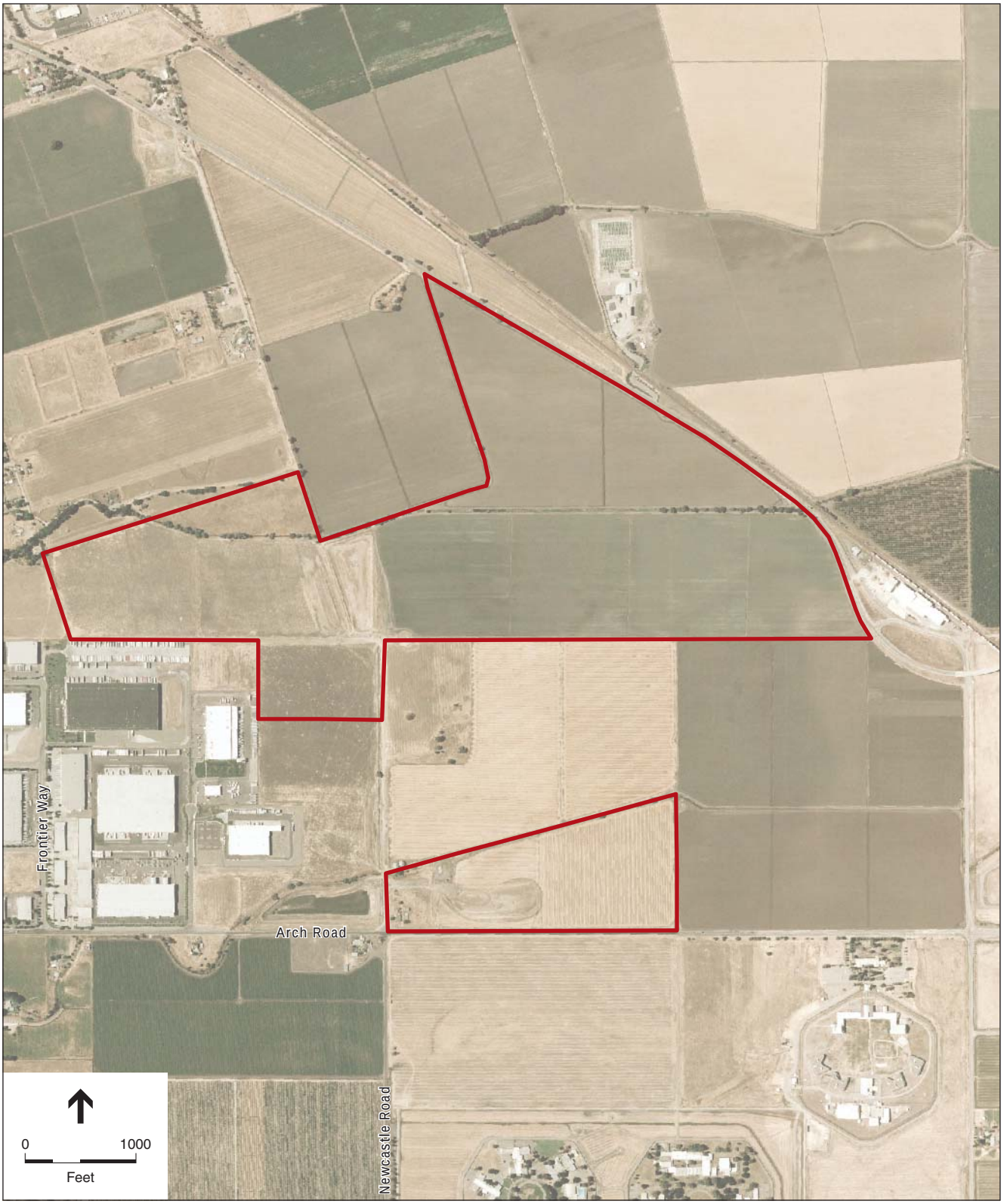
- **U.S. Army Corps of Engineers (ACOE)** – Construction within North Littlejohns Creek and/or Weber Slough required a Section 404 Clean Water Act permit from the ACOE.
- **California Department of Fish and Game (CDFG)** – For any modification of the bank or channel of North Littlejohns Creek and/or Weber Slough, a 1602 Streambed Alteration Agreement with CDFG was required.
- **San Joaquin Council of Governments** – Approval of work within or adjacent to North Littlejohns Creek and/or Weber Slough required compliance with the ITMMs issued under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP).



SOURCE: ESRI, 2007; and ESA, 2012

NorCal Logistics Center . 210506

Figure 1
Regional Locator



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SOURCE: USDA, 2006; and ESA, 2012

Figure 2
Project Site

LEGEND

PROPOSED	EXISTING	
		FEMA FLOOD ZONE BOUNDARY
		EASEMENT AS NOTED
		ADJOINING BOUNDARY
		ASPHALT BERM
		BLOCK/RETAINING WALL
		BUILDING LINE
		CONCRETE CURB
		CONCRETE CURB & GUTTER
		CONTOUR LINE
		DRIVEWAY
		EDGE OF PAVEMENT
		FENCE LINE
		LOT LINE
		MONUMENT/MONUMENT LINE
		PROPERTY LINE
		FIBER OPTIC LINE
		GAS LINE
		OVERHEAD ELECTRIC LINE
		UNDERGROUND ELECTRIC LINE
		SANITARY SEWER-MANHOLE
		STORM DRAIN-MANHOLE & CATCH BASIN
		WATER LINE & VALVE
		JOINT TRENCH
		STREET RIGHT OF WAY
		SIDEWALK
		ELECTROLIER
		POWER POLE/JOINT POLE
		SPOT ELEVATION
		TRAFFIC SIGN
		TREES OR BUSHES
		TREE ON TREE TABLE
		UTILITY BOX
		FIRE HYDRANT
		BLOW OFF VALVE
		STUB
AD	AD	AREA DRAIN
B.N. & S.F.R.R.	B.N. & S.F.R.R.	BURLINGTON NORTHERN & SANTA FAY RAIL ROAD
BSI	BSI	BY SEPERATE INSTRUMENT
B/W	B/W	BOTTOM OF WALL
BL	BL	BUILDING LINE
CB	CB	CATCH BASIN
ESMT	ESMT	EASEMENT
C	C	CONCRETE
I.N.	I.N.	INSTRUMENT NUMBER
LLA	LLA	LOT LINE ADJUSTMENT
LLC	LLC	LIMITED LIABILITY COMPANY
O.R.	O.R.	OFFICIAL RECORD
PG&E	PG&E	PACIFIC GAS AND ELECTRIC
PM	PM	PARCEL MAP
PSDE	PSDE	PUBLIC STORM DRAIN EASEMENT
R/W	R/W	RIGHT OF WAY
RS	RS	RECORD OF SURVEY
SDMH	SDMH	STORM DRAIN MANHOLE
SDE	SDE	STORM DRAIN EASEMENT
SEC	SEC	SECTION
S.S.E	S.S.E	SANITARY SEWER EASEMENT
WLE	WLE	WATERLINE EASEMENT
		CONCRETE
		GRAVEL

NOTES

1) OWNER/SUBDIVIDERS NAME:
ARCH RD LP – CARE OF
WADE LAU
10350 BREN RD W.
MINNETONKA, MN. 55343

2) APPLICANT / LAND SURVEYOR:
KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS INC.
2850 COLLIER CANYON ROAD
LIVERMORE, CA 94551
ATTN: SETH H. IRISH, LS 5922
TELEPHONE: 925-245-8788

3) PURPOSE OF THE VESTING TENTATIVE MAP: TO SUBDIVIDE ONE EXISTING PARCEL INTO SIX (6) NEW COMMERCIAL/INDUSTRIAL LOTS

4) THE SUBJECT PROPERTY IS CURRENTLY ZONED: "IL" – INDUSTRIAL LIMITED
THE PROPOSED LAND USE IS: INDUSTRIAL

5) FLOOD ZONE INFORMATION:
THE SUBJECT PROPERTY IS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM), PANEL NO. 0677C0490F & 0677C0495F, COMMUNITY NUMBER 060302, DATED OCTOBER 16, 2009, AS BEING LOCATED IN FLOOD ZONES "A", "AO", "X-SHADED" AND "X" ACCORDING TO FEMA, ZONES "A", "AO", "X-SHADED" AND "X" ARE DEFINED AS:

ZONE AO: FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY SHEET FLOW ON SLOPING TERRAIN); AVERAGE DEPTHS DETERMINED. FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED.

ZONE X-SHADED: AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

6) SAN JOAQUIN COUNTY TAX ASSESSORS PARCEL NUMBER:

181-100-15

7) TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL SURVEY PERFORMED BY HAMMON, JENSEN & WALLEN PHOTOGRAMMETRY. SUPPLEMENTED BY A FIELD SURVEY. DATE OF PHOTOGRAPHY MAY 18, 2007.

8) THE SUBDIVIDER INTENDS TO FILE MULTIPLE PHASED FINAL MAPS PURSUANT TO GOVT. CODE 66463.1. THE MAXIMUM NUMBER OF MAPS SHALL BE SIX. ALL NECESSARY IMPROVEMENTS FOR EACH LOT TO BE CONSTRUCTED AT TIME OF FINAL MAP.

9) EXISTING TREES WITHIN THE DEVELOPABLE PORTION OF THE SUBJECT PROPERTY ARE SHOWN ON SHEET 2 OF THIS TENTATIVE MAP. THERE EXIST NUMEROUS TREES WITHIN THE UNDEVELOPABLE NORTH LITTLE JOHNS CREEK. SAID TREES WITHIN NORTH LITTLE JOHNS CREEK ARE NOT SHOWN HEREON.

10) PROPOSED UTILITIES FOR THIS SUBDIVISION OF LAND ARE SHOWN ON SHEET 2 OF THIS VESTING TENTATIVE MAP.

11) GROSS AREAS SHOWN HEREON INCLUDE THOSE PORTIONS OF LOGISTICS DRIVE, ARCH ROAD AND NEWCASTLE ROAD ADJOINING THE PROPOSED LOTS WITHIN THE HEAVY DISTINCTIVE BORDER SHOWN HEREON.

12) PARCEL A WEBER SLOUGH IS TO BE DEDICATED TO SAN JOAQUIN COUNTY IN FEE AS A FLOOD CONTROL RIGHT-OF-WAY.

13) *RIGHT OF INGRESS, EGRESS TO ARCH ROAD LIMITED TO RIGHT TURNS IN AND OUT ONLY.

LEGAL DESCRIPTION:

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF STOCKTON, COUNTY OF SAN JOAQUIN, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

BEING ALL OF THAT CERTAIN 4.55 ACRES GROSS PARCEL OF LAND SHOWN ON THAT CERTAIN RECORD OF SURVEY FILED FOR RECORD ON FEBRUARY 13, 1968, IN BOOK 17 OF SURVEYS, PAGE 35, OFFICIAL RECORDS SAN JOAQUIN COUNTY, AND A PORTION OF THAT CERTAIN 135.000 ACRES GROSS PARCEL OF LAND SHOWN ON THAT CERTAIN RECORD OF SURVEY FILED FOR RECORD ON FEBRUARY 5, 1969, IN BOOK 18 OF SURVEYS , PAGE 126, OFFICIAL RECORDS SAN JOAQUIN COUNTY, BEING SITUATE IN NORTHWEST ¼ OF SECTION 27, TOWNSHIP 1 NORTH, RANGE 7 EAST, MOUNT DIABLO BASE AND MERIDIAN AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE CENTER LINE OF NEWCASTLE ROAD AND THE MONUMENT LINE OF ARCH ROAD, SAID POINT BEING THE SOUTHWEST CORNER OF THE NORTHWEST ¼ OF SECTION 27, TOWNSHIP 1 NORTH, RANGE 7 EAST, MOUNT DIABLO BASE AND MERIDIAN , AS SHOWN ON SAID MAPS,

THENCE NORTHERLY ALONG SAID CENTERLINE, NORTH 0° 21' 46" WEST, 568.23 FEET;

THENCE LEAVING SAID CENTERLINE, NORTH 89° 38' 14" EAST, 36.00 FEET;

THENCE NORTH 74° 35' 18" EAST, 2637.41 FEET;

THENCE NORTH 89° 43' 57" EAST, 72.00 FEET TO THE EASTERLY LINE OF THE AFOREMENTIONED 135.000 ACRE PARCEL (18 M 126);

THENCE ALONG SAID EASTERLY LINE, SOUTH 00° 16' 03" EAST, 1268.95 FEET, TO THE SOUTHEAST CORNER OF SAID 135.000 ACRE PARCEL, SAID POINT ALSO BEING ON THE MONUMENT LINE OF THE AFOREMENTIONED ARCH ROAD;

THENCE ALONG SAID CENTERLINE, SOUTH 89° 59' 02" WEST, 2652.90 FEET TO THE POINT OF BEGINNING.

CONTAINING 2,449,975 S.F. OR 56.2437 ACRES, MORE OR LESS.

BASIS OF BEARINGS:

THE BEARING OF NORTH 0° 21' 46" WEST TAKEN ON THE CENTER LINE OF NEWCASTLE ROAD AS SHOWN ON THAT CERTAIN PARCEL MAP FILED FOR RECORD ON MAY 24, 2005, IN BOOK 23 OF PARCEL MAPS AT PAGE 118, OFFICIAL RECORDS OF SAN JOAQUIN COUNTY WAS TAKEN AS THE BASIS FOR ALL BEARINGS SHOWN HEREON.

FILED AS A VESTING TENTATIVE MAP THIS _____ DAY OF _____, 20__

FEE: _____

_____
CITY OF STOCKTON PLANNING COMMISSION

APPROVED BY THE CITY OF STOCKTON PLANNING COMMISSION
THIS _____ DAY OF _____, 20__

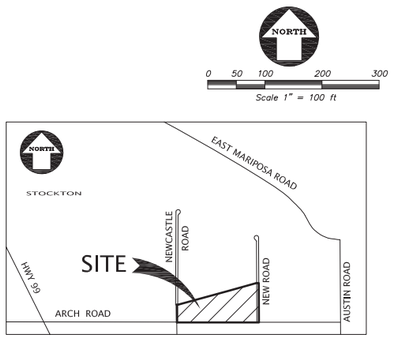
_____
CHAIRMAN

APPROVED BY THE CITY ENGINEER OF THE CITY OF STOCKTON
THIS _____ DAY OF _____, 20__

_____
CITY ENGINEER

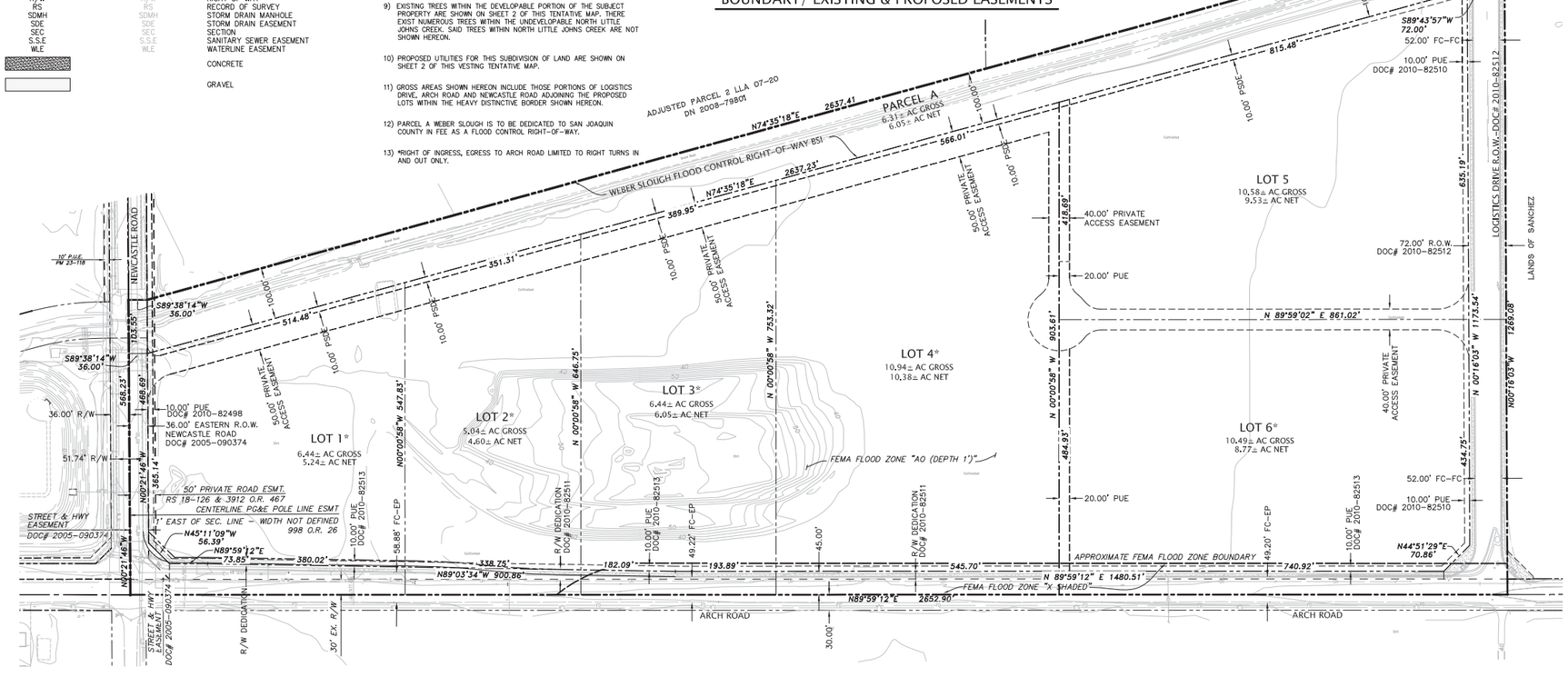
BENCHMARK:

CITY OF STOCKTON BENCHMARK NO. 327, A SAN JOAQUIN COUNTY BRASS DISK STAMPED "0-27.4" IN THE NORTHWEST CORNER OF BRIDGE NO. 1047 ON AUSTIN ROAD, APPROXIMATELY 580 FEET NORTH OF ARCH ROAD. ELEVATION=43.54 FEET. (CITY OF STOCKTON 1996 ADJUSTED) NGVD29.



VICINITY MAP
NOT TO SCALE

BOUNDARY/ EXISTING & PROPOSED EASEMENTS



SOURCE: Kier & Wright, 2012; and ESA, 2012

NorCal Logistics Center . 210506

Figure 3
Vesting Tentative Map 1

NOTES

1) OWNER/SUBDIVIDERS NAME:
ARCH RD LP – CARE OF
WADE LAU
10350 BREN RD W.
MINNETONKA, MN. 55343

2) APPLICANT / LAND SURVEYOR:
KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS INC.
2850 COLLIER CANYON ROAD
LIVERMORE, CA 94551
ATTN: SETH H. IRISH, LS 5922
TELEPHONE: 925-245-8788

3) PURPOSE OF THE VESTING TENTATIVE MAP: TO SUBDIVIDE EXISTING 274.79 ACRE PARCEL INTO FIFTEEN (15) NEW COMMERCIAL/INDUSTRIAL PARCELS

4) THE SUBJECT PROPERTY IS CURRENTLY ZONED: "L" – INDUSTRIAL LIMITED
THE PROPOSED LAND USE IS: INDUSTRIAL

5) FLOOD ZONE INFORMATION:
THE SUBJECT PROPERTY IS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM), PANEL NO. 0677G1049GF & 0677G1049SF, COMMUNITY NUMBER 060302, DATED OCTOBER 16, 2009, AS BEING LOCATED IN FLOOD ZONES "A", "AO", "X-SHADED" AND "X" ACCORDING TO FEMA, ZONES "A", "AO", "X-SHADED" AND "X" ARE DEFINED AS:

ZONE A: NO BASE FLOOD ELEVATIONS DETERMINED.

ZONE AO: FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY SHEET FLOW ON SLOPING TERRAIN); AVERAGE DEPTHS DETERMINED. FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED.

ZONE X-SHADED: AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

ZONE X: AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

6) SAN JOAQUIN COUNTY TAX ASSESSORS PARCEL NUMBERS: 181-100-23, 27, 28, 30.

7) TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL SURVEY PERFORMED BY HAMMON, JENSEN & WALLEN PHOTOGRAMMETRY. SUPPLEMENTED BY A FIELD SURVEY. DATE OF PHOTOGRAPHY MAY 18, 2007.

8) THE SUBDIVIDER INTENDS TO FILE MULTIPLE PHASED FINAL MAPS PURSUANT TO GOVT. CODE 66463.1. THE MAXIMUM NUMBER OF MAPS SHALL BE FIFTEEN. ALL NECESSARY IMPROVEMENTS FOR EACH LOT TO BE CONSTRUCTED AT TIME OF FINAL MAP.

9) EXISTING TREES WITHIN THE DEVELOPABLE PORTION OF THE SUBJECT PROPERTY ARE SHOWN ON SHEETS 3,4 AND 5 OF THIS VESTING TENTATIVE MAP. THERE EXIST NUMEROUS TREES WITHIN THE UNDEVELOPABLE NORTH LITTLE JOHNS CREEK. SAID TREES WITHIN NORTH LITTLE JOHNS CREEK ARE NOT SHOWN HEREON.

11) PROPOSED UTILITIES FOR THIS SUBDIVISION OF LAND ARE SHOWN ON SHEETS 3, 4 AND 5 OF THIS VESTING TENTATIVE MAP. STREET WIDENING IMPROVEMENTS AND UTILITIES WITHIN NEWCASTLE ROAD SOUTH OF THE CUL-DE-SAC AND LOGISTICS DRIVE ARE BEING CONSTRUCTED BY SEPARATE PERMIT. IMPROVEMENTS WITHIN NEWCASTLE ROAD EAST AND NORTH OF THE CUL-DE-SAC ARE PROPOSED BY THIS TENTATIVE MAP.

12) GROSS AREAS SHOWN HEREON INCLUDE THOSE PORTIONS OF LOTS WITHIN EXISTING AND PROPOSED PUBLIC STREETS.

13) PARCEL C IS TO BE DEDICATED AS AN EASEMENT TO THE CITY OF STOCKTON FOR DRAINAGE AND FUTURE ROAD PURPOSES.

14) THAT PORTION OF NEWCASTLE ROAD AND FUTURE NEWCASTLE ROAD WITHIN THIS SUBDIVISION WILL BE DEDICATED AS AN EASEMENT FOR PUBLIC ROAD PURPOSES TO THE CITY OF STOCKTON.

15) PARCEL B WILL BE DEDICATED IN FEE TO THE CITY OF STOCKTON FOR DRAINAGE PURPOSES UPON COMPLETION OF THE FUTURE PUMPING FACILITIES.

16) ALL NEW IMPROVEMENTS AND EXTENSIONS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE ARCH ROAD INDUSTRIAL PARK NORTH (OPUS LOGISTICS CENTER) – MASTER WATER PLAN (APPROVED JUNE 6, 2008).

17) ALL NEW IMPROVEMENTS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE ARCH ROAD INDUSTRIAL PARK NORTH (OPUS LOGISTICS CENTER) – MASTER SANITARY SEWER PLAN (APPROVED JUNE 6, 2008).

18) THIS PROJECT MUST COMPLY WITH THE STORM WATER QUALITY CONTROL CRITERIA PLAN, PER THE STOCKTON MUNICIPAL CODE SECTION 13.20.010 AND AS OUTLINED IN THE CITY'S PHASE 1 STORM WATER NPDES PERMIT ISSUED BY THE CALIFORNIA WATER QUALITY BOARD, CENTRAL VALLEY REGION (ORDER NO. R5-2007-0173).

19) THE OWNERS, DEVELOPERS AND/OR SUCCESSORS-IN-INTEREST (ODS) MUST EXECUTE A MAINTENANCE AGREEMENT WITH THE CITY, PRIOR TO RECEIVING A CERTIFICATE OF OCCUPANCY, TO PROVIDE FUNDING FOR THE OPERATION, MAINTENANCE AND REPLACEMENT COSTS OF THE STORM WATER BEST MANAGEMENT PRACTICES.

20) ALL IMPROVEMENTS SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE ARCH ROAD INDUSTRIAL PARK EAST MASTER STORM DRAINAGE PLAN, REV. NO. 2.

LEGAL DESCRIPTION:

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF STOCKTON, COUNTY OF SAN JOAQUIN, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

BEING A PORTION OF THAT CERTAIN TRACT OF LAND LYING IN SECTIONS 69, 70, 79 AND 80 OF C.M. WEBER GRANT EL RANCHO DEL CAMPO DE LOS FRANCESES AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE NORTHERLY BOUNDARY LINE OF SECTION 27 AND 28, TOWNSHIP 1 NORTH, RANGE 7 EAST, MOUNT DIABLO BASE AND MERIDIAN, SAID POINT BEING DISTANT WESTERLY 243.20 FEET MEASURED ALONG SAID NORTHERLY BOUNDARY LINE FROM THE NORTHEAST CORNER OF SECTION 27; THENCE ALONG THE SOUTHWESTERLY LINE OF THAT CERTAIN 2.967 ACRE PARCEL OF LAND AS DESCRIBED IN DEED FROM WILLIAM LADD SALMON TO THE COUNTY OF SAN JOAQUIN RECORDED NOVEMBER 25, 1949 IN BOOK OF OFFICIAL RECORDS, BOOK 1083, PAGE 296, SAN JOAQUIN COUNTY RECORDS, THE FOLLOWING COURSES:

ALONG A CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 1045.60 FEET THROUGH A CENTER ANGLE OF 56° 06' 21" [THE LONG CHORD OF WHICH BEARS NORTH 56° 59' 10" WEST 983.46 FEET] AN ARC DISTANCE OF 1023.89 FEET; THENCE NORTH 28° 56' 00" WEST 328.59 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 965.60 FEET THROUGH A CENTRAL ANGLE OF 19° 28' [AND THE LONG CHORD OF WHICH BEARS NORTH 38° 40' 15" WEST 326.63 FEET] AN ARC DISTANCE OF 328.21 FEET, MORE OR LESS TO A POINT IN THE SOUTHWESTERLY RIGHT OF WAY LINE MARIPOSA ROAD [80 FEET WIDE] PER D.D.P.H. ON NOVEMBER 6, 1861; LAST SAID POINT BEING THE MOST WESTERLY CORNER OF SAID 2.967 ACRE PARCEL; THENCE ALONG LAST SAID SOUTHWESTERLY RIGHT OF WAY LINE NORTH 52° 59' 40" WEST 1155.00 FEET, MORE OR LESS; THENCE CONTINUING ALONG LAST SAID SOUTHWESTERLY RIGHT OF WAY LINE NORTH 60° 22' 40" WEST 3015.48 FEET; THENCE LEAVING LAST SAID RIGHT OF WAY LINE SOUTH 18° 26' 00" EAST 1975.71 FEET; THENCE SOUTH 71° 49' 30" WEST 1622.55 FEET; THENCE SOUTH 18° 26' 30" EAST 959.71 FEET TO A POINT IN SAID NORTHERLY BOUNDARY LINE OF SECTION 27 AND 28; THENCE ALONG SAID NORTHERLY BOUNDARY LINE NORTH 89° 39' 56" EAST 5343.87 FEET, MORE OR LESS TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM ALL THAT PORTION CONVEYED TO THE BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY, A DELAWARE CORPORATION BY GRANT DEED RECORDED DECEMBER 31, 2002, INSTRUMENT NO. 2002-237858, OFFICIAL RECORDS AND RE-RECORDED MARCH 17, 2004, INSTRUMENT NO. 2004-053393, OFFICIAL RECORDS COUNTY OF SAN JOAQUIN.

ALSO EXCEPTING THEREFROM THE FOLLOWING PARCEL OF LAND:

BEGINNING AT THE NORTHWEST CORNER OF SAID SECTION 27, THENCE ALONG THE NORTHERLY PROLONGATION OF THE WESTERLY LINE OF SAID SECTION 27, NORTH 00° 21' 46" WEST, 106.32 FEET;

THENCE NORTH 89° 38' 14" EAST, 2657.47 FEET TO A POINT ON THE NORTHERLY PROLONGATION OF THE EASTERLY LINE OF THE NORTHWEST 1/4 OF SAID SECTION 27;

THENCE ALONG SAID LINE, SOUTH 00° 16' 03" EAST, 125.50 FEET TO THE NORTHEAST CORNER OF THE NORTHWEST 1/4 OF SAID SECTION 27;

THENCE ALONG THE NORTHERLY LINE OF THE NORTHWEST 1/4 OF SAID SECTION 27, SOUTH 89° 56' 57" WEST, 2657.33 FEET TO THE POINT OF BEGINNING.

THE BASIS OF BEARINGS FOR THE ABOVE DESCRIBED EXCEPTION PARCEL WAS TAKEN AS NORTH 89° 56' 57" EAST ON THE NORTHERLY LINE OF THE NORTHWEST 1/4 OF SECTION

ALL THAT CERTAIN REAL PROPERTY SITUATE IN THE CITY OF STOCKTON, COUNTY OF SAN JOAQUIN, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

BEING PORTIONS OF PARCEL ONE AND RAMOS DRIVE, AS SHOWN ON THAT CERTAIN PARCEL MAP FILED FOR RECORD ON MAY 24, 2005 IN BOOK 23 OF PARCEL MAPS AT PAGE 118, SAN JOAQUIN COUNTY RECORDS, AND ALL OF PARCEL "H", AS DESCRIBED IN THAT CERTAIN DOCUMENT RECORDED JULY 10, 2007 AS INSTRUMENT NUMBER 2007-125731, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A CITY OF STOCKTON MONUMENT IN THE INTERSECTION OF ARCH ROAD AND THE CENTERLINE OF NEWCASTLE ROAD, AS SHOWN ON SAID MAP;

THENCE NORTHERLY ALONG SAID CENTERLINE, NORTH 0°21'46" WEST, 1903.47 FEET, THE POINT OF BEGINNING;

THENCE, THROUGH PARCEL ONE NORTH 89°56'32" WEST, 1136.80 FEET;

THENCE, NORTH 0°04'58" EAST, 750.00 FEET

THENCE, NORTH 89°56'32" WEST, 1518.47 FEET;

THENCE, SOUTH 89°49'09" WEST, 177.56 FEET;

THENCE, NORTH 17°56'37" WEST, 838.78 FEET;

THENCE, NORTH 72°09'31" EAST, 2429.07 FEET;

THENCE, SOUTH 17°50'54" EAST, 1622.11 FEET TO A POINT IN THE CENTERLINE OF THE AFOREMENTIONED RAMOS DRIVE;

THENCE, ALONG SAID CENTERLINE SOUTH 89°56'32" EAST, 275.98 FEET TO A POINT IN THE CENTERLINE OF NEWCASTLE ROAD, SAID POINT ALSO BEING THE NORTHEAST CORNER OF THE AFOREMENTIONED PARCEL ONE;

THENCE, SOUTH 0°21'46" EAST 750.02 FEET TO THE POINT OF BEGINNING.

FILED AS A VESTING TENTATIVE MAP THIS _____ DAY OF _____, 20___

FEE:
_____

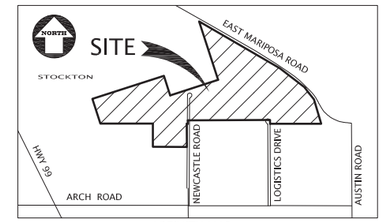
_____
CITY OF STOCKTON PLANNING COMMISSION

APPROVED BY THE CITY OF STOCKTON PLANNING COMMISSION
THIS _____ DAY OF _____, 20___

_____
CHAIRMAN

APPROVED BY THE CITY ENGINEER OF THE CITY OF STOCKTON
THIS _____ DAY OF _____, 20___

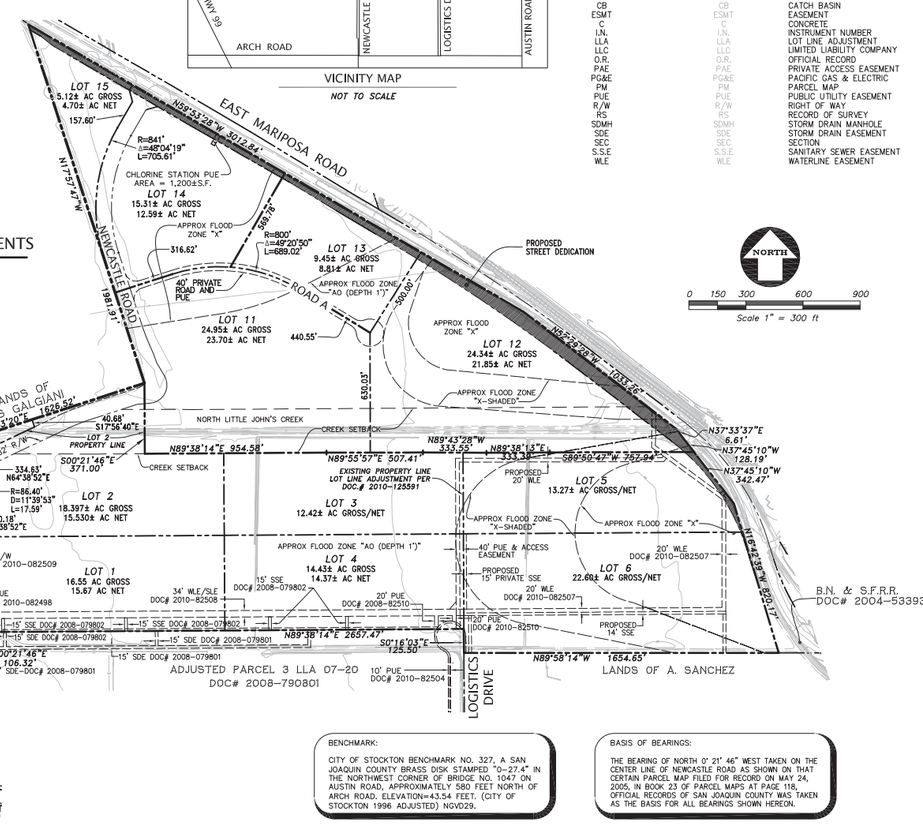
_____
CITY ENGINEER



VICINITY MAP
NOT TO SCALE

LEGEND

PROPOSED	EXISTING	
		FEMA FLOOD ZONE BOUNDARY
		EASEMENT AS NOTED
		ADJOINING BOUNDARY
		ASPHALT BERM
		BLOCK/RETAINING WALL
		BUILDING LINE
		CONCRETE CURB
		CONCRETE CURB & GUTTER
100	100	CONTOUR LINE
		DRIVEWAY
		EDGE OF PAVEMENT
		FENCE LINE
		LOT LINE
		MONUMENT/MONUMENT LINE
		PROPERTY LINE
FO	FO	FIBER OPTIC LINE
G	G	GAS LINE
OH	OH	OVERHEAD ELECTRIC LINE
UGE	UGE	UNDERGROUND ELECTRIC LINE
SS SDMH	SS SDMH	SANITARY SEWER-MANHOLE
SD CB	SD CB	STORM DRAIN-MANHOLE & CATCH BASIN
W WV	W WV	WATER LINE & VALVE
JT	JT	JOINT TRENCH
		STREET RIGHT OF WAY
		ELECTROLIER
		POWER POLE/JOINT POLE
100.00	100.00	SPOT ELEVATION
		TRAFFIC SIGN
		TREES OR BUSHES
		TREE ON TREE TABLE
		UTILITY BOX
		FIRE HYDRANT
		BLOW OFF VALVE
		STUB
AD	AD	AREA DRAIN
B.N. & S.F.R.R.	B.N. & S.F.R.R.	BURLINGTON NORTHERN & SANTA FAY RAIL ROAD
B.S.I.	B.S.I.	INDICATES EASEMENT OR RIGHT-OF-WAY DEDICATION BY SEPARATE INSTRUMENT
B/W	B/W	BOTTOM OF WALL
BL	BL	BUILDING LINE
CB	CB	CATCH BASIN
ESMT	ESMT	EASEMENT
C	C	CONCRETE
I.N.	I.N.	INSTRUMENT NUMBER
LLA	LLA	LOT LINE ADJUSTMENT
LLC	LLC	LIMITED LIABILITY COMPANY
O.R.	O.R.	OFFICIAL RECORD
PAE	PAE	PRIVATE ACCESS EASEMENT
PG&E	PG&E	PACIFIC GAS & ELECTRIC
PM	PM	PARCEL MAP
PUE	PUE	PUBLIC UTILITY EASEMENT
R/W	R/W	RIGHT OF WAY
RS	RS	RECORD OF SURVEY
SDMH	SDMH	STORM DRAIN MANHOLE
SDE	SDE	STORM DRAIN EASEMENT
SEC	SEC	SECTION
S.S.E	S.S.E	SANITARY SEWER EASEMENT
WLE	WLE	WATERLINE EASEMENT



SOURCE: Kier & Wright, 2012; and ESA, 2012

NorCal Logistics Center . 210506

Figure 4
Vesting Tentative Map 2

Environmental Factors Potentially Affected

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

☒ Aesthetics	☒ Agriculture Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Geology, Soils and Seismicity
☒ Hazards and Hazardous Materials	☒ Hydrology and Water Quality	☒ Land Use and Land Use Planning
☐ Mineral Resources	☒ Noise	☐ Population and Housing
☒ Public Services	☐ Recreation	☒ Transportation and Traffic
☒ Utilities and Service Systems	☒ Mandatory Findings of Significance	

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Adam Brucker — Signature

10-31-12 — Date

Adam Brucker, Senior Planner — Printed Name

For

Evaluation of Environmental Impacts

Aesthetics

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
1. AESTHETICS—Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway corridor?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☒	☐	☐	☐

Discussion

a) The proposed project site is located on flat land that is currently vacant. The site is in a largely undeveloped area where the adjacent land uses include agricultural lands and existing industrial uses. According to the City of Stockton General Plan there are no designated scenic vistas and no notable geographic features in the vicinity of the proposed project; as a result, the proposed project would not have an effect on a scenic vista. Therefore, this impact is **less-than-significant**.

b) A review of the current Caltrans Map of Designated Scenic Routes indicates that there are no officially designated state scenic highways in the City of Stockton; however there are two officially designated state scenic highways within San Joaquin County. Interstate 5 (I-5) from the Stanislaus County Line to Interstate 580 (0.7 miles) and Interstate 580 from I-5 to the Alameda County Line (15.4 miles) are officially designated state scenic highways. These highways are located in the southwest portion of San Joaquin County and are not in the vicinity of the proposed project. Furthermore, Arch Road, Mariposa Road, Newcastle Road, and Austin Road, the closest streets to the proposed project site are not identified as a scenic roadway by any City, County, or State planning document. Therefore, the proposed project would have **no impact** on scenic resources associated with a scenic highway or roadway, and no mitigation is required.

c) The development of urban uses has the potential degrade the character and quality of the existing visual environment. The EIR will include an aesthetics analysis that will assess the visual character of the existing project area, address the City's General Plan policies, and evaluate the consistency of the project with the visual quality requirements of the General

Plan and other relevant planning documents. Mitigation measures will be implemented where feasible in order to minimize and/or avoid impacts to visual resources.

d) The placement of buildings on lands where no building currently exist may create substantial new sources of light and glare. The EIR will address the impacts of the project's sources of glare during daytime hours and light during nighttime hours.

References

California Department of Transportation (Caltrans), 2008. California Scenic Highway Program. Available at: http://www.dot.ca.gov/hq/LandArch/scenic/scpr.htm

City of Stockton, 2007. 2035 General Plan, December 2007.

San Joaquin County, 1992. 2010 General Plan, July 1992.

Agricultural Resources

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
2.	**AGRICULTURAL RESOURCES** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. **Would the project:**				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☒	☐	☐	☐
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c)	Result in the conversion of forest land to non-forest use?	☐	☐	☐	☒
d)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☒	☐

Discussion

a) The Department of Conservation's Farmland Mapping and Monitoring Program has designated land located on the proposed site as "Prime Farmland" and "Farmland of Statewide Importance." "Prime Farmland" is defined as farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. "Farmland of Statewide Importance" is defined as farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date. Because land on the proposed project has been classified as "Prime Farmland" and "Farmland of Statewide Importance," this impact is considered **potentially significant** and will be addressed in the EIR. The project would be subject to the City's Agricultural Land Mitigation Program.

b) The proposed project is not zoned or otherwise designated for agricultural land uses and is not currently subject to a Williamson Act contract. Therefore, there is **no impact**.

c) The proposed project site does not contain forest land or land zoned for forest land or timberland. Therefore, there is **no impact**.

d) Land uses adjacent to the proposed project site include important agricultural lands. Because the proposed project site is currently vacant, it is possible that development of the site may have some minor impacts on adjacent agricultural lands (i.e., dust generation); however it is unlikely that uses associated with the proposed project would have any permanent detrimental impact to the adjacent farmlands. Because IL zoning requires nuisance generating uses to be indoors; this impact would be **less-than-significant**.

References

California Department of Conservation, 2006. Farmland Mapping and Monitoring Program.

Air Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
3. AIR QUALITY Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Discussion

a-e) The EIR will address whether potentially significant impacts to air quality on the project site or in the vicinity could occur as a result of the construction and operation of the proposed project. Construction impacts include fugitive dust and emissions from heavy construction equipment. Operational impacts include both stationary and mobile sources (automobiles and heavy trucks). Due to the limitations imposed by the IL zoning, it is not anticipated that odor-producing uses would be developed at the project site. Air quality impacts will be fully examined in the EIR and feasible mitigation measures will be identified.

Biological Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
4. BIOLOGICAL RESOURCES— Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☒	☐	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☒	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☒	☐	☐	☐

Discussion

a-d) Although the project area has been used for agricultural operations, Littlejohns Creek runs through the north side of the property. Portions of Littlejohns Creek may provide habitat for special status species including the giant garter snake. Biological impacts are **potentially significant.**

e-f) The project site is included within the San Joaquin County Multi-species Habitat Conservation and Open Space Plan (SJMSCP). The SJMSCP covers 97 special status plant, fish, and wildlife species in five designated zones. The project site is located entirely within the Central Zone. While it is anticipated that the project will participate in the SJMSCP and all City ordinances, construction of the project could potentially conflict with the provisions of the SJMSCP. This impact is considered **potentially significant** and will be addressed in the EIR.

Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
5. CULTURAL RESOURCES— Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☒	☐	☐	☐
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?	☒	☐	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒	☐	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☒	☐	☐	☐

Discussion

a-d) The project area was examined in a cultural resources report by Michael Brandman Associates in 2007, and updated in 2008 by ASI. The Brandman report recorded three historic resourced within 0.25 miles of the site, and a demolished resource on-site, the Ira Ladd Ranch residence. The ASI report did not find any significant cultural resources within the project area. However, undiscovered archaeological or paleontological may exist on the project site, therefore this impact is considered **potentially significant**. The EIR will address the proposed project's impact on cultural resources including historical, archaeological, and paleontological resources, as well as the possible discovery or disturbance of human remains.

Geology, Soils, and Seismicity

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
6. GEOLOGY, SOILS, AND SEISMICITY— Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☒	☐	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Discussion

a) The proposed project site is relatively flat and is located in an area of low surface rupture or fault-related surface disturbance. According to the Department of Conservation, Division of Mines and Geology Special Publication 42, the proposed project site is not located within a delineated Alquist-Priolo Earthquake Fault Zone; therefore this impact is considered **less-than-significant**.

b) The proposed land use would include structures and landscaping that would minimize bare soil subject to erosion. Compliance with the City of Stockton grading ordinance (Sec. 13-501 of the Municipal Code) would minimize construction impacts relating to top soil erosion. This is a **less-than-significant** impact.

c) The proposed project site's topography is relatively flat and is not located within a delineated Alquist-Priolo Earthquake Fault Zone. Additionally, the probability of soil liquefaction actually taking place on the project site is considered to be a low to moderate hazard.

With adherence to all applicable codes and regulations, including the Uniform Building Code, geologic hazard impacts associated with on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse would be minimized. The impact is considered to be **less-than-significant**.

d) The presence of expansive soils on the project site could pose a risk to property and life as a result of development of the project. This impact is considered **potentially significant** and will therefore be further analyzed in an EIR.

e) The proposed project will connect to existing sewer systems; septic tanks will not be used as part of the proposed project, therefore there is **no impact**.

References

California Department of Conservation, 1999. Division of Mines and Geology, Fault-Rupture Hazard Zones in California, Special Publication 42.

U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). 1992. Soil Survey of San Joaquin County, California. October 1992.

Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
7. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

Discussion

a) Development of industrial uses would potentially greenhouse gas emissions, including area sources, mobile (vehicular) sources, and indirect (energy usage) sources. This potentially significant impact will be examined in the EIR.

b) The City of Stockton has developed a draft climate action plan, as part of the implementation of its 2035 General Plan. The proposed project will be analyzed for consistency with this and any other applicable plans, policies, and regulations.

References

City of Stockton, 2012. *Draft Climate Action Plan*. February 2012.

Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
7. HAZARDS AND HAZARDOUS MATERIALS Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☒	☐	☐	☐
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Discussion

a,b) Two Phase I Environmental Site Assessments (Phase I) were prepared for the proposed project. A Phase I and Screening Level Phase II was prepared for a 460-acre, nine parcel agricultural property located at Arch Road and Newcastle Road (GeoTrans, Inc., 2007a). No Recognized Environmental Conditions were identified for these properties. However, there were several significant findings identified in each of the Phase Is and the Phase II.

The following were identified as significant findings in the Phase I and Screening Level Phase II Environmental Site Assessment Report, 460-Acre Property (GeoTrans, Inc., 2007a):

- 5365 Arch Road (APN 181-10-05) is listed on the HAZNET database. The listing indicates 2.18 tons of unspecified oil containing waste was

transported from the property to a Treatment, Storage, Disposal (TSD) facility in Yolo County.

- Due to existing and former agricultural uses of this site, agricultural pesticide and chemical use has occurred on the property.
- Household debris, oil containers, and empty pesticide/herbicide containers are found in various locations throughout the property. Additionally, soil staining was found in conjunction with some of the locations of oil containers and pesticide/herbicide containers. The soil was sampled and tested as part of the Phase II.
- Three large soil stockpiles are located on the property. Soil sampling and testing of the soil stockpiles was conducted as part of the Phase II.
- The potential for elevated pesticide concentrations in on-site soils is considered low.

The Screening Level Phase II Environmental Site Assessment Report identified the following results from soil sampling and testing conducted for the proposed project site:

- Seven oil-stained areas and a collection of empty agricultural chemical containers were identified at the abandoned farm site on APN 181-10-02 (Parcel 2) and APN 181-10-05 (Parcel 5), located at the northeast corner of the intersection of Arch Road and Newcastle Road. One soil sample from Parcel 5 contained motor oil concentrations in the soil of 5,100 mg/kg motor oil and another sample taken from Parcel 2 showed concentrations of motor oil at 1,100 mg/kg. The Environmental Screening Level (ESL) for motor oil is 1,000 mg/kg. No evidence of soil impact was found in connection with the three soil stockpiles or beneath the empty agricultural chemical containers (GeoTrans, Inc., 2007a).

Construction and operation of the proposed project would potentially require the use of various types and quantities of hazardous materials. A wide range of uses are allowed under the Industrial Limited zoning designation, including light manufacturing, recycling and waste collection, research and development, machine and welding shops, and equipment repair and maintenance to name a few. However, all allowed uses are required to remain indoors. At this time, no specific operations are planned as part of the proposed project, as a result, it is unknown what types of hazardous materials might be utilized by future operations on the project site. It is assumed that any hazardous materials that are used, disposed of, or transported to and from the project site will be done so in accordance with federal, state, and local laws regulating hazardous materials. During construction, there is the potential for accidental release of hazardous materials or the disturbance of unidentified prior contamination. Existing contaminated soil or hazards associated with debris located on the proposed project site could be disturbed during grading and construction activities as part of the proposed project and result in the exposure of construction workers to

hazardous materials. This impact is considered **potentially significant** and will be examined in the EIR.

c) The proposed project is not located within one-quarter mile of an existing school. Venture Academy, a charter school, is the nearest school facility at approximately two miles from the project site. Please refer to (a,b) for further discussion of potential hazards related to the proposed project. This impact is **less-than-significant**.

d) A portion of the proposed project site is listed on a regulatory agency database for hazardous materials. 5365 Arch Road is listed on HAZNET as having removed oil containing waste and disposing of it at a TSD facility (GeoTrans, Inc., 2007a). Since the listed contaminated material was removed, as identified in the database record, the site is not expected to pose a significant hazard to the environment or the public. This impact is considered **less-than-significant.**

e) The EIR will address whether the proposed project is located within two miles of the Stockton Metropolitan Airport (Airport) and whether or not the proposed project would result in a safety hazard for people residing or working in the project area.

f) The proposed project site is not located within the vicinity of a private airstrip. There is **no impact**.

g) The proposed project will not interfere with an emergency response plan or emergency evacuation plan. Prior to approval, the applicant will be required to demonstrate compliance with all emergency access requirements and other emergency standards in place in the City of Stockton. This impact is **less-than-significant**.

h) The proposed project area is not located near any existing wildlands, so no potential impact is expected. Consequently, there is a **less-than-significant** impact due to wildland fire threat.

References

GeoTrans, Inc. 2007a. Phase I and Screening Level Phase II Environmental Site Assessment Report, 460-Acre Property Arch Road at Newcastle Road, Stockton, California. Prepared for Opus West Corporation. July 2007.

GeoTrans, Inc. 2007b. Phase I Environmental Site Assessment Report, 149-Acre Sanchez Property 6001 South Austin Road, Stockton, California. Prepared for Opus West Corporation. October 17, 2007.

San Joaquin County Council of Governments (SJCOG). 1983. Airport Land Use Plan. October 25, 1983.

Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
8. HYDROLOGY AND WATER QUALITY— Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☒	☐	☐	☐
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	☒	☐	☐	☐
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river or, by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☒	☐	☐	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☒	☐	☐	☐
f) Otherwise substantially degrade water quality?	☒	☐	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☒	☐	☐	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion

a,f) Development of the proposed project site has the potential to expose bare soil and potentially generate other water quality pollutants that could be exposed to precipitation and subsequent entrainment in surface runoff. Construction activities involving soil disturbance, excavation, cutting/filling, and grading activities could result in increased erosion and sedimentation to surface waters. Construction materials such as asphalt, concrete, and equipment fluids

could be exposed to precipitation and subsequent runoff. These impacts are considered **potentially significant** and will be further addressed in the EIR.

Furthermore, the property owner is required to file a Notice of Intent (NOI) with the State Water Resources Control Board prior to commencement of construction activity. Upon receipt of the completed NOI, the property owner will be sent a receipt letter containing the Waste Discharger's Identification Number (WDID). The City requires the WDID from the State of California Water Resources Control Board to be submitted prior to issuance of a Grading Permit or plan approval. The SWPPP is required to be available on site. In addition, an Erosion Control Plan is also required to be incorporated into the project plans and/or grading plans prior to approval.

The project must also comply with the Storm Water Quality Control Criteria Plan, as outlined in the City's Phase 1 Storm Water NPDES permit issued by the California Water Quality Control Board, Central Valley Region (Order No. R5-2007-0173). The owners, developers, and/or successors-in-interest (ODS) must establish maintenance entity acceptable to the City to provide funding for the operation, maintenance and replacement costs of the Storm Water Best Management Practices. The property owners, developers, and/or successors-in-interest shall comply with any and all requirements, and pay all associated fees, as required by the City's Storm Water Pollution Prevention Program as set forth in its NPDES Storm Water Permit.

b) The project does not include on-site wells. The project would increase the area of impervious surfaces. Upon development, the project will be required to design and construct a storm drainage collection and discharge outfall into a waterway in accordance with the Stockton Municipal Code, and applicable master plans. Water for the project will be supplied by the City of Stockton, and includes groundwater supplies. A water supply assessment will be required as part of the EIR. Therefore, impacts to groundwater levels are considered **potentially significant** and will be analyzed in the EIR.

c,d,e) The project site is currently undeveloped, with large open areas of generally pervious surfaces. Implementation of the project would create impervious surfaces (roofs, concrete, and asphalt) over a significant portion of the project site, thereby preventing precipitation from infiltrating and causing it to pond and/or runoff. Therefore, development would increase runoff, potentially causing flooding onsite and/or contributing to offsite flooding in down-gradient locations. In addition, site runoff may be discharged more efficiently, decreasing the time necessary to reach drainage facilities and exceeding conveyance system capacity. Drainage and runoff impacts resulting from the proposed project will be evaluated in the EIR.

g,h) No residences are included as part of the proposed project. A large portion of the project site is located within a FEMA designated 100-year flood hazard area, therefore there is potential for structures created by the proposed project to impede or redirect flood flows. This impact is considered **potentially significant** and will be analyzed in the EIR.

i) Flood protection for the project site is provided by a large system of levees and upstream impoundments. These structures are subject to risks associated with inadequate maintenance, rising sea level, and regional land subsidence. However, in applying the significance thresholds, these risks are not directly or indirectly influenced by the project. In recognition of these findings, the impact is considered **less-than-significant**.

j) The proposed project site is located on and near flat topography remote from any major water bodies, thus precluding any potential for these impacts; therefore implementation of the proposed project would have **no impact** from seiche, tsunami, or mudflows.

References

City of Stockton, 2004. South Stockton Water Master Plan Update, November 2004.

Federal Emergency Management Agency (FEMA), 2002. Flood Insurance Rate Maps for Stockton, California. Community Panel Number 0603020040E & 0603020045E, revised April 2, 2002.

Land Use and Planning

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
9.	**LAND USE AND LAND USE PLANNING— Would the project:**				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☒	☐	☐	☐

Discussion

a) The project vicinity is located in a largely undeveloped area that has historically been used for agriculture. The project will not divide an established community; therefore there is **no impact**.

b) All of the parcels included in the proposed project are located within the City of Stockton and are designated for industrial uses (by both the general plan and zoning ordinance). The IL zoning district is applied to areas appropriate for light manufacturing uses that may generate more nuisance impacts than acceptable in commercial zoning districts and whose operations are totally conducted indoors. Includes ancillary office uses. The IL zoning district is consistent with the Industrial land use designation of the General Plan. Unlike the Industrial General zoning district, uses may not occur outdoors or be associated with nuisance or hazardous impacts in the IL zoning district.

Due to the proposed site's location near the Stockton Metropolitan Airport, the proposed project is subject to review by the Airport Land Use Commission for consistency with the San Joaquin County Airport Land Use Plan. The project applicant is also required to coordinate with Stockton Metropolitan Airport to submit FAA Form 7460.1 ("Notice of Proposed Construction or Alteration") to the FAA 30 days prior to filing an application for a construction permit to the City. The proposed project is subject to building height limitations, light and glare restrictions, and wildlife attractant restrictions. At this time, no specific industrial uses are identified. However, the proposed project includes a stormwater detention basin. This detention basin could be filled in the event of a major storm event. It is assumed that standing water collected in the basin from major storm events would remain in the detention basin for less than 24-48 hours. As stated above, the FAA recommends that wildlife attractants be separated from an airport serving turbine-operated aircraft by 10,000 feet. Although the proposed detention basin will only hold water for intermittent periods of time, a potentially significant impact could remain from

the location of a potential wildlife attractant less than 10,000 feet from an airport. The proposed project's consistency with all allocable land use plans, policies, and regulations will be further addressed in the EIR.

c) To the extent that construction activities would not avoid, minimize, or mitigate impacts to special-status species, riparian habitat, or other sensitive natural communities, the project could conflict with the goals of the SJMSCP (see also Biological Resources, above). This impact is considered **potentially significant** and will be addressed in the EIR.

References

California Department of Transportation, Division of Aeronautics (Caltrans), 2002. California Airport Land Use Planning Handbook. January 2002.

Federal Aviation Administration (FAA), 2007. FAA Advisory Circular 150/5200-33B: Hazardous Wildlife Attractants on or Near Airports. August 28, 2007.

San Joaquin Council of Governments (SJCOG), 2000. San Joaquin County Multi-species Habitat Conservation and Open Space Plan. November 2000.

San Joaquin Council of Governments (SJCOG), 1993. Airport Land Use Plan. August 24, 1993.

San Joaquin County, 1992. 2010 General Plan, July 1992.

Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
10. MINERAL RESOURCES—Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion

a,b) An initial review of the project area indicates that no mineral resources are known to exist within the vicinity. Most of the City is classified as MRZ-1 by the Department of Conservation, indicating that there is no evidence of important mineral resources.

References

City of Stockton, 2007. *2035 General Plan*. December 2007.

Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
11. NOISE—Would the project:				
a) Result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☒	☐	☐	☐
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

a-d) Construction and operation of the proposed project may cause an increase in noise, groundborne vibrations, and ambient noise levels within the project vicinity. This impact is considered **potentially significant**; therefore, the EIR will address impacts associated with noise and vibration.

e) The project is located approximately 1.5 miles northeast of the Stockton Metropolitan Airport; therefore, this impact is considered **potentially significant**. The EIR will address whether the project would expose people residing or working in the area to excessive noise levels.

f) The project is not located in the vicinity of a private airstrip, therefore **no impact** would occur.

Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
12. POPULATION AND HOUSING— Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a,b) The project will provide temporary (construction) and permanent jobs in the project area. It is anticipated that the majority of these jobs will be filled by current residents of the Stockton area. Additional housing will not be needed to serve the project. This impact is **less-than-significant**.

b,c) The proposed project does not include demolition of existing housing; therefore there is **no impact**.

Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
13. PUBLIC SERVICES— Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☒	☐	☐	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

a.i) The proposed project site will be served by the Stockton Fire Department (SFD). The SFD provides fire protection, fire prevention services, and paramedic emergency medical services to all areas of the City of Stockton. Specific services provided by the Fire Department include fire fighting, fire prevention, fire hydrant maintenance, training, fire dispatch, hazardous materials intervention, and weed abatement services. The nearest SFD station is #12, located at 4010 East Main Street, approximately 4 miles from the proposed project site. Capital costs of Fire Department expansion are accounted for by the City's Public Facilities Fee program. All Fire Station Expansion Fees will be paid as required at the time they are due; however this impact is still considered **potentially significant**.

a.ii) Law enforcement services will be the responsibility of the Stockton Police Department. Capital costs of Police Department expansion are accounted for by the City's Public Facilities Fee program. All Police Station Expansion Fees will be paid as required at the time they are due; therefore this impact is considered **less-than-significant**.

a.iii) The project site is within the boundaries of the Stockton Unified School District (SUSD). The proposed project will not generate any additional residential population that will increase the demand for additional schools in the project neighborhood or the City as a whole; therefore there is **no impact**.

a.iv) See recreation discussion, below.

References

City of Stockton, Stockton Fire Department, 2008. Available at: http://www.stocktongov.com/Fire/

Recreation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
14. RECREATION—Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

The proposed project area is currently vacant agricultural lands. The proposed project will not contribute to an increase in the local population, and no additional demand on existing neighborhood and regional parks would be created. Furthermore, warehouse/low density projects are exempt from Parkland Public Facilities Fees. The proposed project would have **no impact** on the use of existing neighborhood and regional parks.

Transportation and Traffic

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
15. TRANSPORTATION AND TRAFFIC— Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☒	☐	☐	☐
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☒	☐	☐	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐
e) Result in inadequate parking capacity?	☒	☐	☐	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☒	☐	☐	☐

Discussion

a-f) The estimated trip generation for the project, both phases, is 21,500 average daily trips. These additional trips may affect the following intersections and freeway segments/ramps:

Intersections

1. Arch-Airport Road/Quantas Lane
2. Arch-Airport Road/State Route (SR) 99 Ramps
3. Arch-Airport Road/Frontage Road
4. Arch Road/Frontier Way
5. Arch Road/Fite Court
6. Arch Road/Newcastle Road
7. Arch Road/Austin Road
8. Austin Road/Mariposa Road
9. Carpenter Road/Mariposa Road

10. Stagecoach Road/Mariposa Road
11. SR 99 East Frontage Road/Mariposa Road
12. SR 99 Northbound Mariposa Off-Ramp/SR 99 East Frontage Road
13. SR 99 East Frontage Road/Peterson Road
14. SR 99 Southbound Ramps/Mariposa Road
15. SR 99 Northbound Off-Ramp/Mariposa Road/SR 99 West Frontage Road/SR 99 Southbound On-Ramp

Freeway Segments and Ramps

1. SR 99, north of Mariposa Road
2. SR 99, north of Arch-Airport Road
3. SR 99, south of Arch-Airport Road
4. SR 99 at Arch-Airport Road northbound on-ramp merge
5. SR 99 at Arch-Airport Road northbound on-ramp diverge
6. SR 99 at Arch-Airport Road southbound on-ramp merge
7. SR 99 at Arch-Airport Road southbound on-ramp diverge

The impacts from vehicular traffic are considered **potentially significant** and the EIR will include a complete traffic study. The project would not alter air traffic patterns.

Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
16. UTILITIES AND SERVICE SYSTEMS—Would the project:				
a) Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
d) Require new or expanded water supply resources or entitlements?	☒	☐	☐	☐
e) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☒	☐	☐	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Discussion

a) There is no evidence that the proposed project, which would include uses allowed under the Industrial Limited zoning district, would violate RWQCB standards. This impact is considered **less than significant.**

b) The project site is served by existing utilities municipal water. Water laterals will need to be extended to the proposed lots. This impact is considered **less than significant**.

c) Implementation of the proposed project will result in large areas of impervious surfaces where before there were none; this will cause a change in both the path and runoff flow rate of stormwater. The project area includes existing detention basins. The EIR will assess the adequacy of the proposed stormwater drainage system. This impact is considered **potentially significant.**

d) The project site is currently planned and zoned for industrial uses, and should be included in long-term water supply assessments for the City. The project will be assessed, using the most current Urban Water Management Plan, to determine the adequacy of the water

supply. This impact is therefore considered **potentially significant** and will be examined in the EIR.

f) The anticipated construction of new buildings as part of the proposed project would increase the amount of solid waste that is received by the local landfill. The EIR will evaluate whether there is capacity at service area landfills to accommodate the additional solid waste contributed by the proposed project. This impact is considered **potentially significant.**

g) There is no evidence that the proposed project, which would include uses allowed under the Industrial Limited zoning district, would violate applicable federal, state, and local statues and regulations related to solid waste. This impact is considered **less than significant.**

Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
17. MANDATORY FINDINGS OF SIGNIFICANCE— Would the project:				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Have impacts that would be individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☒	☐	☐	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Discussion

a) Per Issue 4, Biological Resources, above, the project has the potential to substantially degrade the environment; therefore this impact is considered **potentially significant**.

b) Implementation of the project has the potential to involve impacts of "cumulatively considerable" scope that may affect the quality of the environment and in doing so might indirectly impact human beings. The EIR will provide a complete study of the potential impacts of the project regarding "mandatory significance." Where feasible, mitigation measures will be introduced in order to offset any potential impacts resulting from the project. This impact is considered **potentially significant.**

c) Potentially significant impacts related to hazardous materials, air quality, and noise have been identified in this initial study. Therefore this impact is considered **potentially significant** and will be further examined in the EIR.

Appendix A
Environmental Information Form

ESA

STOCKTON
ENVIRONMENTAL INFORMATION AND INITIAL STUDY FORM
(Pursuant to Cal. Code of Regulations, Title 14, Sections 15063-15065)

INITIAL STUDY FILE NO: IS___
EIR FILE NO: P12-110
INITIAL STUDY FILING DATE: ___

LEAD AGENCY
City of Stockton
Community Development Dept.
Planning Division
345 North El Dorado Street
Stockton, CA 95202
(209) 937-8266

Note: ***The purpose of this document is to describe the project, its environmental setting, any potentially significant adverse environmental impacts which may be caused by the project or which may affect the project site and/or surrounding area, and any mitigation measures which will be incorporated into the project. Please complete all applicable portions of Section A (General Information/Project Description) and as much of Section B (Project Site Characteristics) as possible. If a question is not applicable, then, respond with "N/A". After completing Sections A and B, please sign the certification following Section B and attach any supplemental documentation and exhibits as deemed necessary. The completed form and applicable fees should be filed at the above-noted Lead Agency address.***

PLEASE TYPE OR PRINT

A. GENERAL INFORMATION/PROJECT DESCRIPTION *(Completed by Applicant)*

1. **Project Title:** NorCal Logistics Center
2. **Property Owner(s):** Arch Road L.P.
   Address: 10350 Bren Road W., Minnetonka, MN. **Zip** 55343 **Phone** 925-245-8788
3. **Applicant/Proponent:** Arch Road L.P. **Contact Person:** Tom Schaal
   Address: 10350 Bren Road W., Minnetonka, MN **Zip** 55343 **Phone** 925-245-8788
4. **Consulting Firm:** ESA **Contact Person:** Brian Grattidge
   Address: 2600 Capitol Ave., #200, Sacramento CA **Zip** 95816 **Phone** 916-564-4500
5. **Project Site Location:**
   a. **Address (if applicable) or Geographic Location:** North of Arch Road and west of Austin Road, Stockton, CA 95215
   b. **Assessor's Parcel Number(s):** 179-220-27, 28, 30; 181-110-23; 181-100-15
   c. **Legal Description** ***[Attach metes and bounds (bearings and dimensions) description and corresponding map(s) or list existing lots of record from recorded deed]*****:**
      See tile sheet of Tentative Parcel Maps in the Initial Study for detailed legal descriptions.
6. **General Project Description: (*Describe the whole action, including later phases of the project and any secondary, support, or offsite features necessary for its implementation. Attach additional sheets if necessary.*)**
   See attached.
7. **Applications Currently Under City Review:**
   File Number(s): City Planning Application P12-110 – Arch Road LTD – Vesting Tentative Maps (VTM 1 - Tract No. 3732 and VTM 2 - Tract NO. 3733).
8. **Other permits/reviews required by the City, County, State, Federal or other agencies for project implementation:**

Agency:	Permits/Reviews:
NPDES	Permit and preparation of a SWPPP
SJVAPCD	Indirect Source Review (ISR)

9. **Describe proposed General Plan (GP) amendments and/or prezoning/rezoning (Zoning) requests, if applicable:**

Existing GP Designation	Proposed GP Designation	Acres	Existing Zoning	Proposed Zoning	Acres

10. Describe any site alterations which result from the proposed project: (*Address the amount and location of grading, cuts and fills, vegetation/tree removal, alterations to drainage, removal of existing structures, etc.*)

11. Specific Project Description/Operational Characteristics:

a. Describe Proposed Commercial, Industrial, Institutional, and Recreational Uses (*all non-residential uses*):

(1) Proposed Land Use(s)	Zoning	Site Acreage	Structure Sq. Ft.	Required Parking	Parking Provided
Industrial	IL	331	6,337,980	TBD	TBD

(2) Describe project phasing (*location/timing*):

See attached.

(3) Days/Hours of operation: Potentially 24 hours/day **; Work shifts per day:** 3

(4) Total number of employees: 4300 **; Number of employees per work shift:** unknown

(5) Number of company vehicles/trucks: TBD

(6) Estimated number of vehicle trip ends (TE) per day generated by project: Trucks ___ TE/Day; Passenger Vehicles, ___ TE/Day; Total, 22,950 **TE/Day.**

(7) Estimated maximum number of TE/Day based on proposed General Plan Designation: 22,950 **TE/Day, and/or Proposed Zoning:** 22,950 **TE/Day**

(8) Will land use-related noise produced on site exceed adopted noise standards (*i.e.: 45 Leq dB during nighttime or 55 Leq dB during daytime hours at nearest residential property line; 75 Lmax dB at nearest commercial property line; and/or 80 Lmax dB at nearest industrial property line*)?
No ✓ **Yes** ____ **If yes, describe sources and levels of noise:**

(9) Other operational or design characteristics:

See Initial Study

b. Describe Proposed Residential Land Uses: [*Check (4) or specify applicable types]*

Apartments ☐ **Townhouses** ☐
Conventional 1-F ☐ **, 2-F** ☐ **, or 3-F** ☐ **Condominiums** ☐
Elderly Apartments ☐ **Dormitory/Rooming/Boarding Houses** ☐
Residential Care Facility ☐ **Employee Housing** ☐
PURD ☐ **Mobile Homes** ☐
Occupancy Facilities ☐ **Other** ☐
Motel/Hotel/B&B; Extended Stay/Single Rm. ☐

(1) Residential Land Use Summary:

Type of Unit	Zoning	Acreage	Proposed Units	Units/Acre	Max. Units	Allowed	Max. Density

(2) Describe Project Phasing: _____

(3) Population Projection for Proposed Project: = _____
Projected Population Density (*Persons/Unit*): = _____

(4) **Student Generation Projected for Proposed Project:** = _____
Projected Student Density (*K-12 Students/Unit*): = _____

(5) **Estimated total number of vehicle trip ends (TE) per day generated by proposed project:** = ___

(6) **Estimated maximum number of TE/Day based on proposed General Plan Designation:** _____ **TE/Day, and/or Proposed Zoning:** _____ **TE/Day**

12. **Will the project generate any substantial short-term and/or long-term air quality impacts, including regional/cumulative contributions? No** _____ **Yes** _____ **If so, estimate the type and amount of emissions below *(e.g., tons per year of PM10, ROG, Nox, and CO)*:**

a. **Construction Emissions:** To be analyzed in the EIR.

b. **Stationary Source Emissions:** To be analyzed in the EIR.

c. **Mobile Source Emissions:** To be analyzed in the EIR.

B. PROJECT SITE CHARACTERISTICS (*Completed by Applicant and/or Lead Agency, as applicable*):

1. **Total Site Acreage (Ac.) (or) Square Footage (S.F.):** 6,337,980 **S.F.** 331 **Ac.**

2.

Ex. General Plan Designations	Acres	Ex. Zoning (*City or County*)	Acres
Industrial (I)	331	Industrial, Limited (IL)	331

Identify and describe any specific plans, redevelopment areas, and/or other overlay districts/zones which are applicable to the project site:

None.

4.

Identify Existing On-Site Land Uses and Structures:	Acres or Sq. Ft.:
Vacant with no existing structures	331

5. **Prior Land Uses if Vacant:** Agriculture

6. **Describe any on-site and adjacent utility/infrastructure improvements and right-of-ways/easements:**

To be analyzed in the EIR.

7. **Adjacent land uses, zoning and General Plan designations:**

Adjacent Uses	Zoning (City or County)	General Plan Designations
North: Agriculture	Industrial Limited (IL)	Industrial (I)
South: Corrections center	Public (P) (County)	Public Facilities (P-F) (County)
East: BNSF Intermodal Facility	AG-40 (County)	Agricultural (AG) (County)
West: Industrial	Industrial Limited (IL)	Industrial (I)

8. **If site contains at least ten (10) acres of undeveloped and/or cultivated agricultural land, complete the following:**

a. **Is the land classified as "Prime Farmland" and/or "Farmland of Statewide Importance" (*as identified on the San Joaquin County "Important Farmland Map"*)? No** ___ **Yes** ✓

b. **Is the site under a Williamson Act Land Conservation Contract? No** ✓ **Yes** ___

c. **If the site is under contract, has a "Notice of Non-Renewal" been filed? No ___ Yes ___**

If yes, when will the contract expire? Date: _____

9. **Describe important on-site and/or adjacent topographical and water features:**

On-Site: Littlejohns Creek and Weber Slough

Adjacent: N/A

10. **Describe any important on-site and/or adjacent vegetation/wildlife habitat:**

On-Site: Littlejohns Creek

Adjacent: Weber Slough

11. **Describe any general and special status wildlife species known to inhabit the site or for which the site provides important habitat:** Species may include Giant Garter Snake and Swainson's Hawk.

12. **Identify and describe any significant cultural resources on or near the site (*attach a "Records Search", "Site Survey", and/or other documentation, if applicable*):** See Initial Study.

13. **Identify and describe any on-site or nearby public health and safety hazards or hazardous areas (*attach a "Preliminary Site Assessment" and/or "Remediation Plan", if applicable*):** _____

See Initial Study.

14. **Identify and describe any potentially hazardous geologic/soil conditions:** None.

15. **Is any portion of the site subject to a 100-year flood? No _____ Yes ✓ If so, what flood zone?** A & AO

16. **Identify and describe, below, any existing and/or projected on-site ambient noise levels which exceed adopted noise standards (*plot noise contours on proposed tentative maps or on a site plan for the project, if applicable*):**

a. **Do on-site ambient noise levels from existing land uses (locally regulated noise sources) located on-site or off-site exceed adopted noise standards? Yes ___ No ___. If so, describe:** _____

To be analyzed in the EIR.

b. **Does or will transportation-related noise exceed 60 dB Ldn at any exterior location or 45 dB Ldn at any interior location? Yes ___ No ___. If so, describe:** _____

To be analyzed in the EIR.

17. **Indicate by checking (4) whether the following public facilities/infrastructure, utilities, and services are presently or readily available to the project site and whether the proposed project can be adequately served without substantial improvements or expansion of existing facilities and services. If new or expanded/modified facilities or services are necessary, explain below.**

		Yes	No	N/A
a.	**Water supply/treatment facilities**	☑	☐	☐
b.	**Wastewater collection/treatment facilities**	☑	☐	☐
c.	**Storm drainage, flood control facilities**	☑	☐	☐
d.	**Solid waste collection/disposal/recycling services**	☑	☐	☐
e.	**Energy/communication services**	☑	☐	☐
f.	**Public/private roadway and access facilities**	☑	☐	☐
g.	**Public/private parking facilities**	☑	☐	☐
h.	**Other public/private transportation services**	☑	☐	☐

	(public transit, railway, water or air transport, etc.)			
i.	Fire and emergency medical services	☑	☐	☐
j.	Police/law enforcement services	☑	☐	☐
k.	Parks and recreation services	☑	☐	☐
l.	Library services	☑	☐	☐
m.	General government services	☑	☐	☐
n.	School facilities	☑	☐	☐

Explanation(s):

SIGNATURE (*Completed by Owner or Legal Agent*)

I certify, under penalty of perjury, that the foregoing is true and correct and that I am (*check one*):

☐ **Legal property owner** (*owner includes partner, trustee, trustor, or corporate officer*)

☑ **Owner's legal agent, authorized project applicant, or consultant** (*attach proof of consent to file on owner's behalf*)

Kevin O'Grady — 10/25/12

(*Signature*) (*Date*)

Brian J. Graddidge, ESA Project Mgr.

(*Type or Print Name and Title*)

C. ENVIRONMENTAL SIGNIFICANCE CHECKLIST (*Completed by Lead Agency or Authorized Consultant - - Check (4) Responses and Provide Supporting Documentation and References, as applicable]:)*

- ***In completing this Checklist, the Lead Agency shall evaluate each environmental issue based on the preceding Sections A and B of this Initial Study and shall consider any applicable previously-certified or adopted environmental analysis. The decision as to whether a project may have one or more significant effects shall be based on substantial evidence in light of the whole record before the Lead Agency. All answers must take into account the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.***

- ***Following each section of this Checklist is a subsection to incorporate environmental documentation and to cite references in support of the responses for that particular environmental issue. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources the Lead Agency cites (in parentheses) at the end of each section. This subsection provides (a) the factual basis for determining whether the proposal will have a significant effect on the environment; (b) the significance criteria or threshold, if any, used to evaluate each question; and (c) the new or revised mitigation measures and/or previously-adopted measures that are incorporated by reference to avoid or mitigate potentially significant impacts. Mitigation measures from Section D, "Earlier Analyses", may be cross-referenced. In addition, background and support documentation may be appended and/or incorporated by reference, as necessary. This section is required to support a "Mitigated Negative Declaration". If an Environmental Impact Report (EIR) will be prepared, this section shall provide an "EIR Scope of Work" in order to focus on issues to be addressed in the Draft EIR***

- ***A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project site is not subject to flooding). A "No Impact" answer should be explained if it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).***

- ***Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is "Potentially Significant", "Less-than-Significant with Mitigation Incorporated", or "Less-than-Significant". "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant and mitigation measures to reduce the impact to a less-than-significant level have <u>not</u> been identified or agreed to by the project applicant. If there are one or more "Potentially Significant Impact" entries upon completing the Checklist, an Environmental Impact Report (EIR) is required.***

- ***The "Less-than-Significant with Mitigation Incorporated" category applies when revisions in the project plans or proposals made, or agreed to, by the applicant would avoid or mitigate the effect(s) of the project to a point where, clearly, no significant adverse environmental effect would occur. The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less-than-significant level. Upon completing the Checklist, if there is no substantial evidence in light of the whole record before the Lead Agency that the project, as revised, may have a significant effect on the environment, then, a "Mitigated Negative Declaration" shall be prepared.***

- ***The Checklist shall incorporate references to common or comprehensive information sources [e.g., the City's General Plan, redevelopment plans, infrastructure master plans, zoning ordinance/development code(s), and related environmental documents, etc.] for potential regional (Citywide) and cumulatively considerable impacts. In addition, any prior site-specific environmental documents and/or related studies (e.g., traffic studies, geo-technical/soils reports, etc.) should be cited and incorporated by reference, as applicable. Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated. Referenced documents shall be available for public review in the City of Stockton Community Development Department, Planning Division, 345 N. El Dorado St., Stockton, CA.***

- ***Supporting Information Sources: A source list should be attached and other sources used and/or individuals contacted should be cited in the discussion.***

ENVIRONMENTAL SIGNIFICANCE CHECKLIST

1. **AESTHETICS - Would the project:**

a. **Have a substantial adverse effect on a scenic vista?**	Less than Significant Impact
b. **Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?**	No Impact
c. **Substantially degrade the existing visual character or quality of the site and its surroundings?**	Potentially Significant Impact
d. **Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?**	Potentially Significant Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

2. **AGRICULTURAL RESOURCES - In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. Would the project:**

a. **Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**	Potentially Significant Impact
b. **Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?**	No Impact
c. **Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use?**	Less than Significant Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

3. **AIR QUALITY - When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:**

a. **Conflict with or obstruct implementation of the applicable air quality plan?**	Potentially Significant Impact
b. **Violate any air quality standard or contribute substantially to an existing or projected air quality violation?**	Potentially Significant Impact
c. **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?**	Potentially Significant Impact
d. **Expose sensitive receptors to substantial pollutant concentrations?**	Potentially Significant Impact
e. **Create objectionable odors affecting a substantial number of people?**	Less than Significant Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

4. **BIOLOGICAL RESOURCES- Would the project:**

a. **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?** — Potentially Significant Impact

b. **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?** — Potentially Significant Impact

c. **Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?** — Potentially Significant Impact

d. **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?** — Potentially Significant Impact

e. **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?** — Potentially Significant Impact

f. **Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?** — Potentially Significant Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

5. **CULTURAL RESOURCES - Would the project:**

a. **Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?** — Potentially Significant Impact

b. **Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?** — Potentially Significant Impact

c. **Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?** — Potentially Significant Impact

d. **Disturb any human remains, including those interred outside of formal cemeteries?** — Potentially Significant Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

6. **GEOLOGY AND SOILS - Would the project:**

a. **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**

(1) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.** — Less than Significant Impact

(2) **Strong seismic groundshaking?** — Less than Significant Impact

(3) Seismic-related ground failure, including liquefaction?	Less than Significant Impact
(4) Landslides?	Less than Significant Impact
b. Result in substantial soil erosion or the loss of topsoil?	Less than Significant Impact
c. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	Less than Significant Impact
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	Potentially Significant Impact
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	No Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

7. HAZARDS AND HAZARDOUS MATERIALS - Would the project:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than Significant Impact
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Potentially Significant Impact
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less than Significant Impact
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	Less than Significant Impact
e. Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	Potentially Significant Impact
f. Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	No Impact
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than Significant Impact
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	Less than Significant Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

8. HYDROLOGY AND WATER QUALITY - Would the project:

a. Violate any water quality standards or waste discharge requirements?	Potentially Significant Impact

b.	**Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?**	Potentially Significant Impact
c.	**Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?**	Potentially Significant Impact
d.	**Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?**	Potentially Significant Impact
e.	**Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**	Potentially Significant Impact
f.	**Otherwise substantially degrade water quality?**	Potentially Significant Impact
g.	**Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**	No Impact
h.	**Place within a 100-year flood hazard area structures that would impede or redirect floodflows?**	Potentially Significant Impact
i.	**Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?**	No Impact
j.	**Contribute to inundation by seiche, tsunami, or mudflow?**	No Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

9. LAND USE AND PLANNING - Would the project:

a.	**Physically divide an established community?**	No Impact
b.	**Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**	Potenially Significant Impact
c.	**Conflict with any applicable habitat conservation plan or natural community conservation plan?**	Potenially Significant Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

10. MINERAL RESOURCES - Would the project:

a.	**Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**	No Impact
b.	**Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?**	No Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

11. NOISE - Would the project:

a.	**Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?**	Potentially Significant Impact
b.	**Expose persons to or generate excessive groundborne vibration or groundborne noise levels?**	Potentially Significant Impact
c.	**Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**	Potentially Significant Impact
d.	**Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**	Potentially Significant Impact
e.	**Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?**	Potentially Significant Impact
f.	**Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels**	No Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

12. POPULATION AND HOUSING - Would the project:

a.	**Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?**	Less than Significant Impact
b.	**Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?**	Less than Significant Impact
c.	**Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?**	No Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

13. PUBLIC SERVICES - Would the project:

a. **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:**

(1) **Fire protection?** Potentially Significant Impact

(2) **Police protection?** Less than Significant Impact

(3) **Schools?** No Impact

(4) **Parks?** No Impact

(5) **Other public facilities?** No Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

14. RECREATION - Would the project:

a. **Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?** No Impact

b. **Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?** No Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

15. TRANSPORTATION/TRAFFIC - Would the project:

a. **Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?** Potentially Significant Impact

b. **Cause, either individually or cumulatively, exceedance of a level-of-service standard established by the county congestion management agency for designated roads or highways?** Potentially Significant Impact

c. **Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?** Potentially Significant Impact

d. **Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?** Potentially Significant Impact

e. **Result in inadequate emergency access?** Potentially Significant Impact

f. **Result in inadequate parking capacity?** Potentially Significant Impact

g. **Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?** Potentially Significant Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

16. UTILITIES AND SERVICE SYSTEMS - Would the project:

a.	**Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**	Less than Significant Impact
b.	**Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**	Less than Significant Impact
c.	**Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**	Potentially Significant Impact
d.	**Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?**	Potentially Significant Impact
e.	**Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**	Less than Significant Impact
f.	**Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?**	Potentially Significant Impact
g.	**Comply with federal, state, and local statutes and regulations related to solid waste?**	Less than Significant Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

17. MANDATORY FINDINGS OF SIGNIFICANCE

a.	**Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?**	Potentially Significant Impact
b.	**Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)**	Potentially Significant Impact
c.	**Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?**	Potentially Significant Impact

Supporting Documentation/References Cited:

NorCal Logistics Center Initial Study, October 2012.

D. EARLIER ANALYSIS *(Completed by Lead Agency or Authorized Consultant):*

Earlier analyses may be used where, pursuant to the tiering, Program EIR, or other CEQA process, one or more effects have been adequately analyzed in an earlier EIR or Initial Study/Negative Declaration [Section 15063(c)(3)(D) of the State CEQA Guidelines]. The previously-certified or adopted environmental document(s) and any applicable adopted mitigation measures, CEQA "Findings", statements of overriding consideration, and mitigation monitoring/reporting programs are incorporated by reference, as cited below, and discussed on attached sheet(s) to identify the following:

(a) Earlier Analysis Used — Identify and state where earlier analyses are available for review.

(b) Impacts Adequately Addressed — Identify which effects from the above Checklist (Section C) were within the scope of, and adequately analyzed in, an earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.

(c) Mitigation Measures— For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

(d) CEQA Findings, Statements of Overriding Consideration, and Mitigation Monitoring/Reporting Programs — Identify any applicable previously adopted CEQA Findings, overriding considerations, and mitigation monitoring/reporting provisions that have been relied upon and incorporated into the proposed project, pursuant to Sections 15150 (Incorporation by Reference) and 15152(f)(3) (Tiering) of the State CEQA Guidelines.

ENVIRONMENTAL ISSUE:	REFERENCES TO EARLIER ANALYSES, IMPACTS ADEQUATELY ADDRESSED, AND INCORPORATED MITIGATION AND FINDINGS:
1. AESTHETICS	
2. AGRICULTURAL RESOURCES	
3. AIR QUALITY	
4. BIOLOGICAL RESOURCES	
5. CULTURAL RESOURCES	
6. GEOLOGY AND SOILS	
7. HAZARDS AND HAZARDOUS MATERIALS	
8. HYDROLOGY AND WATER QUALITY	
9. LAND USE AND PLANNING	
10. MINERAL RESOURCES	
11. NOISE	
12. POPULATION AND HOUSING	
13. PUBLIC SERVICES	
14. RECREATION	
15. TRANSPORTATION/TRAFFIC	
16. UTILITIES AND SERVICE SYSTEMS	
17. MANDATORY FINDINGS OF SIGNIFICANCE	

E. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED [*Completed by Lead Agency or Authorized Consultant - -* Check (4), as applicable]:

The environmental factors checked below would potentially be affected by this project (i.e., the project would involve at least one impact that is a "Potentially Significant Impact"), as indicated in the preceding Checklist (Section C) and the Earlier Analysis (Section D):

☑ Aesthetics	☑ Agricultural Resources	☑ Air Quality
☑ Biological Resources	☑ Cultural Resources	☑ Geology/Soils
☑ Hazards and Hazardous Materials	☑ Hydrology/Water Quality	☑ Land Use/Planning
☐ Mineral Resources	☑ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☑ Transportation/Traffic
☑ Utilities/Service Systems	☑ Mandatory Findings of Significance	

F. OTHER REFERENCES AND PERSONS CONSULTED *(Completed by Lead Agency or Authorized Consultant):*

Authority: Public Resources Code Sections 21083 and 21087.
Reference: Public Resources Code Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, 21151; *Sundstrom v. County of Mendocino*, 202 Cal. App. 3d 296 (1988); *Leonoff v. Board of Supervisors*, 222 Cal. App. 3d 1337(1990).

G. DETERMINATION [*Completed by Lead Agency* - -Check (4), as applicable]:

On the basis of this initial evaluation and on substantial evidence in light of the whole record before the Lead Agency:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, however, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent (see attached Mitigation Agreement). A MITIGATED NEGATIVE DECLARATION or an ADDENDUM to a MITIGATED NEGATIVE DECLARATION will be prepared.

☑ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR), SUBSEQUENT EIR, SUPPLEMENT to an EIR, or an ADDENDUM to an EIR is required.

☐ I find that the proposed project MAY have an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis, as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or MITIGATED NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or MITIGATED NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required. Specifically, the environmental documentation for the proposed project is provided by the following document(s):

(1) Negative Declaration/Initial Study (I.S.) File No.: _____
State Clearinghouse No.: _____

(2) Final EIR File No: _____ Title: _____
State Clearinghouse No.: _____

(3) Other Environmental Document(s): _____

(Pursuant to the State and City Guidelines for Implementation of CEQA, the determination of the Community Development Director may be appealed to the City Planning Commission by submitting a written appeal with the applicable fee to the Community Development Department within ten (10) calendar days following this date of the determination.)

STEVE CHASE, DIRECTOR
COMMUNITY DEVELOPMENT DEPARTMENT

By: _____ Date: 10-31-12
(Signature of Planner) (Date of Determination)

Adam Brucker, Senior Planner
(Name and Title of Planner – Typed or Printed)
::ODMA\GRPWISE\COS.CDD.CDD_Library:13512.1

NOP COMMENT LETTERS

SAN JOAQUIN COUNCIL OF GOVERNMENTS

555 E. Weber Avenue • Stockton, California 95202

209.235.0600 • 209.235.0438 (fax)
www.sjcog.org

November 21, 2012

Adam Brucker
City of Stockton Community Development Dept.
345 N. El Dorado Street
Stockton, CA 95202

RE: ALUC REVIEW – NORCAL LOGISTICS CENTER NOP

Dear Mr. Brucker:

On behalf of the San Joaquin County Airport Land Use Commission (ALUC), I would like to thank the City for providing our agency with opportunity to comment on the proposed Norcal Project.

The project site is located within the Stockton Metropolitan Airport's (SMA) Influence Area (AIA) and, pursuant to the State Aeronautics Act (Public Utilities Code Section 21676), the project is subject to a Consistency Determination by the San Joaquin County ALUC. At this time, projects within SMA's AIA are subject to the policies and criteria within the 1993 Airport Land Use Plan (ALUP).

NOP COMMENTS

As stated within the project's Initial Study, the EIR will evaluate potential impacts relative to the following significance thresholds within the 2012 CEQA Guidelines, Appendix G:

SECTION VIII. HAZARDS AND HAZARDOUS MATERIALS
For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

SECTION X. LAND USE AND PLANNING. Would the project:
Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Comments Regarding Structural Height

Heights of new structures, trees, artificial embankments, and equipment in the vicinity of airports are limited by three dimensional imaginary surfaces defined in Part 77 of the Federal Aviation Regulations. As shown in Exhibit 1, the project site is located primarily within the Conical Zone, which is one of the five FAA defined imaginary surfaces. The

FAA has review requirements for structures that may fall below ALUP imaginary surfaces but above specific review heights. For runways greater than 3, 200 feet long, a review is required of proposed structures that would rise above a line extending from the centerline at a slope of 100 feet horizontal to 1 foot vertical. Proposed structures that would exceed the height of these lines must file a Notice of Proposed Construction or Alteration FORM-7460 1 with the FAA.

For example, the SMA has a runway that is more than 3,200 feet long. If the nearest portion of the project site is 6,800 feet from the runway any structure greater than 68 feet (including any change in elevation), would need to file a Notice of Proposed Construction or Alteration (Form 7460-1) with FAA. The FAA will conduct an aeronautical study that will produce a determination regarding the impact to air navigation.

Comment Regarding Bird-Strike Hazards

With regard to bird strike hazards, the FAA guidelines set forth throughout FAA documents on this matter specify that no use of land or water anywhere within the boundaries encompassed by FAR Part 77 should be allowed if it could endanger or interfere with the landing, takeoff, or maneuvering of an aircraft.

The risk of bird strikes is most serious along the corridors required for takeoff and landings and the FAA strongly recommends that such uses be kept at least 10,000 feet from any runway used by turbine-powered aircraft. Any stormwater facility should be located within an area that is less than 10,000 feet from SMA's runways. As with structural height determinations, FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, or other suitable documents similar to FAA Form 7460-1 can be used to notify the appropriate FAA Regional Airports Division Office. Project proponents can also contact the appropriate FAA Regional Airports Division Office for assistance with the notification process.

The ALUC recommends that the EIR incorporate conditions to clearly state these FAA standards to ensure that future development is consistent with allowable uses within the AIA. If the project allows land uses that would necessitate an FAA review, The ALUC will defer the final Consistency Review until an aeronautics evaluation and determination by the FAA has been completed. Without this, the impact cannot be determined and therefore, any mitigation proposed may only be deferring the declaration of a potentially significant impact. Within the 1993 ALUP, waterbodies are to be evaluated within the Conical Zone before a consistency determination is given.

The following are standards and project design conditions specific to compliance with the 1993 ALUP and should be carried through as conditions of approval:

1. New land uses that may cause visual, electronic, or increased bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area. Specific characteristics to be avoided include:

    - Glare or distracting lights which could be mistaken for airport lights. Reflective materials are not permitted to be used in structures or signs (excluding traffic directing signs);

    - Sources of dust, steam, or smoke which may impair pilot visibility;

- Sources of electrical interference with aircraft communications or navigation. No transmissions which would interfere with aircraft radio communications or navigational signals are permitted.

- Any proposed use, especially landfills and certain agricultural uses, that creates an increased attraction for large flocks of birds.

2. Within the AIA, ALUC review is required for any proposed object taller than 100 feet AGL.

3. Regardless of location within San Joaquin County, ALUC review is required in addition to FAA notification in accordance with Code of Federal Regulations, Part 77, Paragraph 77.13(a)(1) for any proposal for construction or alteration under the following conditions:

    a. If requested by the FAA.
    b. Any construction or alteration that is more than 200 ft. AGL at its site.
    c. Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slope:
        i. 100 to 1 for a horizontal distance of 20,000 ft. of a public use or military airport from any point on the runway of each airport with its longest runway more than 3,200 ft.
    d. Any highway, railroad or other traverse way whose prescribed adjusted height would exceed the above noted standards

Thank you again for the opportunity to comment. Please contact ALUC staff Laura Brunn if you have and questions or comments at (209) 235-0579, or by email at brunn@sjcog.org.

Sincerely,

Laura Brunn

Laura Brunn, Associate Regional Planner
San Joaquin Council of Governments

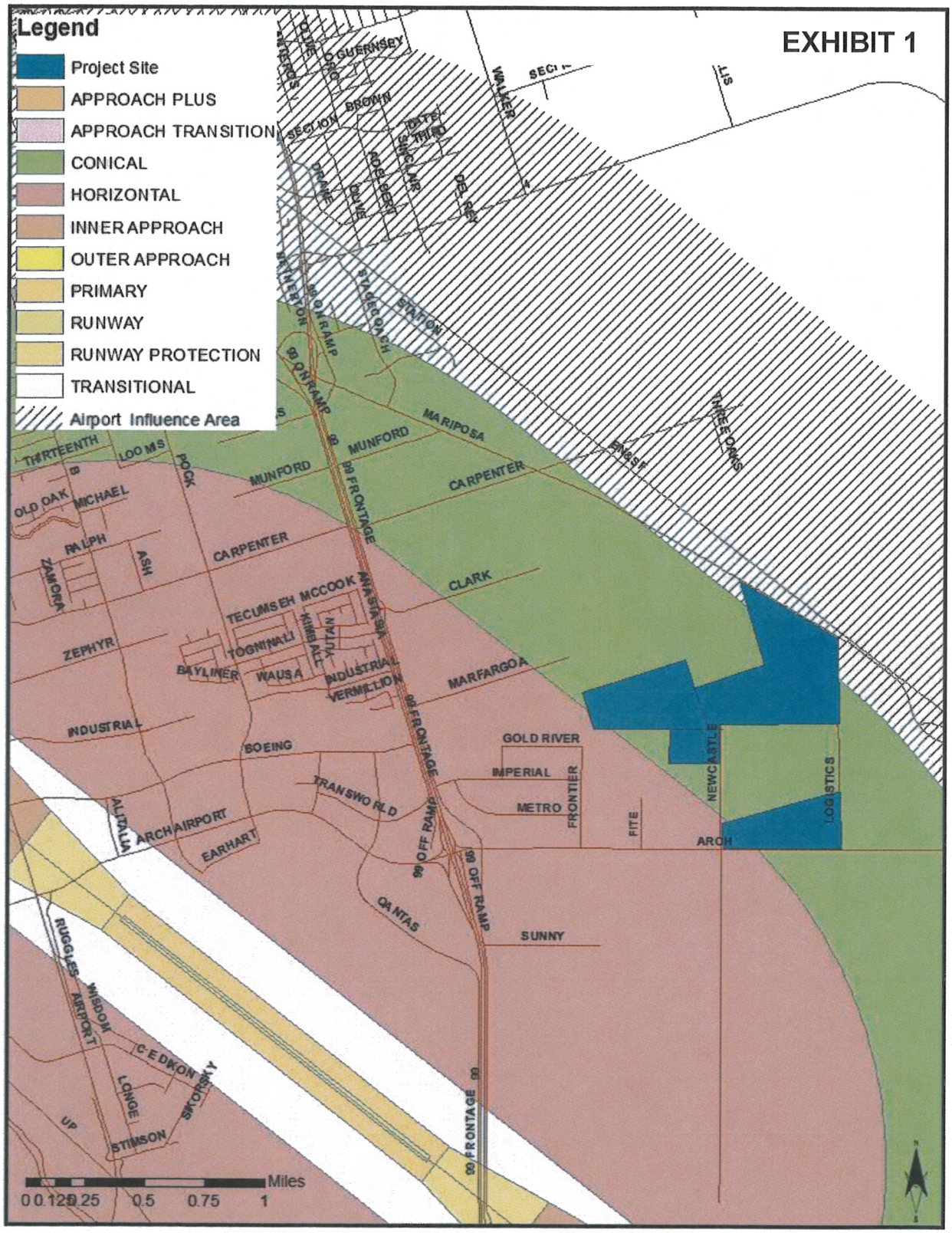


EXHIBIT 1
Legend
Project Site
APPROACH PLUS
APPROACH TRANSITION
CONICAL
HORIZONTAL
INNER APPROACH
OUTER APPROACH
PRIMARY
RUNWAY
RUNWAY PROTECTION
TRANSITIONAL
Airport Influence Area
99 FRONTAGE
99 OFF RAMP
99 ON RAMP
MUNFORD
CARPENTER
CLARK
MARFARGOA
BOEING
TRANSWORLD
EARHART
ARCH AIRPORT
ALITALIA
QANTAS
SUNNY
GOLD RIVER
IMPERIAL
METRO
FRONTIER
NEWCASTLE
LOGISTICS
AROH
FITE
MARIPOSA
THREE FORKS
STAGECOACH
STINTON
WALKER
DEL REY
ZEPHYR
TECUMSEH
MCCOOK
ANASTASIA
TOGNINALI
KIMBALL
VALLAN
BAYLINER
WAUSA
INDUSTRIAL
VERMILLION
THIRTEENTH
LOOMS
POCK
OLD OAK
MICHAEL
RALPH
ASH
ZAMORA
RUGGLES AIRPORT
WISDOM
CEDRON
LONGE
SMORSHY
STIMSON
UP
Miles
0 0.125 0.25 0.5 0.75 1

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December 3, 2012

10-SJ-99, PM 14.61
NorCal Logistics Center
SCH #2012102061

Adam Brucker
City of Stockton
Community Development Department
345 N. El Dorado St.
Stockton, CA 95202

Dear Mr. Brucker,

The California Department of Transportation (Department) appreciates the opportunity to comment on the Initial Study (IS)/Notice of Preparation (NOP) for a Draft Environmental Impact Report (EIR) for **NorCal Logistics Center**. The project, located north of Arch Rd and west of Austin Rd in Stockton within an existing industrial area known as Arch Road Units 3 & 4, proposes to develop 331 acres of light industrial warehouse uses, which includes 4,300 employees and 6,337,980 square feet in proposed industrial structure.

Upon review of the project, the Department has the following comments:

The Department is requesting a Traffic Impact Study (TIS) to determine this proposed project's near-term and long-term impacts to State facilities – both existing and proposed – and to propose appropriate mitigation measures. The Department recommends that the study be prepared in accordance with the *Caltrans Guide for the Preparation of Traffic Impact Studies*, dated December 2002 (Guide) or the latest version. Please ensure that the TIS includes the following:

1. The TIS must analyze the following conditions: Existing, Existing Plus Proposed Project, Cumulative, and Cumulative Plus Proposed Project.

2. Specify the land use category and code with the unit measure used to determine the trip generation.

3. Specify the truck volumes and truck percentages generated by the proposed project.

4. Page 36 of the IS states that the proposed trip generation is 21,500 average daily trips for both phases of the proposed project. Due to this project's close vicinity to the SR-99/Arch Rd interchange, this project will impact traffic circulation at this interchange. Please provide the traffic analysis of the SR-99/Arch Rd interchange intersection ramps as well as analysis of the adjacent interchanges (SR-99/Mariposa Rd interchange and SR-99/French Camp Rd interchange) ramps intersection as part of the study area. The trip generation/distribution must show traffic percentages on all 3 interchanges ramps.

5. The proposed project would not only impact the listed locations on pages 36 and 37, it may also impact the following locations:

   - SR-99 and SR-4 connectors
   - SR-4 segment west of SR-99 to the SR-4/Wilson Way interchange
   - SR-99 and SR-120 connectors
   - SR-120 segment from Austin Rd. to SR-99

   Please analyze the above locations as part of the TIS. Please also note that additional locations may be requested to be analyzed upon review of the Draft EIR.

6. The TIS needs to clearly list the impacts to the State Highway System and the mitigations necessary to mitigate those impacts to a level of less than significant under the summary section. In addition to Delay/Level of Service tables for each scenario (Existing and Future conditions), please provide tables to list the 95th percentile Queuing/Blocking during the peak hour for turn movements. The Queuing/Blocking tables must provide the available storage turn movements and the 95th percentile turn movements on State facilities for the project and study locations.

7. Intersections analyses need to be done using Synchro/Simtraffic program version 7 or 8. Mainline analysis is recommended using the 2010 Highway Capacity Manual using Highway Capacity Software.

Please submit the scope of work to the Department for review and comment prior to start of work on the TIS. The Department is available to discuss assumptions, data requirements, study scenarios, and analysis methodologies. This will help ensure that a quality TIS is prepared.

Upon completion of the TIS, please provide three (3) paper copies along with a disk containing the complete electronic data files (Synchro 6, Simtraffic, Traffix 7.9, HCS, etc.) for our review and comment. This will help expedite the Department's review.

If you have any questions, please contact Sinarath Pheng at (209) 942-6092 (e-mail: Sinarath_Pheng@dot.ca.gov) or myself at (209) 941-1921.

Sincerely,

for TOM DUMAS, CHIEF
OFFICE OF METROPOLITAN PLANNING

c Scott Morgan, State Clearinghouse

CALIFORNIA
Water Boards

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COMMUNITY DEVELOPMENT DEPT.

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

15 November 2012

Adam Brucker
City of Stockton
345 North El Dorado Street
Stockton, CA 95202

CERTIFIED MAIL
7011 2970 0003 8939 6243

COMMENTS TO THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, NORCAL LOGISTICS CENTER PROJECT, SCH NO. 2012102061, SAN JOAQUIN COUNTY

Pursuant to the State Clearinghouse's 31 October 2012 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Notice of Preparation for the Draft Environmental Impact Report* for the NorCal Logistics Center Project, located in San Joaquin County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

---

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Waste Discharge Requirements

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

If you have questions regarding these comments, please contact me at (916) 464-4684 or tcleak@waterboards.ca.gov.

Trevor Cleak
Environmental Scientist

cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

San Joaquin County
Environmental Health Department
1868 East Hazelton Avenue
Stockton, California 95205-6232

Website: www.sjgov.org/ehd
Phone: (209) 468-3420
Fax: (209) 464-0138

DIRECTOR
Donna Heran, REHS

PROGRAM COORDINATORS
Robert McClellon, REHS
Jeff Carruesco, REHS, RDI
Kasey Foley, REHS
Linda Turkatte, REHS

November 16, 2012

Adam Brucker, Senior Planner
City of Stockton
Community Development Department/Planning
345 North El Dorado Street
Stockton, CA 95202-1197

Subject: Notice of Preparation of a Draft Environmental Impact Report Pursuant to Pub. Res. Code Sec. 21080.4 and Cal. Code of Regulations Title 14, Sec 15082(a) for the Norcal Logistics Center Project (p12-110)

The San Joaquin County Environmental Health Department (EHD) is supportive of this proposed project in regards to the provision of full public services, and has no conditions to impose on this project.

If you have any questions, please call Rodney Estrada, Program Coordinator, at (209) 468-0331.

Rodney Estrada,
Program Coordinator

RE:tl

MEMORANDUM

November 19, 2012

TO: Adam Brucker, Senior Planner
Community Development Department/Planning

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

SUBJECT: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE NORCAL LOGISTICS CENTER PROJECT (P12-110)

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

1. Page 5, third paragraph, last sentence, Replace "state" with "start." The sentence should read, "The sewer trunkline is scheduled to **start** construction in the spring of 2013."

2. Page 5, fourth paragraph, According to City records, the drainage basin (N3) located just south of North Littlejohns Creek shall have a capacity of 80.74 ac-ft per the Arch Road Industrial Park (EAST) Master Storm Drain Plan Revision No.2.

3. Page 5, fourth paragraph, According to City records, the drainage basin (W3) located west of Newcastle Road and north of Arch Road shall have a capacity of 138 ac-ft with 1-foot of freeboard per the Storm Drain Master Plan for Opus Logistics Center.

4. Page 5, fourth paragraph, last sentence, Add that this project will be required to construct the pump station, and complete all detention basin improvements for Basin N3 when development exceeds 50 percent of the developed area.

5. Page 26, third paragraph, The discussion needs to reflect the City of Stockton's new Storm Water Quality Control Criteria Plan requirements of volume reduction. The new regulations do not allow an increase of post-construction runoff. Volume control measures must be incorporated into the site design.

6. Page 26, third paragraph, Rewrite the sentence, "The owners, developers, and/or successors-in-interest (ODS) must establish maintenance entity acceptable to the City to provide funding for the operation, maintenance and replacement costs of the Storm Water Best Management Practices." It should state that the ODS of each parcel in the development must individually enter into a maintenance agreement with the City and provide funding for the operation maintenance and replacement costs of their own Storm Water Best Management Practices.

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE NORCAL LOGISTICS CENTER PROJECT (P12-110)

Please incorporate the above comment. If you have any questions, please contact Ann Okubo at (209) 937-8250.

C. MEL LYTLE, Ph.D.
DIRECTOR OF MUNICIPAL UTILITIES

ANN OKUBO
ASSOCIATE CIVIL ENGINEER

CML:AO:jlw

::ODMA\GRPWISE\COS.MUD.MUD_Library:153551.1

THOMAS M. GAU
DIRECTOR

FRITZ BUCHMAN
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December 6, 2012

City of Stockton
c/o Community Development Department
Planning Division
Attention: Mr. Adam Brucker
425 North El Dorado Street
Stockton, California 95202-1997

SUBJECT: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE NORCAL LOGISTICS CENTER PROJECT (P12-110)

Dear Mr. Brucker:

The San Joaquin County Department of Public Works (County) has reviewed the Notice of Preparation and Initial Study for the above referenced project, and has the following comments on the Initial Study:

From Flood Control:

1. Page 6:
   a. Under "Other Agency Approvals" add the following:
      - **San Joaquin County Flood Control and Water Conservation District (District)** – Prior to the recordation of a parcel map, the owner shall make an Irrevocable Offer of Dedication (IOD) for an easement to the District for drainage and flood control purposes. Easement limits shall contain the following and shall be dedicated in a form that is acceptable to the District:
        I. The entire channel of *North Littlejohns Creek* that lies within the property, and
        II. A minimum of 50 feet measured at right angles landward from the top of banks of the *North Littlejohns Creek* that lies within the property, excluding existing structures, or to the property line where the 50 feet is not available.
        III. The entire channel of *Weber Slough* that lies within the property, and
        IV. A minimum of 50 feet measured at right angles landward from the top of banks of *Weber Slough* that lies within the property, excluding existing structures, or to the property line where the 50 feet is not available.
   b. Under "Permits Required" add the following:

- **Central Valley Flood Protection Board** – A permit shall be obtained from the Central Valley Flood Protection Board for work done on the North Littlejohns Creek and within 30 feet of the top of its banks, which will require San Joaquin County Flood Control and Water Conservation District's endorsement.
- **San Joaquin County** – A San Joaquin County Watercourse Encroachment Permit shall be obtained for work done on Weber Slough and within 25 feet of the top of its banks.

From Solid Waste:

2. Page 23: Under the discussion for the "Hazards and Hazardous Waste Materials" section, reference is made to empty pesticide containers found on two of the parcels. The County has a program that can help the project applicant handle the containers. Please see the enclosed brochure.

From Transportation Engineering:

3. The County requests a copy of the draft traffic study for review.

The San Joaquin County Department of Public Works looks forward to reviewing the upcoming environmental documentation, as it becomes available. Thank you for the opportunity to review and comment. Should you have questions, please contact me at (209) 468-8494.

Sincerely,

Megan Aguirre

MEGAN AGUIRRE
Associate Planner

MA:rc
TE-12L001-R1

Enclosure

c: Alex Chetley, Engineering Services Manager
John Maguire, Engineering Services Manager
Desi Reno, Integrated Waste Manager
Firoz Vohra, Senior Engineer

2013

SAVE MONEY
CONSERVE RESOURCES
PROTECT NATURAL RESOURCES

Program Goals

- To dispose of pesticide containers in a cost effective, environmentally sound manner which benefits agriculture and community.
- To encourage resource conservation by recycling plastic containers.
- To protect public health.
- To lessen financial impact on farmers and agricultural businesses.

Other Resources

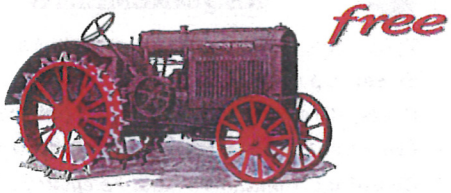
PG&E offers rebates and incentives at www.pge.com or call (800) 468-4743.

SJ Valley Air offers a heavy duty engine incentive program at www.valleyair.org or call (209) 557-6472.

Valley CAN (Clean Air Now) offers grants for projects to improve air quality in the Valley at www.valley-can.org or call (800) 806-2004.

PROUDLY SPONSORED BY THE CITIES AND COUNTY OF SAN JOAQUIN

RECYCLE YOUR WASTE OIL



Locations providing free waste oil collection services for Small Ag Businesses:

Wright's Petroleum
1512 Weiss Way
Escalon, CA 95320
(209) 838-1442

E. F. Kludt & Sons
1126 E. Pine St.
Lodi, CA 95240
(209) 466-8969

Stockton Petroleum
1905 Navy Dr,
Stockton, CA 95206
(209) 462-8707

Van De Pol Enterprises, Inc.
4895 S Airport Way
Stockton, CA 95206
(209) 465-3421

Call for instructions & transportation variances.

2013

The Ag Oil Recycling Program is a partnership of San Joaquin County Department of Public Works and California Department of Resources Recycling and Recovery (CalRecycle).

SAN JOAQUIN COUNTY

SOLID WASTE DIVISION
DEPARTMENT OF PUBLIC WORKS

AGRICULTURAL PESTICIDE CONTAINER RECYCLING PROGRAM

2013

Agricultural Pesticide Container Recycling is sponsored by:
San Joaquin County Board of Supervisors
For more information contact:
Department of Public Works
Solid Waste Division
(209) 468-3066 or
Office of the Agricultural Commissioner
(209) 953-6000

LOCATIONS AND SCHEDULES FOR 2013 FREE EVENTS

Collections are 8:00 a.m. to 12:00 noon at these authorized disposal sites:

Lovelace Materials Recovery Facility
2323 East Lovelace Road, Manteca CA
(209) 468-3066

FREE on the second Wednesday of: February, April, June, August, October, and December.

2013	Feb 13	April 10	June 12
	Aug 14	Oct 9	Dec 11

North County Recycling Center
17720 East Harney Lane, Lodi CA
(209) 468-3066

FREE on the second Thursday of: January, March, May, July, September, and November.

2013	Jan 10	Mar 14	May 9
	July 11	Sept 12	Nov 14

Tracy Materials Recovery Facility
30703 S. MacArthur Drive, Tracy CA
(209) 832-2355

FREE on the second Tuesday of: February, May, August, and November

2013 Feb 12 May 14 Aug 13 Nov 12

ACCEPTABLE CONTAINER REQUIREMENTS

Type: Non-refillable HDPE containers #2.

Sizes: Up to 55 gallon capacity drums.

Users: Growers or Commercial Applicators.

Prior Use: EPA registered agricultural product.

Cleaning: *Containers must be empty, triple or pressure rinsed, and punctured at time of use. Staining is acceptable; caked-on residue is not.*

Parts: *Remove all non-HDPE parts, including caps, metal handles, rubber linings, plastic seals, bungs, labels, and booklets.*

Transportation: Loose loads must be tarped.

Unloading: Most containers must be transferred by customer into a dumpster.

Tip for easy unloading: String a small group of containers together.

NOTICE

Containers not meeting the above-stated requirements, or those that once held motor oil, fuel, or antifreeze, will be refused and may cause the load to be rejected in its entirety.

If contamination is detected post-delivery, San Joaquin County will contact the person or entity that made delivery of prohibited waste. The contaminants must then be removed from the premises by the deliverer within 48 hours from the time of notification and must be disposed of as prescribed by state and federal laws. Proof of proper disposal (documents and/or manifests) will be required and shall be provided to San Joaquin County Public Works, Solid Waste Division. If not safely and lawfully removed within the 48 hour period, San Joaquin County will contract with a hazardous waste hauler for removal and legal disposal. The person or entity that made delivery shall be solely responsible for all costs associated with the handling and disposal of prohibited materials.

DISPOSAL PROCEDURES

On a Scheduled FREE Recycling Day:

1. Follow Acceptable Container Requirements.
2. Self-certify the containers are clean. Forms are available through the Ag Commissioner's Office or online.*
3. Containers will be checked by an inspector from the Ag Commission.
4. No gate fees will be charged for ag plastic containers. If garbage or other materials are included in the load, a fee will be charged.
5. Off-load your containers as instructed.

On an Unscheduled Day:

1. Follow Acceptable Container Requirements.
2. Have containers inspected and certified by an inspector from the Agricultural Commissioner's Office before they are taken to an authorized disposal site. Forms are available at the Ag Commissioner's Office or online *.

Stockton	953-6000
Lodi	331-7287
Simms Station	468-5542 or 838-2276

3. Take your containers to the disposal site. **Normal gate fees will be charged.**
4. Off-load containers as instructed.

We'll recycle your cardboard, too!

*www.sjgov.org/agcomm - see Program Services

SAN JOAQUIN COUNCIL OF GOVERNMENTS

555 E. Weber Avenue • Stockton, California 95202

209.235.0600 *• 209.235.0438 (fax)*
www.sjcog.org

November 21, 2012

Adam Brucker
City of Stockton Community Development Dept.
345 N. El Dorado Street
Stockton, CA 95202

RE: SJCOG REVIEW – NORCAL LOGISTICS CENTER NOP; P12-110

Dear Mr. Brucker:

Thank you for the opportunity to comment on the NOP for the Norcal Logistics Center project. As the County's designated Regional Transportation Planning Agency (RTPA), the Congestion Management Agency (CMA), and the Metropolitan Planning Organization (MPO), the San Joaquin Council of Governments (SJCOG) has reviewed the above-referenced document with respect to consistency with the Regional Congestion Management Program (RCMP).

Establishing and maintaining a Regional Congestion Management Program/Process is required by State Govt. Code, Section 65088 – 65089.10, the County's Measure K Renewal Ordinance, and federal congestion management process planning requirements. The primary purpose of the RCMP is to monitor the cumulative transportation impacts of growth of the regional roadway system, establish operational standards, identify deficient regional roadways, develop plans to mitigate or correct the deficiencies, and to facilitate travel demand management and operational preservation strategies for existing and planned development.

A major implementation action of the CMP is the requirement to analyze and comment on future land uses through the Land Use Analysis Program. SJCOG, in implementing the RCMP, requires that the potential impacts to roadways be analyzed within the project's Traffic Impact Analysis (TIA) and the findings summarized within the DEIR. The DEIR should contain a section that specifically addresses standards of the RCMP, which includes the Regional Travel Demand Management Action Plan and other relevant regional transportation plans.

The Land Use Analysis Program was originally adopted as part of the 2007 Regional Congestion Management Plan. On November 15, 2012 the SJCOG Board of Directors adopted the 2012 update to the Regional Congestion Management Program. The program plan is available at the following link:
http://www.sjcog.org/docs/pdf/Regional%20Planning/CMP/2012.Congestion.Management.Program.Update.pdf

Chapter 6 of the 2012 RCMP defines the updated Land Use Analysis Program, which land use developments are subject, and the levels of review. The estimated trip generation for this project averages 21,500 daily trips and triggers a Tier 2 Review.

SJCOG staff requests a meeting with the City to discuss specifics as it relates to the requirements of the RCMP's Land Use Analysis Program. Thank you again for the opportunity to comment.

Please contact Laura Brunn if you have any questions or comments at (209) 235-0579, or by email at brunn@sjcog.org.

Sincerely,

Laura Brunn

LAURA BRUNN
SJCOG Associate Regional Planner

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

November 26, 2012

Adam Brucker
City of Stockton
Planning Department
345 N. El Dorado Street
Stockton, CA 95202

Project: Norcal Logistics Center (File No. P12-110)

District CEQA Reference No: 20120748

Dear Mr. Brucker:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) for the proposed NorCal Logistics Center project to be located on a 331-acre project site located on the north side of Arch Road, west of Austin Road and south of Mariposa Road, in Stockton, California (APNs 197-220-27, 28, 30; 181-110-23; 181-100-15). The proposed project consists of the subdivision of five (5) parcels into twenty one (21) lots zoned for industrial use and would allow the development of up to 6,337,980 square feet of industrial space. The project also includes circulation improvements including the extension of Newcastle Road to a connection with Mariposa Road. The District offers the following comments:

Emissions Analysis

1) **Criteria Pollutants:** The Environmental Impact Report (EIR) should include a discussion of project related criteria pollutant emissions. This discussion should include the quantification of emissions as well as a discussion of the methodology, model assumptions, inputs and results used in characterizing the project's impact on air quality. The discussion should identify mitigation measures to reduce potential impacts and the characterization of the effectiveness of each mitigation measure incorporated into the project.

   a) Project related criteria pollutant emissions should be identified and quantified. Emissions analysis should be performed using CalEEMod (**Cal**ifornia **E**mission **E**stimator **Mod**el), which uses the most recent approved version of relevant Air

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

Resources Board (ARB) emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: http://www.caleemod.com/.

b) Construction and operational related emissions should be evaluated individually as discussed below.

i) Construction Emissions: Construction emissions are short-term emissions and should be evaluated separate from operational emissions. The project would be considered to have a short-term significant impact on air quality if annual construction emissions cannot be reduced or mitigated to below the following levels of significance: 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

- *Recommended Mitigation:* To reduce impacts from construction related exhaust emissions, the District recommends a condition requiring all future developments within the project area to utilize off-road construction fleets that can achieve fleet average emissions equal to or cleaner than the Tier II emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations. This can be achieved through any combination of uncontrolled engines and engines complying with Tier II and above engine standards.

ii) Operational Emissions: Project related stationary source (permitted and non-permitted) and mobile source (non-permitted, on- and off-site) emissions should be analyzed separately. The analysis should include existing and post-project emissions. The project would be considered to have a long-term significant impact on air quality if the sum of annual permitted and non-permitted emissions cannot be reduced or mitigated to below the following levels of significance: 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

- *Recommended Mitigation:* To reduce impacts from operational criteria pollutant emissions, the District recommends the following measures be made conditions of approval for all future developments within the project area:

  - For permitted sources the District recommends demonstration of compliance with District Rule 2201 (New and Modified Stationary Source Review), such as a copy of the Authority to Construct (ATC), before the issuance of the first grading/building permit; or

- For non-permitted sources the District recommends demonstration of compliance with District Rule 9510 (Indirect Source Review) before the issuance of the first grading/building permit.

- The District believes that mitigation through a Voluntary Emission Reduction Agreement (VERA) is a feasible mitigation measure. If the emissions analysis indicates that the project would have a significant impact after implementation of all other mitigation measures, the District recommends the EIR include a discussion of the feasibility of implementing a VERA to mitigate project specific impacts to less than significant levels. A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds for the District's Emission Reduction Incentive Program (ERIP). The funds are disbursed by ERIP in the form of grants for projects that achieve emission reductions. Thus, project specific impacts on air quality can be fully mitigated. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors. Additional information regarding the VERA process and requirements can be obtained by contacting District CEQA staff at (559) 230-6000.

c) To comply with CEQA requirements for full disclosure, the District recommends that the modeling outputs be provided as appendices to the EIR. To aid in the District's evaluation of potential impacts on air quality, the District recommends that the District be provided with an electronic copy of all input and output files for all modeling.

2) **Nuisance Odors:** The project should be evaluated to determine the likelihood that the project would result in nuisance odors. Nuisance orders are subjective and potential impacts may be assessed qualitatively taking into consideration of project design elements and proximity to off-site receptors that potentially would be exposed objectionable odors.

3) **Health Impacts:** Toxic air contaminants (TAC) are defined as air pollutants which cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. The most common source of TACs can be attributed to

diesel exhaust fumes that are emitted from both stationary and mobile sources. The District recommends that project related health impacts be evaluated to determine if TAC emission could pose a significant health risk to nearby sensitive receptors, including the correctional center to the south of the project site and any other nearby residential or worker sites.

a) If a health risk assessment (HRA) is to be performed, it is recommended that the project proponent contact the District prior to the start of modeling to review the proposed modeling approach. The project would be considered to have a significant health risk if the HRA demonstrates that project related health impacts would exceed the District's significance threshold of 10 in a million.

b) Certain industrial developments, such as those utilizing truck refrigeration units, having loading docks in close proximity to nearby receptors, or having high volumes of heavy duty vehicles, may result in health impacts on those nearby receptors. As specific developments are unknown at this time, accurate quantification of project specific health risks cannot be determined. As such, to ensure that all future projects within the project area would not result in significant health risks, the District recommends that an enforceable mitigation measure be included in the Monitoring and Reporting Program that requires applicants for all future developments within the project area to demonstrate that project specific health risks have been evaluated.

c) To comply with CEQA requirements for full disclosure, the District recommends that the modeling outputs be provided as appendices to the EIR. To aid in the District's evaluation of the adequacy of emission and health risk modeling performed, the District recommends that an electronic copy of all input and output files be provided for District review.

d) More information on TACs, health risk screening and modeling techniques, and evaluation of health risks can be obtained by:

- Contacting the District's Technical Services staff by phone at (559) 230-6000;
- E-mailing inquiries to: hramodeler@valleyair.org; or
- Visiting the District's website at: http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

District Rules and Regulations

4) The Initial Study indicates the subdivision of the project site is a discretionary action by the City of Stockton and that future industrial development of the property would be allowed "as of right" and that only ministerial approvals, such as architectural or site reviews and issuance of building permits, would be required. As such, it

appears that approval of the project and certification of the EIR would constitute final discretionary approval for future development of the project site. The District concurs with the conclusion stated on Page 6 of the Initial Study that the project is subject to District Rule 9510 (Indirect Source Review). As stated earlier, the District recommends that an enforceable mitigation measure be included in the Monitoring and Reporting Program that requires applicants for all future developments within the project area to demonstrate compliance with District Rule 9510, including payment of all applicable fees prior to the issuance of the first grading/building permit.

District ISR staff is available to meet with the Lead Agency or project proponent to further discuss the requirements of Rule 9510 for individual development projects. More information on District Rule 9510 can be obtained by:

- Calling the District's ISR staff at (559) 230-6000;
- E-mailing inquiries to: ISR@valleyair.org; or
- Visiting the District's website at: http://www.valleyair.org/ISR/ISRHome.htm.

5) The proposed project may be subject to District rules and regulations, including: Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

6) Project related ancillary operational equipment, such as generators, may be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and may require District permits. Prior to the start of construction, the project proponent should contact the District's Small Business Assistance (SBA) Office to identify all applicable District rules and regulations and to determine if an Authority to Construct (ATC) permit would be required. SBA staff can be reached by phone at (209) 557-6446.

7) The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (209) 557-6446. A complete list of all current District rules and regulations can be found online on the District's website at: http://www.valleyair.org/rules/1ruleslist.htm.

The District recommends that a copy of the District's comments be provided to the project proponent. If you have any questions or require further information, please call Jessica Willis at (559) 230-5818.

Sincerely,

David Warner
Director of Permit Services

For: Arnaud Marjollet
Permit Services Manager

DW:jw

cc: File

Appendix B
Mitigation Monitoring and Reporting Program

ESA

APPENDIX B
Mitigation Monitoring and Reporting Program

Introduction

The purpose of this Mitigation Monitoring and Reporting Program (MMRP) is to describe the City of Stockton's roles and responsibilities in the mitigation monitoring process for the proposed NorCal Logistics Center Project (proposed project), pursuant to CEQA Guidelines Section 15097.

A reporting and monitoring program ensures that measures adopted to reduce or avoid significant environmental impacts are implemented. It is a working guide to facilitate not only the implementation of mitigation measures, but also the monitoring, compliance, and reporting activities of the City of Stockton.

The MMRP includes a description of the requirements of CEQA and a compliance checklist. The intent of the MMRP is to prescribe and enforce a means for properly and successfully implementing the mitigation measures as identified within the Environmental Impact Report (EIR) for this project. Unless otherwise noted, the cost of implementing the mitigation measures as prescribed by this MMRP shall be funded by the project applicant.

Compliance Checklist

This MMRP is intended to be used by City staff and mitigation monitoring personnel to ensure compliance with the approved mitigation measures during all phases of project implementation. The mitigation measures identified in this MMRP were identified in the EIR prepared for the project. Mitigation is defined by CEQA as a measure which:

- Avoids the impact altogether by not taking a certain action or parts of an action.
- Minimizes impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifies the impact by repairing, rehabilitating, or restoring the affected environment.

- Reduces or eliminates the impact over time by preservation and maintenance operations during the life of the project.
- Compensates for the impact by replacing or providing substitute resources or environments.

The intent of the MMRP is to ensure the effective implementation and enforcement of adopted mitigation measures and permit conditions. The MMRP will provide for monitoring of construction activities as necessary and in-the-field identification and resolution of environmental concerns.

Monitoring and documenting the implementation of mitigation measures will be coordinated by the City of Stockton. **Table B-1** identifies the mitigation measure, the monitoring action for the mitigation measure, the responsible party for the monitoring action, and timing of the monitoring action. The project applicant will be responsible for fully understanding and effectively implementing the mitigation measures contained within the MMRP and the City of Stockton will be responsible for ensuring compliance.

Mitigation Monitoring Program

Table B-1 identifies the mitigation measure number along with the mitigation measure text consistent with the impacts discussion presented in the EIR. Additionally, it identifies the agency or individual responsible for the implementation and monitoring of the measure, the timing for implementation of the mitigation or monitoring actions, and an area for the assigned inspector to verify compliance. Each of the Mitigation Measures identified in Table B-1 shall be incorporated into the Conditions of Approval for the Site Development Permit.

TABLE B-1
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Monitoring Responsibility	Timing	Sign Off
Aesthetics			
Measure 3.1.1: Outdoor Lighting Requirements. All proposed outdoor lighting will be required to meet applicable city standards regulating outdoor lighting in order to minimize any impacts resulting from outdoor lighting on adjacent properties. Lighting and glare guidelines provided in the City of Stockton's Municipal Codes for Design and Development require that all light sources be shielded and directed downwards so as to minimize trespass light and glare to adjacent residences. Additionally, all outdoor lighting sources of 1,000 lumens or greater shall be fully shielded.	City of Stockton Community Development Department	Prior to issuance of building permit.	
Agricultural Resources			
Measure 3.2.1: Compensate for Loss of Agricultural Lands. The applicant will be subject to the City's Agricultural Land Mitigation Program fees. The Agricultural Land Mitigation Program applies to all projects under the jurisdiction of the City of Stockton that would result in the conversion of agricultural land to a non-agricultural use, including residential, commercial, and industrial development. The purpose of the Agricultural Land Mitigation Program is to mitigate for the loss of agricultural land in the City of Stockton through conversion to private urban uses, including residential, commercial and industrial development.	City of Stockton Community Development Department	Prior to issuance of building permit.	
Air Quality			
Measure 3.3.1a: Implement Dust Control Measures During Construction Activities. The applicant shall comply with Regulation VIII Rule 8011 and implement the following dust control measures during construction: • The applicant shall submit a Dust Control Plan subject to review and approval of the SJVAPCD at least 30 days prior to the start of any construction activity on a site that includes 40 acres or more of disturbed surface area. Specific control measures for construction, excavation, extraction, and other earthmoving activities required by the Valley Air District include: • All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover in order to comply with Regulation VIII's 20 percent opacity limitation. • All onsite unpaved roads and offsite unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant. • All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking. • When materials are transported offsite, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained. • All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. However, the use of blower devices is expressly	City of Stockton Community Development Department and the SJVAPCD	During project construction.	

TABLE B-1
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Monitoring Responsibility	Timing	Sign Off
forbidden, and the use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. • Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant. • Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday. • Any site with 150 or more vehicle trips per day shall prevent carryout and trackout. Enhanced and additional control measures for construction emissions of PM10 shall be implemented where feasible. These measures include: • Limit traffic speeds on unpaved roads to 15 mph. • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. • Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site. • Install wind breaks at windward side(s) of construction areas. • Suspend excavation and grading activity when winds exceed 20 mph. • Limit area subject to excavation, grading, and other construction activity at any one time. **Measure 3.3.1b: Implement Construction-Related Exhaust Emission Reducing Measures.** The applicant shall implement control measures during construction to mitigate exhaust emissions from construction equipment. • Contractor shall keep all diesel equipment tuned and maintained. • Use alternative fueled or catalyst equipped diesel construction equipment where feasible. • Minimize idling time to a maximum of 5 minutes. • Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set), where feasible. • Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways. • Implement activity management, such as rescheduling activities to reduce short-term impacts and limiting the hours of operation of heavy duty equipment and/or the amount of equipment in use. **Measure 3.3.1c: Implement Construction-Related Exhaust Emission Reducing Measures Consistent with Rule 9510 Indirect Source Review.** As part of future site development, the applicant shall comply with Rule 9510 Indirect Source Review. Compliance with Rule 9510 would require reductions of 20% of the NOx construction emissions and 45% of the PM10 construction exhaust emissions. If onsite (construction fleet) reductions are insufficient to meet these reduction targets, the applicant shall pay mitigation fees of $9,350/ton for NOx emissions for year 2008 and beyond, and $9,011/ton for PM10 emissions for year 2008 and beyond.			

TABLE B-1
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Monitoring Responsibility	Timing	Sign Off
Measure 3.3.2a: Implement Operation-Related Exhaust Emission Reducing Measures Consistent with Rule 9510 Indirect Source Review. As part of future site development, the applicant shall comply with Rule 9510 Indirect Source Review. Compliance with Rule 9510 will require reductions of 33.3% of the NOx operational emissions and 50% of the PM10 operational emissions. These reductions shall be accomplished through onsite and offsite measures, and/or through the payment of mitigation fees of $9,350/ton for NOx emissions for year 2008 and beyond, and $9,011/ton for PM10 emissions for year 2008 and beyond. **Measure 3.3.2b: Interior and Exterior Coatings.** As part of future site development, the applicant shall require the use of low VOC paints for interior and exterior coatings.	City of Stockton Community Development Department and the SJVAPCD	Prior to issuance of building permit.	
Biological Resources			
Measure 3.4.1: Nesting Raptor Protection Measures. To avoid and minimize impacts on tree-nesting raptors the following measures (consistent with the SJMSCP 2009 ITMMs) will be implemented: • If feasible, conduct all tree and shrub removal and grading activities during the non-breeding season (generally from October through February). • If grading and tree removal activities are scheduled to occur during the breeding season (generally from March through September), pre-construction surveys for Swainson's hawks and other tree-nesting raptors. The surveys shall be conducted by a qualified biologist in suitable nesting habitat within 1,000 feet of the project site for tree nesting raptors prior to project activities that will occur between March 15 and September 15 of any given year. If active nests are recorded within these buffers the project proponent shall consult with CDFW to determine and implement appropriate avoidance and mitigation measures. • If known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past three years or trees, such as large oaks, which the hawks prefer for nesting) are located on the project site, the project applicant has the option of retaining or removing known or potential nest trees (according to Section 5.2.4.11 of the SJMSCP).	City of Stockton Community Development Department	30 days prior to construction IF construction begins February 15 through August 31. If active nest is found, monitoring schedule to be determined by the qualified biologist and the California Department of Fish and Game	
Cultural Resources			
Measure 3.5.1a: Stop Work in the Event of Cultural Resource Discovery. If cultural resources are encountered, all activity in the vicinity of the find shall cease until it can be evaluated by a qualified archaeologist and a Native American representative. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or tool-making debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the archaeologist and Native American representative determine that the resources may be significant, they will notify the City of Stockton. An appropriate treatment plan for the resources should be developed. The archaeologist shall consult with Native American representatives in determining	City of Stockton Community Development Department and construction contractor	During site grading or project construction.	

TABLE B-1
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Monitoring Responsibility	Timing	Sign Off
appropriate treatment for prehistoric or Native American cultural resources. In considering any suggested mitigation proposed by the archaeologist and Native American representative, the City will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed in other parts of the project area while mitigation for cultural resources is being carried out.			
Measure 3.5.1b: Discovery of Human Remains. If human remains are encountered unexpectedly during construction excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the San Joaquin County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC will then identify the person(s) thought to be the Most Likely Descendent, who will help determine what course of action should be taken in dealing with the remains.	City of Stockton Community Development Department and construction contractor	During site grading or project construction.	
Climate Change			
Measure 3.6.1: Implement Construction-Related GHG Reduction Measures. The applicant shall require implementation of all feasible GHG reduction measures during construction, including but not limited to the following: • Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard); • Limit idling time for commercial vehicles, including delivery and construction vehicles; and • Use low or zero-emission vehicles, including construction vehicles.	City of Stockton Community Development Department	During project construction.	
Measure 3.6.2: Implement Operation-Related GHG Reduction and Energy Efficiency Measures. The applicant shall require implementation of all feasible energy efficiency and GHG reduction measures during operations, including but not limited to the following: *On-site Mitigation* • Exceed Title 24 (15% improvement); • Install high-efficiency lighting (25% lighting energy reduction); • Install low-flow bathroom faucets (32% reduction in flow); • Install low-flow kitchen faucets (18% reduction in flow); • Install low-flow toilets (20% reduction in flow); • Install low-flow showers (20% reduction in flow); • Use water-efficient irrigation systems (6.1% reduction in flow); and • Institute recycling and composting services (20% reduction in waste disposed).	City of Stockton Community Development Department	Prior to any construction activity.	

TABLE B-1
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Monitoring Responsibility	Timing	Sign Off
Geology, Soils, and Seismicity			
Measure 3.7.1: Conduct Geotechnical Study and Implement Design Recommendations. The applicant shall conduct a design-level geotechnical investigation of the project site to identify the characteristics of project site soils. Recommendations identified by the geotechnical investigations shall be incorporated into the design of the proposed project structures prior to approval of the building permit. Due to the expansive and corrosive nature of the soils, the geotechnical report may include recommendations for foundation design and use of materials that would not be affected by the corrosive soils, the removal of the expansive soils, or mixing the expansive soil with a non-expansive material.	City of Stockton Community Development Department	Prior to issuance of building permit.	
Hydrology and Water Quality			
Measure 3.9.1: Implement Best Management Practices from Stormwater Pollution Prevention Plan. The applicant shall renew its existing Stormwater Pollution Prevention Plan (SWPPP) for construction and operation of the proposed project for compliance with required NPDES construction permitting, and to reduce the intensity of potential water quality impacts associated with operation of the proposed project. The SWPPP shall identify all pollutant sources that may affect the quality of stormwater discharge, and shall require the implementation of Best Management Practices (BMPs) to reduce pollutants in storm water discharges during construction and operation. BMPs may include, but would not be limited to: • Excavation and grading activities shall be scheduled for the dry season only (to October 14), to the extent possible. This will reduce the chance of severe erosion from intense rainfall and surface runoff. • If excavation occurs during the rainy season, storm runoff from the construction area shall be regulated through a storm water management/erosion control plan that shall include temporary onsite silt traps and/or basins with multiple discharge points to natural drainages and energy dissipaters. Stockpiles of loose material shall be covered and runoff diverted away from exposed soil material. If work stops due to rain, a positive grading away from slopes shall be provided to carry the surface runoff to areas where flow would be controlled, such as the temporary silt basins. Sediment basins/traps shall be located and operated to minimize the amount of off-site sediment transport. Any trapped sediment shall be removed from the basin or trap and placed at a suitable location on-site, away from concentrated flows, or removed to an approved disposal site. • Temporary erosion control measures (such as fiber rolls, staked straw bales, detention basins, check dams, geofabric, sandbag dikes, and similar measures) shall be provided until construction is complete or landscaping is established and can minimize discharge of sediment into nearby waterways. All storm drains shall be protected from sedimentation using such measures. • Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures. • No disturbed surfaces will be left without erosion control measures in place during the rainy	City of Stockton Community Development Department and construction contractor	Prior to any construction activity.	

TABLE B-1
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Monitoring Responsibility	Timing	Sign Off
season, from October 15th through April 30th. • Erosion protection shall be provided on all cut-and-fill slopes. Landscaping shall be initiated as soon as possible after completion of grading and prior to the onset of the rainy season (by October 15). Construction-related stormwater BMPs selected and implemented for the project shall be in place and operational prior to the onset of major earthwork on the site. The construction phase facilities shall be maintained regularly and cleared of accumulated sediment as necessary. Operation-related stormwater BMPs shall be incorporated into project design and fully implemented prior to completion of construction and associated activities for the project. Effective mechanical and structural BMPs that could be implemented at the project site include the following: • Mechanical storm water filtration measures, including oil and sediment separators or absorbent filter systems such as the Stormceptor® system, can be installed within the storm drainage system to provide filtration of storm water prior to discharge. • Vegetative strips, high infiltration substrates, and grassy swales can be used where feasible throughout the development to reduce runoff and provide initial storm water treatment. • Drains shall discharge to natural surfaces, swales, or other stormwater retention features to avoid excessive peak stormwater flows. The water quality detention basins during construction shall be designed to provide effective water quality control measures including the following: • Maximize detention time for settling of fine particles; • Establish maintenance schedules for periodic removal of sedimentation, excessive vegetation, and debris that may clog basin inlets and outlets; • Maximize the detention basin elevation to allow the highest amount of infiltration and settling prior to discharge. • Hazardous materials such as fuels and solvents used on the construction sites shall be stored in covered containers and protected from rainfall, runoff, vandalism, and accidental release to the environment. All stored fuels and solvents will be contained in an area of impervious surface with containment capacity equal to the volume of materials stored. A stockpile of spill cleanup materials shall be readily available at all construction sites. Employees shall be trained in spill prevention and cleanup, and individuals shall be designated as responsible for prevention and cleanup activities. • Equipment shall be properly maintained in designated areas with runoff and erosion control measures to minimize accidental release of pollutants.			

TABLE B-1
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Monitoring Responsibility	Timing	Sign Off
Land Use			
Measure 3.10.2: Incorporate Building Design Features Consistent with SJCALUP Guidance. Any proposed structure over 200' above ground level; or construction which includes reflective material (other than traffic markings), unusual levels of lighting, or telecommunications equipment, shall be submitted to the FAA (San Francisco Airports District Office) for review (using Form 7460-1) to determine if the proposed construction would be a hazard to navigable airspace.	City of Stockton Community Development Department	Prior to issuance of building permit.	
Noise and Acoustics			
Measure 3.11.1: Construction-Related Noise Measures. The City shall ensure that the project applicant or construction contractor will implement the following construction-related noise reducing measures: • Construction activities shall be limited to between 7:00 a.m. and 7:00 p.m. Monday through Saturday to avoid noise-sensitive hours of the day. Construction activities shall be prohibited on Sundays and holidays. • Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools. • Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby residences. • Signs will be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number with the City of Stockton in the event of problems. • An onsite complaint and enforcement manager shall track and respond to noise complaints.	City of Stockton Community Development Department and construction contractor	During project construction.	
Measure 3.11.2a: Measures to Reduce HVAC Equipment Noise. The project applicant shall ensure that HVAC units on northwest buildings of Lot 7 (north map) shall be located away from nearby residences, on building rooftops, and properly shielded by either the rooftop parapet or within an enclosure that effectively blocks the line of site of the source from the nearest receivers.	City of Stockton Community Development Department	Prior to issuance of building permit.	
Measure 3.11.2b: Measures to Reduce Loading Dock Noise. The project applicant shall ensure that loading docks in northwest buildings of Lot 7 (north map) shall be located away from nearby residences (i.e., on south or east sides of buildings) or shall be shielded with appropriate wing walls that effectively block the line of site of the loading docks from the nearest receivers.	City of Stockton Community Development Department	Prior to issuance of building permit.	
Measure 3.11.2c: Measures to Reduce Traffic Noise. The applicant shall notify the homeowners along roadway segment 1 of the noise impacts associated with the traffic from project operations. With the homeowners' approval, the applicant shall construct 6-foot solid fences along the property line of affected residences. Alternatively, residential building facades can be upgraded to reduce interior noise levels (e.g., improved windows and doors). While these measures could substantially reduce the impact of increased traffic noise on the interior environment of existing noise-sensitive uses, no enforcement mechanism has been identified to ensure implementation of the measures nor has any related funding mechanism been identified.	City of Stockton Community Development Department	Prior to issuance of building permit.	

TABLE B-1
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Monitoring Responsibility	Timing	Sign Off
Traffic and Circulation			
Measure 3.13.1: Restripe Arch Road to Provide Second Westbound Lane. The applicant shall restripe Arch Road to provide a second westbound through lane on Arch Road from approximately 500 feet east of Newcastle Road to Fite Court.	City of Stockton Community Development Department and Public Works Department	Prior to issuance of building permit.	
Measure 3.13.2: Project's Fair Share Contribution to SR99 Widening. The applicant shall pay the Public Facilities Fees (PFF), which includes the Regional Transportation Impact, Street Improvements, and Traffic Signal Fees. Payment of these fees would constitute the Project's fair share contribution to on-going widening of SR 99 from SR 120 to the Crosstown Freeway to provide three travel lanes in each direction. This improvement is fully funded, including funding from Measure K as well as Regional Transportation Impact Fees. Construction is expected to be completed in 2015/2016.	City of Stockton Community Development Department and Public Works Department	Prior to issuance of building permit.	
Measure 3.13.3a: Project's Fair Share Contribution to Arch-Airport Road/Sperry Road Specific Road Plan Road Improvements. The applicant shall pay the PFF which would constitute their fair share to the construction of planned improvements identified in the *Arch-Airport Road/Sperry Road Specific Road Plan* (August 2003), which includes the widening of Arch Road to provide two travel lanes in each direction as shown on Figure 3.13-6.	City of Stockton Community Development Department and Public Works Department	Prior to issuance of building permit.	
Measure 3.13.3b: Construct Westbound Right-Turn Only Lane at Arch Road/Newcastle Road Intersection. The applicant shall construct 770 feet (500 feet plus 270 feet of taper) of a right-turn only lane for the westbound approach of the Arch Road/Newcastle Road Intersection.	City of Stockton Community Development Department and Public Works Department	Prior to issuance of building permit.	
Measure 3.13.9a: Provide Adequate Vehicle Storage. At Arch Road/Newcastle Road, the eastbound left-turn lane should be designed to provide approximately 350 feet of vehicle storage. At Arch Road/Logistics Drive, the eastbound left-turn lane should be designed to provide 300 feet of vehicle storage, and the southbound right-turn lane should be designed to provide 300 feet of vehicle storage. At Mariposa Road/Newcastle Road, the eastbound right-turn should be designed to provide 150 feet of vehicle storage and the northbound left-turn should be designed to provide 300 feet of storage.	City of Stockton Community Development Department and Public Works Department	Prior to issuance of building permit.	
Measure 3.13.9b: Provide Adequate Driveway Access on Newcastle Road. The first driveway on Newcastle Road, serving Southern Lot 1 should be at least 300 feet from the Arch Road/Newcastle Road intersection, or restricted to right-in/right-out operation.	City of Stockton Community Development Department and Public Works Department	Prior to issuance of building permit.	
Measure 3.13.9c: Provide Adequate Emergency Vehicle Access. For each developable lot, the applicant shall consult with the City of Stockton fire department to ensure that the site plan provides adequate emergency vehicle access.	City of Stockton Community Development Department, Public Works Department, and Fire Department	Prior to issuance of building permit.	

Appendix C
Air Quality Modeling Results

ESA

NorCal Logistics

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Light Industry	6280.481	1000sqft

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Utility Company**	Pacific Gas & Electric Company
Climate Zone	2	**Precipitation Freq (Days)**	51		

1.3 User Entered Comments

Project Characteristics -

Land Use - Changed assumed acres to 331 to match project description

Construction Phase - Assumed 4 years for construction, starting in July 2013

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment -

Grading - Adjusted acres per Project Description

Vehicle Trips - Bumped up trip length C-C and C-NW to match C-W, based on rural nature of the project. Also adjusted all trips to 100% primary.

Water And Wastewater - Adjusted water use factor for light industrial uses to 925 gallons/1000sf/yr per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Solid Waste - Adjusted solid waste factor to 1.24 tons/1000sf/yr for light industrial uses per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Construction Off-road Equipment Mitigation -

Vechicle Emission Factors - Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4

Vechicle Emission Factors - Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4

Vechicle Emission Factors - Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.45	3.59	2.15	0.00	1.42	0.18	1.59	0.69	0.18	0.87	0.00	339.39	339.39	0.04	0.00	340.17
2014	1.00	7.93	4.68	0.01	2.40	0.37	2.76	1.14	0.37	1.51	0.00	891.24	891.24	0.08	0.00	892.95
2015	18.60	25.98	46.27	0.09	8.51	1.13	9.64	0.83	1.13	1.96	0.00	8,286.44	8,286.44	0.40	0.00	8,294.88
2016	24.85	23.26	43.75	0.10	7.98	1.00	8.98	0.40	1.00	1.40	0.00	8,407.89	8,407.89	0.37	0.00	8,415.76
2017	12.16	10.55	19.90	0.05	3.97	0.46	4.43	0.20	0.46	0.66	0.00	4,126.43	4,126.43	0.17	0.00	4,130.00
Total	**57.06**	**71.31**	**116.75**	**0.25**	**24.28**	**3.14**	**27.40**	**3.26**	**3.14**	**6.40**	**0.00**	**22,051.39**	**22,051.39**	**1.06**	**0.00**	**22,073.76**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.45	3.59	2.15	0.00	0.65	0.18	0.82	0.31	0.18	0.49	0.00	339.39	339.39	0.04	0.00	340.17
2014	1.00	7.93	4.68	0.01	1.10	0.37	1.47	0.51	0.37	0.88	0.00	891.24	891.24	0.08	0.00	892.95
2015	18.60	25.98	46.27	0.09	7.98	1.13	9.11	0.58	1.13	1.71	0.00	8,286.44	8,286.44	0.40	0.00	8,294.88
2016	24.85	23.26	43.75	0.10	7.98	1.00	8.98	0.40	1.00	1.40	0.00	8,407.89	8,407.89	0.37	0.00	8,415.76
2017	12.16	10.55	19.90	0.05	3.97	0.46	4.43	0.20	0.46	0.66	0.00	4,126.43	4,126.43	0.17	0.00	4,130.00
Total	**57.06**	**71.31**	**116.75**	**0.25**	**21.68**	**3.14**	**24.81**	**2.00**	**3.14**	**5.14**	**0.00**	**22,051.39**	**22,051.39**	**1.06**	**0.00**	**22,073.76**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	28.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.66	6.04	5.07	0.04		0.00	0.46		0.00	0.46	0.00	23,436.10	23,436.10	0.89	0.41	23,581.77
Mobile	22.34	86.05	213.59	0.44	41.56	3.35	44.92	1.82	3.35	5.17	0.00	45,345.46	45,345.46	1.48	0.00	45,376.55
Waste						0.00	0.00		0.00	0.00	1,580.85	0.00	1,580.85	93.43	0.00	3,542.79
Water						0.00	0.00		0.00	0.00	0.00	9.21	9.21	0.18	0.00	14.35
Total	**51.89**	**92.09**	**218.66**	**0.48**	**41.56**	**3.35**	**45.38**	**1.82**	**3.35**	**5.63**	**1,580.85**	**68,790.77**	**70,371.62**	**95.98**	**0.41**	**72,515.46**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	28.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.66	6.04	5.07	0.04		0.00	0.46		0.00	0.46	0.00	23,436.10	23,436.10	0.89	0.41	23,581.77
Mobile	22.34	86.05	213.59	0.44	41.56	3.35	44.92	1.82	3.35	5.17	0.00	45,345.46	45,345.46	1.48	0.00	45,376.55
Waste						0.00	0.00		0.00	0.00	1,580.85	0.00	1,580.85	93.43	0.00	3,542.79
Water						0.00	0.00		0.00	0.00	0.00	9.21	9.21	0.18	0.00	14.35
Total	**51.89**	**92.09**	**218.66**	**0.48**	**41.56**	**3.35**	**45.38**	**1.82**	**3.35**	**5.63**	**1,580.85**	**68,790.77**	**70,371.62**	**95.98**	**0.41**	**72,515.46**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.39	0.00	1.39	0.69	0.00	0.69	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.44	3.57	2.02	0.00		0.18	0.18		0.18	0.18	0.00	324.04	324.04	0.04	0.00	324.80
Total	**0.44**	**3.57**	**2.02**	**0.00**	**1.39**	**0.18**	**1.57**	**0.69**	**0.18**	**0.87**	**0.00**	**324.04**	**324.04**	**0.04**	**0.00**	**324.80**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.12	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	15.35	15.35	0.00	0.00	15.37
Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**15.35**	**15.35**	**0.00**	**0.00**	**15.37**

3.2 Site Preparation - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.63	0.00	0.63	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.44	3.57	2.02	0.00		0.18	0.18		0.18	0.18	0.00	324.04	324.04	0.04	0.00	324.80
Total	**0.44**	**3.57**	**2.02**	**0.00**	**0.63**	**0.18**	**0.81**	**0.31**	**0.18**	**0.49**	**0.00**	**324.04**	**324.04**	**0.04**	**0.00**	**324.80**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.12	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	15.35	15.35	0.00	0.00	15.37
Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**15.35**	**15.35**	**0.00**	**0.00**	**15.37**

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.39	0.00	1.39	0.69	0.00	0.69	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.04	0.00		0.00	0.00		0.00	0.00	0.00	7.36	7.36	0.00	0.00	7.38
Total	**0.01**	**0.08**	**0.04**	**0.00**	**1.39**	**0.00**	**1.39**	**0.69**	**0.00**	**0.69**	**0.00**	**7.36**	**7.36**	**0.00**	**0.00**	**7.38**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34	0.00	0.00	0.34
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.34**	**0.34**	**0.00**	**0.00**	**0.34**

3.2 Site Preparation - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.63	0.00	0.63	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.04	0.00		0.00	0.00		0.00	0.00	0.00	7.36	7.36	0.00	0.00	7.38
Total	**0.01**	**0.08**	**0.04**	**0.00**	**0.63**	**0.00**	**0.63**	**0.31**	**0.00**	**0.31**	**0.00**	**7.36**	**7.36**	**0.00**	**0.00**	**7.38**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34	0.00	0.00	0.34
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.34**	**0.34**	**0.00**	**0.00**	**0.34**

3.3 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.96	0.00	0.96	0.45	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.97	7.83	4.39	0.01		0.36	0.36		0.36	0.36	0.00	851.02	851.02	0.08	0.00	852.67
Total	**0.97**	**7.83**	**4.39**	**0.01**	**0.96**	**0.36**	**1.32**	**0.45**	**0.36**	**0.81**	**0.00**	**851.02**	**851.02**	**0.08**	**0.00**	**852.67**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.24	0.00	0.04	0.00	0.05	0.00	0.00	0.00	0.00	32.52	32.52	0.00	0.00	32.57
Total	**0.02**	**0.02**	**0.24**	**0.00**	**0.04**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**32.52**	**32.52**	**0.00**	**0.00**	**32.57**

3.3 Grading - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.43	0.00	0.43	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.97	7.83	4.39	0.01		0.36	0.36		0.36	0.36	0.00	851.02	851.02	0.08	0.00	852.67
Total	**0.97**	**7.83**	**4.39**	**0.01**	**0.43**	**0.36**	**0.79**	**0.20**	**0.36**	**0.56**	**0.00**	**851.02**	**851.02**	**0.08**	**0.00**	**852.67**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.24	0.00	0.04	0.00	0.05	0.00	0.00	0.00	0.00	32.52	32.52	0.00	0.00	32.57
Total	**0.02**	**0.02**	**0.24**	**0.00**	**0.04**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**32.52**	**32.52**	**0.00**	**0.00**	**32.57**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.96	0.00	0.96	0.45	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.06	0.03	0.00		0.00	0.00		0.00	0.00	0.00	6.60	6.60	0.00	0.00	6.61
Total	**0.01**	**0.06**	**0.03**	**0.00**	**0.96**	**0.00**	**0.96**	**0.45**	**0.00**	**0.45**	**0.00**	**6.60**	**6.60**	**0.00**	**0.00**	**6.61**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.25
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**	**0.00**	**0.00**	**0.25**

3.3 Grading - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.43	0.00	0.43	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.06	0.03	0.00		0.00	0.00		0.00	0.00	0.00	6.60	6.60	0.00	0.00	6.61
Total	**0.01**	**0.06**	**0.03**	**0.00**	**0.43**	**0.00**	**0.43**	**0.20**	**0.00**	**0.20**	**0.00**	**6.60**	**6.60**	**0.00**	**0.00**	**6.61**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.25
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**	**0.00**	**0.00**	**0.25**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.46	2.91	2.33	0.00		0.19	0.19		0.19	0.19	0.00	358.23	358.23	0.04	0.00	359.02
Total	**0.46**	**2.91**	**2.33**	**0.00**		**0.19**	**0.19**		**0.19**	**0.19**	**0.00**	**358.23**	**358.23**	**0.04**	**0.00**	**359.02**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	1.71	18.86	10.74	0.03	0.94	0.60	1.54	0.09	0.60	0.69	0.00	3,055.91	3,055.91	0.07	0.00	3,057.45
Worker	2.43	2.71	28.51	0.05	5.82	0.22	6.04	0.26	0.22	0.48	0.00	4,193.78	4,193.78	0.24	0.00	4,198.89
Total	**4.14**	**21.57**	**39.25**	**0.08**	**6.76**	**0.82**	**7.58**	**0.35**	**0.82**	**1.17**	**0.00**	**7,249.69**	**7,249.69**	**0.31**	**0.00**	**7,256.34**

3.4 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.46	2.91	2.33	0.00		0.19	0.19		0.19	0.19	0.00	358.23	358.23	0.04	0.00	359.02
Total	**0.46**	**2.91**	**2.33**	**0.00**		**0.19**	**0.19**		**0.19**	**0.19**	**0.00**	**358.23**	**358.23**	**0.04**	**0.00**	**359.02**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	1.71	18.86	10.74	0.03	0.94	0.60	1.54	0.09	0.60	0.69	0.00	3,055.91	3,055.91	0.07	0.00	3,057.45
Worker	2.43	2.71	28.51	0.05	5.82	0.22	6.04	0.26	0.22	0.48	0.00	4,193.78	4,193.78	0.24	0.00	4,198.89
Total	**4.14**	**21.57**	**39.25**	**0.08**	**6.76**	**0.82**	**7.58**	**0.35**	**0.82**	**1.17**	**0.00**	**7,249.69**	**7,249.69**	**0.31**	**0.00**	**7,256.34**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.42	2.68	2.33	0.00		0.17	0.17		0.17	0.17	0.00	361.00	361.00	0.03	0.00	361.72
Total	**0.42**	**2.68**	**2.33**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**361.00**	**361.00**	**0.03**	**0.00**	**361.72**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	1.57	17.33	10.02	0.03	0.94	0.54	1.49	0.09	0.54	0.63	0.00	3,077.63	3,077.63	0.07	0.00	3,079.05
Worker	2.24	2.45	25.96	0.05	5.86	0.22	6.08	0.26	0.22	0.48	0.00	4,112.80	4,112.80	0.22	0.00	4,117.50
Total	**3.81**	**19.78**	**35.98**	**0.08**	**6.80**	**0.76**	**7.57**	**0.35**	**0.76**	**1.11**	**0.00**	**7,190.43**	**7,190.43**	**0.29**	**0.00**	**7,196.55**

3.4 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.42	2.68	2.33	0.00		0.17	0.17		0.17	0.17	0.00	361.00	361.00	0.03	0.00	361.72
Total	**0.42**	**2.68**	**2.33**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**361.00**	**361.00**	**0.03**	**0.00**	**361.72**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	1.57	17.33	10.02	0.03	0.94	0.54	1.49	0.09	0.54	0.63	0.00	3,077.63	3,077.63	0.07	0.00	3,079.05
Worker	2.24	2.45	25.96	0.05	5.86	0.22	6.08	0.26	0.22	0.48	0.00	4,112.80	4,112.80	0.22	0.00	4,117.50
Total	**3.81**	**19.78**	**35.98**	**0.08**	**6.80**	**0.76**	**7.57**	**0.35**	**0.76**	**1.11**	**0.00**	**7,190.43**	**7,190.43**	**0.29**	**0.00**	**7,196.55**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.19	1.22	1.15	0.00		0.07	0.07		0.07	0.07	0.00	179.81	179.81	0.02	0.00	180.14
Total	**0.19**	**1.22**	**1.15**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**179.81**	**179.81**	**0.02**	**0.00**	**180.14**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.71	7.88	4.62	0.02	0.47	0.24	0.71	0.04	0.24	0.28	0.00	1,532.09	1,532.09	0.03	0.00	1,532.73
Worker	1.01	1.09	11.67	0.03	2.92	0.11	3.03	0.13	0.11	0.24	0.00	1,998.05	1,998.05	0.10	0.00	2,000.18
Total	**1.72**	**8.97**	**16.29**	**0.05**	**3.39**	**0.35**	**3.74**	**0.17**	**0.35**	**0.52**	**0.00**	**3,530.14**	**3,530.14**	**0.13**	**0.00**	**3,532.91**

3.4 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.19	1.22	1.15	0.00		0.07	0.07		0.07	0.07	0.00	179.81	179.81	0.02	0.00	180.14
Total	**0.19**	**1.22**	**1.15**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**179.81**	**179.81**	**0.02**	**0.00**	**180.14**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.71	7.88	4.62	0.02	0.47	0.24	0.71	0.04	0.24	0.28	0.00	1,532.09	1,532.09	0.03	0.00	1,532.73
Worker	1.01	1.09	11.67	0.03	2.92	0.11	3.03	0.13	0.11	0.24	0.00	1,998.05	1,998.05	0.10	0.00	2,000.18
Total	**1.72**	**8.97**	**16.29**	**0.05**	**3.39**	**0.35**	**3.74**	**0.17**	**0.35**	**0.52**	**0.00**	**3,530.14**	**3,530.14**	**0.13**	**0.00**	**3,532.91**

3.5 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.14	0.85	0.58	0.00		0.07	0.07		0.07	0.07	0.00	74.46	74.46	0.01	0.00	74.70
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.14**	**0.85**	**0.58**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**74.46**	**74.46**	**0.01**	**0.00**	**74.70**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	7.73	7.73	0.00	0.00	7.74
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**7.73**	**7.73**	**0.00**	**0.00**	**7.74**

3.5 Paving - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.14	0.85	0.58	0.00		0.07	0.07		0.07	0.07	0.00	74.46	74.46	0.01	0.00	74.70
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.14**	**0.85**	**0.58**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**74.46**	**74.46**	**0.01**	**0.00**	**74.70**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	7.73	7.73	0.00	0.00	7.74
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**7.73**	**7.73**	**0.00**	**0.00**	**7.74**

3.6 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	13.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.22	0.17	0.00		0.02	0.02		0.02	0.02	0.00	22.31	22.31	0.00	0.00	22.38
Total	**13.53**	**0.22**	**0.17**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**22.31**	**22.31**	**0.00**	**0.00**	**22.38**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.33	0.37	3.86	0.01	0.79	0.03	0.82	0.04	0.03	0.06	0.00	567.16	567.16	0.03	0.00	567.85
Total	**0.33**	**0.37**	**3.86**	**0.01**	**0.79**	**0.03**	**0.82**	**0.04**	**0.03**	**0.06**	**0.00**	**567.16**	**567.16**	**0.03**	**0.00**	**567.85**

3.6 Architectural Coating - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	13.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.22	0.17	0.00		0.02	0.02		0.02	0.02	0.00	22.31	22.31	0.00	0.00	22.38
Total	**13.53**	**0.22**	**0.17**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**22.31**	**22.31**	**0.00**	**0.00**	**22.38**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.33	0.37	3.86	0.01	0.79	0.03	0.82	0.04	0.03	0.06	0.00	567.16	567.16	0.03	0.00	567.85
Total	**0.33**	**0.37**	**3.86**	**0.01**	**0.79**	**0.03**	**0.82**	**0.04**	**0.03**	**0.06**	**0.00**	**567.16**	**567.16**	**0.03**	**0.00**	**567.85**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	20.12					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.31	0.25	0.00		0.03	0.03		0.03	0.03	0.00	33.28	33.28	0.00	0.00	33.36
Total	**20.17**	**0.31**	**0.25**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.36**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.45	0.49	5.20	0.01	1.17	0.04	1.22	0.05	0.04	0.10	0.00	823.18	823.18	0.04	0.00	824.12
Total	**0.45**	**0.49**	**5.20**	**0.01**	**1.17**	**0.04**	**1.22**	**0.05**	**0.04**	**0.10**	**0.00**	**823.18**	**823.18**	**0.04**	**0.00**	**824.12**

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	20.12					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.31	0.25	0.00		0.03	0.03		0.03	0.03	0.00	33.28	33.28	0.00	0.00	33.36
Total	**20.17**	**0.31**	**0.25**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.36**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.45	0.49	5.20	0.01	1.17	0.04	1.22	0.05	0.04	0.10	0.00	823.18	823.18	0.04	0.00	824.12
Total	**0.45**	**0.49**	**5.20**	**0.01**	**1.17**	**0.04**	**1.22**	**0.05**	**0.04**	**0.10**	**0.00**	**823.18**	**823.18**	**0.04**	**0.00**	**824.12**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	10.02					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.14	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.58	16.58	0.00	0.00	16.61
Total	**10.04**	**0.14**	**0.12**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**16.58**	**16.58**	**0.00**	**0.00**	**16.61**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.20	0.22	2.34	0.01	0.58	0.02	0.61	0.03	0.02	0.05	0.00	399.91	399.91	0.02	0.00	400.34
Total	**0.20**	**0.22**	**2.34**	**0.01**	**0.58**	**0.02**	**0.61**	**0.03**	**0.02**	**0.05**	**0.00**	**399.91**	**399.91**	**0.02**	**0.00**	**400.34**

3.6 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	10.02					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.14	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.58	16.58	0.00	0.00	16.61
Total	**10.04**	**0.14**	**0.12**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**16.58**	**16.58**	**0.00**	**0.00**	**16.61**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.20	0.22	2.34	0.01	0.58	0.02	0.61	0.03	0.02	0.05	0.00	399.91	399.91	0.02	0.00	400.34
Total	**0.20**	**0.22**	**2.34**	**0.01**	**0.58**	**0.02**	**0.61**	**0.03**	**0.02**	**0.05**	**0.00**	**399.91**	**399.91**	**0.02**	**0.00**	**400.34**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	22.34	86.05	213.59	0.44	41.56	3.35	44.92	1.82	3.35	5.17	0.00	45,345.46	45,345.46	1.48	0.00	45,376.55
Unmitigated	22.34	86.05	213.59	0.44	41.56	3.35	44.92	1.82	3.35	5.17	0.00	45,345.46	45,345.46	1.48	0.00	45,376.55
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	21,479.25	0.00	0.00	82,093,674	82,093,674
Total	21,479.25	0.00	0.00	82,093,674	82,093,674

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
General Light Industry	14.70	14.70	14.70	59.00	28.00	13.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	16,863.80	16,863.80	0.76	0.29	16,969.48
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	16,863.80	16,863.80	0.76	0.29	16,969.48
NaturalGas Mitigated	0.66	6.04	5.07	0.04		0.00	0.46		0.00	0.46	0.00	6,572.30	6,572.30	0.13	0.12	6,612.30
NaturalGas Unmitigated	0.66	6.04	5.07	0.04		0.00	0.46		0.00	0.46	0.00	6,572.30	6,572.30	0.13	0.12	6,612.30
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
General Light Industry	1.2316e+008	0.66	6.04	5.07	0.04		0.00	0.46		0.00	0.46	0.00	6,572.30	6,572.30	0.13	0.12	6,612.30
Total		**0.66**	**6.04**	**5.07**	**0.04**		**0.00**	**0.46**		**0.00**	**0.46**	**0.00**	**6,572.30**	**6,572.30**	**0.13**	**0.12**	**6,612.30**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
General Light Industry	1.2316e+008	0.66	6.04	5.07	0.04		0.00	0.46		0.00	0.46	0.00	6,572.30	6,572.30	0.13	0.12	6,612.30
Total		**0.66**	**6.04**	**5.07**	**0.04**		**0.00**	**0.46**		**0.00**	**0.46**	**0.00**	**6,572.30**	**6,572.30**	**0.13**	**0.12**	**6,612.30**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	5.79688e+007					16,863.80	0.76	0.29	16,969.48
Total						**16,863.80**	**0.76**	**0.29**	**16,969.48**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	5.79688e+007					16,863.80	0.76	0.29	16,969.48
Total						**16,863.80**	**0.76**	**0.29**	**16,969.48**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	28.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	28.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.36					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	24.53					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**28.89**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.36					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	24.53					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**28.89**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					9.21	0.18	0.00	14.35
Unmitigated					9.21	0.18	0.00	14.35
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	5.80944 / 0					9.21	0.18	0.00	14.35
Total						**9.21**	**0.18**	**0.00**	**14.35**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	5.80944 / 0					9.21	0.18	0.00	14.35
Total						**9.21**	**0.18**	**0.00**	**14.35**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					1,580.85	93.43	0.00	3,542.79
Unmitigated					1,580.85	93.43	0.00	3,542.79
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	7787.8					1,580.85	93.43	0.00	3,542.79
Total						**1,580.85**	**93.43**	**0.00**	**3,542.79**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	7787.8					1,580.85	93.43	0.00	3,542.79
Total						**1,580.85**	**93.43**	**0.00**	**3,542.79**

9.0 Vegetation

NorCal Logistics

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Light Industry	6280.48	1000sqft

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Utility Company**	Pacific Gas & Electric Company
Climate Zone	2	**Precipitation Freq (Days)**	51		

1.3 User Entered Comments

Project Characteristics -

Land Use - Changed assumed acres to 331 to match project description

Construction Phase - Assumed 4 years for construction, starting in July 2013

Off-road Equipment -

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Grading - Adjusted acres per Project Description

Vehicle Trips - Bumped up trip length C-C and C-NW to match C-W, based on rural nature of the project. Also adjusted all trips to 100% primary.

Water And Wastewater - Adjusted water use factor for light industrial uses to 925 gallons/1000sf/yr per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Solid Waste - Adjusted solid waste factor to 1.24 tons/1000sf/yr for light industrial uses per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.45	3.59	2.15	0.00	1.42	0.18	1.59	0.69	0.18	0.87	0.00	339.39	339.39	0.04	0.00	340.17
2014	1.00	7.93	4.68	0.01	2.40	0.37	2.76	1.14	0.37	1.51	0.00	891.02	891.02	0.08	0.00	892.74
2015	18.61	25.99	46.28	0.09	8.51	1.13	9.64	0.83	1.13	1.96	0.00	8,287.59	8,287.59	0.40	0.00	8,296.04
2016	24.85	23.26	43.75	0.10	7.98	1.00	8.98	0.40	1.00	1.40	0.00	8,408.12	8,408.12	0.37	0.00	8,415.99
2017	12.16	10.55	19.90	0.05	3.97	0.46	4.43	0.20	0.46	0.66	0.00	4,126.54	4,126.54	0.17	0.00	4,130.11
Total	**57.07**	**71.32**	**116.76**	**0.25**	**24.28**	**3.14**	**27.40**	**3.26**	**3.14**	**6.40**	**0.00**	**22,052.66**	**22,052.66**	**1.06**	**0.00**	**22,075.05**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.45	3.59	2.15	0.00	0.65	0.18	0.82	0.31	0.18	0.49	0.00	339.39	339.39	0.04	0.00	340.17
2014	1.00	7.93	4.68	0.01	1.10	0.37	1.47	0.51	0.37	0.88	0.00	891.02	891.02	0.08	0.00	892.74
2015	18.61	25.99	46.28	0.09	7.98	1.13	9.12	0.58	1.13	1.72	0.00	8,287.59	8,287.59	0.40	0.00	8,296.04
2016	24.85	23.26	43.75	0.10	7.98	1.00	8.98	0.40	1.00	1.40	0.00	8,408.12	8,408.12	0.37	0.00	8,415.99
2017	12.16	10.55	19.90	0.05	3.97	0.46	4.43	0.20	0.46	0.66	0.00	4,126.54	4,126.54	0.17	0.00	4,130.11
Total	**57.07**	**71.32**	**116.76**	**0.25**	**21.68**	**3.14**	**24.82**	**2.00**	**3.14**	**5.15**	**0.00**	**22,052.66**	**22,052.66**	**1.06**	**0.00**	**22,075.05**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	28.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.66	6.04	5.07	0.04		0.00	0.46		0.00	0.46	0.00	23,436.10	23,436.10	0.89	0.41	23,581.77
Mobile	22.34	86.05	213.59	0.44	41.56	3.35	44.92	1.82	3.35	5.17	0.00	39,432.07	39,432.07	1.48	0.00	39,463.15
Waste						0.00	0.00		0.00	0.00	1,580.85	0.00	1,580.85	93.43	0.00	3,542.79
Water						0.00	0.00		0.00	0.00	0.00	9.21	9.21	0.18	0.00	14.35
Total	**51.89**	**92.09**	**218.66**	**0.48**	**41.56**	**3.35**	**45.38**	**1.82**	**3.35**	**5.63**	**1,580.85**	**62,877.38**	**64,458.23**	**95.98**	**0.41**	**66,602.06**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	28.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.56	5.13	4.31	0.03		0.00	0.39		0.00	0.39	0.00	20,524.80	20,524.80	0.78	0.36	20,652.41
Mobile	22.34	86.05	213.59	0.44	41.56	3.35	44.92	1.82	3.35	5.17	0.00	39,432.07	39,432.07	1.48	0.00	39,463.15
Waste						0.00	0.00		0.00	0.00	1,264.68	0.00	1,264.68	74.74	0.00	2,834.23
Water						0.00	0.00		0.00	0.00	0.00	7.37	7.37	0.14	0.00	11.48
Total	**51.79**	**91.18**	**217.90**	**0.47**	**41.56**	**3.35**	**45.31**	**1.82**	**3.35**	**5.56**	**1,264.68**	**59,964.24**	**61,228.92**	**77.14**	**0.36**	**62,961.27**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.39	0.00	1.39	0.69	0.00	0.69	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.44	3.57	2.02	0.00		0.18	0.18		0.18	0.18	0.00	324.04	324.04	0.04	0.00	324.80
Total	**0.44**	**3.57**	**2.02**	**0.00**	**1.39**	**0.18**	**1.57**	**0.69**	**0.18**	**0.87**	**0.00**	**324.04**	**324.04**	**0.04**	**0.00**	**324.80**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.12	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	15.35	15.35	0.00	0.00	15.37
Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**15.35**	**15.35**	**0.00**	**0.00**	**15.37**

3.2 Site Preparation - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.63	0.00	0.63	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.44	3.57	2.02	0.00		0.18	0.18		0.18	0.18	0.00	324.04	324.04	0.04	0.00	324.80
Total	**0.44**	**3.57**	**2.02**	**0.00**	**0.63**	**0.18**	**0.81**	**0.31**	**0.18**	**0.49**	**0.00**	**324.04**	**324.04**	**0.04**	**0.00**	**324.80**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.12	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	15.35	15.35	0.00	0.00	15.37
Total	**0.01**	**0.01**	**0.12**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**15.35**	**15.35**	**0.00**	**0.00**	**15.37**

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.39	0.00	1.39	0.69	0.00	0.69	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.04	0.00		0.00	0.00		0.00	0.00	0.00	7.36	7.36	0.00	0.00	7.38
Total	**0.01**	**0.08**	**0.04**	**0.00**	**1.39**	**0.00**	**1.39**	**0.69**	**0.00**	**0.69**	**0.00**	**7.36**	**7.36**	**0.00**	**0.00**	**7.38**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34	0.00	0.00	0.34
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.34**	**0.34**	**0.00**	**0.00**	**0.34**

3.2 Site Preparation - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.63	0.00	0.63	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.04	0.00		0.00	0.00		0.00	0.00	0.00	7.36	7.36	0.00	0.00	7.38
Total	**0.01**	**0.08**	**0.04**	**0.00**	**0.63**	**0.00**	**0.63**	**0.31**	**0.00**	**0.31**	**0.00**	**7.36**	**7.36**	**0.00**	**0.00**	**7.38**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34	0.00	0.00	0.34
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.34**	**0.34**	**0.00**	**0.00**	**0.34**

3.3 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.96	0.00	0.96	0.45	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.97	7.83	4.39	0.01		0.36	0.36		0.36	0.36	0.00	850.80	850.80	0.08	0.00	852.45
Total	**0.97**	**7.83**	**4.39**	**0.01**	**0.96**	**0.36**	**1.32**	**0.45**	**0.36**	**0.81**	**0.00**	**850.80**	**850.80**	**0.08**	**0.00**	**852.45**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.24	0.00	0.04	0.00	0.05	0.00	0.00	0.00	0.00	32.52	32.52	0.00	0.00	32.57
Total	**0.02**	**0.02**	**0.24**	**0.00**	**0.04**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**32.52**	**32.52**	**0.00**	**0.00**	**32.57**

3.3 Grading - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.43	0.00	0.43	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.97	7.83	4.39	0.01		0.36	0.36		0.36	0.36	0.00	850.80	850.80	0.08	0.00	852.45
Total	**0.97**	**7.83**	**4.39**	**0.01**	**0.43**	**0.36**	**0.79**	**0.20**	**0.36**	**0.56**	**0.00**	**850.80**	**850.80**	**0.08**	**0.00**	**852.45**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.24	0.00	0.04	0.00	0.05	0.00	0.00	0.00	0.00	32.52	32.52	0.00	0.00	32.57
Total	**0.02**	**0.02**	**0.24**	**0.00**	**0.04**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**32.52**	**32.52**	**0.00**	**0.00**	**32.57**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.96	0.00	0.96	0.45	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.06	0.03	0.00		0.00	0.00		0.00	0.00	0.00	6.60	6.60	0.00	0.00	6.61
Total	**0.01**	**0.06**	**0.03**	**0.00**	**0.96**	**0.00**	**0.96**	**0.45**	**0.00**	**0.45**	**0.00**	**6.60**	**6.60**	**0.00**	**0.00**	**6.61**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.25
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**	**0.00**	**0.00**	**0.25**

3.3 Grading - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.43	0.00	0.43	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.06	0.03	0.00		0.00	0.00		0.00	0.00	0.00	6.60	6.60	0.00	0.00	6.61
Total	**0.01**	**0.06**	**0.03**	**0.00**	**0.43**	**0.00**	**0.43**	**0.20**	**0.00**	**0.20**	**0.00**	**6.60**	**6.60**	**0.00**	**0.00**	**6.61**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.25
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**	**0.00**	**0.00**	**0.25**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.46	2.91	2.33	0.00		0.19	0.19		0.19	0.19	0.00	358.46	358.46	0.04	0.00	359.25
Total	**0.46**	**2.91**	**2.33**	**0.00**		**0.19**	**0.19**		**0.19**	**0.19**	**0.00**	**358.46**	**358.46**	**0.04**	**0.00**	**359.25**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	1.71	18.86	10.74	0.03	0.94	0.60	1.54	0.09	0.60	0.69	0.00	3,055.91	3,055.91	0.07	0.00	3,057.45
Worker	2.43	2.71	28.51	0.05	5.82	0.22	6.04	0.26	0.22	0.48	0.00	4,193.78	4,193.78	0.24	0.00	4,198.89
Total	**4.14**	**21.57**	**39.25**	**0.08**	**6.76**	**0.82**	**7.58**	**0.35**	**0.82**	**1.17**	**0.00**	**7,249.69**	**7,249.69**	**0.31**	**0.00**	**7,256.34**

3.4 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.46	2.91	2.33	0.00		0.19	0.19		0.19	0.19	0.00	358.46	358.46	0.04	0.00	359.25
Total	**0.46**	**2.91**	**2.33**	**0.00**		**0.19**	**0.19**		**0.19**	**0.19**	**0.00**	**358.46**	**358.46**	**0.04**	**0.00**	**359.25**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	1.71	18.86	10.74	0.03	0.94	0.60	1.54	0.09	0.60	0.69	0.00	3,055.91	3,055.91	0.07	0.00	3,057.45
Worker	2.43	2.71	28.51	0.05	5.82	0.22	6.04	0.26	0.22	0.48	0.00	4,193.78	4,193.78	0.24	0.00	4,198.89
Total	**4.14**	**21.57**	**39.25**	**0.08**	**6.76**	**0.82**	**7.58**	**0.35**	**0.82**	**1.17**	**0.00**	**7,249.69**	**7,249.69**	**0.31**	**0.00**	**7,256.34**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.42	2.68	2.33	0.00		0.17	0.17		0.17	0.17	0.00	361.23	361.23	0.03	0.00	361.95
Total	**0.42**	**2.68**	**2.33**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**361.23**	**361.23**	**0.03**	**0.00**	**361.95**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	1.57	17.33	10.02	0.03	0.94	0.54	1.49	0.09	0.54	0.63	0.00	3,077.63	3,077.63	0.07	0.00	3,079.05
Worker	2.24	2.45	25.96	0.05	5.86	0.22	6.08	0.26	0.22	0.48	0.00	4,112.80	4,112.80	0.22	0.00	4,117.50
Total	**3.81**	**19.78**	**35.98**	**0.08**	**6.80**	**0.76**	**7.57**	**0.35**	**0.76**	**1.11**	**0.00**	**7,190.43**	**7,190.43**	**0.29**	**0.00**	**7,196.55**

3.4 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.42	2.68	2.33	0.00		0.17	0.17		0.17	0.17	0.00	361.23	361.23	0.03	0.00	361.95
Total	**0.42**	**2.68**	**2.33**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**361.23**	**361.23**	**0.03**	**0.00**	**361.95**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	1.57	17.33	10.02	0.03	0.94	0.54	1.49	0.09	0.54	0.63	0.00	3,077.63	3,077.63	0.07	0.00	3,079.05
Worker	2.24	2.45	25.96	0.05	5.86	0.22	6.08	0.26	0.22	0.48	0.00	4,112.80	4,112.80	0.22	0.00	4,117.50
Total	**3.81**	**19.78**	**35.98**	**0.08**	**6.80**	**0.76**	**7.57**	**0.35**	**0.76**	**1.11**	**0.00**	**7,190.43**	**7,190.43**	**0.29**	**0.00**	**7,196.55**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.19	1.22	1.15	0.00		0.07	0.07		0.07	0.07	0.00	179.92	179.92	0.02	0.00	180.25
Total	**0.19**	**1.22**	**1.15**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**179.92**	**179.92**	**0.02**	**0.00**	**180.25**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.71	7.88	4.62	0.02	0.47	0.24	0.71	0.04	0.24	0.28	0.00	1,532.09	1,532.09	0.03	0.00	1,532.73
Worker	1.01	1.09	11.67	0.03	2.92	0.11	3.03	0.13	0.11	0.24	0.00	1,998.05	1,998.05	0.10	0.00	2,000.18
Total	**1.72**	**8.97**	**16.29**	**0.05**	**3.39**	**0.35**	**3.74**	**0.17**	**0.35**	**0.52**	**0.00**	**3,530.14**	**3,530.14**	**0.13**	**0.00**	**3,532.91**

3.4 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.19	1.22	1.15	0.00		0.07	0.07		0.07	0.07	0.00	179.92	179.92	0.02	0.00	180.25
Total	**0.19**	**1.22**	**1.15**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**179.92**	**179.92**	**0.02**	**0.00**	**180.25**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.71	7.88	4.62	0.02	0.47	0.24	0.71	0.04	0.24	0.28	0.00	1,532.09	1,532.09	0.03	0.00	1,532.73
Worker	1.01	1.09	11.67	0.03	2.92	0.11	3.03	0.13	0.11	0.24	0.00	1,998.05	1,998.05	0.10	0.00	2,000.18
Total	**1.72**	**8.97**	**16.29**	**0.05**	**3.39**	**0.35**	**3.74**	**0.17**	**0.35**	**0.52**	**0.00**	**3,530.14**	**3,530.14**	**0.13**	**0.00**	**3,532.91**

3.5 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.14	0.86	0.58	0.00		0.07	0.07		0.07	0.07	0.00	75.39	75.39	0.01	0.00	75.63
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.14**	**0.86**	**0.58**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**75.39**	**75.39**	**0.01**	**0.00**	**75.63**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	7.73	7.73	0.00	0.00	7.74
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**7.73**	**7.73**	**0.00**	**0.00**	**7.74**

3.5 Paving - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.14	0.86	0.58	0.00		0.07	0.07		0.07	0.07	0.00	75.39	75.39	0.01	0.00	75.63
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.14**	**0.86**	**0.58**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**75.39**	**75.39**	**0.01**	**0.00**	**75.63**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	7.73	7.73	0.00	0.00	7.74
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**7.73**	**7.73**	**0.00**	**0.00**	**7.74**

3.6 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	13.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.22	0.17	0.00		0.02	0.02		0.02	0.02	0.00	22.31	22.31	0.00	0.00	22.38
Total	**13.53**	**0.22**	**0.17**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**22.31**	**22.31**	**0.00**	**0.00**	**22.38**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.33	0.37	3.86	0.01	0.79	0.03	0.82	0.04	0.03	0.06	0.00	567.16	567.16	0.03	0.00	567.85
Total	**0.33**	**0.37**	**3.86**	**0.01**	**0.79**	**0.03**	**0.82**	**0.04**	**0.03**	**0.06**	**0.00**	**567.16**	**567.16**	**0.03**	**0.00**	**567.85**

3.6 Architectural Coating - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	13.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.22	0.17	0.00		0.02	0.02		0.02	0.02	0.00	22.31	22.31	0.00	0.00	22.38
Total	**13.53**	**0.22**	**0.17**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**22.31**	**22.31**	**0.00**	**0.00**	**22.38**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.33	0.37	3.86	0.01	0.79	0.03	0.82	0.04	0.03	0.06	0.00	567.16	567.16	0.03	0.00	567.85
Total	**0.33**	**0.37**	**3.86**	**0.01**	**0.79**	**0.03**	**0.82**	**0.04**	**0.03**	**0.06**	**0.00**	**567.16**	**567.16**	**0.03**	**0.00**	**567.85**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	20.12					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.31	0.25	0.00		0.03	0.03		0.03	0.03	0.00	33.28	33.28	0.00	0.00	33.36
Total	**20.17**	**0.31**	**0.25**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.36**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.45	0.49	5.20	0.01	1.17	0.04	1.22	0.05	0.04	0.10	0.00	823.18	823.18	0.04	0.00	824.12
Total	**0.45**	**0.49**	**5.20**	**0.01**	**1.17**	**0.04**	**1.22**	**0.05**	**0.04**	**0.10**	**0.00**	**823.18**	**823.18**	**0.04**	**0.00**	**824.12**

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	20.12					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.31	0.25	0.00		0.03	0.03		0.03	0.03	0.00	33.28	33.28	0.00	0.00	33.36
Total	**20.17**	**0.31**	**0.25**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.36**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.45	0.49	5.20	0.01	1.17	0.04	1.22	0.05	0.04	0.10	0.00	823.18	823.18	0.04	0.00	824.12
Total	**0.45**	**0.49**	**5.20**	**0.01**	**1.17**	**0.04**	**1.22**	**0.05**	**0.04**	**0.10**	**0.00**	**823.18**	**823.18**	**0.04**	**0.00**	**824.12**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	10.02					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.14	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.58	16.58	0.00	0.00	16.61
Total	**10.04**	**0.14**	**0.12**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**16.58**	**16.58**	**0.00**	**0.00**	**16.61**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.20	0.22	2.34	0.01	0.58	0.02	0.61	0.03	0.02	0.05	0.00	399.91	399.91	0.02	0.00	400.34
Total	**0.20**	**0.22**	**2.34**	**0.01**	**0.58**	**0.02**	**0.61**	**0.03**	**0.02**	**0.05**	**0.00**	**399.91**	**399.91**	**0.02**	**0.00**	**400.34**

3.6 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	10.02					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.14	0.12	0.00		0.01	0.01		0.01	0.01	0.00	16.58	16.58	0.00	0.00	16.61
Total	**10.04**	**0.14**	**0.12**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**16.58**	**16.58**	**0.00**	**0.00**	**16.61**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.20	0.22	2.34	0.01	0.58	0.02	0.61	0.03	0.02	0.05	0.00	399.91	399.91	0.02	0.00	400.34
Total	**0.20**	**0.22**	**2.34**	**0.01**	**0.58**	**0.02**	**0.61**	**0.03**	**0.02**	**0.05**	**0.00**	**399.91**	**399.91**	**0.02**	**0.00**	**400.34**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	22.34	86.05	213.59	0.44	41.56	3.35	44.92	1.82	3.35	5.17	0.00	39,432.07	39,432.07	1.48	0.00	39,463.15
Unmitigated	22.34	86.05	213.59	0.44	41.56	3.35	44.92	1.82	3.35	5.17	0.00	39,432.07	39,432.07	1.48	0.00	39,463.15
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	21,479.24	0.00	0.00	82,093,661	82,093,661
Total	21,479.24	0.00	0.00	82,093,661	82,093,661

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
General Light Industry	14.70	14.70	14.70	59.00	28.00	13.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	14,935.33	14,935.33	0.68	0.26	15,028.93
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	16,863.80	16,863.80	0.76	0.29	16,969.48
NaturalGas Mitigated	0.56	5.13	4.31	0.03		0.00	0.39		0.00	0.39	0.00	5,589.47	5,589.47	0.11	0.10	5,623.49
NaturalGas Unmitigated	0.66	6.04	5.07	0.04		0.00	0.46		0.00	0.46	0.00	6,572.30	6,572.30	0.13	0.12	6,612.30
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
General Light Industry	1.2316e+008	0.66	6.04	5.07	0.04		0.00	0.46		0.00	0.46	0.00	6,572.30	6,572.30	0.13	0.12	6,612.30
Total		**0.66**	**6.04**	**5.07**	**0.04**		**0.00**	**0.46**		**0.00**	**0.46**	**0.00**	**6,572.30**	**6,572.30**	**0.13**	**0.12**	**6,612.30**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
General Light Industry	1.04743e+008	0.56	5.13	4.31	0.03		0.00	0.39		0.00	0.39	0.00	5,589.47	5,589.47	0.11	0.10	5,623.49
Total		**0.56**	**5.13**	**4.31**	**0.03**		**0.00**	**0.39**		**0.00**	**0.39**	**0.00**	**5,589.47**	**5,589.47**	**0.11**	**0.10**	**5,623.49**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	5.79688e+007					16,863.80	0.76	0.29	16,969.48
Total						**16,863.80**	**0.76**	**0.29**	**16,969.48**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
General Light Industry	5.13398e+007					14,935.33	0.68	0.26	15,028.93
Total						**14,935.33**	**0.68**	**0.26**	**15,028.93**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	28.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	28.89	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.36					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	24.53					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**28.89**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.36					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	24.53					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**28.89**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					7.37	0.14	0.00	11.48
Unmitigated					9.21	0.18	0.00	14.35
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	5.80944 / 0					9.21	0.18	0.00	14.35
Total						**9.21**	**0.18**	**0.00**	**14.35**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
General Light Industry	4.64756 / 0					7.37	0.14	0.00	11.48
Total						**7.37**	**0.14**	**0.00**	**11.48**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					1,264.68	74.74	0.00	2,834.23
Unmitigated					1,580.85	93.43	0.00	3,542.79
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	7787.8					1,580.85	93.43	0.00	3,542.79
Total						**1,580.85**	**93.43**	**0.00**	**3,542.79**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
General Light Industry	6230.24					1,264.68	74.74	0.00	2,834.23
Total						**1,264.68**	**74.74**	**0.00**	**2,834.23**

9.0 Vegetation

NorCal Logistics

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Light Industry	6280.481	1000sqft

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Utility Company**	Pacific Gas & Electric Company
Climate Zone	2	**Precipitation Freq (Days)**	51		

1.3 User Entered Comments

Project Characteristics -

Land Use - Changed assumed acres to 331 to match project description

Construction Phase - Assumed 4 years for construction, starting in July 2013

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment -

Grading - Adjusted acres per Project Description

Vehicle Trips - Bumped up trip length C-C and C-NW to match C-W, based on rural nature of the project. Also adjusted all trips to 100% primary.

Water And Wastewater - Adjusted water use factor for light industrial uses to 925 gallons/1000sf/yr per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Solid Waste - Adjusted solid waste factor to 1.24 tons/1000sf/yr for light industrial uses per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Construction Off-road Equipment Mitigation -

Vechicle Emission Factors - Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4

Vechicle Emission Factors - Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4

Vechicle Emission Factors - Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.86	54.33	32.74	0.05	21.03	2.67	23.70	9.94	2.67	12.62	0.00	5,694.24	0.00	0.62	0.00	5,707.27
2014	7.68	60.91	36.11	0.07	21.03	2.81	23.48	9.94	2.81	12.40	0.00	7,578.40	0.00	0.69	0.00	7,592.90
2015	194.71	210.51	385.32	0.78	72.84	9.43	81.12	3.33	9.43	12.10	0.00	76,438.90	0.00	3.60	0.00	76,514.57
2016	191.22	179.33	351.60	0.78	72.84	7.60	80.44	3.06	7.60	10.66	0.00	75,178.32	0.00	3.30	0.00	75,247.55
2017	187.93	163.44	320.91	0.78	72.84	6.96	79.80	3.06	6.96	10.03	0.00	74,052.06	0.00	3.02	0.00	74,115.52
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.86	54.33	32.74	0.05	9.67	2.67	12.34	4.48	2.67	7.16	0.00	5,694.24	0.00	0.62	0.00	5,707.27
2014	7.68	60.91	36.11	0.07	9.67	2.81	12.12	4.48	2.81	6.93	0.00	7,578.40	0.00	0.69	0.00	7,592.90
2015	194.71	210.51	385.32	0.78	72.84	9.43	81.12	3.06	9.43	12.10	0.00	76,438.90	0.00	3.60	0.00	76,514.57
2016	191.22	179.33	351.60	0.78	72.84	7.60	80.44	3.06	7.60	10.66	0.00	75,178.32	0.00	3.30	0.00	75,247.55
2017	187.93	163.44	320.91	0.78	72.84	6.96	79.80	3.06	6.96	10.03	0.00	74,052.06	0.00	3.02	0.00	74,115.52
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Mobile	181.21	665.83	1,740.25	3.59	381.32	25.66	406.98	13.99	25.66	39.65		414,374.17		13.13		414,649.99
Total	**343.16**	**698.91**	**1,768.04**	**3.79**	**381.32**	**25.66**	**409.49**	**13.99**	**25.66**	**42.16**		**454,071.26**		**13.89**	**0.73**	**454,588.67**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Mobile	181.21	665.83	1,740.25	3.59	381.32	25.66	406.98	13.99	25.66	39.65		414,374.17		13.13		414,649.99
Total	**343.16**	**698.91**	**1,768.04**	**3.79**	**381.32**	**25.66**	**409.49**	**13.99**	**25.66**	**42.16**		**454,071.26**		**13.89**	**0.73**	**454,588.67**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					20.67	0.00	20.67	9.93	0.00	9.93						0.00
Off-Road	6.70	54.15	30.68	0.05		2.66	2.66		2.66	2.66		5,413.51		0.60		5,426.15
Total	**6.70**	**54.15**	**30.68**	**0.05**	**20.67**	**2.66**	**23.33**	**9.93**	**2.66**	**12.59**		**5,413.51**		**0.60**		**5,426.15**

3.2 Site Preparation - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.17	2.05	0.00	0.37	0.01	0.38	0.01	0.01	0.03		280.73		0.02		281.11
Total	**0.17**	**0.17**	**2.05**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**280.73**		**0.02**		**281.11**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.30	0.00	9.30	4.47	0.00	4.47						0.00
Off-Road	6.70	54.15	30.68	0.05		2.66	2.66		2.66	2.66	0.00	5,413.51		0.60		5,426.15
Total	**6.70**	**54.15**	**30.68**	**0.05**	**9.30**	**2.66**	**11.96**	**4.47**	**2.66**	**7.13**	**0.00**	**5,413.51**		**0.60**		**5,426.15**

3.2 Site Preparation - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.17	2.05	0.00	0.37	0.01	0.38	0.01	0.01	0.03		280.73		0.02		281.11
Total	**0.17**	**0.17**	**2.05**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**280.73**		**0.02**		**281.11**

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					20.67	0.00	20.67	9.93	0.00	9.93						0.00
Off-Road	6.34	50.69	29.13	0.05		2.44	2.44		2.44	2.44		5,413.51		0.57		5,425.43
Total	**6.34**	**50.69**	**29.13**	**0.05**	**20.67**	**2.44**	**23.11**	**9.93**	**2.44**	**12.37**		**5,413.51**		**0.57**		**5,425.43**

3.2 Site Preparation - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.15	1.85	0.00	0.37	0.01	0.38	0.01	0.01	0.03		274.00		0.02		274.34
Total	**0.15**	**0.15**	**1.85**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**274.00**		**0.02**		**274.34**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.30	0.00	9.30	4.47	0.00	4.47						0.00
Off-Road	6.34	50.69	29.13	0.05		2.44	2.44		2.44	2.44	0.00	5,413.51		0.57		5,425.43
Total	**6.34**	**50.69**	**29.13**	**0.05**	**9.30**	**2.44**	**11.74**	**4.47**	**2.44**	**6.91**	**0.00**	**5,413.51**		**0.57**		**5,425.43**

3.2 Site Preparation - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.15	1.85	0.00	0.37	0.01	0.38	0.01	0.01	0.03		274.00		0.02		274.34
Total	**0.15**	**0.15**	**1.85**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**274.00**		**0.02**		**274.34**

3.3 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.37	0.00	7.37	3.31	0.00	3.31						0.00
Off-Road	7.52	60.74	34.06	0.07		2.80	2.80		2.80	2.80		7,273.96		0.67		7,288.07
Total	**7.52**	**60.74**	**34.06**	**0.07**	**7.37**	**2.80**	**10.17**	**3.31**	**2.80**	**6.11**		**7,273.96**		**0.67**		**7,288.07**

3.3 Grading - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.17	2.05	0.00	0.41	0.01	0.42	0.02	0.01	0.03		304.44		0.02		304.83
Total	**0.17**	**0.17**	**2.05**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**304.44**		**0.02**		**304.83**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.32	0.00	3.32	1.49	0.00	1.49						0.00
Off-Road	7.52	60.74	34.06	0.07		2.80	2.80		2.80	2.80	0.00	7,273.96		0.67		7,288.07
Total	**7.52**	**60.74**	**34.06**	**0.07**	**3.32**	**2.80**	**6.12**	**1.49**	**2.80**	**4.29**	**0.00**	**7,273.96**		**0.67**		**7,288.07**

3.3 Grading - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.17	2.05	0.00	0.41	0.01	0.42	0.02	0.01	0.03		304.44		0.02		304.83
Total	**0.17**	**0.17**	**2.05**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**304.44**		**0.02**		**304.83**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.37	0.00	7.37	3.31	0.00	3.31						0.00
Off-Road	7.08	55.77	32.85	0.07		2.54	2.54		2.54	2.54		7,273.96		0.63		7,287.20
Total	**7.08**	**55.77**	**32.85**	**0.07**	**7.37**	**2.54**	**9.91**	**3.31**	**2.54**	**5.85**		**7,273.96**		**0.63**		**7,287.20**

3.3 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.15	1.85	0.00	0.41	0.01	0.42	0.02	0.01	0.03		296.60		0.02		296.95
Total	**0.15**	**0.15**	**1.85**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**296.60**		**0.02**		**296.95**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.32	0.00	3.32	1.49	0.00	1.49						0.00
Off-Road	7.08	55.77	32.85	0.07		2.54	2.54		2.54	2.54	0.00	7,273.96		0.63		7,287.20
Total	**7.08**	**55.77**	**32.85**	**0.07**	**3.32**	**2.54**	**5.86**	**1.49**	**2.54**	**4.03**	**0.00**	**7,273.96**		**0.63**		**7,287.20**

3.3 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.15	1.85	0.00	0.41	0.01	0.42	0.02	0.01	0.03		296.60		0.02		296.95
Total	**0.15**	**0.15**	**1.85**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**296.60**		**0.02**		**296.95**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.56	22.49	18.01	0.03		1.43	1.43		1.43	1.43		3,050.13		0.32		3,056.84
Total	**3.56**	**22.49**	**18.01**	**0.03**		**1.43**	**1.43**		**1.43**	**1.43**		**3,050.13**		**0.32**		**3,056.84**

3.4 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	12.66	147.49	73.03	0.25	8.56	4.58	13.14	0.66	4.58	5.24		26,156.55		0.60		26,169.07
Worker	19.93	20.24	243.62	0.41	53.56	1.71	55.27	2.00	1.71	3.71		39,120.91		2.21		39,167.30
Total	**32.59**	**167.73**	**316.65**	**0.66**	**62.12**	**6.29**	**68.41**	**2.66**	**6.29**	**8.95**		**65,277.46**		**2.81**		**65,336.37**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.56	22.49	18.01	0.03		1.43	1.43		1.43	1.43	0.00	3,050.13		0.32		3,056.84
Total	**3.56**	**22.49**	**18.01**	**0.03**		**1.43**	**1.43**		**1.43**	**1.43**	**0.00**	**3,050.13**		**0.32**		**3,056.84**

3.4 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	12.66	147.49	73.03	0.25	8.56	4.58	13.14	0.66	4.58	5.24		26,156.55		0.60		26,169.07
Worker	19.93	20.24	243.62	0.41	53.56	1.71	55.27	2.00	1.71	3.71		39,120.91		2.21		39,167.30
Total	**32.59**	**167.73**	**316.65**	**0.66**	**62.12**	**6.29**	**68.41**	**2.66**	**6.29**	**8.95**		**65,277.46**		**2.81**		**65,336.37**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	20.56	17.84	0.03		1.27	1.27		1.27	1.27		3,050.12		0.29		3,056.24
Total	**3.26**	**20.56**	**17.84**	**0.03**		**1.27**	**1.27**		**1.27**	**1.27**		**3,050.12**		**0.29**		**3,056.24**

3.4 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	11.58	134.64	67.16	0.25	8.56	4.10	12.66	0.66	4.10	4.76		26,140.95		0.54		26,152.39
Worker	18.21	18.13	220.58	0.41	53.56	1.70	55.26	2.00	1.70	3.70		38,083.56		2.02		38,126.04
Total	**29.79**	**152.77**	**287.74**	**0.66**	**62.12**	**5.80**	**67.92**	**2.66**	**5.80**	**8.46**		**64,224.51**		**2.56**		**64,278.43**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	20.56	17.84	0.03		1.27	1.27		1.27	1.27	0.00	3,050.12		0.29		3,056.24
Total	**3.26**	**20.56**	**17.84**	**0.03**		**1.27**	**1.27**		**1.27**	**1.27**	**0.00**	**3,050.12**		**0.29**		**3,056.24**

3.4 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	11.58	134.64	67.16	0.25	8.56	4.10	12.66	0.66	4.10	4.76		26,140.95		0.54		26,152.39
Worker	18.21	18.13	220.58	0.41	53.56	1.70	55.26	2.00	1.70	3.70		38,083.56		2.02		38,126.04
Total	**29.79**	**152.77**	**287.74**	**0.66**	**62.12**	**5.80**	**67.92**	**2.66**	**5.80**	**8.46**		**64,224.51**		**2.56**		**64,278.43**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.97	18.76	17.68	0.03		1.11	1.11		1.11	1.11		3,050.12		0.26		3,055.68
Total	**2.97**	**18.76**	**17.68**	**0.03**		**1.11**	**1.11**		**1.11**	**1.11**		**3,050.12**		**0.26**		**3,055.68**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	10.55	123.01	61.72	0.25	8.56	3.65	12.21	0.66	3.65	4.31		26,127.07		0.50		26,137.54
Worker	16.60	16.23	199.68	0.41	53.56	1.69	55.25	2.00	1.69	3.69		37,156.70		1.86		37,195.70
Total	**27.15**	**139.24**	**261.40**	**0.66**	**62.12**	**5.34**	**67.46**	**2.66**	**5.34**	**8.00**		**63,283.77**		**2.36**		**63,333.24**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.97	18.76	17.68	0.03		1.11	1.11		1.11	1.11	0.00	3,050.12		0.26		3,055.68
Total	**2.97**	**18.76**	**17.68**	**0.03**		**1.11**	**1.11**		**1.11**	**1.11**	**0.00**	**3,050.12**		**0.26**		**3,055.68**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	10.55	123.01	61.72	0.25	8.56	3.65	12.21	0.66	3.65	4.31		26,127.07		0.50		26,137.54
Worker	16.60	16.23	199.68	0.41	53.56	1.69	55.25	2.00	1.69	3.69		37,156.70		1.86		37,195.70
Total	**27.15**	**139.24**	**261.40**	**0.66**	**62.12**	**5.34**	**67.46**	**2.66**	**5.34**	**8.00**		**63,283.77**		**2.36**		**63,333.24**

3.5 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.27	20.17	13.76	0.02		1.70	1.70		1.70	1.70		1,954.82		0.29		1,961.00
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.27**	**20.17**	**13.76**	**0.02**		**1.70**	**1.70**		**1.70**	**1.70**		**1,954.82**		**0.29**		**1,961.00**

3.5 Paving - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.12	1.39	0.00	0.30	0.01	0.31	0.01	0.01	0.02		222.45		0.01		222.71
Total	**0.11**	**0.12**	**1.39**	**0.00**	**0.30**	**0.01**	**0.31**	**0.01**	**0.01**	**0.02**		**222.45**		**0.01**		**222.71**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.27	20.17	13.76	0.02		1.70	1.70		1.70	1.70	0.00	1,954.82		0.29		1,961.00
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.27**	**20.17**	**13.76**	**0.02**		**1.70**	**1.70**		**1.70**	**1.70**	**0.00**	**1,954.82**		**0.29**		**1,961.00**

3.5 Paving - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.12	1.39	0.00	0.30	0.01	0.31	0.01	0.01	0.02		222.45		0.01		222.71
Total	**0.11**	**0.12**	**1.39**	**0.00**	**0.30**	**0.01**	**0.31**	**0.01**	**0.01**	**0.02**		**222.45**		**0.01**		**222.71**

3.6 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.41	2.57	1.90	0.00		0.22	0.22		0.22	0.22		281.19		0.04		281.96
Total	**154.57**	**2.57**	**1.90**	**0.00**		**0.22**	**0.22**		**0.22**	**0.22**		**281.19**		**0.04**		**281.96**

3.6 Architectural Coating - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.99	4.05	48.76	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,830.11		0.44		7,839.40
Total	**3.99**	**4.05**	**48.76**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,830.11**		**0.44**		**7,839.40**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.41	2.57	1.90	0.00		0.22	0.22		0.22	0.22	0.00	281.19		0.04		281.96
Total	**154.57**	**2.57**	**1.90**	**0.00**		**0.22**	**0.22**		**0.22**	**0.22**	**0.00**	**281.19**		**0.04**		**281.96**

3.6 Architectural Coating - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.99	4.05	48.76	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,830.11		0.44		7,839.40
Total	**3.99**	**4.05**	**48.76**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,830.11**		**0.44**		**7,839.40**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	**154.53**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**		**281.19**		**0.03**		**281.89**

3.6 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.65	3.63	44.15	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,622.49		0.40		7,630.99
Total	**3.65**	**3.63**	**44.15**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,622.49**		**0.40**		**7,630.99**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	**154.53**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**281.19**		**0.03**		**281.89**

3.6 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.65	3.63	44.15	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,622.49		0.40		7,630.99
Total	**3.65**	**3.63**	**44.15**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,622.49**		**0.40**		**7,630.99**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.33	2.18	1.87	0.00		0.17	0.17		0.17	0.17		281.19		0.03		281.81
Total	**154.49**	**2.18**	**1.87**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**		**281.19**		**0.03**		**281.81**

3.6 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.32	3.25	39.97	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,436.97		0.37		7,444.78
Total	**3.32**	**3.25**	**39.97**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,436.97**		**0.37**		**7,444.78**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.33	2.18	1.87	0.00		0.17	0.17		0.17	0.17	0.00	281.19		0.03		281.81
Total	**154.49**	**2.18**	**1.87**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**281.19**		**0.03**		**281.81**

3.6 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.32	3.25	39.97	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,436.97		0.37		7,444.78
Total	**3.32**	**3.25**	**39.97**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,436.97**		**0.37**		**7,444.78**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	181.21	665.83	1,740.25	3.59	381.32	25.66	406.98	13.99	25.66	39.65		414,374.17		13.13		414,649.99
Unmitigated	181.21	665.83	1,740.25	3.59	381.32	25.66	406.98	13.99	25.66	39.65		414,374.17		13.13		414,649.99
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	21,479.25	0.00	0.00	82,093,674	82,093,674
Total	21,479.25	0.00	0.00	82,093,674	82,093,674

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
General Light Industry	14.70	14.70	14.70	59.00	28.00	13.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
NaturalGas Unmitigated	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
General Light Industry	337425	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Total		**3.64**	**33.08**	**27.79**	**0.20**		**0.00**	**2.51**		**0.00**	**2.51**		**39,697.09**		**0.76**	**0.73**	**39,938.68**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
General Light Industry	337.425	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Total		**3.64**	**33.08**	**27.79**	**0.20**		**0.00**	**2.51**		**0.00**	**2.51**		**39,697.09**		**0.76**	**0.73**	**39,938.68**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	23.91					0.00	0.00		0.00	0.00						0.00
Consumer Products	134.40					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**158.31**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	23.91					0.00	0.00		0.00	0.00						0.00
Consumer Products	134.40					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**158.31**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

NorCal Logistics

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Light Industry	6280.48	1000sqft

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Utility Company**	Pacific Gas & Electric Company
Climate Zone	2	**Precipitation Freq (Days)**	51		

1.3 User Entered Comments

Project Characteristics -

Land Use - Changed assumed acres to 331 to match project description

Construction Phase - Assumed 4 years for construction, starting in July 2013

Off-road Equipment -

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Grading - Adjusted acres per Project Description

Vehicle Trips - Bumped up trip length C-C and C-NW to match C-W, based on rural nature of the project. Also adjusted all trips to 100% primary.

Water And Wastewater - Adjusted water use factor for light industrial uses to 925 gallons/1000sf/yr per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Solid Waste - Adjusted solid waste factor to 1.24 tons/1000sf/yr for light industrial uses per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.86	54.33	32.74	0.05	21.03	2.67	23.70	9.94	2.67	12.62	0.00	5,694.24	0.00	0.62	0.00	5,707.27
2014	7.69	60.92	36.13	0.07	21.03	2.81	23.48	9.94	2.81	12.40	0.00	7,576.52	0.00	0.69	0.00	7,591.03
2015	194.71	210.78	385.32	0.78	72.84	9.45	81.12	3.33	9.45	12.12	0.00	76,440.84	0.00	3.60	0.00	76,516.52
2016	191.22	179.35	351.61	0.78	72.84	7.60	80.44	3.06	7.60	10.66	0.00	75,180.26	0.00	3.30	0.00	75,249.49
2017	187.93	163.46	320.91	0.78	72.84	6.96	79.81	3.06	6.96	10.03	0.00	74,054.00	0.00	3.02	0.00	74,117.47
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.86	54.33	32.74	0.05	9.67	2.67	12.34	4.48	2.67	7.16	0.00	5,694.24	0.00	0.62	0.00	5,707.27
2014	7.69	60.92	36.13	0.07	9.67	2.81	12.12	4.48	2.81	6.93	0.00	7,576.52	0.00	0.69	0.00	7,591.03
2015	194.71	210.78	385.32	0.78	72.84	9.45	81.12	3.06	9.45	12.12	0.00	76,440.84	0.00	3.60	0.00	76,516.52
2016	191.22	179.35	351.61	0.78	72.84	7.60	80.44	3.06	7.60	10.66	0.00	75,180.26	0.00	3.30	0.00	75,249.49
2017	187.93	163.46	320.91	0.78	72.84	6.96	79.81	3.06	6.96	10.03	0.00	74,054.00	0.00	3.02	0.00	74,117.47
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Mobile	181.21	665.83	1,740.25	3.59	381.32	25.66	406.98	13.99	25.66	39.65		355,348.66		13.13		355,624.48
Total	**343.16**	**698.91**	**1,768.04**	**3.79**	**381.32**	**25.66**	**409.49**	**13.99**	**25.66**	**42.16**		**395,045.75**		**13.89**	**0.73**	**395,563.16**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	3.09	28.13	23.63	0.17		0.00	2.14		0.00	2.14		33,760.75		0.65	0.62	33,966.21
Mobile	181.21	665.83	1,740.25	3.59	381.32	25.66	406.98	13.99	25.66	39.65		355,348.66		13.13		355,624.48
Total	**342.61**	**693.96**	**1,763.88**	**3.76**	**381.32**	**25.66**	**409.12**	**13.99**	**25.66**	**41.79**		**389,109.41**		**13.78**	**0.62**	**389,590.69**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					20.67	0.00	20.67	9.93	0.00	9.93						0.00
Off-Road	6.70	54.15	30.68	0.05		2.66	2.66		2.66	2.66		5,413.51		0.60		5,426.15
Total	**6.70**	**54.15**	**30.68**	**0.05**	**20.67**	**2.66**	**23.33**	**9.93**	**2.66**	**12.59**		**5,413.51**		**0.60**		**5,426.15**

3.2 Site Preparation - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.17	2.05	0.00	0.37	0.01	0.38	0.01	0.01	0.03		280.73		0.02		281.11
Total	**0.17**	**0.17**	**2.05**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**280.73**		**0.02**		**281.11**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.30	0.00	9.30	4.47	0.00	4.47						0.00
Off-Road	6.70	54.15	30.68	0.05		2.66	2.66		2.66	2.66	0.00	5,413.51		0.60		5,426.15
Total	**6.70**	**54.15**	**30.68**	**0.05**	**9.30**	**2.66**	**11.96**	**4.47**	**2.66**	**7.13**	**0.00**	**5,413.51**		**0.60**		**5,426.15**

3.2 Site Preparation - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.17	2.05	0.00	0.37	0.01	0.38	0.01	0.01	0.03		280.73		0.02		281.11
Total	**0.17**	**0.17**	**2.05**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**280.73**		**0.02**		**281.11**

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					20.67	0.00	20.67	9.93	0.00	9.93						0.00
Off-Road	6.34	50.69	29.13	0.05		2.44	2.44		2.44	2.44		5,413.51		0.57		5,425.43
Total	**6.34**	**50.69**	**29.13**	**0.05**	**20.67**	**2.44**	**23.11**	**9.93**	**2.44**	**12.37**		**5,413.51**		**0.57**		**5,425.43**

3.2 Site Preparation - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.15	1.85	0.00	0.37	0.01	0.38	0.01	0.01	0.03		274.00		0.02		274.34
Total	**0.15**	**0.15**	**1.85**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**274.00**		**0.02**		**274.34**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.30	0.00	9.30	4.47	0.00	4.47						0.00
Off-Road	6.34	50.69	29.13	0.05		2.44	2.44		2.44	2.44	0.00	5,413.51		0.57		5,425.43
Total	**6.34**	**50.69**	**29.13**	**0.05**	**9.30**	**2.44**	**11.74**	**4.47**	**2.44**	**6.91**	**0.00**	**5,413.51**		**0.57**		**5,425.43**

3.2 Site Preparation - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.15	1.85	0.00	0.37	0.01	0.38	0.01	0.01	0.03		274.00		0.02		274.34
Total	**0.15**	**0.15**	**1.85**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**274.00**		**0.02**		**274.34**

3.3 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.37	0.00	7.37	3.31	0.00	3.31						0.00
Off-Road	7.52	60.75	34.08	0.07		2.80	2.80		2.80	2.80		7,272.08		0.67		7,286.20
Total	**7.52**	**60.75**	**34.08**	**0.07**	**7.37**	**2.80**	**10.17**	**3.31**	**2.80**	**6.11**		**7,272.08**		**0.67**		**7,286.20**

3.3 Grading - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.17	2.05	0.00	0.41	0.01	0.42	0.02	0.01	0.03		304.44		0.02		304.83
Total	**0.17**	**0.17**	**2.05**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**304.44**		**0.02**		**304.83**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.32	0.00	3.32	1.49	0.00	1.49						0.00
Off-Road	7.52	60.75	34.08	0.07		2.80	2.80		2.80	2.80	0.00	7,272.08		0.67		7,286.20
Total	**7.52**	**60.75**	**34.08**	**0.07**	**3.32**	**2.80**	**6.12**	**1.49**	**2.80**	**4.29**	**0.00**	**7,272.08**		**0.67**		**7,286.20**

3.3 Grading - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.17	2.05	0.00	0.41	0.01	0.42	0.02	0.01	0.03		304.44		0.02		304.83
Total	**0.17**	**0.17**	**2.05**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**304.44**		**0.02**		**304.83**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.37	0.00	7.37	3.31	0.00	3.31						0.00
Off-Road	7.08	55.79	32.87	0.07		2.55	2.55		2.55	2.55		7,272.08		0.63		7,285.33
Total	**7.08**	**55.79**	**32.87**	**0.07**	**7.37**	**2.55**	**9.92**	**3.31**	**2.55**	**5.86**		**7,272.08**		**0.63**		**7,285.33**

3.3 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.15	1.85	0.00	0.41	0.01	0.42	0.02	0.01	0.03		296.60		0.02		296.95
Total	**0.15**	**0.15**	**1.85**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**296.60**		**0.02**		**296.95**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.32	0.00	3.32	1.49	0.00	1.49						0.00
Off-Road	7.08	55.79	32.87	0.07		2.55	2.55		2.55	2.55	0.00	7,272.08		0.63		7,285.33
Total	**7.08**	**55.79**	**32.87**	**0.07**	**3.32**	**2.55**	**5.87**	**1.49**	**2.55**	**4.04**	**0.00**	**7,272.08**		**0.63**		**7,285.33**

3.3 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.15	1.85	0.00	0.41	0.01	0.42	0.02	0.01	0.03		296.60		0.02		296.95
Total	**0.15**	**0.15**	**1.85**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**296.60**		**0.02**		**296.95**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.56	22.52	18.01	0.03		1.43	1.43		1.43	1.43		3,052.07		0.32		3,058.79
Total	**3.56**	**22.52**	**18.01**	**0.03**		**1.43**	**1.43**		**1.43**	**1.43**		**3,052.07**		**0.32**		**3,058.79**

3.4 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	12.66	147.49	73.03	0.25	8.56	4.58	13.14	0.66	4.58	5.24		26,156.55		0.60		26,169.07
Worker	19.93	20.24	243.62	0.41	53.56	1.71	55.27	2.00	1.71	3.71		39,120.91		2.21		39,167.30
Total	**32.59**	**167.73**	**316.65**	**0.66**	**62.12**	**6.29**	**68.41**	**2.66**	**6.29**	**8.95**		**65,277.46**		**2.81**		**65,336.37**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.56	22.52	18.01	0.03		1.43	1.43		1.43	1.43	0.00	3,052.07		0.32		3,058.79
Total	**3.56**	**22.52**	**18.01**	**0.03**		**1.43**	**1.43**		**1.43**	**1.43**	**0.00**	**3,052.07**		**0.32**		**3,058.79**

3.4 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	12.66	147.49	73.03	0.25	8.56	4.58	13.14	0.66	4.58	5.24		26,156.55		0.60		26,169.07
Worker	19.93	20.24	243.62	0.41	53.56	1.71	55.27	2.00	1.71	3.71		39,120.91		2.21		39,167.30
Total	**32.59**	**167.73**	**316.65**	**0.66**	**62.12**	**6.29**	**68.41**	**2.66**	**6.29**	**8.95**		**65,277.46**		**2.81**		**65,336.37**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	20.58	17.84	0.03		1.27	1.27		1.27	1.27		3,052.07		0.29		3,058.19
Total	**3.26**	**20.58**	**17.84**	**0.03**		**1.27**	**1.27**		**1.27**	**1.27**		**3,052.07**		**0.29**		**3,058.19**

3.4 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	11.58	134.64	67.16	0.25	8.56	4.10	12.66	0.66	4.10	4.76		26,140.95		0.54		26,152.39
Worker	18.21	18.13	220.58	0.41	53.56	1.70	55.26	2.00	1.70	3.70		38,083.56		2.02		38,126.04
Total	**29.79**	**152.77**	**287.74**	**0.66**	**62.12**	**5.80**	**67.92**	**2.66**	**5.80**	**8.46**		**64,224.51**		**2.56**		**64,278.43**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	20.58	17.84	0.03		1.27	1.27		1.27	1.27	0.00	3,052.07		0.29		3,058.19
Total	**3.26**	**20.58**	**17.84**	**0.03**		**1.27**	**1.27**		**1.27**	**1.27**	**0.00**	**3,052.07**		**0.29**		**3,058.19**

3.4 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	11.58	134.64	67.16	0.25	8.56	4.10	12.66	0.66	4.10	4.76		26,140.95		0.54		26,152.39
Worker	18.21	18.13	220.58	0.41	53.56	1.70	55.26	2.00	1.70	3.70		38,083.56		2.02		38,126.04
Total	**29.79**	**152.77**	**287.74**	**0.66**	**62.12**	**5.80**	**67.92**	**2.66**	**5.80**	**8.46**		**64,224.51**		**2.56**		**64,278.43**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.97	18.78	17.68	0.03		1.11	1.11		1.11	1.11		3,052.07		0.26		3,057.63
Total	**2.97**	**18.78**	**17.68**	**0.03**		**1.11**	**1.11**		**1.11**	**1.11**		**3,052.07**		**0.26**		**3,057.63**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	10.55	123.01	61.72	0.25	8.56	3.65	12.21	0.66	3.65	4.31		26,127.07		0.50		26,137.54
Worker	16.60	16.23	199.68	0.41	53.56	1.69	55.25	2.00	1.69	3.69		37,156.70		1.86		37,195.70
Total	**27.15**	**139.24**	**261.40**	**0.66**	**62.12**	**5.34**	**67.46**	**2.66**	**5.34**	**8.00**		**63,283.77**		**2.36**		**63,333.24**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.97	18.78	17.68	0.03		1.11	1.11		1.11	1.11	0.00	3,052.07		0.26		3,057.63
Total	**2.97**	**18.78**	**17.68**	**0.03**		**1.11**	**1.11**		**1.11**	**1.11**	**0.00**	**3,052.07**		**0.26**		**3,057.63**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	10.55	123.01	61.72	0.25	8.56	3.65	12.21	0.66	3.65	4.31		26,127.07		0.50		26,137.54
Worker	16.60	16.23	199.68	0.41	53.56	1.69	55.25	2.00	1.69	3.69		37,156.70		1.86		37,195.70
Total	**27.15**	**139.24**	**261.40**	**0.66**	**62.12**	**5.34**	**67.46**	**2.66**	**5.34**	**8.00**		**63,283.77**		**2.36**		**63,333.24**

3.5 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.31	20.42	13.93	0.02		1.72	1.72		1.72	1.72		1,979.14		0.30		1,985.40
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.31**	**20.42**	**13.93**	**0.02**		**1.72**	**1.72**		**1.72**	**1.72**		**1,979.14**		**0.30**		**1,985.40**

3.5 Paving - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.12	1.39	0.00	0.30	0.01	0.31	0.01	0.01	0.02		222.45		0.01		222.71
Total	**0.11**	**0.12**	**1.39**	**0.00**	**0.30**	**0.01**	**0.31**	**0.01**	**0.01**	**0.02**		**222.45**		**0.01**		**222.71**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.31	20.42	13.93	0.02		1.72	1.72		1.72	1.72	0.00	1,979.14		0.30		1,985.40
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.31**	**20.42**	**13.93**	**0.02**		**1.72**	**1.72**		**1.72**	**1.72**	**0.00**	**1,979.14**		**0.30**		**1,985.40**

3.5 Paving - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.12	1.39	0.00	0.30	0.01	0.31	0.01	0.01	0.02		222.45		0.01		222.71
Total	**0.11**	**0.12**	**1.39**	**0.00**	**0.30**	**0.01**	**0.31**	**0.01**	**0.01**	**0.02**		**222.45**		**0.01**		**222.71**

3.6 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.41	2.57	1.90	0.00		0.22	0.22		0.22	0.22		281.19		0.04		281.96
Total	**154.57**	**2.57**	**1.90**	**0.00**		**0.22**	**0.22**		**0.22**	**0.22**		**281.19**		**0.04**		**281.96**

3.6 Architectural Coating - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.99	4.05	48.76	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,830.11		0.44		7,839.40
Total	**3.99**	**4.05**	**48.76**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,830.11**		**0.44**		**7,839.40**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.41	2.57	1.90	0.00		0.22	0.22		0.22	0.22	0.00	281.19		0.04		281.96
Total	**154.57**	**2.57**	**1.90**	**0.00**		**0.22**	**0.22**		**0.22**	**0.22**	**0.00**	**281.19**		**0.04**		**281.96**

3.6 Architectural Coating - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.99	4.05	48.76	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,830.11		0.44		7,839.40
Total	**3.99**	**4.05**	**48.76**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,830.11**		**0.44**		**7,839.40**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	**154.53**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**		**281.19**		**0.03**		**281.89**

3.6 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.65	3.63	44.15	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,622.49		0.40		7,630.99
Total	**3.65**	**3.63**	**44.15**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,622.49**		**0.40**		**7,630.99**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	**154.53**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**281.19**		**0.03**		**281.89**

3.6 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.65	3.63	44.15	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,622.49		0.40		7,630.99
Total	**3.65**	**3.63**	**44.15**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,622.49**		**0.40**		**7,630.99**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.33	2.18	1.87	0.00		0.17	0.17		0.17	0.17		281.19		0.03		281.81
Total	**154.49**	**2.18**	**1.87**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**		**281.19**		**0.03**		**281.81**

3.6 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.32	3.25	39.97	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,436.97		0.37		7,444.78
Total	**3.32**	**3.25**	**39.97**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,436.97**		**0.37**		**7,444.78**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.33	2.18	1.87	0.00		0.17	0.17		0.17	0.17	0.00	281.19		0.03		281.81
Total	**154.49**	**2.18**	**1.87**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**281.19**		**0.03**		**281.81**

3.6 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.32	3.25	39.97	0.08	10.72	0.34	11.06	0.40	0.34	0.74		7,436.97		0.37		7,444.78
Total	**3.32**	**3.25**	**39.97**	**0.08**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**7,436.97**		**0.37**		**7,444.78**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	181.21	665.83	1,740.25	3.59	381.32	25.66	406.98	13.99	25.66	39.65		355,348.66		13.13		355,624.48
Unmitigated	181.21	665.83	1,740.25	3.59	381.32	25.66	406.98	13.99	25.66	39.65		355,348.66		13.13		355,624.48
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	21,479.24	0.00	0.00	82,093,661	82,093,661
Total	21,479.24	0.00	0.00	82,093,661	82,093,661

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
General Light Industry	14.70	14.70	14.70	59.00	28.00	13.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.09	28.13	23.63	0.17		0.00	2.14		0.00	2.14		33,760.75		0.65	0.62	33,966.21
NaturalGas Unmitigated	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
General Light Industry	337425	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Total		**3.64**	**33.08**	**27.79**	**0.20**		**0.00**	**2.51**		**0.00**	**2.51**		**39,697.09**		**0.76**	**0.73**	**39,938.68**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
General Light Industry	286.966	3.09	28.13	23.63	0.17		0.00	2.14		0.00	2.14		33,760.75		0.65	0.62	33,966.21
Total		**3.09**	**28.13**	**23.63**	**0.17**		**0.00**	**2.14**		**0.00**	**2.14**		**33,760.75**		**0.65**	**0.62**	**33,966.21**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	23.91					0.00	0.00		0.00	0.00						0.00
Consumer Products	134.40					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**158.31**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	23.91					0.00	0.00		0.00	0.00						0.00
Consumer Products	134.40					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**158.31**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

NorCal Logistics

San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Light Industry	6280.481	1000sqft

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Utility Company**	Pacific Gas & Electric Company
Climate Zone	2	**Precipitation Freq (Days)**	51		

1.3 User Entered Comments

Project Characteristics -

Land Use - Changed assumed acres to 331 to match project description

Construction Phase - Assumed 4 years for construction, starting in July 2013

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment -

Grading - Adjusted acres per Project Description

Vehicle Trips - Bumped up trip length C-C and C-NW to match C-W, based on rural nature of the project. Also adjusted all trips to 100% primary.

Water And Wastewater - Adjusted water use factor for light industrial uses to 925 gallons/1000sf/yr per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Solid Waste - Adjusted solid waste factor to 1.24 tons/1000sf/yr for light industrial uses per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Construction Off-road Equipment Mitigation -

Vechicle Emission Factors - Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4

Vechicle Emission Factors - Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4

Vechicle Emission Factors - Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.87	54.35	32.51	0.05	21.03	2.67	23.70	9.94	2.67	12.62	0.00	5,659.21	0.00	0.62	0.00	5,672.21
2014	7.69	60.93	35.88	0.07	21.03	2.81	23.48	9.94	2.81	12.40	0.00	7,540.23	0.00	0.69	0.00	7,554.70
2015	196.43	213.09	369.23	0.72	72.84	9.57	81.26	3.33	9.57	12.25	0.00	70,239.34	0.00	3.44	0.00	70,311.49
2016	192.76	181.62	337.32	0.72	72.84	7.73	80.57	3.06	7.73	10.79	0.00	69,115.80	0.00	3.13	0.00	69,181.53
2017	189.32	165.07	308.15	0.72	72.84	7.08	79.92	3.06	7.08	10.14	0.00	68,111.26	0.00	2.85	0.00	68,171.02
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.87	54.35	32.51	0.05	9.67	2.67	12.34	4.48	2.67	7.16	0.00	5,659.21	0.00	0.62	0.00	5,672.21
2014	7.69	60.93	35.88	0.07	9.67	2.81	12.12	4.48	2.81	6.93	0.00	7,540.23	0.00	0.69	0.00	7,554.70
2015	196.43	213.09	369.23	0.72	72.84	9.57	81.26	3.06	9.57	12.25	0.00	70,239.34	0.00	3.44	0.00	70,311.49
2016	192.76	181.62	337.32	0.72	72.84	7.73	80.57	3.06	7.73	10.79	0.00	69,115.80	0.00	3.13	0.00	69,181.53
2017	189.32	165.07	308.15	0.72	72.84	7.08	79.92	3.06	7.08	10.14	0.00	68,111.26	0.00	2.85	0.00	68,171.02
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Mobile	183.84	683.96	1,642.68	3.24	381.32	25.97	407.29	13.99	25.97	39.96		370,402.16		12.70		370,668.90
Total	**345.79**	**717.04**	**1,670.47**	**3.44**	**381.32**	**25.97**	**409.80**	**13.99**	**25.97**	**42.47**		**410,099.25**		**13.46**	**0.73**	**410,607.58**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Mobile	183.84	683.96	1,642.68	3.24	381.32	25.97	407.29	13.99	25.97	39.96		370,402.16		12.70		370,668.90
Total	**345.79**	**717.04**	**1,670.47**	**3.44**	**381.32**	**25.97**	**409.80**	**13.99**	**25.97**	**42.47**		**410,099.25**		**13.46**	**0.73**	**410,607.58**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					20.67	0.00	20.67	9.93	0.00	9.93						0.00
Off-Road	6.70	54.15	30.68	0.05		2.66	2.66		2.66	2.66		5,413.51		0.60		5,426.15
Total	**6.70**	**54.15**	**30.68**	**0.05**	**20.67**	**2.66**	**23.33**	**9.93**	**2.66**	**12.59**		**5,413.51**		**0.60**		**5,426.15**

3.2 Site Preparation - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.19	1.83	0.00	0.37	0.01	0.38	0.01	0.01	0.03		245.70		0.02		246.06
Total	**0.17**	**0.19**	**1.83**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**245.70**		**0.02**		**246.06**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.30	0.00	9.30	4.47	0.00	4.47						0.00
Off-Road	6.70	54.15	30.68	0.05		2.66	2.66		2.66	2.66	0.00	5,413.51		0.60		5,426.15
Total	**6.70**	**54.15**	**30.68**	**0.05**	**9.30**	**2.66**	**11.96**	**4.47**	**2.66**	**7.13**	**0.00**	**5,413.51**		**0.60**		**5,426.15**

3.2 Site Preparation - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.19	1.83	0.00	0.37	0.01	0.38	0.01	0.01	0.03		245.70		0.02		246.06
Total	**0.17**	**0.19**	**1.83**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**245.70**		**0.02**		**246.06**

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					20.67	0.00	20.67	9.93	0.00	9.93						0.00
Off-Road	6.34	50.69	29.13	0.05		2.44	2.44		2.44	2.44		5,413.51		0.57		5,425.43
Total	**6.34**	**50.69**	**29.13**	**0.05**	**20.67**	**2.44**	**23.11**	**9.93**	**2.44**	**12.37**		**5,413.51**		**0.57**		**5,425.43**

3.2 Site Preparation - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.17	1.64	0.00	0.37	0.01	0.38	0.01	0.01	0.03		239.64		0.02		239.96
Total	**0.15**	**0.17**	**1.64**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**239.64**		**0.02**		**239.96**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.30	0.00	9.30	4.47	0.00	4.47						0.00
Off-Road	6.34	50.69	29.13	0.05		2.44	2.44		2.44	2.44	0.00	5,413.51		0.57		5,425.43
Total	**6.34**	**50.69**	**29.13**	**0.05**	**9.30**	**2.44**	**11.74**	**4.47**	**2.44**	**6.91**	**0.00**	**5,413.51**		**0.57**		**5,425.43**

3.2 Site Preparation - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.17	1.64	0.00	0.37	0.01	0.38	0.01	0.01	0.03		239.64		0.02		239.96
Total	**0.15**	**0.17**	**1.64**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**239.64**		**0.02**		**239.96**

3.3 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.37	0.00	7.37	3.31	0.00	3.31						0.00
Off-Road	7.52	60.74	34.06	0.07		2.80	2.80		2.80	2.80		7,273.96		0.67		7,288.07
Total	**7.52**	**60.74**	**34.06**	**0.07**	**7.37**	**2.80**	**10.17**	**3.31**	**2.80**	**6.11**		**7,273.96**		**0.67**		**7,288.07**

3.3 Grading - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.19	1.82	0.00	0.41	0.01	0.42	0.02	0.01	0.03		266.27		0.02		266.63
Total	**0.17**	**0.19**	**1.82**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**266.27**		**0.02**		**266.63**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.32	0.00	3.32	1.49	0.00	1.49						0.00
Off-Road	7.52	60.74	34.06	0.07		2.80	2.80		2.80	2.80	0.00	7,273.96		0.67		7,288.07
Total	**7.52**	**60.74**	**34.06**	**0.07**	**3.32**	**2.80**	**6.12**	**1.49**	**2.80**	**4.29**	**0.00**	**7,273.96**		**0.67**		**7,288.07**

3.3 Grading - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.19	1.82	0.00	0.41	0.01	0.42	0.02	0.01	0.03		266.27		0.02		266.63
Total	**0.17**	**0.19**	**1.82**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**266.27**		**0.02**		**266.63**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.37	0.00	7.37	3.31	0.00	3.31						0.00
Off-Road	7.08	55.77	32.85	0.07		2.54	2.54		2.54	2.54		7,273.96		0.63		7,287.20
Total	**7.08**	**55.77**	**32.85**	**0.07**	**7.37**	**2.54**	**9.91**	**3.31**	**2.54**	**5.85**		**7,273.96**		**0.63**		**7,287.20**

3.3 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.16	0.17	1.63	0.00	0.41	0.01	0.42	0.02	0.01	0.03		259.26		0.02		259.58
Total	**0.16**	**0.17**	**1.63**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**259.26**		**0.02**		**259.58**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.32	0.00	3.32	1.49	0.00	1.49						0.00
Off-Road	7.08	55.77	32.85	0.07		2.54	2.54		2.54	2.54	0.00	7,273.96		0.63		7,287.20
Total	**7.08**	**55.77**	**32.85**	**0.07**	**3.32**	**2.54**	**5.86**	**1.49**	**2.54**	**4.03**	**0.00**	**7,273.96**		**0.63**		**7,287.20**

3.3 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.16	0.17	1.63	0.00	0.41	0.01	0.42	0.02	0.01	0.03		259.26		0.02		259.58
Total	**0.16**	**0.17**	**1.63**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**259.26**		**0.02**		**259.58**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.56	22.49	18.01	0.03		1.43	1.43		1.43	1.43		3,050.13		0.32		3,056.84
Total	**3.56**	**22.49**	**18.01**	**0.03**		**1.43**	**1.43**		**1.43**	**1.43**		**3,050.13**		**0.32**		**3,056.84**

3.4 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	13.68	147.69	91.08	0.25	8.56	4.72	13.28	0.66	4.72	5.38		25,867.68		0.65		25,881.27
Worker	20.52	22.61	215.18	0.37	53.56	1.71	55.27	2.00	1.71	3.71		34,195.97		2.03		34,238.52
Total	**34.20**	**170.30**	**306.26**	**0.62**	**62.12**	**6.43**	**68.55**	**2.66**	**6.43**	**9.09**		**60,063.65**		**2.68**		**60,119.79**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.56	22.49	18.01	0.03		1.43	1.43		1.43	1.43	0.00	3,050.13		0.32		3,056.84
Total	**3.56**	**22.49**	**18.01**	**0.03**		**1.43**	**1.43**		**1.43**	**1.43**	**0.00**	**3,050.13**		**0.32**		**3,056.84**

3.4 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	13.68	147.69	91.08	0.25	8.56	4.72	13.28	0.66	4.72	5.38		25,867.68		0.65		25,881.27
Worker	20.52	22.61	215.18	0.37	53.56	1.71	55.27	2.00	1.71	3.71		34,195.97		2.03		34,238.52
Total	**34.20**	**170.30**	**306.26**	**0.62**	**62.12**	**6.43**	**68.55**	**2.66**	**6.43**	**9.09**		**60,063.65**		**2.68**		**60,119.79**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	20.56	17.84	0.03		1.27	1.27		1.27	1.27		3,050.12		0.29		3,056.24
Total	**3.26**	**20.56**	**17.84**	**0.03**		**1.27**	**1.27**		**1.27**	**1.27**		**3,050.12**		**0.29**		**3,056.24**

3.4 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	12.51	134.41	84.71	0.25	8.56	4.23	12.79	0.66	4.23	4.89		25,851.52		0.59		25,863.94
Worker	18.72	20.24	194.04	0.37	53.56	1.70	55.26	2.00	1.70	3.70		33,273.26		1.85		33,312.01
Total	**31.23**	**154.65**	**278.75**	**0.62**	**62.12**	**5.93**	**68.05**	**2.66**	**5.93**	**8.59**		**59,124.78**		**2.44**		**59,175.95**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	20.56	17.84	0.03		1.27	1.27		1.27	1.27	0.00	3,050.12		0.29		3,056.24
Total	**3.26**	**20.56**	**17.84**	**0.03**		**1.27**	**1.27**		**1.27**	**1.27**	**0.00**	**3,050.12**		**0.29**		**3,056.24**

3.4 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	12.51	134.41	84.71	0.25	8.56	4.23	12.79	0.66	4.23	4.89		25,851.52		0.59		25,863.94
Worker	18.72	20.24	194.04	0.37	53.56	1.70	55.26	2.00	1.70	3.70		33,273.26		1.85		33,312.01
Total	**31.23**	**154.65**	**278.75**	**0.62**	**62.12**	**5.93**	**68.05**	**2.66**	**5.93**	**8.59**		**59,124.78**		**2.44**		**59,175.95**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.97	18.76	17.68	0.03		1.11	1.11		1.11	1.11		3,050.12		0.26		3,055.68
Total	**2.97**	**18.76**	**17.68**	**0.03**		**1.11**	**1.11**		**1.11**	**1.11**		**3,050.12**		**0.26**		**3,055.68**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	11.40	122.38	78.81	0.25	8.56	3.77	12.33	0.66	3.77	4.43		25,837.15		0.54		25,848.50
Worker	17.04	18.12	174.80	0.37	53.56	1.69	55.25	2.00	1.69	3.69		32,448.23		1.68		32,483.42
Total	**28.44**	**140.50**	**253.61**	**0.62**	**62.12**	**5.46**	**67.58**	**2.66**	**5.46**	**8.12**		**58,285.38**		**2.22**		**58,331.92**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.97	18.76	17.68	0.03		1.11	1.11		1.11	1.11	0.00	3,050.12		0.26		3,055.68
Total	**2.97**	**18.76**	**17.68**	**0.03**		**1.11**	**1.11**		**1.11**	**1.11**	**0.00**	**3,050.12**		**0.26**		**3,055.68**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	11.40	122.38	78.81	0.25	8.56	3.77	12.33	0.66	3.77	4.43		25,837.15		0.54		25,848.50
Worker	17.04	18.12	174.80	0.37	53.56	1.69	55.25	2.00	1.69	3.69		32,448.23		1.68		32,483.42
Total	**28.44**	**140.50**	**253.61**	**0.62**	**62.12**	**5.46**	**67.58**	**2.66**	**5.46**	**8.12**		**58,285.38**		**2.22**		**58,331.92**

3.5 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.27	20.17	13.76	0.02		1.70	1.70		1.70	1.70		1,954.82		0.29		1,961.00
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.27**	**20.17**	**13.76**	**0.02**		**1.70**	**1.70**		**1.70**	**1.70**		**1,954.82**		**0.29**		**1,961.00**

3.5 Paving - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.13	1.22	0.00	0.30	0.01	0.31	0.01	0.01	0.02		194.44		0.01		194.68
Total	**0.12**	**0.13**	**1.22**	**0.00**	**0.30**	**0.01**	**0.31**	**0.01**	**0.01**	**0.02**		**194.44**		**0.01**		**194.68**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.27	20.17	13.76	0.02		1.70	1.70		1.70	1.70	0.00	1,954.82		0.29		1,961.00
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.27**	**20.17**	**13.76**	**0.02**		**1.70**	**1.70**		**1.70**	**1.70**	**0.00**	**1,954.82**		**0.29**		**1,961.00**

3.5 Paving - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.13	1.22	0.00	0.30	0.01	0.31	0.01	0.01	0.02		194.44		0.01		194.68
Total	**0.12**	**0.13**	**1.22**	**0.00**	**0.30**	**0.01**	**0.31**	**0.01**	**0.01**	**0.02**		**194.44**		**0.01**		**194.68**

3.6 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.41	2.57	1.90	0.00		0.22	0.22		0.22	0.22		281.19		0.04		281.96
Total	**154.57**	**2.57**	**1.90**	**0.00**		**0.22**	**0.22**		**0.22**	**0.22**		**281.19**		**0.04**		**281.96**

3.6 Architectural Coating - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	4.11	4.52	43.07	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,844.38		0.41		6,852.90
Total	**4.11**	**4.52**	**43.07**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,844.38**		**0.41**		**6,852.90**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.41	2.57	1.90	0.00		0.22	0.22		0.22	0.22	0.00	281.19		0.04		281.96
Total	**154.57**	**2.57**	**1.90**	**0.00**		**0.22**	**0.22**		**0.22**	**0.22**	**0.00**	**281.19**		**0.04**		**281.96**

3.6 Architectural Coating - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	4.11	4.52	43.07	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,844.38		0.41		6,852.90
Total	**4.11**	**4.52**	**43.07**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,844.38**		**0.41**		**6,852.90**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	**154.53**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**		**281.19**		**0.03**		**281.89**

3.6 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.75	4.05	38.84	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,659.70		0.37		6,667.45
Total	**3.75**	**4.05**	**38.84**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,659.70**		**0.37**		**6,667.45**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	**154.53**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**281.19**		**0.03**		**281.89**

3.6 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.75	4.05	38.84	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,659.70		0.37		6,667.45
Total	**3.75**	**4.05**	**38.84**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,659.70**		**0.37**		**6,667.45**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.33	2.18	1.87	0.00		0.17	0.17		0.17	0.17		281.19		0.03		281.81
Total	**154.49**	**2.18**	**1.87**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**		**281.19**		**0.03**		**281.81**

3.6 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.41	3.63	34.99	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,494.57		0.34		6,501.61
Total	**3.41**	**3.63**	**34.99**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,494.57**		**0.34**		**6,501.61**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.33	2.18	1.87	0.00		0.17	0.17		0.17	0.17	0.00	281.19		0.03		281.81
Total	**154.49**	**2.18**	**1.87**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**281.19**		**0.03**		**281.81**

3.6 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.41	3.63	34.99	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,494.57		0.34		6,501.61
Total	**3.41**	**3.63**	**34.99**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,494.57**		**0.34**		**6,501.61**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	183.84	683.96	1,642.68	3.24	381.32	25.97	407.29	13.99	25.97	39.96		370,402.16		12.70		370,668.90
Unmitigated	183.84	683.96	1,642.68	3.24	381.32	25.97	407.29	13.99	25.97	39.96		370,402.16		12.70		370,668.90
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	21,479.25	0.00	0.00	82,093,674	82,093,674
Total	21,479.25	0.00	0.00	82,093,674	82,093,674

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
General Light Industry	14.70	14.70	14.70	59.00	28.00	13.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
NaturalGas Unmitigated	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
General Light Industry	337425	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Total		**3.64**	**33.08**	**27.79**	**0.20**		**0.00**	**2.51**		**0.00**	**2.51**		**39,697.09**		**0.76**	**0.73**	**39,938.68**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
General Light Industry	337.425	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Total		**3.64**	**33.08**	**27.79**	**0.20**		**0.00**	**2.51**		**0.00**	**2.51**		**39,697.09**		**0.76**	**0.73**	**39,938.68**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	23.91					0.00	0.00		0.00	0.00						0.00
Consumer Products	134.40					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**158.31**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	23.91					0.00	0.00		0.00	0.00						0.00
Consumer Products	134.40					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**158.31**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

NorCal Logistics

San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Light Industry	6280.48	1000sqft

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Utility Company**	Pacific Gas & Electric Company
Climate Zone	2	**Precipitation Freq (Days)**	51		

1.3 User Entered Comments

Project Characteristics -

Land Use - Changed assumed acres to 331 to match project description

Construction Phase - Assumed 4 years for construction, starting in July 2013

Off-road Equipment -

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Off-road Equipment - Updated load factors to latest OFFROAD

Grading - Adjusted acres per Project Description

Vehicle Trips - Bumped up trip length C-C and C-NW to match C-W, based on rural nature of the project. Also adjusted all trips to 100% primary.

Water And Wastewater - Adjusted water use factor for light industrial uses to 925 gallons/1000sf/yr per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Solid Waste - Adjusted solid waste factor to 1.24 tons/1000sf/yr for light industrial uses per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.87	54.35	32.51	0.05	21.03	2.67	23.70	9.94	2.67	12.62	0.00	5,659.21	0.00	0.62	0.00	5,672.21
2014	7.69	60.94	35.89	0.07	21.03	2.81	23.48	9.94	2.81	12.40	0.00	7,538.35	0.00	0.69	0.00	7,552.83
2015	196.43	213.36	369.23	0.72	72.84	9.60	81.27	3.33	9.60	12.27	0.00	70,241.29	0.00	3.44	0.00	70,313.44
2016	192.76	181.64	337.32	0.72	72.84	7.73	80.57	3.06	7.73	10.79	0.00	69,117.74	0.00	3.13	0.00	69,183.48
2017	189.32	165.09	308.16	0.72	72.84	7.08	79.92	3.06	7.08	10.14	0.00	68,113.20	0.00	2.85	0.00	68,172.97
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.87	54.35	32.51	0.05	9.67	2.67	12.34	4.48	2.67	7.16	0.00	5,659.21	0.00	0.62	0.00	5,672.21
2014	7.69	60.94	35.89	0.07	9.67	2.81	12.12	4.48	2.81	6.93	0.00	7,538.35	0.00	0.69	0.00	7,552.83
2015	196.43	213.36	369.23	0.72	72.84	9.60	81.27	3.06	9.60	12.27	0.00	70,241.29	0.00	3.44	0.00	70,313.44
2016	192.76	181.64	337.32	0.72	72.84	7.73	80.57	3.06	7.73	10.79	0.00	69,117.74	0.00	3.13	0.00	69,183.48
2017	189.32	165.09	308.16	0.72	72.84	7.08	79.92	3.06	7.08	10.14	0.00	68,113.20	0.00	2.85	0.00	68,172.97
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Mobile	183.84	683.96	1,642.68	3.24	381.32	25.97	407.29	13.99	25.97	39.96		325,067.36		12.70		325,334.10
Total	**345.79**	**717.04**	**1,670.47**	**3.44**	**381.32**	**25.97**	**409.80**	**13.99**	**25.97**	**42.47**		**364,764.45**		**13.46**	**0.73**	**365,272.78**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	3.09	28.13	23.63	0.17		0.00	2.14		0.00	2.14		33,760.75		0.65	0.62	33,966.21
Mobile	183.84	683.96	1,642.68	3.24	381.32	25.97	407.29	13.99	25.97	39.96		325,067.36		12.70		325,334.10
Total	**345.24**	**712.09**	**1,666.31**	**3.41**	**381.32**	**25.97**	**409.43**	**13.99**	**25.97**	**42.10**		**358,828.11**		**13.35**	**0.62**	**359,300.31**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					20.67	0.00	20.67	9.93	0.00	9.93						0.00
Off-Road	6.70	54.15	30.68	0.05		2.66	2.66		2.66	2.66		5,413.51		0.60		5,426.15
Total	**6.70**	**54.15**	**30.68**	**0.05**	**20.67**	**2.66**	**23.33**	**9.93**	**2.66**	**12.59**		**5,413.51**		**0.60**		**5,426.15**

3.2 Site Preparation - 2013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.19	1.83	0.00	0.37	0.01	0.38	0.01	0.01	0.03		245.70		0.02		246.06
Total	**0.17**	**0.19**	**1.83**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**245.70**		**0.02**		**246.06**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.30	0.00	9.30	4.47	0.00	4.47						0.00
Off-Road	6.70	54.15	30.68	0.05		2.66	2.66		2.66	2.66	0.00	5,413.51		0.60		5,426.15
Total	**6.70**	**54.15**	**30.68**	**0.05**	**9.30**	**2.66**	**11.96**	**4.47**	**2.66**	**7.13**	**0.00**	**5,413.51**		**0.60**		**5,426.15**

3.2 Site Preparation - 2013

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.19	1.83	0.00	0.37	0.01	0.38	0.01	0.01	0.03		245.70		0.02		246.06
Total	**0.17**	**0.19**	**1.83**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**245.70**		**0.02**		**246.06**

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					20.67	0.00	20.67	9.93	0.00	9.93						0.00
Off-Road	6.34	50.69	29.13	0.05		2.44	2.44		2.44	2.44		5,413.51		0.57		5,425.43
Total	**6.34**	**50.69**	**29.13**	**0.05**	**20.67**	**2.44**	**23.11**	**9.93**	**2.44**	**12.37**		**5,413.51**		**0.57**		**5,425.43**

3.2 Site Preparation - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.17	1.64	0.00	0.37	0.01	0.38	0.01	0.01	0.03		239.64		0.02		239.96
Total	**0.15**	**0.17**	**1.64**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**239.64**		**0.02**		**239.96**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.30	0.00	9.30	4.47	0.00	4.47						0.00
Off-Road	6.34	50.69	29.13	0.05		2.44	2.44		2.44	2.44	0.00	5,413.51		0.57		5,425.43
Total	**6.34**	**50.69**	**29.13**	**0.05**	**9.30**	**2.44**	**11.74**	**4.47**	**2.44**	**6.91**	**0.00**	**5,413.51**		**0.57**		**5,425.43**

3.2 Site Preparation - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.15	0.17	1.64	0.00	0.37	0.01	0.38	0.01	0.01	0.03		239.64		0.02		239.96
Total	**0.15**	**0.17**	**1.64**	**0.00**	**0.37**	**0.01**	**0.38**	**0.01**	**0.01**	**0.03**		**239.64**		**0.02**		**239.96**

3.3 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.37	0.00	7.37	3.31	0.00	3.31						0.00
Off-Road	7.52	60.75	34.08	0.07		2.80	2.80		2.80	2.80		7,272.08		0.67		7,286.20
Total	**7.52**	**60.75**	**34.08**	**0.07**	**7.37**	**2.80**	**10.17**	**3.31**	**2.80**	**6.11**		**7,272.08**		**0.67**		**7,286.20**

3.3 Grading - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.19	1.82	0.00	0.41	0.01	0.42	0.02	0.01	0.03		266.27		0.02		266.63
Total	**0.17**	**0.19**	**1.82**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**266.27**		**0.02**		**266.63**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.32	0.00	3.32	1.49	0.00	1.49						0.00
Off-Road	7.52	60.75	34.08	0.07		2.80	2.80		2.80	2.80	0.00	7,272.08		0.67		7,286.20
Total	**7.52**	**60.75**	**34.08**	**0.07**	**3.32**	**2.80**	**6.12**	**1.49**	**2.80**	**4.29**	**0.00**	**7,272.08**		**0.67**		**7,286.20**

3.3 Grading - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.17	0.19	1.82	0.00	0.41	0.01	0.42	0.02	0.01	0.03		266.27		0.02		266.63
Total	**0.17**	**0.19**	**1.82**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**266.27**		**0.02**		**266.63**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.37	0.00	7.37	3.31	0.00	3.31						0.00
Off-Road	7.08	55.79	32.87	0.07		2.55	2.55		2.55	2.55		7,272.08		0.63		7,285.33
Total	**7.08**	**55.79**	**32.87**	**0.07**	**7.37**	**2.55**	**9.92**	**3.31**	**2.55**	**5.86**		**7,272.08**		**0.63**		**7,285.33**

3.3 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.16	0.17	1.63	0.00	0.41	0.01	0.42	0.02	0.01	0.03		259.26		0.02		259.58
Total	**0.16**	**0.17**	**1.63**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**259.26**		**0.02**		**259.58**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.32	0.00	3.32	1.49	0.00	1.49						0.00
Off-Road	7.08	55.79	32.87	0.07		2.55	2.55		2.55	2.55	0.00	7,272.08		0.63		7,285.33
Total	**7.08**	**55.79**	**32.87**	**0.07**	**3.32**	**2.55**	**5.87**	**1.49**	**2.55**	**4.04**	**0.00**	**7,272.08**		**0.63**		**7,285.33**

3.3 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.16	0.17	1.63	0.00	0.41	0.01	0.42	0.02	0.01	0.03		259.26		0.02		259.58
Total	**0.16**	**0.17**	**1.63**	**0.00**	**0.41**	**0.01**	**0.42**	**0.02**	**0.01**	**0.03**		**259.26**		**0.02**		**259.58**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.56	22.52	18.01	0.03		1.43	1.43		1.43	1.43		3,052.07		0.32		3,058.79
Total	**3.56**	**22.52**	**18.01**	**0.03**		**1.43**	**1.43**		**1.43**	**1.43**		**3,052.07**		**0.32**		**3,058.79**

3.4 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	13.68	147.69	91.08	0.25	8.56	4.72	13.28	0.66	4.72	5.38		25,867.68		0.65		25,881.27
Worker	20.52	22.61	215.18	0.37	53.56	1.71	55.27	2.00	1.71	3.71		34,195.97		2.03		34,238.52
Total	**34.20**	**170.30**	**306.26**	**0.62**	**62.12**	**6.43**	**68.55**	**2.66**	**6.43**	**9.09**		**60,063.65**		**2.68**		**60,119.79**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.56	22.52	18.01	0.03		1.43	1.43		1.43	1.43	0.00	3,052.07		0.32		3,058.79
Total	**3.56**	**22.52**	**18.01**	**0.03**		**1.43**	**1.43**		**1.43**	**1.43**	**0.00**	**3,052.07**		**0.32**		**3,058.79**

3.4 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	13.68	147.69	91.08	0.25	8.56	4.72	13.28	0.66	4.72	5.38		25,867.68		0.65		25,881.27
Worker	20.52	22.61	215.18	0.37	53.56	1.71	55.27	2.00	1.71	3.71		34,195.97		2.03		34,238.52
Total	**34.20**	**170.30**	**306.26**	**0.62**	**62.12**	**6.43**	**68.55**	**2.66**	**6.43**	**9.09**		**60,063.65**		**2.68**		**60,119.79**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	20.58	17.84	0.03		1.27	1.27		1.27	1.27		3,052.07		0.29		3,058.19
Total	**3.26**	**20.58**	**17.84**	**0.03**		**1.27**	**1.27**		**1.27**	**1.27**		**3,052.07**		**0.29**		**3,058.19**

3.4 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	12.51	134.41	84.71	0.25	8.56	4.23	12.79	0.66	4.23	4.89		25,851.52		0.59		25,863.94
Worker	18.72	20.24	194.04	0.37	53.56	1.70	55.26	2.00	1.70	3.70		33,273.26		1.85		33,312.01
Total	**31.23**	**154.65**	**278.75**	**0.62**	**62.12**	**5.93**	**68.05**	**2.66**	**5.93**	**8.59**		**59,124.78**		**2.44**		**59,175.95**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	20.58	17.84	0.03		1.27	1.27		1.27	1.27	0.00	3,052.07		0.29		3,058.19
Total	**3.26**	**20.58**	**17.84**	**0.03**		**1.27**	**1.27**		**1.27**	**1.27**	**0.00**	**3,052.07**		**0.29**		**3,058.19**

3.4 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	12.51	134.41	84.71	0.25	8.56	4.23	12.79	0.66	4.23	4.89		25,851.52		0.59		25,863.94
Worker	18.72	20.24	194.04	0.37	53.56	1.70	55.26	2.00	1.70	3.70		33,273.26		1.85		33,312.01
Total	**31.23**	**154.65**	**278.75**	**0.62**	**62.12**	**5.93**	**68.05**	**2.66**	**5.93**	**8.59**		**59,124.78**		**2.44**		**59,175.95**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.97	18.78	17.68	0.03		1.11	1.11		1.11	1.11		3,052.07		0.26		3,057.63
Total	**2.97**	**18.78**	**17.68**	**0.03**		**1.11**	**1.11**		**1.11**	**1.11**		**3,052.07**		**0.26**		**3,057.63**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	11.40	122.38	78.81	0.25	8.56	3.77	12.33	0.66	3.77	4.43		25,837.15		0.54		25,848.50
Worker	17.04	18.12	174.80	0.37	53.56	1.69	55.25	2.00	1.69	3.69		32,448.23		1.68		32,483.42
Total	**28.44**	**140.50**	**253.61**	**0.62**	**62.12**	**5.46**	**67.58**	**2.66**	**5.46**	**8.12**		**58,285.38**		**2.22**		**58,331.92**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.97	18.78	17.68	0.03		1.11	1.11		1.11	1.11	0.00	3,052.07		0.26		3,057.63
Total	**2.97**	**18.78**	**17.68**	**0.03**		**1.11**	**1.11**		**1.11**	**1.11**	**0.00**	**3,052.07**		**0.26**		**3,057.63**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	11.40	122.38	78.81	0.25	8.56	3.77	12.33	0.66	3.77	4.43		25,837.15		0.54		25,848.50
Worker	17.04	18.12	174.80	0.37	53.56	1.69	55.25	2.00	1.69	3.69		32,448.23		1.68		32,483.42
Total	**28.44**	**140.50**	**253.61**	**0.62**	**62.12**	**5.46**	**67.58**	**2.66**	**5.46**	**8.12**		**58,285.38**		**2.22**		**58,331.92**

3.5 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.31	20.42	13.93	0.02		1.72	1.72		1.72	1.72		1,979.14		0.30		1,985.40
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.31**	**20.42**	**13.93**	**0.02**		**1.72**	**1.72**		**1.72**	**1.72**		**1,979.14**		**0.30**		**1,985.40**

3.5 Paving - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.13	1.22	0.00	0.30	0.01	0.31	0.01	0.01	0.02		194.44		0.01		194.68
Total	**0.12**	**0.13**	**1.22**	**0.00**	**0.30**	**0.01**	**0.31**	**0.01**	**0.01**	**0.02**		**194.44**		**0.01**		**194.68**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.31	20.42	13.93	0.02		1.72	1.72		1.72	1.72	0.00	1,979.14		0.30		1,985.40
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.31**	**20.42**	**13.93**	**0.02**		**1.72**	**1.72**		**1.72**	**1.72**	**0.00**	**1,979.14**		**0.30**		**1,985.40**

3.5 Paving - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.13	1.22	0.00	0.30	0.01	0.31	0.01	0.01	0.02		194.44		0.01		194.68
Total	**0.12**	**0.13**	**1.22**	**0.00**	**0.30**	**0.01**	**0.31**	**0.01**	**0.01**	**0.02**		**194.44**		**0.01**		**194.68**

3.6 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.41	2.57	1.90	0.00		0.22	0.22		0.22	0.22		281.19		0.04		281.96
Total	**154.57**	**2.57**	**1.90**	**0.00**		**0.22**	**0.22**		**0.22**	**0.22**		**281.19**		**0.04**		**281.96**

3.6 Architectural Coating - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	4.11	4.52	43.07	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,844.38		0.41		6,852.90
Total	**4.11**	**4.52**	**43.07**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,844.38**		**0.41**		**6,852.90**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.41	2.57	1.90	0.00		0.22	0.22		0.22	0.22	0.00	281.19		0.04		281.96
Total	**154.57**	**2.57**	**1.90**	**0.00**		**0.22**	**0.22**		**0.22**	**0.22**	**0.00**	**281.19**		**0.04**		**281.96**

3.6 Architectural Coating - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	4.11	4.52	43.07	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,844.38		0.41		6,852.90
Total	**4.11**	**4.52**	**43.07**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,844.38**		**0.41**		**6,852.90**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	**154.53**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**		**281.19**		**0.03**		**281.89**

3.6 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.75	4.05	38.84	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,659.70		0.37		6,667.45
Total	**3.75**	**4.05**	**38.84**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,659.70**		**0.37**		**6,667.45**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	**154.53**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**281.19**		**0.03**		**281.89**

3.6 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.75	4.05	38.84	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,659.70		0.37		6,667.45
Total	**3.75**	**4.05**	**38.84**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,659.70**		**0.37**		**6,667.45**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.33	2.18	1.87	0.00		0.17	0.17		0.17	0.17		281.19		0.03		281.81
Total	**154.49**	**2.18**	**1.87**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**		**281.19**		**0.03**		**281.81**

3.6 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.41	3.63	34.99	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,494.57		0.34		6,501.61
Total	**3.41**	**3.63**	**34.99**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,494.57**		**0.34**		**6,501.61**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	154.16					0.00	0.00		0.00	0.00						0.00
Off-Road	0.33	2.18	1.87	0.00		0.17	0.17		0.17	0.17	0.00	281.19		0.03		281.81
Total	**154.49**	**2.18**	**1.87**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**281.19**		**0.03**		**281.81**

3.6 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	3.41	3.63	34.99	0.07	10.72	0.34	11.06	0.40	0.34	0.74		6,494.57		0.34		6,501.61
Total	**3.41**	**3.63**	**34.99**	**0.07**	**10.72**	**0.34**	**11.06**	**0.40**	**0.34**	**0.74**		**6,494.57**		**0.34**		**6,501.61**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	183.84	683.96	1,642.68	3.24	381.32	25.97	407.29	13.99	25.97	39.96		325,067.36		12.70		325,334.10
Unmitigated	183.84	683.96	1,642.68	3.24	381.32	25.97	407.29	13.99	25.97	39.96		325,067.36		12.70		325,334.10
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	21,479.24	0.00	0.00	82,093,661	82,093,661
Total	21,479.24	0.00	0.00	82,093,661	82,093,661

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
General Light Industry	14.70	14.70	14.70	59.00	28.00	13.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.09	28.13	23.63	0.17		0.00	2.14		0.00	2.14		33,760.75		0.65	0.62	33,966.21
NaturalGas Unmitigated	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
General Light Industry	337425	3.64	33.08	27.79	0.20		0.00	2.51		0.00	2.51		39,697.09		0.76	0.73	39,938.68
Total		**3.64**	**33.08**	**27.79**	**0.20**		**0.00**	**2.51**		**0.00**	**2.51**		**39,697.09**		**0.76**	**0.73**	**39,938.68**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
General Light Industry	286.966	3.09	28.13	23.63	0.17		0.00	2.14		0.00	2.14		33,760.75		0.65	0.62	33,966.21
Total		**3.09**	**28.13**	**23.63**	**0.17**		**0.00**	**2.14**		**0.00**	**2.14**		**33,760.75**		**0.65**	**0.62**	**33,966.21**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	158.31	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	23.91					0.00	0.00		0.00	0.00						0.00
Consumer Products	134.40					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**158.31**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	23.91					0.00	0.00		0.00	0.00						0.00
Consumer Products	134.40					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**158.31**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

CALEEMOD INPUTS - NORCAL LOGISTICS BAU

tblPollutants

PollutantSelection	PollutantFullName	PollutantName
1	Reactive Organic Gases (ROG)	ROG
1	Nitrogen Oxides (NOx)	NOX
1	Carbon Monoxide (CO)	CO
1	Sulfur Dioxide (SO2)	SO2
1	Particulate Matter 10um (PM10)	PM10
1	Particulate Matter 2.5um (PM2.5)	PM2_5
1	Fugitive PM10um (PM10)	PM10_FUG
1	Fugitive PM2.5um (PM2.5)	PM25_FUG
1	Total Organic Gases (TOG)	TOG
1	Lead (Pb)	PB
1	Biogenic Carbon Dioxide (CO2)	CO2_BIO
1	Non-Biogenic Carbon Dioxide (CO2)	CO2_NBIO
1	Carbon Dioxide (CO2)	CO2
1	Methane (CH4)	CH4
1	Nitrous Oxide (N2O)	N2O
1	CO2 Equivalent GHGs (CO2e)	CO2E

tblLandUse

LandUseType	LandUseSubType	LandUseUnitAmount	LandUseSizeMetric	LotAcreage	LandUseSquareFeet	Population
Industrial	General Light Industry	6280.48	1000sqft	331	6280481	0

tblConstructionPhase

PhaseNumber	PhaseName	PhaseType	PhaseStartDate	PhaseEndDate	NumDaysWeek	NumDays	PhaseDescription
1	Site Preparation	Site Preparation	2013/07/01	2014/01/03	5	135	
2	Grading	Grading	2014/01/06	2015/01/02	5	260	
3	Building Construction	Building Construction	2015/01/05	2017/06/30	5	650	
4	Paving	Paving	2015/01/05	2015/04/30	5	84	
5	Architectural Coating	Architectural Coating	2015/05/01	2017/06/30	5	566	

tblOffRoadEquipment

PhaseName	OffRoadEquipmentType	OffRoadEquipmentUnitAmount	UsageHours	HorsePower	LoadFactor
Site Preparation	Rubber Tired Dozers	3	8	358	0.4
Site Preparation	Tractors/Loaders/Backhoes	4	8	75	0.37
Grading	Excavators	2	8	157	0.38
Grading	Graders	1	8	162	0.41
Grading	Rubber Tired Dozers	1	8	358	0.4
Grading	Scrapers	2	8	356	0.48
Grading	Tractors/Loaders/Backhoes	2	8	75	0.37
Building Construction	Cranes	1	7	208	0.29
Building Construction	Forklifts	3	8	149	0.2
Building Construction	Generator Sets	1	8	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7	75	0.37
Building Construction	Welders	1	8	46	0.6
Paving	Pavers	2	8	89	0.42
Paving	Paving Equipment	2	8	82	0.36
Paving	Rollers	2	8	84	0.38
Architectural Coating	Air Compressors	1	6	78	0.48

tblTripsAndVMT

PhaseName	WorkerTripNumber	VendorTripNumber	HaulingTripNumber	WorkerTripLength	VendorTripLength
Site Preparation	18	0	0	16.8	6.6
Grading	20	0	0	16.8	6.6
Building Construction	2638	1029	0	16.8	6.6
Paving	15	0	0	16.8	6.6
Architectural Coating	528	0	0	16.8	6.6

HaulingTripLength	WorkerVehicleClass	VendorVehicleClass	HaulingVehicleClass
20	LD_Mix	HDT_Mix	HHDT
20	LD_Mix	HDT_Mix	HHDT
20	LD_Mix	HDT_Mix	HHDT
20	LD_Mix	HDT_Mix	HHDT
20	LD_Mix	HDT_Mix	HHDT

tblOnRoadDust

PhaseName	WorkerPercentPave	VendorPercentPave	HaulingPercentPave	RoadSiltLoading	MaterialSiltContent
Site Preparation	100	100	100	0.1	8.5
Grading	100	100	100	0.1	8.5
Building Construction	100	100	100	0.1	8.5
Paving	100	100	100	0.1	8.5
Architectural Coating	100	100	100	0.1	8.5

MaterialMoistureContent	AverageVehicleWeight	MeanVehicleSpeed
0.5	2.4	40
0.5	2.4	40
0.5	2.4	40
0.5	2.4	40
0.5	2.4	40

PhaseName	MaterialImported	MaterialExported	GradingSizeMetric	ImportExportPhased	MeanVehicleSpeed	AcresOfGrading
Site Preparation	0	0		0	7.1	331
Grading	0	0		0	7.1	331

MaterialMoistureContentBulldozing	MaterialMoistureContentTruckLoading	MaterialSiltContent
7.9	12	6.9
7.9	12	6.9

PhaseName	ArchitecturalCoatingStartDate	ArchitecturalCoatingEndDate	EF_Residential_Interior	ConstArea_Residential_Interior	
Architectural Coating	2011/01/01	3000/12/31	150		0

EF_Residential_Exterior	ConstArea_Residential_Exterior	EF_Nonresidential_Interior	ConstArea_Nonresidential_Interior
150	0	150	9420722

EF_Nonresidential_Exterior	ConstArea_Nonresidential_Exterior
150	3140241

VehicleTripsLandUseSubType	VehicleTripsLandUseSizeMetric	WD_TR	ST_TR	SU_TR	HW_TL	HS_TL	HO_TL	CC_TL	CW_TL
General Light Industry	1000sqft	3.42	0	0	0	0	0	14.7	14.7

CNW_TL	PR_TP	DV_TP	PB_TP	HW_TTP	HS_TTP	HO_TTP	CC_TTP	CW_TTP	CNW_TTP
14.7	100	0	0	0	0	0	28	59	13

Season	EmissionTy	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	FleetMix	0.452182	0.114694	0.199947	0.106331	0.021766	0.006566	0.016992	0.065316	0.000653	0.002013	0.00922	0.001241	0.003079
A	CH4_IDLE	0	0	0	0	0.0014	0.0012	0.0009	0.12	0.0012	0	0	0.02	0
A	CH4_RUNI	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.03	0.03	0.07	0.19	0.02	0.02
A	CH4_STRE	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.03	0.05	0.11	0.14	0.01	0.03
A	CO_IDLEX	0	0	0	0	0.2	0.17	0.13	13.23	0.18	0	0	4.77	0
A	CO_RUNE	1.27	1.78	2.1	2.6	1.93	1.48	2.25	2.96	4.73	11.6	20.53	5.06	4.35
A	CO_STRE	3.2	4.03	4.92	5.86	4.34	3.4	5.4	9.56	16.65	29.5	10.85	3.73	10.42
A	CO2_IDLE	0	0	0	0	7.771	8.3315	12.141	1756.75	10.4975	0	0	523.3455	0
A	CO2_RUN	361.04	448.61	456.58	623.77	819.85	715.369	1304.445	1724.972	1154.687	2126.214	140.98	1364.333	741.9975
A	CO2_STRE	71.27	86.59	90.04	123.06	36.5465	29.1555	11.7515	5.6905	21.983	26.1535	41.971	11.153	31.1695
A	NOX_IDLE	0	0	0	0	0.02	0.05	0.18	33.11	0.1	0	0	9.05	0
A	NOX_RUN	0.1	0.17	0.23	0.3	0.97	1.76	3.57	7.36	2.92	16.89	1.13	9.35	1.43
A	NOX_STRI	0.19	0.22	0.41	0.5	1.39	1.09	0.48	0.93	2.06	3.29	0.31	0.23	0.96
A	PM10_IDLI	0	0	0	0	0.0002	0.0007	0.0023	0.27	0.0013	0	0	0.11	0
A	PM10_PMI	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063	0.01	0.01
A	PM10_PM	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004	0.01	0.01
A	PM10_RUI	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01	0.45	0.01
A	PM10_STF	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01	0.0007	0.0008
A	PM25_IDLI	0	0	0	0	0.0002	0.0007	0.0023	0.27	0.0013	0	0	0.11	0
A	PM25_PMI	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063	0.01	0.01
A	PM25_PM	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004	0.01	0.01
A	PM25_RUI	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01	0.45	0.01
A	PM25_STF	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01	0.0007	0.0008
A	ROG_DIUF	0.08	0.1	0.11	0.1	0.0018	0.0015	0.0007	0.0003	0.0012	0.0092	0.96	0.0041	1.33
A	ROG_HTS	0.14	0.16	0.18	0.17	0.03	0.03	0.01	0.0064	0.02	0.14	0.35	0.01	0.07
A	ROG_IDLE	0	0	0	0	0.03	0.02	0.01	2.76	0.02	0	0	0.64	0
A	ROG_RES	0.05	0.06	0.06	0.06	0.0004	0.0004	0.0002	0.0001	0.0004	0.0033	0.41	0.0011	0.33
A	ROG_RUN	0.02	0.04	0.04	0.07	0.19	0.17	0.18	0.62	0.29	1.36	2.31	0.51	0.17
A	ROG_RUN	0.056568	0.111083	0.12339	0.113523	0.347773	0.269042	0.088152	0.003514	0.199759	0.021019	0.273961	0.013969	0.016587
A	ROG_STR	0.24	0.27	0.36	0.48	0.34	0.27	0.39	0.52	0.96	1.95	2.26	0.26	0.57
A	SO2_IDLE	0	0	0	0	0.0001	0.0001	0.0001	0.01	0.0001	0	0	0.0053	0
A	SO2_RUNI	0.0035	0.0043	0.0044	0.006	0.0083	0.0072	0.01	0.01	0.01	0.02	0.0018	0.01	0.0076
A	SO2_STRE	0.0007	0.0009	0.0009	0.0013	0.0004	0.0004	0.0002	0.0002	0.0005	0.0008	0.0007	0.0002	0.0005
A	TOG_DIUF	0.08	0.1	0.11	0.1	0.0018	0.0015	0.0007	0.0003	0.0012	0.0092	0.96	0.0041	1.33
A	TOG_HTSI	0.14	0.16	0.18	0.17	0.03	0.03	0.01	0.0064	0.02	0.14	0.35	0.01	0.07
A	TOG_IDLE	0	0	0	0	0.03	0.03	0.02	3.14	0.03	0	0	0.71	0
A	TOG_RES	0.05	0.06	0.06	0.06	0.0004	0.0004	0.0002	0.0001	0.0004	0.0033	0.41	0.0011	0.33
A	TOG_RUN	0.04	0.06	0.07	0.1	0.21	0.2	0.21	0.71	0.34	1.5	2.55	0.58	0.21
A	TOG_RUN	0.056568	0.111083	0.12339	0.113523	0.347773	0.269042	0.088152	0.003514	0.199759	0.021019	0.273961	0.013969	0.016587
A	TOG_STRI	0.25	0.29	0.38	0.52	0.36	0.29	0.42	0.56	1.03	2.09	2.43	0.28	0.61
S	FleetMix	0.452182	0.114694	0.199947	0.106331	0.021766	0.006566	0.016992	0.065316	0.000653	0.002013	0.00922	0.001241	0.003079

S	CH4_IDLE	0	0	0	0	0.0014	0.0012	0.0009	0.11	0.0012	0	0	0.02	0
S	CH4_RUNI	0.01	0.01	0.02	0.03	0.02	0.01	0.01	0.03	0.03	0.07	0.19	0.02	0.03
S	CH4_STRE	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.04	0.09	0.11	0.01	0.02
S	CO_IDLEX	0	0	0	0	0.2	0.17	0.13	9.12	0.18	0	0	4.77	0
S	CO_RUNE	1.5	2.07	2.46	3.01	1.98	1.5	2.26	2.97	4.85	11.7	19.97	5.1	4.5
S	CO_STRE	2.22	2.81	3.42	4.1	2.88	2.3	3.89	6.71	11.65	22.74	8.86	2.88	6.93
S	CO2_IDLE	0	0	0	0	7.771	8.3315	12.141	1878.264	10.4975	0	0	523.3455	0
S	CO2_RUN	403.09	497.82	507.62	693.4	819.85	715.369	1304.445	1724.972	1154.687	2126.214	140.98	1364.333	741.9975
S	CO2_STRE	71.27	86.59	90.04	123.06	36.5465	29.1555	11.7515	5.6905	21.983	26.1535	41.971	11.153	31.1695
S	NOX_IDLE	0	0	0	0	0.02	0.05	0.18	34.53	0.1	0	0	9.05	0
S	NOX_RUN	0.1	0.17	0.23	0.3	0.96	1.76	3.58	7.39	2.88	16.89	1.06	9.39	1.4
S	NOX_STRI	0.17	0.2	0.37	0.45	1.31	1.03	0.45	0.87	1.93	3.06	0.28	0.21	0.9
S	PM10_IDLI	0	0	0	0	0.0002	0.0007	0.0023	0.22	0.0013	0	0	0.11	0
S	PM10_PMI	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063	0.01	0.01
S	PM10_PM'	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004	0.01	0.01
S	PM10_RUI	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01	0.45	0.01
S	PM10_STF	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01	0.0007	0.0008
S	PM25_IDLI	0	0	0	0	0.0002	0.0007	0.0023	0.22	0.0013	0	0	0.11	0
S	PM25_PMI	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063	0.01	0.01
S	PM25_PM'	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004	0.01	0.01
S	PM25_RUI	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01	0.45	0.01
S	PM25_STF	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01	0.0007	0.0008
S	ROG_DIUF	0.2	0.23	0.26	0.24	0.0043	0.0035	0.0018	0.0007	0.0028	0.02	2.45	0.0097	3.1
S	ROG_HTS	0.17	0.2	0.21	0.2	0.04	0.04	0.01	0.0072	0.02	0.17	0.54	0.02	0.08
S	ROG_IDLE	0	0	0	0	0.03	0.02	0.01	2.56	0.02	0	0	0.64	0
S	ROG_RES	0.12	0.14	0.16	0.15	0.001	0.0008	0.0005	0.0002	0.0008	0.0076	1.27	0.0023	0.7
S	ROG_RUN	0.03	0.04	0.05	0.08	0.19	0.18	0.18	0.62	0.3	1.38	2.23	0.52	0.18
S	ROG_RUN	0.054491	0.10556	0.117075	0.107846	0.340277	0.262833	0.088408	0.003591	0.198282	0.019741	0.2575	0.012615	0.016264
S	ROG_STR	0.18	0.21	0.27	0.37	0.26	0.22	0.3	0.41	0.78	1.66	1.83	0.22	0.43
S	SO2_IDLE	0	0	0	0	0.0001	0.0001	0.0001	0.01	0.0001	0	0	0.0053	0
S	SO2_RUNI	0.0038	0.0047	0.0048	0.0066	0.0083	0.0072	0.01	0.01	0.01	0.02	0.0018	0.01	0.0076
S	SO2_STRE	0.0007	0.0009	0.0009	0.0013	0.0004	0.0003	0.0002	0.0002	0.0004	0.0007	0.0006	0.0002	0.0004
S	TOG_DIUF	0.2	0.23	0.26	0.24	0.0043	0.0035	0.0018	0.0007	0.0028	0.02	2.45	0.0097	3.1
S	TOG_HTSI	0.17	0.2	0.21	0.2	0.04	0.04	0.01	0.0072	0.02	0.17	0.54	0.02	0.08
S	TOG_IDLE	0	0	0	0	0.03	0.03	0.02	2.92	0.03	0	0	0.71	0
S	TOG_RES'	0.12	0.14	0.16	0.15	0.001	0.0008	0.0005	0.0002	0.0008	0.0076	1.27	0.0023	0.7
S	TOG_RUN	0.04	0.06	0.07	0.11	0.22	0.2	0.21	0.71	0.34	1.52	2.46	0.58	0.21
S	TOG_RUN	0.054491	0.10556	0.117075	0.107846	0.340277	0.262833	0.088408	0.003591	0.198282	0.019741	0.2575	0.012615	0.016264
S	TOG_STRI	0.19	0.22	0.29	0.4	0.28	0.23	0.32	0.44	0.83	1.77	1.96	0.24	0.46
W	FleetMix	0.452182	0.114694	0.199947	0.106331	0.021766	0.006566	0.016992	0.065316	0.000653	0.002013	0.00922	0.001241	0.003079
W	CH4_IDLE	0	0	0	0	0.0014	0.0012	0.0009	0.13	0.0012	0	0	0.02	0
W	CH4_RUNI	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.03	0.03	0.06	0.2	0.02	0.02

W	CH4_STRE	0.01	0.01	0.02	0.03	0.02	0.01	0.02	0.03	0.06	0.12	0.15	0.01	0.03
W	CO_IDLEX	0	0	0	0	0.2	0.17	0.13	17.34	0.18	0	0	4.77	0
W	CO_RUNE	1.19	1.7	1.98	2.48	1.91	1.46	2.25	2.95	4.66	11.65	21.48	5.04	4.29
W	CO_STRE	3.78	4.75	5.8	6.9	5.21	4.07	6.34	11.32	19.77	33.29	12.04	4.34	12.54
W	CO2_IDLE	0	0	0	0	7.771	8.3315	12.141	1635.226	10.4975	0	0	523.3455	0
W	CO2_RUN	341.21	425.5	432.63	591.1	819.85	715.369	1304.445	1724.972	1154.687	2126.214	140.98	1364.333	741.9975
W	CO2_STRE	71.27	86.59	90.04	123.06	36.5465	29.1555	11.7515	5.6905	21.983	26.1535	41.971	11.153	31.1695
W	NOX_IDLE	0	0	0	0	0.02	0.05	0.18	31.7	0.1	0	0	9.05	0
W	NOX_RUN	0.11	0.19	0.25	0.33	1.01	1.82	3.7	7.6	3.08	17.48	1.22	9.63	1.52
W	NOX_STR	0.21	0.24	0.44	0.53	1.45	1.14	0.5	0.97	2.15	3.43	0.32	0.25	1
W	PM10_IDL	0	0	0	0	0.0002	0.0007	0.0023	0.32	0.0013	0	0	0.11	0
W	PM10_PMI	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063	0.01	0.01
W	PM10_PM	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004	0.01	0.01
W	PM10_RUI	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01	0.45	0.01
W	PM10_STF	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01	0.0007	0.0008
W	PM25_IDL	0	0	0	0	0.0002	0.0007	0.0023	0.32	0.0013	0	0	0.11	0
W	PM25_PMI	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063	0.01	0.01
W	PM25_PM	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004	0.01	0.01
W	PM25_RUI	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01	0.45	0.01
W	PM25_STF	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01	0.0007	0.0008
W	ROG_DIUF	0.05	0.06	0.07	0.06	0.0012	0.001	0.0005	0.0002	0.0007	0.0068	0.6	0.0027	0.88
W	ROG_HTS	0.16	0.18	0.19	0.18	0.04	0.04	0.01	0.0075	0.02	0.17	0.42	0.02	0.09
W	ROG_IDLE	0	0	0	0	0.03	0.02	0.01	2.96	0.02	0	0	0.64	0
W	ROG_RES	0.02	0.03	0.03	0.03	0.0003	0.0002	0.0001	0.0001	0.0002	0.0019	0.16	0.0006	0.2
W	ROG_RUN	0.02	0.04	0.04	0.07	0.18	0.17	0.18	0.62	0.29	1.35	2.38	0.51	0.17
W	ROG_RUN	0.065279	0.134711	0.149757	0.137058	0.386078	0.299404	0.093838	0.003712	0.214779	0.025859	0.33771	0.016849	0.01774
W	ROG_STR	0.27	0.31	0.4	0.55	0.38	0.31	0.45	0.6	1.09	2.13	2.52	0.29	0.65
W	SO2_IDLE	0	0	0	0	0.0001	0.0001	0.0001	0.01	0.0001	0	0	0.0053	0
W	SO2_RUN	0.0033	0.0041	0.0042	0.0057	0.0083	0.0072	0.01	0.01	0.01	0.02	0.0018	0.01	0.0076
W	SO2_STRE	0.0007	0.0009	0.001	0.0013	0.0005	0.0004	0.0002	0.0002	0.0006	0.0008	0.0007	0.0002	0.0005
W	TOG_DIUF	0.05	0.06	0.07	0.06	0.0012	0.001	0.0005	0.0002	0.0007	0.0068	0.6	0.0027	0.88
W	TOG_HTS	0.16	0.18	0.19	0.18	0.04	0.04	0.01	0.0075	0.02	0.17	0.42	0.02	0.09
W	TOG_IDLE	0	0	0	0	0.03	0.03	0.02	3.37	0.03	0	0	0.71	0
W	TOG_RES	0.02	0.03	0.03	0.03	0.0003	0.0002	0.0001	0.0001	0.0002	0.0019	0.16	0.0006	0.2
W	TOG_RUN	0.04	0.06	0.06	0.1	0.21	0.2	0.2	0.71	0.33	1.49	2.62	0.57	0.2
W	TOG_RUN	0.065279	0.134711	0.149757	0.137058	0.386078	0.299404	0.093838	0.003712	0.214779	0.025859	0.33771	0.016849	0.01774
W	TOG_STR	0.29	0.33	0.43	0.58	0.41	0.33	0.48	0.64	1.16	2.27	2.71	0.31	0.7

tblRoadDust

RoadPercentPave	RoadSiltLoading	MaterialSiltContent	MaterialMoistureContent	MobileAverageVehicleWeight	MeanVehicleSpeed
100	0.1	4.3	0.5	2.4	40

ROG_EF
0.0000214

tblAreaCoating

Area_EF_Residential_Interior	Area_Residential_Interior	Area_EF_Residential_Exterior	Area_Residential_Exterior
150	0	150	0

tblAreaCoating

Area_EF_Nonresidential_Interior	Area_Nonresidential_Interior	Area_EF_Nonresidential_Exterior	Area_Nonresidential_Exterior	ReapplicationRatePercent
150	9420720	150	3140240	10

NumberSnowDays	NumberSummerDays
0	180

EnergyUseLandUseSubType	T24E	NT24E	LightingElect	T24NG	NT24NG
General Light Industry	2.02	4.2	3.01	19.55	0.06

WaterLandUseSubType	WaterLandUseSizeMetric	IndoorWaterUseRate	OutdoorWaterUseRate	ElectricityIntensityFactorToSupply
General Light Industry	1000sqft	5809444.93	0	2117

ElectricityIntensityFactorToTreat	ElectricityIntensityFactorToDistribute	ElectricityIntensityFactorForWastewaterTreatment
111	1272	1911

SepticTankPercent	AerobicPercent	AnaerobicandFacultativeLagoonsPercent	AnaDigestCombDigestGasPercent
10	84.69	2.14	3.17

AnaDigestCogenCombDigestGasPercent
0

tblSolidWaste

SolidWasteLandUseSubType	SolidWasteLandUseSizeMetric	SolidWasteGenerationRate	LandfillNoGasCapture
General Light Industry	1000sqft	7787.8	6

LandfillCaptureGasFlare	LandfillCaptureGasEnergyRecovery
94	0

tblConstEquipMitigation

ConstMitigationEquipmentType	FuelType	Tier	NumberOfEquipmentMitigated	TotalNumberOfEquipmentMitigated	DPF
Air Compressors	Diesel	No Change	0		1
Cranes	Diesel	No Change	0		1
Excavators	Diesel	No Change	0		2
Forklifts	Diesel	No Change	0		3
Generator Sets	Diesel	No Change	0		1
Graders	Diesel	No Change	0		1
Pavers	Diesel	No Change	0		2
Paving Equipment	Diesel		0		2
Rollers	Diesel		0		2
Rubber Tired Dozers	Diesel		0		4
Scrapers	Diesel		0		2
Tractors/Loaders/Backhoes	Diesel		0		9
Welders	Diesel		0		1

OxidationCatalyst
0
0
0
0
0
0
0
0
0
0
0
0
0

tblConstDustMitigation

SoilStabilizerCheck	SoilStabilizerPM10PercentReduction	SoilStabilizerPM25PercentReduction	ReplaceGroundCoverCheck
0			0

ReplaceGroundCoverPM10PercentReduction	ReplaceGroundCoverPM25PercentReduction	WaterExposedAreaCheck
		1

WaterExposedAreaFrequency	WaterExposedAreaPM10PercentReduction	WaterExposedAreaPM25PercentReduction
2	55	55

tblConstDustMitigation

WaterUnpavedRoadMoistureContentCheck	WaterUnpavedRoadVehicleSpeedCheck	WaterUnpavedRoadMoistureContent
0	1	

tblConstDustMitigation

WaterUnpavedRoadVehicleSpeed	CleanPavedRoadCheck	CleanPavedRoadPercentReduction
15		0

tblCommuteMitigation

ImplementTripReductionProgramCheck	ImplementTripReductionProgramPercentEmployee	ImplementTripReductionProgramType
	0	

tblCommuteMitigation

TransitSubsidyCheck	TransitSubsidyPercentEmployee	TransitSubsidyDailySubsidyAmount	ImplementEmployeeParkingCashOutCheck
0			0

tblCommuteMitigation

ImplementEmployeeParkingCashOutPercentEmployee	WorkplaceParkingChargeCheck	WorkplaceParkingChargePercentEmployee
		0

WorkplaceParkingChargeCost	EncourageTelecommutingCheck	EncourageTelecommutingPercentEmployee9_80
		0

EncourageTelecommutingPercentEmployee4_40	EncourageTelecommutingPercentEmployee1_5days

MarketCommuteTripReductionOptionCheck	MarketCommuteTripReductionOptionPercentEmployee	EmployeeVanpoolCheck
0		0

tblCommuteMitigation

EmployeeVanpoolPercentEmployee	EmployeeVanpoolPercentModeShare	ProvideRideSharingProgramCheck
2		0

ProvideRideSharingProgramPercentEmployee	ImplementSchoolBusProgramCheck	ImplementSchoolBusProgramPercentFamilyUsing
		0

LandscapeLawnmowerCheck	LandscapeLawnmowerPercentElectric	LandscapeLeafblowerCheck	LandscapeLeafblowerPercentElectric
	0		0

LandscapeChainsawCheck	LandscapeChainsawPercentElectric	UseLowVOCPaintResidentialInteriorCheck
0		0

UseLowVOCPaintResidentialInteriorValue	UseLowVOCPaintResidentialExteriorCheck	UseLowVOCPaintResidentialExteriorValue
150	0	150

UseLowVOCPaintNonresidentialInteriorCheck	UseLowVOCPaintNonresidentialInteriorValue
0	150

UseLowVOCPaintNonresidentialExteriorCheck	UseLowVOCPaintNonresidentialExteriorValue	HearthOnlyNaturalGasHearthCheck
0	150	0

NoHearthCheck	UseLowVOCCleaningSuppliesCheck
0	0

tblApplianceMitigation

ApplianceType	ApplianceLandUseSubType	PercentImprovement
ClothWasher		30
DishWasher		15
Fan		50
Refrigerator		15

tblWaterMitigation

ApplyWaterConservationStrategyCheck	ApplyWaterConservationStrategyPercentReductionIndoor
	0

tblWaterMitigation

ApplyWaterConservationStrategyPercentReductionOutdoor	UseReclaimedWaterCheck	PercentOutdoorReclaimedWaterUse
		0

tblWaterMitigation

PercentIndoorReclaimedWaterUse	UseGreyWaterCheck	PercentOutdoorGreyWaterUse	PercentIndoorGreyWaterUse
	0		

InstallLowFlowBathroomFaucetCheck	PercentReductionInFlowBathroomFaucet	InstallLowFlowKitchenFaucetCheck
0	32	0

PercentReductionInFlowKitchenFaucet	InstallLowFlowToiletCheck	PercentReductionInFlowToilet	InstallLowFlowShowerCheck
18	0	20	0

PercentReductionInFlowShower	TurfReductionCheck	TurfReductionTurfArea	TurfReductionPercentReduction
20	0		

UseWaterEfficientIrrigationSystemCheck	UseWaterEfficientIrrigationSystemPercentReduction	WaterEfficientLandscapeCheck	MAWA
0	6.1	0	

ETWU

SubModuleID	PhaseName	Season	Remarks
1			
3			Changed assumed acres to 331 to match project description
4			Assumed 4 years for construction, starting in July 2013
5	Architectural Coating		
5	Building Construction		Updated load factors to latest OFFROAD
5	Grading		Updated load factors to latest OFFROAD
5	Paving		Updated load factors to latest OFFROAD
5	Site Preparation		Updated load factors to latest OFFROAD
9			Adjusted acres per Project Description
12			Bumped up trip length C-C and C-NW to match C-W, based on rural nature of the project. Also adjusted all trips to 100% primary.
13		A	Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4
13		S	Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4
13		W	Changed to Non-Pavley Non-LCFS factors from CalEEMod Appendix D Table 4.4
21			Adjusted water use factor for light industrial uses to 925 gallons/1000sf/yr per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)
22			Adjusted solid waste factor to 1.24 tons/1000sf/yr for light industrial uses per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)
25			

tblProjectCharacteristics

ProjectName	LocationScope	EMFAC_ID	WindSpeed	PrecipitationFrequency	ClimateZone	UrbanizationLevel	OperationalYear	UtilityCompany	CO2IntensityFactor	CH4IntensityFactor	N2OIntensityFactor	TotalPopulation	TotalLotAcreage	UsingHistoricalEnergyUseData
NorCal Logistics	C	SJ	2.7	51	2	Rural	2017	Pacific Gas & Electric Company	641.35	0.029	0.011	0	331	0

CALEEMOD INPUTS - NORCAL LOGISTICS

PollutantSelection	PollutantFullName	PollutantName
1	Reactive Organic Gases (ROG)	ROG
1	Nitrogen Oxides (NOx)	NOX
1	Carbon Monoxide (CO)	CO
1	Sulfur Dioxide (SO2)	SO2
1	Particulate Matter 10um (PM10)	PM10
1	Particulate Matter 2.5um (PM2.5)	PM2_5
1	Fugitive PM10um (PM10)	PM10_FUG
1	Fugitive PM2.5um (PM2.5)	PM25_FUG
1	Total Organic Gases (TOG)	TOG
1	Lead (Pb)	PB
1	Biogenic Carbon Dioxide (CO2)	CO2_BIO
1	Non-Biogenic Carbon Dioxide (CO2)	CO2_NBIO
1	Carbon Dioxide (CO2)	CO2
1	Methane (CH4)	CH4
1	Nitrous Oxide (N2O)	N2O
1	CO2 Equivalent GHGs (CO2e)	CO2E

tblLandUse

LandUseType	LandUseSubType	LandUseUnitAmount	LandUseSizeMetric	LotAcreage	LandUseSquareFeet	Population
Industrial	General Light Industry	6280.48	1000sqft	331	6280481	0

tblConstructionPhase

PhaseNumber	PhaseName	PhaseType	PhaseStartDate	PhaseEndDate	NumDaysWeek	NumDays	PhaseDescription
1	Site Preparation	Site Preparation	2013/07/01	2014/01/03	5	135	
2	Grading	Grading	2014/01/04	2015/01/02	5	260	
3	Building Construction	Building Construction	2015/01/03	2017/06/30	5	650	
4	Paving	Paving	2015/01/05	2015/04/30	5	84	
5	Architectural Coating	Architectural Coating	2015/05/01	2017/06/30	5	566	

tblOffRoadEquipment

PhaseName	OffRoadEquipmentType	OffRoadEquipmentUnitAmount	UsageHours	HorsePower	LoadFactor
Site Preparation	Rubber Tired Dozers	3	8	358	0.4
Site Preparation	Tractors/Loaders/Backhoes	4	8	75	0.37
Grading	Excavators	2	8	157	0.38
Grading	Graders	1	8	162	0.41
Grading	Rubber Tired Dozers	1	8	358	0.4
Grading	Scrapers	2	8	356	0.48
Grading	Tractors/Loaders/Backhoes	2	8	75	0.37
Building Construction	Cranes	1	7	208	0.29
Building Construction	Forklifts	3	8	149	0.2
Building Construction	Generator Sets	1	8	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7	75	0.37
Building Construction	Welders	1	8	46	0.6
Paving	Pavers	2	8	89	0.42
Paving	Paving Equipment	2	8	82	0.36
Paving	Rollers	2	8	84	0.38
Architectural Coating	Air Compressors	1	6	78	0.48

tblTripsAndVMT

PhaseName	WorkerTripNumber	VendorTripNumber	HaulingTripNumber	WorkerTripLength	VendorTripLength
Site Preparation	18	0	0	16.8	6.6
Grading	20	0	0	16.8	6.6
Building Construction	2638	1029	0	16.8	6.6
Paving	15	0	0	16.8	6.6
Architectural Coating	528	0	0	16.8	6.6

HaulingTripLength	WorkerVehicleClass	VendorVehicleClass	HaulingVehicleClass
20	LD_Mix	HDT_Mix	HHDT
20	LD_Mix	HDT_Mix	HHDT
20	LD_Mix	HDT_Mix	HHDT
20	LD_Mix	HDT_Mix	HHDT
20	LD_Mix	HDT_Mix	HHDT

tblOnRoadDust

PhaseName	WorkerPercentPave	VendorPercentPave	HaulingPercentPave	RoadSiltLoading	MaterialSiltContent
Site Preparation	100	100	100	0.1	8.5
Grading	100	100	100	0.1	8.5
Building Construction	100	100	100	0.1	8.5
Paving	100	100	100	0.1	8.5
Architectural Coating	100	100	100	0.1	8.5

MaterialMoistureContent	AverageVehicleWeight	MeanVehicleSpeed
0.5	2.4	40
0.5	2.4	40
0.5	2.4	40
0.5	2.4	40
0.5	2.4	40

PhaseName	MaterialImported	MaterialExported	GradingSizeMetric	ImportExportPhased	MeanVehicleSpeed	AcresOfGrading
Site Preparation	0	0		0	7.1	331
Grading	0	0		0	7.1	331

MaterialMoistureContentBulldozing	MaterialMoistureContentTruckLoading	MaterialSiltContent
7.9	12	6.9
7.9	12	6.9

tblArchitecturalCoating

PhaseName	ArchitecturalCoatingStartDate	ArchitecturalCoatingEndDate	EF_Residential_Interior	ConstArea_Residential_Interior
Architectural Coating	2011/01/01	3000/12/31	150	0

tblArchitecturalCoating

EF_Residential_Exterior	ConstArea_Residential_Exterior	EF_Nonresidential_Interior	ConstArea_Nonresidential_Interior
150	0	150	9420722

EF_Nonresidential_Exterior	ConstArea_Nonresidential_Exterior
150	3140241

VehicleTripsLandUseSubType	VehicleTripsLandUseSizeMetric	WD_TR	ST_TR	SU_TR	HW_TL	HS_TL	HO_TL	CC_TL	CW_TL
General Light Industry	1000sqft	3.42	0	0	0	0	0	14.7	14.7

CNW_TL	PR_TP	DV_TP	PB_TP	HW_TTP	HS_TTP	HO_TTP	CC_TTP	CW_TTP	CNW_TTP
14.7	100	0	0	0	0	0	28	59	13

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY
A	FleetMix	0.452182	0.114694	0.199947	0.106331	0.021766	0.006566	0.016992	0.065316	0.000653	0.002013	0.00922
A	CH4_IDLEX	0	0	0	0	0.0014	0.0012	0.0009	0.12	0.0012	0	0
A	CH4_RUNEX	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.03	0.03	0.07	0.19
A	CH4_STREX	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.03	0.05	0.11	0.14
A	CO_IDLEX	0	0	0	0	0.2	0.17	0.13	13.23	0.18	0	0
A	CO_RUNEX	1.27	1.78	2.1	2.6	1.93	1.48	2.25	2.96	4.73	11.6	20.53
A	CO_STREX	3.2	4.03	4.92	5.86	4.34	3.4	5.4	9.56	16.65	29.5	10.85
A	CO2_IDLEX	0	0	0	0	7.771	8.3315	12.141	1756.7495	10.4975	0	0
A	CO2_RUNEX	281.732	357.3615	382.2515	528.2665	819.85	715.369	1304.445	1724.972	1154.687	2126.214	140.98
A	CO2_STREX	58.7195	72.0575	78.1185	107.5305	36.5465	29.1555	11.7515	5.6905	21.983	26.1535	41.971
A	NOX_IDLEX	0	0	0	0	0.02	0.05	0.18	33.11	0.1	0	0
A	NOX_RUNEX	0.1	0.17	0.23	0.3	0.97	1.76	3.57	7.36	2.92	16.89	1.13
A	NOX_STREX	0.19	0.22	0.41	0.5	1.39	1.09	0.48	0.93	2.06	3.29	0.31
A	PM10_IDLEX	0	0	0	0	0.0002	0.0007	0.0023	0.27	0.0013	0	0
A	PM10_PMBW	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004
A	PM10_RUNEX	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01
A	PM10_STREX	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01
A	PM25_IDLEX	0	0	0	0	0.0002	0.0007	0.0023	0.27	0.0013	0	0
A	PM25_PMBW	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063
A	PM25_PMTW	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004
A	PM25_RUNEX	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01
A	PM25_STREX	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01
A	ROG_DIURN	0.08	0.1	0.11	0.1	0.0018	0.0015	0.0007	0.0003	0.0012	0.0092	0.96
A	ROG_HTSK	0.14	0.16	0.18	0.17	0.03	0.03	0.01	0.0064	0.02	0.14	0.35
A	ROG_IDLEX	0	0	0	0	0.03	0.02	0.01	2.76	0.02	0	0
A	ROG_RESTL	0.05	0.06	0.06	0.06	0.0004	0.0004	0.0002	0.0001	0.0004	0.0033	0.41
A	ROG_RUNEX	0.02	0.04	0.04	0.07	0.19	0.17	0.18	0.62	0.29	1.36	2.31
A	ROG_RUNLS	0.056568	0.111083	0.12339	0.113523	0.347773	0.269042	0.088152	0.003514	0.199759	0.021019	0.273961
A	ROG_STREX	0.24	0.27	0.36	0.48	0.34	0.27	0.39	0.52	0.96	1.95	2.26
A	SO2_IDLEX	0	0	0	0	0.0001	0.0001	0.0001	0.01	0.0001	0	0
A	SO2_RUNEX	0.0035	0.0043	0.0044	0.006	0.0083	0.0072	0.01	0.01	0.01	0.02	0.0018
A	SO2_STREX	0.0007	0.0009	0.0009	0.0013	0.0004	0.0004	0.0002	0.0002	0.0005	0.0008	0.0007
A	TOG_DIURN	0.08	0.1	0.11	0.1	0.0018	0.0015	0.0007	0.0003	0.0012	0.0092	0.96
A	TOG_HTSK	0.14	0.16	0.18	0.17	0.03	0.03	0.01	0.0064	0.02	0.14	0.35
A	TOG_IDLEX	0	0	0	0	0.03	0.03	0.02	3.14	0.03	0	0

A	TOG_RESTL	0.05	0.06	0.06	0.06	0.0004	0.0004	0.0002	0.0001	0.0004	0.0033	0.41
A	TOG_RUNEX	0.04	0.06	0.07	0.1	0.21	0.2	0.21	0.71	0.34	1.5	2.55
A	TOG_RUNLS	0.056568	0.111083	0.12339	0.113523	0.347773	0.269042	0.088152	0.003514	0.199759	0.021019	0.273961
A	TOG_STREX	0.25	0.29	0.38	0.52	0.36	0.29	0.42	0.56	1.03	2.09	2.43
S	FleetMix	0.452182	0.114694	0.199947	0.106331	0.021766	0.006566	0.016992	0.065316	0.000653	0.002013	0.00922
S	CH4_IDLEX	0	0	0	0	0.0014	0.0012	0.0009	0.11	0.0012	0	0
S	CH4_RUNEX	0.01	0.01	0.02	0.03	0.02	0.01	0.01	0.03	0.03	0.07	0.19
S	CH4_STREX	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.04	0.09	0.11
S	CO_IDLEX	0	0	0	0	0.2	0.17	0.13	9.12	0.18	0	0
S	CO_RUNEX	1.5	2.07	2.46	3.01	1.98	1.5	2.26	2.97	4.85	11.7	19.97
S	CO_STREX	2.22	2.81	3.42	4.1	2.88	2.3	3.89	6.71	11.65	22.74	8.86
S	CO2_IDLEX	0	0	0	0	7.771	8.3315	12.141	1878.264	10.4975	0	0
S	CO2_RUNEX	310.0705	391.0485	419.2635	579.3765	819.85	715.369	1304.445	1724.972	1154.687	2126.214	140.98
S	CO2_STREX	58.7195	72.0575	78.1185	107.5305	36.5465	29.1555	11.7515	5.6905	21.983	26.1535	41.971
S	NOX_IDLEX	0	0	0	0	0.02	0.05	0.18	34.53	0.1	0	0
S	NOX_RUNEX	0.1	0.17	0.23	0.3	0.96	1.76	3.58	7.39	2.88	16.89	1.06
S	NOX_STREX	0.17	0.2	0.37	0.45	1.31	1.03	0.45	0.87	1.93	3.06	0.28
S	PM10_IDLEX	0	0	0	0	0.0002	0.0007	0.0023	0.22	0.0013	0	0
S	PM10_PMBW	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063
S	PM10_PMTW	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004
S	PM10_RUNEX	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01
S	PM10_STREX	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01
S	PM25_IDLEX	0	0	0	0	0.0002	0.0007	0.0023	0.22	0.0013	0	0
S	PM25_PMBW	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063
S	PM25_PMTW	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004
S	PM25_RUNEX	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01
S	PM25_STREX	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01
S	ROG_DIURN	0.2	0.23	0.26	0.24	0.0043	0.0035	0.0018	0.0007	0.0028	0.02	2.45
S	ROG_HTSK	0.17	0.2	0.21	0.2	0.04	0.04	0.01	0.0072	0.02	0.17	0.54
S	ROG_IDLEX	0	0	0	0	0.03	0.02	0.01	2.56	0.02	0	0
S	ROG_RESTL	0.12	0.14	0.16	0.15	0.001	0.0008	0.0005	0.0002	0.0008	0.0076	1.27
S	ROG_RUNEX	0.03	0.04	0.05	0.08	0.19	0.18	0.18	0.62	0.3	1.38	2.23
S	ROG_RUNLS	0.054491	0.10556	0.117075	0.107846	0.340277	0.262833	0.088408	0.003591	0.198282	0.019741	0.2575
S	ROG_STREX	0.18	0.21	0.27	0.37	0.26	0.22	0.3	0.41	0.78	1.66	1.83
S	SO2_IDLEX	0	0	0	0	0.0001	0.0001	0.0001	0.01	0.0001	0	0
S	SO2_RUNEX	0.0038	0.0047	0.0048	0.0066	0.0083	0.0072	0.01	0.01	0.01	0.02	0.0018
S	SO2_STREX	0.0007	0.0009	0.0009	0.0013	0.0004	0.0003	0.0002	0.0002	0.0004	0.0007	0.0006

S	TOG_DIURN	0.2	0.23	0.26	0.24	0.0043	0.0035	0.0018	0.0007	0.0028	0.02	2.45
S	TOG_HTSK	0.17	0.2	0.21	0.2	0.04	0.04	0.01	0.0072	0.02	0.17	0.54
S	TOG_IDLEX	0	0	0	0	0.03	0.03	0.02	2.92	0.03	0	0
S	TOG_RESTL	0.12	0.14	0.16	0.15	0.001	0.0008	0.0005	0.0002	0.0008	0.0076	1.27
S	TOG_RUNEX	0.04	0.06	0.07	0.11	0.22	0.2	0.21	0.71	0.34	1.52	2.46
S	TOG_RUNLS	0.054491	0.10556	0.117075	0.107846	0.340277	0.262833	0.088408	0.003591	0.198282	0.019741	0.2575
S	TOG_STREX	0.19	0.22	0.29	0.4	0.28	0.23	0.32	0.44	0.83	1.77	1.96
W	FleetMix	0.452182	0.114694	0.199947	0.106331	0.021766	0.006566	0.016992	0.065316	0.000653	0.002013	0.00922
W	CH4_IDLEX	0	0	0	0	0.0014	0.0012	0.0009	0.13	0.0012	0	0
W	CH4_RUNEX	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.03	0.03	0.06	0.2
W	CH4_STREX	0.01	0.01	0.02	0.03	0.02	0.01	0.02	0.03	0.06	0.12	0.15
W	CO_IDLEX	0	0	0	0	0.2	0.17	0.13	17.34	0.18	0	0
W	CO_RUNEX	1.19	1.7	1.98	2.48	1.91	1.46	2.25	2.95	4.66	11.65	21.48
W	CO_STREX	3.78	4.75	5.8	6.9	5.21	4.07	6.34	11.32	19.77	33.29	12.04
W	CO2_IDLEX	0	0	0	0	7.771	8.3315	12.141	1635.2255	10.4975	0	0
W	CO2_RUNEX	269.268	342.5985	366.0445	505.894	819.85	715.369	1304.445	1724.972	1154.687	2126.214	140.98
W	CO2_STREX	58.7195	72.0575	78.1185	107.5305	36.5465	29.1555	11.7515	5.6905	21.983	26.1535	41.971
W	NOX_IDLEX	0	0	0	0	0.02	0.05	0.18	31.7	0.1	0	0
W	NOX_RUNEX	0.11	0.19	0.25	0.33	1.01	1.82	3.7	7.6	3.08	17.48	1.22
W	NOX_STREX	0.21	0.24	0.44	0.53	1.45	1.14	0.5	0.97	2.15	3.43	0.32
W	PM10_IDLEX	0	0	0	0	0.0002	0.0007	0.0023	0.32	0.0013	0	0
W	PM10_PMBW	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063
W	PM10_PMTW	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004
W	PM10_RUNEX	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01
W	PM10_STREX	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01
W	PM25_IDLEX	0	0	0	0	0.0002	0.0007	0.0023	0.32	0.0013	0	0
W	PM25_PMBW	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.0063
W	PM25_PMTW	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.03	0.01	0.0087	0.004
W	PM25_RUNEX	0.01	0.01	0.02	0.02	0.02	0.03	0.16	0.29	0.1	0.28	0.01
W	PM25_STREX	0.0072	0.0077	0.01	0.01	0.0019	0.0015	0.001	0.0007	0.0027	0.0023	0.01
W	ROG_DIURN	0.05	0.06	0.07	0.06	0.0012	0.001	0.0005	0.0002	0.0007	0.0068	0.6
W	ROG_HTSK	0.16	0.18	0.19	0.18	0.04	0.04	0.01	0.0075	0.02	0.17	0.42
W	ROG_IDLEX	0	0	0	0	0.03	0.02	0.01	2.96	0.02	0	0
W	ROG_RESTL	0.02	0.03	0.03	0.03	0.0003	0.0002	0.0001	0.0001	0.0002	0.0019	0.16
W	ROG_RUNEX	0.02	0.04	0.04	0.07	0.18	0.17	0.18	0.62	0.29	1.35	2.38
W	ROG_RUNLS	0.065279	0.134711	0.149757	0.137058	0.386078	0.299404	0.093838	0.003712	0.214779	0.025859	0.33771
W	ROG_STREX	0.27	0.31	0.4	0.55	0.38	0.31	0.45	0.6	1.09	2.13	2.52

W	SO2_IDLEX	0	0	0	0	0.0001	0.0001	0.0001	0.01	0.0001	0	0
W	SO2_RUNEX	0.0033	0.0041	0.0042	0.0057	0.0083	0.0072	0.01	0.01	0.01	0.02	0.0018
W	SO2_STREX	0.0007	0.0009	0.001	0.0013	0.0005	0.0004	0.0002	0.0002	0.0006	0.0008	0.0007
W	TOG_DIURN	0.05	0.06	0.07	0.06	0.0012	0.001	0.0005	0.0002	0.0007	0.0068	0.6
W	TOG_HTSK	0.16	0.18	0.19	0.18	0.04	0.04	0.01	0.0075	0.02	0.17	0.42
W	TOG_IDLEX	0	0	0	0	0.03	0.03	0.02	3.37	0.03	0	0
W	TOG_RESTL	0.02	0.03	0.03	0.03	0.0003	0.0002	0.0001	0.0001	0.0002	0.0019	0.16
W	TOG_RUNEX	0.04	0.06	0.06	0.1	0.21	0.2	0.2	0.71	0.33	1.49	2.62
W	TOG_RUNLS	0.065279	0.134711	0.149757	0.137058	0.386078	0.299404	0.093838	0.003712	0.214779	0.025859	0.33771
W	TOG_STREX	0.29	0.33	0.43	0.58	0.41	0.33	0.48	0.64	1.16	2.27	2.71

SBUS	MH
0.001241	0.003079
0.02	0
0.02	0.02
0.01	0.03
4.77	0
5.06	4.35
3.73	10.42
523.3455	0
1364.333	741.9975
11.153	31.1695
9.05	0
9.35	1.43
0.23	0.96
0.11	0
0.01	0.01
0.01	0.01
0.45	0.01
0.0007	0.0008
0.11	0
0.01	0.01
0.01	0.01
0.45	0.01
0.0007	0.0008
0.0041	1.33
0.01	0.07
0.64	0
0.0011	0.33
0.51	0.17
0.013969	0.016587
0.26	0.57
0.0053	0
0.01	0.0076
0.0002	0.0005
0.0041	1.33
0.01	0.07
0.71	0

0.0011	0.33
0.58	0.21
0.013969	0.016587
0.28	0.61
0.001241	0.003079
0.02	0
0.02	0.03
0.01	0.02
4.77	0
5.1	4.5
2.88	6.93
523.3455	0
1364.333	741.9975
11.153	31.1695
9.05	0
9.39	1.4
0.21	0.9
0.11	0
0.01	0.01
0.01	0.01
0.45	0.01
0.0007	0.0008
0.11	0
0.01	0.01
0.01	0.01
0.45	0.01
0.0007	0.0008
0.0097	3.1
0.02	0.08
0.64	0
0.0023	0.7
0.52	0.18
0.012615	0.016264
0.22	0.43
0.0053	0
0.01	0.0076
0.0002	0.0004

0.0097	3.1
0.02	0.08
0.71	0
0.0023	0.7
0.58	0.21
0.012615	0.016264
0.24	0.46
0.001241	0.003079
0.02	0
0.02	0.02
0.01	0.03
4.77	0
5.04	4.29
4.34	12.54
523.3455	0
1364.333	741.9975
11.153	31.1695
9.05	0
9.63	1.52
0.25	1
0.11	0
0.01	0.01
0.01	0.01
0.45	0.01
0.0007	0.0008
0.11	0
0.01	0.01
0.01	0.01
0.45	0.01
0.0007	0.0008
0.0027	0.88
0.02	0.09
0.64	0
0.0006	0.2
0.51	0.17
0.016849	0.01774
0.29	0.65

0.0053	0
0.01	0.0076
0.0002	0.0005
0.0027	0.88
0.02	0.09
0.71	0
0.0006	0.2
0.57	0.2
0.016849	0.01774
0.31	0.7

tblRoadDust

RoadPercentPave	RoadSiltLoading	MaterialSiltContent	MaterialMoistureContent	MobileAverageVehicleWeight	MeanVehicleSpeed
100	0.1	4.3	0.5	2.4	40

ROG_EF
0.0000214

tblAreaCoating

Area_EF_Residential_Interior	Area_Residential_Interior	Area_EF_Residential_Exterior	Area_Residential_Exterior
150	0	150	0

Area_EF_Nonresidential_Interior	Area_Nonresidential_Interior	Area_EF_Nonresidential_Exterior	Area_Nonresidential_Exterior
150	9420720	150	3140240

ReapplicationRatePercent
10

NumberSnowDays	NumberSummerDays
0	180

EnergyUseLandUseSubType	T24E	NT24E	LightingElect	T24NG	NT24NG
General Light Industry	2.02	4.2	3.01	19.55	0.06

WaterLandUseSubType	WaterLandUseSizeMetric	IndoorWaterUseRate	OutdoorWaterUseRate	ElectricityIntensityFactorToSupply
General Light Industry	1000sqft	5809444.93	0	2117

ElectricityIntensityFactorToTreat	ElectricityIntensityFactorToDistribute	ElectricityIntensityFactorForWastewaterTreatment
111	1272	1911

SepticTankPercent	AerobicPercent	AnaerobicandFacultativeLagoonsPercent	AnaDigestCombDigestGasPercent
10	84.69	2.14	3.17

AnaDigestCogenCombDigestGasPercent
0

tblSolidWaste

SolidWasteLandUseSubType	SolidWasteLandUseSizeMetric	SolidWasteGenerationRate	LandfillNoGasCapture
General Light Industry	1000sqft	7787.8	6

LandfillCaptureGasFlare	LandfillCaptureGasEnergyRecovery
94	0

tblConstEquipMitigation

ConstMitigationEquipmentType	FuelType	Tier	NumberOfEquipmentMitigated	TotalNumberOfEquipmentMitigated	DPF	OxidationCatalyst
Air Compressors	Diesel	No Change	0	1		0
Cranes	Diesel	No Change	0	1		0
Excavators	Diesel	No Change	0	2		0
Forklifts	Diesel	No Change	0	3		0
Generator Sets	Diesel	No Change	0	1		0
Graders	Diesel	No Change	0	1		0
Pavers	Diesel	No Change	0	2		0
Paving Equipment	Diesel		0	2		0
Rollers	Diesel		0	2		0
Rubber Tired Dozers	Diesel		0	4		0
Scrapers	Diesel		0	2		0
Tractors/Loaders/Backhoes	Diesel		0	9		0
Welders	Diesel		0	1		0

tblConstDustMitigation

SoilStabilizerCheck	SoilStabilizerPM10PercentReduction	SoilStabilizerPM25PercentReduction	ReplaceGroundCoverCheck
0			0

ReplaceGroundCoverPM10PercentReduction	ReplaceGroundCoverPM25PercentReduction	WaterExposedAreaCheck
		1

WaterExposedAreaFrequency	WaterExposedAreaPM10PercentReduction	WaterExposedAreaPM25PercentReduction
2	55	55

tblConstDustMitigation

WaterUnpavedRoadMoistureContentCheck	WaterUnpavedRoadVehicleSpeedCheck	WaterUnpavedRoadMoistureContent
0	1	

tblConstDustMitigation

WaterUnpavedRoadVehicleSpeed	CleanPavedRoadCheck	CleanPavedRoadPercentReduction
15		0

tblCommuteMitigation

ImplementTripReductionProgramCheck	ImplementTripReductionProgramPercentEmployee	ImplementTripReductionProgramType
	0	

tblCommuteMitigation

TransitSubsidyCheck	TransitSubsidyPercentEmployee	TransitSubsidyDailySubsidyAmount	ImplementEmployeeParkingCashOutCheck
0			0

tblCommuteMitigation

ImplementEmployeeParkingCashOutPercentEmployee	WorkplaceParkingChargeCheck	WorkplaceParkingChargePercentEmployee
		0

WorkplaceParkingChargeCost	EncourageTelecommutingCheck	EncourageTelecommutingPercentEmployee9_80
		0

EncourageTelecommutingPercentEmployee4_40	EncourageTelecommutingPercentEmployee1_5days

MarketCommuteTripReductionOptionCheck	MarketCommuteTripReductionOptionPercentEmployee	EmployeeVanpoolCheck
0		0

tblCommuteMitigation

EmployeeVanpoolPercentEmployee	EmployeeVanpoolPercentModeShare	ProvideRideSharingProgramCheck
2		0

ProvideRideSharingProgramPercentEmployee	ImplementSchoolBusProgramCheck	ImplementSchoolBusProgramPercentFamilyUsing
		0

LandscapeLawnmowerCheck	LandscapeLawnmowerPercentElectric	LandscapeLeafblowerCheck	LandscapeLeafblowerPercentElectric
0	0	0	0

LandscapeChainsawCheck	LandscapeChainsawPercentElectric	UseLowVOCPaintResidentialInteriorCheck
0	0	0

UseLowVOCPaintResidentialInteriorValue	UseLowVOCPaintResidentialExteriorCheck	UseLowVOCPaintResidentialExteriorValue
150	0	150

UseLowVOCPaintNonresidentialInteriorCheck	UseLowVOCPaintNonresidentialInteriorValue
1	150

UseLowVOCPaintNonresidentialExteriorCheck	UseLowVOCPaintNonresidentialExteriorValue	HearthOnlyNaturalGasHearthCheck
1	150	0

NoHearthCheck	UseLowVOCCleaningSuppliesCheck
1	0

tblEnergyMitigation

ExceedTitle24Check	ExceedTitle24CheckPercentImprovement	InstallHighEfficiencyLightingCheck
1	15	1

tblEnergyMitigation

InstallHighEfficiencyLightingPercentEnergyReduction	OnSiteRenewableEnergyCheck	KwhGeneratedCheck	KwhGenerated
25	0	0	

PercentOfElectricityUseGeneratedCheck	PercentOfElectricityUseGenerated
	0

tblApplianceMitigation

ApplianceType	ApplianceLandUseSubType	PercentImprovement
ClothWasher		30
DishWasher		15
Fan		50
Refrigerator		15

tblWaterMitigation

ApplyWaterConservationStrategyCheck	ApplyWaterConservationStrategyPercentReductionIndoor
0	0

tblWaterMitigation

ApplyWaterConservationStrategyPercentReductionOutdoor	UseReclaimedWaterCheck	PercentOutdoorReclaimedWaterUse
0	0	0

tblWaterMitigation

PercentIndoorReclaimedWaterUse	UseGreyWaterCheck	PercentOutdoorGreyWaterUse	PercentIndoorGreyWaterUse
0	0	0	0

InstallLowFlowBathroomFaucetCheck	PercentReductionInFlowBathroomFaucet	InstallLowFlowKitchenFaucetCheck
1	32	1

PercentReductionInFlowKitchenFaucet	InstallLowFlowToiletCheck	PercentReductionInFlowToilet	InstallLowFlowShowerCheck
18	1	20	1

PercentReductionInFlowShower	TurfReductionCheck	TurfReductionTurfArea	TurfReductionPercentReduction
20	0	0	0

tblWaterMitigation

UseWaterEfficientIrrigationSystemCheck	UseWaterEfficientIrrigationSystemPercentReduction	WaterEfficientLandscapeCheck	MAWA
1	6.1	0	0

ETWU
0

InstituteRecyclingAndCompostingServicesCheck	InstituteRecyclingAndCompostingServicesWastePercentReduction
1	20

SubModuleID	PhaseName	Season	Remarks
1			
3			Changed assumed acres to 331 to match project description
4			Assumed 4 years for construction, starting in July 2013
5	Architectural Coating		
5	Building Construction		Updated load factors to latest OFFROAD
5	Grading		Updated load factors to latest OFFROAD
5	Paving		Updated load factors to latest OFFROAD
5	Site Preparation		Updated load factors to latest OFFROAD
9			Adjusted acres per Project Description
12			Bumped up trip length C-C and C-NW to match C-W, based on rural nature of the project. Also adjusted all trips to 100% primary.
21			Adjusted water use factor for light industrial uses to 925 gallons/1000sf/yr per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)
22			Adjusted solid waste factor to 1.24 tons/1000sf/yr for light industrial uses per SCAQMD recommendation (personal comm. with Michael Krause on 1/9/2013)
25			
29			
30			
32			
33			

tblProjectCharacteristics

ProjectName	LocationScope	EMFAC_ID	WindSpeed	PrecipitationFrequency	ClimateZone	UrbanizationLevel	OperationalYear
NorCal Logistics	C	SJ	2.7	51	2	Rural	2017

UtilityCompany	CO2IntensityFactor	CH4IntensityFactor	N2OIntensityFactor	TotalPopulation	TotalLotAcreage
Pacific Gas & Electric Company	641.35	0.029	0.011	0	331

UsingHistoricalEnergyUseData	0

Appendix D
Water Supply Assessment

ESA

MEMORANDUM

DATE: February 23, 2009

TO: Michael Niblock, Director
Community Development Department

FROM: Mark J. Madison, Director
Municipal Utilities Department

SUBJECT: **WATER SUPPLY ASSESSMENT FOR THE OPUS LOGISTICS CENTER PROJECT**

Attached are four (4) copies of the Water Supply Assessment (WSA) for the Gateway Master Development Plan.

Please refer any questions to Bob Granberg at extension 8779.

MARK J. MADISON
DIRECTOR OF MUNICIPAL UTILITIES

MJM:RLG:pd

Attachments

Water Supply Assessment
For The
Opus Logistics Center Project

City of Stockton Municipal Utilities Department

Mark Madison, Director

February 23, 2009

Reviewed and Edited by:
Robert Granberg, Deputy Director

Developed By:
Jonathan D. Goetz, MWH Americas, Inc

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LIST OF ACRONYMS

AF – Acre-feet

AF/ac/year – Acre-feet per acre per year

Cal-Water – California Water Service Company

CACWD – Calaveras County Water District

CEQA – California Environmental Quality Act

COS – City of Stockton

COSMUD – City of Stockton Municipal Utilities Department

COSMA – City of Stockton Metropolitan Area

CVP – Central Valley Project

DFG – California Department of Fish and Game

DHS – California Department of Health Services

DWR – California State Department of Water Resources

DWSP – Delta Water Supply Project

ESA – Endangered Species Act

GP Update – General Plan Update

GIS – Geographic Information System

IGSM – Integrated Groundwater Surface Water Model

M&I – Municipal and Industrial Uses

mgd – million gallons per day

msl – mean sea level

NEPA – National Environmental Policy Act

OID – Oakdale Irrigation District

Reclamation – United States Bureau of Reclamation

SEWD – Stockton East Water District

SOI – General Plan Sphere of Influence

SSJID – South San Joaquin Irrigation District

SWP – State Water Project

SWRCB – State Water Resources Control Board

TAF – Thousands of Acre-feet

USBR – United States Bureau of Reclamation

UWMP – Urban Water Management Plan

WID – Woodbridge Irrigation District

WSE – Water Supply Evaluation

WSA – Water Supply Assessment (as defined by SB610)

WTP – Water Treatment Plant

WATER SUPPLY ASSESSMENT

FOR THE

OPUS LOGISTICS CENTER PROJECT

E1.0 EXECUTIVE SUMMARY

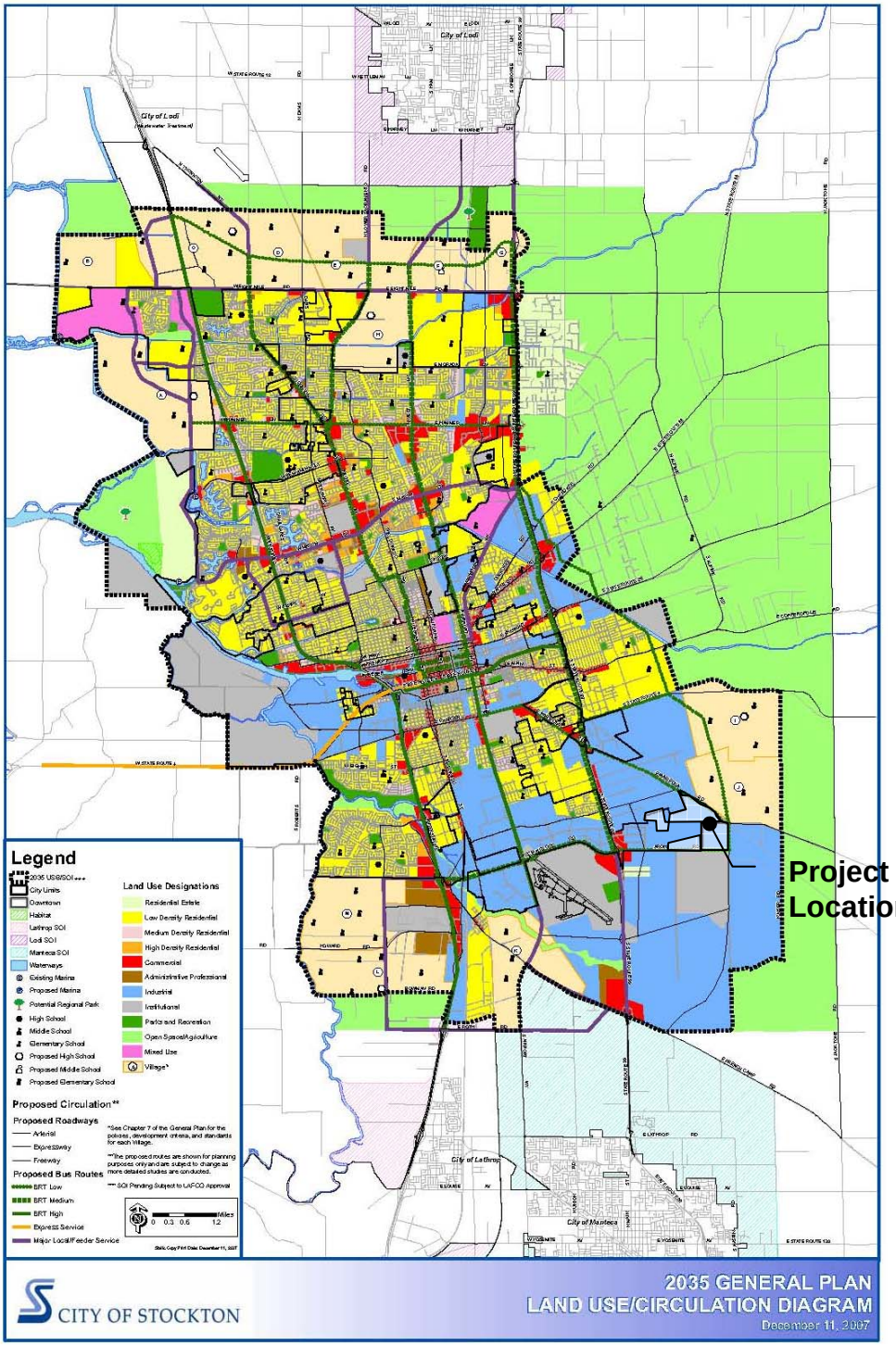
The Opus Logistics Center Project (Project) is a 710 acre development located in San Joaquin County near the intersection of Arch Road and Newcastle Road (see **Figure E-1** for approximate location). The Project, as proposed, consists of two phases with one not dependent on the other for development. The Phase 1 portion consists of 562 acres with Industrial Limited zoning that lie entirely within the City of Stockton city limits with public water service provided by the City of Stockton Municipal Utilities Department (COSMUD). Phase 2 is an additional 148 acres (total of 710 acres) that lie within the current Stockton General Plan 2035 Urban Services Boundary and Sphere of Influence, and is contiguous to the current City of Stockton city limit boundary. The project proponent proposes to have the Phase 2 project site annexed into the City of Stockton with an Industrial Limited zoning. Upon annexation to the City of Stockton, the retail water service provider will be the COSMUD. The Industrial Limited (IL) zoning is characterized as being suitable for light indoor manufacturing that may generate nuisance impacts not acceptable in typical commercial zoning districts. Both Phases of the Project are considered as a single project for purposes of a Water Supply Assessment.

Under Senate Bill 610 (codified as California Water Code, §10910-10915), each public water system responsible for serving proposed projects meeting specified criteria (e.g., residential projects of more than 500 residential dwelling units or industrial park projects occupying more than 40 acres) must prepare a "Water Supply Assessment (WSA)" evaluating whether the water system's "total projected water supplies . . . will meet the projected water demand associated with the proposed project," together with existing and other foreseeable planned future uses over a twenty-year horizon. If, as a result of its assessment, the public water system concludes that its water supplies are not sufficient, the assessment must detail its plans in acquiring the necessary water supplies.

As one of three retail water providers serving potable water supplies to the City of Stockton Metropolitan Area (COSMA[1]), the City of Stockton Municipal Utilities Department (COSMUD) is responsible for preparing the water supply assessment for the Project. In so doing, COSMUD has relied on and incorporates by reference its prior analysis conducted in the City of Stockton Urban Water Management Plan (Kennedy/Jenks Consultants, Dec. 6, 2005) (UWMP), the Delta Water Supply Project

[1] The use of the term COSMA implies the City of Stockton's three water retailers (COSMUD, California Water Service Company (Cal-Water), and San Joaquin County) and their respective service areas. The term COSMA is used only for convenience when grouping the water retailers and should not be construed as defining a legal entity.

Figure E-1. 2035 General Plan Project Location Map



Feasibility Report (ESA Consulting, MWH Americas, Inc., April 22, 2003) (DWSP Feasibility Report), and DWSP Environmental Impact Report (ESA Consulting, MWH Americas, Inc., November 2005). It is recognized and noted that each of these documents are based on build-out of the 1990 General Plan's Urban Policy Area and build-out of the 1990 General Plan Urban Services Boundary.

This WSA supplements the information provided in the UWMP, and DWSP Reports. In some cases the information contained in the WSA has been updated from information provided in the aforementioned reports as a result of the City of Stockton's adoption of the 2035 General Plan Update in December 2007. (**GP Policy PFS-2.9**)

E1.1 2035 General Plan

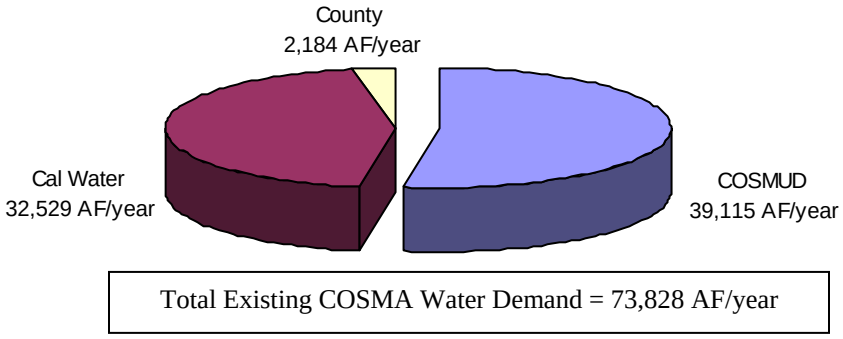
With the adoption of the 2035 City of Stockton General Plan, the COSMA water retailers are now being asked to assist the City of Stockton in the application of General Plan policies as they relate to water supplies and water supply infrastructure. The *Water Supply Evaluation for the General Plan Update Preferred Alternative* (MWH Americas, Inc., Amended May 12, 2006) (WSE), is included by reference in this WSA to supplement the UWMP and DWSP Feasibility Report and to reconcile their applicability to the 2035 General Plan.

Many of the 2035 General Plan (**GP Goal PF-2**, see **Exhibit "A"**) policies are consistent with the WSE findings and, as a result, serve to safeguard the region's water supplies and *"to ensure the adequate, reliable, and safe provision of water to all existing and future City of Stockton development, even through drought periods."*(Goals and Policies Report 2035 General Plan, City of Stockton, December 2007). Many of these policies also serve to strengthen the requirements of a Water Supply Assessment completed under SB 610. For this reason, General Plan policies **PFS-2.1** through **PFS-2.13** are also included by reference in the Executive Summary of the WSA (e.g. **GP Policy PFS-2.13**) to identify the additional level of compliance under the 2035 General Plan which are applied to the Project.

E1.2 Projected Service Area Demands

Relying on a combination of surface water and groundwater, the COSMA is served by three water retail providers: (i) the California Water Service Company (Cal-Water), (ii) City of Stockton Municipal Utilities Department (COSMUD), and (iii) County Maintenance Districts. Due to the Project's geographic location, it will be served entirely by COSMUD. Because existing water supplies for the COSMA are coordinated between the three retail providers and rely on the same sources of water, this WSA evaluates existing water demands separate and apart from the evaluation of new demands for the project. Based on actual past water deliveries, the total 2007/08 water demand for the COSMA was 73,828 AF/year. This amount is the total for the three retailers and is split as shown in **Figure E-2** below.

Figure E-2. Existing (2007/08) COSMA Water Demand by Water Retailer



E1.3 Approach to WSA with Multiple Water Retailers

The approach in completing the WSA has been modified from WSAs completed prior to November 2008 by the City of Stockton Municipal Utilities Department (COSMUD). The fundamental difference is how, in the past, COSMUD addressed the level of water sustainability for the entire City of Stockton which includes the service areas of California Water Service Company (Cal-Water) and two small County Service areas (Lincoln Village and Colonial Heights Maintenance Districts). Collectively these water retail service areas are, and will continue to be, referred to as the City of Stockton Metropolitan Area (COSMA).

By voluntarily incorporating these service areas in past WSAs, COSMUD has portrayed a regional water supply portfolio that was consistent with past and current water supply practices. Given the City of Stockton's recent adoption of the 2035 General Plan and its water related policies, the need to include other water retailers in the overall solution to meet existing and future City of Stockton water demands is no longer needed. Assuming that each water retailer is now held to the General Plan policies, the individual water retailer can pursue their own business solutions without affecting the others and without impacting the sustainability of the City's water supplies.

This separation should not impact the findings of sustainable water supplies for prior WSAs and will likely benefit future WSAs, given that each of the water retailers will be held to the adopted General Plan policies and will need to respond to their own specific requests for new development WSAs and in their respective Urban Water Management Plan updates. From this point forward, COSMUD will only respond to WSA requests for meeting increased water demands for new development areas (or portions) within its service area. However, in consideration of the investment existing rate payers have made over the past 20+ years in the existing conjunctive use system, existing water demands will continue to be discussed in terms of the COSMA and its current and future water supply practices.

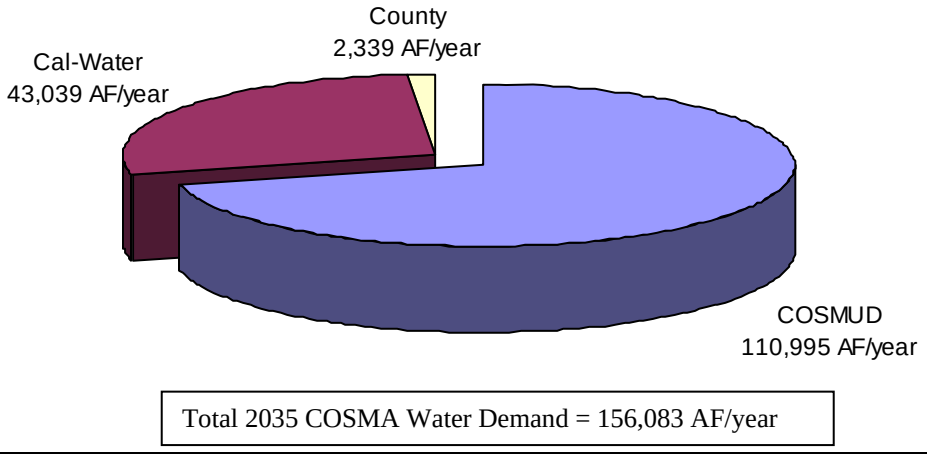
This change in approach is in recognition of the need to move forward on several fronts in securing sustainable water supplies based on the General Plan's expected growth as it affects each water retailer. The net result of this separation will optimize the infrastructure and water supply investments already made and provide sustainable cost effective water supplies and water projects into the future.

E1.4 Existing Water Supply Outlook

In addition to COSMUD's conjunctive use in managing the groundwater basin, the COSMUD is also implementing water conservation best management practices (**GP Policy PFS-2.1**) with the retail service area being 100 percent metered. The current rate structure is being modified to switch from a declining block rate (customer pays less per unit of water as water use increases) to a uniform commodity rate for all customers. In normal and above normal rainfall years, it is assumed that water demands will continue to reflect the current level of "hardened" water conservation programs in accordance with COSMUD's UWMP. In dry and critical hydrologic years extreme conservation measures will be implemented to reduce water demands by an additional 10 to 15 percent.

With anticipated growth and development within the COSMA and accounting for continued implementation of water conservation programs, the total water demand for surface water and groundwater supplies is predicted to increase over the next twenty years (**GP Policy PFS-2.2**). Specific projections of growth have been developed over time under the City's 2035 General Plan. The 2035 General Plan, for example, estimates that water demands in the COSMA will grow to 156,000 AF/year by the year 2035 (**GP Policy PFS-2.4**). Of this 156,000 AF/year, COSMUD's water demand is 111,000 AF/year or 71 percent of the total COSMA water demand as illustrated in **Figure E-3** below. Compared with **Figure E-2**, this figure shows COSMUD's water demands increasing by over 300 percent and ending up with highest percentage of the COSMA's water demand. This significant increase in COSMUD's water demand places COSMUD in a unique position of having to aggressively pursue new water supplies that have been the focus of water planning studies and City Council actions started in the mid-1990's to present.

Figure E-3. 2035 COSMA Water Demands by Water Retailer



Under the Water Code, demand and supply must be evaluated over a twenty-year horizon. Therefore, COSMUD has evaluated the revised growth calculations in the City's 2035 General Plan Update, which includes the existing COSMUD water demands, the Project water demands and the water demand from growth within the COSMUD service area as defined by the 2035 General Plan proposed Urban Policy Area. While the period of growth evaluated in the 2035 General Plan is longer than the twenty-year horizon mandated in the Water Code, these more recent projections more accurately reflect anticipated growth in the region and the availability of surface water and groundwater supplies, and therefore are appropriately evaluated here as a "worst case" scenario.

E1.5 Existing Water Supplies

To meet existing demands, COSMUD relies on both surface water and groundwater. COSMUD currently pays for and receives all of its surface water through the wholesale purchase of treated water from Stockton East Water District (SEWD) based on the apportionment criteria set forth in the "*Second Amended Contract Among the Stockton East Water District, The California Water Service Company, The City of Stockton, The Lincoln Village Maintenance District, and The Colonial Heights Maintenance District Providing For The Sale of Treated Wate*r." This agreement allocates the quantity of treated surface water from the SEWD WTP that each urban water retailer/contractor (COSMUD, Cal Water and the County) is to receive based on its percentage of total water used in the COSMA during the previous year. As a retail agency grows, the agency's contribution to paying off the bonds increases, thereby increasing their financial interest in the total WTP capacity. This methodology in allocating SEWD WTP capacity and its supplies amongst the three water retailers is especially relevant in deciding the available SEWD WTP capacity available to COSMUD evaluated in this WSA.

In addition to the two primary sources of raw surface water coming from New Hogan and New Melones reservoirs, the COSMA retailers have negotiated two interim raw water supply contracts (described below) on the Stanislaus River with Oakdale Irrigation District (OID) and South San Joaquin Irrigation District (SSJID) that are also conveyed through SEWD. See **Exhibit "B"** for copy of SEWD and OID/SSJID contracts. It should be noted that the COSMUD is currently served using conjunctive use methods where groundwater and surface water are balanced so as to protect the groundwater resources and not to exceed accepted groundwater yields over a long term period or in any given year (explained in more detail below and in the WSA). Each surface water source currently delivered to the COSMA is discussed in turn, as follows:

New Hogan Reservoir (40,171 AF/year): SEWD and Calaveras County Water District (CACWD) hold a repayment contract with the Bureau of Reclamation (Reclamation) for

water stored in New Hogan Reservoir. New Hogan Reservoir was constructed by the United States Army Corps of Engineers and is operated as a flood control reservoir. Since this water is not part of the Central Valley Project, it is not subject to CVP deficiencies in dry hydrologic years, and has no expiration date. Out of this contract SEWD has a right to divert up to 40,171 AF/year and CACWD has a right to divert up to 30,928 AF/year. The 40,171 AF/year is 56.5 percent of the total contract amount with CACWD holding 43.5 percent. The reliability of this water is based on data that reflects the operation rules assumed in the latest version of California Simulation Model II (CALSIM II), which is a statewide water resources planning model jointly developed by California Department of Water Resources and Reclamation. Each year, there is a storage target for September to ensure there will be enough water stored going into the next year (i.e., often referred to as carryover storage). Under some extremely dry conditions, monthly deliveries to all users of New Hogan Reservoir are reduced or even cut off to maintain the necessary carryover storage.

Calaveras County Water District's Transfer (10,000 AF/year) of Unused New Hogan Reservoir Water: SEWD holds a contract with CACWD for transfer of unused water entitlements under the Reclamation repayment contract for New Hogan Reservoir described above. While water under this contract continues to be delivered at 24,000 AF/year, the contract amount may be reduced to around 10,000 AF/year as competing demands arise from new development in Calaveras County.

Central Valley Project New Melones Reservoir (40,000 AF/year): This Stanislaus River water source is assumed to be only reliable in wet and above-normal hydrologic years. Under a Bureau of Reclamation (Reclamation) contract as part of the Central Valley Project, SEWD is entitled to a combined 75,000[2] AF/year for municipal and industrial uses, and for agricultural uses. The infrastructure to supply this water is complete, but the source is not reliable since the Central Valley Project Improvement Act and other regulatory actions have reduced the quantity of water available from this source. For purposes of this WSA, it is assumed that existing contract obligations with Reclamation limit the maximum amount of water in any given year to 10,000 AF/year. In dry and critical hydrologic years this supply can be as low as 1,600 AF/year and 0 AF/year, respectively.

South San Joaquin Irrigation District (15,000 AF/year): The City of Stockton holds an interim water transfer contract treated and wheeled through SEWD with South San Joaquin Irrigation District (SSJID) for 15,000 AF/year from the Stanislaus River (New Melones). The contract amount is limited to a minimum of 4,000 AF/year in critically dry

[2] The current Reclamation contract specifies 10,000 AF/year for municipal and industrial uses, and 65,000 AF/year for agricultural uses (including losses). Prior studies and reports have assumed a partial conversion of the agricultural water to municipal uses yielding a maximum of 40,000 AF/year for municipal uses in wet hydrologic years and 0 AF/year in dry and critical year hydrologic years. Given the increased uncertainty in the volume of this supply based on the CVP's 1997 New Melones Reservoir Interim Operation Plan, the amount of this supply was reduced back to 10,000 AF/year for municipal uses with slightly increased reliability in most years but still 0 AF/year in critical hydrologic years.

years. Because SSJID is a senior water rights holder, this supply is considered reliable. This contract expires in 2009 pending the renegotiation that is currently taking place.

Oakdale Irrigation District (OID) (15,000 AF/year): The City of Stockton also has an interim contract with OID for up to 15,000 AF/year from the Stanislaus River (New Melones) that is wheeled and treated by SEWD to the COSMA. The contract is expected to deliver at least 4,000 AF/year in critically dry years. Because OID is a senior water rights holder on the Stanislaus River, this is considered a reliable source of water. This contract is also due to expire in 2009.

> While negotiations are currently taking place for renewal of one of the two contracts (SSJID), the City of Stockton and COSMUD's interest is in providing reliable surface water in every year until the longer term solution of the DWSP is operational in 2012 at which time the City's interest would occur only in dry and critical years. This would increase Cal-Water's availability for this water supply in below average to wet hydrologic years

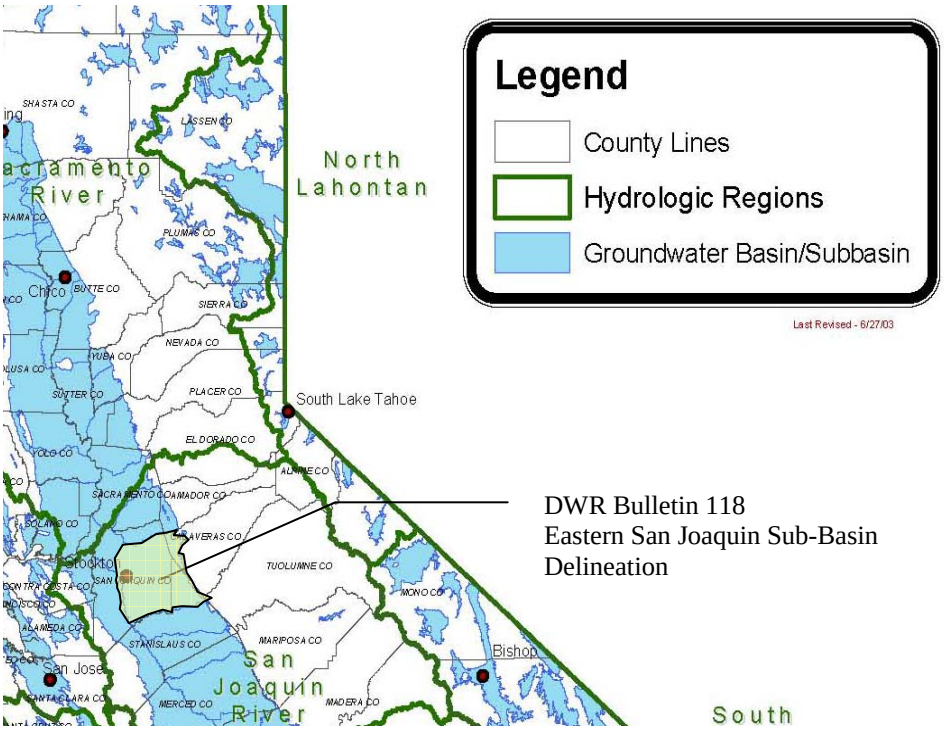
Groundwater: As an overlying appropriator of groundwater since the early 1900's, COSMUD has depended on the aquifer underlying the COSMA. The source of the groundwater is considered to come from the Eastern San Joaquin sub-basin, a sub-basin of the larger Central Valley Aquifer as identified in State Department of Water Resources Bulletin 118-0 as shown in **Figure E-4**. As part of a regional effort to manage groundwater and to stem the rapid decline in groundwater elevations and the advancement of salt water from the west, a conjunctive use program was implemented with SEWD in the mid-1970's. As a result, the COSMA retailers' current use of groundwater is largely dependent on the availability of surface water supplies from the east that are treated at the SEWD surface water treatment plant. In wet years, COSMUD maximizes its use of surface water supplies and only uses groundwater for the higher demand months. In dry and critical years, surface water supplies are subject to cutbacks and groundwater is used more heavily. This method of conjunctively using groundwater and surface water is not uncommon in the Central Valley where the groundwater basins can essentially store water through in-lieu or direct (e.g., direct injection, recharge basins) recharge for use in dry year conditions.

Figure E-4. DWR Definition of Eastern San Joaquin Sub basin

Source:

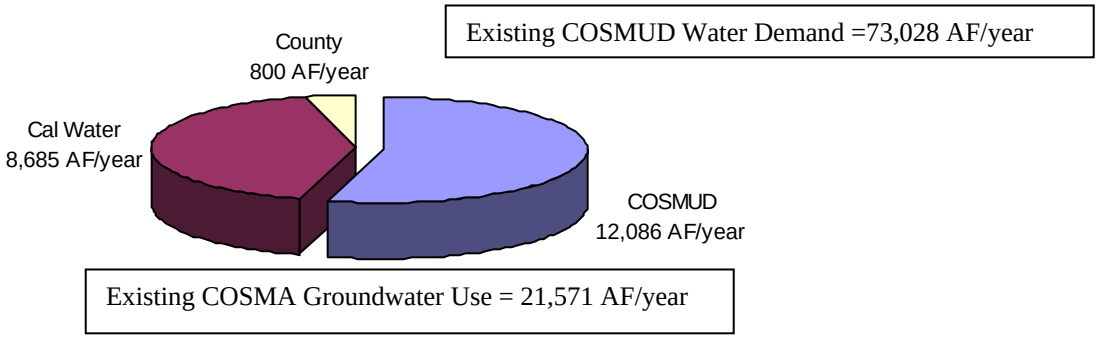
DWR Bulletin 118-0
http://www.groundwater.water.ca.gov/bulletin118/basin_maps/index.cfm

DWR Disclaimer: The basin boundaries for the revised groundwater basin map were primarily defined using geologic contacts and hydrogeologic divides. Specifically the identification of the groundwater basins was initially based on the presence and aerial extent of unconsolidated alluvial soils identified on 1:250,000 scale geologic maps provided by the California Department of Conservation, Division of Mines and Geology. The identified groundwater basin areas were then further evaluated through review of relevant geologic and hydrogeologic reports, well completion reports, court-determined adjudicated basin boundaries, and contact with local agencies to refine the basin boundaries.



Currently, groundwater extractions are at or below the current self-imposed sustainable yield of the groundwater basin with 2006/07 groundwater extraction amounts totaling 25,604 AF/year split amongst the three water retailers as shown in **Figure E-5**.

Figure E-5. Existing (2007/08) COSMA Groundwater Use by Water Retailer



E1.6 Existing Surface Water Capacity

The existing SEWD Water Treatment Plant (WTP) was initially constructed in 1978 with further improvements in 1991, 2005 and 2008 to achieve a rated capacity of 60 mgd. The SEWD WTP is financed by COSMA's three water retailers and constructed by SEWD. It is assumed that SEWD will maintain its existing 60 mgd surface WTP into the future with possible expansions over time based on available water supplies. COSMUD recognizes that current studies are taking place to look for full utilization opportunities for the SEWD WTP.

E1.7 Existing Groundwater Capacity

Groundwater extraction capacity within COSMUD's existing service area boundary has and will continue to be conservatively sized for a certain level of redundancy for service in critical years, to meet maximum day demands, and to meet fireflow requirements. In the event that surface water is curtailed by contract, especially in dry and critical years, groundwater becomes a significant and important portion of the urban water retailers' water supply in order to insure the required level of service under drought conditions (**GP Policy PFS-2.6**).

E1.8 Determination of Water Supply Sufficiency

Given the requirements of water supply sufficiency under SB 610, this WSA concludes that the COSMUD cannot serve the water demands for existing uses (including existing pending developments shown in **Exhibit "C"**), the Project, and all reasonably foreseeable planned future uses. Given the insufficiency of water available for all

planned future uses, particularly in critically dry years, this Water Supply Assessment evaluates alternative future water supplies, as described below.

E1.9 Future Water Supplies

Where the public water system's supplies may not be sufficient to meet the demands of the Project and all existing and reasonably foreseeable planned future uses, the Water Supply Assessment must discuss the water retailer's plans for acquiring additional water supplies. Here, the WSA concludes that existing water supplies are not sufficient to meet the water demands from the Project and all existing and reasonably foreseeable planned future uses. Consequently, this Water Supply Assessment outlines several future reasonably certain additional water supplies (**GP Policy PFS-2.7**).

Delta Water Supply Project (125,900 AF/year): The Delta Water Supply Project (DWSP) includes an application to the State Water Resources Control Board (SWRCB) to divert up to 125,900 AF/year from the Delta, as well as to construct necessary diversion, conveyance, and treatment facilities. On March 8, 2006, the SWRCB issued a water right permit (see **Exhibit "D"**) for diversions from the Delta of up to 33,600 AF/year (or 30 million gallons per day (mgd) constant diversion over one year) from the Delta by COSMUD for use within the Place of Use (1990 General Plan Urban Services Boundary) identified in the Water Right Application (the so-called "DWSP Phase 1 – 30 mgd" supply). (**GP Policy PFS-2.8**).

This water right is based on California Water Code Section 1485, which authorizes any municipality disposing of treated wastewater into the San Joaquin River to seek rights to divert a like amount of water, less losses, from the river or Delta downstream of the point of wastewater discharge. This implies a very high level of reliability in even the most critical years. Environmental review under the California Environmental Quality Act (CEQA) has been completed for Phase 1. Phase 1 is expected to be operational by 2011/12 and will be funded through customer user rates, development fees, and potential federal and state grants.

Despite the fact that the DWSP Phase 1 is an "additional" water supply and not an "existing" water supply for purposes of SB 610 (compare Wat. Code, § 10911(a) with § 10910(d)), COSMUD concludes that the DWSP Phase 1 is nevertheless a reasonably certain and likely source on which the City can prudently depend. In consideration of the significant steps in the environmental review, permitting, and financing of the DWSP and its supplies of raw water for potable drinking water purposes, it is reasonable to rely on the DWSP for the evaluation of water supplies.

As explained in detail in this WSA and its "Determination of Sufficiency", the City of Stockton has completed the necessary CEQA analysis for Phase 1; the State Water Resources Control Board approved the water rights permit for Phase 1; and the National Marine Fisheries Service and the United States Fish and Wildlife Service have authorized Phase 1 to proceed under the Endangered Species Act. More recently, the California State Department of Fish and Game (DFG) has conditioned the DWSP to

limit Delta diversions over a longer period than the agreed upon period by the National Marine Fisheries Service and the United States Fish and Wildlife Service. The City has responded to DFG with a formal submittal of an alternative mitigation plan consistent with mitigation already authorized by the two federal agencies. The remaining regulatory approvals are comparatively minor and easy to obtain, compared with these other clearances and approvals, and relate mainly to the construction of treatment and delivery infrastructure. Once constructed, the DWSP supplies are to be used conjunctively with existing SEWD and groundwater supplies to provide sufficient water supplies to meet the Project's build-out water demand as well as all existing and reasonably foreseeable water demands.

Woodbridge Irrigation District (6,500 to 13,000 AF/year): The COS has negotiated an additional 40-year contract with Woodbridge Irrigation District (WID) (see **Exhibit "E"**) for 6,500 AF/year in surface water supplies, which is anticipated to be treated at the DWSP WTP and retailed by COSMUD during the time of year when Delta diversions are curtailed for fish (up to two months) consistent with mitigation authorized by the United States Fish and Wildlife Service. This new contract includes 6,500 AF/year initially with provisions for increasing to 13,000 AF/year as additional lands within the overlap areas between WID and COSMUD that are annexed to the City of Stockton and converted to urban uses over time. Although the use of WID surface water still requires CEQA compliance (currently underway with anticipated 2009 completion date), the City is unaware of any environmental considerations that are likely to emerge through that process that would make the water unreliable. (**GP Policy PFS-2.10**)

Calaveras River (10,000 AF/year): Additionally, SEWD is pursuing its own appropriative water rights to the Calaveras River in the total amount of 50,000 AF/year in wet and above-normal years, but only 15,000 AF/year will be available in below-normal and dry years.

New Hogan Reservoir (40,000 AF/year): Potential supplemental supplies may be available from New Hogan reservoir through excess spill waters and re-operation of the reservoir at an amount of approximately 40,000 AF/year. The New Hogan contract, however, may not be available in critical years and requires authorization from the United States Bureau of Reclamation, which renders this water supply unreliable in all but above normal and wet years.

New Melones Farmington Project (50,000 AF/year): SEWD is also pursuing additional supplies from the Stanislaus River New Melones Farmington Project in the amount of 50,000 AF/year. The reliability of this supply is unknown at this time.

Conjunctive Use of Groundwater (0.75 AF/acre/year): As mentioned above, conjunctive use of groundwater and surface water is critical to addressing the year-to-year and seasonal variability in hydrology and will also help ensure long-term water supplies for the COSMUD. In accordance with General Plan policies and referenced technical studies, groundwater is available throughout the developed acreage at the

rate of **0.75** AF/acre/year in any one given year and **0.60** AF/acre/year over a long term average. (**GP Policy PFS-2.11**)

E1.10 Summary of Surface Water Utilization for the Project

The COSMUD has and will continue to meet annual demands during differing hydrologic periods with surface water, groundwater, water conservation, and other potential water supplies such as non-potable supplies from local communities, raw surface water from local irrigation districts, and water from active groundwater storage projects. Currently, the COS, through COSMUD's support, is pursuing other raw surface water transfer agreements similar to the WID contract with local irrigation districts and municipalities and possible use of tertiary treated recycled water from the City of Lodi for use as a non-potable source for irrigation of public landscape areas. (**GP Policy PFS-2.12**)

E2.0 CONCLUSION

In consideration of the significant steps in the environmental review, permitting, and financing of the DWSP and its supplies of raw water for potable drinking water purposes, it is reasonable to rely on the DWSP for the evaluation of water supplies. The City has completed the necessary CEQA analysis for Phase 1; the State Water Resources Control Board approved the water rights permit for Phase 1; and both the National Marine Fisheries Service and the United States Fish and Wildlife Service have authorized Phase 1 to proceed under the Endangered Species Act. With COSMUD's finance and construction of the 30 mgd DWSP Phase 1 WTP (2010/11), the existing use of COSMUD's share of the 60 mgd SEWD WTP, and continued improvements on groundwater capacity (**GP Policy PFS-2.3**) and water use efficiency, water supplies are deemed sufficient to meet existing water demands and the water demands of the Project and all reasonably foreseeable planned future uses in wet and above-normal hydrologic years and in dry and critical years and under sustained drought conditions

Water Supply Assessment

Opus Logistics Center Project

1. WATER SUPPLY ASSESSMENT INTRODUCTION

1.1 Background

The California Water Code requires coordination between land use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies and implementation of water conservation best management practices are adequate to meet existing demands, anticipated demands of the proposed Project and all existing and reasonable foreseeable planned future uses as set forth under Section 10910 of the State Water Code.

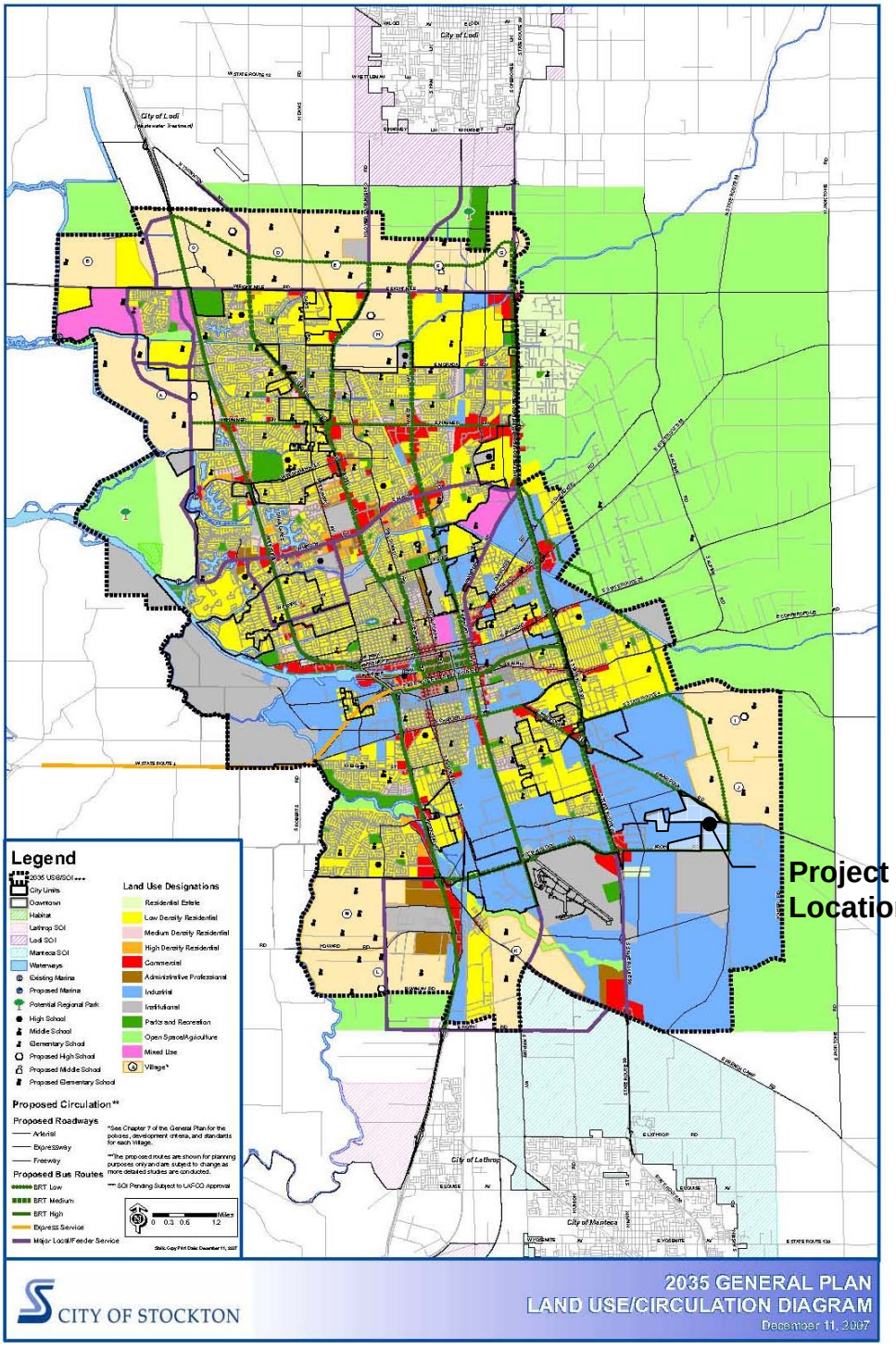
Water Code Sections 10910 - 10915 (inclusive) require land use lead agencies: 1) to identify the responsible public water purveyor for a proposed development projects of a certain magnitude, and 2) to request from the responsible purveyor, a "Water Supply Assessment (WSA)". The purpose of the WSA is to demonstrate the sufficiency of the purveyors' water supplies to satisfy the water demands of the proposed development project in normal, dry, and multiple dry years, while still meeting the current and projected water demands of existing and planned future uses over a 20-year time horizon. Water Code Sections 10910 – 10915 delineate the specific information that must be included in the WSA.

This WSA is structured in way that shows which portion of the Water Code Section is being satisfied by stating the section number and title. Additional information is provided where it is useful in the understanding of the Project, its water demands, and its water supplies.

1.2 Project Description

The Opus Logistics Center Project (Project) is a 710 acre development located in San Joaquin County near the intersection of Arch Road and Newcastle Road (see **Figure E-1** for approximate location). The Project, as proposed, consists of two phases with one not dependent on the other for development. The Phase 1 portion consists of 562 acres with Industrial Limited zoning that lie entirely within the City of Stockton city limits. Phase 2 is an additional 148 acres (total of 710 acres) that lie within the current Stockton General Plan 2035 Urban Services Boundary and Sphere of Influence, and is contiguous to the current City of Stockton city limit boundary. The project proponent proposes to have the Phase 2 project site annexed into the City of Stockton with an Industrial Limited zoning.

Figure 1. 2035 General Plan Land Use Map and Project Location



(2035 General Plan, City of Stockton, December 2007)

The Industrial Limited (IL) zoning is characterized as being suitable for light indoor manufacturing that may generate nuisance impacts not acceptable in typical commercial zoning districts. Both Phases of the Project are considered as a single project for purposes of a Water Supply Assessment under SB610. Planned construction and occupancy of the Project is expected to occur from 2010 to 2013.

Water demands associated with the Industrial Limited zoning can vary depending on the use taking place at any given time. Light manufacturing processes typically have some indoor water use for clean-up and restroom purposes. Additional uses may include cooling water or production water. Outdoor uses of water may include landscape irrigation and equipment wash-down. From previous studies, light industrial uses in the City of Stockton have typically been assigned a water use factor comparable to low density residential uses. The DWSP Feasibility Report cited a water demand factor of 1.5 AF/acre/year. For purposes of this WSA and to remain consistent with prior WSAs, a uniform factor of 1.6 AF/acre/year will be conservatively applied to the gross acreage of the Project. It will be explained later in the WSA that a uniform water demand is assigned to this area regardless of land use unless there is a special use requiring significant quantities of water.

As explained in more detail below, the Project's total anticipated water demand over the required 20-year horizon (through 2028) was included under COSMUD's planned future water requirements consistent with the 2035 General Plan and preferred alternative evaluated in the General Plan Update Water Supply Evaluation (WSE). Many of these requirements were written into the 2035 General Plan Goal and Policies Report *"to ensure the adequate, reliable, and safe provision of water to all existing and future City of Stockton development, even through drought periods."*(Goals and Policies Report 2035 General Plan, City of Stockton, December 2007) (see **Exhibit "A"**)

1.3 Project Water Demands by Land Use Overview of Current Water Supply Condition

Like many northern California communities, the City of Stockton Metropolitan Area (COSMA) is experiencing substantial population growth and increasing water demands. At the same time, regulatory pressures, increased water usage in neighboring areas, and saline intrusion affecting groundwater supplies are straining the City's already limited water supplies. This WSA balances the environmental and natural constraints on water supplies with that of the projects and programs that are currently being implemented or that are planned to be in place with increasing increments of water supply facility capacity.

As a result, the City of Stockton (COS) and its three urban water retailers as shown in **Figure 2** have focused attention looking into the future on the availability of existing and future surface water supplies from Stockton East Water District

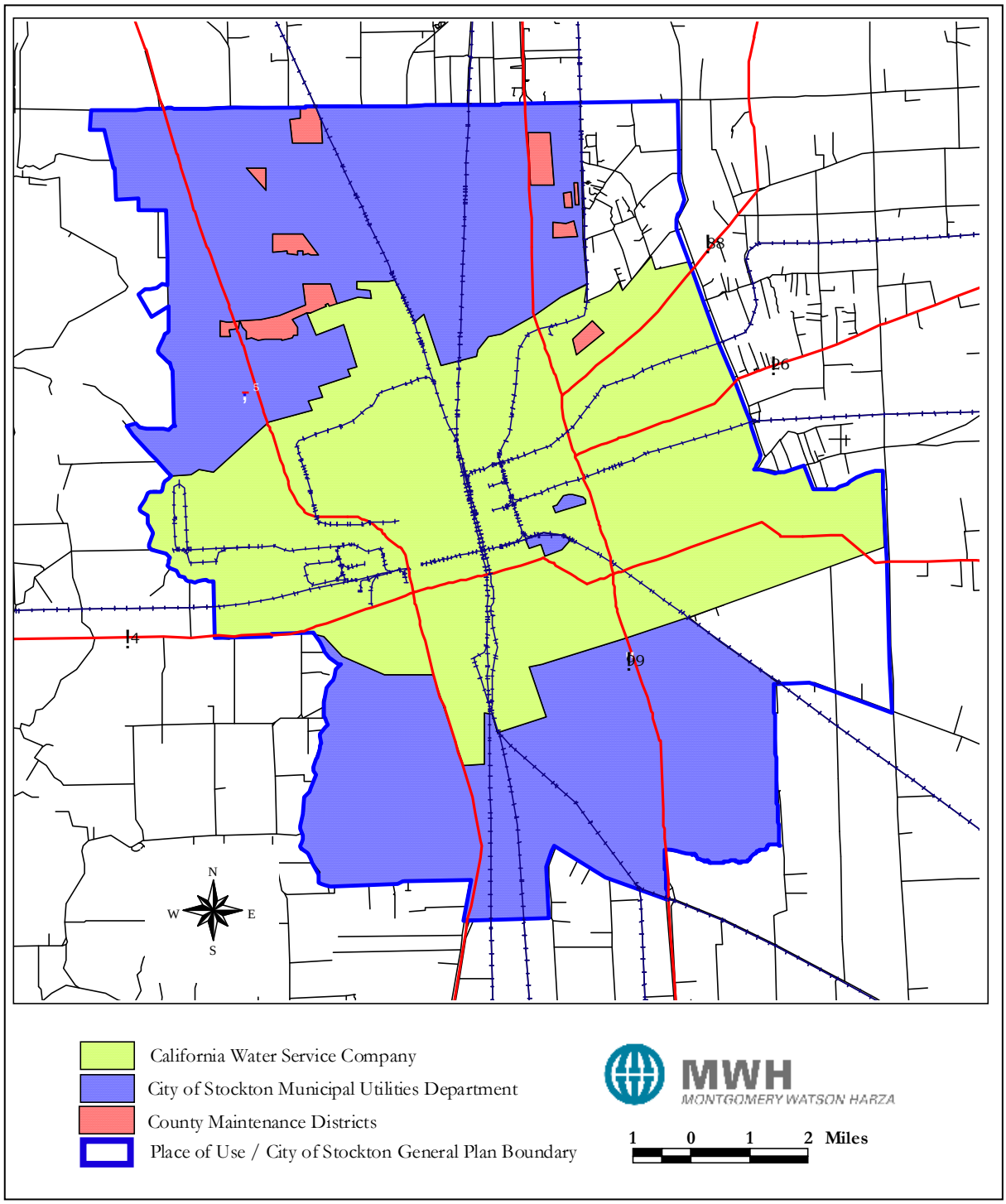
(SEWD) and the Delta Water Supply Project (DWSP), implementation of water conservation best management practices, and the need to manage groundwater resources at a sustainable yield. The COS's objective is to achieve a long-term reliable water supply to 2050[1].

Beyond its cooperative participation in SEWD supplies, a product of the COS's effort in obtaining future long term reliable water supplies for the DWSP is a water right application to the State Water Resources Control Board (SWRCB) on January 6, 1996, that requested an increasing amount of surface water from approximately 20,000 acre-feet per year (AF/year) initially, up to 125,900 AF/year in 2050. To divert, deliver, and treat this surface water supply to its retail water customers, the COSMUD is pursuing the DWSP. This is a Delta/San Joaquin River diversion and water treatment plant which will provide supplemental surface water supplies to the COSMUD if existing supplies are deemed insufficient to meet water demands from existing growth, the Project, and foreseeable growth. It is believed that the DWSP is a critical project to the City of Stockton's continued economic growth and it is not a matter of if, but when the project is constructed. The DWSP will achieve the following three objectives:

- **Managing groundwater resources for environmental benefit and to provide a long-term sustainable yield,**
- **satisfying future demands by conjunctively using groundwater and surface water, and**
- **providing the City of Stockton with the flexibility to control how and from what sources water demands are met.**

[1] 2050 is used as the ultimate build out for the DWSP Feasibility Report. 2035 is the build out of the current General Plan.

Figure 2. COSMA Water Retail Providers



Note: General Plan Boundary (1990) shown does not reflect the current 2035 General Plan. Retail Purveyor Boundaries indicated in this figure may not be representative of 2008 conditions.

On April 22, 2003, Stockton's City Council approved the DWSP Feasibility Report and directed the City of Stockton Municipal Utilities Department (COSMUD) staff to complete the necessary environmental studies to comply with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). On November 8, 2005, the Stockton City Council certified the EIR and also authorized the City staff to proceed with the project. The certified document was included as part of the water rights application package submitted to SWRCB, which issued a permit for a Delta diversion for Phase 1 in the amount of 33,600 AF/year on March 8, 2006. (see **Exhibit "D"**) Additional information on the DWSP is provided later in the WSA and can also be found in the DWSP Feasibility Report and DWSP EIR[2].

Phase 1 of the DWSP is planned for construction in 2009 and be operational in 2011/12. Once construction of the Phase 1 DWSP is completed, the COSMUD will continue to rely upon existing surface water supplies through SEWD and existing groundwater supplies that underlie COSMUD's service areas. The reliability of water supply resources for COSMUD will be secure for some time while plans and agreements are secured for optimum use of water supplies for the long term build-out of the COS General Plan.

Please note that under Section 10910 of the State Water Code, the DWSP is classified as an additional planned future water supply project. This WSA does not consider the DWSP as an existing water supply and will only include the DWSP as a future planned water supply if existing water supplies (i.e., SEWD and groundwater) are insufficient to meet existing water demands plus the Project.

1.4 Overview of COSMUD's Future Water Demands

In order to evaluate current and projected water demands within the COSMUD over the 20-year horizon required by Water Code section 10910, et seq., this WSA relies upon several studies conducted in the area over the past 5 years. COSMUD has relied on and incorporates by reference its prior analysis conducted in the City of Stockton adopted 2005 Urban Water Management Plan (Kennedy/Jenks Consultants, Dec. 6, 2005) (UWMP), the Water Supply Evaluation for the General Plan Update Preferred Alternative (MWH Americas, Inc., Amended May 12, 2006) (WSE), and the Delta Water Supply Project Feasibility Report (ESA Consulting, MWH Americas, Inc., April 22, 2003) (DWSP Feasibility Report) and DWSP Environmental Impact Report (ESA, MWH Americas, Inc., November 2005).

[2] Previous studies and environmental documents depicted the DWSP as a cooperative project between the three COSMA water retailers. In mid-2008, a decision was made by the water retailers allowing COSMUD to solely finance and construct the DWSP. This decision alone does not create an impact to COSMUD's ability to finance and construct the DWSP.

This WSA supplements the information provided in the UWMP, WSE, the DWSP Report and EIR. In some cases the information contained in this WSA has been updated from information provided in the aforementioned reports as a result of the COSMUD's continual evolutionary change in its water supply portfolio as new information becomes available. Changes typically occur as result of an earlier assumption in the aforementioned documents that has been evaluated and understood to a higher degree. These changes are explained more fully throughout this WSA. Each of the referenced studies is available for review at COSMUD or available for download on the City of Stockton's Web Site. In all cases, the WSA should be used as the governing document where any conflict of information exists.

The water demands associated with new growth in the COSMA were evaluated to 2015 as part of the April 2003 DWSP Feasibility Report and have been evaluated to 2035 as part of a Water Supply Evaluation (WSE) completed in May 2006 on behalf of COSMUD and the California Water Company (Cal Water in order to provide information relevant to the City's 2035 General Plan. The WSE, which is hereby incorporated by reference herein, has been relied on in this WSA in order to provide all relevant information regarding future water demands, even though the WSE evaluates a period of time (approximately 30 years) that is well beyond that necessary for the WSA (which is 20 years). The WSE also reconciles past documents to provide an understanding of what has changed in the water supply portfolio over the last four years.

The WSE supplements and, in some cases, complements previously available information found in the DWSP Feasibility Study and in other documents, such as the City's UWMP and previous WSAs for prior development applications. COSMUD makes every attempt to maintain the latest information in the WSAs as a means of providing the latest and most reliable information.

The findings of the DWSP Feasibility Study evaluated current water demands and developed a land use based water demand projection for build-out of the current City General Plan to 2015 and a population based water demand projection to 2050. Water demands within the COS are now projected to increase from the present 73,100 Acre-Feet/year (AF/year) in 2007/08 to 156,083 AF/year by build-out of the General Plan in 2035. Growth projections included as part of the DWSP Water Right Application were solely population based. As part of the DWSP Feasibility Report, a reconciliation of growth rates with the Water Right Application was completed based on the best available information at the time including:

- **City of Stockton General Plan Background Report, January 1990, City of Stockton Planning Department.**
- **Supplemental Reports for Water Supply, February 1992, City of Stockton Planning Department.**
- **2000 Update Urban Water Management Plan Public Review Draft December 2000, City of Stockton Department of Municipal Utilities.**

- **Water Right Application No. 30531, January 30, 1996, City of Stockton Department of Municipal Utilities.**
- **Existing and Projected Population, Flows and Wastewater Load Study for Stockton**
- **Regional Wastewater Control Facility Master Plan Update, 1997, City of Stockton Department of Municipal Utilities**

Land use based water demand projections are generally preferred over population based projections. For this reason, the updated land use diagram from the 2035 General Plan was used in place of the DWSP Feasibility Report population-based water demands for beyond 2015 (build-out of the 1990 General Plan). For the period from 2015 to 2035, the WSE increases projected demands for the COSMA from 85,330 AF/year in 2015 to 156,083 AF/year in 2035, and for COSMUD from 46,000 AF/year in 2015 to 111,000 AF/year in 2035, as shown in **Figure 3**.

Four fundamental elements of the WSE will be used in this WSA as follows:

1. All existing supplies (i.e., SEWD surface water and available groundwater) will be evaluated for determining adequacy prior to making water available from the DWSP (i.e, the DWSP is a planned future water supply). The DWSP will not be used unless existing, reasonably foreseeable, and Project water demands exceed the defined thresholds for sustainable groundwater use and SEWD surface water supplies are being fully utilized to the extent raw and treated water facility capacity allows for its use.

2. Studies are being conducted at the time of this WSA's development to evaluate, at a higher level of detail, the maximum capacity available through SEWD. These studies are being conducted by the Stockton Area Water Retailers (SAWS) comprised of the three City of Stockton water retailers and SEWD and should be completed in the spring of 2009. To date, the best available information on SEWD capacity and constraints is in the DWSP Feasibility Report and the WSE.

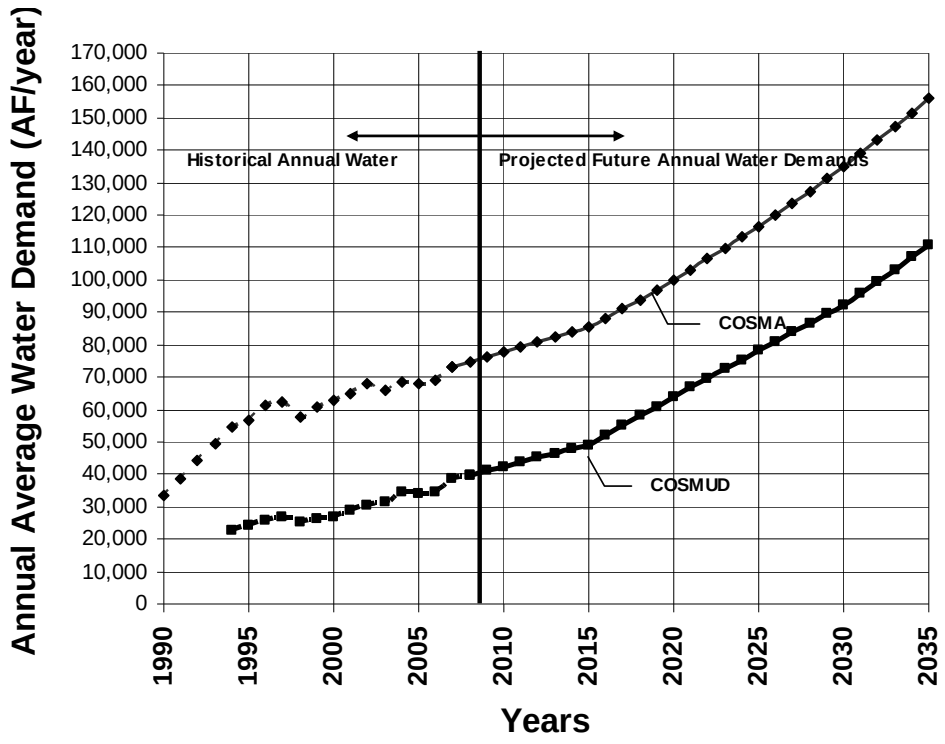
3. Water supply conditions are evaluated to 2035 rather than 2028 (the required 20 year projection as required by Water Code Section 10910) and are based on existing SEWD surface water supplies and available groundwater under current groundwater use policies. Surface water supplies for the DWSP will be included only if the WSA analysis requires the DWSP to be constructed to meet projected water demands. This implies that all existing supplies including SEWD and available groundwater supplies will be exhausted prior to making the DWSP available.

4. Groundwater management strategies defined in the WSE will be used in this WSA regardless of whether the DWSP is shown to be needed or not.

5. Water facility requirements (e.g., size, phasing, and location) will be in accordance with the WSE to 2035 (and the DWSP Feasibility Report to 2050, if needed). The growth assumptions and facility phasing contained within DWSP Feasibility Report are consistent with the WSE and 2035 General Plan policies; however, Phase 1 DWSP is contemplated in the WSE only for use to 2035 as a reference point to evaluate how much water demand (and growth) could be served with the Phase 1 DWSP project. Subsequent phases of the DWSP will be constructed based on the ability of the Phase 1 DWSP, SEWD surface water supplies and groundwater to serve the projected 2035 General Plan water demands.

In short, this WSA uses the 2035 General Plan to address the 20-year planning horizon called for under Water Code Section 10910. This WSA (i) includes the best information and projections currently available about (a) the reliability of groundwater supplies and (b) the reliability of SEWD surface supplies, and (ii) identifies water supplies and infrastructure to provide for the existing, the Project, and reasonably foreseeable water demands over a 20+ year time horizon that more than satisfies Water Code Section 10910.

Figure 3. Historical and Projected COSMA and COSMUD Water Demands



2. ELEMENTS OF A WSA [WATER CODE SECTION 10910]

The format of this WSA is intended to follow Water Code Sections 10910 – 10915 to delineate clearly the specific requirements of a WSA. This WSA is structured according to those requirements. Section 10910 of the Water Code is intended to evaluate if existing water supply sources are adequate to meet existing water demands, the Project demands and the demands of all planned foreseeable future uses within the public water system. What follows is a breakdown of the elements of the Water Code that respond to the adequacy of existing supplies. If under Section 10910 existing water supplies are adequate to serve existing water demands, the Project and all planned future uses within the public water system over the twenty-year horizon, the WSA can move forward with a positive finding of sufficiency in water supplies. If Section 10910 is not satisfied, further evaluation into planned water supply sources and projects need to be included as per Section 10911 of the Water Code.

In addition to meeting the Water Code, this WSA will also assist City Planners in their evaluation of the Project's compliance in meeting 2035 General Plan policies (Goal PFS-2). Specific references to relevant policies will be included throughout the WSA with the water supply portion of the *2035 General Plan Goals and Policies Report* (City of Stockton, December 2007) included as **Appendix B**.

2.1 Determine if Project is Subject To CEQA [Section 10910(a)]

The COS Planning Department has determined that the Project is subject to CEQA and satisfies the criteria set forth in Section 10912 of the California Water Code requiring the completion of a WSA. The information contained within this WSA will partially, or in whole, address 2035 General Plan policies PFS-2.1 through PFS 2.13.

2.2 Identify Responsible Public Water System [Section 10910(b)]

The COS Planning Department has identified COSMUD as the responsible public water system purveyor for the Project.

2.3 Determine if UWMP Includes Water Demands [Section 10910(c)]

The 2005 Urban Water Management Plan adopted for the COSMA included a portion of the projected water demand associated with the proposed Project and applied forecasted water supply conditions in 2025. The UWMP also includes COSMUD's water conservation best management practices that are accounted for in the land use based unit water demands and in dry and critical hydrologic years when extreme conservation measures will be implemented. Hence, the 2005 UWMP and the information therein is incorporated by this reference.

The portion of the Project water demands included in the 2005 UWMP water demand projections are to 2015 assuming that water is served on a first come first serve basis. Since the UWMP looks only at the 2015 build-out condition of the currently adopted General Plan while applying 2025 water supply conditions as per the Urban Water Management statute, it is necessary to refer to the WSE for information related to sufficiency in demands that exceed 2015 demands consistent with the 2035 General Plan. In addition, unit water demand factors used for the 2035 General Plan vary slightly from the 2005 UWMP due to changes in zoning and land use planning practices. The unit water demand factors used in **Table 1** are therefore used for purposes of assessing water demands within the 2035 General Plan.

Table 1. 2035 General Plan Unit Water Demand Factors and Calculated Water Demands

Designated Land Use	Planning Area Acreage (acres)	Unit Water Demand Factor (AF/ac/year)	Water Demand AF/year
Residential Estate	2,460	1.5	3,690
Low Density Residential	26,220	1.5	39,330
Medium Density Residential	1,970	1.5	2,955
High Density Residential	1,150	3.0	3,450
Village	18,430	3.0	55,290
Administrative Professional	1,050	1.5	1,575
Commercial	4,780	1.5	7,170
Mixed Use	1,420	1.9	2,698
Industrial	17,070	1.5	25,605
Institutional	7,160	1.5	10,740
Parks and Recreation	1,790	2.0	3,580
Open Space/Agriculture	38,560	-	-
Total	**122,060**		**156,083**

Source: NOP of Draft EIR, May 2005 Table 2. Designated Land Uses…

This WSA uses land use-based water demands with some modification to maintain consistency as WSAs are prepared over time. In order to measure projected water demands of a particular project, two land use-based methods can be used, including a "weighted average" method and a project specific land use-based method. As mentioned above, the WSE uses land use information from the 2035 General Plan.

Compliance with SB 610 is simplified greatly by utilizing the land use based methodology. In requesting assurance of a reliable water supply, development projects can be tracked by the General Plan land use map to determine if the lands were included in the water supply analysis and at what levels of assumed water demand. For purposes of WSE, land use-based water demand factors were

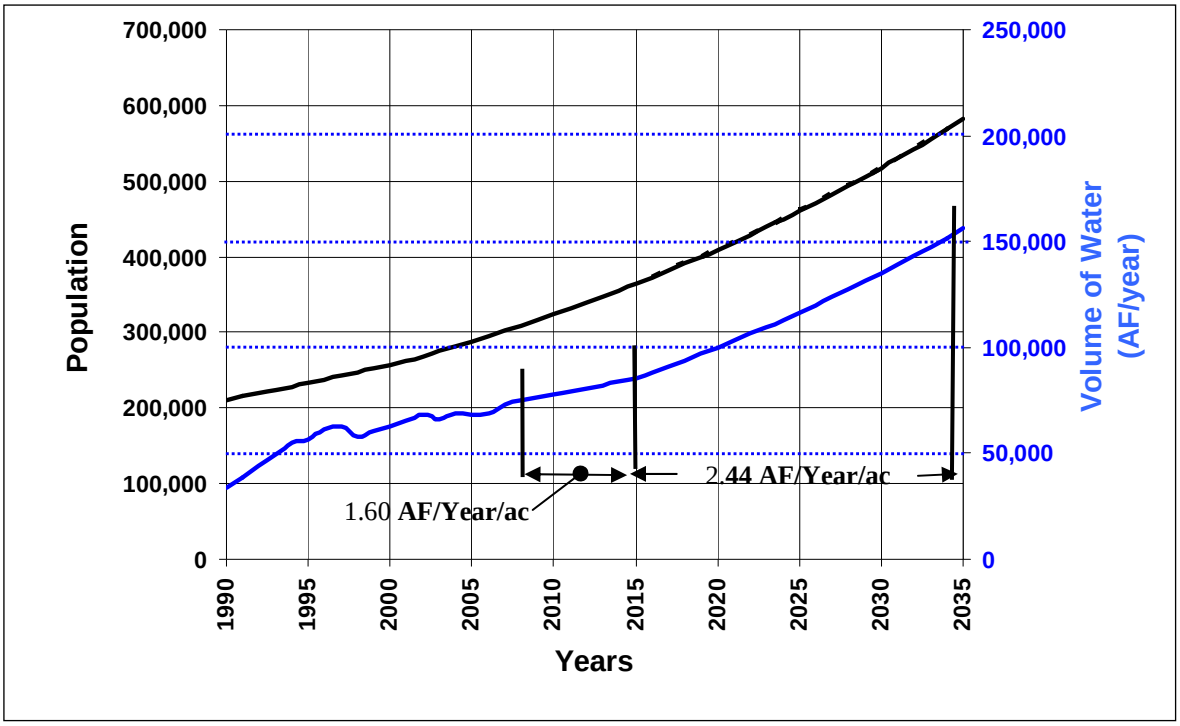
determined and applied to the 2035 General Plan. This application of land-based unit demand factors totaled approximately 156,083 AF/year of water demand in the COSMA with 111,000 AF/year of this amount (71 percent) within the COSMUD service area by 2035 as shown in **Figure 3**.

In order to maintain consistency with the UWMP and the DWSP Feasibility Report, the shape of the water demand curves in **Figure 3** from 2008 to 2015 is based on build-out of the 1990 General Plan land uses and verified using population projections. From 2015 to 2035, the shape of the curves is based on population projections (i.e., 2035 water demands is the end point based on the General Plan land use diagram). Looking at **Figure 4**, the COSMA water demand curve passes through 85,330 AF/year in 2015 and 156,083 AF/year in 2035. If the demand is spread over the **54,500** acres of proposed developed land in 2015, the resulting unit water demand factor is **1.60 AF/acre/year**. Growth that is assumed to take place after 2015 has a different weighted factor calculated in the same manner. The additional COSMA water demand beyond 2015 is **70,753** AF/year that is generated from **29,021** acres of developed urban area. The applied weighted unit water demand factor for projects that are constructed post-2015 is calculated to be **2.44** AF/acre/year.

As mentioned previously, if a project warrants a specific demand calculation by having an intensive water use (i.e., large regional parks, recreational lakes, etc), then another method other than the weighted average method may be used for calculating water demand. In cases where land uses are provided, a check is made to see if the calculated water demand falls close to the **1.60** AF/acre/year and **2.44** AF/acre/year factors, depending on the proposed timing and build-out of the project.

In the case of the Project, the average water demand is **1.5 AF/acre/year** (i.e. single land use of Limited Industrial with 1.5 AF/acre/year). Given the timing of the Project's completion by 2010/15, the higher weighted demand value of **1.60 AF/acre/year** is used in this WSA and is characterized as development that occurs prior to and including 2015.

Figure 4. COSMA Population and Water Demand Increase Over Time



2.4 Identify Existing Water Supplies for the Project [Section 10910(d)(1)]

Section 10910(d)(1) requires identification of existing water supply entitlements, water rights, or water service contracts relevant to the Project and quantification of water obtained by the COS pursuant to those water supply entitlements, water rights, or water service contracts in previous years.

2.4.1 Existing Surface Water Supplies

Stockton East Water District (SEWD) was organized as a public agency on June 7, 1948 under the provisions of the California Water Conservation District Act of 1931. Since 1978, SEWD has been treating and supplying treated surface water up to 60 million gallons per day (mgd) to the region's urban areas through its three urban contractors (water retailer providers): COSMUD, Cal-Water, and the County (see **Figure 2** for location of service areas). **Figure 5** illustrates the growth in COSMUD's surface water supplies from purchased through SEWD and its self-supplied groundwater extractions from 1994 to 2007 with an average growth in water demand of approximately 1,130 AF/year.

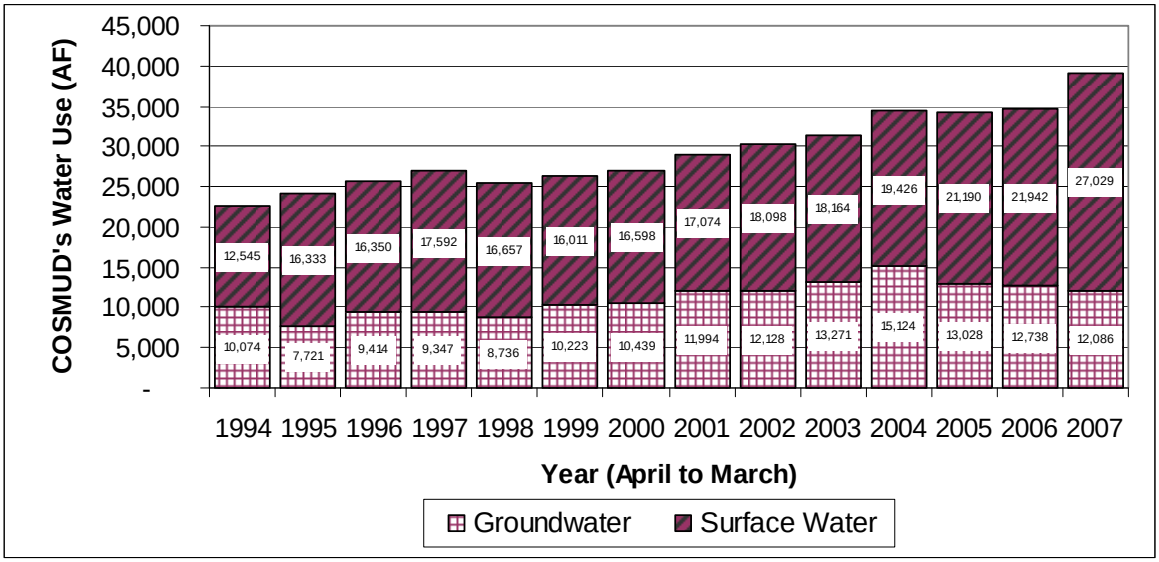
While **Figure 5** shows fluctuations in COSMUD's groundwater use depending on hydrologic conditions, for the most part groundwater is not increasing due to increased SEWD surface water supplies purchased by COSMUD. For historical annual water demands by each of the COSMA water retailers see **Figure 6**. Over

the historical period, local indigenous groundwater from portions of the regional aquifer underlying each purveyor (groundwater supplies are discussed in some detail after the surface water section) and surface water from SEWD have satisfied the three water retail provider's water demand.

It should also be noted that SEWD also provides surface water to San Joaquin County farmers (this amount is not included or considered in this WSA). In addition, SEWD has implemented phased efficiency enhancements to its surface water treatment plant (WTP) to increase the WTP capacity by 15 mgd for a rated WTP capacity of 60 mgd. [3]

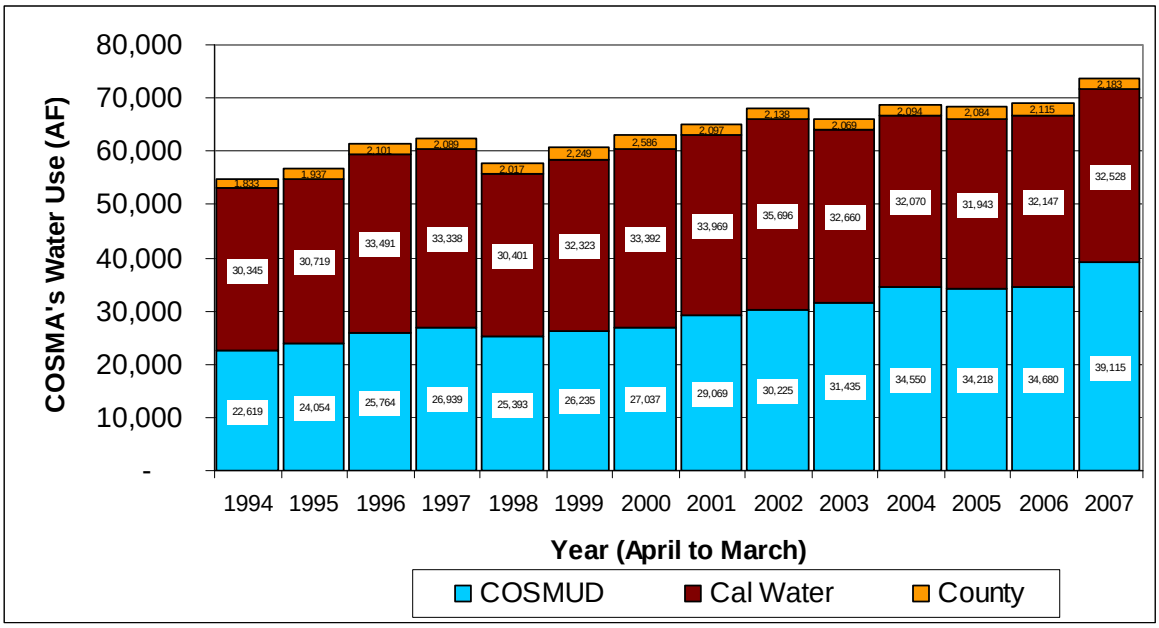
Groundwater extraction capacity within the COSMUD Boundary is conservatively sized for a certain level of redundancy to meet maximum day demands and fire flow requirements and to provide additional annual average supplies in the event that curtailments in surface water occur in dry and critical years.

Figure 5. COSMUD's Historical Water Use



[3] SEWD's recent enhancements have increased capacity in their WTP from 45 mgd to 50 mgd (2005), and from 50 to 60 mgd (2008).

Figure 6. COSMA's Water Use By Water Retailer



2.4.1.1 Existing SEWD Surface Water Contract Entitlements

In 1987, SEWD agreed to provide a minimum of 20,000 AF/year to the City of Stockton Place of Use in accordance with the contract entitled, "*Second Amended Contract Among the Stockton East Water District, The California Water Service Company, The City of Stockton, The Lincoln Village Maintenance District, and The Colonial Heights Maintenance District Providing For The Sale of Treated Water*." See **Exhibit "B"** of this WSA. This agreement allocates the quantity of treated surface water from the SEWD WTP that each urban water retailer/contractor (COSMUD, Cal Water and the County) is to receive based on its percentage of total water used in the COSMA during the previous year. As a retail agency grows, the agency's contribution to paying off the bonds used to construct the SEWD WTP and enhancements increases, thereby increasing their financial interest in the total WTP capacity. This methodology in allocating SEWD WTP capacity and its supplies amongst the three water retailers is especially relevant in deciding the available SEWD WTP capacity available to COSMUD evaluated in this WSA.

In 2007-2008, SEWD WTP annual production of 52,256 AF was allocated as follows: 51.7 percent to COSMUD, 45.6 percent to Cal Water, and 2.6 percent to San Joaquin County. Because of COSMUD's much more rapid growth in population and hence water demand during the past five years, its percentage of

SEWD WTP output has gone from 48% to 52% while Cal Water's has declined from 53% to 46%. The County's share remains constant at around 3%.

The COSMA water retailers currently receive surface water supplies via SEWD from five sources as shown in **Table 2** and illustrated in **Figure 7**: two (2) from New Hogan Reservoir on the Calaveras River and three (3) from New Melones Reservoir on the Stanislaus River. Total existing firm supplies for municipal and industrial (M&I) uses are approximated to yield **74,170 acre-feet per year (AF/year)** under wet and above average hydrologic conditions. Their full entitlements including interim and future supply sources could yield **124,100 AF/year**. Currently, SEWD's ability to use its full water right amount is constrained by one or more of the following in any given year: 1) the hydrologic year type (i.e., dry year curtailment provisions in surface water contracts and reductions in surface water contracted from other agencies), 2) the COSMA's M&I water demand, 3) the capacity of the raw water delivery system to the SEWD WTP, 4) the rated SEWD WTP capacity, and 5) the treated water conveyance capacity from the SEWD WTP to the urban contractors. SEWD is currently pursuing a sixth source of water through Area-of-Origin statutes on the Calaveras River. This would be a junior appropriative water right and its reliability in dry year conditions will likely be small.

2.4.1.1.1 Calaveras River/New Hogan Reservoir

New Hogan Reservoir is owned and operated by the United States Army Corps of Engineers (Army Corps). Reclamation is responsible for the sale of water stored in the reservoir. Both SEWD and Calaveras County Water District (CACWD) hold riparian water rights along the Calaveras River and hold Reclamation contracts for additional water. The riparian water right is 12,650 AF/year for SEWD and 350 AF/year for CACWD with both considered as firm yields in all hydrologic years; this water is only for agricultural irrigation and it is not considered as a water supply for SEWD's WTP in **Table 2**.

Table 2. Current and Future SEWD Water Sources and Critical Year Availability

Source		Annual Contract Amount Acre-feet (AF)	Projected "Critical Year" Annual Availability (acre-feet/year)			
			Planning Year			
			2000	2010	2020	2035
Current and Future Sources of Supply						
Calaveras River/New Hogan Reservoir[4]	Reclamation New Hogan Water Supplies, CACWD and SEWD	Total Reclamation Contract Yield **84,100** AF [1] SEWD Entitled to M&I or Ag **40,171** AF	20,000	12,000	12,000	12,000
	Reclamation Unused CACWD Appropriative Water Rights	Unused CACWD Portion of **84,100** AF Reclamation Contract[2] (Currently estimated at approximately M&I **24,000** AF to **10,000** AF at build-out)	4,800	4,060	3,240	2,000
Stanislaus River/New Melones Reservoir	CVP New Melones Reservoir Interim Water Contract	Total Contract 75,000 AF[3] (M&I **10,000** AF) (Ag & Recharge 65,000 AF)	Not Available in Critical Years			
	SSJID Transfer - Stanislaus River	(Interim M&I 15,000 AF) Contract termination assumed to take place in 2009	4,000	0	0	0
	OID Transfer - Stanislaus River	(Interim M&I 15,000 AF) Contract renewal is assumed to take place to 2025.	4,000	4,000	4,000	0
Calaveras River	Future Appropriative Water Rights on the Calaveras River	(Not Yet Determined, Assumed to be M&I available only in Wet and Above Normal years Only)	Not Available in Critical Years			
Critical Year SEWD Transfers	Future Critical Year SEWD Surface Water or Groundwater Transfers	(These are currently unspecified supplies that could be available with a high degree of certainty in select years through transfer agreements[5])	See Note 5			
Total		(Firm M&I **74,170** AF Initially and **60,171** AF Build-out) (Approximate Max M&I **124,150** AF)[6]	**32,800**	**20,060**	**19,240**	**14,000**

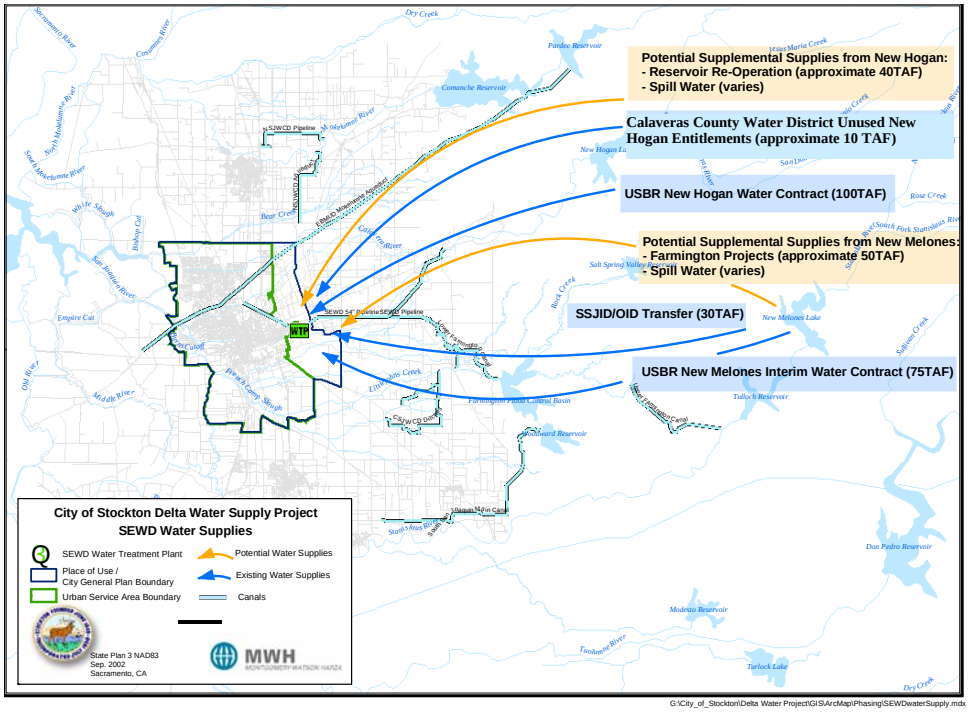
Notes:

1. This includes riparian and Reclamation Contract water leaving 71,100 AF to be split between SEWD and CACWD. SEWD has a contractual right to 56.5 percent of the remaining yield, and CACWD has rights to the remaining 43.5 percent. CACWD currently uses approximately 3,500 AF of its allocation. SEWD and CACWD utilize all of their riparian rights totaling 13,000 AF.
2. Based on a legal opinion from SEWD to CACWD on March 21, 2007, SEWD currently has use of the unused portion of CACWD's appropriative water rights that yields approximately 24,000 AF in wet and above average conditions. For planning purposes, this amount is assumed to decrease to 10,000 AF as CACWD's demands increase through 2035; critical year supplies are assumed to be 20% of the wet and above average condition amount.
3. An interim CVP settlement contract for delivery of up 10,000 AF/year in wet and above average conditions is currently in place.
4. Reliability of New Hogan supplies reduce as water demands increase due to the Corp's need to meet carryover storage in New Hogan reservoir from year to year. Values shown may decrease based on the Corp's reservoir operations.
5. Transfer agreements are likely to occur with upstream senior water right holders on the Calaveras and Stanislaus Rivers or through purchase agreements for groundwater from agricultural in-lieu of their use of same for crop irrigation. Additionally, SEWD may develop groundwater banking programs that store surface water supplies in the wet years for use in the dry and critical years with no net impact to the groundwater basin.
6. This includes up to 50,000 AF/year from future SEWD appropriative water rights and future critical year supply transfers.

On August 25, 1970, SEWD and CACWD entered into an agreement with Reclamation for surface water supplies from New Hogan Reservoir in addition to their riparian water rights. Based on the 1970 agreement, it is estimated that the annual safe yield from the New Hogan Reservoir is 84,100 AF; after the 13,000 AF total riparian water rights, the remaining 71,100 AF is split between SEWD (56.5 percent or up to 40,171 AF in **Table 2** as ***Reclamation New Hogan Water Supplies, CACWD and SEWD***) and CACWD (43.5 percent or up to 30,929 AF) for irrigation and urban uses. The maximum amount of 40,171 AF to SEWD is

identified as ***Reclamation New Hogan Water Supplies, CACWD and SEWD*** in **Table 2**.

Figure 7. SEWD Existing, Future, and Potential Surface Water Right



It is estimated that the CACWD would only use up to 7,000 AF/year of its 30,929 AF from New Hogan Reservoir in 2025; the remaining 23,929 AF/year, shown as ***Reclamation Unused CACWD Appropriative Water Rights*** in **Table 2,** could be diverted by SEWD for municipal and agricultural uses. The question of whether the COSMUD can claim unused CACWD entitlement as a firm water supply is addressed in the following quote from SEWD's attorney (March 21, 2007, Herum Crabtree, Brown, Attorneys at Law):

"There is no alternative use for the C[A]CWD New Hogan supply other than future development within the New Hogan Place of Use within C[A]CWD. The contract among the United States [Reclamation], SEWD and C[A]CWD expressly prohibits the use of New Hogan water outside of the boundaries of the two districts. Further, in Article 10 of the SEWD-C[A]CWD [contract], C[A]CWD expressly agreed that no water from the New Hogan Project shall be used by it or through it by a third party beyond the [Place of Use] boundaries."

Consequently, it is a viable conclusion that if projected growth within Calaveras County does not require its full water entitlements, any unused CACWD water entitlement can be made available to SEWD pursuant to the New Hogan agreements. For purposes of this analysis, and to remain conservative, the assumption is that only 10,000 AF/year will be available in 2035 for SEWD.

Furthermore, over the planning period of 2000 through 2035, only 20 percent of the wet year amount will be available to SEWD in critical years.

For purposes of this analysis, the forecasted availability of water from New Hogan Reservoir is based on data that reflects the operation rules assumed in the latest version of California Simulation Model II (CALSIM II), which is a statewide water resources planning model jointly developed by California Department of Water Resources and Reclamation. Each year, there is a storage target for September to ensure there will be enough water stored going into the next year (i.e., often referred to as carryover storage). Under some extremely dry conditions, monthly deliveries to all users of New Hogan Reservoir are reduced or even cutoff to maintain the necessary carryover storage.

2.4.1.1.2 Stanislaus River/New Melones Reservoir

In 1983, SEWD contracted with Reclamation for 75,000 AF/year of surface water supply from the New Melones Project on the Stanislaus River to be delivered at Goodwin Dam.

In 1994, SEWD completed construction of the Farmington Canal Project, connecting Goodwin Dam to SEWD's WTP expanding its raw water capacity. This provided access to SEWD's New Melones CVP supply. However, as mentioned above, in the mid 1990's, implementation of the CVPIA and other regulatory actions substantially reduced the volumes of water SEWD could expect to be delivered under its New Melones CVP contract, especially in dry years. For purposes of this report, up to 10,000 AF/year of surface water of the original 75,000 AF/year contract will be made available by Reclamation through their New Melones CVP Project in wet years per the 1997 New Melones Reservoir Interim Operation Plan. Under some dry years, SEWD receives no water out of this contract. This CVP supply is identified as ***Reclamation – New Melones Interim Water Contract*** in **Table 2**.

Also included on the Stanislaus River are two interim contracts; one from Oakdale Irrigation District (OID) and the other from South San Joaquin Irrigation District (SSJID); herein referred to as the OID/SSJID contract. SEWD and the urban water retailers have arrangements for interim water transfers from OID and SSJID, which hold senior appropriative water rights on the Stanislaus River. These two interim water contracts are identified as ***SSJID Transfer - Stanislaus River*** and ***OID Transfer - Stanislaus River*** in **Table 2**.

The OID/SSJID contract includes an option to renew for a minimum of a ten-year period upon expiration in 2009, subject to mutually agreed conditions. The OID/SSJID contract is currently for up to 30,000 AF/year, 15,000 AF/year from each district. The projected variability of supply available to SEWD under the April 1997 OID/SSJID contract is shown in **Table 3**. While both contracts are due to expire in 2009 (with a possible ten year renewal), the City of Stockton is currently

pursuing a renewal of only one of the contractors (SSJID). Therefore, as part of this work, it is assumed that one of the two contracts will be renewed and that the contract will contain a 10-year renewal option similar to terms of the original agreement. In 2035, there would be no water transfer from either OID/SSJID unless some critical year transfer agreement is made.

Table 3. Availability of Water Under the OID/SSJID Interim Water Contract

Percentage of Years (see note below)	Volume Available Annually Prior to 2009 (AF/year)
85%	30,000
9%	12,500
6%	8,000

Note: Percentage of years is based on the existing contract that stipulates that 30,000 AF/year of water is available in years in which the Reclamation forecast for inflow to New Melones Reservoir is forecasted to be greater than 500,000 AF, 12,500 AF/year if between 450,000 AF and 499,000 AF, and 8,000 AF/year if less than 450,000 AF.

2.4.1.1.3 New Appropriative Water Rights on the Calaveras River

Additionally, this report recognizes that SEWD is pursuing its own appropriative water rights to the Calaveras River in the total amount of 20,000 AF/year in wet and above-normal hydrologic years. However, because of the uncertainties in obtaining a new water right permit and the special conditions that may be attached to the permit, no amount of this water is used in this report. This water is identified as Future Appropriative Water Rights on the Calaveras River in **Table 2**.

2.4.1.1.4 Critical Year SEWD Transfers

Through an initial phase analysis of SEWD's surface water supplies under 2035 conditions, there were years (less than 10 percent probability) when surface water supplies to SEWD's WTP were less than 20 TAF/year. It is anticipated that, in those years, SEWD and the urban water contractors would seek remedies to insure reliable water supplies to optimize the existing SEWD WTP and conveyance capacity through surface water transfers from senior water right holders (e.g., OID/SSJID) or other CVP contractors on the Calaveras or Stanislaus Rivers. Other potential programs may include: 1) purchasing groundwater from agricultural groundwater users in-lieu of their use of the water for irrigation, or 2) construction and implementation of a groundwater storage and recovery project where surface water is allowed to percolate into the aquifer in the wet years for recovery in dry years with no net impact to the groundwater elevations. This water is identified as Critical Year SEWD Transfers in **Table 2** and is not used in this WSA.

2.4.2 Summary of SEWD Water Supplies

Based on the above discussion, availability of existing water contracts from the Calaveras and Stanislaus rivers would likely be reduced due to: 1) dry year shortages, 2) the temporary nature of interim water from OID and SSJID, and 3) the junior status of any new appropriative water right. It is also anticipated that the reliability of these existing and future water supplies will reduce over time. Forecasting COSMUD's use of SEWD water will be based on its projected water demands relative to Cal-Water and the County. The historical and future percentage of COSMUD's use of SEWD is shown in **Table 4** below for the period dating back to 1994 (42%) and forecasting to 2035 (71%) assuming continued reliance on SEWD as the sole source of surface water supplies.

Table 4. COSMUD's Past and Future Percentage Use of SEWD WTP Capacity

Year	Total Demand	COSMUD		Cal Water		County	
	(AF/year)	Demand (AF/year)	Percent of Total Demand	Demand (AF/year)	Percent of Total Demand	Demand (AF/year)	Percent of Total Demand
1994	**54,260**	22,619	**41.69%**	30,345	55.93%	1,296	2.39%
2004	**68,714**	34,550	**50.28%**	32,070	46.67%	2,094	3.05%
2010	**81,250**	45,170	**55.59%**	33,940	41.77%	2,140	2.63%
2015	**85,330**	49,078	**57.52%**	34,076	39.93%	2,176	2.55%
2020	**106,250**	64,030	**60.26%**	40,000	37.65%	2,220	2.09%
2030	**137,500**	92,200	**67.05%**	43,000	31.27%	2,300	1.67%
2035	**156,083**	110,663	**70.90%**	43,079	27.60%	2,341	1.50%

2.4.3 Existing Groundwater Supplies

While the urban water purveyors participate cooperatively in the development of SEWD surface water supplies, each of the urban water retailers currently exercise (and will continue to exercise) their rights as overlying appropriators to extract groundwater from the Eastern San Joaquin Sub-Basin underlying the City of Stockton for delivery to its customers. Groundwater is an extremely important resource for the COSMA water retailers and can be managed for long term sustainability and use through conjunctive use with the surface water supplies described above. COSMUD views it groundwater supplies as a means to both reduce the migration of salt water from the west that threatens potable groundwater supplies, and to conjunctively use groundwater with surface water to manage the basin when groundwater supplies will be needed to meet water demands. Each of the COSMA retailers has similar groundwater management objectives. The adopted 2035 General Plan Policies provide a means of adherence in meeting the City of Stockton's groundwater management goals and objectives.

Conjunctive use implies that groundwater will be preserved as the last source of supply that is used if surface water supplies are insufficient to meet water demands. In wet years, when surface water is more plentiful, the groundwater basin is allowed to recover through in-lieu recharge (i.e., allowing natural recharge to occur from streams and rivers by pumping at lower extraction amounts), and in the dry years, groundwater is extracted at higher amounts to meet the shortfall of surface water supplies in meeting M&I water demands. The result is that groundwater levels are managed at or near current levels. This WSA recognizes the need to protect the groundwater resource that is already threatened by salinity intrusion, and to provide a plan to protect the groundwater resources indefinitely.

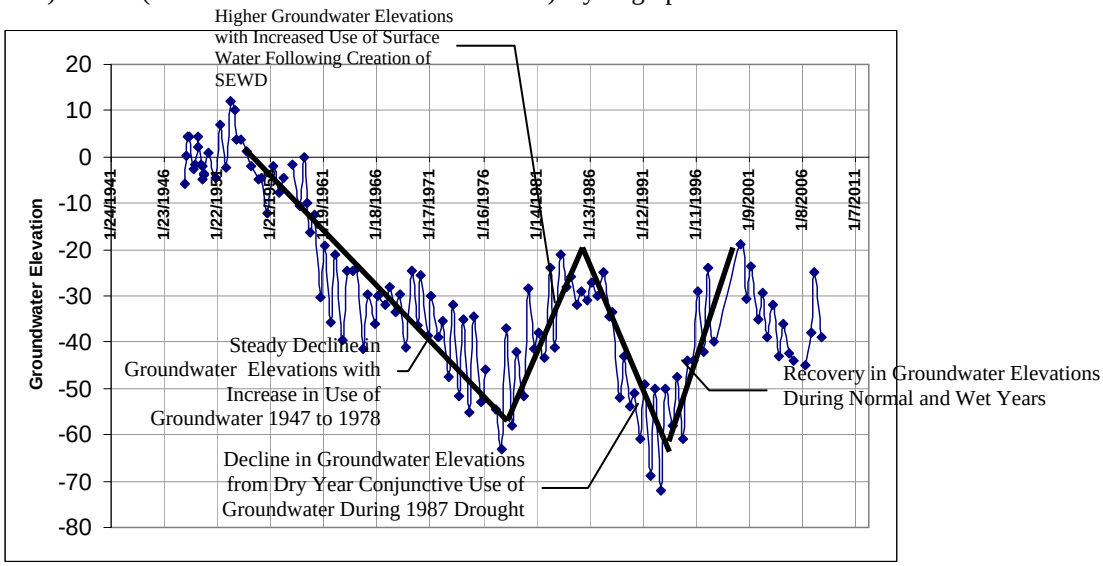
Groundwater use within the broader San Joaquin County region has resulted in a net decline of groundwater elevations over the period from 1947 to 2008 as indicated by two of the three hydrographs shown in **Figure 8.** The figure illustrates groundwater elevations at wells located within and adjacent to the City (see **Figure 9** for well locations and recent groundwater elevations). The short duration fluctuations in **Figure 8** result from the seasonal wet and dry months and irrigation usage within each year. An overall decline in groundwater elevations from 1947 to 1978 is the result of agriculture and urban areas relying entirely on groundwater supplies.

In the late 1970's, SEWD began to provide supplemental supplies of surface water to the Stockton urban water retailers and to agricultural lands with available raw surface water conveyance facilities. The use of surface water in the COSMA resulted in an increase in groundwater elevations as shown in the hydrographs in **Figure 8**. Increases in the elevation continued until the drought of the late 1980's and early 1990s. The behavior of the groundwater basin during the drought and subsequent normal year hydrology of the late 1990's indicate that the basin is recovering and is stabilized and operating within a manageable range. The recent stabilization and improvement in groundwater elevations is the result of wet

Figure 8. Groundwater Elevation Hydrographs for Areas Near the City of Stockton

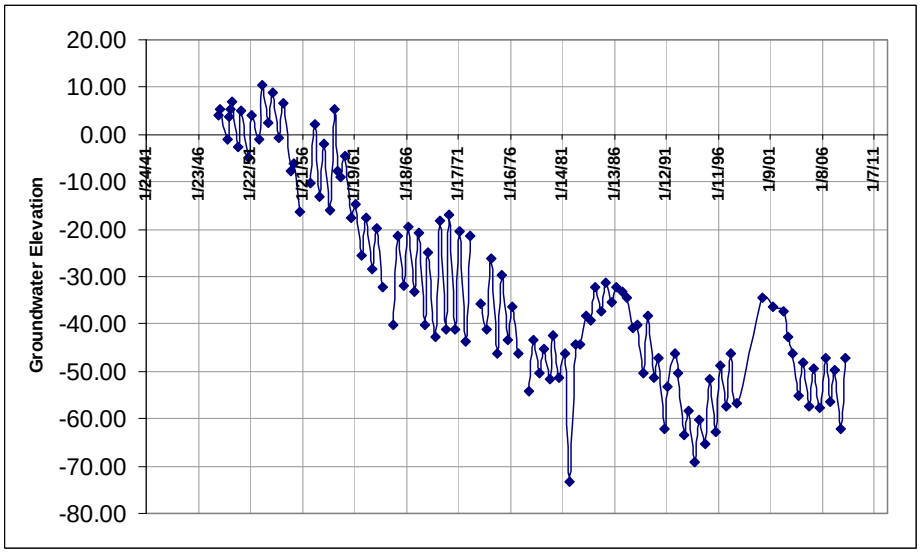
(see Figure 9 for Hydrograph locations)

a) Well 1 (State Well ID No. 02N06E26H001M) Hydrograph from 1947 to 2008



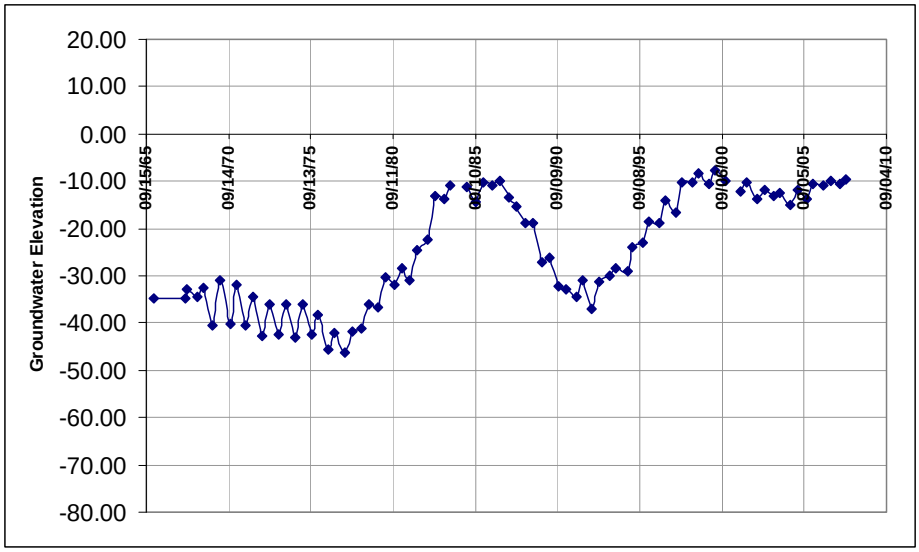
Data Source: State of California DWR State Well Monitoring Program as of June 2008

b) Well 2 (State Well ID No. 02N07E15C001M) Hydrograph from 1947 to 2008



Data Source: State of California DWR State Well Monitoring Program as of June 2008

c) Well 3 (State Well ID No. 01N06E03K001M) Hydrograph from 1966 to 2008



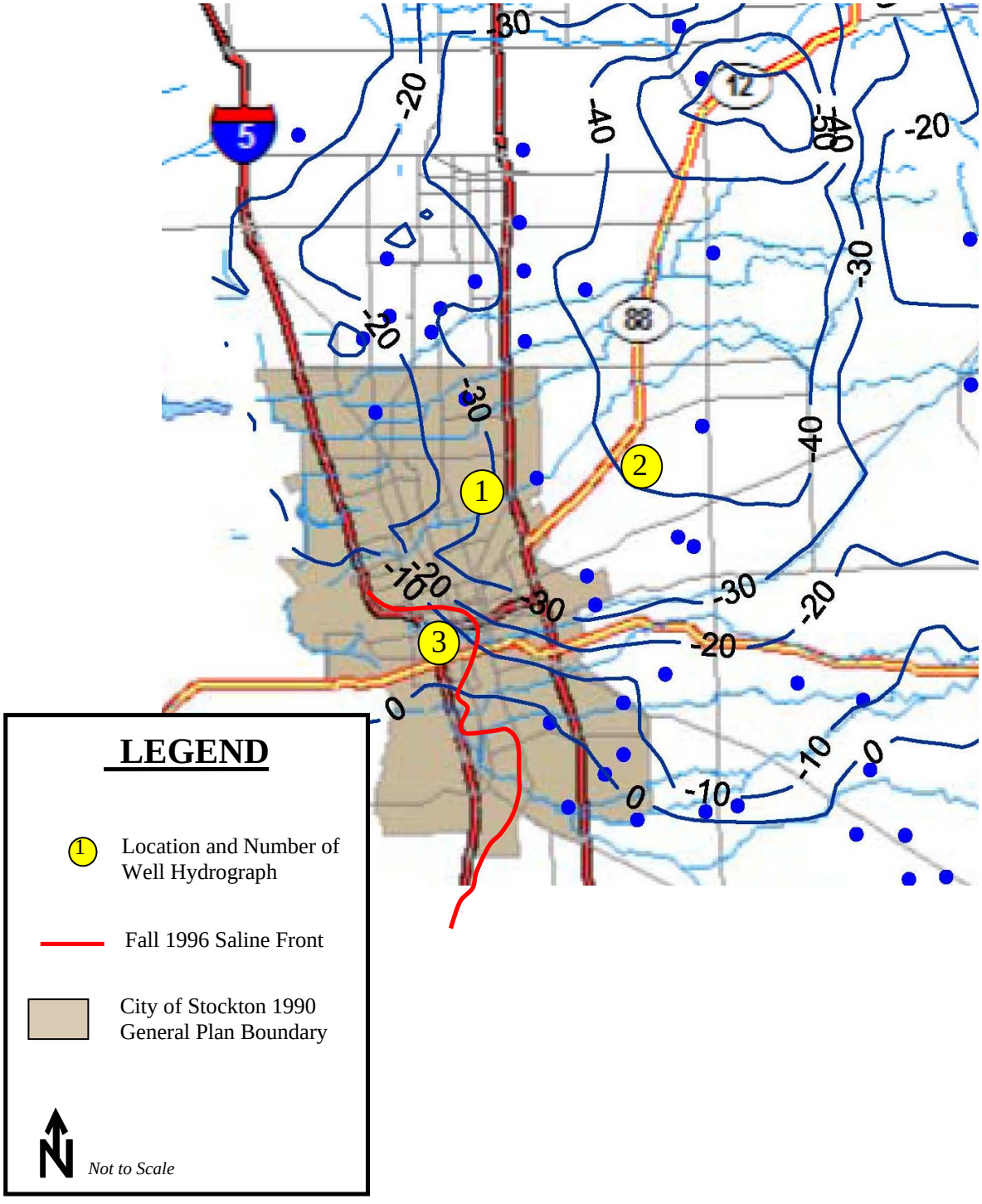
Data Source: State of California DWR State Well Monitoring Program as of June 2008

hydrology, active recharge projects, and increased surface water deliveries in areas historically served by groundwater. Stabilization infers that the amount of recharge is keeping up with the amount of extraction on a long term average basis. Over the period from 1995 to 2006 hydrologic conditions have been, on average, above normal (i.e. based on rainfall, runoff and snow pack). This has provided a significant period of time for reduced groundwater use and increased surface water use; thereby allowing the groundwater basin to recharge naturally. It is anticipated that the recent dry hydrologic conditions seen in 2007/08 will show up as a decline in groundwater elevations from the 2006 monitoring results but not go below elevations seen in the 1987 to 1993 hydrologic period of record.

Over the period from 1947 to present, the change in slope of the groundwater surface in western San Joaquin County has created a condition that has allowed saline water to migrate east-northeast into a portion of the COSMA, degrading water quality and rendering it unsuitable for municipal or agricultural use in some areas of COSMUD's and Cal-Water's service areas. Salinity intrusion is perhaps the most significant concern, rendering a well useless for potable drinking water and agricultural irrigation. Every measure to reduce the movement of the salinity front further east has been, and continues to be, taken by decommissioning public and private wells and through strategic delivery of surface water to areas most impacted by salt water intrusion.

Figure 9. COSMA Fall 2005 Groundwater Elevation Contours

(Data Source: California State Department of Water Resources, feet, msl)



An important constraint on the sustainable yield of the groundwater basin is the change in the rate of movement of the salinity front. Sustainable yield is that rate at which groundwater can be withdrawn from the aquifer, while protecting the aquifer from overdraft and water quality degradation (such as from saltwater intrusion). Over the years, there have been various estimates of the sustainable long-term yield from the groundwater aquifer. The February 1992 Supplemental Report for Water Supply prepared for the COS Special Planning Area Study states:

"about 40,000 acres and an average withdrawal of 0.75 AF/acre/year. …groundwater can provide from 0.75 to 1.0 AF/acre/year on a long term basis."

Likewise, the COS 1995 Urban Water Management Plan Update identifies long term (sustainable) firm yield as 1.0 AF/acre/year and the North Stockton Master Plan identifies 0.75 AF/acre/year as sustainable groundwater yield. Although sustainable yield of the groundwater aquifer is calculated at 0.75 to 1.0 AF/acre/year, this WSA (in accordance with GP Policy PFS-2.11) conservatively employs a 0.60 AF/acre/year factor for evaluating the long term average annual target extraction rate, and a 0.75 AF/acre/year factor for purposes of setting a maximum extraction rate in a single dry year and multi-dry years.

2.5 Capital Outlay Program for Financing Delivery of Water [Section 10910(d)(2)(B)]

This subsection requires a copy of the capital outlay program for financing the delivery of water to the Project. Generally, the financial program for development of surface and groundwater supplies in the COSMUD has been completed at a planning level with the DWSP Feasibility Report, and includes both existing and future capital outlays.

Currently, the three COSMA urban water retailers finance their respective capital costs for new and replacement facilities. Groundwater is provided by each water retailer to its respective service area. Surface water is purchased by COSMUD, Cal Water and the County from SEWD. User fees and connection fees pay for each purveyor's water facilities and for each urban contractor's portion of SEWD facilities, water supply and services.

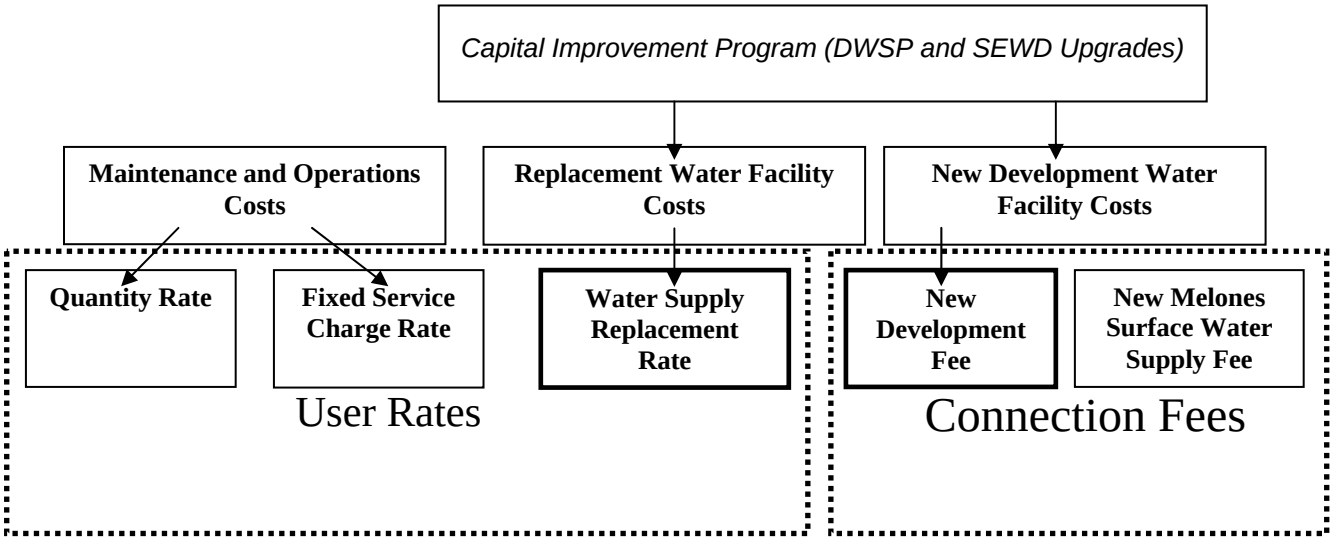
Cal Water and COSMUD rate structures are similar with 100 percent metered billing with water bills (stand-by and meter charge) averaging approximately $35 to $60 per month based on two-thirds of an acre foot per year for a single family home. This analysis assumes that a uniform rate and connection fee are applied over the entire service area to provide for the needed capital improvements.

The current rate structure for COSMUD (see **Figure 10**) assumes that maintenance and operations costs are recovered from revenues generated from quantity and fixed service charge rates. The current quantity based rate structure

is being modified to switch from a declining block rate (customer pays less per unit of water as water use increases) to a uniform commodity rate for all customers.

Since replacement water (i.e., water and infrastructure purchased by existing rate payers that require replacement as a result of regulatory reductions in the amount of available water such as the New Melones Project) supplies benefit existing customers, an additional fixed water supply replacement rate component is added to pay for facilities needed to replace lost supplies. Since new growth customers will also be paying this component, they will share in the replacement water supply costs. Costs of capacity constructed for new development is borne entirely by new growth through a development fee. Given the fragile balance in water supplies and the dependency of one supply on the other there is no distinction in geographic area on which areas of COSMUD benefit from which supply sources.

Figure 10. Conceptual Rate Design (COSMUD Model)



2.6 Federal, State, and Local Permits Required [Section 10910(d)(2)(C)]

This subsection requires identification of any federal, state, and local permits required for construction of any infrastructure associated with delivering water to the Project.

Any new wells for the General Plan Update will be added to each of the water purveyor's California Department of Public Health (DPH) permit to serve potable water supplies. The design of those facilities will require coordination with DPH. Any future expansion of SEWD WTP capacity will also be done in accordance with DPH requirements. Large SEWD WTP efficiency enhancements may require local permitting and possible CEQA action depending on the extent of new construction. No other regulatory approvals are anticipated for meeting existing demands.

2.7 Regulatory Approvals Required [Section 10910(d)(2)(D)]

This subsection requires identification of any regulatory approvals required for delivery of the water supply to the project.

The local groundwater and surface water facilities to serve the Project will be added to the DPH permit to serve potable water supplies within the COSMUD service area. The design of those facilities will require coordination with DPH. No other regulatory approvals are anticipated.

2.8 Identify Potential Conflicts in Exercising Water Rights [Section 10910(e)]

This section states:

"If no water has been received in prior years by the public water system,…, under the existing water supply entitlements, water rights, or water service contracts [identified to serve the proposed project], the public water system, … , shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, … , has identified as a source of water supply within its water supply assessments."

The intent of this section is to identify any potential conflicts that may arise from the exercise of an existing water supply entitlement, water right, or water service contract to serve a proposed project if such water supply entitlement, water right, or water service contract has not been previously exercised.

Use of Groundwater:

The water demands of the COSMUD will be met in part with groundwater. The COSMA urban water retail purveyors have previously exercised their rights as overlying groundwater appropriators to serve the water demands of their customers through above normal, drought and multiple drought years over the past 20+ years and will continue to exercise those rights to sustainable levels to provide potable water supplies.

Use of Surface Water:

The surface water supplies associated with the conjunctive use program fall into three categories: 1) water supplies derived from the CVP, 2) interim water supply contracts, 3) surplus supplies available on an intermittent basis. Intermittent supplies may be used, if available, but are not considered "firm" and not used in the WSA.

The parties that could most directly be affected by exercise of these water rights are CVP contractors, State Water Project (SWP) contractors, water rights holders subject to Term 91 conditions, and riparian diverters downstream of the points of diversion for each contract.

2.9 Groundwater Assessment [Section 10910(f)]

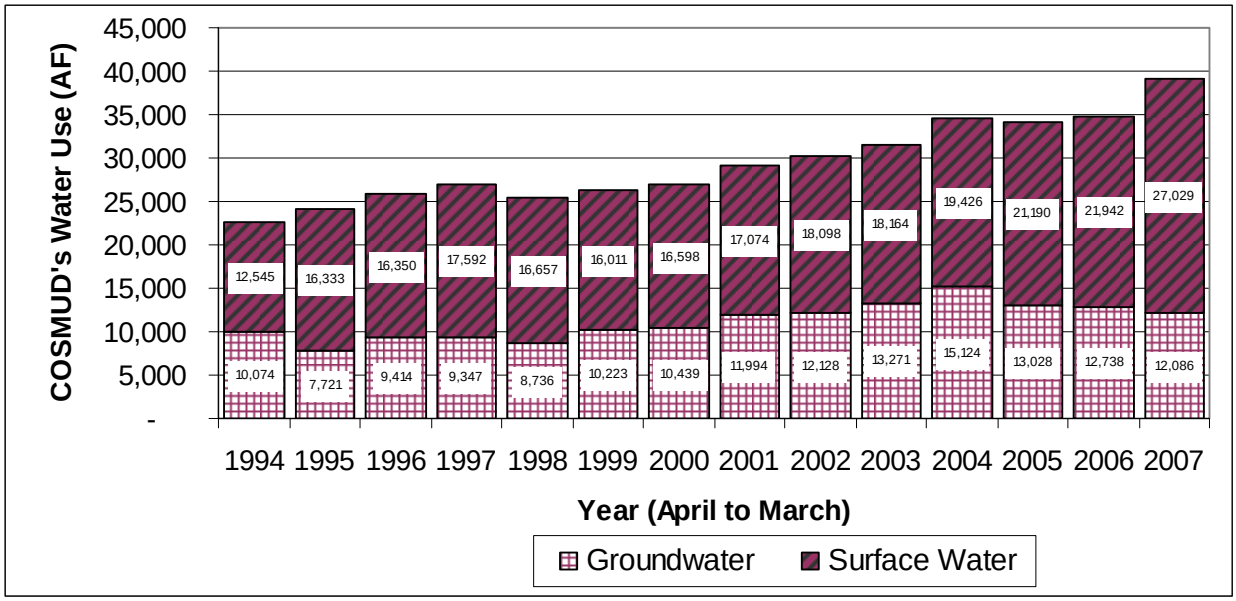
The water demands of the project will be met partially with groundwater. Consequently, Section 10910(f) requires specific additional information.

Section 10910(f)(1)

Section 10910(f)(1) requires a review of groundwater data contained in the UWMP.

The December 2005 UWMP does identify past volumes of groundwater extracted by the COSMA urban water retailers. An updated graph of COSMUD's historical surface water and groundwater supplies from 1994 to 2007 is provided in **Figure 5**. This graph shows groundwater use fluctuating between wet and dry hydrologic periods and availability of surface water supplies. Overall groundwater use averages 23.2 TAF/year with a minimum of 17.4 TAF/year and a maximum of 29.7 TAF/year. For COSMUD (See **Figure 5**) the average, maximum, and minimum groundwater use has been 11.1 TAF/year, 15.1 TAF/year, and 7.7 TAF/year, respectively. This same method of water delivery is assumed to occur into the future as demands increase. The current limitation in the SEWD infrastructure requires additional groundwater supplies for meeting peak month and maximum day water demands including the Project.

Figure 11. COSMA's Historical Groundwater and Surface Water Use



Section 10910(f)(2)

Section 10910(f)(2) requires a description of the groundwater basin and the efforts being taken to prevent long-term overdraft.

The groundwater basin underlying San Joaquin County is part of the contiguous Central Valley aquifer system, which supplies groundwater to agricultural, domestic, and industrial water users from Redding to Bakersfield. The basin consists of Pre-Tertiary igneous and metamorphic rocks of the Sierra Nevada that continue west beneath the valley floor. Marine sediments, thousands of feet thick, overlie the basement rocks. Continental deposits overlie the marine rocks and act as the primary freshwater aquifer in the study area. In local areas, fresh water may be present in both marine and continental deposits, and saline water may be found in continental deposits.

DWR Bulletins 118 and 146 identify the usable aquifer in the eastern portion of San Joaquin County as the continental deposits of Miocene and younger age. The usable aquifer is present within the boundaries of the county in distinct geologic formations that include the Mehrten Formation, the Laguna Formation, the Victor Formation, flood basin deposits, and alluvial fan and stream channel deposits. The thickness of the usable aquifer ranges from less than 100 feet in the eastern edge of the county to over 3,000 feet in the southwestern edge, and is approximately 1000 feet beneath Stockton.

Groundwater in the San Joaquin County area moves from sources of recharge to areas of discharge. Most recharge to the aquifer system occurs from the Delta and along active stream channels where extensive sand and gravel deposits exist. Consequently, the highest groundwater elevations typically occur near the Delta, the Stanislaus River, and the San Joaquin River. Other sources of recharge within the project area include subsurface recharge from fractured geologic formations to the east, as well as deep percolation from applied surface water and precipitation.

Municipal and agricultural uses of groundwater within San Joaquin County contribute to an overall average yield of groundwater estimated to be 867,000 AF/year. Historically, groundwater elevations have declined from 40 to 60 feet. As a result, a regional cone of depression has formed in Eastern San Joaquin County creating a gradient that allows saline water underlying the Delta region to migrate northeast within the southern portions of the City. Groundwater underlying the City generally flows to the east due to the regional cone of depression. Reducing the hydraulic gradient in the vicinity of the salinity front is a specific groundwater management goal.

In the past, the groundwater basin underlying San Joaquin County has been classified by DWR as being in overdraft, especially in the northeastern portion of the County. The COSMA water retailers, however, have been instrumental through voluntary participation in funding the existing conjunctive use program for the portion of the basin underlying the COSMA that groundwater elevations have stabilized and no significant declines have been recorded since the late 1980's.

In addition to its historical contributions, the COSMUD's long-term plan for preventing overdraft of the groundwater basin are embedded in the objectives of

the proposed future DWSP to insure systematic, incremental implementation of the on-going conjunctive use program to provide a benefit to the groundwater basin. This benefit extends beyond the political boundaries of the COS. As agricultural lands irrigated by groundwater are fallowed or converted to urban uses, groundwater use is expected to decrease significantly. Another more costly recourse to agricultural groundwater pumping is to supply untreated surface water to these lands. SEWD would likely be the water supplier with costs paid through assessment or by other funding mechanisms. To date, this enforcement type action has not been required in part due to the urbanized areas of the County working towards bringing more surface water into growing areas.

Section 10910(f)(3)

Section 10910(f)(3) requires a description of the volume and geographic distribution of groundwater extractions from the basin for the last five years (See **Figure 5**).

Data for municipal and industrial groundwater usage have been collected and are shown in **Figure 5**. The distribution of groundwater pumping is shown in **Figure 12** where existing well locations are shown. Historical groundwater demands and location of agriculture and private wells have not precisely been identified, measured, and collated; rather, a regional groundwater model of the entire San Joaquin County area was constructed in the early 1990's to evaluate the effects of cumulative groundwater extractions in the San Joaquin County area and surrounding regions that are affected by or affect groundwater elevations in the San Joaquin County area. This groundwater and surface water model estimated through land use and crop types the consumptive use of water that is extracted from groundwater and diverted from surface water supplies. This Integrated Surface Water Groundwater Model (IGSM) was used in the WSE for the General Plan Update to evaluate the cumulative impacts of groundwater extractions from the new growth areas, using the self-imposed groundwater management goals, and the private and agricultural groundwater extractions that have been taking place over the past 20 years. Boundary conditions for the San Joaquin IGSM are either the Sierra Nevada foothills to the east, a similar IGSM model for Sacramento County and Stanislaus County to the north and south, repectively, or from the State's Central Valley IGSM along the western boundary. For any boundary not represented by a high resolution IGSM in the aforementioned county IGSMs, the Central Valley IGSM was used.

As explained later in the WSA, use of the model was limited to evaluating the effects of removing agricultural extractions from inside the 2035 General Plan region and replacing this extraction with an amount that does not impact the salinity front or reduce groundwater elevations by more than 2 feet from the "without any additional extraction" scenario (i.e., this is very conservative given that agricultural pumping can be as high as 4.0 AF/acre/year and the recommended urban pumping can be as high as 0.87 AF/acre/year. The 0.27

AF/acre/year long term average above the 0.60 AF/acre/year goal is considered to be an agricultural credit in the WSE; likewise the 0.12 AF/acre/year difference with the 0.75 AF/acre/year not-to-exceed extraction in any given critical year or consecutive dry years is considered to be an agricultural credit in the WSE).

On the issue of Agricultural Groundwater credits, the studies of agricultural credits (see Appendix F of the WSE) and the use of groundwater for municipal purposes in areas that have historically extracted groundwater for irrigation uses results in a significant decrease in groundwater pumping, contrary to comments made that equate urban pumping with agricultural pumping. Agricultural uses require anywhere from 2 to 4 acre feet/acre/year from groundwater. Under self-imposed groundwater management programs, the sustainable yield for lands converted to urban uses within the COSMA is 0.75 AF/ac/year. That is, as each new acre of planned development occurs, a maximum of 0.75 AF/year of groundwater can be extracted in any one given year, and the average over multiple years cannot exceed 0.60 AF/year. However, Agricultural Credits were not used to meet 2035 General Plan build-out water demands.

Section 10910(f)(4)

Section 10910(f)(4) requires a description of the projected volume and geographic distribution of groundwater extractions from the basin. For the existing supplies, this is presented in Section **10910(d)(1)** above and the location of groundwater wells are represented in **Figure 12**.

Section 10910(f)(5)

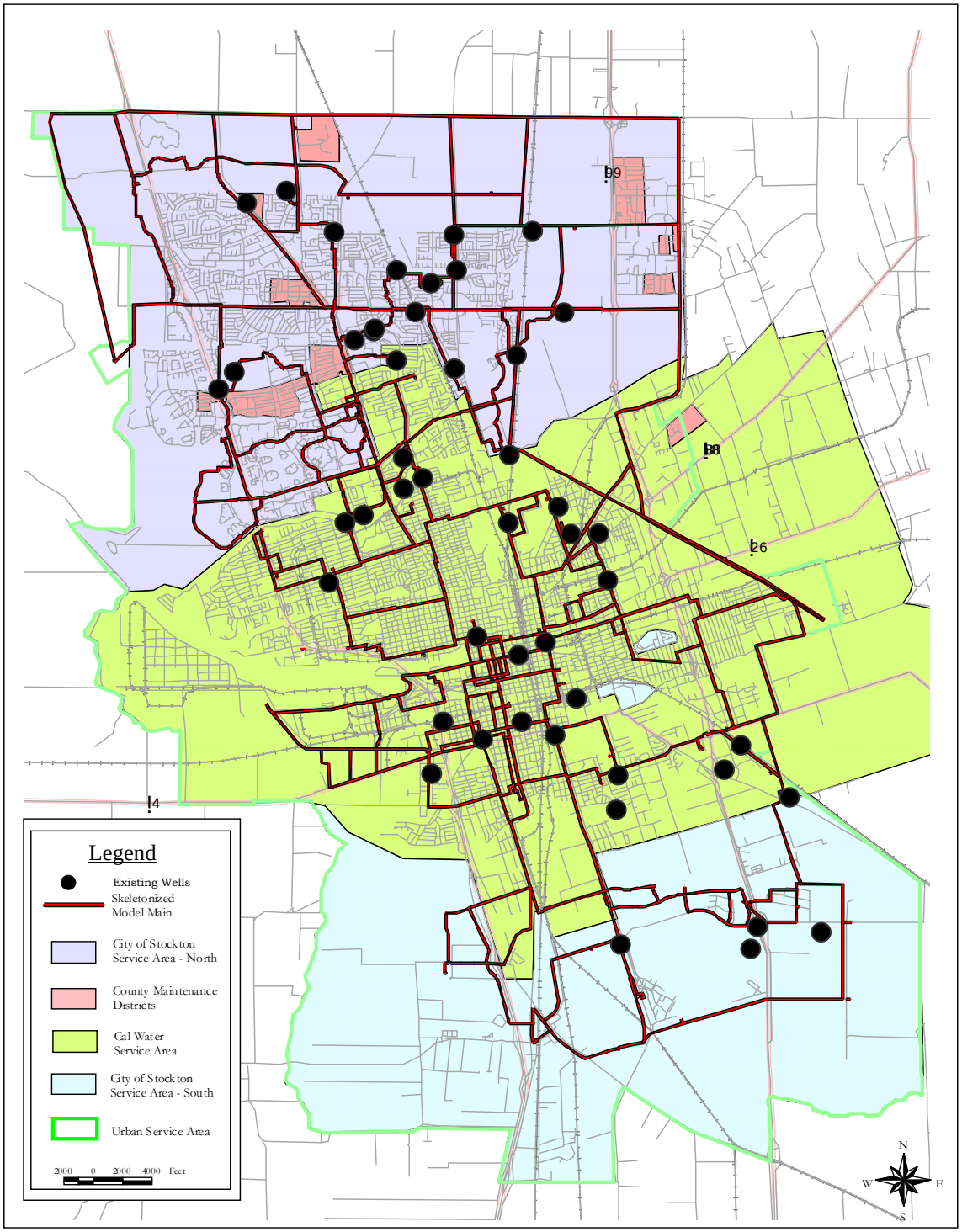
Section 10910(f)(5) requires an analysis of the sufficiency of the groundwater basin to meet the demands associated with the project.

This is presented in Section 10910(d)(1) above and starting on Page **21** under the heading of “Existing Groundwater Supplies”.

2.10 City’s On-going Conjunctive Management Program

This section describes how the water supply sources in the COSMA are currently being operated in conjunction with each other to meet COSMUD’s existing water demands. This analysis includes modeling a complete conjunctive management program using all of the existing COSMUD water supplies described in the above sections and applying those supplies against existing and reasonably foreseeable water demands plus the Project water demands. (See **Exhibit “C”** for list of pending developments.) For purposes of this WSA, reasonably foreseeable is defined as existing water demands plus all new development demands that have either been approved or have a completed WSA on file (see below) with COSMUD. The WSA evaluates if existing supplies can meet the additional Project demand assuming that all other water demands are either existing or have a WSA

Figure 12. Existing COSMA Well Locations



showing sufficiency of water supplies. This analysis assumes operation of shared facilities in accordance with existing agreements and operational rules (e.g., Cal-Water is not included in the total water demand; however, its shared use of SEWD WTP capacity is taken into account by apportioning the capacity based on the previous year's water demands.)

Other (proposed) projects for which WSA's have been prepared together with the proposed project are summarized in **Table 5** include:

Cannery Park: 450-acre located southwest of the Eight Mile Road and Highway 99 interchange. (Current Status: Approved)

Paradise (a.k.a. Westlake) Villages: 683 acres located west of Interstate 5 and immediately west of the Spanos Park West, south of Eight Mile Road, east of Bishop Cut and north of Disappointment Slough. (Current Status: Approved)

Origone Ranch: 394 acres located in the unincorporated area of San Joaquin County south of Eight Mile Road and east of West Road. (Current Status: Not Approved)

North Stockton Phase III: 237 acres located south of Eight Mile Road and Lower Sacramento Road on the east and the Union Pacific Railroad on the west. (Current Status: Approved)

Bear Creek West Specific Plan: 1,149 acres located south of Eight Mile Road, west of West Lane, east of Lower Sacramento Road, and north of Sutherland drive. (Current Status: Not Approved)

Bear Creek East Specific Plan: 318 acres located south of Eight Mile Road, east of West Lane, west of the Union Pacific Railroad, and north of the Bear Creek drainage corridor. (Current Status: Not Approved)

Weston Towne Center: 59.68 acres located north of French Camp Road, west of I-5 at the northwest quadrant of the I-5/French Camp Road interchange, and east of McDougald Boulevard and the existing Weston Ranch residential subdivision. (Current Status: Approved)

Tidewater Crossing Specific Plan: 895 acres located immediately south and southwest of the Stockton Metropolitan Airport. The Project bisects South Airport Way. The southwestern portion of the site abuts French Camp Road. (Current Status: Approved)

Spanos Business Park Master Plan Development: 219 acres surrounded by Eight Mile Road (north), Interstate 5 (east), approved Residential Component of Spanos Park West (west), and Pixley Slough/Bear creek (south). (Current Status: Not Approved)

Sanctuary/Shima Tract Specific Plan: 1,967 acres located South of I-5, South of Spanos West and north of Lincoln Village West. (Current Status: Approved)

Mariposa Lakes Specific Plan Specific Plan: 3,810 acres (note: only 3,091 acres subject to a WSA, remaining to be served with non-potable supplies) located south of State Route 4 and west of Kaiser Road. This project is located in the unincorporated area of San Joaquin County within the City of Stockton Sphere of Influence but outside the Urban Service Boundary of the 1990 City of Stockton General Plan. (Current Status: Approved)

Atlas Tract Specific Plan: 360 acres located south of Eight Mile Road, west of Interstate 5. This Project is a mixed use project proposed for development in the northwest corner of the City of Stockton. (Current Status: Approved)

Crystal Bay Specific Plan: 173 acres bounded to the north by Eight Mile Road, to the South by Westlake at Spanos Park West, to the west by Bishop Cut and Rio Blanco Road and to the east by Westlake at Spanos Park West. (Current Status: Approved)

Bear Creek South Master Plan Development Plan: 510 acres bounded by Bear Creek to the north, West Lane to the west, the Union Pacific Railroad to the east, and Morada Lane to the south. (Current Status: Not Approved)

Gateway Master Development Plan: 2,231 acres located in San Joaquin County immediately north of Eight Mile Road, west of Thornton Road, south of the City of Stockton Sphere of Influence and east of the Reserve at Spanos Park Golf Course. (Current Status: Not Approved)

North Stockton Village: 771 acres located within the City of Stockton's sphere of influence, adjacent to Stockton's northern city limits at Eight Mile Road. It lies east of Interstate Highway 5. (Current Status: Not Approved)

Arch Road Industrial Park: 63 acres located in San Joaquin County immediately south of Arch Road and east of Newcastle Road. (Current Status: Not Approved)

Archtown Industrial Park: 70 acres located in San Joaquin County at the southwest corner of the intersection of Arch Road and Newcastle Road. (Current Status: Not Approved)

The total existing, foreseeable, and Project water demand is calculated to be **61,404** AF/year as shown in **Table 5**. The subsequent analysis addresses the question of whether existing supplies can meet water demands over the next 20+ years. Especially, it addresses the concern if groundwater can sustain the

Table 5. WSA Water Demand and Groundwater Yield

	Development	Acreage	Water Demand Factor (Note 1)	Total Water Demand	Groundwater Yield (AF/ac/year)	Groundwater Supply (AF/year)
Existing	Existing Development within COSMUD's Retail Service Area	**24,164**	**n.a.**	**34,550**	**0.6**	**14,498**
Approved	Approved Growth	1,613	1.6	2,581	0.6	968
Proposed Projects	Cannery Park	450	1.6	720	0.6	270
	Paradise Village 683	683	1.6	1,093	0.6	410
	Origone 394	394	1.6	630	0.6	236
	North Stockton Phase 3	237	1.6	379	0.6	142
	Bear Creek West Specific Plan	1,149	1.6	1,838	0.6	689
	Bear Creek East Specific Plan	318	1.6	509	0.6	191
	Weston Towne Center	60	1.6	95	0.6	36
	Tidewater Crossing	895	1.6	1,432	0.6	537
	Spanos Business Park	219	2.4	526	0.6	131
	Sanctuary/Shima Tract	1,967	2.02	3,973	0.6	1,180
	Mariposa Lakes	1,337	2.2	2,982	0.6	802
	Atlas Tract	360	2.4	848	0.6	216
	Crystal Bay	173	1.6	277	0.6	104
	Bear Creek South Master Plan	510	2.3	1,183	0.6	306
	Gateway	2,231	2.2	4,881	0.6	1,339
	North Stockton Village	771	2.0	1,557	0.6	463
	Arch Road Industrial Park	63	1.6	101	0.6	38
	Archtown Industrial Park	70	1.6	112	0.6	42
WSA Project	Opus Logistics Center Project	710	1.6	1,136	0.6	426
Subtotal for Approved and Proposed Projects		**14,209**		**26,854**		**8,526**
Total COSMUD		**38,373**		**61,404**		**23,024**

Notes: 1. The Water Demand Factor is approximated for some projects because the build-out period for some include years prior to 2015 at the 1.6 factor, and years after 2015 at the 2.44 factor. For this reason, the total water demand in this table may differ slightly from other tables in the WSA where an actual calculation is made to determine the appropriate water demand.

projected water demands if curtailments in surface water occur in the dry and critical years.

Under existing conditions, groundwater extractions are targeted to not go above the long-term operational yield of the basin (0.75 acre-ft/acre/year) in any one year and not go above 0.60 acre-ft/acre/year over a long term average. For this analysis, it is assumed that SEWD will maintain its existing 60 mgd surface WTP.

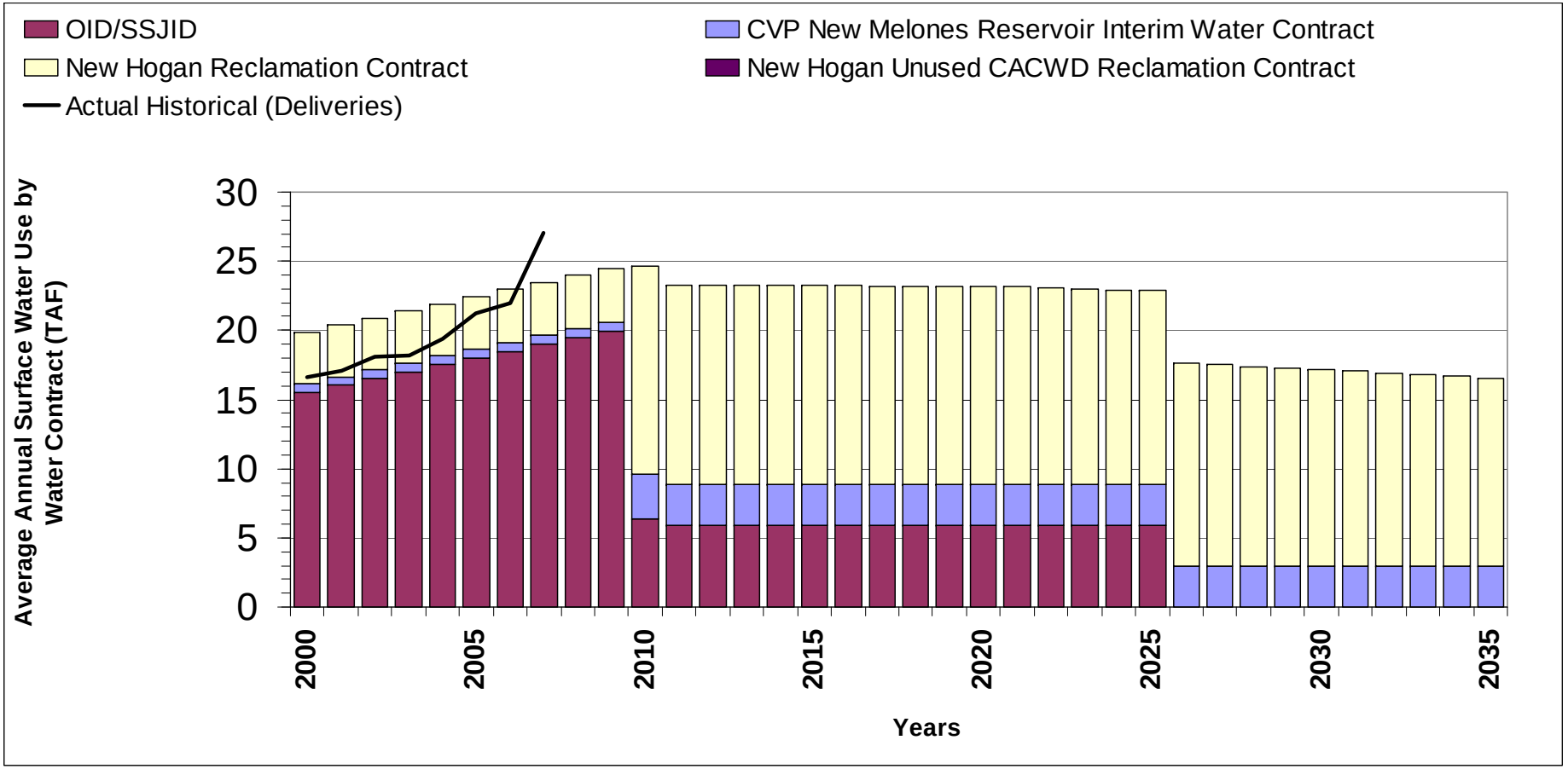
Under Section 10910 of the State Water Code, SEWD supplies and other groundwater facility supplies will be delivered to COSMUD to meet the maximum day municipal water demands from existing growth, the Project, and foreseeable development as listed in **Table 5**.

The operation of the conjunctive use spreadsheet model assumes that COSMUD's water demand is met first by SEWD and lastly by groundwater. Additional enhancements to the design and operations of the SEWD WTP are assumed to minimize the impact of scheduled maintenance, and account for the impact of higher turbidity in the raw water supply especially in the wet months of the wet years.

Groundwater extraction capacity within the existing service area boundary is conservatively sized for a certain level of redundancy for service in critical years, to meet maximum day demands, and to meet fire flow requirements. In the event that surface water is curtailed by contract, especially in dry and critical years, groundwater becomes a significant portion of the urban water retailers' water supply. Under these conditions water demands will exceed available surface water treatment capacity necessitating the on-going use of groundwater facilities within COSMUD's service area.

The timing and amount of water assumed available from each SEWD source is based on conservative estimates of the reliable yield of each source and the probability of the various contracts being renewed. (See **Figure 13** for the 35 year model average of surface water supplies and their sources. These amounts are only for COSMUD's use of the surface water supplies and the SEWD WTP capacity and represent only the average use over multiple hydrologic years.)

Figure 13. COSMUD's Projected Average Surface Water Contract Use from 2000 to 2035 Based on Existing Supplies and Water Demands



As shown in **Figure 13** the OID contract ends in 2009 and the SSJID transfer contract is assumed to expire in 2025 and not be renewed. Once all of the transfer contract water is used, the New Hogan contract and then the New Melones CVP contract are used. The New Hogan contract is assumed to be subject to dry year deficiencies which include shortages of up to 40 percent in critical years as well as provisions that make the New Melones CVP contract water available only in the wet years.

A 70 year historical model of hydrology was used to determine the adequacy of the sum total of water supplies in any given year type. For instance, in dry years, surface water curtailments are considered, so groundwater and rationing are used to make up the difference. The objective is that over the 70 years, the groundwater use does not exceed the predefined sustainable yield of 0.75 AF/acre/year in any one year and 0.60 AF/acre/year over a long term average as described above (note: agricultural groundwater credits are not applied unless it becomes necessary after the construction of planned future water supplies). **Figure 14** shows the results at 2035 on how water demands are met from the above mentioned sources. This figure shows that, in even the driest historical hydrologic periods (say 1976 to 1978 or 1987 to 1992) there is sufficient water supply to meet existing water demands with 2035 surface water supply availability and higher use of groundwater.

Figure 15 reflects the average water demand and average use of groundwater and surface water based on 70 years of historical hydrology. **Figure 15** shows the build-up of water demand as the top line, the safe sustainable yield as the dashed line and the modeled average yield as the bottom line. From this figure, it shows that the groundwater yield approaches and exceeds the safe sustainable yield of **23,024 AF/year** based on the **0.60** AF/ac/year.

2.11 Existing Water Supply Assessment

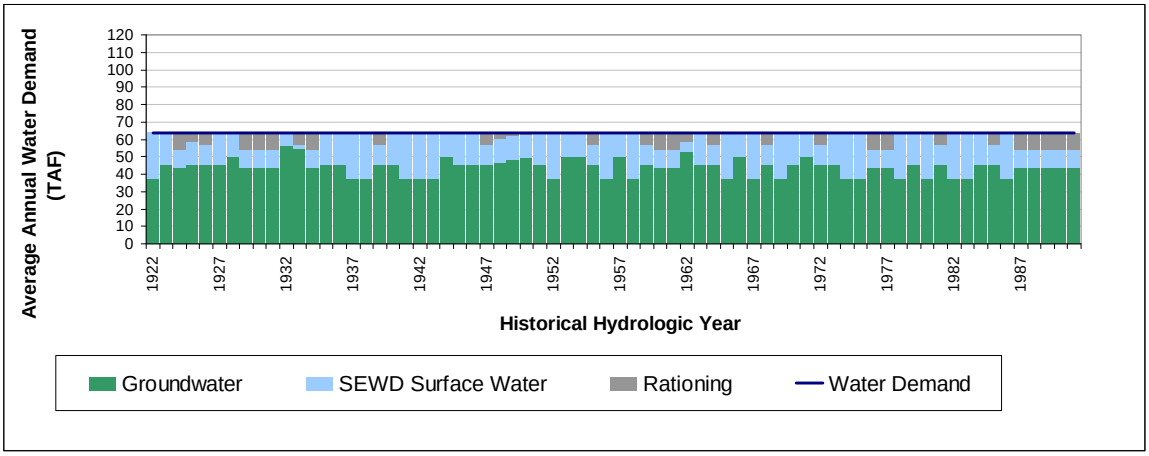
Given the reliability in surface water and the estimate of firm groundwater yield, the adequacy of water supplies can be evaluated for the existing condition. **Table 6** presents a comparison of normal, dry, and consecutive dry year supplies and demands based on a baseline year of 2004 for existing demands. Water supplies are based on existing “firm” surface water entitlements and their availability forecasted to 2035.

The average water demand for COSMUD over 70 years of historical hydrology at 2035 conditions is **60,393** AF/year. This is less than the water demand shown in **Table 5** because of water conservation**.** In dry years, slightly more groundwater is available to replace deficiencies in surface water as part of the existing conjunctive use program. The sustainable yield of groundwater is based on the amount of urban developed acreage within COSMUD’s service area of **38,373** acres of existing and foreseeable acreage shown in **Table 5**. This results in a maximum long-term average groundwater extraction rate of **23,024** AF/year

based on the 0.60 AF/ac/year factor and a not-to-exceed in any given year extraction rate of **28,780** AF/year based on the 0.75 AF/acre/year.

Figure 15 indicates that, over the 70-year period, average water supplies in 2035 meet existing water demands but exceed the sustainable groundwater yield by **20,802** AF/Year (**43,826 - 23,024 = 20,802**) creating the need for water based on the demand of the new Project and foreseeable projects. **Figure 16** shows a strong departure from the not-to-exceed goal of 0.75 AF/acre/year with the maximum groundwater extraction in the critical year being **55,699** AF/year or a difference of **26,919** AF/year (**55,699 - 28,780 = 26,919**).

Figure 14. 70-year Historical Hydrologic Period Using Existing and Foreseeable Water Demands and Existing Water Supply Conditions



Lastly, **Figure 17** represents an exceedence graph that is used to evaluate the frequency of groundwater exceedence over the 70 years of historical hydrology using 2035 (i.e. Existing plus Foreseeable) water demands and supply levels. The figure shows that groundwater extractions at the 2035 demand level exceed acceptable groundwater yield limits in all hydrologic years including the wettest periods on record. Based on the analysis provided herein under Water Code Section 10910, the Project water demands plus existing and all foreseeable water demands cannot be met with existing supplies of surface water and groundwater. Sustainable water supplies can only be met through planned or on-going water supply projects and by obtaining water rights to divert and treat water to COSMUD.

Figure 15. COSMUD's Average Groundwater Use and Water Demands From 2000 to 2035 Using 0.60 AF/ac/year Groundwater Sustainable Yield

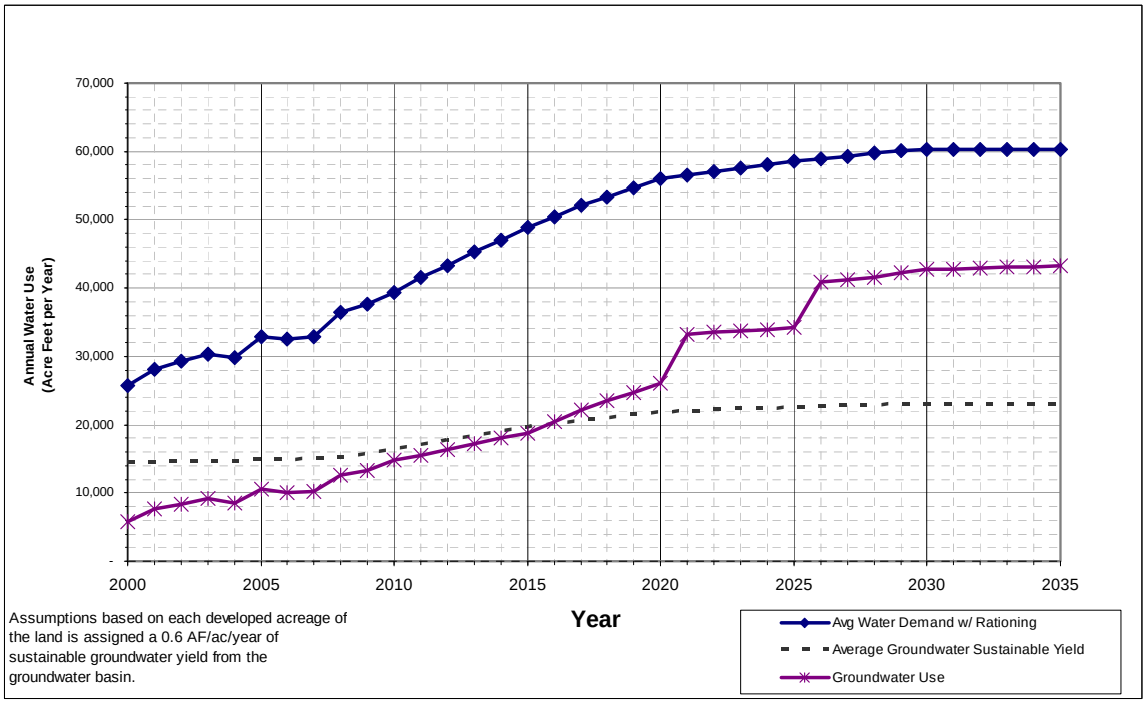


Figure 16. COSMUD's Maximum Groundwater Use and Water Demands From 2000 to 2035 Using 0.75 AF/ac/year Groundwater Sustainable Yield

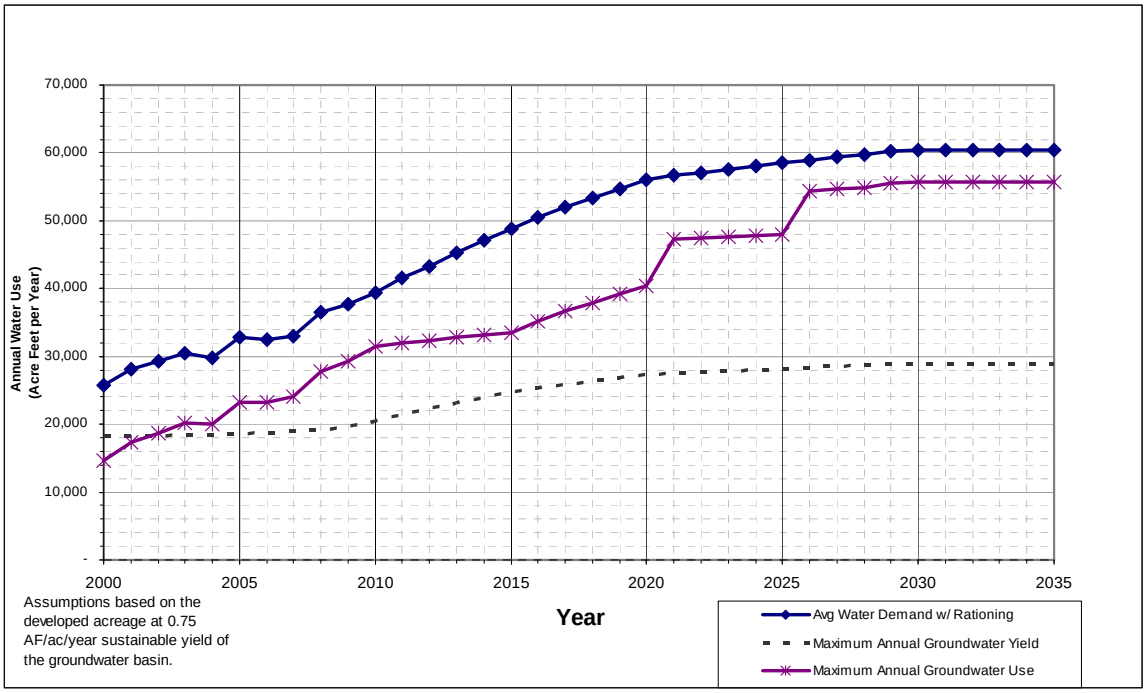


Table 6. Existing (2004) and Foreseeable Water Supplies and Demands for the COSMUD Service Area

Hydrologic Supply Scenarios to Meet WSA Water Demands		Normal[3]	Single Dry[4]	Multiple Dry Year Period[6]			Average over 70-Years
				Year 1	Year 2	Year 3	
		(AF/year)	(AF/year)	(AF/year)	(AF/year)	(AF/year)	(AF/year)
Demand Reductions		**0%**	**15%**	**0%**	**10%**	**15%**	**5%**
Existing[1] (2004) Water Supplies	Surface Water	19,426	16,512	19,426	17,484	16,512	19,426
	Groundwater	15,124	12,855	15,124	13,612	12,855	15,124
	Total Supply	**34,550**	**29,368**	**34,550**	**31,095**	**29,368**	**34,550**
Foreseeable [4, 5] Water Supplies	Surface Water	6,642	(5,871)	6,642	(5,843)	(5,871)	(2,859)
	Groundwater	22,320	30,489	22,320	31,908	30,489	28,702
	Total Supply	**28,962**	**24,617**	**28,962**	**26,066**	**24,617**	**25,843**
Existing + Foreseeable Water Supplies	Surface Water	26,068	10,641	26,068	11,641	10,641	16,567
	Groundwater	37,444	43,344	37,444	45,520	43,344	43,826
	Total Supply	**63,512**	**53,985**	**63,512**	**57,161**	**53,985**	**60,393**
Total Water Demand		**63,512**	**53,985**	**63,512**	**57,161**	**53,985**	**60,393**

Reference: City of Stockton Urban Water Management Plan 2000 Update, December 2000

Notes:

1.) Existing is actual 2004 calendar year usage of surface water and groundwater. The assumption is that 2004 depicts a normal year hydrologic and water supply availability condition.

2.) Dry year surface water amounts assume SEWD's New Hogan Reclamation water with deficiencies, and Oakdale Irrigation District and South San Joaquin Irrigation District deficiencies as stipulated in the contract for these water supplies.

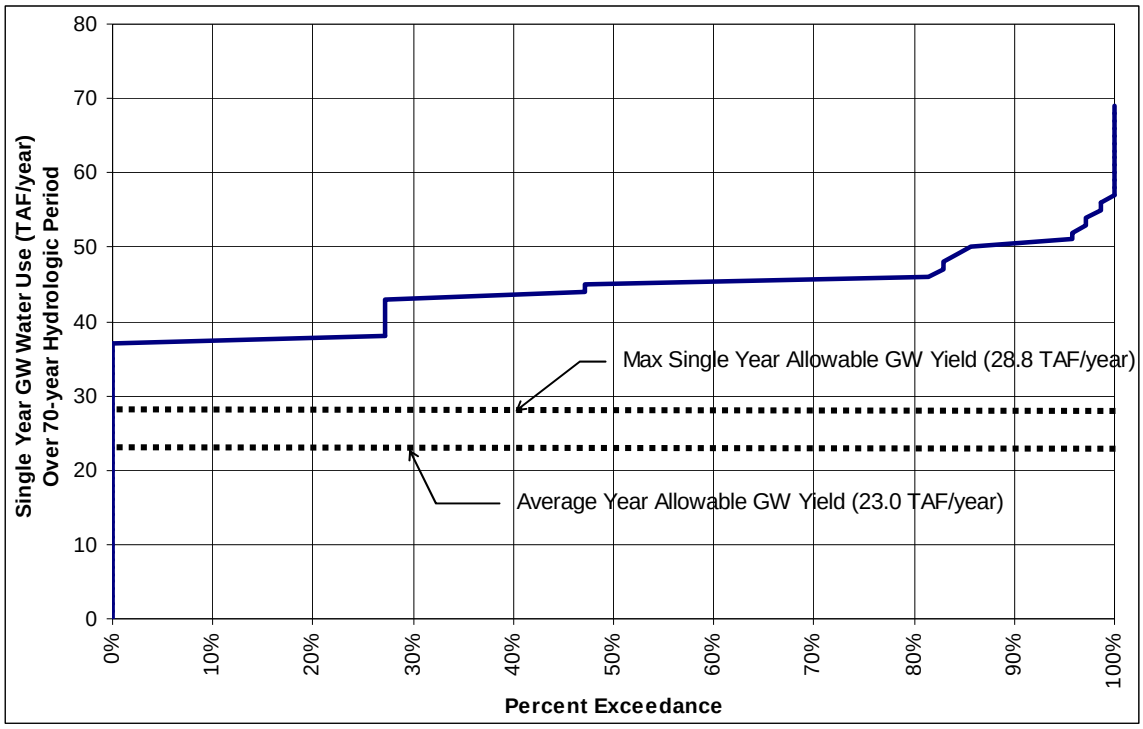
3.) Normal year surface water deliveries are restricted to the projected availability of SEWD conveyance and treatment plant capacity (not to exceed 60 mgd).

4.) Foreseeable includes all projects that have been approved or have a valid WSA as of the date of this WSA.

5.) Negative values imply a decrease in the amount of surface water or groundwater based on the use of both supplies in 2004.

6.) Multiple Dry (Hypothetical 3-year Drought Period into the Future (looking at both the 1977 to 1980 Drought Sequence and 1987 to 1990 Drought Sequence)

Figure 17. Groundwater Exceedence Plot - 2035 COSMUD Water Demand Applied to 70 Year Historical Hydrologic Record



3. IF EXISTING WATER SUPPLIES ARE INSUFFICIENT TO MEET PROJECT DEMANDS [SECTION 10911(A)]

3.1 Section 10911(a)

Sufficiency of supply as per Section 10910 of the State Water Code was not met by the analysis in Section 2 above. Section 10911(a) of the State Water Code requires that if existing water supplies are insufficient as determined under Section 10910, the public water system shall provide to the city or county its plans for acquiring additional water supplies. In describing the plans, Section 10911(a) states:

"…*the public water system shall provide to the city or county its plans for acquiring additional water supplies setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:*

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.

(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.

(b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

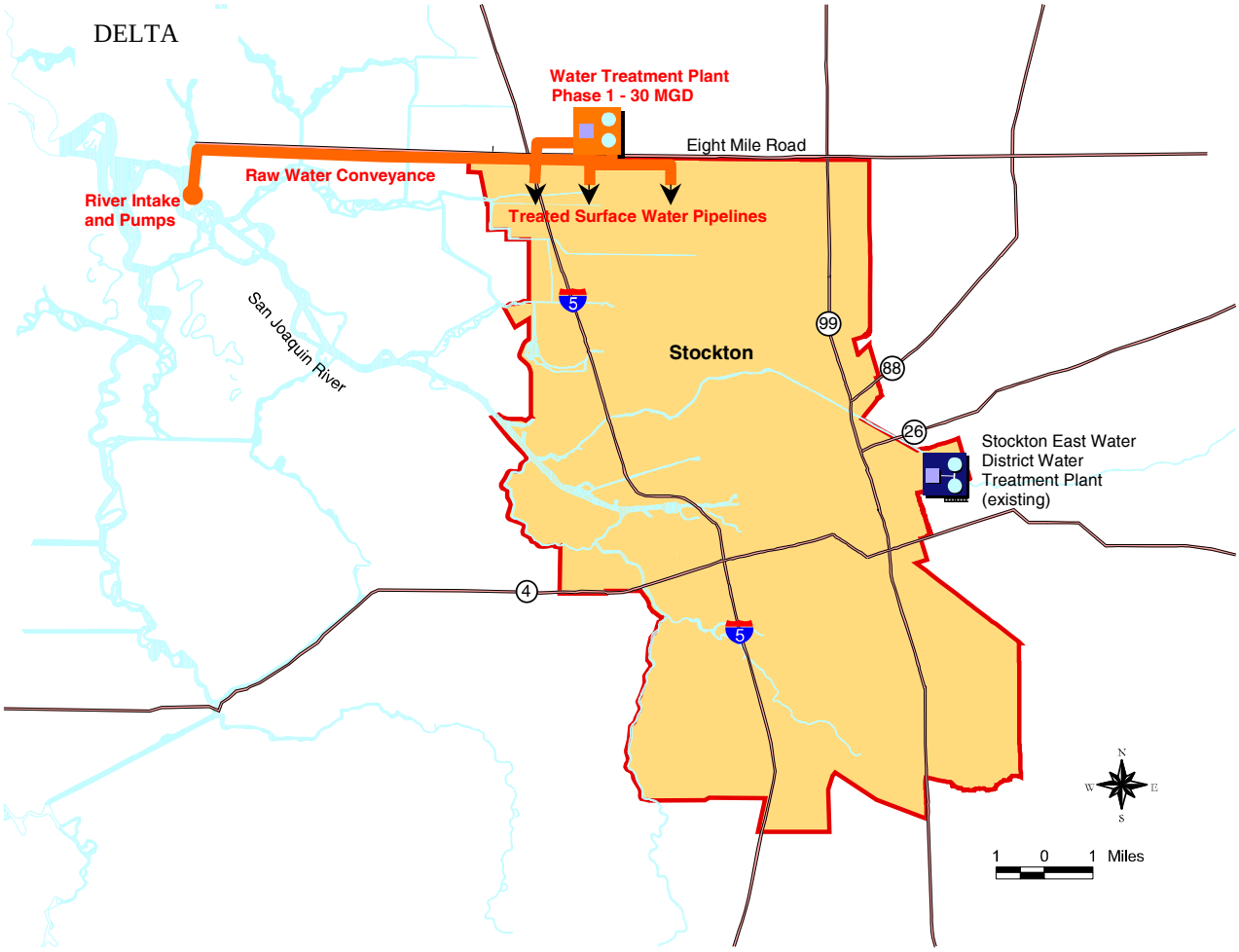
(c) The city or county may include in any environmental document an evaluation of any information included in that environmental document provided pursuant to subdivision (b). The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

3.2 Planned Implementation of the DWSP

Implementation of the DWSP will require a large diversion structure in the Delta and large raw and treated water conveyance facilities (surface water pipelines) to convey water to the DWSP WTP and then to the distribution systems of the urban water retailers and ultimately to the retail customer. The size and location of the large surface water pipelines are suitable for serving the area defined by the 2035 General Plan and beyond in terms of water demand. The size and location of the DWSP surface water pipelines are based on the ability to use as much of the existing treated water conveyance capacity as possible.

Figure 18 depicts the approximate location of the preferred DWSP site with the pipelines needed for the first 30 mgd phase and the existing location of the SEWD WTP. In order to achieve the required level of service, conveyance capacity of treated water to COSMUD's north and south water systems will be made to move surface water from both SEWD and the DWSP WTPs among the COSMUD's two retail service areas.

Figure 18. COSMA DWSP and SEWD WTPs



3.3 Necessary DWSP Water Right Permits

Because portions of the COSMA fall within the legally-defined Delta and the area of origin, the City has rights to Delta water. To access water for the DWSP, the City has filed an application for the appropriation of surplus water in the Delta, plus water the City is entitled to pursuant to Water Code Sections 1485 and 11460-11465.

Section 1485 Water Rights

California Water Code Section 1485 can be summarized as follows: any municipality disposing of treated wastewater into the San Joaquin River may seek a water right to divert a like amount of water, less losses, from the river or Delta downstream of the point of wastewater discharge.

Water losses associated with these discharges once they enter the river system can result from seepage, evaporation, or transpiration between the Regional Wastewater Control Facility and the diversion. The San Joaquin River (River) and associated Delta channels are in balance with the connected groundwater systems, therefore, seepage losses can be estimated at zero. Also, the incremental flow added at the Regional Wastewater Control Facility has no measurable effect on the top width of the River; therefore evaporation from the River surface is not increased. Similarly, transpiration is not measurably affected by the incremental flow since the top width of the water surface is not increased. Therefore, it is assumed that the volume of water loss between the wastewater plant and any diversion point downstream is negligible.

Area of Origin Water Rights

The California Water Code contains a number of sections addressing certain benefits and obligations of areas in which water originates. The “Area of Origin” provisions have not yet been thoroughly interpreted by the courts, so their operation and effect remain unclear.

For purposes of planning for a Delta surface supply, it is assumed that the ability to divert water under the California Water Code Sections 11460 et seq. may be limited by conditions similar to those contained in Water Right Standard Permit Term 91. California Water Code Section 11460 et seq. allows a water user within a watershed or other area of origin to appropriate water that otherwise would be exported and to receive water rights senior to the federal Central Valley Project (CVP) and the State Water Project (SWP). Permits for the diversion of water from the Delta under the area of origin statute may be conditioned by the SWRCB to include standard permit Term 91 which prohibits diversions at times when the SWP and/or CVP are required to release stored water from their reservoirs in excess of export diversions, project carriage water, and project in-

basin deliveries[6]. Under these conditions, the COS/COSMUD would be allowed to divert water only at times when Delta outflow is greater than regulatory minimum requirements, or when the CVP and/or SWP are exporting water that has no previously been stored in CVP-SWP reservoirs or imported to the basin by the CVP-SWP.

Woodbridge Irrigation District

The COS has negotiated an additional 40-year contract with Woodbridge Irrigation District (WID) (see **Exhibit "E"**) for 6,500 AF/year in surface water supplies, which is anticipated to be treated at the DWSP WTP during the time of year when Delta diversions are curtailed for fish (up to two months). This new contract includes 6,500 AF/year initially with provisions for increasing to 13,000 AF/year as additional lands within the WID boundaries are annexed to the City of Stockton and converted to urban uses. Although the use of WID surface water still requires CEQA compliance (currently underway with anticipated 2009 completion date), the City is unaware of any environmental considerations that are likely to emerge through that process that would make the water unreliable.

3.4 Financing of DWSP

The cost of the Phase 1 portion of the DWSP as is estimated to be **$171** Million. This cost is apportioned based on benefits to existing customers and to new development. The financing of the project will be done through customer user rates, development fees, and federal and state grants as described in **Section 10910(d)(2)(B)** starting on **Page 26**.

3.5 Regulatory Permitting for DWSP

Refer to section titled, "Current Water Supply Condition" on **Page 5** regarding the steps taken to date for implementing Phase 1 of the DWSP. Further milestones in the regulatory approval process include a National Marine Fisheries Service (NMFS) Biological Opinion (BO) dated November 29, 2006, a United States Fish and Wildlife Service (USFWS) BO dated June 27, 2007, and a draft final Department of Fish and Game Streambed Alteration Agreement (SAA) dated June 16, 2008.

More recently, the California State Department of Fish and Game (DFG) has conditioned the DWSP to limit Delta diversions over a longer period than the agreed upon period by the United States Fish and Wildlife Service. The City has responded to DFG with a formal submittal of an alternative mitigation plan consistent with mitigation already authorized by the two federal agencies. Also pending is a 404 Permit from the United States Army Corps of Engineers. Other

[6] The application of Term 91 to diversions under the area of origin statute has not yet been finally concluded in the courts, so the operation and effect of Term 91 and how it impacts area of origin diversions remains unclear. This leaves a significant amount of uncertainty in appropriative water rights in dry year conditions and is therefore not used in critical years in this WSA.

regulatory approvals upon completion of the DWSP include a DPH permit for including the DWSP in the COSMUD potable water system.

3.6 Necessary SEWD Water Right Permits/Contracts

SEWD is pursuing its own appropriative water rights on the Calaveras River that will likely yield some wet and normal year water but no dry or critical year supply is expected. To date, there is no known contract water right amount since the appropriative water right is junior to many other water rights on the Calaveras River. The Water Right amount will only be known once the SWRCB issues the permit. So, for purposes of the WSA, no appropriative water rights are assumed as reflected in **Table 2** on **Page 17**.

Other supplies are anticipated through future appropriative water right permits on the Stanislaus and Littlejohn's Creeks. Both of these potential supplies are not accounted for in this WSA or reflected in **Table 2**. Other potential water supplies shown in **Figure 7** on **Page 18** are also not accounted for in this WSA.

3.7 Summary of Surface Water Utilization for the Project

The COSMUD has met and will continue to meet annual demands during differing hydrologic periods with surface water, groundwater, water conservation, and other potential water supplies such as non-potable supplies from local communities, raw surface water from local irrigation districts, and water from active groundwater storage projects. Currently, the COS/COSMUD is pursuing other raw surface water transfer agreements similar to the WID contract with local irrigation districts and municipalities and possible use of tertiary treated recycled water from the City of Lodi for use as a non-potable source for irrigation of public landscape areas.

Potable surface water transfer supplies would be diverted for treatment at the SEWD WTP or the DWSP WTP. Water transfers would require mutually agreeable contract terms between the City and another entity transferring water and might require the approval of the SWRCB. Water purchases, treatment facilities and conveyance infrastructure would be funded locally through a combination of rates and fees. Timing of water transfers would coincide with water demands that outpace current supplies through SEWD or the City's water right.

Water Facility Phasing

An important element of the DWSP Feasibility Report was looking beyond the current General Plan to begin to understand how water entitlements will be granted or be diminished over time to meet growing water demands. The certified DWSP EIR referenced the work completed in the DWSP Feasibility Report and provided a firm definition of the DWSP Phase 1 project and defined the programmatic nature of the Phase 2 project and its timing being associated with the build-up of demand as a result of new development.

In the DWSP Feasibility Report, population was used to assume growth and water demand beyond 2015 (build-out of the 1990 General Plan) and assumptions for water supply entitlements were made in order to forecast the ultimate size of the DWSP project and needed upgrades to the SEWD WTP over time (**GP Policy PFS-2.3**). As a result of this report, a scheduled phasing of the DWSP project, SEWD WTP upgrades, and groundwater facilities was made as shown in **Table 7** below.

Table 7. Phasing of COSMA Water Supply Facilities Based on 1990 General Plan

Phasing	Year	SEWD WTP[7] (mgd)	DWSP Diversion and WTP (mgd)[8]	Groundwater (mgd)
Immediate Phase	**2003**	45	0	65
	2009	50 (60)	0	83
1-Build-out of General Plan	**2010**	50 (60)	0	83
	2015	50 (60)	30	83
2-Interim Milestone	**2016**	60	30	83
	2020	60	60	90
	2030	60	90	110
3- Build-out of 1990 General Plan Boundary/ POU	**2031**	60	90	110
	2040	60	135	140
	2050	60	135	140

In the sizing of the different water facilities, the operation of the DWSP and SEWD surface WTPs is assumed to occur simultaneously, and, if water supply is available, the water demand is met first by SEWD and then by the DWSP. Additional enhancements to the design and operations of the SEWD and DWSP treatment plants are assumed to minimize the impact of scheduled maintenance, and account for the impact of higher turbidity in the raw water supply especially in the wet months of the wet years.

To protect larval delta smelt during April through June, when early life history stages of delta smelt and the eggs and larvae of other fish are likely to be in the project area, the potential of the fish screen and diversions to impact these life stages of fish would be reduced operationally (by reducing diversions and thus reducing approach velocities and diversion volume) or physically (by installing an aquatic filter barrier). Either of these options would also reduce the potential for juvenile fish of all sizes to be affected by the diversion and fish screen during the spring (April through June). For purposes of this WSA, curtailment in diversions from the Delta is assumed to take place during the April through May period (i.e., no water is assumed to be diverted by the DWSP in April and May). Monitoring will be required from April through June to detect the presence of larval delta smelt in the vicinity of the project area and trigger the implementation of impact avoidance and minimization measures.

[7] SEWD efficiency improvements accelerated the increase in rated WTP capacity from 45 mgd to 60 mgd in 2008/09.
[8] DWSP Phases shown in this table are from the DWSP Feasibility Report. This WSA assumes that only Phase 1- 30 mgd will be needed to 2035.

3.8 Summary of Groundwater Supplies

DWSP planning assumes a maximum long term operational yield objective of the basin underlying the Urban Services Area of the 1990 General Plan reflecting a conservative 0.60 AF/ac/year groundwater extraction rate. As established in the April 2003 DWSP Feasibility Report, the 0.60 AF/ac/year objective is a 20 percent reduction in the COS's established 0.75 AF/ac/year objective used in prior water supply planning documents. The purpose of this reduction is to fulfill the COS's objective of managing the underlying groundwater basin for the protection of groundwater resources indefinitely.

A deviation from the lower extraction rate can occur if lands within the General Plan Planning Area Boundary are converted from agricultural uses irrigated with groundwater to urban uses (this agricultural credit concept is not in effect until after 2011/12 when the DWSP becomes fully operational). To account for the prior groundwater pumping, an agricultural credit is assumed based on not exceeding a 0.87 AF/acre/year maximum. This is acknowledging that the aquifer was sustaining the agricultural use prior to urbanization and at a rate that was likely 2 or 3 times that of the self-imposed maximum of 0.87 AF/ac/year (i.e. a typical field crop may use up to 4.0 AF/acre/year). The determination of how the agricultural credit concept is summarized below and a detailed technical memorandum is available upon request from COSMUD.

Section 10910(f)(5) requires an analysis of the sufficiency of the groundwater basin to meet the demands associated with the project.

A portion of this discussion is presented in **Section 10910(d)(1)** above and starting on **Page 21** under the heading of "Existing Groundwater Supplies". The other aspect of considering the sufficiency of groundwater is evaluating the groundwater basin as a whole for purposes of providing for existing growth, foreseeable growth (i.e., proposed and approved growth), the WSA Project growth and projected growth based on the 2035 General Plan.

The general approach taken to determine the adequacy of groundwater from a basin-wide perspective, assuming all existing and future users of the groundwater basin to 2035, is based on using the IGSM for San Joaquin County that:

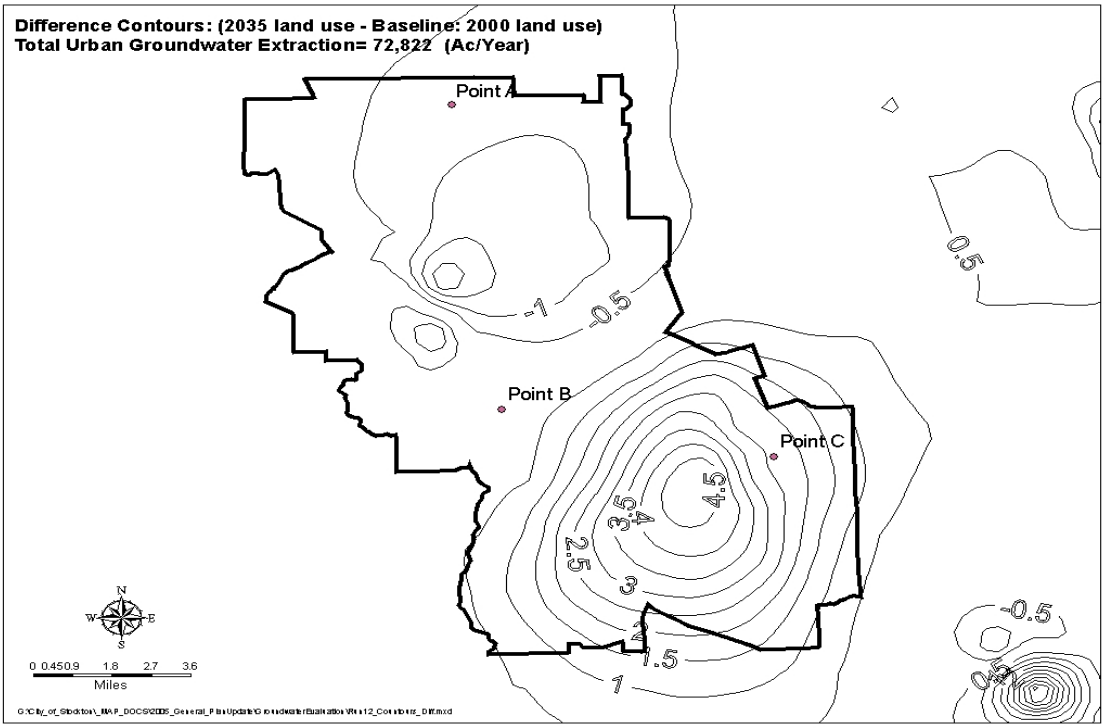
- Includes urban water use and groundwater extractions based on the 2035 General Plan,
- calculates agricultural supply requirements given the various parameters of agricultural crops, irrigation efficiencies, soil conditions, and hydrologic conditions, and
- assumes an empirical-based method for including groundwater extractions occurring from residential private wells.

From this information as well as information pertaining to rainfall, runoff, streamflow, urban demands, etc, the IGSM can arrive at a solution regarding where groundwater elevations could be based on the input of the various data in the 70 years of historical hydrology used in the model.

The IGSM was calibrated through the period from 1969 to 1992 and then set up to be able to run the "what if" questions by looking at 2035 land use conditions and running the model through 70 years of historical hydrology. By doing this, the changes in groundwater elevations can be evaluated for 70 years based on the various scenarios to determine if any problem might exist (e.g., drying out of aquifer, dewatering of wells, movement of the salinity front, etc).

Memorialized as Exhibit "F" of the General Plan Update WSE entitled, "Groundwater Studies Supporting Agricultural Credits," a thorough analysis was performed to consider full build-out conditions of the 2035 General Plan Update and the use of agricultural credits in urban areas where agriculture currently exists and is irrigating crops with groundwater. The results of this study provided a conservative justification that a slight increase can occur in the groundwater factor of 0.75 AF/acre/year used as a "not- to-exceed" limit in groundwater extraction over the urbanized areas of the General Plan Update in any given year without jeopardizing the groundwater basin. The resulting changes in groundwater elevations at the higher 0.87 AF/acre/year between the 2035 General Plan Update and the modeled 2000 groundwater elevations are shown in **Figure 19**. This figure indicates a significant overall improvement in the southeast portion of the 2035 General Plan area due to reduced groundwater extractions through retirement of agricultural lands and a slight decrease in groundwater elevations in the central and north areas located in the current urbanized areas of the COSMA. Changes in groundwater elevations in areas outside the COSMA are considered to be small. The points indicated in the figure represent control points used in the General Plan Update study in the determination of the acceptable extraction amount. Readers are referred to the study for more detailed information on how these points were used in developing the acceptable extraction amount.

Figure 19. Regional Change in Groundwater Elevations based on 2035 General Plan Update



The conclusion from the above-described evaluation is that use of groundwater under full build out conditions of the General Plan Update at a level of 0.87 AF/ac/year or lower (i.e., 0.75 AF/ac/year is the maximum set in this WSA) will not impact the larger groundwater basin; therefore the Project's use of groundwater, if held to the same constraint, will not have a negative effect on regional groundwater elevations, water quality, or groundwater quantity.

Agricultural Groundwater Use Conversion

The approach taken to determine the validity of assuming agricultural credits is based on a proven theoretical approach of determining the agricultural water supply requirement and use of the IGSM for San Joaquin County. The IGSM calculates agricultural supply requirements given the various parameters of agricultural crop types, their irrigation efficiencies, soil conditions, field capacities, root zones, etc. The IGSM is run first applying the agriculture to establish the baseline condition. The second run removes the agriculture to see how the basin rebounds as a result of no agricultural pumping in the urban services boundary. Urban land use and water demand (groundwater and surface water) are then applied and the impacts are evaluated as follows:

Constrained Impacts to the Groundwater

Impacts to the groundwater elevations can occur in three ways:

1. the gradient (or slope) of the groundwater piezometric surface (groundwater table) would not increase in the area of the salinity front (See Figure 9 on Page 25 for approximate location of salinity front),

2. groundwater elevations would not drop more than a foot in the agricultural area where the credit is applied, and

3. the lowest elevation of the regional cone of depression would not be impacted by the application of urban groundwater extractions in the agricultural areas.

Each IGSM scenario that includes urban extractions in areas where agricultural extraction are removed is measured against the three impact constraints listed above. The lesser of the applied groundwater extractions is used as the incremental increase to account for agricultural credits. In no case should groundwater extractions exceed 1.0 AF/ac/year of urban developed area. For purposes of evaluation, the agricultural credit is only applied after it is demonstrated that the 0.60 AF/ac/year factor is exceeded as a result of the existing demand, the Project, and all foreseeable water demands.

3.9 Future Conjunctive Management

This section describes how the water supply sources in the COSMUD can continue to be operated in conjunction with each other to meet future water demands. This analysis includes modeling a complete conjunctive management program similar to the conjunctive use program in-place today including all existing and foreseeable SEWD and COSMUD water supplies and projected demands including the Project. The analysis addresses the planning period from 2000 to 2035 to evaluate the adequacy of surface water entitlements and the necessary facility requirements to meet the Project water demands.

As mentioned above, groundwater extractions are targeted to not go above the long-term operational yield of the basin (0.6 acre-ft/acre/year) but not permitted to go beyond the 0.75 AF/ac/year maximum in any one given year. The concept of agricultural credits will also be considered, if applicable.

For this analysis, it is assumed that SEWD will maintain its existing 60 mgd surface WTP so that the combined capacity of COSMUD, SEWD, and other groundwater facilities will meet maximum day municipal demands

The operation of the DWSP and SEWD surface WTPs is assumed to occur simultaneously, and, if water supply is available, the water demand is met first by SEWD, then by the DWSP, and lastly by groundwater. Additional enhancements to the design and operations of the SEWD and DWSP treatment plants are assumed to minimize the impact of scheduled maintenance, and account for the

impact of higher turbidity in the raw water supply especially in the wet months of the wet years.

Groundwater extraction capacity within the General Plan Boundary is conservatively sized for a certain level of redundancy for service in critical years, to meet maximum day demands, and to meet fire flow requirements. In the event that surface water is curtailed by contract or by Endangered Species Act (ESA) mitigation requirements, especially in dry and critical years, groundwater becomes a significant portion of the urban water retailers' water supply. Prior to construction of the DWSP (first phase assumed to be completed in 2010/11), water demands will exceed available surface water treatment capacity necessitating the on-going use of groundwater facilities within COSMUD's service areas until the DWSP is operational.

The timing and amount of water assumed available from each SEWD source is based on conservative estimates of the reliable yield of each source and the probability of the various contracts being renewed (See **Figure 23** for 35 year projection of average surface water supplies and their sources).

The SSJID transfer contract is assumed to expire by 2025 and not be renewed. Once all of the SSJID contract water is used, the New Hogan and then the New Melones CVP contracts are used. SEWD's portion of the New Hogan Reclamation contract is assumed to be subject to dry year deficiencies as indicated in **Table 2**. Water supply assumptions for the New Melones CVP contract are not changed and allow for water deliveries only in the wet years. SEWD's future appropriative water right on the Calaveras River, Stanislaus River, and Littlejohn's Creek would be used next; however, these likely future water rights are not used in this WSA. Once the SEWD supplies are used, the model turns to DWSP supplies.

Current sources of water supply for the DWSP include Section 1485 water and WID water described in sections above. The amount of Section 1485 water depends on the discharge volume from the municipal wastewater treatment plant over time. For the purpose of this WSA, and to be consistent with the City's water right application, the amount of Section 1485 water available in a given year is assumed to be 41 percent of the total municipal water use within the General Plan POU, not to exceed the total water right permit. The water right permit issued by the SWRCB on March 8, 2006, is for a Delta diversion for the Phase 1 DWSP in the amount of 33,600 AF/year. (see Exhibit "D" for copy of permit) No reductions of Section 1485 water occur in dry years as a result of water rationing because rationing is assumed to affect only the outdoor uses of water that typically do not enter the wastewater system. The need for Area of Origin water is not expected until beyond 2035 and is not included in this WSA. The WID water contract is assumed to be available and will be diverted from local canals and raw water pipelines in months when curtailments for the protection of larval delta smelt are taking place during April through June. Any unused entitlement can be diverted in other months in accordance with the terms of the WID contract agreement. The amount of WID water will initially start at 6,500 AF/year and

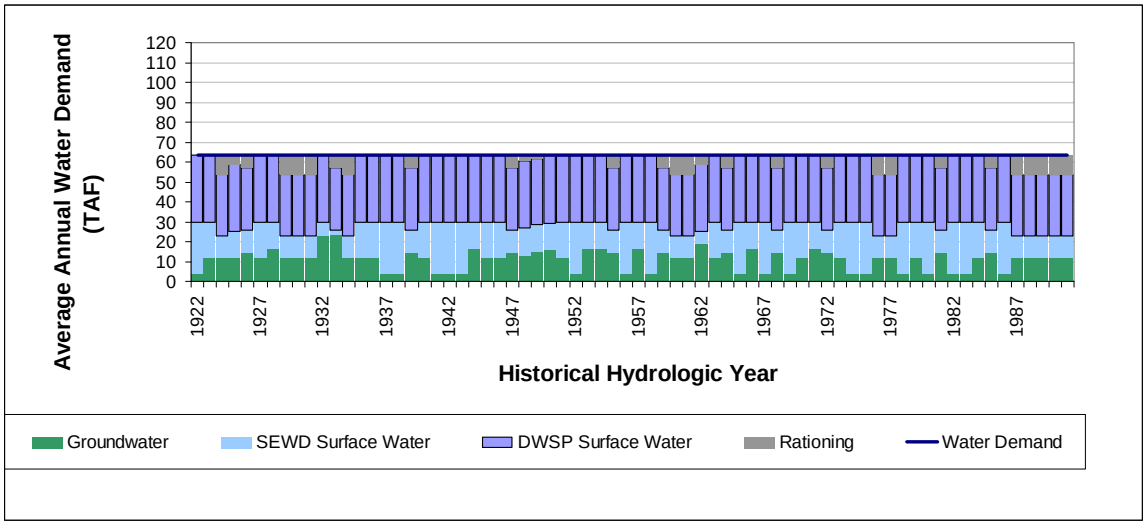
increase to 13,000 AF/year as areas north of Eight Mile Road that are within WID's service boundary are developed in accordance with the COS's General Plan.

With the construction of the DWSP, COSMUD's use and apportionment of SEWD WTP capacity is assumed to change from the current policy set forth in the "*Second Amended Contract Among the Stockton East Water District, The California Water Service Company, The City of Stockton, The Lincoln Village Maintenance District, and The Colonial Heights Maintenance District Providing For The Sale of Treated Water*" based on each of the COSMA water retailer's previous year water demands to a straight percentage that accounts for the vested capacity in the SEWD WTP by existing rate payers. For purposes of completing this WSA, an assumption is made that 50 percent (or 30 mgd) of the SEWD WTP capacity will be available to COSMUD after 2015 with the remaining 50 percent shared between Cal-Water and the County. This assumption accounts for curtailments in SEWD surface water supplies and shares the cutbacks over each of the water retailers based on the percentage given. After making full use of SEWD supplies, COSMUD turns to the DWSP and then to groundwater to meet any remaining water demands.

A 70 year historical model of hydrology was used to determine the adequacy of the sum total of water supplies in any given year type. For instance, in dry years, surface water curtailments are considered at both the SEWD and DWSP WTPs, so groundwater and rationing are used to make up the difference. The objective is that over the 70 years of historical hydrology for any projected level of water demand, the groundwater use does not exceed the predefined sustainable yield of the basin as described below. **Figure 20** below shows the results based on 2035 water supplies and on how water demands are met from the above mentioned sources. This figure shows that, in even the driest historical hydrologic periods (say 1976 to 1978 or 1987 to 1991) there is sufficient water supply to meet 2035 water demands.

The operational yield objective of the groundwater basin is based on not allowing the groundwater elevations to drop to a point where impacts could occur as described above or that the annual yield in any given year over the 70-year hydrologic period will not exceed the 0.75 AF/ac/year plus an agricultural credit, if applied. The groundwater component is needed to make a final determination of the adequacy of surface water supplies to be able to compare the allowable yield with the calculated yield from the 70-year hydrologic conjunctive use model.

Figure 20. 70-year Historical Hydrologic Period Using 2035 Water Demand and Supply Condition



The impacts to the groundwater basin (The groundwater component is the bottom set of bars shown in **Figure 20**) are measured against the three criteria listed in the **Constrained Groundwater Use Impacts** section above and a finding of the maximum sustainable groundwater yield is made for each year of the simulation. The average and maximum groundwater yield at Project build out is determined to be **11** TAF/year and **22.8** TAF/year, respectively. **Figure 21** shows the build-up of water demand as the top line, the safe sustainable yield as the dashed line and the modeled average yield as the bottom line. From this figure, it shows that during no time does the groundwater yield approach the targeted goal of **0.60** AF/ac/year. In this case no agricultural credits are needed.

The remaining question is whether the groundwater yield in any given dry year exceeds the DWSP goal of having a maximum of 0.75 AF/ac/year plus the agricultural credits determined above, if applied. For the 70 years of historical hydrology, the maximum groundwater yield is extracted for each year of the Project model. This is then compared to the maximum yield of the basin underlying the COSMUD service areas. The results of this are shown in **Figure 22**. This graph is the "worst" case scenario and it is anticipated that beyond 2020 there will be active groundwater recharge programs (e.g., aquifer storage and recovery, recharge basins, in-lieu surface water irrigation to agriculture) to make up for the dry year dependency on groundwater. While these programs are very likely to occur, this WSA conservatively assumes that there will be no contribution to COS water supplies. The conclusion from the figure is that the 0.75 AF/ac/year is not exceeded and no agricultural credits are required.

Figure 21. Average Groundwater Use vs. Demand From 2000 to 2035 Using 0.60 AF/ac/year Average Groundwater Sustainable Yield

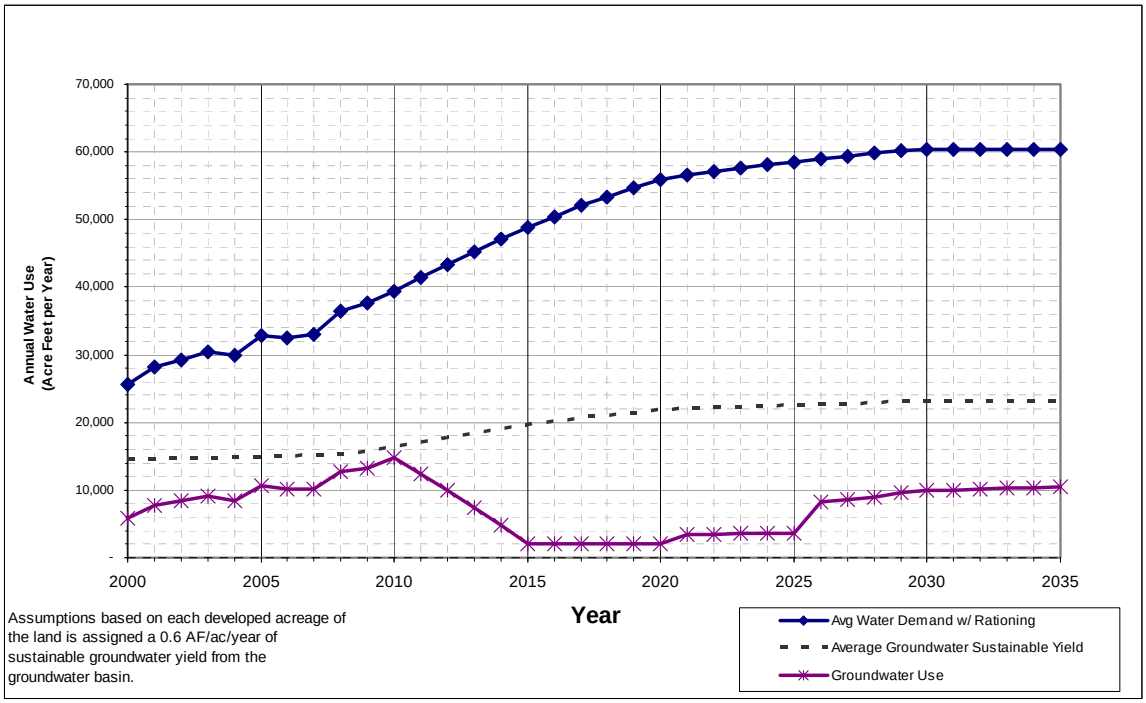
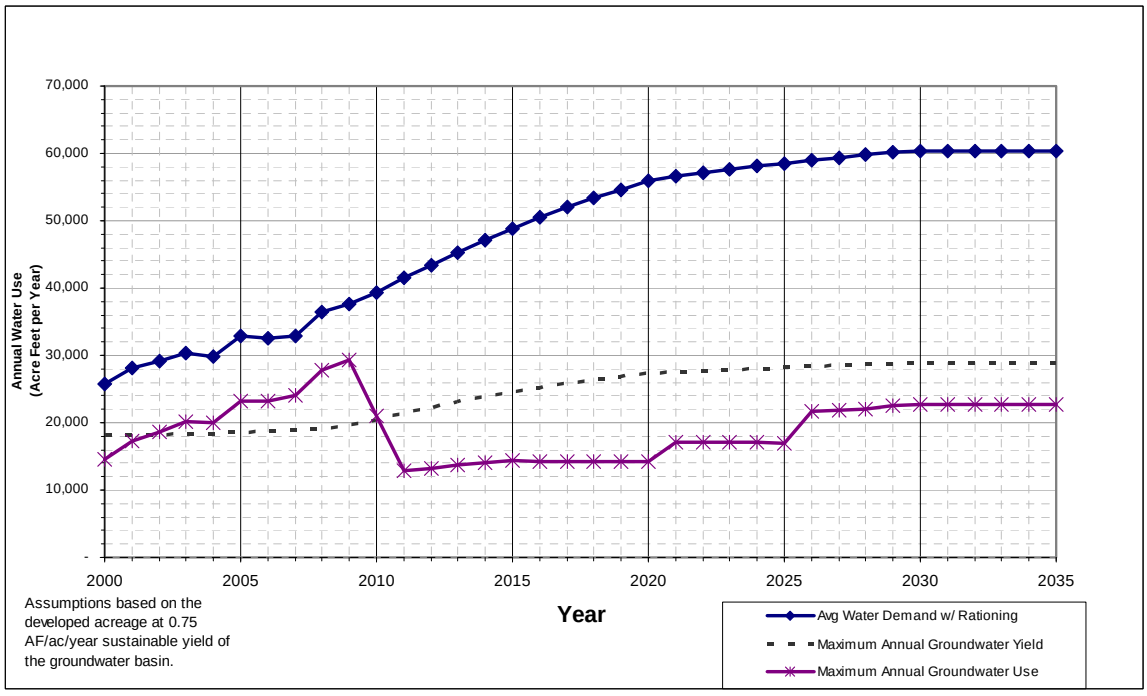


Figure 22. Maximum Single Year Groundwater Use and Water Demand From 2000 to 2035 Using 0.75 AF/acre/year Factor



3.10 Summary of Conjunctive Use Model Findings

Figure 23 illustrates the increase and decrease in surface water supplies "on average" over the period from 2000 to 2035 based on the demands from 2000 to the 2035 of the Project and the conjunctive use program described above. Maximum surface water use is constrained by the SEWD or the DWSP conveyance and WTP capacity and by the various contract entitlements described above. For example, the set of bars for each contract for each year considers 70 years of historical hydrology (i.e., rainfall, stream flows, etc) from 1921 to 1991 and the limitations of the SEWD and DWSP WTPs to treat and deliver potable water supplies for that given year. The decrease in overall surface water for SEWD throughout the planning period reflects the assumption that the annual volume of the CACWD's unused New Hogan allocation will diminish slightly due to new water demands expected in the CACWD service area.

While this WSA identifies the potential for additional interim surface water supplies as back-up water supplies, those supplies are not necessary for purposes of this WSA and its determination of sufficiency of water supplies to serve the Project and all planned future uses in the service area. A similar table as **Table 6** is provided as **Table 8** for the future condition to compare the availability of water supplies with forecasted water demands. **Figure 24** indicates that in the dry year conditions, there are adequate water supplies while meeting the average sustainable groundwater yield while not exceeding the maximum groundwater yield in any one hydrologic year type. **Figure 24** further shows that during no year, over the 70 years of historical hydrology does the groundwater extraction for COSMUD exceed the average or maximum groundwater yield amounts.

Comparing these findings from the evaluation completed under Section 10910, the groundwater requirement reduces from an average need of **43,826** AF/year to **11,060** AF/year, a **32,766** AF/year reduction and **11,964** AF/year less than the sustainable groundwater yield of **23,024** AF/year (Please see **Table 5** on **Page 38**). Single dry year maximum groundwater use has a similar decrease as shown in **Figure 22**.

Figure 23. Projected Average Surface Water Contract Use from 2000 to 2035

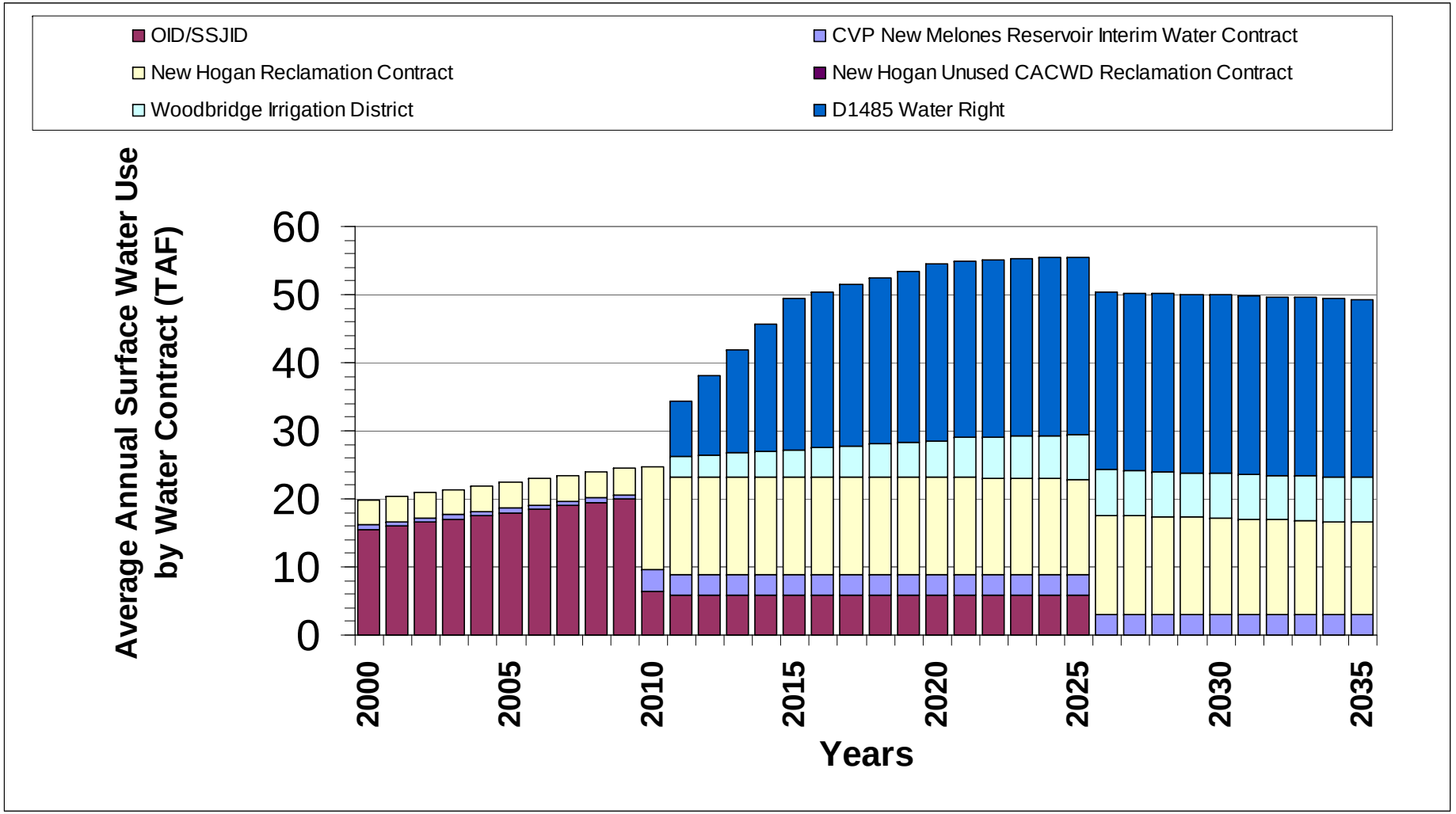
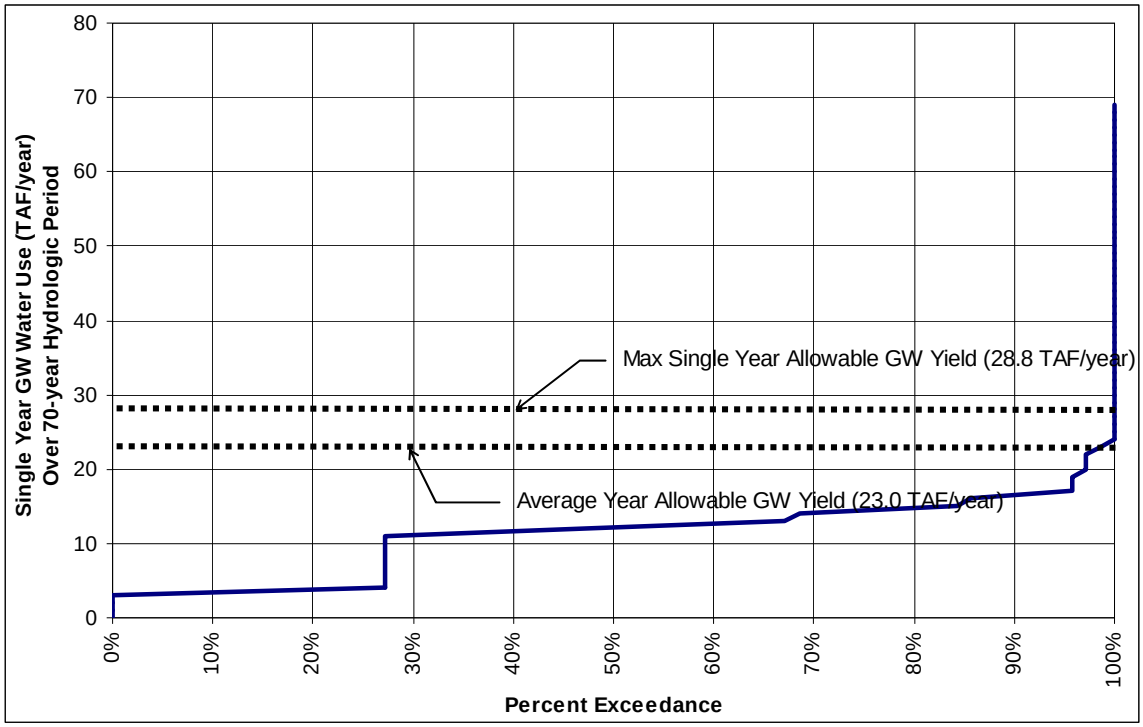


Table 8. Existing (2004) and Foreseeable Water Supplies and Demands for the COSMUD Service Area with DWSP

Hydrologic Supply Scenarios to Meet WSA Water Demands		Normal[3]	Single Dry[4]	Multiple Dry Year Period[6]			Average over 70-Years
				Year 1	Year 2	Year 3	
		(AF/year)	(AF/year)	(AF/year)	(AF/year)	(AF/year)	(AF/year)
Demand Reductions		**0%**	**15%**	**0%**	**10%**	**15%**	**5%**
Existing[1] (2004) Water Supplies	Surface Water	19,426	16,512	19,426	17,484	16,512	19,426
	Groundwater	15,124	12,855	15,124	13,612	12,855	15,124
	Total Supply	**34,550**	**29,368**	**34,550**	**31,095**	**29,368**	**34,550**
Foreseeable [4, 5] Water Supplies	Surface Water	40,242	25,393	40,242	25,421	25,393	29,907
	Groundwater	(11,280)	(775)	(11,280)	644	(775)	(4,064)
	Total Supply	**28,962**	**24,617**	**28,962**	**26,066**	**24,617**	**25,843**
Existing + Foreseeable Water Supplies	Surface Water	59,668	41,905	59,668	42,905	41,905	49,333
	Groundwater	3,844	12,080	3,844	14,256	12,080	11,060
	Total Supply	**63,512**	**53,985**	**63,512**	**57,161**	**53,985**	**60,393**
Total Water Demand		**63,512**	**53,985**	**63,512**	**57,161**	**53,985**	**60,393**

Reference: City of Stockton Urban Water Management Plan 2000 Update, December 2000
Notes:
1.) Existing is actual 2004 calendar year usage of surface water and groundwater. The assumption is that 2004 depicts a normal year hydrologic and water supply availability condition.
2.) Dry year surface water amounts assume SEWD's New Hogan Reclamation water with deficiencies, and Oakdale Irrigation District and South San Joaquin Irrigation District deficiencies as stipulated in the contract for these water supplies.
3.) Normal year surface water deliveries are restricted to the projected availability of SEWD conveyance and treatment plant capacity (not to exceed 60 mgd).
4.) Foreseeable includes all projects that have been approved or have a WSA as of the date of this WSA.
5.) Negative values imply a decrease in the amount of surface water or groundwater based on the use of both supplies in 2004.
6.) Multiple Dry (Hypothetical 3-year Drought Period into the Future (looking at both the 1977 to 1980 Drought Sequence and 1987 to 1990 Drought Sequence)

Figure 24. Groundwater Exceedence Plot - 2035 COSMUD Water Demand with DWSP Applied to 70 Year Historical Hydrologic Record



4. DETERMINATION OF SUFFICIENCY

This WSA determines that COSMUD currently cannot support the Project without the DWSP Phase 1 project based on inadequate surface water entitlements and the infrastructure to divert, treat and convey potable water to the Project along with surface water supplies from SEWD and groundwater. Despite the fact that the DWSP Phase 1 is an "additional" water supply and not an "existing" water supply for purposes of SB 610 (compare Wat. Code, § 10911(a) with § 10910(d)), however, COSMUD concludes that the DWSP Phase 1 is nevertheless a reasonably certain and likely source on which the City can prudently depend.

In consideration of the significant steps in the environmental review, permitting, and financing of the DWSP and its supplies of raw water for potable drinking water purposes, it is reasonable to rely on the DWSP for the evaluation of water supplies. The City has completed the necessary CEQA analysis for Phase 1; the State Water Resources Control Board approved the water rights permit for Phase 1; and both the National Marine Fisheries Service and the United States Fish and Wildlife Service have authorized Phase 1 to proceed under the Federal Endangered Species Act. The COSMUD has submitted a mitigation plan for Delta smelt and Longfin smelt and are awaiting the receipt of an Incidental Take Permit. The remaining regulatory approvals are comparatively minor and easy to obtain, compared with these other clearances and approvals, and relate mainly to the construction of treatment and delivery infrastructure. Once constructed, the DWSP will provide sufficient water supply to meet the Project's build-out water demand as well as all existing and reasonably foreseeable water demands.

COSMUD makes this determination based on the information provided in this WSA and on the following specific facts:

- The existing near-term and long-term reliable supplies of SEWD surface water supplies and indigenous groundwater supplies can deliver a sustainable reliable water supply to meet existing and foreseeable water demands without impacting environmental values and/or impacting the current stabilization of the groundwater basin underlying the COSMUD service areas and the COSMA as a whole.
- The Project water demands and the self-imposed reductions in groundwater use by COSMUD, make it necessary to supplement current surface water supplies from SEWD through the implementation of the DWSP (i.e., current water supplies are <u>insufficient</u> to meet the projected demands of the Project and all other existing and planned future uses in the service area).
- The existing and future (i.e., DWSP Phase 1) conjunctive use program of using surface water and each of the urban water retailer's groundwater supplies has been extensively analyzed as part of the DWSP Feasibility Report and EIR and as part of this WSA. All studies show that sufficient surface water supplies and available groundwater supplies will exist once Phase 1 of the DWSP is operational for the level of water demand contemplated under the Project. The

most difficult regulatory approvals, including the water right itself, for Phase 1 are already in hand, and the remaining approvals are comparatively modest in character and are easier to obtain than those already obtained.

- The Project area will be served by water supplies made available through the existing and planned future conjunctive use program and full implementation of water conservation best management practices within the COSMUD service areas.

It should be noted that the determination of sufficiency for this project does not constitute a reservation of supply to serve this project. SB 610 only requires that the Assessment be conducted at the time that the EIR is prepared, and does not require that the Assessment be updated at any point in the future.

EXHIBIT “A”

PORTION OF 2035 GENERAL PLAN GOALS AND POLICIES REPORT (GOAL PFS-2)

PFS-1.9 Development Guidelines
During the development review process, the City shall not approve new development unless the following guidelines are met:

- The applicant provides acceptable documentation demonstrating infrastructure capacity will be available to serve the project prior to occupancy;
- The applicant can demonstrate that all necessary infrastructure to serve the project is adequately financed and will be installed prior to occupancy;
- Infrastructure improvements are consistent with City or other service provider's infrastructure master plans; and
- Infrastructure improvements incorporate a range of feasible measures that can be implemented to reduce all public safety and/or environmental impacts associated with the construction, operation, or maintenance of any required improvement.

PFS-1.10 Utility Master Planning
Performance criteria for water, wastewater, and stormwater facility shall be set forth in an adopted citywide master plan for each utility.

PFS-1.11 Subdivision Approval
Prior to approval of any tentative small lot subdivision map for a proposed residential project of more than 500 dwelling units, the City shall comply with Government Code Section 66473.7. Prior to approval of any tentative small lot subdivision map for a proposed residential project of 500 or fewer units, the City need not comply with Section 66473.7 or formally consult with the public water system that would provide water to a proposed subdivision, but shall nevertheless make a factual showing or impose conditions similar to those required by Section 66473.7 in order to ensure an adequate water supply for development authorized by the map. Prior to recordation of any final small lot subdivision map, or prior to City approval of any project-specific discretionary approval or entitlement required for nonresidential land uses, the City or the project applicant shall demonstrate, based on substantial evidence, the availability of a long-term, reliable water supply from a public water system for the amount of development that would be authorized by the final subdivision map or project-specific discretionary nonresidential approval or entitlement. Such a demonstration shall consist of a written verification that existing sources are or will be available and that needed physical improvements for treating and delivering water to the project site will be in place prior to occupancy.

9.2 Water Supply and Delivery

With the exceptions of the South Stockton service area, which currently relies solely on groundwater, the water systems in the City of Stockton Metropolitan Area (COSMA) use a combination of treated surface water provided by SEWD and pumped groundwater. There are five water service areas in the COSMA, with service provided by the three water purveyors identified previously. The COSMA is divided into four separate water storage and distribution systems: North Stockton, Central Stockton, WPA, and South Stockton. The North Stockton, South Stockton, and WPA systems are run and operated by COS MUD and SJCMDs. The Central Stockton system is run and operated by CWSC.

The Stockton East Water District (SEWD) Water Treatment Plant (WTP) provides a source of surface water to COSMA. The SEWD operates the SEWD WTP and currently provides COSMA with the only source of surface water supply. The SEWD receives water from three sources: Calaveras River via the New Hogan Reservoir, Stanislaus River via the New Melones Reservoir, and OID/SSJD water via the New Melones Reservoir. The SEWD WTP, which currently has the capacity to treat 45 mgd (50,400 af/year), produces an average of 36.6 mgd (41,100 af/year) of treated surface water.

Per the 2003 Delta Water Supply Feasibility Report, water demand will increase from the current demand of 67,948 af/year to 85,330 af/year by 2015, and 177,900 af/year (158.8 MGD) by 2050. Projected water demand could exceed available water supply somewhere between now to 2020.

Overdraft of the groundwater basin as resulted in groundwater levels decreasing 40 to 60 feet over the last 20 to 30 years. The decline in groundwater elevations has created a cone of depression, allowing saltwater from the Delta region to intrude into the basin underlying the western portion of the COSMA, diminishing groundwater quality.

Goal PFS-2 establishes the policy structure for the provision of adequate water supply and delivery infrastructure within the City. As new elements to the General Plan, policies reflect the City's need for facilities able to meet the long-term demands. Incremental should be avoided in order to reduce long-term costs associated with facility replacement.

As the City continues to grow, the availability of sustainable water sources will increasingly become more important. New policies focus on the need for the identification of new water sources and protection and expansion of existing surface water right to meet growing demands.

PFS-2 To ensure the adequate, reliable, and safe provision of water to all existing and future City of Stockton development, even through drought periods.

PFS-2.1 Water Conservation
The City shall continue to implement water conservation programs that save significant amounts of water at a reasonable cost.

PFS-2.2 Water Supply
The City shall evaluate long-term water supply strategies, including acquiring or developing additional water supplies that would be available during drought periods, to offset the shortages anticipated from existing supplies, and improved water conservation and re-use. For new development, the City will require the installation of non-potable water infrastructure for irrigation of large landscaped areas where feasible and cost effective. Conditions of approval will require connection and use of non-potable water supplies when available at the site.

PFS-2.3 Water Treatment Capacity
The City shall plan, secure funding for, and procure sufficient water treatment capacity and infrastructure to meet projected water demands.

PFS-2.4 Growth Trends
The City shall establish a process for monitoring water demand growth trends to anticipate water supply needs.

PFS-2.5 Water Quality
The City shall monitor water quality regularly to ensure that safe drinking water standards are met and maintained in accordance with State and EPA regulations and take necessary measures to prevent contamination.

PFS-2.6 Level of Service
The City shall maintain adequate levels of water service by preserving, improving, and replacing infrastructure as necessary.

PFS-2.7 Water Supply for New Development
The City shall ensure that water supply capacity and infrastructure are in place prior to granting building permits for new development.

PFS-2.8 Delta Water Supply
The City shall not approve new development that relies on water from the Delta Water Supply Project until this Delta water is allocated through a water right to the City by the State of Water Resources Control Board or a replacement water supply is secured.

PFS-2.9 Water Facility Sizing
The City shall ensure through the development review process that public facilities and infrastructure are designed to meet ultimate capacity needs, pursuant to a master plan, to avoid the need for future replacement to achieve upsizing. For facilities subject to incremental sizing, the initial design shall include adequate land area and any other elements not easily expanded in the future.

PFS-2.10 Sustainability of Surface Water Supplies
The City shall work in concert with other water purveyors in the region to seek long-term renewable surface water contracts, and shall take actions to acquire, protect, and expand surface water rights to serve growing water demands.

PFS-2.11 Sustainability of Groundwater Supplies

The City shall work in concert with other water purveyors in the region to achieve the target yield (0.6 AF/year) of the drinking water aquifer, and shall limit its long-term average groundwater withdrawals to this target yield.

PFS-2.12 Water for Irrigation

The City shall encourage the use of non-potable water supplies for irrigation of landscape.

PFS-2.13 Timing of Future Development

Prior to approval of any tentative small lot subdivision map for a proposed residential project of more than 500 dwelling units, the City shall comply with Government Code Section 66473.7. Prior to approval of any tentative small lot subdivision map for a proposed residential project of 500 or fewer units, the City need not comply with Section 66473.7 or formally consult with the public water system that would provide water to a proposed subdivision, but shall nevertheless make a factual showing or impose conditions similar to those required by Section 66473.7 in order to ensure an adequate water supply for development authorized by the map. Prior to recordation of any final small lot subdivision map, or prior to City approval of any project-specific discretionary approval or entitlement required for nonresidential land uses, the City or the project applicant shall demonstrate, based on substantial evidence, the availability of a long-term, reliable water supply from a public water system for the amount of development that would be authorized by the final subdivision map or project-specific discretionary nonresidential approval or entitlement. Such a demonstration shall consist of a written verification that existing sources are or will be available and that needed physical improvements for treating and delivering water to the project site will be in place prior to occupancy.

9.3 Wastewater

The City of Stockton sanitary sewer collection system is divided into 10 designated sub-areas or "systems". The RWCF has a 2006 peak wet weather flow of 42 mgd, while the current dry weather flows are estimated at 35 mgd. Improvements anticipated to be completed by the end of 2006 include provisions to expand the peak wet weather flow to 48 mgd.

The City's objectives for an adequate wastewater infrastructure system are established in Goal PFS-3. Similar to Goal PFS-2, new policies include the need for proper facility sizing to meet long-term needs, wastewater reuse, and protection of critical infrastructure.

PFS-3 To ensure adequate collection, treatment, and safe disposal of wastewater.

PFS-3.1 Sanitary Sewer Service Area

The City shall require that all new urban development is served by an adequate collection system to avoid possible contamination of groundwater from onsite wastewater disposal (septic) systems.

PFS-3.2 Wastewater Treatment Standards

The City shall continue to take actions necessary to meet water quality discharge standards in the operation of the regional wastewater treatment plant.

PFS-3.3 Compliance with Federal Standards for Surface Water Protection

The City shall comply with the requirements of the Clean Water Act with the intent of minimizing the discharge of pollutants to surface waters.

PFS-3.4 Wastewater Facility Sizing

The City shall ensure through the development review process that public facilities and infrastructure are designed and constructed to meet ultimate capacity needs, pursuant to a master plan, to avoid the need for future replacement to achieve upsizing. For facilities subject to incremental upsizing, initial design shall include adequate land area and any other elements not easily expanded in the future.

PFS-3.5 Wastewater Collection System Rehabilitation

The City shall ensure that when infrastructure rehabilitation projects are undertaken, upsizing of the facility and cost sharing are considered in order to accommodate upstream planned growth in accordance with an approved master plan.

EXHIBIT “B”

EXISTING SURFACE WATER AND WHEELING CONTRACTS

SECOND AMENDED CONTRACT

AMONG THE STOCKTON EAST WATER DISTRICT, THE CALIFORNIA WATER SERVICE COMPANY, THE CITY OF STOCKTON, THE LINCOLN VILLAGE MAINTENANCE DISTRICT, AND THE COLONIAL HEIGHTS MAINTENANCE DISTRICT PROVIDING FOR THE SALE OF TREATED WATER

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LIST OF EXHIBITS

The original contract ("Original Contract") was made the 11th day of February, 1975, among Stockton East Water District, a political subdivision of the State of California, hereinafter referred to as Stockton East, the California Water Service Company, a California corporation, hereinafter referred to as Cal-Water, the City of Stockton, a municipal corporation of the State of California, hereinafter referred to as City, the Lincoln Village Maintenance District, a political subdivision of the State of California, governed by the Board of Supervisors of San Joaquin County, hereinafter referred to as Lincoln, and the Colonial Heights Maintenance District, a political subdivision of the State of California, governed by the Board of Supervisors of San Joaquin County, hereinafter referred to as Colonial. This Second Amended Contract is made this ____ day of _____, 19__, by and among all the same parties as were parties to the Original Contract.

WITNESSETH THAT:

WHEREAS, Stockton East contemplated the construction of water treatment facilities which would permit treatment of raw water available to Stockton East and in turn make the same available for municipal and industrial use within Stockton East through Cal-Water, City, Lincoln and Colonial, which operate "municipal" water distribution systems within that portion of Stockton East commonly known as the Stockton Metropolitan Area; and

WHEREAS, it was anticipated that said water treatment facilities would have a nominal capacity to treat and distribute 20,000 acre feet of water per year and would be physically capable of treating additional quantities of water annually; and

WHEREAS, in order to construct said water treatment facilities, pursuant to authority granted to it by an affirmative vote at an election held on March 5, 1974, Stockton East sold revenue bonds pursuant to the Revenue Bond Law of 1941, which bonds have a maximum amortization period of not to exceed 30 years from the date of their issue; and

WHEREAS, said water treatment facilities have been constructed; and

WHEREAS, the purpose of constructing and operating the water treatment facilities was to assist in alleviating severe ground water overdraft problems especially in the western portion of Stockton East underlying the Stockton Metropolitan Area, and particularly to stop, or slow the

rate of, falling ground water tables and related saline intrusion from the west; and

WHEREAS, Stockton East with the concurrence of City, Cal-Water, and the Board of Supervisors of San Joaquin County has heretofore had prepared, approved and adopted a "Master Water Plan" and a "Contingency Water Plan" and an "Environmental Impact Report dated October, 1973" to serve as guidelines to Stockton East in solving the water problems of Stockton East and in providing solutions in the problems of ground water overdraft and saline intrusion, which plans, among other things, contemplated the construction of water treatment facilities; and

WHEREAS, since the construction of the water treatment facilities, there has been completed the Eastern San Joaquin Groundwater Study; and

WHEREAS, that Study demonstrates that an additional annual minimum of 30,000 acre feet of supplemental surface water must be imported into the Stockton Metropolitan Area in order to meet the needs of that area by the year 2020; and

WHEREAS, it is the desire and intention of all of the parties that said water treatment facilities, and the distribution of water treated by them, will be operated and conducted at all times in a manner which will have the most beneficial effect possible in reducing ground water overdraft, reducing the rate of lowering of underground water levels and of reducing saline intrusion into the ground water basin underlying Stockton East; and

WHEREAS, under date of August 25, 1970, Stockton East under its prior name of Stockton and East San Joaquin Water Conservation District, entered into contracts with the United States of America and the Calaveras County Water District by which Stockton East obtained a portion of the supply of water developed by New Hogan Dam on the Calaveras River; and

WHEREAS, under date of December 19, 1983, Stockton East entered into a contract with the United States Department of the Interior, Bureau of Reclamation, by which Stockton East obtained the right to a portion of the supply of water developed by New Melones Dam on the Stanislaus River, on an interim basis; and

WHEREAS, Stockton East has allocated a portion of its water supply from New Hogan Dam and New Melones Dam together with such other water supplies as it may have now and in

the future to said water treatment facilities so as to permit said water treatment facilities to produce a minimum of 20,000 acre feet of treated water per year; and

WHEREAS, in order to eliminate the present ground water overdraft and to meet its municipal and industrial and agricultural needs, Stockton East requires additional supplies of water in excess of those which it now obtains from New Hogan Dam and is now endeavoring to obtain the supplies of water which it requires from various sources which may now or in the future be available; and

WHEREAS, in order to make the most beneficial use of the water from New Hogan Dam, New Melones Dam, and any other source, it will be necessary to construct conveyance and storage facilities, and to expand the existing water treatment facilities; and

WHEREAS, a First Amendment to the Original Contract was made May 31, 1977, and expired March 31, 1978; and

WHEREAS, the parties hereto desire to enter into this Second Amended Contract so as to produce the maximum benefit to the underground basin by providing for a mechanism for the financing and construction of such conveyance, storage and expanded water treatment facilities as may be necessary, and by altering the method of payment of the base monthly payment under the Original Contract so as to provide maximum incentive for use of treated water in a cost effective and/or energy efficient manner thereby reducing the use of water produced from the underground basin; and

WHEREAS, Stockton East will perform studies necessary to provide recommendations to the Contractors intended to maximize energy efficiency; and

WHEREAS, it is the intent of the parties hereto that this Second Amended Contract shall apply to all treated water produced by the water treatment facilities, regardless of the source of raw water so treated;

Now, Therefore, It Is Agreed As Follows:

1. DEFINITIONS: When used herein, unless otherwise indicated expressly to the contrary, the following words, terms and phrases shall have the following meanings:

1A. "Acquisition and Construction Fund" means the fund having such name established and defined by the Bond Resolution.

1B. "Agricultural water" means water used primarily in the commercial production of agricultural crops or livestock, including domestic use incidental thereto, on tracts of land operated in units of more than 2 acres.

1C. "Annual Audit" means the audit to be undertaken each year, by a certified public accountant selected by Stockton East, in accordance with subparagraphs 5C and 6C.

1D. "Annually" refers to the 12-month period commencing on April 1 and ending on the next succeeding March 31st.

1E. "Base monthly payment" means the basic payment which each Contractor shall pay and which the Contractors together shall pay, the amount of which shall be calculated on an annual basis pursuant to Paragraph 5 and shall be paid on a monthly basis pursuant to Paragraph 6.

1F. "Base supply of raw water" means the minimum supply of raw water provided by Stockton East from various sources to meet the needs of the water treatment facilities, which base supply of raw water shall be 20,000 acre feet per year except as provided in subparagraphs 4J, 4K, and 4L.

1G. "Base supply of treated water" means the minimum supply of treated water which Stockton East will furnish from the water treatment facilities to Contractors in the manner set forth in this Second Amended Contract, which base supply of treated water shall be 20,000 acre feet per year except as provided in subparagraphs 4J, 4K, and 4L.

1H. "Bond Resolution" means the resolution adopted by Stockton East on February 20, 1975, identified as Resolution No. 74-75-21.

1I. "Bond Reserve Account" means the account held as a reserve fund by Stockton East, and used by Stockton East in accordance with the Bond Resolution.

1J. "Bond Sinking Fund Account" means the account having such name established and defined by the Bond Resolution.

1K. "Contractors" means the parties to this Second Amended Contract, other than Stockton East, or any other parties who may hereafter take water in accordance with Paragraph 13 and who further agree to be bound by all of the terms of this Second Amended Contract as the same now exists or as it may have been amended at the time such additional Contractors agree to take water and who agree in

writing to be bound by this Second Amended Contract or this Second Amended Contract as amended.

1L "Conveyance and Storage Facilities" means those facilities not at present constructed which Stockton East intends to construct in order to acquire, store and convey raw water to the water treatment facilities from sources other than New Hogan Dam.

1M. "Debt service" means the payments required to be ~~made during each year for principal, interest and other~~ charges to the holders of the water treatment facilities bonds, all in accordance with the schedule attached hereto as Exhibit "A", provided that debt service shall not include premiums on water treatment facilities bonds required to be called under the Bond Resolution except to the extent that any such premium in any year exceeds interest earned in such year on the Bond Sinking Fund Account.

1N. "Debt service surcharge" means an annual sum equal to 20% of annual debt service.

1O. "Initial delivery date" means March 10, 1977, the date of first delivery of treated water from the water treatment facilities into the distribution facilities of Cal-Water under the Original Contract.

1P. "Initial delivery of water" means the actual first delivery of treated water from the water treatment facilities into the distribution facilities of any one or more of the Contractors.

1Q. "Intake facilities" means the facilities constructed as a part of the water treatment facilities at Bellota, San Joaquin County, California, to divert water into the raw water transmission line.

1R. "Municipal and industrial share" means the percentage of the cost of acquisition of supplemental surface water from any source other than New Hogan Dam, including the cost of acquisition of such water and the cost of construction of conveyance and storage facilities which is allocated as municipal and industrial water by Stockton East as set forth in Paragraph 15. Such share shall be paid from the time the first payment becomes due regardless of whether all the municipal and industrial allocated water is in fact used for municipal and industrial purposes.

1S. "Municipal and industrial water" means water used for other than agricultural purposes.

1T. "New debt service" means the payments required to be made during each year, for principal, interest and other charges to the holders of any bonds which may be issued hereafter to finance expansion, additions to, or replacements of the water treatment facilities; and, in the event any bonds are issued to finance the acquisition, location or construction of Conveyance and Storage Facilities if any portion of the raw water conveyed or stored by such facilities is used by the Contractors as municipal and industrial water, new debt service shall include the municipal and industrial share of the payments required to be made during each year for principal, interest and other charges to the holders of such bonds.

1U. "New debt service surcharge" means an annual sum equal to the percentage of annual new debt service required as a surcharge by the controlling debt documents.

1V. "New Hogan Contracts" means the two contracts entered into under date of August 25, 1970, one between the United States of America and the Stockton and East San Joaquin Water Conservation District (now Stockton East) and the Calaveras County Water District, and the other between the Calaveras County Water District and the Stockton and East San Joaquin Water Conservation District (now Stockton East) which contracts together provide for a supply of water to Stockton East from New Hogan Dam.

1W. "New Hogan Dam" means the dam, reservoir and related facilities constructed in Calaveras County on the Calaveras River pursuant to the Act of Congress of December 22, 1944 (58 Stat. 887).

1X. "New Melones Contract" means that contract entered into under date of December 19, 1983, between Stockton East and the United States Department of the Interior, Bureau of Reclamation, by which Stockton East obtained the right to a portion of the supply of water developed by New Melones Dam, on an interim basis.

1Y. "New Melones Dam" means the dam, reservoir and related facilities constructed on the Stanislaus River pursuant to the Flood Control Acts of December 22, 1944 (58 Stat. 887) and October 23, 1962 (76 Stat. 1173).

1Z. "New Service Area" means an area not presently served by any of the Contractors.

1AA. "Nominal capacity" means the capacity of the water treatment plant to produce treated water under normal operating conditions. The water treatment plant construct-

ed pursuant to the plans and specifications described in subparagraph 5A of the Original Contract has a nominal capacity of 20,000 acre feet per year.

1BB. "North Stockton Aqueduct" means a pipeline extending from the water treatment plant to the approximate location of the intersection of Hammer Lane and Southern Pacific Railroad right-of-way in City, sufficient in size to serve that portion of the urban area north of the Calaveras River, together with a branch extending westerly along March Lane to El Dorado Street, and a branch extending westerly along Hammer Lane to West Lane.

1CC. "Noticed public hearing" means a public hearing held by the Board of Directors of Stockton East following at least 10 days notice given to each of the Contractors and further published at least once in a newspaper of general circulation published within Stockton East.

1DD. "Prime rate" means, during any year, the prime interest rate, as announced by the Bank of America, N.T.&.S.A. or its successor, in effect on April 1 of that year for the best credit risks of said Bank or its successor.

1EE. "Parties" means all of the parties to this Second Amended Contract or as the parties may hereafter be modified by the addition or subtraction of one or more contractors.

1FF. "Produced water" means water extracted from the underground by Stockton East or water otherwise developed or made available by Stockton East and not purchased from another agency or entity.

1GG. "Raw water" means the supply of untreated water made available to the water treatment facilities.

1HH. "Raw water transmission line" means the pipeline constructed as a part of the water treatment facilities extending from the intake facilities at Bellota, San Joaquin County, California, to the water treatment plant.

1II. "Southern Water System" means that water supply and distribution system operated by San Joaquin County which provides municipal and industrial water to the Airport, AirMetro Industrial Park, and surrounding Airport facilities; San Joaquin General Hospital, the County Jail Complex and Juvenile Justice Center, three migrant labor camps, County facilities in the Mathews Road area, and such

other areas as may be added to the system from time to time by action of the Board of Supervisors.

1JJ. "Surplus Account" means the account having such name established and defined by the Bond Resolution.

1KK. "Treated water" means water processed by the water treatment plant or other water meeting the requirements of Paragraph 12 made available in accordance with this Second Amended Contract to the Contractors by Stockton East.

1LL. "Water Fund" means the fund having such name established and defined by the Bond Resolution.

1MM. "Water treatment facilities" means (a) the water treatment plant, (b) the raw water transmission line, (c) all related facilities constructed by Stockton East pursuant to bond authorization obtained at an election held on March 5, 1974, and pursuant to all statutory authority including, but not limited to, Sections 53540 and 53541 of the Government Code, as amended, and further in accordance with the plans and specifications described in subparagraph 5A, of the Original Contract, and (d) those measuring devices selected, installed and maintained by Stockton East pursuant to paragraph 11 of this Second Amended Contract; all as they have been constructed or installed pursuant to the Original Contract and as they may be expanded, added to, or replaced after the commencement of the term of this Second Amended Contract.

1NN. "Water treatment facilities advances" means the total sum of money Stockton East advanced under the Original Contract from funds other than the proceeds of the water treatment facilities bonds, to the cost of the water treatment facilities, namely, the sum of $614,073.46, as set forth in the schedule attached hereto as Exhibit "C".

1OO. "Water treatment facilities bonds" means the bonds heretofore issued by Stockton East pursuant to the Revenue Bond Law of 1941.

1PP. "Water treatment plant" means the water treatment plant built by Stockton East generally in the vicinity of East Main Street and the Stockton Diverting Canal, near Stockton, San Joaquin County, California, as a part of the water treatment facilities, pursuant to the Original Contract, as such plant may be expanded, added to, or replaced after the commencement of the term of this Second Amended Contract.

1QQ. "Year" means each 12-month period commencing on April 1 and ending on the next succeeding March 31.

2. TERM.

2A. Effective Date of Second Amended Contract. This Second Amended Contract shall be effective immediately upon its execution by the last of the parties hereto to execute said Contract except that for all purposes the provisions of the Original Contract shall continue to control until the North Stockton Aqueduct has been placed in service, at which time the terms of this Second Amended Contract shall become operative. Notwithstanding the previous sentence, City shall construct and place in service the North Stockton Aqueduct on or before October 31, 1988. This Second Amended Contract shall remain in effect until April 1, 2035.

2B. Replacement of Original Contract. This Second Amended Contract shall replace the Original Contract as soon as it shall take effect, except that where in this Second Amended Contract reference is made to provisions of the Original Contract, those provisions so referred to shall remain in effect. Those back sums referenced in Paragraphs 13 and 14 of the Original Contract shall continue to be due and shall be paid, until paid in full, as though the Original Contract were still in effect.

3. RENEWAL: CONTINUED SERVICE:

3A. Renewal: Each Contractor shall have the right, upon written notice to Stockton East given not less than six months prior to expiration of the initial or any renewal term of this Second Amended Contract, to extend the term of this Second Amended Contract for such term and upon such terms and conditions as Stockton East and the Contractor giving such notice shall agree upon in writing. Promptly after receipt of such notice Stockton East and such Contractor shall negotiate as to the terms and conditions of such renewal contract for such renewal term. The terms and conditions of any such renewal contract shall not be more favorable to one Contractor than those of any such renewal contract between Stockton East and another Contractor.

3B. Continued Service: After the expiration of the initial or any renewal term of this Second Amended Contract, each Contractor shall be entitled to continued service under the following conditions:

3B(1). Service of water in annual percentage amounts determined in accordance with the provisions set forth in Paragraph 4.

3B(2). Service of water shall be at charges to be mutually agreed upon by the parties, provided, however, that if such charges cannot be agreed upon, then service shall be continued at charges calculated in the same manner as applicable during the preceding initial or renewal term, as the case may be.

3B(3). Other terms and conditions of continued service shall be reasonable and equitable and shall be mutually agreed upon, provided, however, that if the parties cannot agree upon such other terms and conditions, continued service shall be in the manner and under all the terms and conditions applicable during the preceding initial or renewal term, as the case may be.

3B(4). If a Contractor shall have given Stockton East written notice of its election to enter into a renewal contract as provided in subparagraph 3A, and if upon expiration of the initial or extended term of this Second Amended Contract, as the case may be, the parties shall not have executed such renewal contract, then such Contractor shall be entitled to continued service under the provisions of this subparagraph 3B.

3C. One Contractor May Renew: The failure of one or more Contractors to enter into a renewal contract or to receive continued service pursuant to the provisions of subparagraph 3A or 3B, as the case may be, shall not prevent any other Contractor from exercising its right to enter into a renewal contract or to receive such continued service, as the case may be.

4. WATER TO BE FURNISHED TO THE CONTRACTORS:

4A. Obligation of Stockton East: Stockton East shall undertake all steps necessary to permit it to operate and maintain the water treatment facilities in order to meet the obligations of Stockton East under this Second Amended Contract. Stockton East shall only be excused from the performance of its obligations under this subparagraph 4A in the event of its performance being prevented by conditions beyond its control, such as, but not limited to an inability to raise sufficient funds to construct said water treatment facilities.

4B. Water to be Made Available: Subject to the provision of subparagraphs 4J, 4K, 4L and 5G, Stockton East

shall make available to the Contractors a minimum of 20,000 acre feet of treated water during each year of the term of this Second Amended Contract. Water shall be allocated among the Contractors in the following manner: Each Contractor shall have the right to take on a continuing monthly basis an amount of treated water equal to the current percentage applicable to such Contractor calculated by Stockton East in accordance with Paragraph 4H hereof multiplied by the aggregate amount of treated water delivered by Stockton East during such month. Nothing in this paragraph ~~will prohibit any Contractor from taking more than its~~ percentage of entitlement at any time to the extent that any other Contractor is not able to use its applicable percentage of entitlement. However, each of the parties hereto agrees to exert its best efforts to use its full proportional water entitlement and to cooperate to see that each Contractor, to the extent possible, receives its full entitlement, both in an energy-efficient and/or cost-effective manner.

4C. Emergency Conditions. In the event of the occurrence of an emergency or other condition beyond the control of a Contractor which requires such Contractor to use more than the percentage of treated water to which it is then entitled hereunder in order to meet the health or safety needs of its consumers, and in the event there is no unused treated water then available, the remaining Contractors ("Remaining Contractors") agree to make available on a temporary basis upon written request therefor from the Contractor so in need (the "Requesting Contractor"), sufficient water to meet such health or safety needs provided that the Requesting Contractor shall pay the Remaining Contractors within 60 days of written demand therefor any actual extra costs, including the cost of replacing the water so provided, and a 15% surcharge for overhead and administration, incurred by the Remaining Contractors by reason of making such treated water available to the Requesting Contractor. The Requesting Contractor shall diligently prosecute all reasonable corrective measures to restore full service independent of water so made available by the Remaining Contractors.

4D. Additional Water: To the extent Stockton East so determines, it will make available to Contractors through the water treatment facilities quantities of water in addition to the base supply of treated water annually. Such additional water shall be made available on a pro-rata basis to the Contractors in accordance with percentages currently allocated to each Contractor pursuant to this Paragraph 4. It is understood that the ability of Stockton East to deliver such additional water on a pro-rata basis

will be dependent upon various factors involving the combined operations of the water treatment facilities and the distribution systems of each of the Contractors. However, the parties agree that they shall together use their best efforts to permit the utilization of such additional water, as well as the base supply, on such pro-rata basis.

4E. Acceptance of Treated Water: The Contractors shall use their best efforts to accept treated water, including both the base supply under Paragraph 4B and any additional water under Paragraph 4D, made available to the Contractors to the extent of the physical capacity of the combined systems and the physical capacity of each Contractor to take and use such water at the times that it is made available, and each Contractor shall undertake all reasonable methods of operation necessary to permit the use of such water, rather than water pumped from the underground, within their respective systems when such water is made available, whether as a part of the base supply or as additional water. Each Contractor shall either construct necessary physical systems to facilitate the taking of water provided to it under this Second Amended Contract or shall arrange through wheeling agreements for the use of the physical systems of other Contractors. The City will construct and place in service the North Stockton Aqueduct (as defined herein) on or before October 31, 1988. Each of the parties hereto agrees to cooperate, to the extent feasible in the operation of its system, to the end that each Contractor receives its full entitlement of treated water in an energy efficient and/or cost effective manner, provided, however, that (unless otherwise mutually agreed) each Contractor shall bear its fair share of the cost of any joint use or jointly owned facility and the expense of operation and maintenance thereof. To this end, the Contractors shall, as necessary, enter into wheeling agreements, subject to all the provisions of this Second Amended Contract. In the event agreement as to the terms of any such wheeling agreement cannot be reached within ninety (90) days of opening of negotiations on any such wheeling agreement, any party to such wheeling agreement negotiation may initiate binding arbitration in accordance with the California Arbitration Act (Code of Civil Procedure §§1280 and following), with the following provisions: Each party shall appoint one arbitrator, who may be any person; the arbitrators so appointed shall appoint a neutral arbitrator, who may be any person and who shall be the sole decision-maker; the scope of arbitration shall be limited to the terms to be included in the wheeling agreement. Nothing in this Paragraph 4E contained shall, however, be deemed to obligate any Contractor to make its facilities, or any part thereof, available for use of any other Contractor unless

there is adequate capacity available in such facilities for such use of the second Contractor. No Contractor shall extend service to a new service area relying on the conveyance facilities of any other Contractor except by mutual agreement. No Contractor shall be under any obligation to dedicate all or any portion of its facilities to the use of any other Contractor hereunder. The foregoing provisions of this Paragraph 4E shall not limit the mutual undertakings of the Contractors set forth in Paragraph 4C to make water available on a temporary basis to a Requesting Contractor in the event of an emergency or other condition beyond the control of the Contractor.

4F. Scheduling of Maintenance: Any repairs, maintenance, replacement, or other work which will necessitate taking all or a portion of the water treatment facilities out of operation shall, to the extent practical, be undertaken each year between November and February, inclusive.

4G. Standard of Operation: Stockton East shall, at all times during the term hereof, operate and maintain the water treatment facilities in accordance with good and accepted waterworks practices.

4H. Calculation of Percentage: On or before September 1 of each year, each Contractor shall provide to Stockton East, in form designated by Stockton East, data, sufficient in Stockton East's determination, to enable Stockton East to calculate the total amount of water produced by that Contractor during the previous Year from all sources, whether from wells, Stockton East, or other providers or sources. On or before the October 1 next succeeding the provision of such data, Stockton East shall calculate for each Contractor a percentage determined by dividing the total amount of water produced by each Contractor, as calculated by Stockton East from the data provided to Stockton East, by the sum of such totals for all Contractors, and multiplying by 100. Such percentage so determined for each Contractor shall be the percentage applicable for each Contractor respectively in accordance with paragraphs 4 and 5, for the Year next succeeding such calculation and Stockton East shall promptly notify the Contractors of each such percentage. Stockton East's determination of the percentages shall be final.

4I. Minimum Amount: Notwithstanding any other provision of the Original Contract or of this Second Amended Contract, in consideration of the consent by Cal Water to a reduction in its minimum allocation of 18,500 acre feet of treated water yearly from the existing 20,000 acre feet nominal capacity of the water treatment plant set forth in

the Original Contract to an amount based on its total water production from all sources as a percentage of all Contractors' total water production from all sources as determined in Paragraph 4 hereof, Stockton East hereby agrees to deliver to Cal Water (on a monthly basis) during each Year a minimum of not less than one-half of the total treated water available for delivery to all Contractors. The Contractors other than Cal Water hereby agree and consent to such agreement by Stockton East regardless of whether, as a result of such deliveries to Cal Water pursuant to such agreement, the amount of treated water delivered to such other Contractors, or any of them, during any Year may be less than the amount determined under Paragraph 4B by use of the applicable percentage determined under Paragraph 4H hereof and regardless of whether the amount of treated water may be insufficient in any Year to meet the allocation of such other Contractors so determined under Paragraph 4B by use of the applicable percentage determined under Paragraph 4H after first meeting the allocation of Cal Water. After so meeting such allocation of Cal Water, the remaining treated water shall be allocated on a pro-rata basis among such other Contractors based on their respective applicable percentages determined under Paragraph 4H. The provisions of this Paragraph shall remain in effect until Conveyance and Storage Facilities have been constructed which deliver to the water treatment plant raw water sufficient in amount to increase the annual nominal capacity of that plant from 20,000 acre feet to 30,000 acre feet.

4J. Lack of Availability of Raw Water: Subject to subparagraph 5G, Stockton East shall be excused from its obligation to deliver annually a minimum of 20,000 acre feet of treated water, without Contractors being excused from making their respective payments to Stockton-East required by this Second Amended Contract during any Year in which there is available to Stockton East, from all sources, less than a total for all uses of 20,000 acre feet of raw water. In such event Stockton East shall during such a Year deliver as much water as it does have available but shall have no liability for its failure to deliver more.

4K. Failure of System to Accept Water: Subject to subparagraph 5G, Stockton East shall also be excused from its obligation to deliver a minimum of 20,000 acre feet of water in any Year during which the combined systems of Contractors fail to accept a full 20,000 acre feet of water due to operational or physical limitations and in such event Stockton East shall deliver as much water as is operationally possible but shall not be obligated to deliver the full 20,000 acre feet of water during such a Year, and in

such event the Contractors shall not be excused from making their respective payments to Stockton, East required by this Second Amended Contract.

4L. Inability to Deliver Treated Water: Subject to subparagraph 5G, Stockton East shall also be excused from its obligation to deliver water without the Contractors being excused from payment during any period, not exceeding 18 months, of failure by Stockton East to deliver treated water for any reason. In the event of a failure by Stockton East to deliver treated water to Contractors, then to the extent practical and to the extent of the capacity of the water treatment facilities, the availability of raw water, and the ability of Contractors' systems to accept water, Stockton East shall subsequently during the Year of such a failure, make up any quantity required to be delivered as a part of the base supply of treated water.

4M. Allocation of Deficiency: Any deficiency resulting due to conditions mentioned in subparagraphs 4J, 4K and 4L shall be allocated among the Contractors on a proportional basis in accordance with the percentages currently allocated to each Contractor pursuant to this Paragraph 4.

5. PAYMENT BY CONTRACTORS.

5A. Amount to Be Paid Annually: In exchange for Stockton East agreeing to make available to Contractors treated water in the manner set forth in Paragraph 4 and otherwise operating in accordance with this Second Amended Contract, the Contractors together shall pay annually, in equal monthly installments estimated, computed, and paid as set forth in Paragraph 6, to Stockton East, regardless of the amount of water actually delivered to Contractors and regardless of whether any water is delivered at all, subject to subparagraph 5G, the sum of the following:

5A(1). Debt service and the debt service surcharge for the subject Year together with 30 equal annual payments calculated to amortize the total water treatment facilities advances with interest at the average interest rate applicable to the water treatment facilities bonds, provided, that, there shall be deducted from the amount of the water treatment facilities advances the aggregate of the sums which have been applied to the water treatment facilities advances either directly from the proceeds of the water treatment facilities bonds or from sums made available pursuant to Paragraph 4 of the Original Contract.

5A(2). New debt service and the new debt service surcharge.

5A(3). A sum equal to the aggregate of the following:

(a) the cost of expansion of, additions to, or replacements of, the water treatment facilities,

(b) the municipal and industrial share of the cost of acquisition of supplemental surface water from any source other than New Hogan Dam, and

(c) the municipal and industrial share of the cost of construction and acquisition of Conveyance and Storage Facilities, less the aggregate of all payments on account of such costs heretofore made by the Contractors, and plus interest at the prime rate for one Year on the remaining balance of such costs, divided by the number of Years remaining in the term of this Second Amended Contract, provided, however, that those costs itemized in the preceding clauses (a), (b) and (c) shall be included only if and to the extent that they have not been financed by the issuance of bonds and/or paid for from reserves established and maintained by Stockton-East pursuant to the provisions of the Bond Resolution, the Original Contract or this Second Amended Contract.

5A(4). The annual adjusted price of the raw water delivered to the water treatment plant including both the base supply of raw water and any additional water which may be delivered to and accepted by the Contractors. The adjusted price of raw water shall be determined annually for each applicable Year as follows:

5A(4)(a). From the total actual cost of all water purchased in any Year by Stockton East there shall be deducted any charges of any kind imposed by a purveyor of raw water to Stockton East on the use or required scheduling of municipal and industrial water, as opposed to agricultural water.

5A(4)(b). The amount so obtained pursuant to subparagraph 5A(4)(a) shall then be multiplied by a fraction, the numerator of which shall be the amount of raw water delivered to the water treatment plant during the year and the denominator of which shall be all water purchased or produced by Stockton East during the year. For purposes of the denominator, water shall be measured as follows:

5A(4)(b)(i) Water purchased from New Hogan Dam shall be the amount of water released from New Hogan

Dam less the amount of water diverted within Calaveras County as such diversions within Calaveras County are measured or determined from time to time by agreement between Stockton East and the Calaveras County Water District.

5A(4)(b)(ii) In measuring surface water from sources other than New Hogan Dam the water shall be measured at the point at which such water is measured for purposes of payment by Stockton East to the purveyor of such water.

5A(4)(b)(iii) Produced water shall be measured at the point of production.

5A(4)(c). It is understood by the parties that the provisions of this subparagraph 5A(4) shall not be deemed to control the present or future agricultural water rates or charges of Stockton East.

5A(4)(d). To the amount so obtained there shall then be added, in order to obtain the adjusted price of raw water, all charges, of any kind imposed by a purveyor of raw water to Stockton East on the use or required scheduling of municipal and industrial water as opposed to agricultural water, but excluding any minimum payments made for municipal and industrial water not used in order to make such water available in the future, but including interest charges payable by Stockton East under the New Hogan Contracts, the New Melones Contract, or any other contract for the purchase of raw water by Stockton-East in the future.

5A(4)(e). In the event that in the future water is delivered by Stockton East to water treating facilities in addition to the water treatment plant, then the adjusted price for raw water shall be calculated for all water delivered to water treating facilities and shall then be apportioned among the various water treating facilities on an equal per acre foot basis.

5A(5). The actual operation, maintenance, repair and replacement costs directly attributable to the water treatment facilities for the annual production of the base supply of treated water less sums drawn against the Repair and Replacement Reserve Account pursuant to the provisions of Paragraph 8 of the Original Contract. It is understood that no item for depreciation shall be included in the sums calculated and paid pursuant to Paragraphs 5 and 6.

5A(6). An amount equal to the actual cost of administrative services attributable to the operation of the water treatment facilities and the administration of this Second

Amended Contract including, but not limited to, management time and required legal, accounting, and consulting engineering services, and the actual cost of paying agents or other services which Stockton East requires in processing and making payments on the water treatment facilities bonds, or any other related bonds.

5A(7). The actual cost of insurance for the water treatment facilities, and Conveyance and Storage Facilities, including, but not limited to, casualty and liability and including fire, and extended coverage, at full replacement value, but excluding "loss of revenue" insurance.

5A(8) A sum equal to the actual cost of operation, maintenance, and repair of the wells, pumps, conduits, and related facilities enumerated in Paragraph 8, including both costs arising on account of actual operation and costs arising on account of necessary standby facilities for use in future Years when such production facilities may be required.

5A(9) The annual payments required by Paragraphs 7 and 8 into the reserve funds established by Paragraphs 7 and 8.

5A(10) The sum of $100,000, to be paid into the Water Treatment Facilities Reserve Fund established by Paragraph 9; said sum of $100,000 to be adjusted from time to time by Stockton East, provided that:

5A(10)(a) Prior to any initial or subsequent adjustment in said sum of $100,000, Stockton East shall obtain a written report, or reports, from one or more registered civil engineers as to the need for funds to meet expenditures described in subparagraph 9C.

5A(10)(b) Prior to any initial or subsequent adjustment upward in said sum of $100,000, the Board of Directors of Stockton East shall hold a noticed public hearing to consider such upward adjustment.

5A(10)(c) Said sum of $100,000 shall in no event be reduced below $100,000 and shall only be adjusted above $100,000 for the purpose of meeting expenditures described in subparagraph 9C.

5B. Credit: Against the sums due under subparagraph 5A there shall be allowed as a credit, a sum calculated in a manner established by resolution of the Board of Directors of Stockton East for the use of the raw water transmission line and intake facilities for delivery of water to

users and uses other than the water treatment plant, provided that prior to initially adopting or thereafter altering said method of calculation the Board of Directors of Stockton East shall first hold a noticed public hearing relative to such method of calculation.

5C. Audit: The annual amount of operations, maintenance, repair and replacement, the cost of necessary and desirable improvements, and modifications to the treatment facilities, ~~the cost of acquisition of surface water from~~ any source other than New Hogan Dam, the cost of construction of Conveyance and Storage Facilities and the cost of necessary and desirable improvements and modifications thereto, the cost of administrative services, charges for raw water, and the amount of all other variable costs, charges, credits, and funds shall be determined each year by Stockton East and thereafter audited and reported upon by an independent certified public accountant selected by Stockton East as set forth in subparagraph 6C.

5D. Allocation of Charges: The charges imposed by this Paragraph 5 shall be allocated among the contractors annually in proportion to the percentage currently allocated to each contractor pursuant to Paragraph 4.

5E. Payment Adjustments: Notwithstanding any other provision of this Second Amended Contract, City shall pay an estimated sum of $5,856,586 and Lincoln Village and Colonial Heights Maintenance Districts combined shall pay an estimated sum of $582,690 to Stockton East as consideration for the purchase of water entitlements, which entitlements had been previously allocated under the Original Contract to Cal-Water. The sums shall be paid in equal monthly installments commencing at the date the Second Amended Contract becomes operative and extended thereafter for 15 years.

As and for consideration to Cal Water to terminate the Original Contract and enter into the Second Amended Contract, the base monthly payment which Cal Water would otherwise be obligated to pay under this Paragraph 5 shall be reduced by an estimated sum of $6,439,276 which credit shall be applied in equal monthly installments on a monthly basis during each month commencing at the date the Second Amended Contract becomes operative and extended thereafter for 15 years. The above-mentioned estimated sums shall be adjusted to the actual amounts applicable to each Contractor as of the date that the North Stockton Aqueduct is placed in service, in accordance with Paragraph 2A of this Second Amended Contract. Such actual amounts shall be determined by Stockton East.

Notwithstanding any other provision of this Second Amended Contract to the contrary, Lincoln Village and Colonial Heights Maintenance Districts shall make payment to Stockton East solely on the basis of a charge per acre foot of water computed by Stockton East to be applicable to the Lincoln Village and Colonial Heights Maintenance Districts for their allocation of surface water as computed under Section 4H, which charge shall be equal to the unit cost per acre foot payment made by any other Contractor pursuant to the payment provisions within this Second Amended Contract with the exception of payments made under Section 5E. The payment of the charge will be made on a monthly basis.

5F. Further Adjustments: It is agreed that in the year 2016, and each tenth (10th) Year thereafter, the contractors will review the payment of capital costs with bonded indebtedness as compared to water allocation and make such adjustments to future payments as appropriate to adjust any inequities.

5G. Failure to Continue Service: Following any period of 18 months during which Stockton East fails to make available to Contractors at least 7,500 acre feet of treated water, the Contractors shall be excused from making the payments required pursuant to this Second Amended Contract until such time as Stockton East is prepared to, and has, restored the normal service contemplated by this Second Amended Contract. In the event of any failure of the raw water supply, damage or destruction of all or a portion of the water treatment facilities, or any other cause preventing Stockton-East from making available to Contractors the quantities of water contemplated by this Second Amended Contract, Stockton East shall use its best efforts to restore full service promptly. In the event of damage to or destruction of the water treatment facilities, any insurance proceeds shall be applied to repair and reconstruction. In the event that all or a portion of the water treatment facilities are taken or damaged by condemnation by, or conveyed by Stockton East to avoid or compromise any condemnation proceeding to, a public agency not assuming the obligations of this Second Amended Contract, then Stockton- East shall use any proceeds from such a condemnation or conveyance in the manner required by the Bond Resolution.

6. TIME AND MANNER OF PAYMENT:

6A. Monthly Payments: Payment of the annual sum due pursuant to Paragraph 5 shall be as set forth in this Paragraph 6. There shall be a base monthly payment made as set

forth in this Paragraph 6. Payment shall be made monthly on the first day of each month.

6B. Proration: During the term of this Second Amended Contract payments which cover less than a full month or which cover less than a full Year's service shall be prorated accordingly.

6C. Procedures for Audit: Actual and variable costs and other items subject to audit shall be audited and reported upon by an annual audit as set forth in subparagraph 5C. The audit shall be commenced each Year not later than July 1 next following the close of each Year. The annual audit shall be completed not later than December 31 succeeding the close of the Year being audited. Each audit shall cover a full Year commencing on April 1 and ending on March 31. In the event that an annual audit discloses a necessary adjustment or correction in any amount or fund, then such adjustment or correction shall be applied to the base monthly payment to be paid during the Year next succeeding the completion of such an annual audit. Three copies of the annual audit report shall be furnished to each Contractor without expense promptly after receipt by Stockton East.

6D. Establishing Base Monthly Payment. The base monthly payment shall be calculated annually as follows:

6D(1) On or before the first day of October annually Stockton-East shall announce a new base monthly payment to be applicable during the next succeeding Year.

6D(2) The base monthly payment which shall be announced annually pursuant to subparagraph 6D(1) shall be an estimate, which estimate shall be made by Stockton East to include the following:

6D(2)(a) Debt service, the debt service surcharge, new debt service, new debt service surcharge, and any payment toward water treatment facilities advances required by subparagraph 5A(1) for the subject Year and for costs established in subparagraph 5A(3).

6D(2)(b) A sum based on an estimate of the actual cost of variable items as anticipated for the forthcoming Year during which said base monthly payment will be applicable. The estimate so made is to be made following a survey of current and anticipated costs of the subject items and in consideration of information disclosed by the last available required audit and records of Stockton East for the immediately preceding Year.

6D(2)(c) The application of any credit which it is estimated may be due the Contractors.

6D(2)(d) A sum necessary to make any corrections because of overpayments or underpayments arising because of variance between estimates and actual experience during the preceding Year and any corrections or adjustments disclosed as necessary by the last available audit.

6D(2)(e) A deduction for all sums collected pursuant to Paragraph 6D(3), for the previous year, in excess of that amount required for the groundwater production fund, as determined by Stockton East.

6D(3) Stockton East shall annually levy a municipal groundwater assessment, pursuant to its enabling legislation such that the cost of groundwater use is equivalent to the cost of surface water use. That portion of such assessment which is deducted pursuant to paragraph 6D(2)(e) shall be paid to meet costs set forth in paragraph 6D(2)(a) and 6D(2)(b).

6E. Public Hearing On Base Monthly Payment: Annually prior to announcing the base monthly payment for the next Year the Board of Directors of Stockton East shall hold a noticed public hearing to consider the amount of said base monthly payment.

6F. Final Payments: During the 12 months next following the availability of the audit of the last 12 months preceding the cessation of service pursuant to this Second Amended Contract, and any extension, continuation, or renewal thereof, 12 final monthly payments shall be made which together shall adjust any differences among the parties between the last base monthly payment and actual experience during the last 12 months as confirmed by audit of operations for the last 12 months.

7. REPAIR AND REPLACEMENT RESERVE ACCOUNT:

7A. Maintenance of Repair and Replacement Reserve Account: Stockton East has established and shall maintain during the term of this Second Amended Contract a reserve account for the purpose of covering the cost of repairs and replacement of items scheduled pursuant to subparagraph 7B which are required during the life of the Second Amended Contract in order to maintain the water treatment facilities in good order and at all times able to meet efficiently the production of the water to be supplied pursuant to this Second Amended Contract. The account identified in

this Paragraph 7 is the same as the Repair and Replacement Reserve Account established by the Bond Resolution.

7B. Amount of Annual Payment: There is attached hereto as Exhibit "D" a major repair and replacement schedule which schedule has been prepared with the assistance of the engineers who designed the water treatment facilities and which sets forth an estimate of such anticipated major repair and replacement expenses during the life of the Second Amended Contract and the amount of level annual payments sufficient to provide a reserve account adequate to meet the expenses anticipated by said schedule.

7C. Adjustment of Payment and Use of Account: Payment shall be made by the Contractors annually as a part of the total payment required by Paragraph 5 into the Repair and Replacement Reserve Account in accordance with the payment schedule established by Exhibit "D". Payments to be made into the reserve fund shall be adjusted from time to time, by Stockton East to meet actual operating experience, provided that prior to any such adjustment the Board of Directors of Stockton East shall first hold a noticed public hearing. Any sums drawn against the Repair and Replacement Reserve Account shall be deducted from the actual charge for operation, maintenance, and replacement made pursuant to subparagraph 5A(5).

8. WATER DEFICIENCY RESERVE FUND: It is recognized that pursuant to the New Hogan Contracts Stockton East in some years may be required to take a 25% deficiency in its New Hogan Dam water supply. In order to furnish Contractors with a minimum of a full 20,000 acre feet of water per year Stockton East agrees that it will purchase water, or construct, install, or acquire such wells, pumps, conduits, and related facilities as may from time to time be required to permit Stockton East to take such water from the underground annually as may be necessary to augment an annual deficiency of as much as 25% in the base supply of raw water. In order to place itself in a position to meet the obligations of this Paragraph 8 Stockton East has established a Water Deficiency Reserve Fund into which it shall deposit annually a sum set by the Board of Directors of Stockton East. The amount so deposited shall not in any Year exceed an amount equal to ten cents multiplied by the total number of acre feet of water delivered to the water treatment plant during the subject Year. Funds in said Water Deficiency Reserve Fund may be applied by Stockton East at such time as Stockton East may from time to time determine is appropriate to the construction or other acquisition of such wells, pumps, conduits, and related facilities, and to do any other acts necessary on the part of

Stockton East in its judgment to furnish the base supply of treated water to Contractors annually. In the event that during the term hereof Stockton East by act of the California legislature is granted special powers to levy taxes or assessments for the purposes specified herein and such taxes or assessments are applicable to the treated water which is the subject of this Second Amended Contract, then this Paragraph 8 shall be inapplicable and of no force and effect.

9. WATER TREATMENT FACILITIES RESERVE FUND: Stockton East has established and shall maintain during the term of this Second Amended Contract a Water Treatment Facilities Reserve Fund. There shall be deposited in that fund at the end of each Year the sums paid to Stockton East pursuant to subparagraphs 5A(10). Stockton East may, at any time, make withdrawals from said Water Treatment Facilities Reserve Fund and expend such funds as Stockton East determines, provided that such expenditures are limited to the following purposes:

9A. Debt Service: Debt service, including the call and redemption of bonds prior to fixed maturity date.

9B. Operation and Maintenance: Operation, maintenance, and repair of the water treatment facilities including the items listed in subparagraphs 5A(4) through 5A(8).

9C. Replacement and Expansion: Necessary or desirable replacement, expansion, improvement, modification, and increase in the capacity of the water treatment facilities.

10. SCHEDULING OF WATER: From time to time as is necessary and convenient, and at least once each year during the month of March representatives of the Contractors and Stockton East shall meet and confer as to available raw water and the scheduling of the delivery of treated water to the Contractors. Following such conferences Stockton East shall, from time to time announce schedules for the delivery of treated water to Contractors and to each Contractor. The schedules so announced, from time to time, shall be developed in a manner to permit making maximum use of the treated water which may be available subject to the respective demands of Contractors' systems. It is also understood that schedules announced pursuant to this Paragraph 10 shall be goals toward which Stockton East and the Contractors shall work in operating the water treatment facilities and the respective distribution systems of Contractors, but it is understood that such goals may not in every instance be achieved.

11. MEASUREMENT: Necessary measurement of water to permit compliance with this Second Amended Contract shall be by recording measuring devices selected by Stockton East and installed and maintained by Stockton East and subject to inspection at all times by the Contractors.

12. QUALITY: Stockton East has obtained and shall maintain in effect during the term of this Second Amended Contract a permit to operate the water treatment facilities from the California Department of Health Services. At all times Stockton East will use its best efforts to the end that the quality of water delivered by it pursuant to and in satisfaction of this Second Amended Contract meets or exceeds requirements as to water for human consumption of the Department of Public Health of the State of California, the United States Environmental Protection Agency and their respective successors. The Contractors shall likewise use their best efforts to meet or exceed such requirement with respect to water delivered by the Contractors to their respective customers or users.

13. OTHER CONTRACTORS: It is recognized that another Contractor, not a party hereto at this time, could take water. The parties hereto agree that no such Contractor shall be furnished water on terms more favorable than those made available to the Contractors at the date such a new Contractor agrees to take water and to be bound by this Second Amended Contract. No additional Contractors will be added to this Second Amended Contract without the express written consent of all the existing Contractors, which consents shall not be unreasonably withheld. Notwithstanding the provisions herein, the Southern Water System may become a Contractor under this Second Amended Contract, upon written notice to the other parties hereto.

14. OPERATIONS: Stockton East shall at all times make all reasonable efforts to operate the water treatment facilities in a manner in accordance with the currently applicable schedule adopted as set forth in Paragraph 10. In so operating Stockton East will endeavor to meet the full water demand of the systems of the Contractors during periods of low demand. During periods of high demand it is understood that all systems may be required to operate ground water pumps in order to meet peak loads. Water will be delivered into the systems of Contractors by delivery to Cal Water at the point shown on Exhibit "B". Such water delivery points may later be changed, and new delivery points may be created.

15. CONSTRUCTION OF NEW FACILITIES: The parties recognize that in order to meet the increased demand for treated

water in the Stockton Metropolitan Area it will be necessary for Stockton East to acquire water from sources other than New Hogam Dam and in order to transport such water to the water treatment facilities it will be necessary to construct Conveyance and Storage Facilities. The cost of acquiring such additional water, the cost of the Conveyance and Storage Facilities, and the respective agricultural share and municipal and industrial share of such costs are presently unknown. Since the Contractors will be the parties ultimately responsible for payment of such municipal and industrial share, the engineering feasibility of such project and the cost thereof are matters of vital interest to them. Accordingly, Stockton East agrees that it will consult with the Contractors on any such proposed acquisition or construction, together with engineering details and details as to the cost thereof, the municipal and industrial share of all such costs to be allocated to the Contractors, the proposed financing plan, the financial impact on the Contractors, and other pertinent aspects of the overall project. If all Contractors approve the plan in writing, then Stockton East may proceed in accordance with law. If any Contractor shall not approve within thirty days of a request for approval by Stockton East, the proposed plan shall be submitted to a vote of the electors of Stockton East, and the results of such vote shall be final and binding on all Contractors.

16. ATTORNEYS FEES AND COSTS: In any case where court action is instituted by one or more parties against one or more other parties to interpret this Second Amended Contract, the rights of the respective parties hereunder, or to enforce a right or obligation created by this Second Amended Contract, the prevailing party or parties shall receive costs and reasonable attorneys fees to be set by the court.

17. SUCCESSORS: This Second Amended Contract shall bind and inure to the legal successors of the parties and is not made for the benefit of any other parties. Any Contractor may assign all or any part of this Second Amended Contract to a public agency having the power of eminent domain. In the event of any such assignment of all of a Contractor's interest in this Second Amended Contract, the Contractor so assigning shall be relieved from all further obligations under this Second Amended Contract. In the event of such an assignment of a part of a Contractor's interest under this Contract the Contractor so assigning shall remain obligated for the remainder of its obligations under this Second Amended Contract.

18. DEFAULT AND REMEDIES:

18A. Interest: Any sum due hereunder and not paid when due shall bear interest at the prime rate until paid in full.

18B. Remedies: If any Contractor shall fail to cure or correct any default, including, but not limited to payment of any sum when due, then following 10 days written notice of such default to the defaulting Contractor, Stockton East shall have, without further notice or demand and without one remedy excluding any other, all remedies at law, in equity, or as set forth below:

18B(1). The discontinuance of service until the default is remedied and in the event of such a discontinuance of service Contractor shall continue to be liable for the accrual of the base monthly payment or payments accruing during such period of discontinued service. In the event of a discontinuance of service to any Contractor, written notice of such cessation shall be given by Stockton East to all of the Contractors and, if discontinuance of service requires a cessation of wheeling, the Contractors providing wheeling shall cease wheeling, and Stockton East shall, and hereby agrees to, hold harmless and indemnify any Contractor from liability which might arise following such a written notice of the cessation of wheeling.

18B(2). The collection by suit of any sums due, it being understood that the collection by suit of any sums due shall not waive or terminate a Contractor's continuing obligation to make all required payments to Stockton East.

19. NOTICES: Notices required or permitted to be given under this Second Amended Contract shall be made by all parties as provided herein. Mail shall be deposited in a United States Post Office mail box first class postage prepaid addressed as shown by the respective addresses following the signature block for each of the parties hereto. Notices so posted shall be deemed delivered on the second day following said posting. Changes in these addresses shall be given in writing by the method specified herein.

20. SUBJECT TO BOND RESOLUTION: This Second Amended Contract and the relationship between Contractors and Stockton East, and the respective obligations and privileges of each of the parties shall, in all respects, be subject to and bound by the Bond Resolution. In the event of any conflict between the Bond Resolution and this Second Amended Contract the Bond Resolution shall prevail.

21. SPECIFIC PERFORMANCE: By reason of the specialized nature of the water service to be rendered, and for the further reason that the extent of any damage caused to any party by another by reason of any breach of this Contract may be extremely difficult to determine, it is agreed by the parties hereto that an action for damages is an inadequate remedy for any breach, and that specific performance, without precluding any other remedy available in equity or at law, will be necessary to furnish any party hereto with an adequate remedy for the breach by any other party hereto of any covenant or obligation for the benefit of the aggrieved party.

22. SEVERABILITY: If any term, provision, covenant, or condition of this Second Amended Contract is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

23. ENTIRE AGREEMENT: This instrument constitutes the sole and only agreement of the parties hereto relating to the rights and obligations granted and assumed herein. Any prior agreements, promises, negotiations, or representations not expressly set forth in this Second Amended Contract are of no force or effect, except as set forth in paragraph 2B of this Second Amended Contract.

24. REMEDIES NOT EXCLUSIVE: Any remedy granted to a party by this Second Amended Contract is not exclusive and any party may elect any remedy granted by this Second Amended Contract, or otherwise, at law, by statute, or in equity, or any combination thereof.

25. WAIVER: No waiver of any default shall constitute a waiver of any other breach or default, whether of the same or any other term, covenant, or condition. No waiver, benefit, privilege, or service voluntarily given or performed by either party shall give the other any contractual right by custom, estoppel, or otherwise. The subsequent acceptance of any payment pursuant to this Second Amended Contract shall not constitute a waiver of any preceding default by any party other than default in the payment of the particular payment so accepted, regardless of a party's knowledge of the preceding breach at the time of accepting the payment.

26. TITLES: The table of contents of this Second Amended Contract and the captions of the various articles and paragraphs of this Second Amended Contract are for convenience and ease of reference only and do not define,

limit, augment, or describe the scope, content, or intent of this Contract or of any part or parts of this Second Amended Contract.

27. GENDER, NUMBER: The neuter gender includes the feminine and masculine, the masculine includes the feminine and neuter, and the feminine includes the masculine and neuter, and each includes corporation, partnership, or other legal entity when the context so requires. The singular number includes the plural and the plural the singular whenever the context so requires.

28. AMENDMENT: This Second Amended Contract may only be amended by agreement of all the parties.

29. CONTROVERSIES: No dispute or controversy between any two or more of the parties hereto shall affect the rights of any party or parties not involved in such dispute or controversy.

30. INTEREST RECEIVED ON RESERVE FUNDS: All interest income received by Stockton East by virtue of the investment of funds on hand in any reserve fund or account to the extent any such fund is funded out of payments made pursuant to this Second Amended Contract, shall be added to the respective reserve fund generating such interest and shall be expended for the purposes of such reserve fund.

31. MODIFICATION OF BOND RESOLUTION: There shall be no modification of the Bond Resolution nor the adoption of a supplemental or additional resolution which affects the obligations of any Contractor or increases or changes their respective payment obligations without the prior written consent of each Contractor.

32. SUBJECT TO UNITED STATES BUREAU OF RECLAMATION CONTRACTS: It is understood that this Second Amended Contract and the rights and obligations of the parties hereunder are subject to the terms of the New Hogan Contracts and the New Melones Contract and by execution hereof each of the Contractors agrees to be bound by the provisions of said contracts, including, but not limited to, the provisions of Article 32 of the contract entered into under date of August 25, 1970 between the United States of America and the Stockton and East San Joaquin Water Conservation District (now Stockton East) and the Calaveras County Water District, and Article 17 of the New Melones Contract and pursuant to the provisions of subdivision (g) of said Article 32 and of subdivision (7) of said Article 17, the provisions of subdivision (a) through (g) of said Article 32 and of said Article 17 are hereinafter set forth:

EQUAL OPPORTUNITY

32. During the performance of this Contract, the Districts agree as follows:

(a) The Districts will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Districts will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Districts agree to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this Equal Opportunity clause.

(b) The Districts will, in all solicitations or advertisements for employees placed by or on behalf of the Districts, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) The Districts will send to each labor union or representative of workers with which they have a collective bargaining agreement or other Contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the labor union or workers' representative of the Districts' commitments under this Equal Opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Districts will comply with all provisions of Executive order No. 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Districts will furnish all information and reports required by said Executive Order and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to their books, records, and accounts by the contracting agency and the Secretary of Labor for purpose of investigation to ascertain compliance with such rules, regulations and orders.

(f) In the event of the Districts' noncompliance with the Equal Opportunity clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part, and the District declared ineligible for further Government contracts in accordance with procedures authorized in said Executive Order, and such other sanctions may be imposed and remedies invoked as provided in said Executive Order, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Districts will include the provisions of subdivisions (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of said Executive Order so that such provisions will be binding upon each subcontractor or vendor. The Districts will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event the Districts become involved in, or are threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Districts may request the United States to enter into such litigation to protect the interests of the United States.

EQUAL OPPORTUNITY

17. During the performance of this Contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicious places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without discrimination because of race, color, religion, sex, or national origin.

(3) The Contractor will send to each labor union or representative of workers, with which it has a collective bargaining agreement or other Contract or understanding, a notice, to be provided by the Contracting Officer, advising the said labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicious places available to employees and applicants for employment.

(4) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The Contractor will furnish all information and reports required by said amended Executive Order and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the Contracting Officer and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated,or suspended, in whole or in part, and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in said amended Executive Order, and such other sanctions may be imposed and remedies invoked as provided in said Executive Order, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The Contractor will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of said amended Executive Order, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will

take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

~~Stockton East covenants and agrees to perform all of~~ its obligations under the provisions of said Article 32 and of said Article 17.

33. CONDUCT OF PUBLIC HEARINGS: Whenever Stockton East is required by this Second Amended Contract to hold a noticed public hearing such noticed public hearing may be consolidated with any other noticed public hearing required by this Second Amended Contract. A notice of a public hearing required by this Second Amended Contract need not set forth in detail the item or items to be considered but will be sufficient if it describes generally the subject matter to be considered at the public hearing.

34. ADJUDICATION OF GROUND WATER BASIN: In the event of a future adjudication of rights to extract water from the ground water basin underlying Stockton East, the parties agree and stipulate among themselves that use of water delivered under this Second Amended Contract shall constitute a reasonable beneficial use of ground water to the extent that such use results in a reduction in ground water extraction below the level of such extraction prior to the initial delivery date. The parties further agree that in the event of an adjudication, the respective positions they assert, whether in judicial proceedings or stipulated settlement, will be in accordance with the provisions of this Paragraph 34.

35. STOCKTON EAST AS CONTRACTOR: In the event that while service is continued hereunder to any Contractor Stockton East undertakes, by purchase, other acquisition, or by contract, the operation of all or any part of the distribution system of any Contractor, then in such capacity, as the operator of a distribution system, Stockton East shall not extend to such a system or the water users of such a system any benefit, right, or preference, not extended to the other Contractors, unless such benefit, right, or preference is also extended to all other Contractors.

36. TEMPORARY USE OF FUNDS: In the event that during any year Stockton East has a shortage of funds to meet

anticipated or unanticipated costs and charges arising under subparagraphs 5A(4) through 5A(8) then Stockton East may, in its discretion, use any funds it may have on hand in the Water Treatment Facilities Reserve Fund for such purposes. In the event that Stockton East does use funds in the Water Treatment Facilities Reserve Fund pursuant to the preceeding sentence, then Stockton East may withdraw from the Surplus Account at the end of the current Year, and at the end of any necessary succeeding Years, sufficient funds to reimburse the Water Treatment Facilities Reserve Fund for the money used pursuant to this Paragraph 36 from the Water Treatment Facilities Reserve Fund.

37. ALLOCATION OF SURPLUS TO WATER FUND: At the time of setting the amount of the annual payments to be made by the Contractors pursuant to Paragraphs 5 and 6, an estimate shall be made of that amount of money which will remain in the Surplus Account at the end of the current Year which will be in excess of the amount required to meet all allocations and payments to Stockton East in the current Year provided for by Paragraphs 8, 9 and 36, and subparagraph 5A(1). The sums to be paid by the Contractors pursuant to Paragraphs 5 and 6 for the coming Year shall be reduced by such amount estimated to be remaining in the Surplus Account. At the end of the current Year, all moneys remaining in the Surplus Account which are in excess of the amounts required to meet all allocations and payments to Stockton East provided for by Paragraphs 8, 9 and 36 and subparagraph 5A(1) for such current Year shall be deposited in the Water Fund and used as therein provided.

38. RESOLUTIONS AND EXECUTION: There are attached hereto the following: as Exhibit "E" a certified copy of a resolution of the Board of Directors of Stockton East authorizing execution of this Second Amended Contract; as Exhibit "F" a certified copy of a resolution of the Board of Directors of Cal-Water authorizing execution of this Second Amended Contract; as Exhibit "G" a certified copy of a resolution of the City Council of City authorizing execution of this Second Amended Contract; as Exhibit "H" a certified copy of a resolution of the Board of Supervisors of the County of San Joaquin acting on behalf of Lincoln authorizing execution of this Second Amended Contract; and as Exhibit "I" a certified copy of a resolution of the Board of Supervisors of San Joaquin County acting on behalf of Colonial authorizing execution of this Second Amended Contract. The parties shall execute ten originals of this Second Amended Contract.

39. SUBJECT TO OPINION: Notwithstanding any other provision of this Second Amended Contract, it shall not become effective until there has been obtained, from Messrs. Orrick, Herrington & Sutcliffe, the bond counsel who issued the original opinion for the bonds issued pursuant to the Bond Resolution, an opinion stating that any and all requirements of the Bond Resolution, the bonds issued pursuant thereto, and the laws authorizing and governing the issuance of such bonds, with respect to execution of this Second Amended Contract have been met.

40. SUBJECT TO REMOVAL OF SAN MARCOS DECISION STRICTURES: Notwithstanding any other provision of this Second Amended Contract, it shall not become effective until each of the Contractors, upon advice of their respective attorneys, agrees in writing that the strictures imposed upon the payment by public agencies of certain capital costs, by the California Supreme Court in the case of San Marcos Water District v. San Marcos Unified School District (1986) 42 Cal. 3d 154, have been lifted either by remedial legislation or further judicial decision.

Executed on the day and year first above written at Stockton, California.

STOCKTON EAST WATER DISTRICT
a political subdivision of the
State of California

By: _____
ROGER M. HUCKINS, PRESIDENT

ATTEST:

_____
EDWARD M. STEFFANI
SECRETARY

APPROVED AS TO FORM:

_____
JOHN W. STOVALL
GENERAL COUNSEL

Address for Notice to
Stockton East:
Post Office Box 5157
Stockton, California 95205

CALIFORNIA WATER SERVICE
COMPANY
a California Corporation

By _____
C. H. STUMPF, PRESIDENT

ATTEST:

APPROVED AS TO FORM:
McCutchen, Doyle, Brown
& Enersen

Lester E. Saxe
LESTER SAXE
SECRETARY

_____
A. CRAWFORD GREENE
ATTORNEYS

Address for Notice to Cal-Water:
Post Office Box 1150
San Jose, California 95108

CITY OF STOCKTON, a municipal corporation of the State of California

By _____
BARBARA FASS, MAYOR

ATTEST:

APPROVED AS TO FORM:

Frances Hong
FRANCES HONG
CITY CLERK

R Thomas Harris
ROBERT THOMAS HARRIS
CITY ATTORNEY

Address for Notice to City:
c/o City Clerk, City Hall
Stockton, California 95202

LINCOLN VILLAGE MAINTENANCE DISTRICT, a political subdivision
of the State of California
governed by the Board of Supervisors of San Joaquin County

By _____
GEORGE BARBER
CHAIRMAN, Board of Supervisors
County of San Joaquin

State of California

ATTEST:

APPROVED AS TO FORM:

JORETTA J. HAYDE
CLERK OF THE Board
of Supervisors of the
County of San Joaquin,
State of California

By: _____
~~DEPUTY~~ CLERK

_____
JOHN CHEADLE
COUNTY COUNSEL

Address for Notice to Lincoln:
c/o Board of Supervisors
Courthouse
222 E. Weber Avenue
Stockton, California 95202

COLONIAL HEIGHTS MAINTENANCE DISTRICT, a political subdivision of the State of California governed by the Board of Supervisors of San Joaquin County

By _____
GEORGE BARBER, CHAIRMAN
Board of Supervisors
County of San Joaquin
State of California

ATTEST:

APPROVED AS TO FORM:

JORETTA J. HAYDE
CLERK OF THE Board
of Supervisors of the
County of San Joaquin,
State of California

By: _____

_____

~~DEPUTY~~ CLERK

JOHN CHEADLE
COUNTY COUNSEL

Address for Notice to Colonial:
c/o Board of Supervisors
Courthouse
222 E. Weber Avenue
Stockton, California 95202

Exhibit "A"

AMORTIZATION SCHEDULE

	Payments				
Year	Interest	Principal (1,000s)	Total	Bond Years	Cumulativ Bond Year
1975	(sale)	-	-	-	-
1976	$1,386,000	-	$1,386,000	-	-
1977	1,386,000	-	1,386,000	-	-
1978	1,386,000	-	1,386,000	-	-
1979	1,386,000	$ 250	1,636,000	1,000	1,000
1980	1,368,500	275	1,643,500	1,375	2,375
1981	1,349,250	300	1,649,250	1,800	4,175
1982	1,328,250	325	1,653,250	2,275	6,450
1983	1,305,500	350	1,655,500	2,800	9,250
1984	1,281,000	375	1,656,000	3,375	12,625
1985	1,254,750	400	1,654,750	4,000	16,625
1986	1,226,750	425	1,651,750	4,675	21,300
1987	1,197,000	450	1,647,000	5,400	26,700
1988	1,165,500	475	1,640,500	6,175	32,875
1989	1,132,250	500	1,632,250	7,000	39,875
1990	1,097,250	550	1,647,250	8,250	48,128
1991	1,058,750	600	1,658,750	9,600	57,725
1992	1,016,750	650	1,666,750	11,050	68,775
1993	971,250	700	1,671,250	12,600	81,375
1994	992,250	750	1,672,250	14,250	95,625
1995	869,750	800	1,669,750	16,000	111,625
1996	813,750	850	1,663,750	17,850	129,475
1997	754,250	900	1,654,250	19,800	149,275
1998	691,250	950	1,641,250	21,850	171,125
1999	624,750	1,025	1,649,750	24,600	195,725
2000	553,000	1,100	1,653,000	27,500	223,225
2001	476,000	1,175	1,651,000	30,550	253,775
2002	393,750	1,250	1,643,750	33,750	287,525
2003	306,250	1,350	1,656,250	37,800	325,325
2004	211,750	1,450	1,661,750	42,050	367,375
2005	110,250	1,575	1,685,250	47,250	414,625
		/ 15,125,000/ term maturity			

$19,800,000 27 yr. average: $1,654,287 — 414,625

Average life: 20.94 years.

Exhibit "A"

$15,125,000 dated 2005; minimum mandatory calls starting in 1991 as per schedule.
Dated 4/1/75.

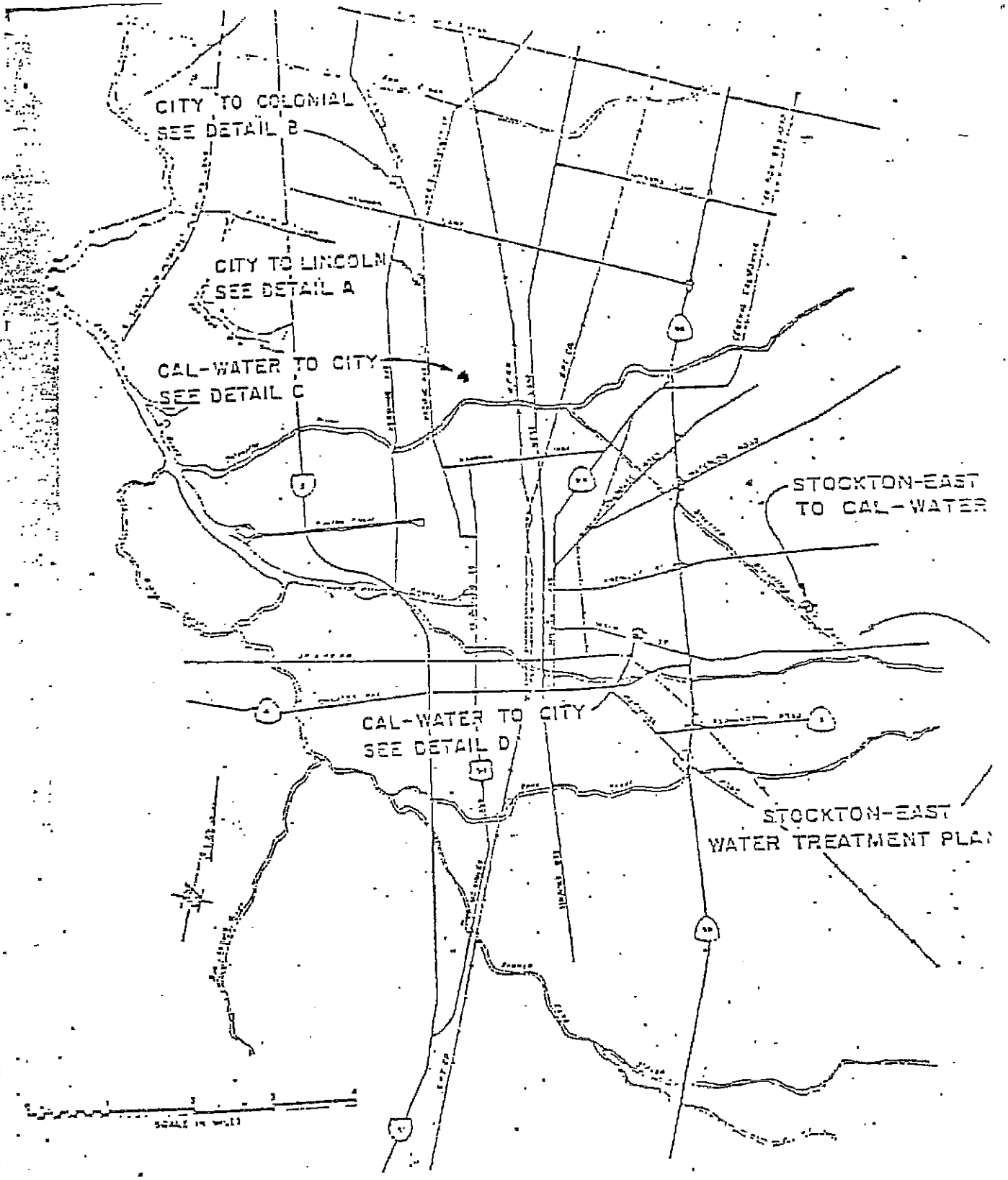
Call premiums:

Premium	Redemption Year
2-1/2%	1991
2-1/4	1992
2	1993
1-3/4	1994
1-1/2	1995
1-1/4	1996
1	1997
3/4	1998-1999
1/2	2000-2001
1/4	2002-2004
0	2005

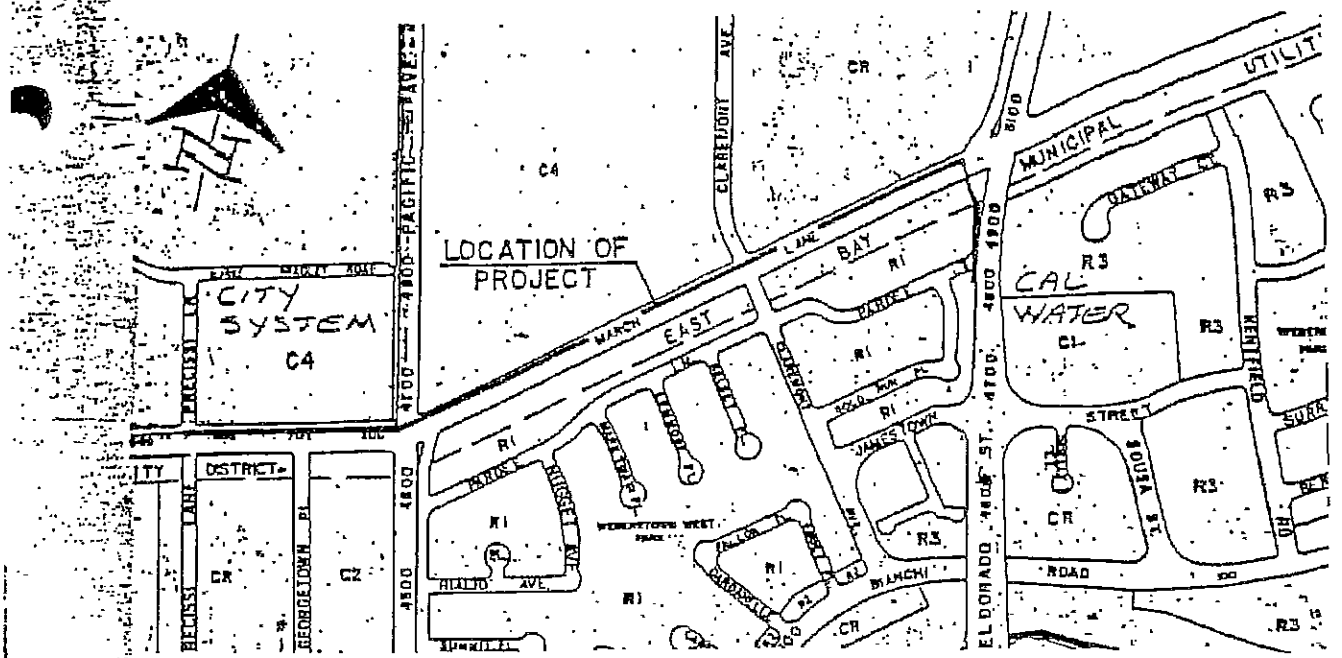
Paying Agent:

Bank of America, National Trust and Savings Association

The foregoing schedule is an example only based on interest at 7%.

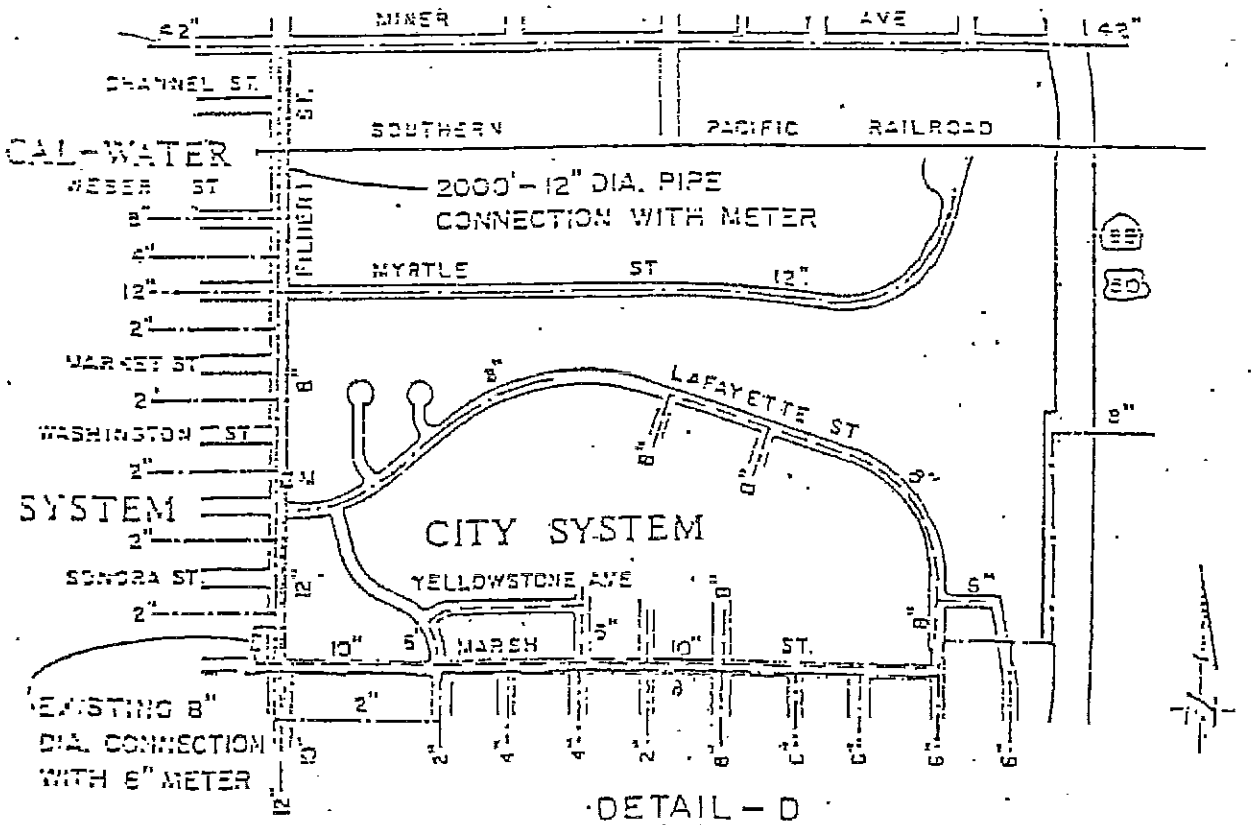


WATER DELIVERY POINTS



DETAIL - C

CAL-WATER CONNECTION TO CITY (NORTH)



DETAIL - D

CAL-WATER CONNECTION TO CITY (DIAMOND-WALNUT)

EXHIBIT C

WATER TREATMENT FACILITIES ADVANCES

1.	Feasibility Study of Master Water Plan Recommendations	$ 24,510.01
2.	Financial Consultant's Services	24,612.72
3.	Design Engineering, Pipeline	46,212.05
4.	Surveys, Pipeline and Treatment Plant	31,718.43
5.	Soil Studies, Pipeline and Treatment Plant	17,358.29
6.	Design Engineering, Treatment Plant	105,660.32
7.	Architectural Design Services	14,707.38
8.	Contingency Water Plan	13,974.00
9.	P.L. 984 Loan Application	40,893.60
10.	Environmental Impact Report	11,521.13
11.	Legal Services	35,960.00
12.	Bond Election	25,817.21
13.	Lands, Easements and Rights of Way	209,094.22
	TOTAL	$602,039.36

The foregoing items were expended prior to November 30, 1974. There shall be added to said sum of $602,039.36 an additional sum in the amount of $12,034.10 for items similar to those enumerated above expended between December 1, 1974 and the date that funds became available from the sale of the Water Treatment Facilities Bonds.

EXHIBIT D

MAJOR REPAIR AND REPLACEMENT SCHEDULE

The following schedule of major repairs and replacements is the schedule mentioned in subparagraph 7B of the Contract.

Item	Estimated Costs of Major Repairs and Replacements During Five-Year Periods Shown (Based on 1974 Costs in $1000)						
	0-5	5-10	10-15	15-20	20-25	25-30	30-35
Chemical Feeders	5	15	25	25	25	25	25
Electrical and Instrumentation	10	40	60	60	60	60	60
Natural Gas Engines	5	20	5	20	5	20	5
Chemical Mixers	3	6	6	6	6	6	6
Pumps and Motors	30	40	50	50	50	50	50
Chlorine Equipment	5	10	10	10	10	10	10
Air Conditioning	-	-	8	-	-	8	-
Flocculators	5	10	14	14	14	14	14
Valves	4	8	8	8	8	8	8
Miscellaneous	5	11	11	11	11	12	12
Sub-total	72	160	197	204	189	213	190

Total = $1,225,000.00

Cost Per Year = $ 35,000.00

Ed Stefani
Stockton-East Water Dist
P O Box 5157
Stkn CA 95205

Before the Board of Supervisors

County of San Joaquin, State of California

B- 87- 1419

MOTION: SOUSA/CARTER

SEP 24 '87

STOCKTON-EAST WATER DISTRICT

SECOND AMENDED CONTRACT FOR SALE OF TREATED WATER

IT IS HEREBY RESOLVED that the Board of Supervisors approve the Second Amended Contract between Stockton East Water District, California Water Service Company, City of Stockton, and Lincoln Village and Colonial Heights Maintenance Districts and authorize the Chairman of the Board to execute the Contract.

I HEREBY CERTIFY that the above order was passed and adopted on SEP 15 1987 by the following vote of the Board of Supervisors, to wit

AYES: WILHOIT, COSTA, SOUSA, CARTER, BARBER

NOES: NONE

ABSENT: NONE

ABSTAIN:

Copies to:

JORETTA J. HAYDE
Clerk of the Board of Supervisors
County of San Joaquin
State of California

RESOLUTION NO. 87-88-10

RESOLUTION OF THE BOARD OF DIRECTORS OF THE STOCKTON-EAST WATER DISTRICT APPROVING AND AUTHORIZING EXECUTION OF SECOND AMENDED CONTRACT WITH CITY OF STOCKTON, LINCOLN VILLAGE MAINTENANCE DISTRICT, COLONIAL HEIGHTS MAINTENANCE DISTRICT, AND CALIFORNIA WATER SERVICE COMPANY.

IT IS HEREBY RESOLVED that the Second Amended Contract between the Stockton-East Water District, the California Water Service Company, the City of Stockton, the Lincoln Village Maintenance District, and the Colonial Heights Maintenance District providing for the sale of treated water, for a term extending until April 1, 2035, be, and it hereby is, approved.

BE IT FURTHER RESOLVED that the President and Secretary of this Board of Directors be, and they hereby are, authorized and directed to execute said Second Amended Contract on behalf of the STOCKTON-EAST WATER DISTRICT.

PASSED AND ADOPTED this 15th day of September, 1987, by the following vote of the Board of Directors, to wit:

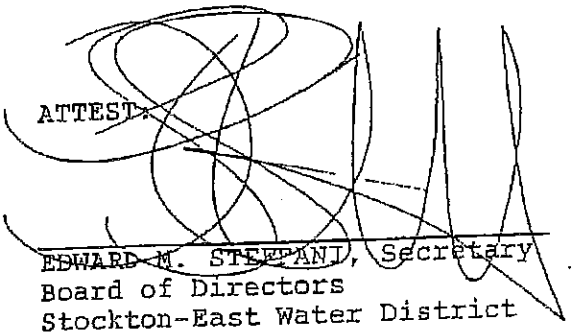
AYES: BOZZANO, DONDERO, HUCKINS, LAVEN, and SOLARI

NOES: TONE

ABSENT: MACNEAR

ROGER M. HUCKINS, President
Board of Directors
Stockton-East Water District

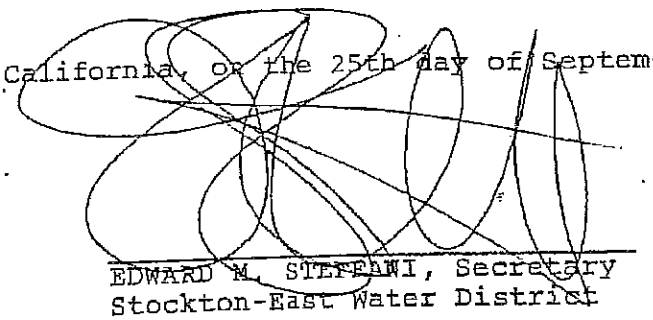
ATTEST:



EDWARD M. STEFFANI, Secretary
Board of Directors
Stockton-East Water District

I hereby certify that I am the Secretary of the Stockton-East Water District and that the foregoing is a true and correct copy of a resolution which was duly adopted by the vote of the Board of Directors of the Stockton-East Water District shown above on September 15th, 1987.

Dated at Stockton, California, on the 25th day of September, 1987.



EDWARD M. STEFFANI, Secretary
Stockton-East Water District

Exhibit "E"
Sheet 1 of 2

1201-304-001

Resolution No. 87-0508

Exhibit "G"

STOCKTON CITY COUNCIL

RESOLUTION AUTHORIZING THE EXECUTION OF A SECOND AMENDED CONTRACT FOR THE SALE OF TREATED WATER BETWEEN THE CITY OF STOCKTON, STOCKTON EAST WATER DISTRICT, CALIFORNIA WATER SERVICE COMPANY, LINCOLN VILLAGE MAINTENANCE DISTRICT AND COLONIAL HEIGHTS MAINTENANCE DISTRICT

WHEREAS, in order to meet the water needs of the parties hereto, the original contract was made February 11, 1975, and amended May 31, 1977, allocating certain water entitlements among the parties; and

WHEREAS, such agreements were executed in order to protect the groundwater basin in and around the City of Stockton from overdraft and saline intrusion; and

WHEREAS, in order to further those considerations enunciated in the original contracts, it has become necessary to reapportion certain surface water entitlements, and to make provisions for the expansion of certain water conveyance, storage and treatment facilities; now therefore

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF STOCKTON, AS FOLLOWS:

That the Mayor is hereby authorized to execute on behalf of the City of Stockton the Second Amended Four Party Contract attached hereto as Exhibit "A" and by reference made a part hereof.

INTRODUCED SEPTEMBER 14, 1987.

PASSED, APPROVED and ADOPTED this 21st day of September, 1987.

Stockton

Date: Sept. 22, 1987

Frances Mong
City Clerk of the City of Stockton

By Peggy E. Jackson
Deputy

Before the Board of Supervisors

County of San Joaquin, State of California

B- 87-1419

MOTION: SOUSA/CARTER

SECOND AMENDED CONTRACT FOR SALE OF TREATED WATER

IT IS HEREBY RESOLVED that the Board of Supervisors approve the Second Amended Contract between Stockton East Water District, California Water Service Company, City of Stockton, and Lincoln Village and Colonial Heights Maintenance Districts and authorize the Chairman of the Board to execute the Contract.

I HEREBY CERTIFY that the above order was passed and adopted on September 15, 1987 by the following vote of the Board of Supervisors, to wit:

AYES: WILHOIT, COSTA, SOUSA, CARTER, BARBER

NOES: NONE

ABSENT: NONE

ABSTAIN: NONE

JORETTA J. HAYDE
Clerk of the Board of Supervisors
County of San Joaquin
State of California

Joretta J. Hayde

Before the Board of Supervisors

County of San Joaquin, State of California

B- 87-1419

MOTION: SOUSA/CARTER

SECOND AMENDED CONTRACT FOR SALE OF TREATED WATER

IT IS HEREBY RESOLVED that the Board of Supervisors approve the Second Amended Contract between Stockton East Water District, California Water Service Company, City of Stockton, and Lincoln Village and Colonial Heights Maintenance Districts and authorize the Chairman of the Board to execute the Contract.

I HEREBY CERTIFY that the above order was passed and adopted on September 15, 1987 by the following vote of the Board of Supervisors, to wit:

AYES: WILHOIT, COSTA, SOUSA, CARTER, BARBER

NOES: NONE

ABSENT: NONE

ABSTAIN: NONE

JORETTA J. HAYDE
Clerk of the Board of Supervisors
County of San Joaquin
State of California

Joretta J. Hayde

EXHIBIT A

WATER TRANSFER AGREEMENT BY AND BETWEEN THE OAKDALE IRRIGATION DISTRICT, SOUTH SAN JOAQUIN IRRIGATION DISTRICT AND STOCKTON EAST WATER DISTRICT, et al.

This Agreement is entered into this first day of April, 1997, between and among the Oakdale Irrigation District ("OID"), the South San Joaquin Irrigation District ("SSJID"), sometimes hereinafter collectively referred to as "Joint Districts;" and Stockton East Water District ("SEWD"), City of Stockton, Lincoln Village Maintenance District, and the Colonial Heights Maintenance District , herein collectively referred to as "Purchasers"; and Central San Joaquin Water Conservation District ("Central"). Joint Districts, Purchasers and Central are collectively referred to hereafter as "Parties".

RECITALS

WHEREAS, Joint Districts, are operating under and by virtue of Division 11 of the California Water Code; and

WHEREAS, SEWD is operating under and by virtue of Chapter 819 of the Statutes of 1971, as amended; and

WHEREAS, the Purchasers desire to purchase water from Joint Districts for M & I and irrigation uses; and

WHEREAS, SEWD intends to deliver the water provided hereunder utilizing the Goodwin Dam Intake structure and other facilities owned and/or financed by the Purchasers; and

WHEREAS, Joint Districts are the owners of certain water rights to the waters of the Stanislaus River; and

WHEREAS, the purpose of this Agreement is to facilitate a long term transfer of water conserved or water otherwise developed by Joint Districts; and

WHEREAS, Joint Districts are currently subject to changing land use patterns for both irrigable and nonirrigable lands, in that irrigated and nonirrigated agricultural lands are being converted to urbanized uses which is anticipated to result in a temporary decline in use of water for agricultural purposes and the long-term demand growing within the area for use of water for urban purposes; and

WHEREAS, due to such changes and due to ongoing conservation practices and improvements in facilities by the Joint Districts, the water to be transferred to the Purchasers by this Agreement, hereinafter referred to as the "Agreement-

Water," is surplus to the current needs of the landowners and water users of the Joint Districts in accordance with California Water Code section 22259; and

WHEREAS, the quantity and quality of ground water within lands underlying the Purchasers is threatened from over-drafting of ground water in areas of San Joaquin County, including some areas within SEWD; and

WHEREAS, Purchasers intend by this Agreement to (1) obtain additional surface water for their use; (2) cause a reduction in the extraction of ground water; and (3) assist their landowners, water users, and water purveyors in obtaining a safe and reliable water supply; and

WHEREAS, by providing Agreement-Water to the Purchasers pursuant to this Agreement, the Joint Districts intend to (1) keep agriculture viable within their districts and benefit Joint Districts' water users and landowners; (2) safeguard the Joint Districts' ground water and provide for reasonable beneficial uses of available water supplies that may be temporarily available due to land use changes and increased conservation within their districts; (3) continue to maintain and secure these water supplies for the long term benefit of the Joint Districts and the landowners served by them; and (4) provide water determined to be not immediately required for agricultural or beneficial purposes within the Joint Districts to be placed to reasonable beneficial use by the Purchasers.

NOW, THEREFORE, the Parties, on the terms and conditions herein set forth, agree as follows:

AGREEMENT

1. DEFINITIONS: The following definitions shall govern this agreement:

a. "Agreement-Water" is that surface water which is surplus to the current needs of the landowners and water users of the Joint Districts in accordance with California Water Code Section 22259, which is to be transferred to the Purchasers by this Agreement.

b. "Delivery" means that the Agreement-Water is made available to Purchasers at the SEWD Goodwin Tunnel Intake, whether or not Purchasers take and/or store and/or can make use of such water. This definition is intended to include the grammatical variations of the term "delivery" including "deliver" and "delivered", where such term references water.

2. DESIGNATION OF SEWD: The Purchasers designate SEWD to carry out the obligations of Purchasers hereunder, including paying for, receiving, treating, transporting and distributing Agreement-Water purchased hereunder, and paying Purchasers' share of costs as provided herein. In the event that SEWD should fail to comply with any obligation hereunder, Joint Districts shall notify the other Purchasers at least thirty (30) days before terminating this Agreement and offer them the opportunity to cure.

3. TERM: The term of this agreement shall be ten years from the date on which water is first delivered to Purchasers under this agreement, with an option to renew for an additional ten years, upon conditions mutually agreeable to the Parties. Once all approvals are obtained and water is delivered to Purchasers under this Agreement, Purchasers may terminate this Agreement upon two years prior notice after the first five years.

4. AGREEMENT TO TRANSFER: The Joint Districts will annually sell and deliver Agreement-Water for reasonable and beneficial uses in the quantities described and subject to the terms and conditions of this Agreement. Agreement-Water will be used within the boundaries of Purchasers and Central, except that Purchasers may sell the water for use outside their boundaries according to the provisions of Paragraph 25.

5. QUANTITY: a) Joint Districts agree to sell and deliver to Purchasers 30,000 acre-feet of water in years in which the United States Bureau of Reclamation's forecast of inflow to New Melones Reservoir ("forecast") equals 500,000 acre-feet or more; 12,500 acre-feet if the forecast is between 450,000 and 499,000 acre-feet, and 8,000 acre-feet if the forecast is less than 450,000 acre-feet.

b) The amount of Agreement-Water is based on the water supply forecast in April of each year. The Agreement-Water shall be delivered over a water year commencing on October 1 and terminating on September 30 of succeeding year.

6. DELIVERY OBLIGATIONS OF OID AND SSJID: It is understood that OID and SSJID shall each contribute one-half of the Agreement-Water to be transferred to Purchasers pursuant to this Agreement, and neither shall be responsible for the other district's inability to deliver its share of Agreement-Water in any year. If a shortage occurs under Paragraph 16 which is such that one of the Districts is no longer able to meet its obligations in this Agreement for the duration of the term hereof, the other District may, but is not obliged to, deliver water to make up the shortage. SEWD's payment obligation shall not be affected if one of the Joint Districts shall deliver Agreement-Water on behalf of the other, and Joint Districts shall determine the division of payments between themselves by separate agreement.

7. PURCHASE PRICE: In years in which the forecast equals or exceeds 450,000 acre-feet, SEWD shall pay Joint Districts $55 per acre-foot of water delivered by Joint Districts, whether Purchasers take the water or not. If Joint Districts provide reduced deliveries pursuant to one or more of the provisions this Agreement, SEWD shall pay only for water actually delivered. In years in which the forecast is less than 450,000 acre-feet, and only 8,000 acre-feet are delivered, Purchasers shall pay $90 per acre-foot.

8. ANNUAL CHANGES TO PURCHASE PRICE: a) The purchase price shall be adjusted based on changes to the Consumer Price Index as shown as the

urban wage-earners and clerical workers, U.S. City average (CPI-W)("Index")for the twelve month period concluding with the August CPI index of each preceding year. Effective October 1 of each year, following the initial delivery of water, the base purchase price shall be modified, whether an increase or decrease in price, based on the same percentage that the Index as published in August of such year has changed, whether higher or lower, as compared to the Index published in August of the preceding year, provided, however, that the increase shall not exceed 5 per cent in any year and provided further that the purchase price shall at no time be based on a per acre-foot price of less than $55 per acre-foot for water sold to Purchasers or $15 for water sold to Central.

b) If the Index is discontinued or revised during the term, such other index or computation with which it is replaced shall be used in order to obtain substantially the same result as would be obtained if the Index had not been discontinued or revised, and in the absence of such a comparable replacement index, the Parties shall mutually determine a comparable replacement index.

9. PAYMENTS: a) Joint Districts shall bill SEWD and Central monthly for the water delivered in the preceding month. SEWD and Central shall pay within thirty days of receipt of the invoice.

b) All payments to be made by SEWD pursuant to this Agreement will be made one-half to SSJID and one-half to OID. The respective payments will be made to:

South San Joaquin Irrigation District
11011 E. Highway 20
Manteca, California 95336

Oakdale Irrigation District
1205 East "F" Street
Oakdale, California 95361

10. INTEREST: SEWD shall pay the Joint Districts interest at the annual interest rate of 10% on any charges that remain unpaid thirty (30) days beyond the due date.

11. BILLING "YEAR" DEFINED: For billing and forecasting purposes, each new year under this Agreement shall run concurrently with the "water year," defined as October 1 through September 30 of the following calendar year.

12. WATER QUALITY: The Joint Districts make no warranty or representations as to the quality or fitness for use of Agreement-Water sold and delivered to SEWD. SEWD shall be responsible for all necessary measures at its own expense for the testing, treatment, and other steps required for the intended uses of the Agreement-Water by the Purchasers.

13. WATER MEASUREMENT: The Agreement-Water will be measured by Joint Districts pursuant to the provisions of paragraphs 6.1-6.4, inclusive, of the

March 23, 1990, agreement by and between the County of San Joaquin, City of Stockton, OID, SSJID, Goodwin Tunnel Financing Authority, and SEWD (hereinafter, the "Goodwin Agreement").

14. LIMITING CONDITIONS: The Joint Districts' obligations hereunder and the Delivery Provisions will, at all times, be subject and subordinate to the following conditions: (1) the terms and conditions of their water rights; (2) the 1988 Agreement and Stipulation (the "1988 Agreement") with the United States Bureau of Reclamation (the "Bureau"), as it now exists and as modified from time to time; (3) the Tulloch Enhancement Agreement with PG&E, as it now exists and as modified from time to time; (4) the Goodwin Agreement, as it now exists and as modified from time to time; (5) the terms and conditions of Federal Energy Regulatory Commission licenses, as they now exist, and as they may be amended and/or renewed upon relicensing including, but not limited to, those held for Tulloch and Goodwin Dams; (6) the rights of landowners, within the boundaries of OID or SSJID as of the initial delivery of Agreement-Water hereunder, to the beneficial use of their respective district's water; (7) applicable federal and state laws now in existence and as modified from time to time, affecting the Joint Districts' rights or obligations, and (8) the rights of the cities of Lathrop, Manteca, Escalon and Tracy pursuant to Water Supply Development Agreement with SSJID. The conditions described in 1-8, inclusive, above, are collectively referred to as the "Limiting Conditions." Nothing in Exhibit A or in this Agreement shall be construed so as to contradict, conflict with or otherwise be contrary to the provisions of any of the Limiting Conditions; and in the event of any conflict between any of the Limiting Conditions and this Agreement, the Limiting Condition(s) shall control, and Joint Districts shall not be deemed to be in violation of this Agreement by any modifications of the agreement, including reduced supply for SEWD, required to ensure compliance with any of the Limiting Conditions.

15. AGREEMENT-WATER DELIVERY: Joint Districts will deliver Agreement-Water to Purchasers in the amounts listed in Paragraph 5 in each and every year of this Agreement, subject to the changes, limitations and other provisions in this Agreement. Joint Districts will deliver Agreement-Water in accordance with the schedule in Exhibit A to this Agreement ("Delivery Schedule"), provided that the Parties may jointly agree to variations on the Delivery Schedule. Purchasers may presume that water is available at the Goodwin Tunnel Intake in the amounts listed in Paragraph 5 based upon the April 1 forecast and according to the Delivery Schedule, and may divert such amounts at the Goodwin Tunnel Intake, unless Joint Districts notify them of a reduction pursuant to one or more of the provisions of this Agreement. Joint Districts shall give Purchasers at least 60 days notice prior to imposing a reduction.

16. WATER SUPPLY REDUCTIONS: Water supply to be delivered to SEWD under this Agreement may be reduced by Joint Districts for any of the following reasons: the Limiting Conditions; failure of facilities; intervening acts, including litigation and stream adjudication brought by third parties, or actions of any state or federal agency exercising jurisdiction or claiming an interest and/or right to reduce and/or modify operations and/or quantities of water otherwise available to the Joint

Districts; diversions which may hereafter be authorized for others from the North, Middle or South Forks of the Stanislaus River, and any action, legislation, ruling or determination adverse to the Joint Districts affecting the Agreement and beyond the reasonable control of the Joint Districts. Joint Districts shall make good faith efforts to oppose such reductions, but Purchasers agree that Joint Districts shall not be liable for reductions of supply in this Agreement due to such causes. In the event of a reduction of supply caused by factors listed in this Paragraph, Purchasers shall pay only for water actually delivered.

17. DIVERSION COSTS: In accordance with the Goodwin Agreement, all permitting, construction, reconstruction, and maintenance costs for facilities necessary or used to divert Agreement-Water from the Goodwin Pool and those which are necessary to accomplish the measurement of Agreement-Water shall be borne solely by SEWD. SEWD is solely responsible for all costs associated with treatment, diversion headworks, pumping facilities, etc., to divert, convey, transport, treat, and deliver Agreement-Water to the Purchasers.

18. WATER RIGHTS: If approval of the transfer from Joint Districts to Purchasers is not sought from the State Water Resources Control Board, Joint Districts shall inform Purchasers of any approvals which Joint Districts consider necessary and of the process they will follow to obtain any necessary approvals, and provide a justification for the process selected or for the conclusion that no approvals are required.

19. ENVIRONMENTAL REVIEW: Joint Districts will be the lead agencies for purposes of the California Environmental Quality Act. Expenses of environmental review and approval will be split equally between the Purchasers and Joint Districts. An Oversight Committee composed of 4 representatives from the Purchasers and 4 representatives from the Joint Districts shall approve in advance and monitor the scope of environmental work and the selection of consultants to perform the work.

20. TERMINATION: The Parties to this agreement shall have the right of termination as set forth in this paragraph.

A. Joint Districts:

(1) If regulatory approvals and final CEQA action are not satisfied by December 31, 1998, either OID or SSJID may, by written notice to the other Parties, cancel this agreement.

(2) Should the State Water Resources Control Board, the United States Bureau of Reclamation, the United States Corps of Engineers, or any other state or federal agency or any state or federal court, excercising jurisdiction over this Agreement and/or the operations of Joint Districts or their water rights, impose any requirements, limitations, operational restrictions, fees, charges, costs, water rights restrictions or operating criteria upon the Joint Districts in whole or in part as a result of the transfer of Agreement-Water under this

Agreement, then Joint Districts may, in their sole and unlimited discretion, determine that compliance with such regulatory action is not in the interest of the Joint Districts, and terminate this Agreement. Written notice shall be provided to the other Parties.

(3) If, in the judgment of either of the Joint Districts, the costs of litigation, the restrictions imposed in the approvals of any regulatory agency, mitigation measures imposed by any agency pursuant to the California Environmental Quality Act, or any relief afforded to plaintiffs in an action brought in State of Federal Court involving this Agreement are too burdensome in relation to the benefits to be received under this Agreement, then either OID or SSJID may terminate this Agreement.

B. Purchasers.

(1) If regulatory approvals and final CEQA action are not satisfied by December 31, 1998, any Purchaser may, by written notice to the other Parties, cancel this agreement.

(2) Should the United States Corps of Engineers, the United States Fish and Wildlife Service, or any other state or federal agency or any other state or federal agency or any state or federal court, exercising jurisdiction over this Agreement and/or Purchasers' operations of the Goodwin Tunnel and related conveyance facilities, impose any requirements, limitations, operational restrictions, fees, charges, costs, or operating criteria upon the Purchasers in whole or in part as a result of the transfer of Agreement-Water under this Agreement, then Purchasers, in their sole and unlimited discretion, may determine that compliance with such regulatory action is not in the interest of the Purchasers, and terminate this Agreement. Written notice shall be provided to the other Parties.

(3) If, in the judgment of any Purchaser, the costs of litigation, regulatory review, compliance with regulatory conditions, CEQA compliance and/or mitigation, or relief afforded to plaintiffs in an action brought in State or Federal Court involving this Agreement are too costly in relation to the benefits to be received, then any Purchaser may terminate this Agreement.

C. Notice. A Party shall give 30 days advance written notice to all other Parties prior to terminating this Agreement. Prior to giving such notice, the Party electing to terminate pursuant to this provision shall have met and conferred with representatives of the other Parties to discuss the concerns.

In the event of termination under this paragraph, the Parties shall thereafter be under no further obligation or responsibility hereunder and will

release each other from further obligations under this Agreement, except for their respective shares of costs incurred prior to the effective date of termination.

21. REGULATORY AND LITIGATION COSTS: Joint Districts will defend their own interests in any litigation or regulatory action challenging the validity of Joint Districts' water rights. The Parties shall each defend their own interests in litigation or regulatory action involving this Agreement, including environmental compliance and transferability of the water. Any attorney fees and/or costs awarded in CEQA litigation to a person or entity not a party to this contract shall be split equally between Joint Districts and Purchasers.

22. CONDITIONS TO DELIVERY OF WATER: It is a condition to the obligations of Joint Districts to deliver water to Purchasers and to the obligation of Purchasers to pay for Agreement-Water that the following conditions be met:

Environmental Compliance. Adoption of a certified EIR pursuant to the requirements of the California Environmental Quality Act.

Other Approvals. The Joint Districts shall obtain such other state and/or federal regulatory approval for this transfer as are agreed upon by the Parties. Joint Districts and Purchasers shall split equally the cost of obtaining any regulatory approvals to which Purchasers have consented.

23. COOPERATION: To the extent reasonably required, each Party to this Agreement shall, in good faith, assist the other in obtaining all such necessary approvals and preparation of required environmental documents. The Parties agree to cooperate and assist each other in good faith in meeting such requirements of regulatory agencies as may be applicable to performance of any terms of the Agreement.

24. RIGHT TO SUSPEND DELIVERIES: In addition to any other remedy available, Joint Districts may suspend deliveries under this Agreement if any of the following shall occur:

Nonpayment. SEWD has failed to make any payment required by this Agreement. If SEWD contests such obligation or payment, it shall pay the amount due under protest to Joint Districts and invoke the procedures of Paragraph 31 as a condition of continued delivery. Prior to terminating for nonpayment by SEWD, Joint Districts shall give notice to all Purchasers and give them 30 days to make the payment.

Breach of Goodwin Agreement. Purchasers, or any of them, are determined by an arbitrator or court to be in breach of any of their obligations, covenants or responsibilities in the Goodwin Agreement.

25. RESALE: Purchasers may resell the water delivered to them under this Agreement. If the resale price exceeds the price paid by Purchasers to Joint Districts under this Agreement, and Purchasers incur actual costs in wheeling water to their buyer through Goodwin Tunnel and related conveyance facilities, Purchasers shall pay to Joint Districts one half the amount by which the resale price net of those actual costs exceeds the purchase price under this Agreement. If the water is delivered to the buyer via releases to the Stanislaus River, Joint Districts shall cooperate in making such releases, and Purchasers shall pay to Joint Districts one half the amount by which the gross resale price exceeds the purchase price under this Agreement.

26. STORAGE IN NEW MELONES: Joint Districts will not object if Purchasers request the United States Bureau of Reclamation to store Agreement-Water for use in subsequent years, provided that: (1) Purchasers use their stored water first in any given year, (2) Joint Districts are not injured, and (3) Purchasers' stored water spills before any water stored by Joint Districts. Should Purchasers obtain a written agreement with the United States to store Agreement-Water, Purchasers and Joint Districts shall mutually agree to any amendments to this Agreement required to confirm the timing of delivery of such stored water. It is agreed that payment for stored water shall be made by Purchasers to Joint Districts at the time of storage, and that election to store water in any given year shall be made on or before May 1 of that year.

27. WAIVER OF RIGHTS: Any waiver, at any time, by any Party of its rights with respect to a breach or default, or any other matter arising in connection with this Agreement, shall not be deemed to be a waiver with respect to any other breach, default or matter.

28. ASSIGNMENT: This Agreement is entered into in reliance on water supplies available to Joint Districts and the need and credit of Purchasers, as well as the desire of the Parties to assist in alleviating water shortage problems in San Joaquin County, and therefore, any attempted assignment of this Agreement in whole or in part without the prior written consent of all Parties hereto is void.

29. NOTICES: All notices that are required, either expressly or by implication, to be given by any Party to the other under this Agreement shall be signed for by OID, SSJID and Purchasers by such officers as they may, from time to time, authorize in writing to so act.

Any notices to Parties required by this Agreement shall be delivered or mailed, United States first-class postage prepaid, addressed as follows:

OAKDALE IRRIGATION DISTRICT
General Manager/Secretary
Oakdale Irrigation District
1205 East "F" Street
Oakdale, CA 95361

SOUTH SAN JOAQUIN IRRIGATION DISTRICT
General Manager/Secretary
South San Joaquin Irrigation District
11011 East Highway 120
Manteca, CA 95336

STOCKTON EAST WATER DISTRICT
General Manager/Secretary
Stockton East Water District
PO Box 5157
Stockton, CA 95207-0157

COUNTY OF SAN JOAQUIN
c/o Clerk, Board of Supervisors
Board of Supervisors
222 East Weber Avenue
Stockton, CA 95202

CITY OF STOCKTON
c/o City Clerk
City Hall
Stockton, CA 95202

CENTRAL SAN JOAQUIN WATER
CONSERVATION DISTRICT
311 East Main Street, Suite 202
Stockton, CA 95202

Notice shall be deemed given (a) two calendar days following mailing via regular or certified mail, return receipt requested, (b) one business day after deposit with any one-day delivery service assuring "next day" delivery, (c) upon actual receipt of notice, or (d) upon transmission, if by facsimile, whichever is earlier. The Parties shall promptly give written notice to each other of any change of address, and mailing or shipment to the addresses stated herein shall be deemed sufficient unless written notification of a change of address has been received.

30. APPROVALS: Where the terms of this Agreement provide for action to be based upon a judgment, approval, review or determination of any Party, such terms are not intended to be and shall never be construed as permitting such opinion, judgment, approval, review, or determination to be arbitrary, capricious or unreasonable.

31. ARBITRATION: In the event of a dispute between the Parties as to any right, alleged right, obligation or alleged obligation under this Agreement, the Parties shall make a good faith effort to resolve the dispute. In the event that a resolution of the dispute cannot be reached despite these efforts, any Party may declare an impasse and its intent to submit the matter to arbitration. Any such arbitration shall be held and conducted before one arbitrator who shall be selected by mutual agreement of the Parties. If agreement is not reached on the selection of an arbitrator within fifteen (15) days after a Party has notified the other Parties of its election to submit an issue to arbitration, then such arbitrator shall be appointed by the presiding judge of the superior court of Stanislaus County upon application of either Party hereto. The award or decision of the arbitrator shall be final and judgment may be entered thereon. The provisions of Title 9 of Part 3 of the California Code of Civil Procedure, including Section 1283.05, and successor statutes, permitting expanded discovery proceedings shall be applicable to all disputes which are arbitrated pursuant to this paragraph.

32. OTHER AGREEMENTS: Nothing contained herein restricts the Joint Districts from providing water services and sales to others as authorized by law which do not unreasonably interfere with Joint Districts' obligation hereunder.

33. ENTIRE AGREEMENT: This Agreement constitutes the entire Agreement between the Joint Districts and Purchasers and supersedes any oral agreement, statement or promise between them relating to the subject matter of the Agreement. Any amendment, including oral modifications, must be reduced to writing and signed by all Parties to be effective.

34. GOODWIN AGREEMENT: This Agreement amends the Goodwin Agreement to the extent necessary to permit the Parties to carry out the terms hereof. Joint Districts specifically agree that the license granted Purchasers by Section 2.1 of the Goodwin Agreement shall be deemed to enable Purchasers to take delivery of water made available by Joint Districts under this Agreement; in addition, the license granted Purchasers by Section 2.1 of the Goodwin Agreement shall be deemed to enable Purchasers to wheel water made available to Central under this Agreement pursuant to written agreement between Purchasers and Central. The Parties do not, however, intend to modify, alter, rescind, change or waive any of the terms and conditions of the Goodwin Agreement with respect to any other water.

35. DELIVERY OF WATER BY SSJID TO CENTRAL: SSJID agrees to make available to Central up to 15,000 acre-feet of Water over and above the amounts delivered to Purchasers pursuant to Paragraph 5, subject to all of the terms and conditions of this Agreement applicable to delivery of water by Joint Districts to Purchasers except to the extent they are inconsistent with the terms and conditions in this paragraph, and to the following additional terms conditions:

A. Conditions to Initial Delivery of Water. The following conditions must be satisfied prior to SSJID making Agreement-Water available to Central:

(1) Central's preparation of an initial plan of the proposed distribution facilities and a map showing the areas within Central which will be served. The initial plan is to be completed within four months of the date of this Agreement.

(2) Acceptance of the initial plan by SSJID's Board of Directors within 30 days of receipt. It is understood that one of SSJID's purposes in proposing to deliver water to Central is to improve groundwater levels within SSJID by reducing the use of groundwater within areas of Central which border on SSJID. SSJID will determine from the initial plan whether the proposed project will adequately serve those portions of Central which either share a common boundary with SSJID or which are adjacent to such areas, and which consist of approximately 6,000 acres.

(3) Central shall deliver to SSJID written evidence of Central's right to take delivery of water whether through the Goodwin Tunnel Facility or through other means acceptable to SSJID within six months of the date of this Agreement.

(4) Central's preparation of a study of the physical and financial feasibility of transporting water to Central and distributing the water within Central utilizing the Goodwin Tunnel. The completed study is to be prepared at Central's expense, is to be consistent with the initial plan approved by SSJID, and is to be delivered to SSJID within one year of the date of this Agreement. The study is to include a detailed description of the necessary distribution facilities; a schedule of the times and rates of diversion of water at Goodwin Tunnel; an estimate of the losses anticipated from diversion at Goodwin Tunnel until application within Central; a cost breakdown for the project showing the estimated cost for permits, approvals, environmental compliance, construction, and conveyance; a time estimate for construction; the method for payment of the facilities; and the final estimated cost to users for delivered water.

(5) Acceptance of the feasibility study by SSJID's Board of Directors within 60 days of receipt.

(6) Central's preparation of the initial plan and the feasibility plan is not subject to any required action on the part of the Joint Districts.

(7) Completion of the facilities by Central at its expense pursuant to the feasibility study within one year from the date that all conditions to delivery of Water to Purchasers are satisfied.

(8) If any one of the above conditions is not satisfied by the specified date, all obligations of SSJID to Central in this paragraph are terminated.

B. General Provisions Applicable to Delivery

(1) SSJID has no obligation to make Water available to Central in any year unless the United States Bureau of Reclamation's April 1 forecast of inflow to New Melones exceeds 600,000 acre-feet.

(2) The quantities of water to be made available by SSJID are subject to reduction pursuant to the other provisions of this Agreement.

(3) It is understood Water made available to Central pursuant to this paragraph 35 is the obligation, subject to all of the terms of this Agreement, of SSJID alone.

(4) Central shall use Water made available by SSJID for irrigation purposes only and within Central alone. Central shall make water available to those areas which can be effectively served by the facilities constructed pursuant to the feasibility study and if additional water is still available after needs within those areas are satisfied, to other areas within Central.

(5) Central shall pay SSJID $15.00 per acre-foot for Water made available pursuant to this Agreement. The purchase price is subject to the adjustment provisions of Paragraph 8.

(6) Central agrees to perform all of the other covenants of Purchasers or of SEWD in the Agreement which are applicable to delivery of Agreement-Water by Joint Districts, except as is otherwise provided in this paragraph.

(7) Subject to the changes, limitations and other provisions in this Agreement, SSJID will make water available to Central according to the schedule set forth in Exhibit A.

No breach or termination of this Paragraph or failure of any of the conditions in this Paragraph shall affect the remainder of this Agreement.

36. EFFECTIVE DATE: The effective day and date of this Agreement shall be the day and date first above written.

37. COUNTERPARTS: This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Agreement shall not be effective until the execution and delivery between each of the Parties of at least one set of counterparts. The Parties authorize each other to detach and combine original signature pages and consolidate them into a single identical original. Any one of such completely executed counterparts shall be sufficient proof of this Agreement.

38. GENERAL INTERPRETATION: The terms of this Agreement have been negotiated by the Parties hereto and the language used in this Agreement shall be deemed to be the language chosen by the Parties hereto to express their mutual intent. This Agreement shall be construed without regard to any presumption or rule requiring construction against the Party causing such instrument or any portion thereof to be drafted, or in favor of the Party receiving a particular benefit under the agreement. No rule of strict construction will be applied against any person.

OAKDALE IRRIGATION DISTRICT, a political subdivision of the State of California

By _____
Title President, Board of Directors

APPROVED AS TO FORM:

_____
General Counsel for Oakdale Irrigation District

ATTEST:

_____
Secretary

SOUTH SAN JOAQUIN IRRIGATION DISTRICT, a political subdivision of the State of California

By _____

Title Board President

APPROVED AS TO FORM:

_____

General Counsel for South San Joaquin Irrigation District

ATTEST: _____

_____

Secretary

STOCKTON EAST WATER DISTRICT, a political subdivision of the State of California

By _____
Title _____

APPROVED AS TO FORM:

_____
General Counsel for Stockton East Water District

ATTEST:

_____
Secretary

LINCOLN VILLAGE MAINTENANCE DISTRICT, a political subdivision of the State of California governed by the Board of Supervisors of San Joaquin County

By _____
EDWARD A. SIMAS, Chairman
Board of Supervisors of LVMD

ATTEST: LOIS M. SAHYOUN
Clerk of the Board of Supervisors
of the County of San Joaquin,
State of California

By _____
Deputy Clerk

APPROVED AS TO FORM:
TERRENCE R. DERMODY
County Counsel

By _____

COLONIAL HEIGHTS MAINTENANCE DISTRICT, a political subdivision of the State of California governed by the Board of Supervisors of San Joaquin County

By _____
EDWARD A. SIMAS, Chairman
Board of Supervisors of CHMD

ATTEST: LOIS M. SAHYOUN
Clerk of the Board of Supervisors
of the County of San Joaquin,
State of California

By: _____ (SEAL)
Deputy Clerk

APPROVED AS TO FORM:
TERRENCE R. DERMODY
County Counsel

By _____

CITY OF STOCKTON, a political subdivision of the State of California

By _____

Title City Manager

ATTEST:

~~Secretary~~ Assistant CITY CLERK

APPROVED AS TO FORM:

City Attorney of the City of Stockton

CENTRAL SAN JOAQUIN WATER
CONSERVATION DISTRICT

By _____
Title President

APPROVED AS TO FORM:

_____
General Counsel for Central San
Joaquin Water Conservation District

ATTEST:

_____
Secretary

EXHIBIT A
Delivery Schedule

	SEWD			CENTRAL	
MONTH	AF	AVE DCFS	MAX D CFS	AF	AVE DCFS
January	1000	17	34	0	
February	1000	17	34	0	
March	1000	17	34	0	
April	3000	50	100	2000	33
May	4000	66	130	2000	33
June	4000	66	130	3000	50
July	4000	66	130	3000	50
August	4000	66	130	3000	50
September	3000	50	100	2000	33
October	2000	33	66	0	
November	2000	33	66	0	
December	1000	17	34	0	
TOTALS	30000 AF	498	998	15000	249

OID and SSJID shall deliver the average daily cfs to the Goodwin Tunnel intake unless notified otherwise by purchasers pursuant to paragraph 15 of the agreement.

12/12/96

EXHIBIT D

RESOLUTION TD-99-04
JOINT RESOLUTIONS
OF
SOUTH SAN JOAQUIN IRRIGATION DISTRICT
AND
OAKDALE IRRIGATION DISTRICT

CERTIFYING ENVIRONMENTAL IMPACT REPORT FOR WATER TRANSFER PROJECT

WHEREAS, South San Joaquin Irrigation District (SSJID) and Oakdale Irrigation District (OID) have proposed to transfer up to 30,000 acre-feet of surface water annually over a 10-year period through existing conveyance facilities to the Stockton East Water District and its customers, the City of Stockton and the Lincoln Village and Colonial Heights Maintenance Districts ("Water Transfer Project.")

WHEREAS, SSJID and OID as lead agencies prepared and circulated a draft Environmental Impact Report (DEIR) dated March 1999 regarding the Water Transfer Project, in accordance with the California Environmental Quality Act (Public Resources Code §21000 et seq.; "CEQA").

WHEREAS, SSJID and OID have reviewed the DEIR, and the analysis of potential environmental impacts from the Water Transfer Project described in the DEIR, and concur with the findings in the DEIR that there are no significant environmental impacts from the Water Transfer Project.

WHEREAS, SSJID and OID have jointly prepared and circulated responses to comments and recommendations received on the DEIR, in accordance with CEQA.

WHEREAS, changes to the DEIR are not necessary for it to satisfy CEQA as a result of the comments and recommendations received.

WHEREAS, SSJID and OID have jointly prepared a final Environmental Impact Report which consists of the DEIR, all comments and recommendations received on the DEIR and the list of persons, organizations and public agencies that have commented on the DEIR and the responses of SSJID and OID to the comments and recommendations received on the DEIR ("Final EIR").

WHEREAS, SSJID and OID have each reviewed and considered the information in the Final EIR before deciding whether to carry out the Water Transfer Project.

WHEREAS, SSJID and OID each find that the Final EIR has been completed in compliance with CEQA.

WHEREAS, SSJID and OID each find that the Final EIR reflects their respective independent judgments.

WHEREAS, SSJID and OID make as part of their findings all of the analysis and findings in the Final EIR.

NOW THEREFORE, BE IT RESOLVED that the Board of Directors of South San Joaquin Irrigation District and the Board of Directors of Oakdale Irrigation District each take the following actions:

1. Make the findings set forth above, each of which is found to be true.

2. Adopt the Final EIR.

3. Incorporate all of the findings in the Final EIR into the record of their adoption of the Final EIR and their decision to carry out the Water Transfer Project.

4. Find that the Water Transfer Project will not cause any significant environmental impacts.

5. Elect to carry out the Water Transfer Project beginning October 1, 1999.

6. Direct the general managers of each district to execute a Notice of Determination as to the actions set forth above in the form presented at this meeting with such changes as are acceptable to the general managers, to file a Notice of Determination with the County Clerks of Stanislaus, Calaveras, Tuolumne and San Joaquin Counties for posting for a thirty day period in accordance with CEQA and to file a copy of the Notice of Determination with the State Clearinghouse.

7. Direct that any required filing fee for filing the Notice of Determination, including any fee due the Department of Fish and Game, be paid.

8. That the documents and other materials that constitute the record of the proceedings regarding the Final EIR for the Water Transfer Project adopted by San Joaquin Irrigation District and Oakdale Irrigation District is available at:

South San Joaquin Irrigation District
11011 E. Highway 120
Manteca, CA 95336

Oakdale Irrigation District
1205 East "F" Street
Oakdale, CA 95370

PASSED AND ADOPTED this 27th day of July 1999, by the following roll call vote:

OAKDALE IRRIGATION DISTRICT

AYES:	Burtschi, Francis, Webb, Taro
NOES:	
ABSENT:	Price
ABSTAIN:	

SOUTH SAN JOAQUIN IRRIGATION DISTRICT

AYES:	DeGroot, Kamper, Schulz, Haworth
NOES:	
ABSENT:	Roos
ABSTAIN:	

OADKALE IRRIGATION DISTRICT -
SOUTH SAN JOAQUIN IRRIGATION DISTRICT -
TRI-DAM PROJECT

OAKDALE IRRIGATION DISTRICT

Vice President, Henry Burtschi

Secretary, Wayne Marcus

SOUTH SAN JOAQUIN IRRIGATION DISTRICT

Vice President, Dave Kamper

Secretary, Richard Martin

EXHIBIT E

City of Stockton

Findings for the

Oakdale and South San Joaquin Irrigation District

Water Transfer Project

Containing

- Issue/Impact and Mitigation Measures
- Findings

CITY OF STOCKTON

CEQA FINDINGS AND MITIGATION MONITORING/REPORTING PROGRAM

(PURSUANT TO CALIFORNIA PUBLIC RESOURCES CODE SECTIONS 21081 AND 21081.6)

ROJECT DATA

INITIAL STUDY FILE NO.: IS12-99 (or) EIR FILE NO.: ER

State Clearinghouse No.: SCH#97122035 (If submitted to Clearinghouse)

Related File No.(s):

Property Owner(s): Oakdale and South San Joaquin Irrigation Districts, City of Stockton East Water District for San Joaquin County

Address: Water Transfer involves portions of San Joaquin, Calaveras, Stanislaus and Tuolumne Counties

Zip Phone ( )

Project Applicant: South San Joaquin Irrigation District and Oakdale Irrigation District

Contact Person: Dean Ruiz, Assistant Planner

Address: 325 N. El Dorado Street

Stockton Zip 95202 Phone (209) 937-8266

Project Title: Water Transfer Project of the South San Joaquin Irrigation District and Oakdale Irrigation District

Address: Counties of San Joaquin, Stanislaus, Tuolumne and Calaveras

Project Description/Location: South San Joaquin Irrigation District and Oakdale Irrigation district have proposed to transfer up to 30,000 acre-feet of surface water annually over a 10-year period through existing conveyance facilities to the Stockton East Water District and its customers, the City of Stockton and the Lincoln Village and Colonial Heights Maintenance Districts ("Project").

KEY

1. The impacts are shaded and followed by related mitigation measures, implementation and monitoring provisions, and findings.
2. Abbreviations:
   N/A=(Not Applicable); COS=(City of Stockton); ODS=(Owners, Developers and/or Successors-In-Interest); CDD=(Community Development Department); CD-P=(Community Development-Planning Division); CD-B=(Community Development-Building Division); PW=(Public Works Department); CM=(City Manager); CA=(City Attorney); P&R=(Parks and Recreation Department); HR=(Housing and Redevelopment Department); MUD=(Municipal Utilities Department); FD=(Fire Department); PD=(Police Department); PC=(Planning Commission); CC=(City Council); SJC=(San Joaquin County); ALUC=(Airport Land Use Commission).
3. Related Notes:

FINDINGS AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Findings for significant and potentially significant impacts identified in the Final EIR or Negative Declaration/Initial Study are listed as follows:

1. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect identified in the Final EIR or Negative Declaration/Initial Study, or
2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the City of Stockton. Such changes have been adopted by such other agency, or
3. The City of Stockton is adopting, or has previously adopted, specific economic, social, or other considerations which make infeasible the mitigation measures and project alternatives identified in the Final EIR or Negative Declaration/Initial Study.

The level of significance (LS) of each impact after mitigation is listed as: S= (significant), PS=(potentially significant), SU=(significant and unavoidable), or NS=(not significant). The basis for Finding 1 and/or 2 is provided in applicable sections of the Final EIR or Negative Declaration/Initial Study and any basis for Finding 3 (Statement of Overriding Considerations) is attached or enclosed with this document.

RESPONSIBLE AGENCY

CITY OF STOCKTON

c/o Community Development Dept./Planning Division

345 North El Dorado Street, Stockton, CA 95202-1997

(209) 937-8266

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(DATE FINDINGS/MONITORING PROGRAM ADOPTED)

EXHIBIT E pg. 2

ISSUE/IMPACT AND MITIGATION MEASURES	MITIGATION MONITORING/REPORTING RESPONSIBILITY AND TIMING	SIGNIFICANCE OF FINDINGS/LS AFTER MITIGATION
4.1 WATER RESOURCES		
Issue 4.1-1: Implementation of the proposed project would result in decreased groundwater flows to the Stanislaus River which would result in reduced groundwater levels.		
No mitigation required.	N/A	LS
Issue 4.1-2: Implementation of the proposed project would result in decreased groundwater flows to the Stanislaus River which would result in reduced groundwater levels in the San Joaquin River.		
No mitigation required.	N/A	LS
Issue 4.1-3: Implementation of the proposed project would result in decreased groundwater flows to the Stanislaus River which would result in exceedance of adopted water quality standards which could adversely affect agricultural production within the Delta.		
No mitigation required.	N/A	LS
Issue 4.1-4: Implementation of the proposed project would result in additional groundwater pumping which would result in a reduction in groundwater supplies in the Modesto Groundwater Basin.		
No mitigation required.	N/A	LS
Issue 4.1-5: Implementation of the proposed project would result in additional groundwater pumping which would result in a reduction in groundwater levels in the Modesto Groundwater Basin which could result in a degradation in groundwater quality.		
No mitigation required.	N/A	LS
Issue 4.1-6: Implementation of the proposed project in conjunction with cumulative actions on the Stanislaus and San Joaquin Rivers would result in decreased groundwater flows which would result in reduced groundwater levels.		
No mitigation required.	N/A	LS
Issue 4.1-7: Implementation of the proposed project in conjunction with cumulative actions on the Stanislaus and San Joaquin Rivers would result in decreased groundwater flows which would result in exceedance of adopted water quality standards which could adversely affect agricultural production within the Delta.		
No mitigation required.	N/A	LS
Issue 4.1-8: Cumulative reductions in groundwater pumping resulting from proposed project and other Stanislaus and San Joaquin River actions in the Modesto Groundwater Basin would lower groundwater levels which could adversely affect groundwater quality.		
No mitigation required.	N/A	LS

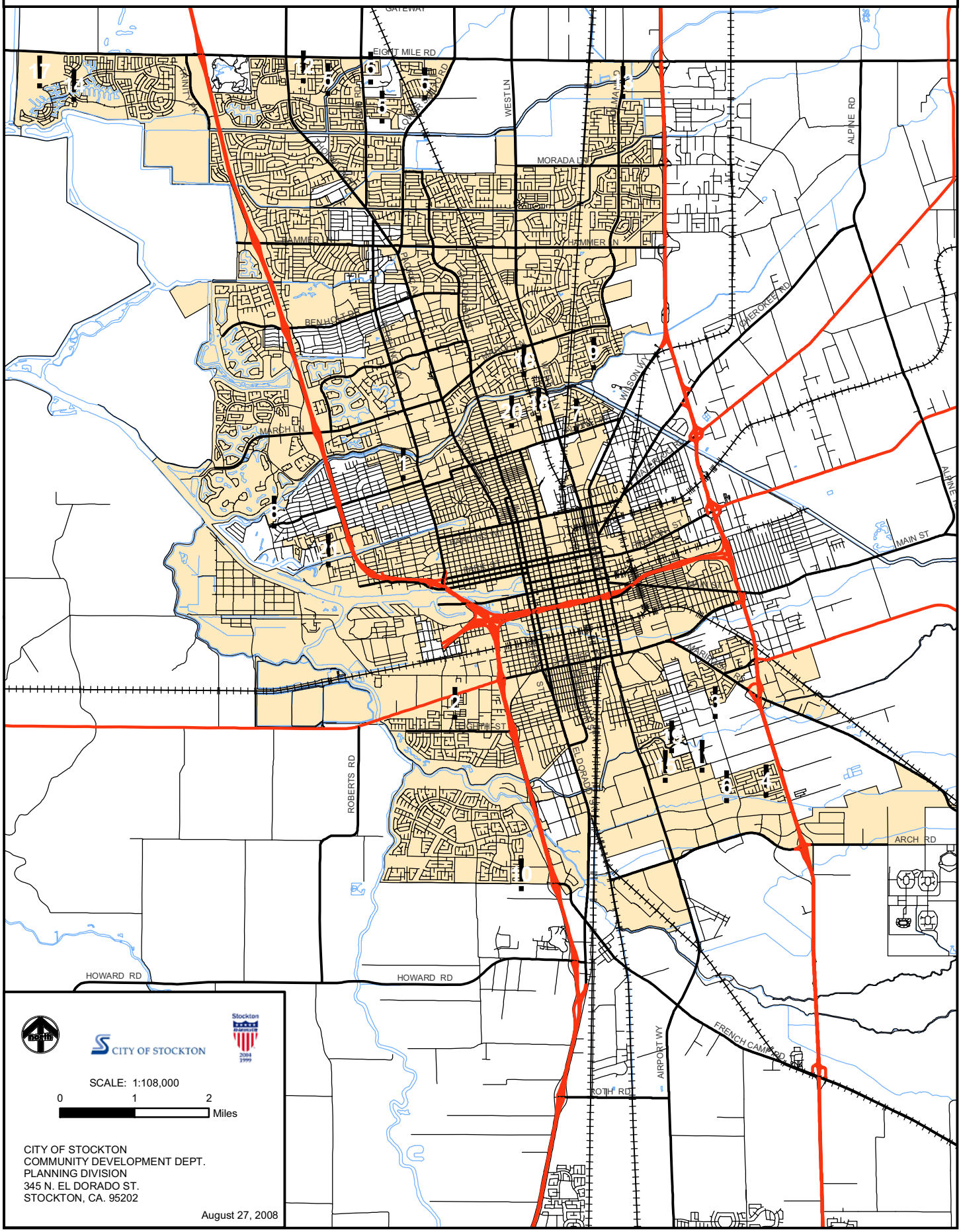
ISSUE/IMPACT AND MITIGATION MEASURES	MITIGATION MONITORING/REPORTING RESPONSIBILITY AND TIMING	SIGNIFICANCE OF FINDINGS/LS AFTER MITIGATION
4.2 FISHERIES		
Issue 4.2.1: Implementation of the proposed project would result in a decrease of return flows to the Stanislaus River which could affect fall-run Chinook salmon.	N/A	LS
No mitigation required.		
Issue 4.2.2: Implementation of the proposed project would result in a decrease of return flows to the Stanislaus River which would result in elevated temperatures which could affect juvenile salmonids.	N/A	LS
No mitigation required.		
Issue 4.2.3: Implementation of the proposed project would result in a decrease of return flows to the Stanislaus River which would result in elevated temperatures which could affect resident and migratory fish.	N/A	LS
No mitigation required.		
Issue 4.2.4: Implementation of the proposed project in combination with cumulative diversions on the Stanislaus and San Joaquin Rivers would result in a decrease of return flows to the San Joaquin River which could affect fall-run Chinook salmon habitat.	N/A	LS
No mitigation required.		
Issue 4.2.5: Implementation of the proposed project in combination with cumulative diversions on the Stanislaus and San Joaquin Rivers would result in a decrease of return flows to the San Joaquin River which could result in elevated temperatures which could affect resident warmwater fish.	N/A	LS
No mitigation required.		
Issue 4.2.6: Implementation of the proposed project in combination with cumulative diversions on the Stanislaus and San Joaquin Rivers would result in a decrease of return flows to the San Joaquin River which would result in elevated temperatures which could affect resident and migratory fish.	N/A	LS
No mitigation required.		

EXHIBIT “C”

LIST OF PENDING DEVELOPMENTS

LINK TO SUBDIVISION LIST

RESIDENTIAL SUBDIVISIONS



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CITY OF STOCKTON

CITY OF STOCKTON
RESIDENTIAL DEVELOPMENT

LINK TO MAP

Map #	Residential Subdivison Project Name	Tentative Map #	TM Acres	Map Units	Bdg Permits Issued	Lots Remain	% Project Completion
1	Riverwalk	TM13-05	10	113	50	63	44%
2	Moss Garden: Moss Garden East, Moss Garden West	TM24-05	50	359	82	277	23%
3	Windstone	TM33-04	8	66	0	66	0%
4	Little John Creek	TM13-90	151	853	794	59	93%
5	North Stockton Projects: Elkhorn Country Club, Waterford Estates West and East, Beck Ranch, Beck Estates, Fairway Greens, Windmill Park, Meadowlands, Destinations, Northbrook	TM1-98, TM2-98, TM3-98, TM4-98, TM14-98, TM5-98, TM15-03, TM6-03, TM 24-04	393	2,503	1,743	760	70%
6	Seabreeze I and II	TM5-03 & TM21-03	50	249	167	82	67%
7	Montego I & II	TM9-03, TM7-04	82	347	168	179	48%
8	Mariana Estates (Darrah)	TM33-03, SU01-03 (County TM#)	25	73	0	73	0%
9	Riverbend & Riverbend West	TM14-04 & TM15-04	168	584	270	314	46%
10	Cornerstone II	TM25-03	14	186	2	184	1%
11	Simbad Estates	TM9-04	5	28	8	20	29%
12	Silver Springs / Gold Springs	TM28-03 & TM10-04	96	305	272	33	89%
13	Cannery Park	TM8-04	450	1,100	40	409	9%
14	Westlake Villages (SPW)	TM18-04	680	2,630	288	2,342	11%
15	Malisa Manor	TM25-04	4	16	7	9	44%
16	Charlotte's Oaks	TM6-05	15	105	43	62	41%
17	Crystal Bay	TM17-05	174	1,343	0	1343	0%
18	Dama Estates	TM37-04	3	17	0	17	0%
19	Old Oak Estates	TM23-04	14	62	7	55	11%
20	Calaveras Estates #3	TM36-04	13	77	15	62	19%
21	Tuscany Cove	TM42-04	4	14	0	14	0%
22							
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	SINGLE FAMILY TOTAL:		**2,409**	**11,030**	**3,956**	**6,423**	**36%**
	MULTIFAMILY TOTAL:		**84**	**1,560**	**801**	**759**	**51%**

"TM Acres" refers to the gross acreage listed in the approved Tentative Map

"Building Permits" represent the number of permits issued to date

"Multi Family Projects" are four attached units or more

"Lots Remaining" are the lots with out building permits issued in that project

Based on Tentative Maps of 15 parcels or more

Updated: 8/27/08

EXHIBIT “D”

STATE WATER RESOURCES CONTROL BOARD WATER RIGHT PERMIT FOR CITY OF STOCKTON DELTA DIVERSION

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

PERMIT FOR DIVERSION AND USE OF WATER

PERMIT 21176

Application 30531A of City of Stockton
c/o Department of Municipal Utilities
2500 Navy Drive
Stockton, CA 95206-1191

filed on April 18, 1996, has been approved by the State Water Resources Control Board (State Water Board) SUBJECT TO PRIOR RIGHTS and to the limitations and conditions of this permit.

Permittee is hereby authorized to divert and use water as follows:

1. Source of water

Source:
San Joaquin River

Tributary to:
Sacramento-San Joaquin Delta

within the County of San Joaquin

2. Location of point of diversion

By California Coordinate System of 1927 in Zone 3	40-acre subdivision of public land survey or projection thereof	Section (Projected)	Township	Range	Base and Meridian
POD #1: N563,400 - E1,713,150	NE¼ of NE¼	11	2N	4E	MD

3. Purpose of use	4. Place of use	Section (Projected)*	Township	Range	Base and Meridian	**Portions of C.M. Weber Grant with Place of Use boundaries and Township and Range**
Municipal and Industrial	Portions of:	2, 12, 24, 36, 25	2N	5E	MD	None
	All of:	1	2N	5E	MD	
	Portions of:	1, 12	1N	5E	MD	None
	Portions of:	7, 13, 18, 21, 22, 23, 33	2N	6E	MD	All
	All of:	1-6, 8-12, 14-17, 19, 20, 29-32	2N	6E	MD	
	Portions of:	4, 15, 18, 27, 34, 21, 28, 33	1N	6E	MD	All
	All of:	5-9, 16, 17, 22	1N	6E	MD	
	Portions of:	3, 5, 9, 10	1S	6E	MD	All except portions of sections G and 3
	All of:	4	1S	6E	MD	
	Portions of:	4, 8, 9, 17, 18	2N	7E	MD	All except portions of sections 81-86, H, M, 93 and 94
	All of:	5, 6, 7	2N	7E	MD	
	Portions of:	1, 11, 12, 25, 26	1N	7E	MD	All except portions of sections M, 86, 93, and 94
	All of:	13, 14, 23, 24, 27, 28, 33, 34	1N	7E	MD	
	Portions of:	3, 4, 5, 8, 9, 10	1S	7E	MD	All except portions of sections O and 27
	All of:	None	1S	7E	MD	
	Total area within Place of Use = 81,441 acres					

The place of use is shown on map dated October 27, 1997 filed with the State Water Board.

5. The water appropriated shall be limited to the quantity, which can be beneficially used, and shall not exceed 317 cubic feet per second to be diverted from January 1 to December 31 of each year. The maximum amount diverted under this permit shall not exceed 33,600 acre-feet per year.

(0000005A)

6. Construction work of Delta Water Supply Project facilities developed under this permit: (a) the point of diversion (water intake site), (b) the raw water and treated water transmission pipelines, and (c) the 30 million gallon per day water treatment facility, shall be prosecuted with reasonable diligence and completed by December 31, 2015. Complete application of the water to the authorized uses under this permit shall be completed by December 31, 2020.

(0000009)

7. The amount authorized for appropriation may be reduced in the license if investigation warrants.

(0000006)

8. Progress reports shall be submitted promptly by permittee when requested by the SWRCB until a license is issued.

(0000010)

9. Permittee shall allow representatives of the SWRCB and other parties, as may be authorized from time to time by said SWRCB, reasonable access to project works to determine compliance with the terms of this permit.

(0000011)

10. Pursuant to California Water Code sections 100 and 275, and the common law public trust doctrine, all rights and privileges under this permit and under any license issued pursuant thereto, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of SWRCB in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.

The continuing authority of the SWRCB may be exercised by imposing specific requirements over and above those contained in this permit with a view to eliminating waste of water and to meeting the reasonable water requirements of permittee without unreasonable draft on the source. Permittee may be required to implement a water conservation plan, features of which may include but not necessarily be limited to (1) reusing or reclaiming the water allocated; (2) using water reclaimed by another entity instead of all or part of the water allocated; (3) restricting diversions so as to eliminate agricultural tailwater or to reduce return flow; (4) suppressing evaporation losses from water surfaces; (5) controlling phreatophytic growth; and (6) installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this permit and to determine accurately water use as against reasonable water requirements for the authorized project. No action will be taken pursuant to this paragraph unless the SWRCB determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially feasible and are appropriate to the particular situation.

The continuing authority of the SWRCB also may be exercised by imposing further limitations on the diversion and use of water by the permittee in order to protect public trust uses. No action will be taken pursuant to this paragraph unless the SWRCB determines, after notice to affected parties and opportunity for hearing, that such action is consistent with California Constitution Article X, Section 2; is consistent with the public interest; and is necessary to preserve or restore the uses protected by the public trust.

(0000012)

11. The quantity of water diverted under this permit and under any license issued pursuant thereto is subject to modification by the SWRCB if, after notice to the permittee and an opportunity for hearing, the SWRCB finds that such modification is necessary to meet water quality objectives in water quality control plans which have been or hereafter may be established or modified pursuant to Division 7 of the Water Code. No action will be taken pursuant to this paragraph unless the SWRCB finds that (1) adequate waste discharge requirements have been prescribed and are in effect with respect to all waste discharges, which have any substantial effect upon water quality in the area involved, and (2) the water quality objectives cannot be achieved solely through the control of waste discharges.

(0000013)

12. This permit does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & G. Code, §§ 2050 - 2097) or the federal Endangered Species Act (16 U.S.C.A. §§ 1531 - 1544). If a "take" will result from any act authorized under this water right, the permittee shall obtain authorization for an incidental take prior to construction or operation of the project. Permittee shall be responsible for meeting all requirements of the applicable Endangered Species Act for the project authorized under this permit.

(0000014)

13. Permittee shall maintain records of the amount of water diverted and used to enable the State Water Resources Control Board to determine the amount of water that has been applied to beneficial use pursuant to Water Code Section 1605.

(0000015)

14. No work shall commence and no water shall be diverted, stored or used under this permit until a copy of a stream or lake alteration agreement between the State Department of Fish and Game and the permittee is filed with the Division of Water Rights. Compliance with the terms and conditions of the agreement is the responsibility of the permittee. If a stream or lake agreement is not necessary for this permitted project, the permittee shall provide the Division of Water Rights a copy of a waiver signed by the State Department of Fish and Game.

(0000063)

15. Permittee shall comply with the following conditions that are derived from the agreements and stipulations between permittee and the California Department of Water Resources, the United States Bureau of Reclamation, the San Joaquin River Group Authority, dated November 22, 2004, November 29, 2004, September 27, 2005, respectively, and filed with the State Water Resources Control Board:

    a. In order to ensure compliance with Water Code section 1485, the permittee shall conduct its diversions as follows:

        1. The permittee shall maintain records of (a) daily diversion of water from the Delta at its Delta Diversion Facility and (b) daily discharge of effluent to the Delta at its Regional Wastewater Control Facility.

        2. The 15-day running average of diversions from the Delta under this permit shall be less than or equal to the 15-day running average of discharges of properly treated effluent discharged from the Regional Wastewater Control Facility into the San Joaquin River. The term “properly treated effluent” means effluent that meets the requirements of the Central Valley Regional Water Quality Control Board.

        3. The permittee shall maintain weekly summary records of diversions, discharges and computations specified in paragraphs 15a.1 and 15a.2.

4. The permittee shall post on the World Wide Web (WWW) Internet for public monitoring purposes, within five (5) days of the diversion or discharge, the daily total amount of water in acre-feet diverted from the Delta at the permittee's diversion facility, the daily total amount of water in acre-feet of properly treated effluent discharged into the San Joaquin River from the permittee's Regional Wastewater Control Facility, and the weekly summary records specified in paragraph 15a.3.

Inclusion in this permit of certain provisions of the referenced agreements shall not be construed as disapproval of other provisions of the agreements or as affecting the enforceability, as between the parties, of such other provisions insofar as they are not inconsistent with the terms of this permit.

(0000024)

16. Permittee shall consult with the Division of Water Rights and, within one year from the date of this permit, shall submit to the State Water Resources Control Board its Urban Water Management Plan as prepared and adopted in conformance with section 10610, et seq. of the California Water Code, supplemented by any additional information that may be required by the Board.

All cost-effective measures identified in the Urban Water Management Plan and any supplements thereto shall be implemented in accordance with the schedule for implementation found therein.

(0000029A)

17. No water shall be used under this permit until permittee has filed a report of waste discharge with the California Regional Water Quality Control Board, Central Valley Region, pursuant to Water Code Section 13260, and the Regional Board or State Water Resources Control Board has prescribed waste discharge requirements or has indicated that waste discharge requirements are not required. Thereafter, water may be diverted only during such times as all requirements prescribed by the Regional Board or State Board are being met. No point source discharges of waste to surface water shall be made unless waste discharge requirements are issued by a Regional Board or the State Board. A discharge to ground water without issuance of a waste discharge requirement may be allowed if, after filing the report pursuant to Section 13260:

(1) the Regional Board issues a waiver pursuant to Section 13269, or
(2) the Regional Board fails to act within 120 days of the filing of the report.

No permittee shall be required to file a report of waste discharge pursuant to Section 13260 of the Water Code for percolation to ground water of water resulting from the irrigation of crops.

(0290101)

18. No water shall be diverted under this permit except through a fish screen on the intake to the diversion structure, designed to meet the California Department of Fish and Game (CDFG) and the National Marine Fisheries Service (NMFS) screening criteria to protect all life history stages of emigrating juvenile Chinook salmon (*Oncorhynchus tshawytscha*), steelhead (*Oncorhynchus mykiss*) and Delta smelt (*Hypomesus transpacificus*). The screen will meet the following specifications:

- The screen will be oriented such that flow past the screen will be parallel to river flow.
- The screen will be designed so that a maximum uniform approach velocity of 0.2 feet per second as well as an adjustment for flow patterns will be provided across the face of the screen.

- The screen will be fitted with an automatic rotating brush or hydraulic screen cleaner that cleans the entire fish screen once every five minutes, while the diversion is in operation. Except during periods of tidal flow reversal, sweeping flow velocity will be at least twice the approach velocity.
- Screen openings will not exceed 1.75 millimeters with a minimum opening of 27 percent based on the salmonid fry criterion.
- The screen will be made of rigid, corrosion-resistant material with no sharp edges or projections (stainless-steel or copper-nickel alloy using wedge wire.)

(0000214)

19. No water shall be diverted until permittee has completed a monitoring and response plan for larval delta smelt (*Hypomesus transpacificus*). Monitoring for larval delta smelt will be conducted annually between February 15 and July 31 to detect the presence of larval delta smelt and trigger the implementation of the response plan, if necessary. The densities and geographic distribution of smelt will be used to identify those periods when larval delta smelt are not in the area and no operational changes are necessary. An annual monitoring and response report will be submitted to the Chief, Division of Water Rights by September 15.

    Permittee shall submit the monitoring and response plan to the CDFG, NMFS and United States Fish and Wildlife Service (USFWS) for review. Permittee shall submit evidence of the review and the completed response plan to the Chief, Division of Water Rights.

    In consultation with CDFG, permittee shall complete a census of larval delta smelt to determine the effectiveness of the response plan. If the response plan measures are not effective in protecting larval smelt from entrainment, permittee shall identify and develop alternative measures in cooperation with USFWS and CDFG. Permittee shall submit evidence of the effectiveness of the response plan or the alternative measures to the Chief, Division of Water Rights. Permittee shall be responsible for the construction, operation, and maintenance of the required facility.

    Permittee shall mitigate for the impacts of the project to special-status species identified in the FEIR. Permittee may either submit to the Chief, Division of Water Rights, evidence that the Project is approved for participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) and comply with the requirements under that program, or permittee may obtain the necessary individual permits from the appropriate regulatory agency (CDFG or USFWS). Evidence of regulatory agency review will be submitted to the Chief, Division of Water Rights.

20. The State Water Board reserves jurisdiction to amend this permit, after notice and opportunity for hearing, to reduce the maximum amount authorized to be diverted or require other appropriate action if the State Water Board receives new substantial evidence showing that, due to the diversion of water under this permit, the SWP or the federal CVP is required to forego exports from the southern Delta or release from upstream storage additional water to meet salinity objectives in the Delta compared with the amount of water that the SWP or the federal CVP would have to forego exporting or release from upstream storage for salinity control in the absence of diversions under this permit.

21. In accordance with Public Resources Code, section 21167.3, the City is authorized under this permit to proceed with the project at the City's risk.

This permit is issued and permittee takes it subject to the following provisions of the Water Code:

Section 1390. A permit shall be effective for such time as the water actually appropriated under it is used for a useful and beneficial purpose in conformity with this division (of the Water Code), but no longer.

Section 1391. Every permit shall include the enumeration of conditions therein which in substance shall include all of the provisions of this article and the statement that any appropriator of water to whom a permit is issued takes it subject to the conditions therein expressed.

Section 1392. Every permittee, if he accepts a permit, does so under the conditions precedent that no value whatsoever in excess of the actual amount paid to the State therefore shall at any time be assigned to or claimed for any permit granted or issued under the provisions of this division (of the Water Code), or for any rights granted or acquired under the provisions of this division (of the Water Code), in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any permittee or by the holder of any rights granted or acquired under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State, of the rights and property of any permittee, or the possessor of any rights granted, issued, or acquired under the provisions of this division (of the Water Code).

STATE WATER RESOURCES CONTROL BOARD

for James W. Kassel

Victoria A. Whitney, Chief
Division of Water Rights

Dated: March 8, 2006

EXHIBIT “E”

WOODBRIDGE AGREEMENT FOR PURCHASE OF WATER BY THE CITY OF STOCKTON

AGREEMENT FOR PURCHASE OF WATER FROM THE WOODBRIDGE IRRIGATION DISTRICT BY THE CITY OF STOCKTON

This Agreement is made and entered into between Woodbridge Irrigation District and the City of Stockton, adjoining public entities located within the County of San Joaquin, State of California, this 22 day of January, 2008.

Background Recitals

a. The City of Stockton obtains a portion of its municipal water supply from wells located within the City, extracting the water from the underground aquifer, which is replenished in part by flows of the Mokelumne River. Stockton desires to acquire a supplemental surface water supply to offset current groundwater pumping as part of its overall conjunctive use program.

b. Because of substantial population growth and increasing water demands in the Stockton metropolitan area, the City is also developing its Delta Water Supply Project to divert surface water from the San Joaquin River, and has obtained Permit 21176 from the State to divert water for that Project. The City needs to supplement that surface water supply in the periods of each year when the diversion of water from that source is restricted by the terms of the City's Water Permit.

c. Woodbridge Irrigation District (District or WID) is an irrigation district that is organized and existing under Division 11 of the California Water Code (Sections 20500 et seq). The District is located immediately west of the City of Lodi and immediately north of the City of Stockton. The District diverts water from the Mokelumne River at Woodbridge Dam, located in the NE 1/4 of the SE 1/4 of Section 34, Township 4 N, Range 6 E, MDBM, for irrigation of a net area of 19,370.3 acres within a gross area of 40,441.77 acres and that are located within Townships 2 N, 3 N, 4 N and 5 N, Ranges 5 E, 6 E and 7 E, MDBM.

d. The District diverts its water supply from the Mokelumne River under pre-1914 appropriative rights for the diversion of water up to 300 cubic feet per second (cfs). The District's pre-1914 rights are overlapped by the District License No. 5945 for the appropriation of 300 cfs per annum from February 1 to October 31 for irrigation use, supplemented by License No. 8214 for the diversion of an additional 114.4 cfs from May 1 to August 31 of each year and from November 1 of each year to January 31 of the succeeding year. The combined rights under the two Licenses together with the District's pre-1914 rights are limited to a maximum diversion of 414.4 cfs.

e. The District, following the East Bay Municipal Utility District's (EBMUD) building of the Pardee and Camanche Reservoirs on the Upper Mokelumne River, entered into Agreements with EBMUD in 1938 after Pardee's completion and again in 1965 after the completion of Camanche, which acknowledged the priority of some of the District rights to the EBMUD rights, and under which agreements EBMUD releases a Regulated Base Supply of water each year from Camanche Reservoir for diversion by the District at Woodbridge Dam for irrigation use.

RM 08-229

f. The District's demand for water from the Mokelumne River under its water rights has begun to diminish by reason of the District's water conservation programs, including the conversion of field furrow and flood irrigation methods of application to water applied by drip irrigation and micro-sprinklers, which reduce the amount of applied water for crops. Reductions in the delivery of irrigation water have also occurred and are continuing to occur by reason of the number of irrigated acres being reduced as a result of urbanization of lands in the southern part of the District which are being annexed by the City of Stockton.

g. By reason of the anticipated reductions in water usage within the District, the District has determined that it will have surplus water in certain amounts available under its water entitlements from the Mokelumne River, and the water that would be delivered to the City by this Agreement will be surplus to the needs of the landowners and water users within the District as required by Section 22259 of the Water Code. The District's conveyance facilities traverse the northerly portion of the City of Stockton, and the District could deliver water diverted from the Mokelumne River under its water rights to Stockton at a location along the District's canal system indicated in this Agreement.

h. The City of Stockton desires to contract with the District for the purchase of water from the District for use within the City service area, for which the City will pay on the basis and pursuant to the conditions hereinafter set forth.

NOW, THEREFORE, WOODBRIDGE IRRIGATION DISTRICT (DISTRICT) AND THE CITY OF STOCKTON (CITY) AGREE AS FOLLOWS:

1. Water to be Made Available to City and Payment. Beginning on January 1, 2009, and continuing through the term of this Agreement, the District shall make available to the City out of District's Regulated Base Supply, 6,500 acre-feet per annum under the terms and conditions herein set forth. In consideration thereof, the City will pay the District annually the sum of $200 per acre-foot for such water or $1,300,000 (ONE MILLION THREE HUNDRED THOUSAND DOLLARS) annually. Payments thereon of $325,000 (THREE HUNDRED TWENTY FIVE THOUSAND DOLLARS) quarterly are due and payable in advance beginning on the first day of each calendar quarter, commencing on January 2, 2009. Said payments shall be made irrespective of whether the City takes the water made available to it under this Agreement and irrespective of whether the District has water available to it under this Agreement for delivery to the City, provided that the District shall make its best efforts to provide to the City the amounts of water provided for in this Agreement.

In lieu of delivering water in 2009, the quarterly payments made to the District in 2009 shall be used by the District for the improvements to be made by the District to the Wilkerson Canal as provided in paragraph 2 below, and any right of way costs that may be incurred, in order to deliver the water to the City. Any funds remaining after the completion of such capital improvements shall be refunded to the City.

After 2009, for each quarter-year payment made by the City prior to the completion and commencement of operation of the City's initial phase of the DWSP (not to exceed a total of

eight calendar quarters), the City shall be entitled to one-fourth of its annual water entitlement that year (1,625 acre-feet) as a carryover credit, to be delivered thereafter at not to exceed a total of 2,000 acre-feet per year, to be provided in years when District has the additional water available to make such deliveries, as provided in paragraph 6.a. hereof.

2. Point of Delivery and Times and Amounts of Delivery. The District agrees to deliver the water to the City from the District's Wilkerson Lateral canal, at the northwest corner of the City's parcel located in the East ½ of the NE ¼ of Section 33, T 3 N, R 6 E, MDB&M (APN 059-030-02, formerly owned by Rodao), as shown in Exhibit A attached hereto. The water will be delivered during the period from March 1 through July 31 of each year, at a uniform rate of delivery, 24 hours per day, throughout the month. The District shall make needed capacity improvements to the Wilkerson lateral, using therefore the proceeds of the payments by the City to the District during the initial year (2009) under the Agreement, as set forth in Section 1 above. The improvements to be made and the schedule for the improvements shall be prepared by the District and shall be approved by the City. The cost of the improvements needed to the Wilkerson Lateral in order to deliver the water to the City shall be at the cost of the City.

The City shall construct at its sole cost and expense the facilities needed to measure and take delivery of water from the District Canal system at a mutually agreed-upon location at the above-described point of delivery, and the design, construction and operation thereof shall be approved by the District. The City will be responsible for all costs of operation, repair, maintenance and replacement of such facilities. The measurement facilities shall be recalibrated annually at the City's expense as requested by the District and the District shall have a continuing right to test the accuracy of such facilities.

a. The City shall provide the District, as soon as possible after January 1 of each year, and in any event not later than February 15 of each year, an estimate of the amount of water anticipated to be needed by the City during each month of that year from March 1 through July 31, which scheduling will be subject to the District's approval. The District will supply such water on said approved monthly schedule pursuant to and as limited by the terms, conditions and limitations of this Agreement; provided that the City shall to the extent that its operations will permit, schedule the taking of as much of its entitlement to water from the District that year prior to July 1 as is feasible, but in any event not less than 3,000 acre feet. The delivery of 6,500 acre-feet of water will be made each year in approximately the following amounts each month. The parties may jointly agree to variations in the monthly delivery schedule amounts subject to the availability of water.

Estimated Deliveries

Month	Amount (af)
March	1,000 ±
April	1,000 ±
May	3,000 ±
June	1,500±
July	1,000 ±
Total (not to exceed)	**6,500**

Orders for water deliveries and changes thereto must be made upon a 72-hour notice placed in person or by phone with the District on any business day (Monday-Friday) and between the hours of 8 AM to 12 PM and 1 PM to 5 PM. No water orders to turn water on or off or change the rate of delivery shall be left with an answering machine or faxed to the District. Delivery of water shall be at a constant rate until changed by proper notice.

b. At such times as it is possible for the District to deliver any of the 6,500 acre-feet of water to the City during the period from August 1 to October 15, and also at such times as the District has additional water available and can deliver water in excess of 6,500 acre feet during the period from March 1 through October 15, then by mutual agreement of the parties, delivery of such water to the City may be made by the District. The City shall pay the District $100 per acre foot for any such additional water delivered to the City in excess of 6,500 acre-feet.

c. The determination of whether any such water is available for delivery to the City shall be made solely by the District. In the event that both the City of Stockton and the City of Lodi under their respective Agreements request additional water during the same period(s) that additional water is available for delivery, the water shall be apportioned between them if necessary in the manner and times that they shall agree upon. In the event they do not agree, such water shall be apportioned between them by the District 50/50, i.e., one-half to Lodi and one-half to Stockton; provided that, if such apportionment would result in either party losing any deficiency curtailment water banked to the credit of that party because of non-use within the required eight-year period under Section 6.b., that party shall have a first right to such portion of the available water that will avoid such loss.

d. The water furnished by the District under this Agreement shall be used or furnished by the City only for domestic, municipal, industrial, irrigation and other beneficial uses. The City shall have no right to sell or transfer any of its entitlement to water from the District under the Agreement, permanently or on interim basis, or to use any of said water outside of the City, without the District's prior approval.

e. The District further agrees that it will, during the term of this Agreement at the City's request, divert from the Mokelumne River at the District's Woodbridge Dam and wheel and convey through the District's canal system to the City's delivery point any non-District water acquired by or available to the City, subject to the District having available capacity for that purpose and subject to the City paying a per-acre-foot charge in an amount which the District determines to be its costs for such service. The District's cost for such service in year 2007 would be $20 per acre-foot. There would be no wheeling charge for District water in the event the City purchases some of the District water that is under the purchase contract of the City of Lodi.

f. Commencing on January 1 of 2010, and on January 1 of each year thereafter, the amounts payable to the District under paragraph 1, and the amounts payable to the District under subparagraphs 2.b. and 2.e., shall be increased by two percent per year above the amounts payable during the preceding calendar year. In the event that the annual change in the Consumer Price Index (CPI-W, unadjusted U.S. average) published in December of each year by the United

States Bureau of Labor Statistics, commencing in December of the preceding year, has increased more than two (2) percent above the December Index of the prior year, the increases in the amounts payable in the ensuing year shall be in the percentage of that increase; provided that any such annual increase shall not exceed five percent (5%).

g. The payments by the City to the District under this Agreement shall be deemed to include the payment during the term of the Agreement of all District groundwater recharge fees on parcels within the City of Stockton which are also located within the boundary of the District.

3. Term of Agreement and Right to Purchase Additional Water.

a. This Agreement shall be effective from the date of execution hereof, and shall remain in effect for a term of forty (40) years from said date.

b. Upon receipt by the District of written notice and request for renewal from the City at least two years in advance of the termination of the Agreement, the District agrees to negotiate with the City for a renewal of this Agreement for an additional forty (40) year term, on terms and conditions that are reasonable and equitable and which are satisfactory to the District.

c. Right to Purchase Additional Water. The City shall have the further right during the initial term of this Agreement to buy up to an additional 6,500 acre-feet of water from the District based upon the annexation of additional lands within the District to the City of Stockton after the completion and commencement of operation of the initial phase of the City's Delta Water Treatment Plant, and which as a result of such annexation will be taken out of agricultural production, as follows. For each acre of land so annexed after such date which is now zoned agricultural and which has been irrigated with District water:

- and for which a tentative subdivision map is approved for such acreage for use other than agriculture,
- and which is to be served a water supply by the utility water system now serving lands within City of Stockton,

the City will be entitled to purchase an additional 3.0 acre-feet of water per such acre from the District, on the same terms and subject to the same conditions herein applicable to the 6,500 acre-feet under this Agreement.

4. City Payments to be Made from City's Water System Revenues. The City shall make payments under this Agreement solely from the Revenues of the Stockton Municipal Water System. The City hereby pledges the Revenues to the payments required hereunder. Nothing herein shall be construed as prohibiting the City from using any other funds and revenues for purposes of satisfying any provisions of this Agreement. So long as the City is in compliance with all of it obligations hereunder, such pledge shall not prevent its application of Revenues to other operating expenses of the Stockton Municipal Water System or, subject to the payment of such operating expenses, to other lawful purposes, or impair the rights of any recipient of Revenues lawfully so applied. District agrees that it will subordinate the pledge of Revenues hereunder to any bond or bonds issued for the purpose of financing capital improvements to the

City's Municipal Water System for a period not to exceed three years from the effective date of this Agreement.

"Revenues" means "all gross income and revenue received or receivable by the City from the ownership and operation of the Stockton Municipal Water System, which gross income and revenue shall be calculated in accordance with generally accepted accounting principles, including all rates, fees, and charges received by the City for water service and connection and hook-up fees and all other income and revenue howsoever derived by the City from the ownership and operation of or arising from the Stockton Municipal Water System, but excluding in all cases any proceeds or taxes and any refundable deposits made to establish credit, federal or state grants, or advances or contributions in aid of construction."

"Stockton Municipal Water System" means "the municipal water system of the City existing on the effective date of this Agreement and all additions, betterments, extensions and improvements thereto hereafter acquired or constructed."

5. No Permanent Water Right, and Dry Year Curtailments. The District has determined that the water to be made available annually for delivery to the District pursuant to this Agreement will be surplus to the needs of the District during the term of this Agreement. The parties further agree that no permanent right to the water supplied by the District shall accrue to the City except pursuant to and as limited by the terms of this Agreement.

a. The District agrees that it will deliver up to 6,500 acre-feet per annum to the City under this Agreement except in years when forecasted runoffs in the Mokelumne Watershed by DWR and EBMUD, beginning with the February 1 forecast by DWR and EBMUD indicates that the inflow to Pardee Reservoir as of July 1 may be less than a total quantity of 375,000 acre-feet (in which case the District's Regulated Base Supply of 60,000 acre feet under its Agreements with East Bay Municipal Utility District is reduced by thirty-five percent (35%)). In such years, the District may reduce the amount of water to be provided under this Agreement by up to fifty percent (50%), as follows. Beginning in March and in each ensuing month through July when the forecasts in those months continue to indicate that the July 1 inflow may be less than 375,000 acre-feet, the District may reduce the amount of water to be provided during those months under paragraph 2.a. by up to fifty percent (50%). In the event that any ensuing monthly forecast indicates that the estimated July 1 inflow will not be less than 375,000 acre-feet, City will be entitled to have the amount of its delivery under paragraph 2.a. for that month. The remainder of any undelivered amount under paragraph 2.a., by reason of the curtailments for that year shall be included as makeup deficiency water under paragraph 6.a. unless it was delivered later in that deficiency year. There shall be no reduction in the amount of the City's annual payment to the District in such years under paragraph 1.

b. The City shall have no claim for damages for breach arising from the unavailability of water from the District or for the District's inability to deliver water to the City due to failure of facilities, intervening acts, or actions of any state or federal agency exercising jurisdiction or claiming an interest and/or right to reduce or modify operations and quantities of water otherwise available to District, and any legal action, legislation, ruling or determination adverse to the

District affecting the agreement and beyond the reasonable control of the District. District shall make good faith efforts to vigorously oppose such reductions.

6. Carryover of Entitlements. Unused water may not be carried over by the City from year to year except that the right to receive water may be "banked" for later use, as follows:

a. For each calendar quarter beginning January 1, 2010 in which payments to District are made under paragraph 1 of this Agreement but in which the City is unable to take water deliveries under the Agreement because the commencement of operations of the initial phase of the City's DWSP has not begun, the City may carry over and have credit for one-fourth of its annual water entitlement, not to exceed a total of 13,000 acre-feet. The District will make this water available for later delivery during the initial 40-year term of this Agreement, not to exceed 2,000 acre-feet per year, at such times as the District has extra water available as determined solely by the District. There will be no additional charge for the delivery of such banked water.

b. If delivery of water to the City is curtailed by District's maintenance or other District activities or by reason of a dry year condition as provided in paragraph 5.a. and is not used later in that year, then the City may carry over and have credit for the amount of such curtailment for later delivery at such time(s) as the District has extra water available as determined solely by the District. Any City credits for curtailed segments of carryover water shall expire at the end of eight (8) years from the end of the period in which the curtailment for the segment of curtailed water occurred. Such credits for the delivery of curtailed carryover water which accrue less than eight years immediately preceding the termination date of this Agreement, may extend beyond the termination of this Agreement and be utilized within eight years from the year of their accrual at such time(s) as the District has extra water available as determined solely by the District. There will be no additional charge for the delivery of such banked water.

c. The determination of whether any such banked water or curtailment water is available for delivery shall be made solely by the District, and shall be taken by the City in the years that the District determines that it is available, at the times and in the amounts determined by the District after consulting with the City on the times and amounts that is most convenient to the City.

d. In the event that both the City of Stockton and the City of Lodi request water banked to their respective credits during the same period(s) that the water is available for delivery, the water shall be apportioned between them if necessary in the manner and times that they shall agree upon. In the event they do not agree, the available water shall be apportioned between them 50/50 by the District, or one-half to each; provided that, if such apportionment would result in either party losing any deficiency curtailment water banked to the credit of that party because of non-use within the required eight-year period under Section 6.b above, that party shall have a first right to such portion of the available water that will avoid such loss.

e. Except as provided in subparagraph a, no credits shall accrue for water that is available to but is unused by the City.

7. Water Quality, Temporary Interruptions, and Responsibility for the Water Beyond Point of Delivery.

a. The water being supplied to the City is raw water diverted from the Mokelumne River, and the character or quality of the water furnished hereunder may vary from time to time. District does not guarantee in any respect the character or quality of the water furnished pursuant to this Agreement, provided that the District shall not apply or use any chemicals within the Canal section used to deliver water to the City that the City determines to be deleterious to the quality of the water for the uses made by the City of such water.

b. It is agreed that there may be, in addition to shortages of water, temporary discontinuance or reduction of water to be furnished for the City as herein provided, for purposes of investigation, inspection, maintenance, repair or replacement as may be necessary of any of the facilities used by the District for furnishing water to the City. The District agrees to provide the City notice of such temporary discontinuance or reduction of water as soon as such information is available to the District.

c. The City shall hold the District harmless from and defend the District from all claims or expenses on account of damage or claim of damage of any nature whatsoever from which there is legal responsibility, including property damage, personal injury or death, arising out of or connected with the delivery, control, carriage, handing, use, or disposal or distribution of water furnished hereunder beyond the point of delivery of water into the City's system from the District's Canal System.

8. Arrearage in Payments. No water shall be furnished to the City during any period in which the City may be in arrears in payment of charges accruing hereunder after the determination on the amount thereof as above provided. Interest on arrearage in payment shall be charges at a rate of 1-1/2% per month and compounded monthly, commencing 45 days after the due date of the payment.

9. Assignment. The provisions of this contract shall apply to and bind the successors and assigns of the respective parties hereto; but no assignment or transfer of this contract or any part thereof or interest therein by the City shall be valid unless and until approved in writing by the District; and no assignment of the obligation to provide or deliver the water shall be assignable by the District without the consent of the City.

10. CEQA and Validation of Agreement.

a. The parties agree that the District will be Lead Agency for purposes of compliance with any requirements of the California Environmental Quality Act pertaining to the execution of this Agreement by each party. District and City acknowledge and agree that the obligations of the parties under this Agreement are conditioned on District and City completing, proceedings under CEQA in connection with the Agreement and the expiration of the applicable period for any challenge to the adequacy of District's and City's compliance with CEQA without any challenge being filed. District and City shall select a qualified environmental consultant acceptable to both to prepare the underlying documentation for District's review and

consideration as may be required by CEQA and applicable law. City shall direct the qualified environmental consultant and both City and the environmental consultant shall coordinate the preparation of the environmental analysis with District to ensure an adequate and complete consideration of potential environmental impacts. Any documentation submitted by City shall be sufficient for District to make a fair decision in accordance with applicable law. Neither party shall be bound hereby unless and until District's compliance with CEQA is completed and there is no possibility of a challenge pursuant to CEQA. The obligations of each party shall be conditioned upon the result of CEQA compliance not imposing any obligations or conditions upon that party's performance that are unacceptable to that party. District and City acknowledge that any modifications to the proposed project resulting from District's compliance with CEQA may necessitate amendments to this Agreement in a mutually acceptable manner.

b. A validation action may be brought to determine the validity of this agreement pursuant to Section 22670 of the Water Code and Sections 860 et seq of the Code of Civil Procedure, within the 60-day time limit of Section 860. In the event any such action is brought, then the agreement and the parties' obligations hereunder shall be conditioned upon the entry of a judgment affirming the validity of the agreement. In the event the validation judgment contains conditions or restrictions which impose upon either party costs, requirements, obligations or limitations in their performance of the agreement or upon their operations or property interests which were not reasonably anticipated by that party as a consequence of this Agreement and which are in that party's judgment unacceptable or otherwise not in the best interests of that party, that party shall have the right to terminate this Agreement, and in that event neither party shall have any further liability or obligation to the other party hereunder.

11. Fees and Costs. Any fees, costs or expenses, including attorney fees, administrative costs, and consultant fees, incurred by the District to effect the sale of water to the City, together with CEQA and any other regulatory approval, shall be paid by District and City on a 50/50 basis. The City shall not be required to contribute to any fees or costs incurred by District relating to other issues or disputes that may arise in any of said proceedings not directly relating to City's use of District water. District shall provide to City invoices and accountings of said fees and expenses on a quarterly basis.

12. City Use of District Rights of Way. The District agrees to cooperate with City and to agree to the City's use of any District right of way along the District's Canal System needed by the City for the conveyance or distribution of water it obtains from the District. Nothing herein warrants or guarantees that the District has the ability or authority to allow such use under its interest in its rights of way.

13. Entire Agreement. This Agreement contains the full and entire Agreement of the parties and there are no other conditions, either explicit or implied, nor any warranties or promises other than those contained within the written terms of this Agreement.

14. Time of the Essence. Time is of the essence in the performance of this Agreement.

15. Nonwaiver. The failure of either party to enforce or abide by a term or condition of this Agreement shall not constitute a waiver of that term or condition unless a written Agreement

is prepared specifically providing for the waiver or forgiveness of that term and such Agreement is executed by each party hereto.

16. Date of Execution. The date of execution of this Agreement is the date of execution by the party last signing the Agreement. City shall execute this Agreement within sixty (60) days after its approval for execution by the District, and upon City's failure to do so, District shall not be obligated to enter into this Agreement.

17. Lodi's Prior Rights. City acknowledges that District has an existing Agreement with the City of Lodi dated May 13, 2003, to sell 6,000 acre-feet of water per annum to Lodi, and the City acknowledges the receipt of said Agreement, as amended on JANUARY 16, 2006. City further acknowledges that by reason thereof, this Agreement to sell such water to the City of Stockton and the providing of water to Stockton hereunder is subordinate to the District's obligations to deliver such amount of water to Lodi under the Lodi Agreement as set forth in Section 4(c) of the Lodi Agreement, as amended. The District has offered the additional 6,500 acre-feet of water to be sold to Stockton, and Lodi has declined to exercise its right of first refusal to purchase the additional water.

IN WITNESS WHEREOF, the parties hereto have executed this instrument on the 22 day of JANUARY, 2008.

WOODBRIDGE IRRIGATION DISTRICT

By _____
William Stokes, President

Attest:

_____
Andrus Christensen, Secretary

CITY OF STOCKTON, A MUNICIPAL CORPORATION

By _____

Attest:

_____
Katherine Gong Meissner, City Clerk

APPROVED AS TO FORM:

_____
, City Attorney

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Appendix E
Transportation Impact Analysis

ESA

Transportation Impact Analysis

NORCAL LOGISTICS CENTER

Prepared for:

ESA

January 2014

FEHR & PEERS

WC12-2959

NorCal Logistics Center

Prepared for:
ESA

January 2014

WC12-2959

FEHR PEERS

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Appendices

Appendices included under separate cover.

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EXECUTIVE SUMMARY

This report presents the results of the transportation impact analysis (TIA) for the proposed NorCal Logistics Center (Project) proposed north of Arch Road and south of Mariposa Road in the City of Stockton, California.

PROJECT DESCRIPTION AND ANALYSIS PARAMETERS

The project site is located north of Arch Road and south of Mariposa Road in Stockton, California and consists of two sites to be subdivided; a 275-acre site and 50-acre site. The sites are zoned industrial, and are proposed to be developed with light industrial uses. Based on the net-acreage of 244 acres for the northern portion and 45 acres for the southern potion and an allowable floor-area-ratio of up to 0.50, the analysis presented in this study reflects a maximum of 6,280,480 square feet of light industrial uses constructed on the two sites combined; the actual level of development may be less. As part of the Project, Newcastle Road would be extended through the site connecting Arch Road to Mariposa Road. An analysis of a Project Alternative that would not connect Arch Road to Mariposa Road was also evaluated to the same level of detail as the proposed Project.

The purpose of the analysis is to identify potential transportation impacts of the proposed project on the surrounding roadway system, and recommend improvements to mitigate impacts considered significant in comparison to thresholds determined by City of Stockton and other responsible agencies. Intersections, freeway segments and freeway ramp operations were evaluated under Existing and Near-term conditions, both without and with the project. Daily roadway segment operations were evaluated under General Plan build-out conditions, without and with the project. A preliminary review of on-site circulation and vehicle access was conducted.

PROJECT TRAFFIC ESTIMATES

Vehicle trips generated by the proposed project were calculated based on trip generation rates from the Fehr & Peers *City of Stockton Trip Generation Study*. The rates were applied to the maximum building square footage that could be constructed on each site to calculate daily and peak hour driveway volumes for the proposed project. The proposed project is expected to generate approximately 21,500 daily vehicle trips, including 1,130 morning and 1,380 evening peak hour trips.

FINDINGS AND RECOMMENDATIONS

Existing Conditions

Results of the existing conditions assessment indicate that the study intersections in the vicinity of the site currently operate at acceptable service levels during the morning and evening peak hours. The addition of project traffic would worsen the operation of one study intersection and mitigation measures are proposed.

Several segments of State Route 99 (SR 99), including ramp merge/diverge areas at the Arch Road and Mariposa Road interchanges, are currently operating at unacceptable levels based on standards set by the City of Stockton, Caltrans and the San Joaquin Council of Governments. Implementation of planned improvements to SR 99 through the study area would result in acceptable freeway operations. The project applicant would be required to pay Public Facilities Fees (PFF), which includes the Regional Transportation Impact, Street Improvements, and Traffic Signal fees. Payment of these fees would constitute the projects fair share contribution to projects included in the fee.

Near-Term Conditions

The near-term condition scenario considers traffic from approved projects likely to be constructed in the next 5 to 10 years, and re-occupation of the vacant industrial space within the study area. Without the implementation of planned roadway improvements, operations of three study intersections are projected to degrade to unacceptable levels. Construction of planned improvements would result in acceptable operations with the addition of project traffic. The project would contribute to the construction of these improvements through the payment of the PFF.

Some segments of SR 99 would continue to operate at deficient levels and the addition of traffic from approved projects would further degrade the operation of SR 99 in the study area, which would be further worsened by the addition of project traffic. Planned improvements would result in acceptable service levels.

Cumulative Conditions

The analysis of General Plan build-out conditions was based on an evaluation of daily roadway segment operations. With the roadway improvements assumed in the General Plan Build-out network, the roadway segments in the vicinity of the project site are expected to have sufficient capacity to accommodate the anticipated vehicle traffic from build-out of the General Plan land uses, including development on the project site.

Project Alternative

Results of the Project Alternative assessment indicates that without providing the connection between Arch Road and Mariposa Road, the project would load more traffic onto the Arch Road corridor. However, the overall analysis results are similar to that of the Proposed Project. In the Existing Plus Project Alternative scenario, additional improvements would be needed at the Arch Road/Newcastle Road intersection to accommodate expected peak hour traffic flows until the ultimate intersection configuration is constructed.

In the near-term scenario, Project Alternative traffic would accelerate the need for planned improvements at the SR 99/Arch Road interchange and Arch Road/Frontage Road intersection.

The Project Alternative would impact the SR 99 at Mariposa Road southbound on-ramp in the existing condition, as opposed to just the near-term condition with the Proposed Project. No additional mitigation was identified.

No additional intersection, freeway or roadway segment impacts beyond those noted above were identified with the Project Alternative.

1.0 INTRODUCTION

This report presents the results of the Transportation Impact Analysis (TIA) for the NorCal Logistics Center (Project) proposed north of Arch Road and south of Mariposa Road, in Stockton. This chapter discusses the TIA purpose, analysis scenarios, study locations and methods, criteria used to identify significantly impacted locations, and report organization.

1.1 STUDY PURPOSE

The study purpose is to identify potential impacts of the proposed development on the surrounding transportation system and to recommend improvements to mitigate significant impacts. Potential project impacts were evaluated following the City of Stockton, Caltrans and San Joaquin Council of Government (SJCOG) guidelines. The proposed project consists of the development of up 6,280,480 square feet of light industrial and warehouse type uses. Approximately 1,692,000 square feet of development could occur north of Little John's Creek, with the remaining development occurring on the south side of the creek. A roadway over Little John's Creek is included as part of the project. However, this assessment considers a Project Alternative where the roadway connection is not constructed.

Operations of key intersections, freeway segments, and freeway ramps in the vicinity of the project site were evaluated under existing and future scenarios, both without and with the project. **Figure 1** presents the project location, surrounding roadway system, and study intersections. The proposed lotting plan is shown on **Figures 2A and 2B** for the northern and southern portions of the project.

1.2 ANALYSIS OVERVIEW

Project impacts on the study area roadway facilities were determined by measuring the effect project traffic would have on intersections and roadway segments in the vicinity of the site during the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods. The following intersections, as shown on **Figure 3**, were selected based on a review of the project location, prior analyses prepared for the site, and the amount of traffic that could be added to the intersections in the vicinity of the site. The list of study locations was approved by City staff and also reflects input from other responsible agencies, including Caltrans and SJCOG.

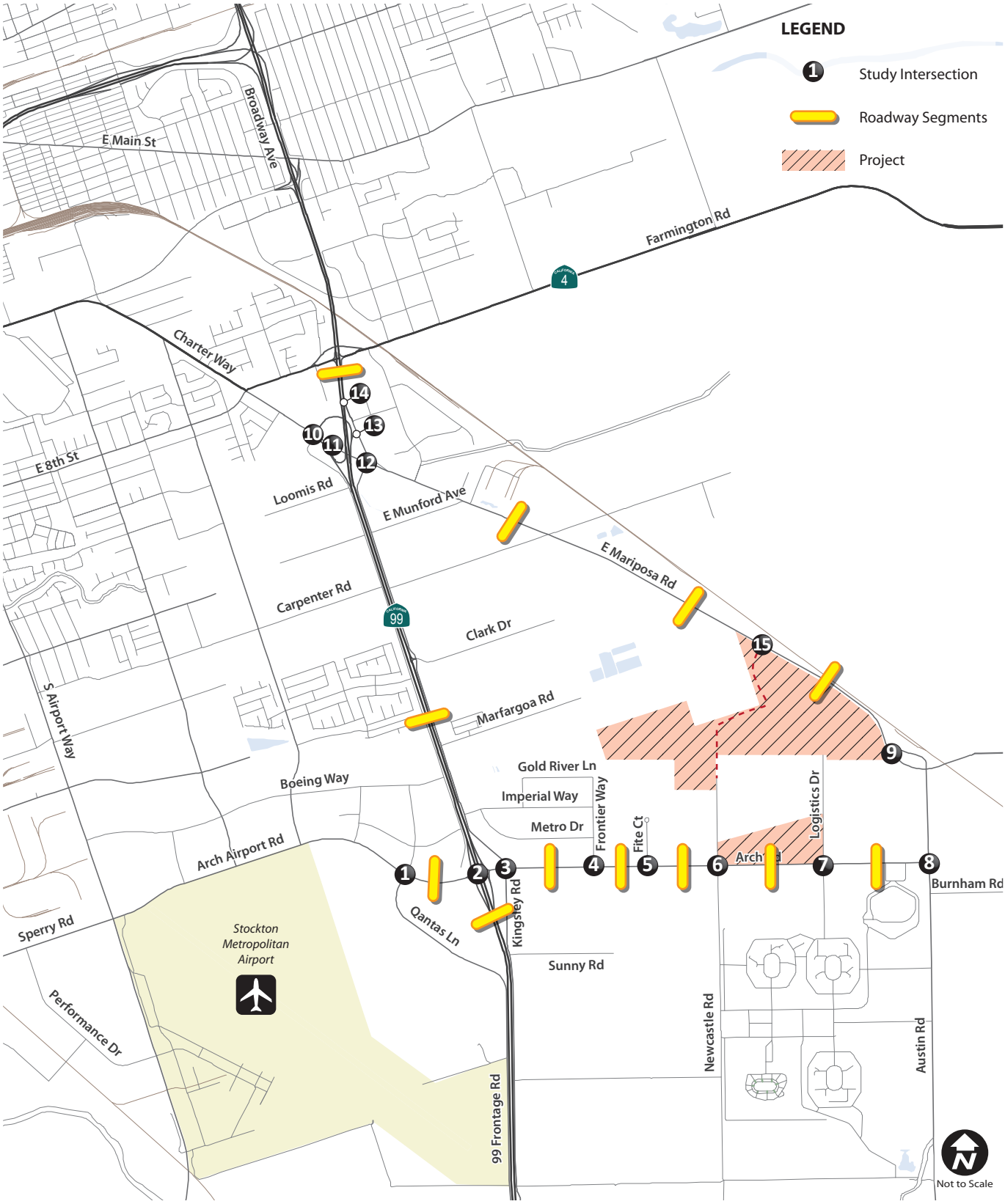
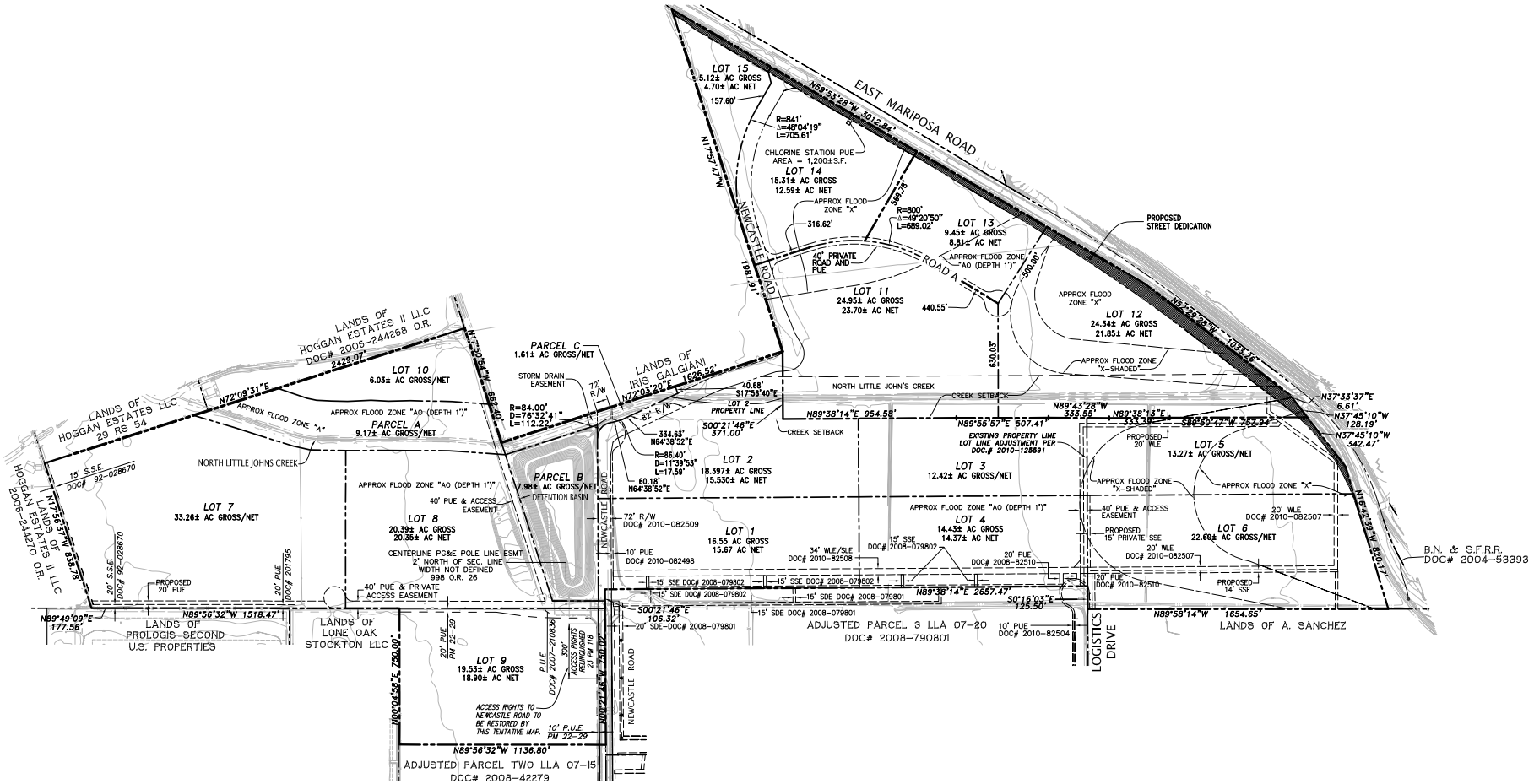


Figure 1.

Project Site and Analysis Locations

WC12-2959_1_StudyInt

FEHR PEERS



SOURCE: Kier & Wright, August 2012

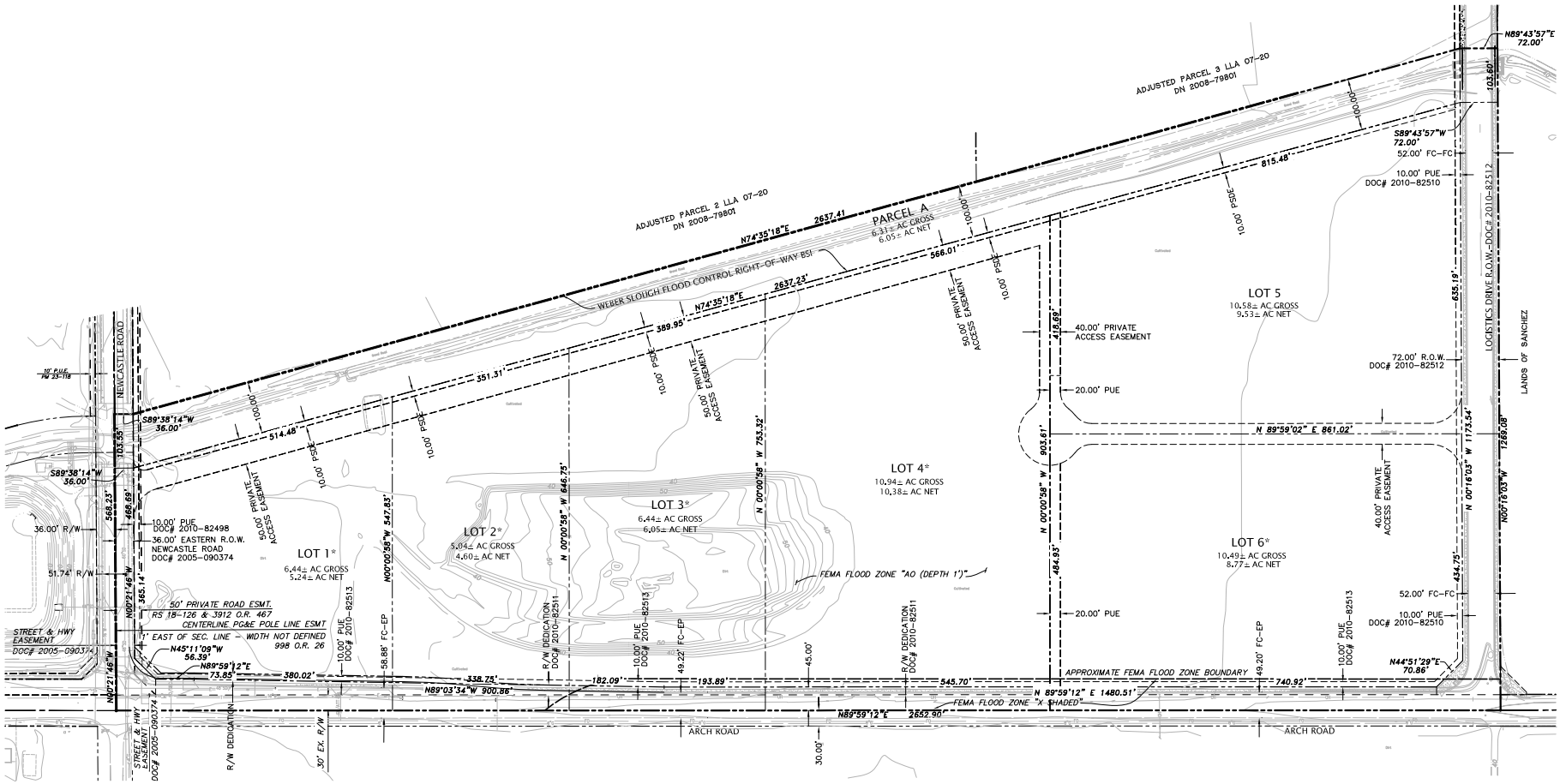
Not to Scale

Figure 2A.

Project Site Plan – Northern Portion

WC12-2959_2A_SitePlanN

FEHR & PEERS



SOURCE: Kier & Wright, August 2012

Not to Scale

Figure 2B.

Project Site Plan – Southern Portion

FEHR & PEERS

1) Arch-Airport Road/Qantas Lane
2) Arch-Airport Road/State Route (SR) 99
3) Arch Road/Frontage Road
4) Arch Road/Frontier Way
5) Arch Road/Fite Court
6) Arch Road/Newcastle Road
7) Arch Road/Logistics Drive
8) Arch Road/Austin Road
9) Austin Road/Mariposa Road
10) SR 99 Northbound Off-Ramp/Mariposa Road/SR 99 West Frontage Road/SR 99 Southbound On-Ramp
11) SR 99 Southbound Ramps/Mariposa Road
12) SR 99 East Frontage Road/Mariposa Road
13) SR 99 Northbound Mariposa Off-Ramp/ SR 99 East Frontage Road
14) SR 99 East Frontage Road/Peterson Road
15) Newcastle Road/Mariposa Road (with Project scenarios only)

Operations of the following freeway segments and ramps were also evaluated:

1) SR 99, north of Mariposa Road
2) SR 99, north of Arch-Airport Road
3) SR 99, south of Arch-Airport Road
4) SR 99 at Arch-Airport Road northbound on-ramp merge
5) SR 99 at Arch-Airport Road northbound off-ramp diverge
6) SR 99 at Arch-Airport Road southbound on-ramp merge
7) SR 99 at Arch-Airport Road southbound off-ramp diverge
8) SR 99 at Mariposa Road northbound on-ramp merge
9) SR 99 at Mariposa Road northbound off-ramp diverge
10) SR 99 at Mariposa Road southbound on-ramp merge
11) SR 99 at Mariposa Road southbound off-ramp diverge

Roadway Segments

For cumulative conditions, daily roadway segment operations, including the freeway mainline segments noted above, were evaluated consistent with the General Plan analysis for the following roadway segments:

1) Arch-Airport Road, east of Qantas Lane
2) Arch Road, east of SR 99 Frontage Road
3) Arch Road, east of Frontier Way
4) Arch Road, east of Fite Court

5) Arch Road, east of Newcastle Road
6) Arch Road, east of Logistics Drive
7) Mariposa Road, west of Austin Road
8) Mariposa Road, west of Project Driveway
9) Mariposa Road, west of Carpenter Road

1.2.1 ANALYSIS SCENARIOS

The following scenarios were evaluated for this study:

Scenario 1: Existing – Existing volumes obtained from recent counts and existing lane configurations.

Scenario 2: Existing Plus Project – Existing traffic volumes, plus traffic generated by the project.

Scenario 3: Near-Term – Existing volumes plus traffic from approved but not yet constructed developments in the area. Traffic that could be generated by vacant buildings in the vicinity of the project was also factored into this scenario. No roadway improvements were assumed in this scenario.

Scenario 4a: Near-Term With Project – Volumes from Scenario 3 plus the new traffic generated by the proposed project. Under his scenario, no roadway improvements were assumed, except the connection to Mariposa Road planned to be constructed with the project.

Scenario 4b: Near-Term With Project – Volumes from Scenario 4a. The intersection and freeway analysis considers planned roadway improvements in the study area.

Scenario 5: General Plan Build-out – Traffic volumes and transportation system resulting from build-out of the land uses and roadway network envisioned by the *2035 General Plan Update* without development on the proposed project site. The *2035 General Plan Update* build-out is proposed to include about 210,000 residential units and 200 million square feet of non-residential uses citywide.

Scenario 6: General Plan Build-out With Project – Traffic volumes and transportation system from Scenario 5 plus the new traffic generated by the proposed project.

For the existing and near-term scenarios noted above, which allow for relatively high degrees of certainty about the amount and location of future development and its associated travel, peak hour intersection and freeway operations were evaluated. For the cumulative condition scenario, where there is much more uncertainty about the magnitude and timing of potential future development, the evaluation focused on daily roadway operations.

1.3 ANALYSIS METHODS

The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the best operating conditions, to LOS F, with the worst operating conditions. LOS E represents "at-capacity" operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions. Level of service D is the limit of acceptable operations in the City of Stockton, except where Level of Service exceptions have been identified in the General Plan. The City of Stockton Transportation Impact Study Guidelines specify the use of the analysis methods outlined in the 2000 *Highway Capacity Manual* (HCM), Transportation Research Board. Although the Transportation Research Board has recently published the 2010 HCM, the City of Stockton has not yet adopted the analysis procedures prescribed in the 2010 HCM.

1.3.1 SIGNALIZED INTERSECTIONS

The level of service method approved by the City of Stockton analyzes a signalized intersection's operation based on average control vehicular delay, as calculated using the method described in Chapter 16 of the 2000 HCM. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections was calculated and correlated to a LOS designation as shown in **Table 1**. Operations of the closely-spaced signalized interchange ramp terminal intersections on Arch Road and Mariposa Road were evaluated using the Synchro 7.0 software programs; all other intersection operations were analyzed using the TRAFFIX 8.0 traffic analysis software program, as required by the City of Stockton Transportation Analysis Guidelines (July 2003).

TABLE 1
SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: *Highway Capacity Manual* (Transportation Research Board, 2000).

1.3.2 UNSIGNALIZED INTERSECTIONS

Operations of the unsignalized intersections were evaluated using the method contained in Chapter 17 of the 2000 *Highway Capacity Manual*. The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (See **Table 2**). At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and as well as for the left-turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. For all-way stop controlled locations, LOS is computed for the intersection as a whole.

TABLE 2
UNSIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Per Vehicle (Seconds)[1]
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: *Highway Capacity Manual* (Transportation Research Board, 2000).

1.3.3 FREEWAY MAINLINE ANALYSIS

For the freeway mainline segments, LOS was calculated using the method described in Chapter 23 of the 2000 *HCM*. This method takes into consideration peak hour traffic volumes, free-flow speeds, percentage of heavy vehicles, and number of travel lanes. These factors are used to determine the vehicle density, measured in passenger cars per mile per lane. **Table 3** summarizes the relationship between vehicle density and LOS for mainline freeway segments.

1.3.4 FREEWAY INTERCHANGE MERGE/DIVERGE

Freeway ramp merging and diverging operations were analyzed using the methods described in Chapter 25 of the 2000 *HCM*. This method correlates the LOS ratings to projected (computed) vehicle densities (passenger cars per mile per lane). **Table 4** summarizes the relationship between vehicular density and LOS for freeway ramps.

1.3.5 ROADWAY SEGMENT ANALYSIS

Roadway segment service levels were calculated by comparing the daily roadway volumes to the LOS thresholds developed as part of the Background Report for the City of Stockton General Plan Update (Fehr & Peers, 2004), as provided in **Table 5.**

TABLE 3
FREEWAY MAINLINE LOS CRITERIA

Level of Service	Description	Density Range (pc/mi/ln)[1]
A	Free-flow operations in which vehicles are relatively unimpeded in their ability to maneuver within the traffic stream. Effects of incidents are easily absorbed.	0 to 11
B	Relative free-flow operations in which vehicle maneuvers within the traffic stream are slightly restricted. Effects of minor incidents are easily absorbed.	> 11 to 18
C	Travel is still at relative free-flow speeds, but freedom to maneuver within the traffic stream is noticeably restricted. Minor incidents may be absorbed, but local deterioration in service will be substantial. Queues begin to form behind significant blockages.	> 18 to 26
D	Speeds begin to decline slightly and flows and densities begin to increase more quickly. Freedom to maneuver is noticeably limited. Minor incidents can be expected to create queuing as the traffic stream has little space to absorb disruptions.	> 26 to 35
E	Operation at capacity. Vehicles are closely spaced with little room to maneuver. Any disruption in the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow. Any incident can be expected to produce a serious disruption in traffic flow and extensive queuing.	> 35 to 45
F	Breakdown in vehicle flow.	> 45

Note: [1]pc/mi/ln = passenger cars per mile per lane.
Source: *Highway Capacity Manual* (Transportation Research Board, 2000).

TABLE 4
FREEWAY RAMP MERGE/DIVERGE LOS CRITERIA

LOS	Density[1]
A	≤ 10
B	10.1 to 20.0
C	20.1 to 28.0
D	28.1 to 35.0
E	> 35.1
F	Demand Exceeds Capacity

Note: [1]Density is presented in passenger cars per mile per lane (pc/mi/ln).
Source: *Highway Capacity Manual* (Transportation Research Board, 2000).

TABLE 5
DAILY ROADWAY SEGMENT LOS THRESHOLDS

Number of Lanes	Facility Type	LOS A	LOS B	LOS C	LOS D	LOS E
2	Arterial	10,000	11,100	14,000	17,500	20,600
4	Arterial	23,300	25,800	32,600	40,700	47,900
6	Arterial	33,000	37,000	46,600	58,300	68,600
8	Arterial	41,100	45,700	57,600	72,000	84,700
4	Freeway	27,600	45,200	63,600	77,400	86,400
6	Freeway	41,400	67,800	95,400	116,100	129,600
8	Freeway	55,200	90,400	127,200	154,800	172,800
10	Freeway	69,000	113,000	159,000	193,500	216,000
12	Freeway	82,800	135,600	190,800	232,200	259,200

Source: Background Report for the *City of Stockton General Plan Update*, Fehr & Peers, 2004.

1.4 SIGNIFICANCE CRITERIA

This section outlines the significance criteria used in this analysis relating to roadway system impacts. The criteria are based on California Environmental Quality Act (CEQA) guidelines, City of Stockton Guidelines (*City of Stockton Transportation Impact Analysis Guidelines*, July 30, 2003), and guidance from Caltrans and SJCOG.

1.4.1 CITY OF STOCKTON FACILITIES

The following thresholds of significance have been developed and used in the City of Stockton for transportation impact studies. Conditions without and with the project are compared to identify significant impacts to City of Stockton facilities according to the following criteria:

A. Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

   a. If a signalized intersection is projected to operate acceptably (i.e., LOS D or better with an average control delay of equal to or less than 55 seconds per vehicle) without the project and the project is expected to cause the facility to operate at an unacceptable LOS (LOS E or F), the impact is considered significant.

   b. If an intersection is projected to operate unacceptably (i.e., LOS E or F) without the project, and the project is expected to increase the average control delay by more than 5 seconds, the impact is considered significant.

   c. If an intersection is projected to operate at an unacceptable LOS E without the project and the project is expected to cause the facility to operate at an unacceptable LOS F, but the average control delay does not increase by more than 5 seconds, City staff would determine whether the project has a significant impact.

   d. If the operations of an unsignalized study intersection is projected to decline from acceptable to unacceptable with the addition of Project traffic, and if the installation of a traffic signal based on the *Manual on Uniform Traffic Control Devices* (MUTCD) Peak Hour Signal Warrant (Warrant 3) would be warranted, the impact is considered significant.

B. Would the Project conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads and highways?

C. Would the Project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks;

D. Would the Project substantially increase traffic hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?

E. Would the project result in inadequate emergency access?

F. Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

1.4.2 CALTRANS FACILITIES

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway facilities (*Guide for the Preparation of Traffic Studies*, Caltrans, December 2002); however, Caltrans recognizes that achieving LOS C/LOS D may not always be feasible. Consistent with the City of Stockton level of service policy for the intersections in the study area, a standard of LOS D or better on a peak hour basis was used as the planning objective for the evaluation of potential freeway impacts of this development. The following criteria were used to evaluate potential freeway impacts:

- If a Caltrans facility (ramp terminal intersection, freeway mainline, ramp merge/diverge area) is projected to operate acceptably (i.e., LOS D or better) without project and the project is expected to cause the facility to operate at an unacceptable service level (i.e., LOS E or worse), the impact is considered significant.
- If a Caltrans facility is projected to operate unacceptably (i.e., LOS E or worse) without project and the project is expected to increase delay or density, the impact is considered significant.

1.4.3 SAN JOAQUIN COUNCIL OF GOVERNMENTS (SJCOG)

SJCOG is the designated Congestion Management Agency (CMA) for San Joaquin County. As such, they are required to maintain the state-mandated Regional Congestion Management Program (RCMP) for roadways within the County. Within the study area for this project, Arch Road west of SR 99, Mariposa Road and SR 99 are designated RCMP facilities. Study intersections that are also RCMP facilities include:

- Arch-Airport Road/State Route (SR) 99
- SR 99 NB Off-Ramp/Mariposa Road/SR 99 West Frontage Road/SR 99 SB On-Ramp
- SR 99 SB Ramps/Mariposa Road
- SR 99 East Frontage Road/Mariposa Road
- SR 99 NB Mariposa Off-Ramp/SR 99 East Frontage Road

Similar to the City of Stockton, the LOS standard for RCMP facilities has been set at LOS D. However, there are exceptions for facilities that currently operate at LOS E or F.

1.5 REPORT ORGANIZATION

This report is divided into eight chapters as described below:

Chapter 1 – Introduction discusses the study purpose and organization of this report.

Chapter 2 – Existing Conditions describes the transportation facilities and existing traffic operations in the project vicinity, including the surrounding roadway network; transit, pedestrian, and bicycle facilities; typical weekday morning (AM) and evening (PM) peak-hour vehicular traffic volumes; and intersection, freeway mainline, and freeway ramp operations.

Chapter 3 – Project Characteristics presents relevant project information, such as description of the project components and project traffic estimates.

Chapter 4 – Existing Plus Project Conditions addresses the existing condition plus the project, and discusses project vehicular impacts.

Chapter 5 – Near-Term Conditions addresses existing traffic plus traffic from development anticipated in the next 5 to 10 years, without and with the project, and discusses near-term project impacts.

Chapter 6 – General Plan Build-out addresses the cumulative condition, without and with the project and discusses associated project impacts. This scenario represents build-out of the land uses and transportation system developed for the 2035 General Plan Update.

Chapter 7 – Project Alternative presents the analysis of a circulation alternative that does not include a connection between Arch Road and Mariposa Road over Little John's Creek.

Chapter 8 – Site Access, On-Site Circulation and Parking presents a discussion of site access and on-site circulation.

2.0 EXISTING CONDITIONS

This chapter describes the existing conditions of the roadway, bicycle, pedestrian and transit facilities, existing traffic volumes, and presents the existing intersection, freeway mainline, and freeway ramp operations.

2.1 EXISTING ROADWAY NETWORK

Regional vehicular access to the project site is provided from the Arch Road and Mariposa Road interchanges with State Route 99 (SR 99). Site access would be provided from Newcastle Road, which would ultimately be extended through the project site connecting Mariposa Road and Arch Road, and from Logistics Drive. This section describes the existing roadway network, which was illustrated previously on Figure 1.

State Route 99 (SR 99) is a north-south freeway that traverses the central valley of California. It originates south of Bakersfield, branching from Interstate 5 (I-5) and continuing north to Sacramento, where it reconnects with I-5. SR 99 runs through the eastern portion of the City of Stockton, west of the project site. Two to three mixed-flow lanes are provided in each direction on SR 99 in the vicinity of the project site. Daily volumes on SR 99 in the vicinity of the project site according to information from Caltrans are approximately 78,000 vehicles.

Sperry Road/Arch-Airport Road/Arch Road is an east-west roadway, stretching from McKinley Avenue in the west and extending east to SR 99, where it becomes Arch Road. In the study area, Arch Road is generally a two-lane roadway with a posted speed limit of 45 miles per hour. A second westbound travel lane is provided for a short roadway segment west of Newcastle Drive. Additional lanes are also provided around the SR 99 interchange. Arch Road is currently undergoing improvements with some segments widened to provide additional travel capacity, although not yet striped to accommodate additional traffic. A sidewalk was recently installed on the north side of the street from Logistics Drive to approximately 100 feet east of Fite Court. There are no bicycle facilities on Arch-Airport Road/Arch Road in the project study area.

Qantas Lane is a north-south roadway that begins at Boeing Way to the north. South of Arch-Airport Road, Qantas Lane turns into the southbound West Frontage Road running alongside SR 99. North of Arch-Airport Road, Qantas Lane is a two-lane roadway, while four travel lanes are provided south of Arch-Airport Road. Limited pedestrian facilities and no bicycle facilities are provided along Qantas Lane within the project study area.

SR 99 East Frontage Road runs parallel to and east of SR 99. The facility ends at Petersen Road, where it merges with northbound SR 99. South of Arch Road, the Frontage Road becomes Kingsley Road and merges with northbound SR 99 before reaching French Camp Road. The SR 99 East Frontage Road is a two-lane roadway with limited pedestrian facilities and no bicycle facilities in the project study area.

Frontier Way is a north-south roadway that runs north from Arch Road, curves west to become Gold River Lane, and then curves south to become Arkansas Place before intersecting with Imperial Way. This is a two-lane roadway with a center two-way left-turn lane providing access to industrial and warehouse uses. On-street parking is permitted on both sides of the street. There are limited pedestrian facilities and no bicycle facilities on Frontier Way.

Fite Court is a north-south cul-de-sac extending north from Arch Road and providing access to existing industrial developments. This is a two-lane roadway with limited pedestrian facilities. No pedestrian or bicycle facilities are provided at the intersection with Arch Road.

Newcastle Road is a north-south roadway that extends south from Arch Road, and ends before reaching a riverbed roughly halfway between Arch Road and French Camp Road. Construction of a north leg of Newcastle Road from Arch Road has been completed, with a new signal installed and operating at the Newcastle Road/Arch Road intersection. South of Arch Road, the two-lane roadway has a posted speed limit of 45 miles-per-hour. North of Arch Road, sidewalks are provided in addition to curb and gutter. A center two-way left-turn lane is also provided to facilitate access to adjacent parcels. A crosswalk and pedestrian signals with pedestrian push buttons and pedestrian countdown signal heads have been installed along the southbound leg of the intersection with Arch Road. There are no bicycle facilities on Newcastle Road. No parking is permitted on Newcastle Road.

Logistics Drive is a north-south roadway extending north from Arch Road to provide access to industrial parcels. The two-lane roadway is approximately ½-mile long with a two-way center left-turn lane provided along much of its length. Sidewalks are provided on both sides of Logistics Drive for its entire length.

Austin Road is a north-south roadway that extends south from Mariposa Road, and passes through Manteca before terminating at Caswell Memorial State Park. Within the project study area, Austin Road is a two-lane roadway with no pedestrian or bicycle facilities.

Mariposa Road is an east-west roadway connecting E. Charter Way in south Stockton with Escalon Bellota Road in the east. In the study area, Mariposa Road is a two-lane roadway with a 45 mph posted speed limit. Mariposa Road runs roughly parallel to a railroad track with a grade-separated railroad crossing

located just east of the intersection with Austin Road. Limited pedestrian and no bicycle facilities are provided along the roadway within the study area.

2.2 BICYCLE, PEDESTRIAN, AND TRANSIT FACILITIES

Bicycle and pedestrian facilities can be classified into several general types, including:

- ***Class I Bicycle Paths*** – These facilities are located off-street and can serve both bicyclists and pedestrians. Recreational trails can be considered Class I facilities. Class I paths are typically 8 to 10 feet wide, excluding shoulders, and are generally paved.
- ***Class II Bicycle Lanes*** – These facilities provide a dedicated area for bicyclists within the paved street width through the use of striping and appropriate signage. These facilities are typically 4 to 6 feet wide.
- ***Class III Bicycle Routes*** – These facilities are found along streets that do not provide sufficient width for dedicated bicycle lanes. In such cases, the street is designated as a bicycle path through the use of signage informing drivers of bicyclists.
- ***Sidewalks*** – The exclusive realm of pedestrians, sidewalks provide pedestrian access and circulation. Sidewalks can vary in width from 5 to 20 feet; wider sidewalks are typically found in heavily urbanized and downtown areas.

Within the study area, limited pedestrian facilities are provided along Arch Road, Frontage Road, Frontier Way, Newcastle Road, and Mariposa Road. Crosswalks are provided at some of the intersections within the study area, such as at Newcastle Road/Arch Road. Some of the signalized intersections are not equipped with pedestrian signal heads and call buttons, such as at Qantas Lane/Arch Road. Sidewalks are provided at various intervals along Arch Road. There are no existing bicycle facilities in the study area.

Limited transit service is provided in the study area, with the closest transit stop approximately 2 miles from the project site at the Qantas Lane/Arch-Airport Road intersection. San Joaquin RTD lines 85 and 390, with service to Downtown Stockton and locations in between, serve this stop. The stop is marked by a sign, however there are no pedestrian or bicycle facilities at the stop location.

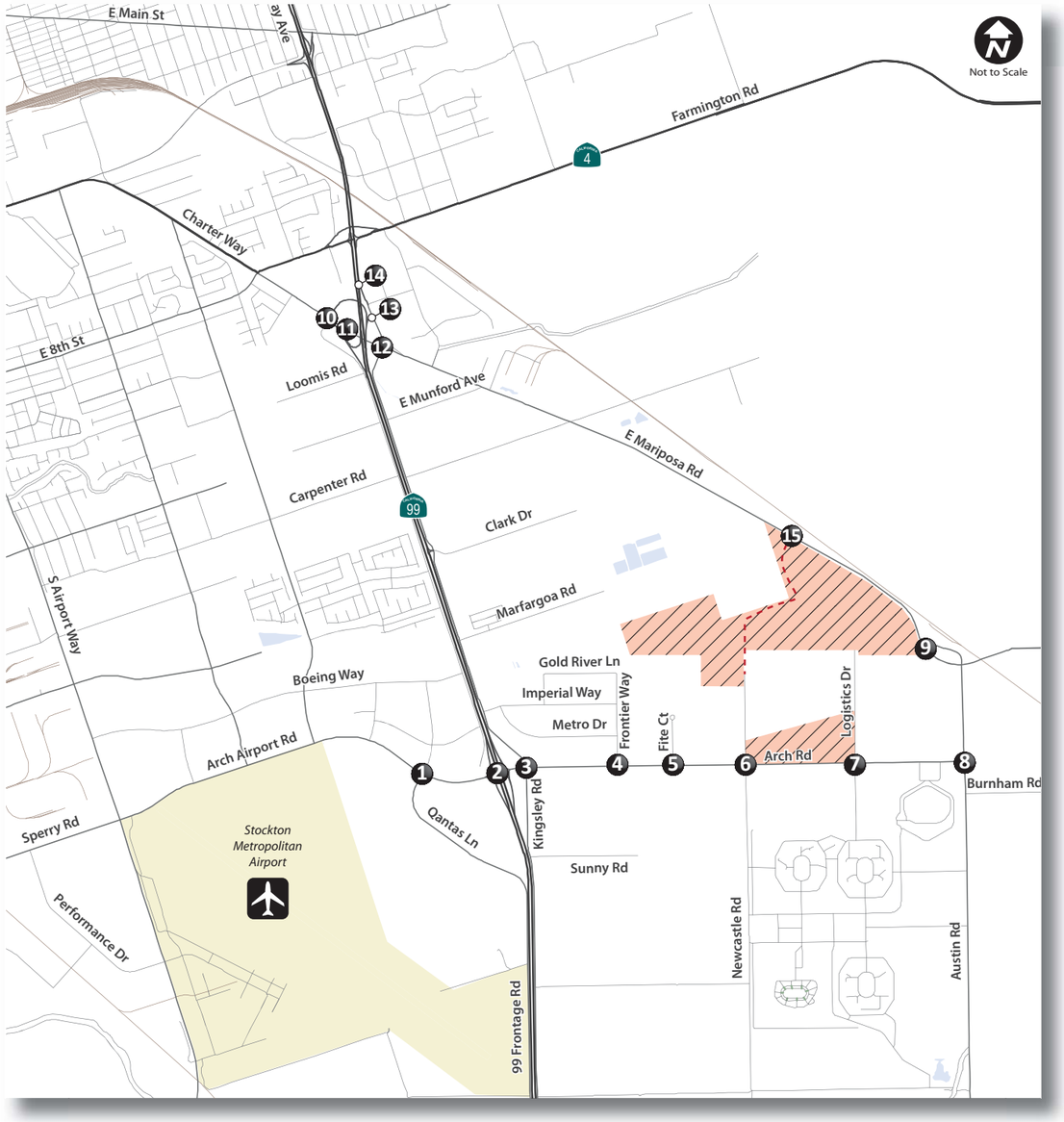
2.3 EXISTING INTERSECTION DATA

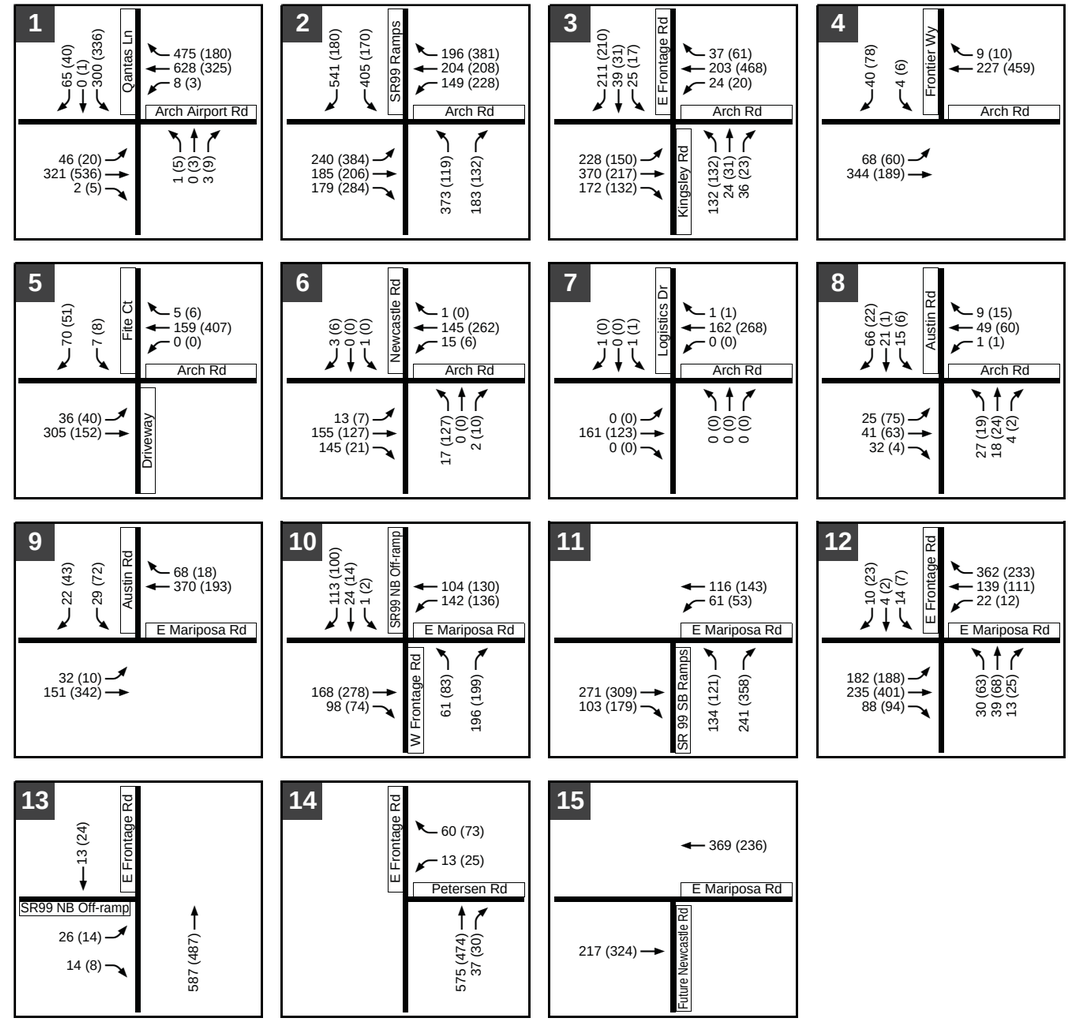
Weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period intersection turning movement counts were conducted at the study intersections on clear days with area schools in normal session in September 2012. The existing traffic counts are provided in Appendix A. For each intersection, the highest hourly traffic volume during the two count periods was identified. These peak-hour volumes are presented on **Figure 3**. Existing lane configurations and traffic control are shown on **Figure 4**. Classification counts were conducted at the study intersections to determine the percentage of total traffic comprised of heavy trucks in the area. The observed truck percentages are presented in **Table 6.**

TABLE 6
TRUCK TRAFFIC PERCENTAGES

Location	Peak Hour	
	AM	PM
1. Arch-Airport Road/Qantas Lane	13%	13%
2. Arch-Airport Road/State Route (SR) 99	16%	14%
3. Arch Road/Frontage Road	22%	17%
4. Arch Road/Frontier Way	30%	25%
5. Arch Road/Fite Court	33%	28%
6. Arch Road/Newcastle Road	43%	27%
7. Arch Road/Logistics Drive	45%	36%
8. Arch Road/Austin Road	55%	53%
9. Austin Road/Mariposa Road	23%	11%
10. SR 99 NB Off-Ramp/Mariposa Road/SR 99 West Frontage Road/SR 99 SB On-Ramp	18%	12%
11. SR 99 Southbound Ramps/Mariposa Road	21%	14%
12. SR 99 East Frontage Road/Mariposa Road	14%	11%
13. SR 99 NB Mariposa Off-Ramp/SR 99 East Frontage Road	19%	15%
14. SR 99 East Frontage Road/Peterson Road	19%	13%

Source: Fehr & Peers, 2013.





MAP KEY

1 Study Intersection

Project

VOLUMES KEY

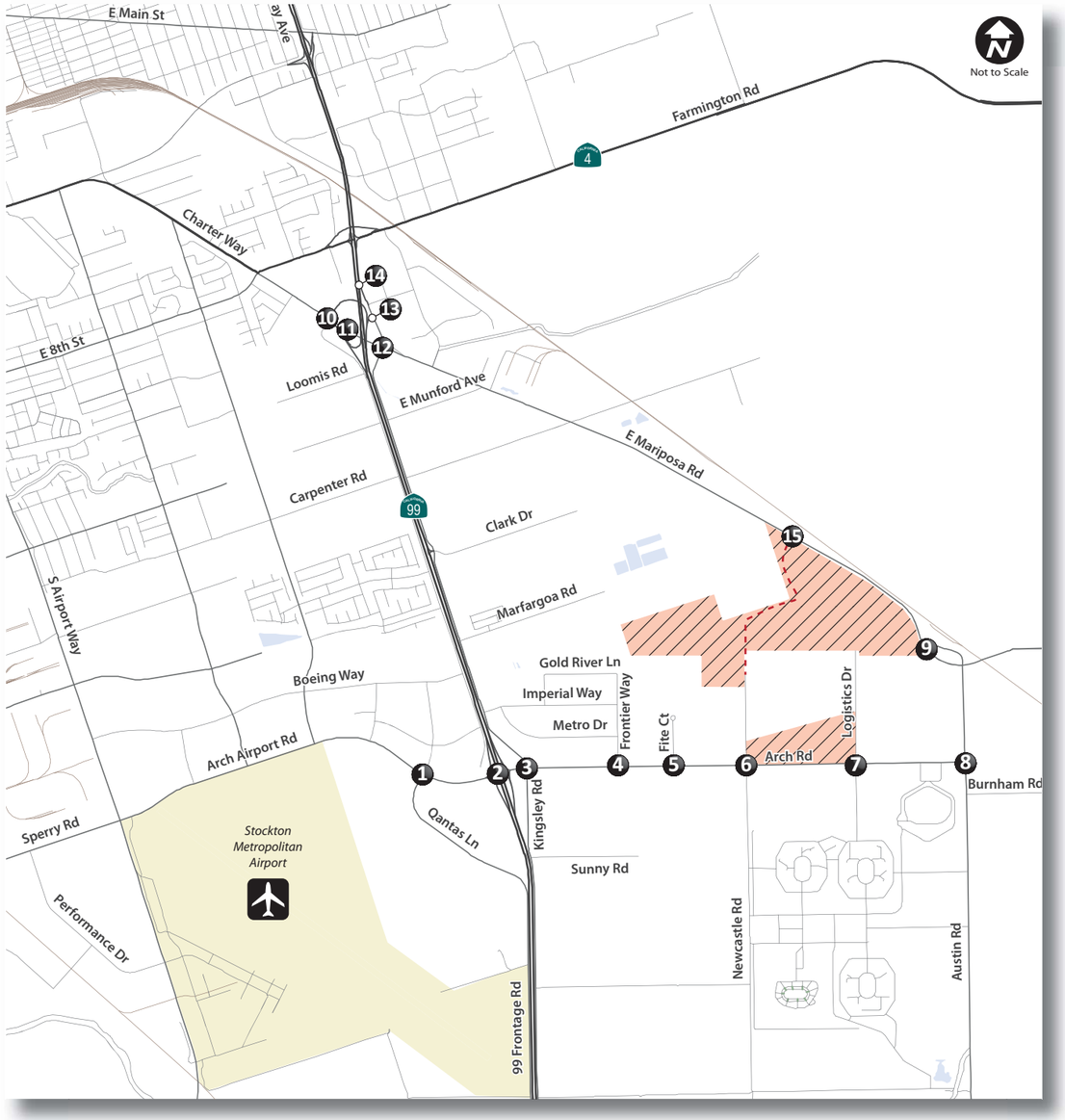
XX (YY) AM (PM) Peak Hour Traffic Volumes

Figure 3.

Existing
Peak Hour Intersection Turning Movement Volumes

WC12-2959_3_ExVol

FEHR PEERS



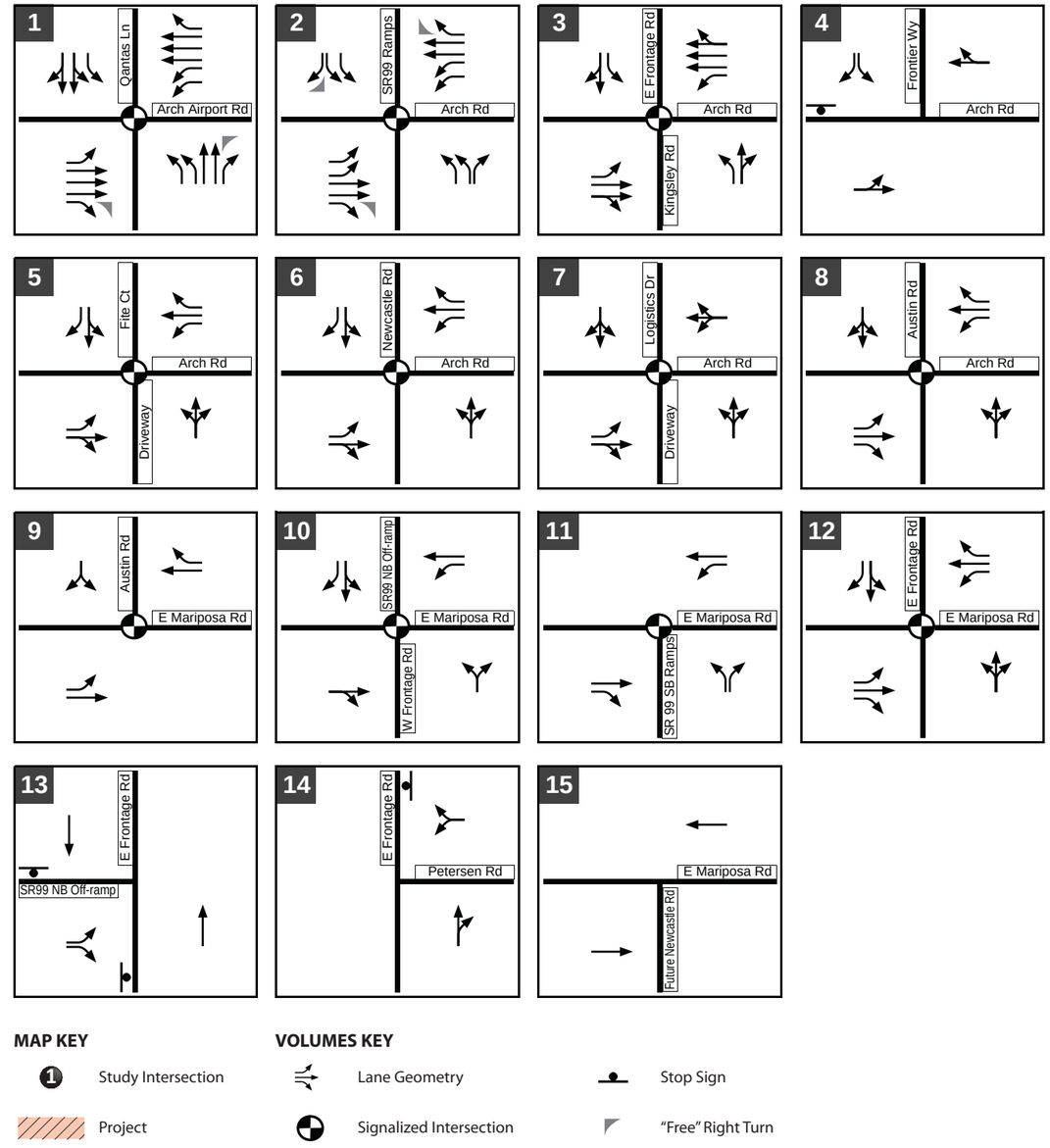


Figure 4.

Existing
Intersection Lane Configurations and Traffic Control

WC12-2959_4_ExGeo

FEHR PEERS

Trucks behave differently than passenger vehicles because they take longer to accelerate, decelerate, and negotiate turns and therefore affect intersection operations. The existing truck percentages were used in the analysis of intersection operations. In addition to truck percentages, peak hour factors[1] were used to account for the variation in traffic volumes during the peak hour. Peak hour factors based on the existing traffic counts were used for all study intersections, with a minimum peak hour factor of 0.85 used in the analysis.

2.4 EXISTING CONDITIONS ANALYSIS

2.4.1 INTERSECTION OPERATIONS

Existing intersection lane configurations and traffic control, signal timings, peak-hour turning movement volumes, truck percentages, and peak-hour factors were used as inputs for the level of service (LOS) calculations. The results of the LOS analysis for Existing Conditions are presented in **Table 7**. **Appendix B** contains the corresponding calculation sheets.

Measured against the City of Stockton level of service standards, which is LOS D, the signalized study intersections operate within an acceptable range. Existing intersection operations are also within the standards set in the CMP. The unsignalized intersections also operate at overall LOS C or better.

Peak hour signal warrants were also reviewed for the unsignalized intersections and the peak-hour warrants are not satisfied at the existing unsignalized intersections. LOS calculation sheets also present estimates of 95th percentile vehicle queues. The results were reviewed for the ramp terminal and adjacent intersections and the existing queues do not exceed the storage lengths of the existing turn pockets. **Appendix C** contains the Signal Warrant Worksheets and **Appendix D** presents a summary of the queuing results and queue worksheets for intersections 1 through 3 and 10 through 14.

[1] The relationship between the peak 15-minute flow rate and the full hourly volume is given by the peak-hour factor (PHF) as shown in the following equation: PHF=Hourly volume/(4* volume during the peak 15 minutes of flow). The analysis of level of service is based on peak rates of flow occurring within the peak hour because substantial short-term fluctuations typically occur during an hour.

TABLE 7
EXISTING INTERSECTION LEVELS OF SERVICE

Intersection	Control Type[1]	Peak Hour	Delay[2,3]	LOS[4]
1. Arch-Airport Road/Qantas Lane	Signal	AM PM	23 21	C C
2. Arch-Airport Road/State Route (SR) 99	Signal	AM PM	12 10	B A
3. Arch Road/Frontage Road	Signal	AM PM	27 28	C C
4. Arch Road/Frontier Way	SSSC	AM PM	2 (12) 2 (14)	A (B) A (B)
5. Arch Road/Fite Court	Signal	AM PM	13 10	B A
6. Arch Road/Newcastle Road	Signal	AM PM	9 21	A C
7. Arch Road/Logistics Drive	Signal	AM PM	3 3	A A
8. Arch Road/Austin Road	Signal	AM PM	21 21	C C
9. Austin Road/Mariposa Road	Signal	AM PM	9 14	A B
10. SR 99 NB Off-Ramp/Mariposa Road/SR 99 West Frontage Road/SR 99 SB On-Ramp	Signal	AM PM	34 32	C C
11. SR 99 Southbound Ramps/Mariposa Road	Signal	AM PM	22 21	C C
12. SR 99 East Frontage Road/Mariposa Road	Signal	AM PM	23 24	C C
13. SR 99 Northbound Mariposa Off-Ramp/SR 99 East Frontage Road	SSSC	AM PM	1 (13) 1 (11)	A (B) A (B)
14. SR 99 East Frontage Road/Peterson Road	SSSC	AM PM	2 (16) 2 (13)	A (C) A (B)

Notes: [1] Signal = signalized intersection, SSSC = Side-Street Stop-Controlled intersection
[2] Signalized intersection level of service based on weighted average control delay per vehicle, according to the HCM.
[3] Side-street stop control intersection LOS: intersection average and (worst approach) control delay per vehicle, according to the 2000 HCM.
[4] LOS = level of service. LOS calculations conducted using the TRAFFIX 8.0 level of service analysis software package, except for 1 -3 and 10-13 which were analyzed with the Synchro 7.0 level of service analysis software package.
Source: Fehr & Peers, 2013.

2.4.2 FREEWAY MAINLINE OPERATIONS

The SR 99 freeway mainline segments from north of Mariposa Road to south of Arch Road were analyzed based on the peak hour volumes shown in **Table 8** and the LOS criteria shown in Table 3. The analysis results indicate that northbound SR 99, north of Mariposa Road, operates at LOS E during the AM peak hour, and southbound SR 99 from north of Mariposa Road to south of Arch Road operates at LOS E during the PM peak hour, which exceeds the standards set by Caltrans and SJCOG. Calculation worksheets are provided in **Appendix E**.

TABLE 8
EXISTING PEAK HOUR FREEWAY MAINLINE ANALYSIS

Segment	AM Peak Hour			PM Peak Hour		
	Volume	Density	LOS	Volume	Density	LOS
Northbound SR 99 South of Arch Road SR 99	3,380	31.8	D	2,340	20.9	C
Northbound SR 99 between Arch Road and Mariposa Road	3,260	30.2	D	2,850	25.7	C
Northbound SR 99, North of Mariposa Road	3,720	**37.4**	**E**	3,260	30.2	D
Southbound North of Mariposa Road	2,690	24.1	C	3,940	**42.3**	**E**
Southbound SR 99 between Arch Road and Mariposa Road	2,480	22.2	C	3,690	**36.8**	**E**
Southbound SR 99 South of Arch Road	1,860	16.7	B	3,850	**40.2**	**E**

Notes: **Bold** indicates level of service standard exceeded. Traffic volumes from Caltrans.
Density measured in passenger cars per mile per lane.
Mainline segment level of service based on vehicle density, according to the *Highway Capacity Manual* (TRB, 2000).
Source: Fehr & Peers, 2013.

2.4.3 FREEWAY RAMP OPERATIONS

Ramp merge and diverge operations were evaluated for the SR 99/Arch-Airport Road and SR 99/Mariposa Road interchanges. As summarized in **Table 9,** the on-ramp at Arch-Airport Road to southbound SR 99 operates at LOS E during the evening peak hour. At the Mariposa Road interchange, the northbound on-ramp operates at LOS E during the AM peak hour and the southbound off-ramp operates at LOS E during the evening peak hour. The LOS E operations exceed the standards set by Caltrans and SJCOG. The remaining merge/diverge areas operate at LOS D or better during peak hours.

TABLE 9
EXISTING PEAK HOUR FREEWAY RAMP ANALYSIS

Ramp	Peak Hour	Density[1]	LOS[2]
SR-99 at Arch-Airport Road Northbound Off-Ramp	AM PM	31.2 23.8	D C
SR-99 at Arch-Airport Road Northbound On-Ramp	AM PM	20.9 16.6	C B
SR-99 at Arch-Airport Road Southbound Off-Ramp	AM PM	13.6 20.7	B C
SR-99 at Arch-Airport Road Southbound On-Ramp	AM PM	18.4 **36.1**	B **E**
SR-99 at Mariposa Road Northbound Off-Ramp	AM PM	33.3 29.6	D D
SR-99 at Mariposa Road Northbound On-Ramp	AM PM	**35.2** 31.0	**E** D
SR-99 at Mariposa Road Southbound Off-Ramp	AM PM	23.9 **35.3**	C **E**
SR-99 at Mariposa Road Southbound On-Ramp	AM PM	23.5 34.5	C D

Notes: **Bold** indicates level of service standard exceeded.
[1] Density measured in passenger cars per mile per lane.
[2] Ramp merge and diverge area LOS based on vehicle density, according to the *Highway Capacity Manual* (TRB, 2000).
Source: Fehr & Peers, 2013.

3.0 PROJECT CHARACTERISTICS

This chapter describes the procedure used to develop project traffic estimates. The results are used to evaluate potential impacts the project would have on the surrounding roadway system.

The amount of traffic added to the roadway system by the proposed development is estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. The first step estimates the amount of added traffic to the roadway network. The second step estimates the direction of travel to and from the project site. Third, the trips are assigned to specific roadway segments and intersection turning movements. The results of the process for the proposed project are described in the following sections.

3.1 PROJECT DESCRIPTION

The project site is located north of Arch Road and south of Mariposa Road in Stockton, California and consists of two sites to be subdivided; a 275-acre site and 50-acre site. The sites are zoned industrial, and are proposed to be developed with light industrial uses. Based on the net-acreage of 244 acres for the northern portion and 45 acres for the southern potion and an allowable floor-area-ratio of up to 0.50, the analysis presented in this study reflects a maximum of 6,280,480 square feet of light industrial uses constructed on the two sites combined; the actual level of development may be lessThe net-acreage considers land that would be dedicated for roadway improvements and flood control, and therefore is not available for development. As proposed, the northern site would be subdivided into 15 lots ranging between 5 and 33 net acres. A flood control area would create a 16th lot, although no development would occur in this area. The southern site would be subdivided into 6 lots ranging between 5 and 10 acres.

Regional access to the site would be provided from Arch Road and Mariposa Road, both with full interchanges at State Route 99. Local access to the project site is provided from Newcastle Road and Logistics Drive. Newcastle Road would connect Mariposa Road to Arch Road, and a new intersection would be constructed at Mariposa Road. Access to Logistics Drive is only provided from Arch Road. It should be noted that development on the southern portion is already entitled for development as a single parcel and this assessment evaluates development potential with the proposed 6 lot subdivision.

Under the Project Alternative with no roadway over Little John's Creek connecting Arch Road to Mariposa Road, approximately 1,692,000 square feet of development would take access from Mariposa Road with the remaining 4,588,480 square feet of development would take access from Arch Road.

3.2 TRIP GENERATION

Because of the large size and unique nature of modern light industrial/warehousing uses, care must be taken in determining appropriate trip generation rates that reflect current local conditions to the greatest extent possible. For this study, we reviewed several sources of trip generation information for light industrial and warehousing land uses, as presented in **Table 10**. Sources include the Institute of Transportation Engineers' (ITE) *Trip Generation*, 9th Edition (2012), the *Inland Empire Study* produced at the request of San Bernardino Associated Governments (SANBAG) in 2005, and the *Truck Trip Generation Study* for the City of Fontana, County of San Bernardino and the State of California in 1992 and 2003. Fehr & Peers also conducted a study of the trip generating characteristics of industrial uses in Stockton in September 2007. For that study, Fehr & Peers surveyed over 4,500,000 square-feet of industrial uses in the south Stockton area. Table 10 compares the daily and peak hour trip generation rates from these sources.

As shown, trip generation rates for light industrial and warehouse/distribution centers range widely. The rates contained in ITE's *Trip Generation* reflect average results for a series of data collection exercises at various locations throughout the United States over the last four decades, and may not reflect recent advances in the logistics industry which dictate the operation of many warehouse/distribution facilities. Recent data collection efforts from Southern California reflect warehouse distribution centers that generate significantly fewer peak hour trips than the centers included in ITE's *Trip Generation*.

Industrial trip generation rates from the City of Stockton's travel demand model fall between those from ITE and the Southern California surveys, and are consistent with the findings of the City of Stockton industrial trip generation study.

TABLE 10
TRIP GENERATION RATE[1] COMPARISON FOR LIGHT INDUSTRIAL, INDUSTRIAL AND WAREHOUSE USES

Source	Land Use	Daily	AM Peak Hour	PM Peak Hour
ITE Code 110[2]	Light Industrial	6.97	0.92	0.97
ITE Code 150[2]	Warehouse	3.56	0.30	0.32
ITE Code 152[2]	High-Cube Warehouse/ Distribution Center	1.68	0.11	0.12
City of Stockton Model[3]	Industrial	2.40	0.16	0.13
1992 Fontana Truck Study[4]	Light Industrial	1.60	0.10	0.15
2003 Fontana Truck Study[5]	Light Industrial	3.50	0.07	0.07
Inland Empire Study[6]	Light Industrial	1.10	0.08	0.08
City of Stockton Trip Generation Study[7]	Industrial	3.42	0.18	0.22

Sources:
1. Rates expressed in trips per 1,000 square feet of building area.
2. Institute of Transportation Engineers (ITE), *Trip Generation Manual*, (9th Edition), 2012.
3. City of Stockton Travel Demand Model, 2006.
4. *Truck Trip Generation Study*, City of Fontana, County of San Bernardino, State of California, 1992.
5. *Truck Trip Generation Study*, City of Fontana, County of San Bernardino, State of California, 2003.
6. San *Bernardino/Riverside County Warehouse/Distribution Center Vehicle Trip Generation Study* (Inland Empire Study), Crain & Associates, 2005.
7. Maximum observed rates, Fehr & Peers, 2007.

In consultation with city staff, it was determined that the City of Stockton Trip Generation Study provided the best source of current local information on the trip-generating characteristics of land uses similar to those in the proposed project. The Stockton trip generation study rates were applied to the potential development area of the project to calculate daily and peak hour driveway volumes for the proposed industrial uses. These rates are within the mid-range of other documented rates, have been validated by a Stockton-specific trip generation study, and are reflective of the same type of uses being proposed. As summarized in **Table 11**, the proposed project is expected to generate approximately 21,500 daily trips, including 1,130 AM and 1,380 PM peak hour trips.

TABLE 11
PROJECT TRIP GENERATION ESTIMATES

Land Use	Size	Daily Trips	AM			PM		
			In	Out	Total	In	Out	Total
Light Industrial	6,280,481 square feet	21,500	690	439	1,129	502	879	1,382

Source: Fehr & Peers, 2013.

Should the site be developed with all high-cube warehouse/distribution center type uses, the actual trip generation could be less than presented in Table 11.

Based on the Stockton industrial trip generation study, peak hour driveway volumes are expected to consist of about 75 percent passenger vehicles and 25 percent trucks during the AM peak hour and 78 percent passenger vehicles and 22 percent trucks during the PM peak hour. To adequately account for the operational characteristics of large trucks, the appropriate heavy vehicle percentages were used in the intersection and freeway operations analysis.

3.3 TRIP DISTRIBUTION AND ASSIGNMENT

Estimates of project trip distribution were developed based on the City of Stockton traffic model for both Existing/Near-term and General Plan Build-out scenarios, existing traffic volumes at the study intersections, and the location of complementary land uses. The proposed project trip distribution percentages for the Existing/Near-Term and General Plan Build-out conditions are shown on **Figures 5** and **6**, respectively.

The trips generated by the project were assigned to the roadway system based on the directions of approach and departure discussed above considering a roadway connecting Arch Road and Mariposa Road through the project site. Project trip assignment for the existing and near-term conditions are shown on **Figure 7** and daily project trip assignment for the General Plan Build-out scenario is shown on **Figure 8.**

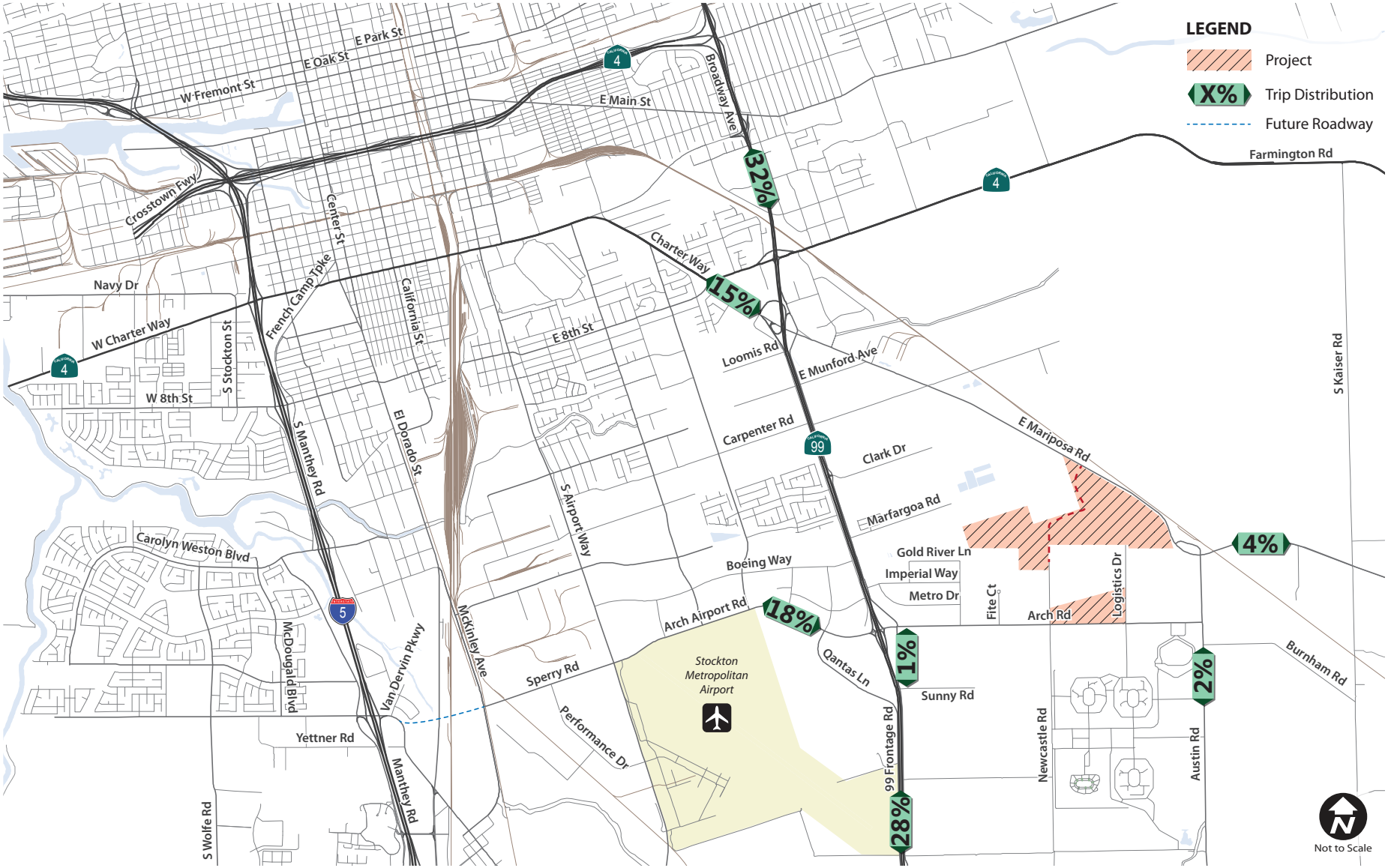


Figure 5.

Existing and Near-Term Approved Project Trip Distribution

WC12-2959_5_ExNTtripdistro

FEHR & PEERS

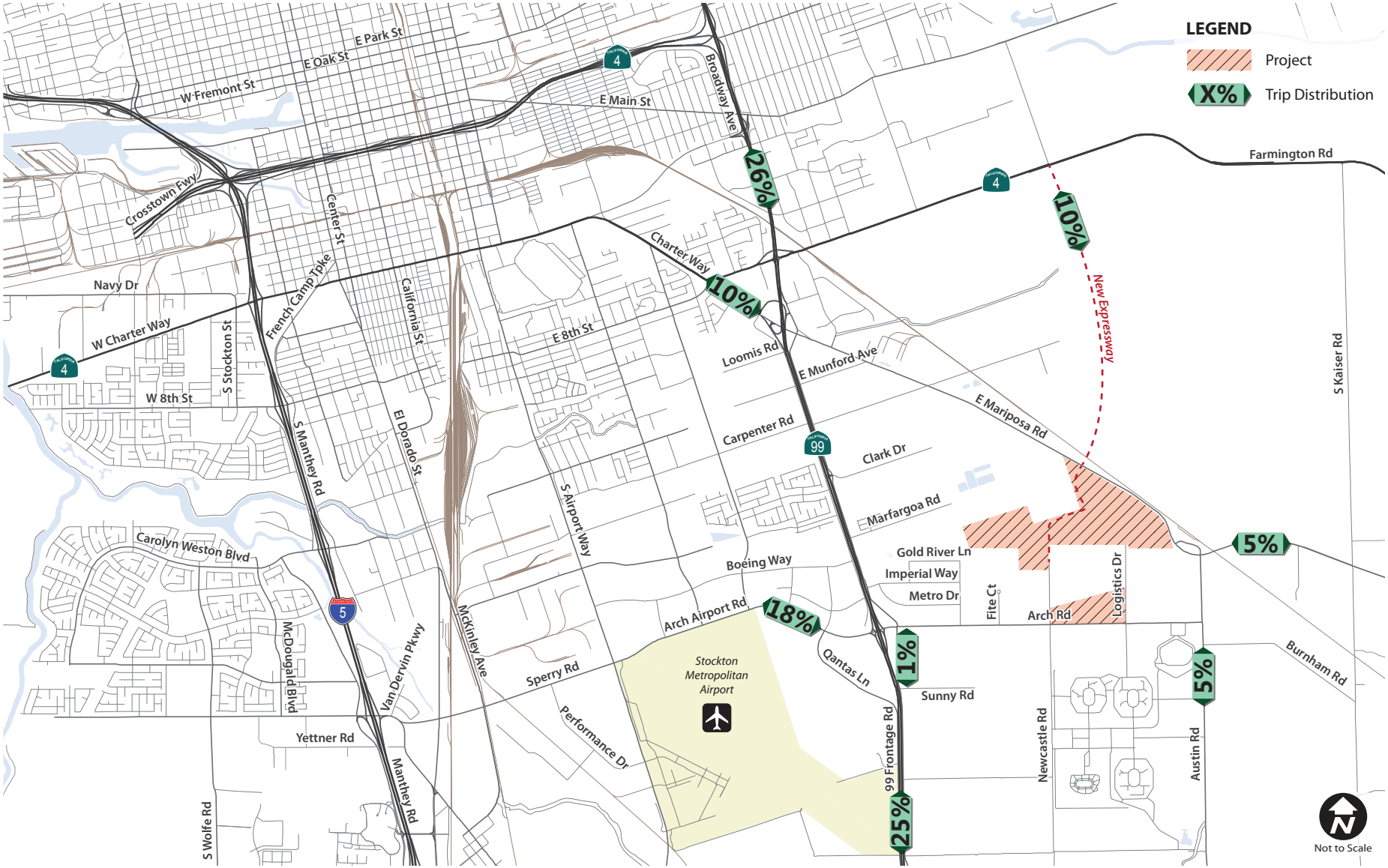


Figure 6.

General Plan Buildbout Project Trip Distribution

WC12-2959_6_GPBripdistro

FEHR & PEERS

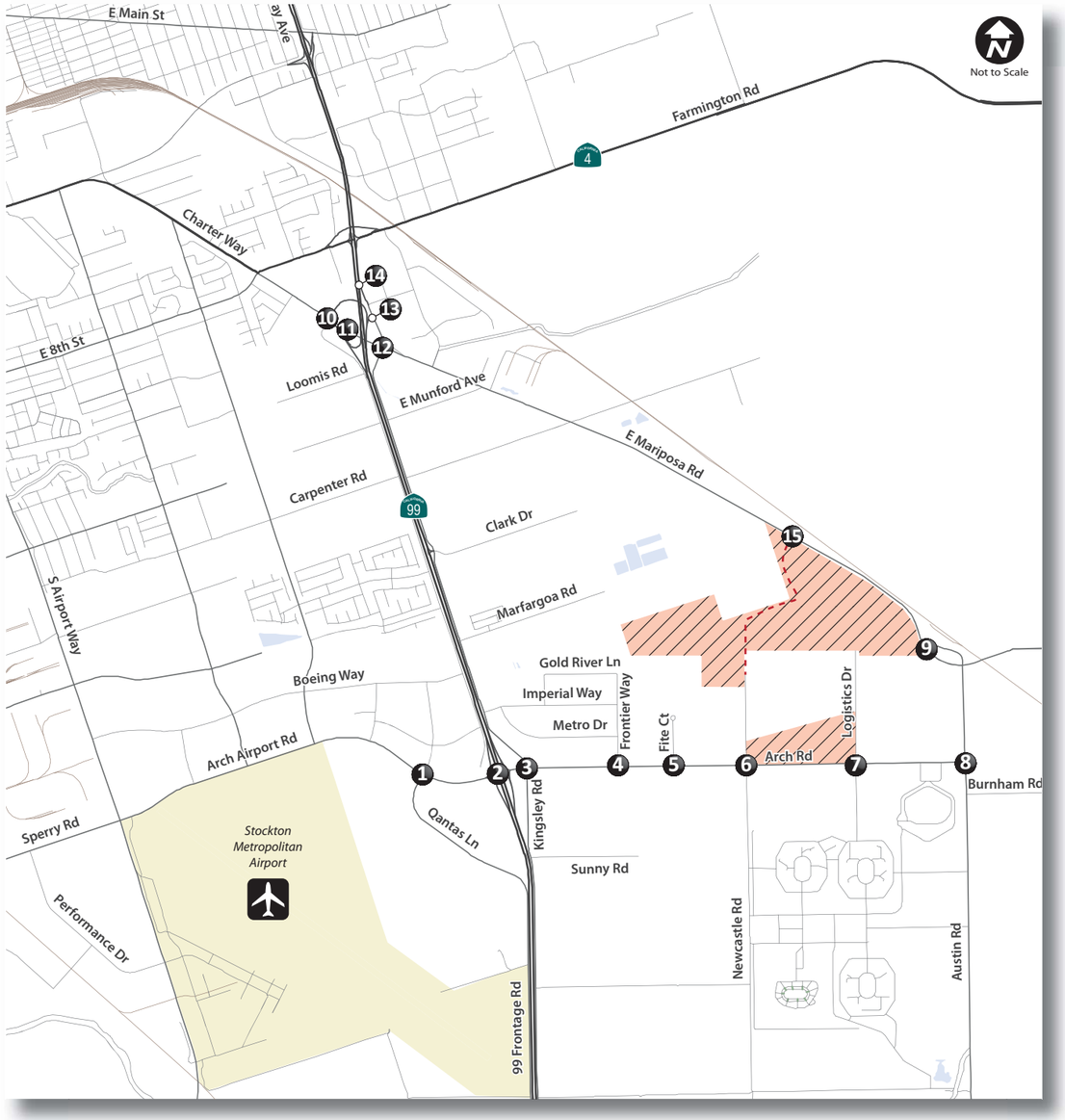


Figure 7.

Existing and Near-Term Peak Hour Project Trip Assignment

WC12-2959_7_ExNTtripassgn

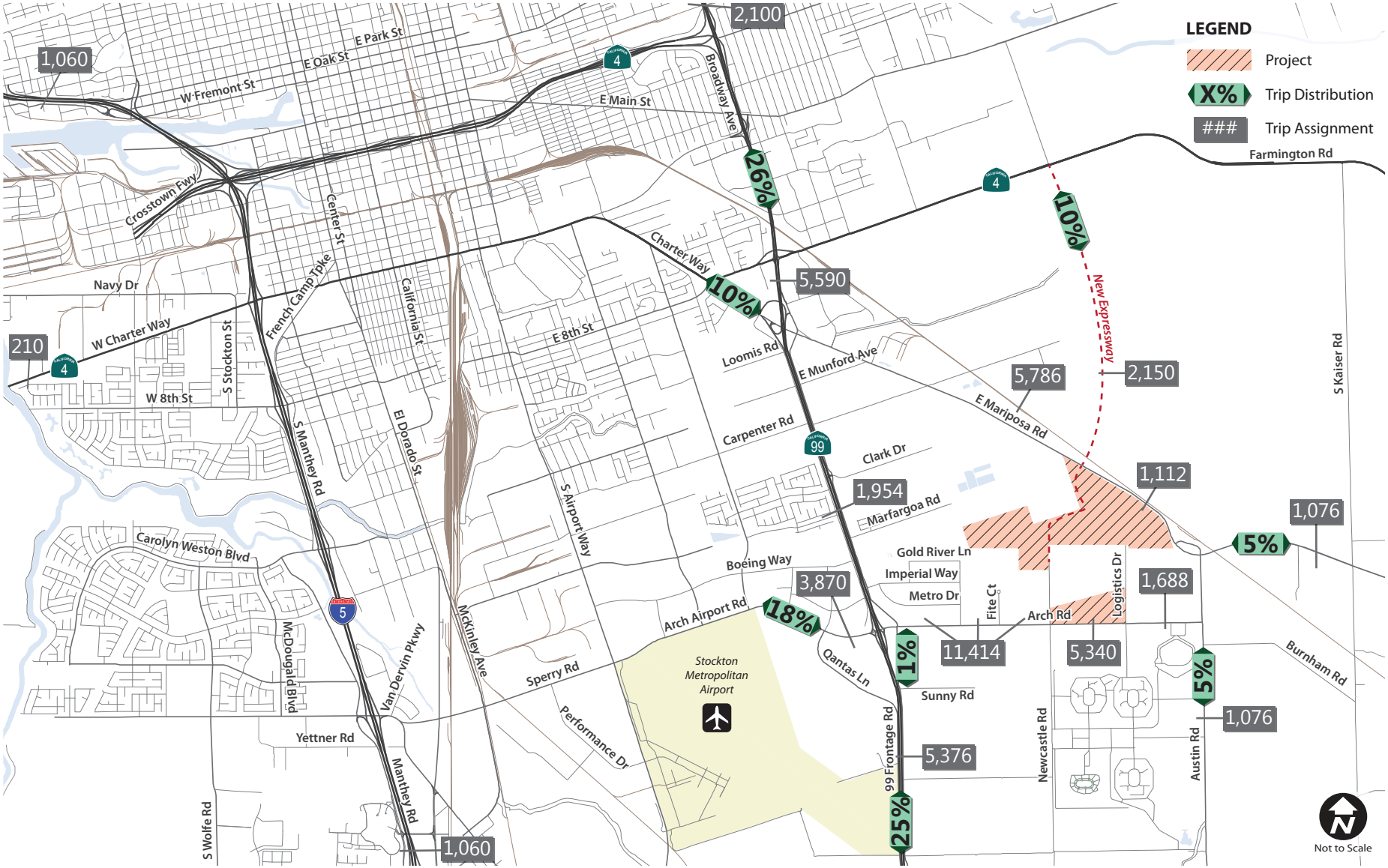


Figure 8.

General Plan Buildbout Daily Project Trip Assignment

WC12-2959_8_GPBtripassgn

FEHR & PEERS

4.0 EXISTING PLUS PROJECT CONDITIONS

This chapter evaluates potential off-site traffic impacts under Existing Plus Project conditions.

4.1 EXISTING PLUS PROJECT TRAFFIC VOLUMES AND ROADWAY IMPROVEMENTS

The project traffic volumes (Figure 7) were added to the existing peak hour traffic volumes (Figure 3) to estimate the Existing Plus Project peak hour traffic volumes, as shown on **Figure 9**. No roadway improvements were assumed, except for the extension of Newcastle Road over Little John's Creek that would connect Mariposa Road to Arch Road.

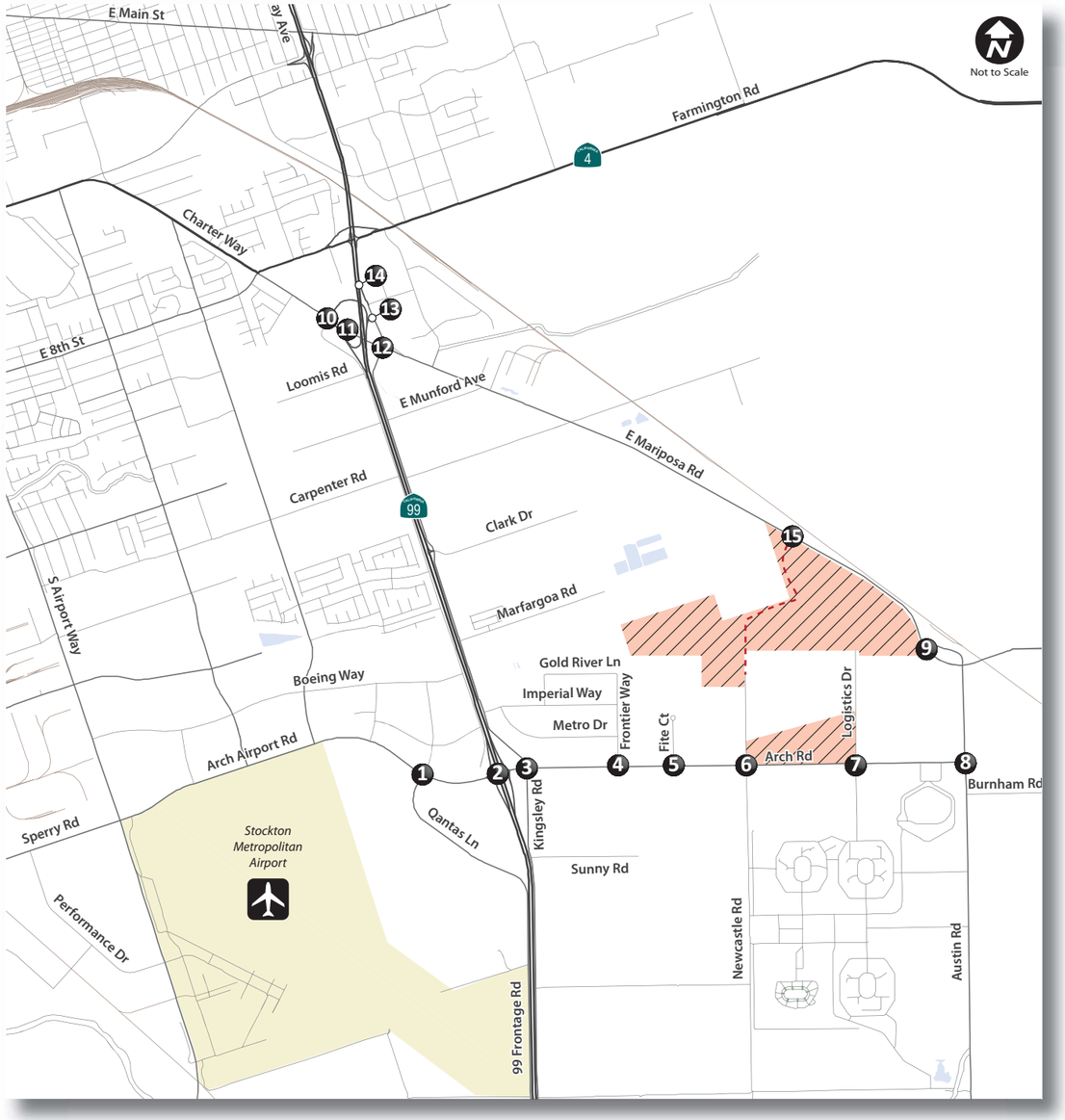
4.2 ANALYSIS OF EXISTING PLUS PROJECT CONDITIONS

4.2.1 INTERSECTION OPERATIONS

Level of service calculations were conducted for the study intersections to evaluate their operations under Existing Plus Project conditions using the methods described in Chapter 2. No adjustments were made to the peak hour factors or heavy vehicle percentages for the analysis of Existing Plus Project conditions. The results of the LOS analysis are presented in **Table 12**.

The intersection of Arch Road/Newcastle Road is projected to degrade to LOS E during the PM peak hour with the addition of project traffic in the Existing condition. The remaining study intersections are expected to continue operating within level of service standards set by the City of Stockton, Caltrans and SJCOG (for RCMP intersections). The LOS calculation worksheets are in Appendix B. Peak hour signal warrants would not be satisfied at the unsignalized study intersections with the addition of project traffic.

With the addition of project traffic in the existing condition, vehicle queues for the eastbound through movement at the Arch Road/Frontage Road intersection could spillback to the SR 99/Arch Road interchange intersection. Although vehicle queues are not expected to impact the operations of the adjacent intersections, monitoring of signal timing to provide optimal flow through the interchange area could reduce vehicle queue spillback. A vehicle queue summary is provided in Appendix D for intersections 1 through 3, and 10 through 14.



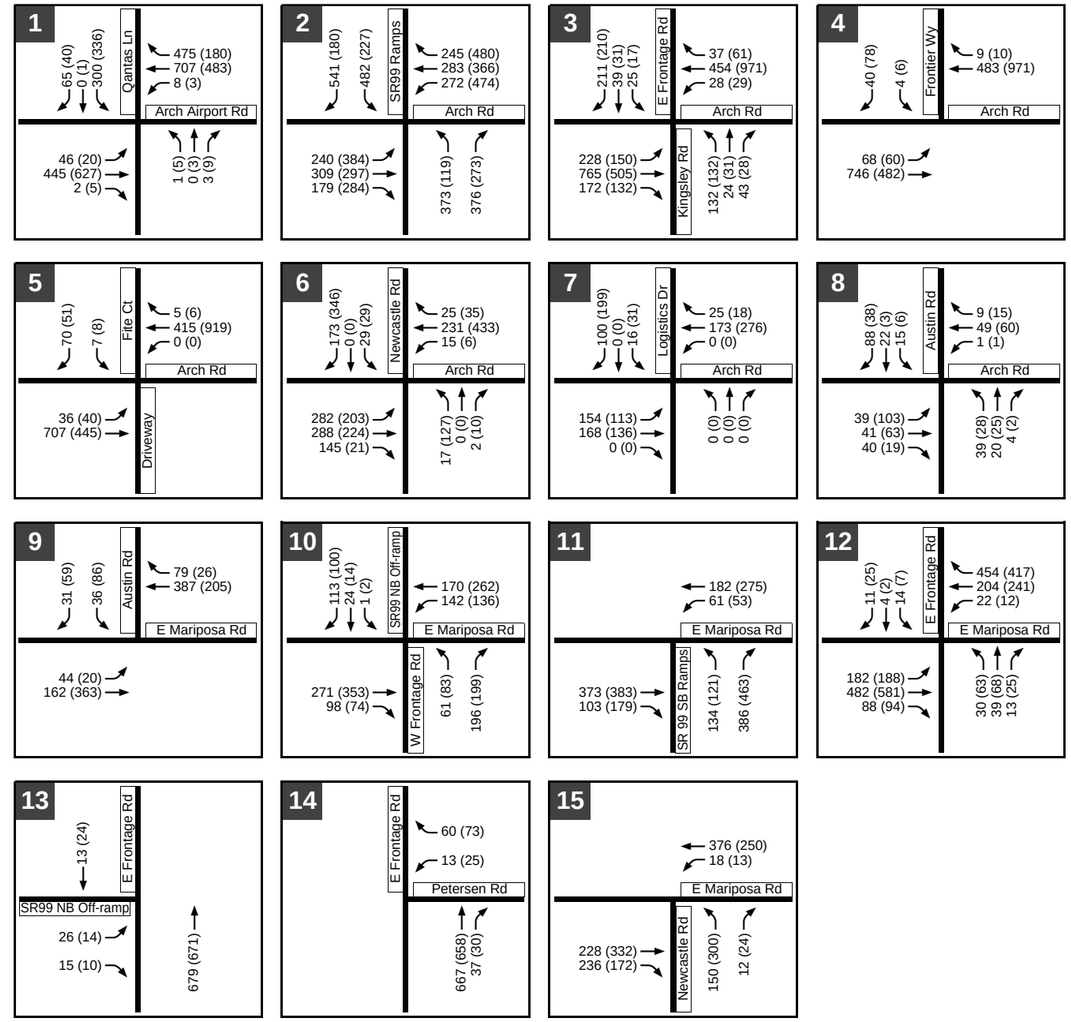


Figure 9.

Existing Plus Project
Peak Hour Intersection Traffic Volumes

WC12-2959_9_ExPPvol

FEHR PEERS

TABLE 12
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection	Control Type[1]	Peak Hour	Existing		Existing + Project	
			Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]
1. Arch-Airport Road/Qantas Lane	Signal	AM PM	23 21	C C	23 21	C C
2. Arch-Airport Road/State Route (SR) 99	Signal	AM PM	12 10	B A	18 12	B B
3. Arch Road/Frontage Road	Signal	AM PM	27 28	C C	32 29	C C
4. Arch Road/Frontier Way	SSSC	AM PM	2 (12) 2 (14)	A (B) A (B)	1 (17) 2 (34)	A (C) A (D)
5. Arch Road/Fite Court	Signal	AM PM	13 10	B A	16 32	B C
6. Arch Road/Newcastle Road	Signal	AM PM	9 21	A C	29 ***70***	C ***E***
7. Arch Road/Logistics Drive	Signal	AM PM	3 3	A A	16 24	B C
8. Arch Road/Austin Road	Signal	AM PM	21 21	C C	22 21	C C
9. Austin Road/Mariposa Road	Signal	AM PM	9 14	A B	11 15	B B
10. SR 99 NB Off-Ramp/Mariposa Rd/SR 99 W. Frontage Rd/SR 99 SB On-Ramp	Signal	AM PM	34 32	C C	41 33	D C
11. SR 99 Southbound Ramps/Mariposa Road	Signal	AM PM	22 21	C C	22 21	C C
12. SR 99 East Frontage Road/Mariposa Road	Signal	AM PM	23 24	C C	23 24	C C
13. SR 99 NB Mariposa Off-Ramp/SR 99 E. Frontage Rd	SSSC	AM PM	1 (13) 1 (11)	A (B) A (B)	1 (14) 1 (12)	A (B) A (B)
14. SR 99 East Frontage Road/Peterson Road	SSSC	AM PM	2 (16) 2 (13)	A (C) A (B)	2 (17) 2 (16)	A (C) A (B)
15. Newcastle Road/Mariposa Road	Signal	AM PM	-- --	-- --	11 17	B B

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicates potential significant impact.
[1] Signal =Signalized Intersection; SSSC = Side-Street Stop-Controlled intersection.
[2] Signalized intersection level of service based on weighted average control delay per vehicle, according to the 2000 *HCM*.
[3] Side-street control intersection LOS presented as: intersection average and (worst approach) control delay per vehicle, per 2000 *HCM*.
[4] LOS = level of service. LOS calculations conducted using the TRAFFIX 8.0 level of service analysis software package, except for 1 -3 and 10-13 which were analyzed with the Synchro 7.0 level of service analysis software package.
Source: Fehr & Peers, 2013.

4.2.2 FREEWAY MAINLINE OPERATIONS

Project traffic expected to use SR 99 in the project vicinity was added to the existing freeway volumes based on the trip generation/distribution shown previously and the expected travel routes to the site. SR 99 freeway mainline segments were analyzed based on the peak hour volumes shown in **Table 13**. The addition of project traffic would worsen the operation of segments that currently operate at deficient levels:

- SR 99 Northbound, North of Mariposa Road (1 analysis segment – AM peak hour)
- SR 99 Southbound, North of Mariposa Road to South of Arch Road (3 analysis segments – PM peak hour)

The addition of project traffic would not cause any new segments to operate at a deficient level.

4.2.3 FREEWAY RAMP OPERATIONS

Ramp merge and diverge operations were evaluated for Existing Plus Project conditions at the SR-99 Arch-Airport Road and Mariposa Road interchanges, as presented in **Table 14.** The addition of project traffic would worsen the operation of the ramp merge/diverge areas that currently operate at a deficient level:

- SR-99 at Arch-Airport Road Southbound On-Ramp (AM peak hour)
- SR-99 at Mariposa Road Northbound On-Ramp (AM peak hour)
- SR-99 at Mariposa Road Southbound Off-Ramp (PM peak hour)

No merge/diverge areas that currently operate at acceptable levels would degrade with the addition of project traffic.

TABLE 13
EXISTING PLUS PROJECT PEAK HOUR FREEWAY MAINLINE ANALYSIS

Segment	Peak Hour	Existing			Existing Plus Project			
		Volume	Density	LOS	Volume	Density	LOS	Percent Increase
Northbound SR 99 South of Arch Road SR 99	AM PM	3,380 2,340	31.8 20.9	D C	3,573 2,477	34.7 22.2	D C	6% 6%
Northbound SR 99 between Arch Road and Mariposa Road	AM PM	3,260 2,850	30.2 25.7	D C	3,309 2,949	30.8 26.7	D D	2% 3%
Northbound SR 99, North of Mariposa Road	AM PM	3,720 3,260	**37.4** 30.2	**E** D	3,857 3,540	***40.4*** 34.2	***E*** D	4% 9%
Southbound North of Mariposa Road	AM PM	2,690 3,940	24.1 **42.3**	C **E**	2,913 4,099	26.3 ***> 45***	D ***F***	8% 4%
Southbound SR 99 between Arch Road and Mariposa Road	AM PM	2,480 3,690	22.2 **36.8**	C **E**	2,557 3,747	22.9 ***38.0***	C ***E***	3% 2%
Southbound SR 99 South of Arch Road	AM PM	1,860 3,850	16.7 **40.2**	B **E**	1,985 4,098	17.8 ***> 45***	B ***F***	7% 6%

Notes: Traffic volumes from Caltrans. **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicate potential significant impact.
Density measured in passenger cars per mile per lane.
Mainline segment level of service based on vehicle density, according to the *Highway Capacity Manual* (TRB, 2000).
Source: Fehr & Peers, 2013.

TABLE 14
EXISTING PLUS PROJECT FREEWAY RAMP ANALYSIS

Ramp	Peak Hour	Existing		Existing Plus Project	
		Density[1]	LOS[2]	Density[1]	LOS[2]
SR-99 at Arch-Airport Road Northbound Off-Ramp	AM	31.2	D	31.2	D
	PM	23.8	C	23.8	C
SR-99 at Arch-Airport Road Northbound On-Ramp	AM	20.9	C	21.3	C
	PM	16.6	B	17.5	B
SR-99 at Arch-Airport Road Southbound Off-Ramp	AM	13.6	B	14.0	B
	PM	20.7	C	20.7	C
SR-99 at Arch-Airport Road Southbound On-Ramp	AM	18.4	B	19.5	B
	PM	**36.1**	**E**	***> 45***	***F***
SR-99 at Mariposa Road Northbound Off-Ramp	AM	33.3	D	33.8	D
	PM	29.6	D	30.6	D
SR-99 at Mariposa Road Northbound On-Ramp	AM	**35.2**	**E**	***36.5***	***E***
	PM	31.0	D	33.4	D
SR-99 at Mariposa Road Southbound Off-Ramp	AM	23.9	C	24.6	C
	PM	**35.3**	**E**	***35.9***	***E***
SR-99 at Mariposa Road Southbound On-Ramp	AM	23.5	C	24.2	C
	PM	34.5	D	34.9	D

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicate potential significant impact.
Density measured in passenger cars per mile per lane.
Ramp merge and diverge area LOS based on vehicle density, according to the *2000 HCM*.
Source: Fehr & Peers, 2013.

4.3 EXISTING PROJECT IMPACTS AND MITIGATION MEASURES

The following describes the impacts and mitigation measures of the proposed project under Existing conditions.

4.3.1 INTERSECTIONS

Project traffic is expected to worsen the operation of one study intersection in the Existing Condition. Measures to mitigate these impacts are discussed below. The effectiveness of the measure is presented in **Table 15.**

Impact 1 – Arch Road/Newcastle Road (Intersection 6): The signalized intersection of Arch Road/Newcastle Road operates at acceptable levels prior to the addition of project traffic. The addition of

project traffic would result in LOS E conditions during the PM peak hour, resulting in a ***significant*** impact. This impact is projected to occur when the project is approximately 85 percent complete, with the connection to Mariposa Road constructed.

> ***Mitigation Measure 1:*** The project applicant shall restripe Arch Road to provide a second westbound through lane on Arch Road from approximately 500 feet east of Newcastle Road to Fite Road. With implementation of this mitigation measure, the intersection would operate acceptably during the AM and PM peak hours, as shown in Table 15, reducing the project's impact to a ***less-than-significant*** level.

TABLE 15
EXISTING PLUS PROJECT PLUS MITIGATION INTERSECTION LEVELS OF SERVICE

Intersection	Control Type[1]	Peak Hour	Existing		Existing Plus Project		Existing Plus Project Plus Mitigation	
			Delay[2]	LOS	Delay[2]	LOS[4]	Delay[2]	LOS[4]
6. Arch Road/Newcastle Road	Signal	AM	9	A	29	C	27	C
		PM	21	C	***70***	***E***	42	D

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicates potential significant impact.
[1] Signal =Signalized Intersection;
[2] Signalized intersection level of service based on weighted average control delay per vehicle, according to the 2000 *HCM*.
Source: Fehr & Peers, 2013.

4.3.2 FREEWAY SEGMENTS

The addition of project traffic would increase the vehicle density on freeway segments that currently operate at deficient levels prior to the addition of project traffic.

Impact 2 – SR 99 Freeway Segments:

- ***SR 99 Northbound, North of Mariposa Road***: Northbound SR 99, north of Mariposa Road currently operates at LOS E during the AM peak hour. The addition of project traffic would increase the vehicle density on this roadway segment, resulting in a ***significant*** impact.
- ***SR 99 Southbound, North of Mariposa Road***: Southbound SR 99, north of Mariposa Road currently operates at LOS E during the PM peak hour. The addition of project traffic would increase the vehicle density and result in LOS F conditions during the PM peak hour, resulting in a ***significant*** impact.
- ***SR 99 Southbound, Between Arch Road and Mariposa Road:*** Southbound SR 99, between Arch Road and Mariposa Road currently operates at an unacceptable LOS E during the PM peak hour.

The addition of project traffic would increase the vehicle density on this roadway segment, resulting in a ***significant*** impact.

- ***SR 99 Southbound, South of Arch Road:*** Southbound SR 99, south of Arch Road currently operates at an unacceptable LOS E during the PM peak hour. The addition of project traffic would increase the vehicle density and result in LOS F conditions, resulting in a ***significant*** impact.

Mitigation Measure 2 – The project applicant shall pay the pay Public Facilities Fees (PFF), which includes the Regional Transportation Impact, Street Improvements, and Traffic Signal fees. Payment of these fees would constitute the projects fair share contribution to on-going widening of SR 99 from SR 120 to the Crosstown Freeway to provide three travel lanes in each direction. This improvement is fully funded, including funding from Measure K as well as Regional Transportation Impact Fees. Construction is expected to be completed in 2015/2016. With implementation of this improvement, the freeway segments would operate at acceptable service levels during both peak hours, as shown in **Table 16**, reducing the project's impact to the SR 99 mainline to a ***less-than-significant*** level.

TABLE 16
EXISTING PLUS PROJECT PLUS MITIGATION PEAK HOUR FREEWAY MAINLINE ANALYSIS

Segment	Peak Hour	Existing		Existing Plus Project		Existing Plus Project Plus Mitigation	
		Density	LOS	Density	LOS	Density	LOS
Northbound SR 99 South of Arch Road	AM PM	31.8 20.9	D C	34.7 22.2	D C	21.4 14.8	C B
Northbound SR 99 between Arch Road and Mariposa Road	AM PM	30.2 25.7	D C	30.8 26.7	D D	19.8 17.6	C B
Northbound SR 99, North of Mariposa Road	AM PM	**37.4** 30.2	**E** D	***40.4*** 34.2	***E*** D	23.0 21.2	C C
Southbound North of Mariposa Road	AM PM	24.1 **42.3**	C **E**	26.3 ***> 45***	D ***F***	17.4 24.5	B C
Southbound SR 99 between Arch Road and Mariposa Road	AM PM	22.2 **36.8**	C **E**	22.9 ***38.0***	C **E**	15.3 22.4	B C
Southbound SR 99 South of Arch Road	AM PM	16.7 **40.2**	B **E**	17.8 ***> 45***	B ***F***	11.9 24.5	B C

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicate potential significant impact. Density measured in passenger cars per mile per lane.

Ramp merge and diverge area LOS based on vehicle density, according to the *2000 HCM*.
Source: Fehr & Peers, 2013.

4.3.3 RAMP MERGE/DIVERGE

The addition of project traffic would increase the vehicle density at three ramp merge/diverge segments the currently operate at deficient levels.

Impact 3 – SR 99 Ramp Merge/Diverge Segments:

- ***SR 99 Southbound Arch Road On-Ramp:*** Prior to the addition of project traffic, the SR 99 southbound Arch Road on-ramp merge area is projected to operate at an unacceptable service level E during the PM peak hour. The addition of project traffic would increase vehicle density, resulting in LOS F conditions. This is considered a ***significant*** impact.
- ***SR 99 Northbound Mariposa Road On-Ramp:*** Prior to the addition of project traffic, the SR 99 northbound Mariposa Road on-ramp merge area is projected to operate an unacceptable LOS E during the AM peak hour. The addition of project traffic would increase vehicle density during the AM peak hour, resulting in a ***significant*** impact.
- ***SR 99 Southbound Mariposa Road Off-Ramp:*** Prior to the addition of project traffic, the SR 99 Southbound Mariposa Road off-ramp diverge area is projected to operate an unacceptable LOS E during the PM peak hour. The addition of project traffic would increase vehicle density during the PM peak hour, resulting in a ***significant*** impact.

Mitigation Measure 3 – Implement Mitigation Measure 2 (widen SR 99 to 6 lanes from SR 120 to the Crosstown Freeway): The effectiveness of the measure is presented in **Table 17** for the impacted merge areas. As these improvements are fully funded and construction is expected to be completed in 2015/2016, payment of applicable regional and local transportation impact fees would constitute the project's fair share to this improvement. With implementation of this improvement, the ramp merge/diverge areas would operate at acceptable service levels during both peak hours, reducing the project's impact to SR 99 ramp merge/diverge areas at Arch and Mariposa Roads to a ***less-than-significant*** level.

TABLE 17
EXISTING PLUS PROJECT PLUS MITIGATION FREEWAY RAMP ANALYSIS

Ramp	Peak Hour	Existing		Existing Plus Project		Existing Plus Project Plus Mitigation	
		Density	LOS	Density	LOS	Density	LOS
SR-99 at Arch-Airport Road Southbound On-Ramp	AM	18.4	B	19.5	B	13.8	B
	PM	**36.1**	**E**	***> 45***	***F***	25.9	C
SR-99 at Mariposa Road Northbound On-Ramp	AM	**35.2**	**E**	**36.5**	**E**	24.9	C
	PM	31.0	D	33.4	D	23.0	C
SR-99 at Mariposa Road Southbound Off-Ramp	AM	23.9	C	24.6	D	18.3	B
	PM	**35.3**	**E**	**35.9**	**E**	24.9	C

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicate potential significant impact. Density measured in passenger cars per mile per lane. Ramp merge/diverge LOS based on vehicle density, 2000 *HCM*.
Source: Fehr & Peers, 2013.

4.4 TIMING OF MARIPOSA ROAD CONNECTION

The timing of construction of the project's connection of Newcastle Road to Mariposa Road is uncertain and would likely occur after development begins on the north side of Little John's Creek. In the Existing Plus Project scenario, development of approximately 50 percent of the project site could occur prior to the need to construct the Mariposa Road connection or additional improvements on Arch Road. Restriping Arch Road to provide a second westbound through lane from approximately 500 feet east of Newcastle Road to Fite Court would allow for approximately 90 percent of the site to be built, if no other development occurs in the area. Roadway improvement phasing in the near-term condition is discussed in Chapter 5.

5.0 NEAR-TERM CONDITIONS

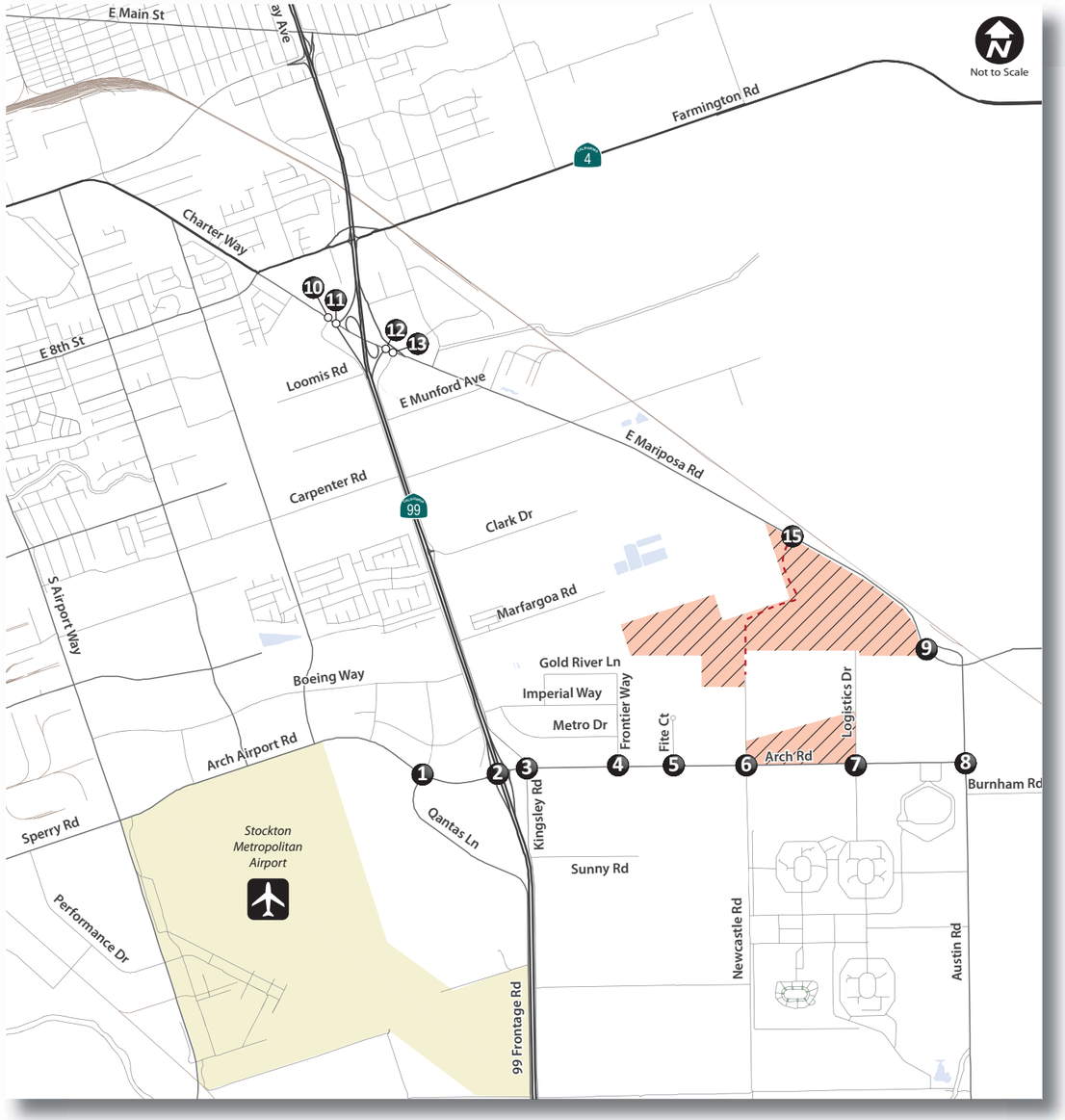
This chapter discusses near-term operations of roadways and intersections in the study area and serves as the basis for identifying near-term project impacts. Traffic volumes in this scenario include existing traffic plus traffic generated from surrounding projects that have been approved but not yet constructed or occupied, as well as the traffic that could be generated by vacant industrial buildings in the immediate project area.

5.1 NEAR-TERM ROADWAY IMPROVEMENTS

No roadway improvements were assumed for the preliminary analysis of near-term conditions because the timing of some planned improvements is uncertain. A secondary analysis of intersection operations assuming certain planned improvements, including the roadway improvements specified in the *Arch-Airport Road/Sperry Road Specific Road Plan* (August 2003), reconstruction of the Mariposa Road interchange, and widening of SR 99 from SR 120 to the Crosstown Freeway (SR 4) to a six lane facility was performed. Reconstruction of the Mariposa Road interchange and the SR 99 widening between Arch Road and the Crosstown Freeway is scheduled to be completed by 2015/2016. Widening of SR 99 to a six-lane facility between SR 120 in Manteca and Arch Road is scheduled to be completed by 2015. Roadway construction along the SR 99 corridor is underway. Intersection configurations with planned improvements are shown on **Figure 10**.

5.2 NEAR-TERM TRAFFIC VOLUME FORECASTS

This scenario includes existing traffic volumes and traffic from developments that are approved and/or under construction within the study area. For the approved projects, only those that have the likelihood of being developed within the foreseeable future (the next five to ten years) were included in the analysis; these included the light industrial parcels on the south side of Arch Road at Newcastle Road and the California Health Care Facility, which was under construction on Austin Road at the time the traffic count data was collected. Traffic from the approved Mariposa Lakes and Tidewater development projects were not included in the analysis because the timing of development of those projects is uncertain. Given the high rate of vacant industrial space within the area, traffic that could be generated by the reoccupation of approximately 1.9 million square feet of industrial properties in the study area that were vacant at the time the traffic count data was collected was accounted for in the analysis. The resulting traffic estimates are shown on **Figure 11**. Details regarding the approved projects and vacant parcels included in the Near-term analysis are provided in **Appendix F**. The peak hour project traffic volumes were added to the Near-Term traffic volumes (Figure 11) to determine the Near-Term With project traffic volumes, as shown on **Figure 12.**



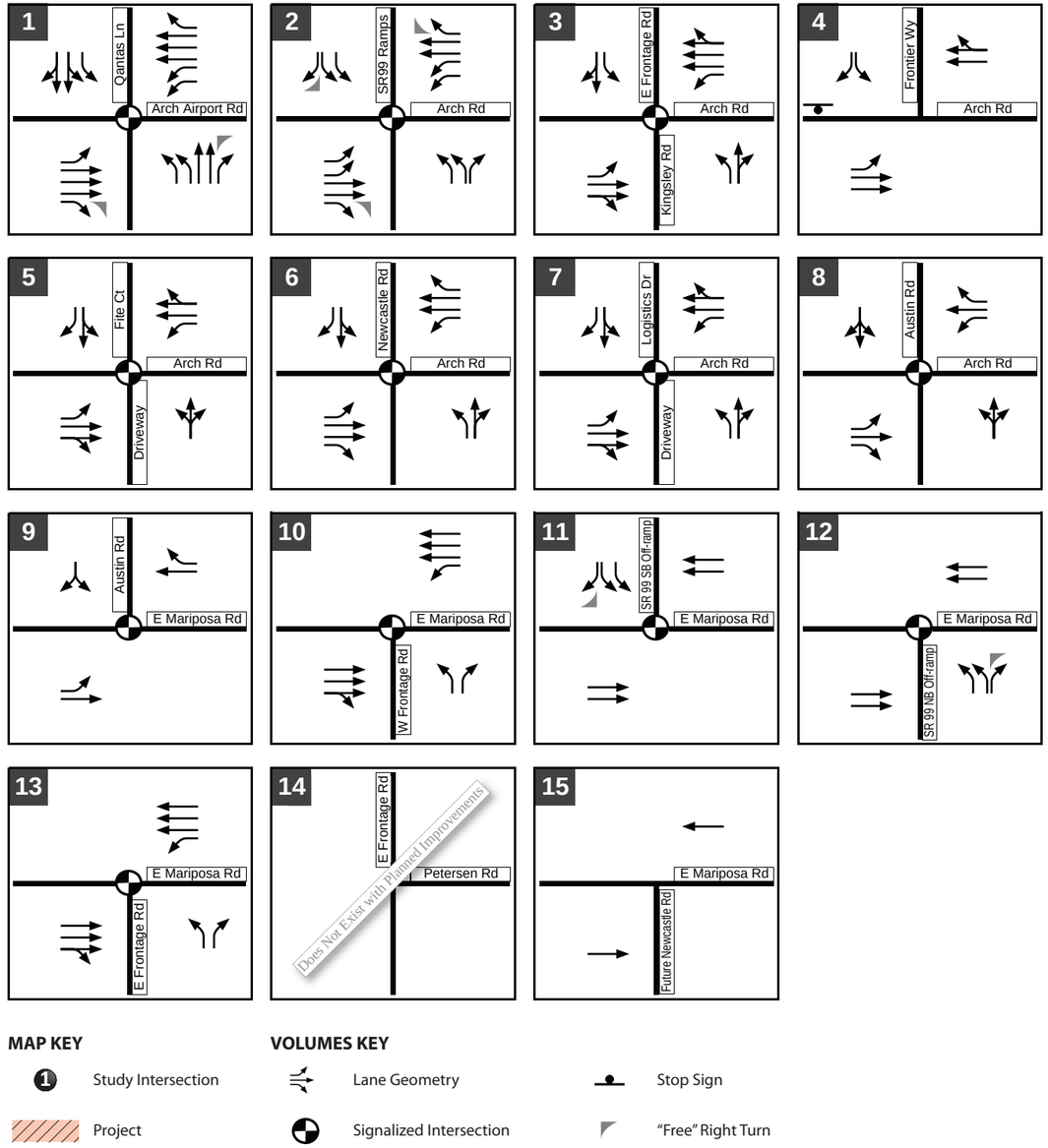
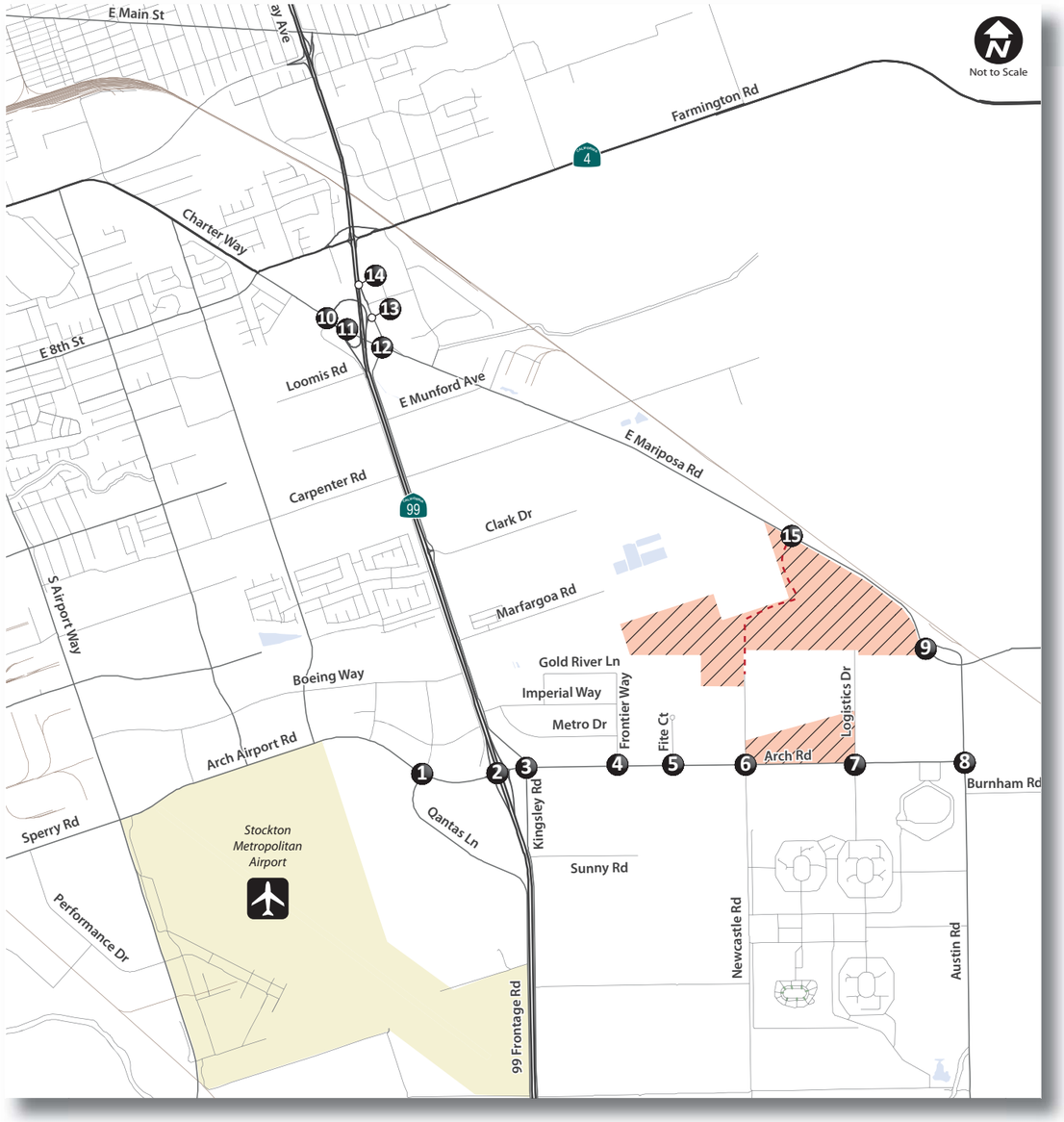


Figure 10.

Near-Term
Intersection Lane Configurations and Traffic Control with Planned Improvements

WC12-2959_10_NTgeo

FEHR PEERS



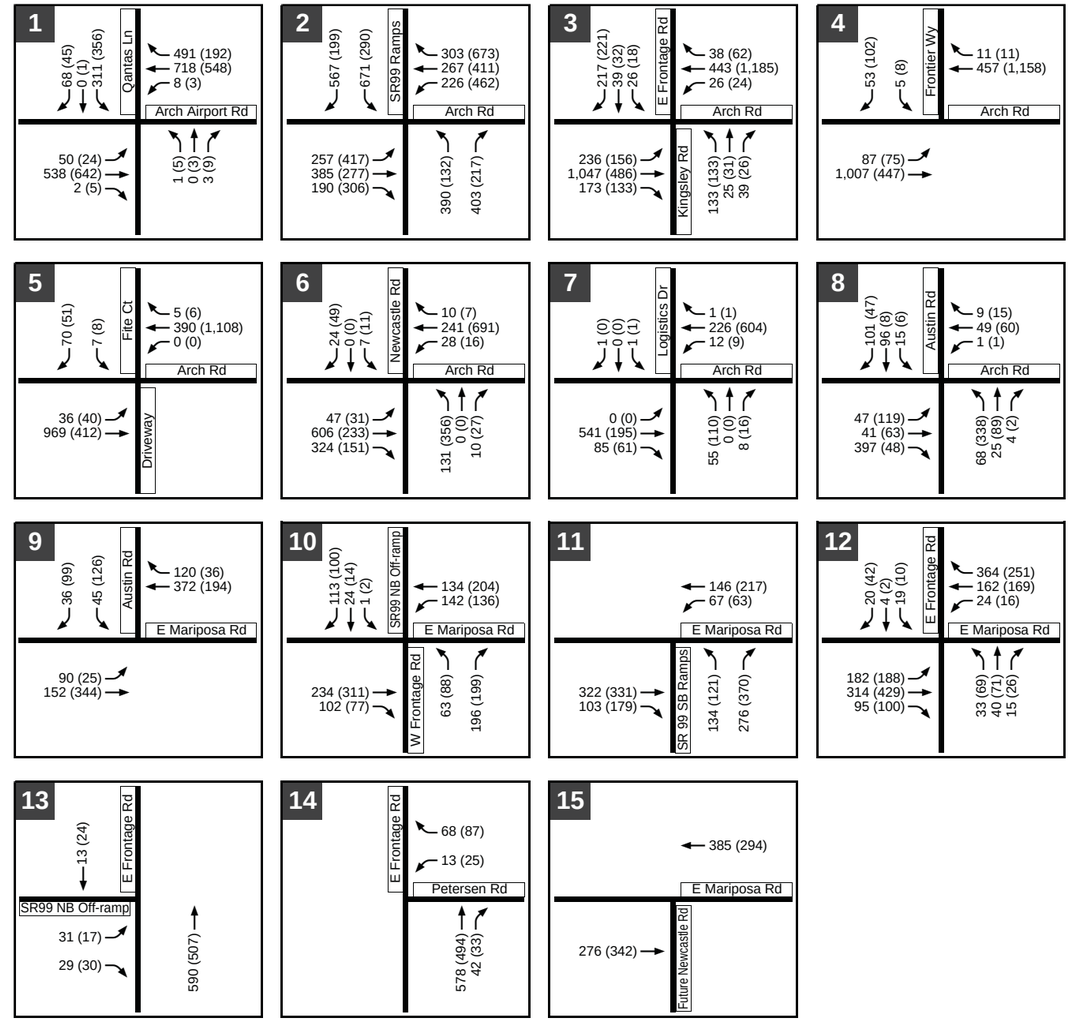
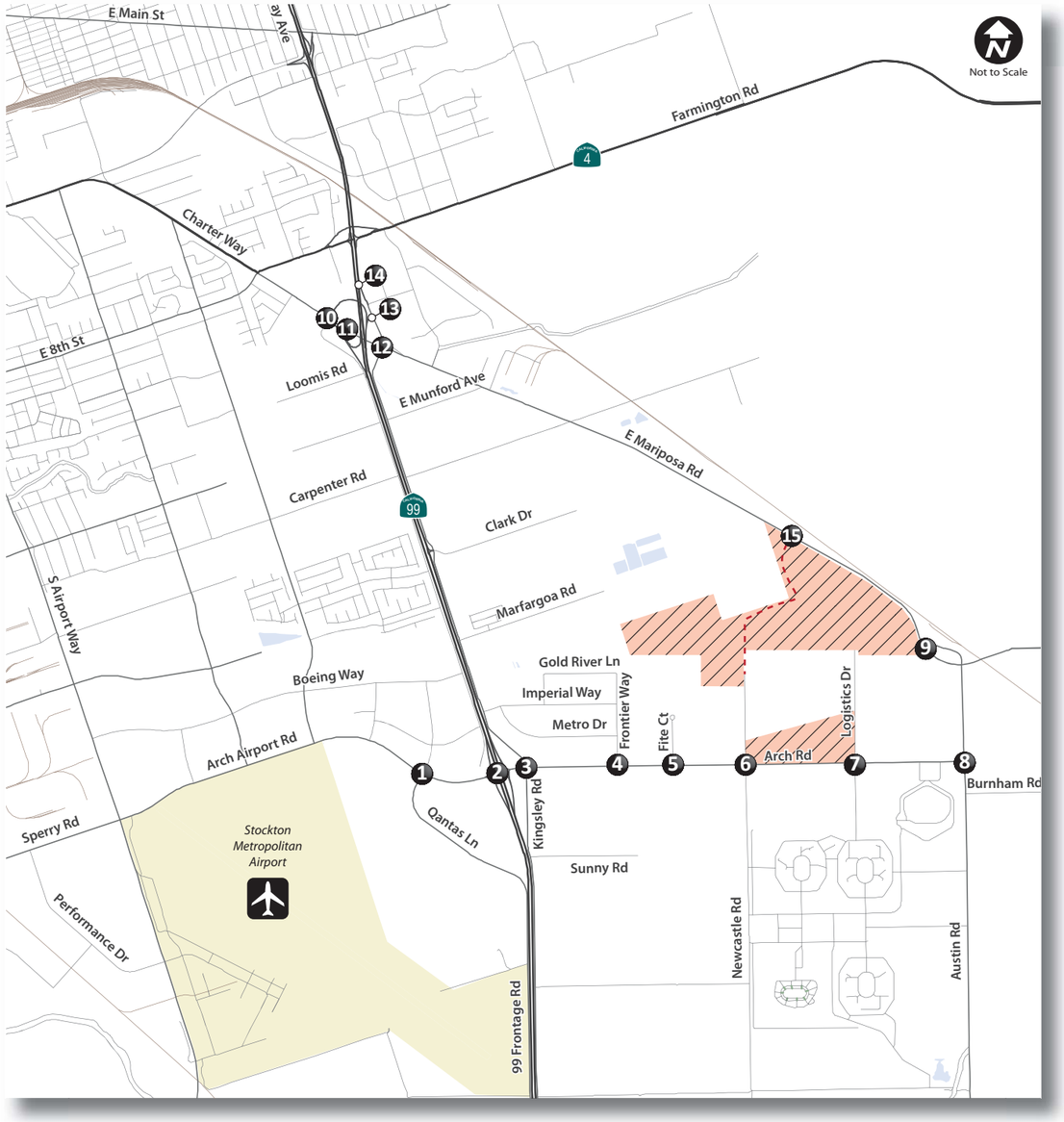
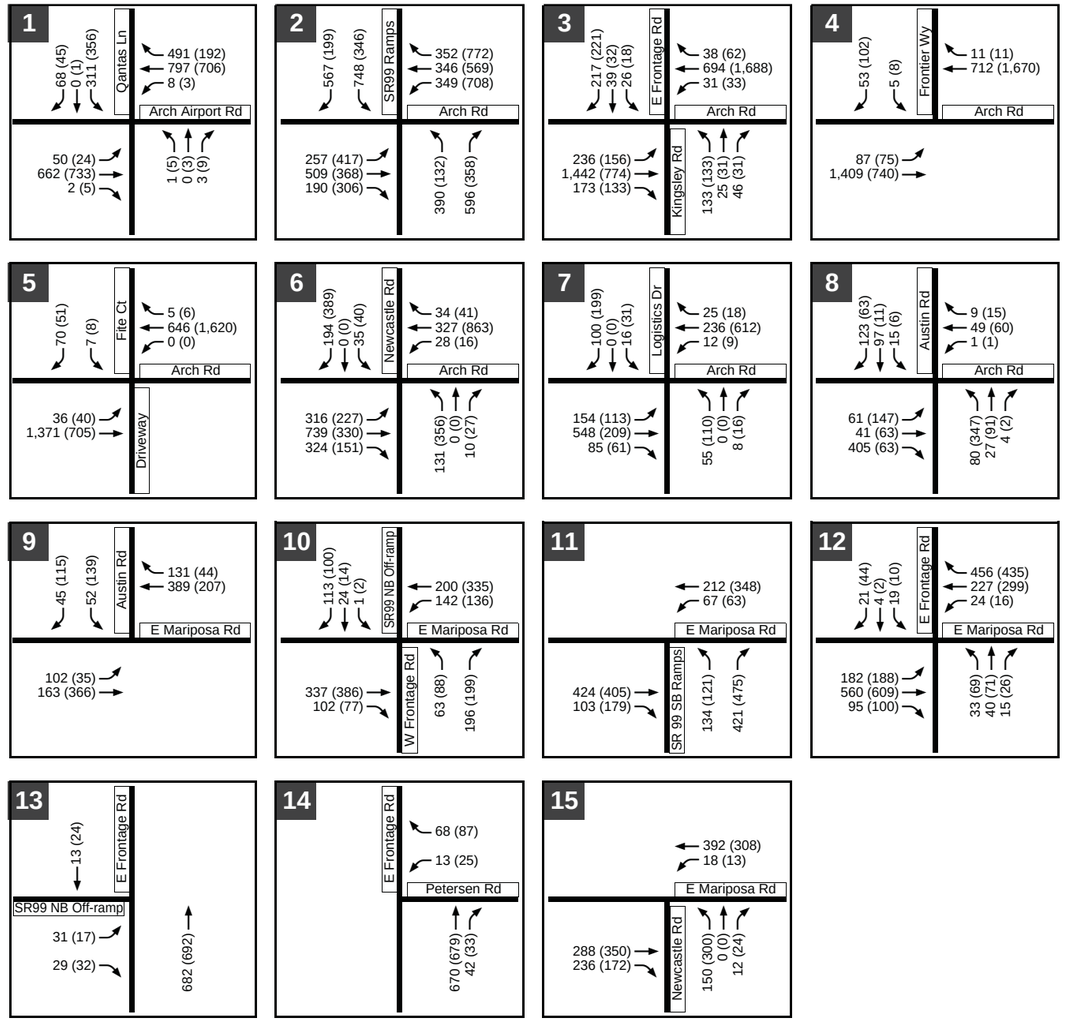


Figure 11.

Near-Term Without Project
Peak Hour Intersection Traffic Volumes

FEHR PEERS





MAP KEY

1 Study Intersection

Project

VOLUMES KEY

XX (YY) AM (PM) Peak Hour Traffic Volumes

Figure 12.

Near-Term With Project
Peak Hour Intersection Traffic Volumes

WC12-2959_12_NTPPvol

FEHR PEERS

5.3 NEAR-TERM CONDITIONS ANALYSIS

5.3.1 INTERSECTION OPERATIONS

Level of service calculations were conducted for the study intersections to evaluate their operations under Near-Term Conditions Without and With the Project based on the volumes shown on Figures 11 and 12. Operations were evaluated using the lane configurations shown on Figures 4 (Existing Configuration) and 10 (With Planned Improvements).

For intersections 4 through 9, and 15, where significant traffic volumes increases are projected, the heavy vehicle percentages for through movements on the major roadways were adjusted to 22 percent during the morning peak hour and 17 percent during the evening peak hour; this reflects the existing observed percentages on Arch Road near SR 99 where traffic volumes are the highest in the existing condition. This adjustment to the heavy vehicle percentages recognizes that much of the new traffic to be generated by uses in this area will be passenger vehicles. For movements from the side-streets serving industrial uses, heavy vehicle factors were adjusted to 25 percent in the morning and 22 percent in the evening to reflect the vehicle trip generation profile of the industrial uses served by those roadways. Where observed peak hour factors in the existing condition were less than 0.92, the peak hour factor was increased to 0.92. The results of the LOS analysis are presented in **Table 18**.

TABLE 18
NEAR-TERM INTERSECTION LEVELS OF SERVICE

Intersection	Control Type[1]	Peak Hour	Without Project		With Project No Intersection Improvements		With Project With Intersection Improvements	
			Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]
1. Arch-Airport Road/ Qantas Lane	Signal	AM PM	21 21	C C	21 21	C C	--	--
2. Arch-Airport Road/ State Route (SR) 99	Signal	AM PM	25 12	C B	49 16	D B	**--**	**--**
3. Arch Road/ Frontage Road	Signal	AM PM	32 31	C C	46 41	D D	--	--
4. Arch Road/Frontier Way	SSSC	AM PM	1 (18) 4 (48)	A (C) A (E)	1 (37) *12* ***(>200)***	A (E) *B* ***(F)***	1 (21) 3 **(52)**	A (C) A **(F)**
5. Arch Road/Fite Court	Signal	AM PM	19 20	B B	***84*** ***118***	***F*** ***F***	12 11	B B

TABLE 18
NEAR-TERM INTERSECTION LEVELS OF SERVICE

Intersection	Control Type[1]	Peak Hour	Without Project		With Project No Intersection Improvements		With Project With Intersection Improvements	
			Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]
6. Arch Road/ Newcastle Road	Signal	AM PM	40 51	D D	***70*** ***124***	***E*** ***F***	25 43	C D
7. Arch Road/Logistics Drive	Signal	AM PM	14 15	B B	26 ***57***	C ***E***	22 31	C C
8. Arch Road/Austin Road	Signal	AM PM	36 29	D C	38 31	D C	--	--
9. Austin Road/ Mariposa Road	Signal	AM PM	14 18	B B	15 19	B B	--	--
10. SR 99 NB Off-Ramp/ Mariposa Rd/W. Frontage Rd/SR 99 SB On-Ramp	Signal	AM PM	34 33	C C	39 37	D D	14 11	B B
11. SR 99 SB Ramps/ Mariposa Road	Signal	AM PM	22 20	C B	22 20	C B	16 15	B B
12. SR 99 East Frontage Road/ Mariposa Road	Signal	AM PM	22 24	C C	22 25	C C	22 21	C C
13. SR 99 NB Mariposa Off-Ramp/SR 99 East Frontage Road	SSSC	AM PM	1 (12) 1 (11)	A (B) A (B)	1 (13) 1 (11)	A (B) A (B)	6 7	A A
14. SR 99 East Frontage Road/ Peterson Road	SSSC	AM PM	2 (15) 2 (14)	A (B) A (C)	2 (17) 2 (17)	A (C) A (C)	Eliminated with interchange improvements	
15. Project Driveway/ Mariposa Road	Signal	AM PM	-- --	-- --	12 17	B B	--	--

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicates potential significant impact. – indicates no planned improvements

[1] Signal = Signalized Intersection; SSSC = Side-Street Stop-Controlled intersection.

[2] Signalized intersection level of service based on weighted average control delay per vehicle, according to the 2000 *HCM*.

[3] Side-street stop control intersection level of service intersection average and (worst approach) control delay per vehicle, 2000 *HCM*.

[4] LOS = level of service. LOS calculations conducted using the TRAFFIX 8.0 level of service analysis software package, except for 1 -3 and 10-13 which were analyzed with the Synchro 7.0 level of service analysis software package.

Source: Fehr & Peers, 2013.

In the near-term condition prior to the addition of project traffic, the study intersections are projected to operate at acceptable service levels, although delay is expected to increase with added traffic from approved projects and re-occupancy of vacant uses. Operations at several intersections along Arch Road would worsen to unacceptable levels with the addition of project traffic, including:

- Arch Road/Frontier Way
- Arch Road/Fite Court
- Arch Road/Newcastle Road
- Arch Road/Logistics Drive

The LOS calculation worksheets are in Appendix B. With the construction of planned improvements along the Arch Road corridor, the intersections noted above are projected to operate at acceptable service levels and no improvements beyond those previously planned would be required. The project would be required to contribute their fair share to planned corridor and intersection improvements through the payment of all local and regional transportation impact fees.

Vehicle queues were also reviewed for the ramp terminal intersections and adjacent intersections, as summarized in Appendix D. The 95th percentile vehicle queues at the Mariposa Road ramp terminal intersections are projected to be accommodated within the available vehicle storage. At the Arch Road interchange, vehicle queues are expected to increase for the eastbound through movement at the Arch Road/Frontage Road intersection, spilling back to the Arch-Airport Road/SR 99 intersection and for the northbound right-turn movement at the Arch-Airport Road/SR 99 intersection. Vehicle queues at the off-ramp are not expected to spill-back to the freeway mainline. Monitoring of signal timings could optimize traffic flow through the area, minimizing vehicle queue spillback.

5.3.2 FREEWAY MAINLINE OPERATIONS

The SR 99 freeway mainline segments from north of Mariposa Road to south of Arch-Airport Road were analyzed based on the peak hour volumes shown in **Table 19,** which includes traffic from approved projects in the study area and traffic that could be generated by the reoccupation of vacant parcels in the area. The analysis results indicate that in the study area, SR 99 is expected to degrade to deficient LOS E or LOS F conditions during either one or both the AM and PM peak hours in the Existing Plus Approved Projects scenario prior to the addition of project traffic. With the addition of project traffic the vehicle density per mile would increase on the following deficient segments:

- SR 99 Northbound, North of Mariposa Road (1 segment – AM and PM peak hours)
- SR 99 Southbound, From North of Mariposa Road to South of Arch Road (3 segments – PM peak hours)
- SR 99 Northbound, South of Arch Road (1 segment – AM peak hours)

TABLE 19
NEAR-TERM WITHOUT AND WITH PROJECT FREEWAY ANALYSIS

Segment	Peak Hour	Without Project			With Project			With Project With SR 99 Improvements		% Increase
		Volume	Density	LOS	Volume	Density	LOS	Density	LOS	
Northbound SR 99 South of Arch Road	AM	3,626	**35.7**	**E**	3,819	***39.5***	***E***	22.8	C	5%
	PM	2,441	21.9	C	2,582	23.1	C	15.4	B	6%
Northbound SR 99 between Arch Road and Mariposa Road	AM	3,393	32.0	D	3,442	32.7	D	20.6	C	1%
	PM	3,182	29.2	D	3,281	30.5	D	19.6	C	3%
Northbound SR 99, North of Mariposa Road	AM	3,841	**40.0**	**E**	3,982	***43.5***	***E***	23.8	C	4%
	PM	3,600	**35.2**	**E**	3,882	***40.9***	***E***	23.2	C	8%
Southbound North of Mariposa Road	AM	3,018	27.4	D	3,240	29.9	D	19.4	C	7%
	PM	4,088	**> 45**	**F**	4,250	***> 45***	***F***	25.5	C	4%
Southbound SR 99 between Arch Road and Mariposa Road	AM	2,778	25.0	C	2,855	25.7	C	17.1	B	3%
	PM	3,839	**39.9**	**E**	3,896	***41.3***	***E***	23.3	C	2%
Southbound SR 99 South of Arch Road	AM	1,956	17.5	B	2,079	18.6	C	12.4	B	6%
	PM	4,118	**> 45**	**F**	4,365	***> 45***	***F***	26.3	D	6%

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicates potential significant impact.
Density measured in passenger cars per mile per lane.
Mainline segment level of service based on vehicle density, according to the Highway Capacity Manual (Transportation Research Board 2000.
Source: Fehr & Peers, 2013.

5.3.3 FREEWAY RAMP OPERATIONS

Ramp merge and diverge operations were evaluated for Near-Term Without and With Project conditions at the Arch Road and Mariposa Road interchanges, as presented in **Table 20.** The following ramp junctions are projected to operate deficiently in the near-term prior to the addition of project traffic:

- SR-99 at Arch-Airport Road northbound off-ramp (AM peak hour)
- SR-99 at Arch-Airport Road southbound on-ramp (PM peak hour)
- SR-99 at Mariposa Road northbound off-ramp (AM peak hour)
- SR-99 at Mariposa Road northbound on-ramp (AM peak hour)

- SR-99 at Mariposa Road southbound off-ramp (PM peak hour)
- SR-99 at Mariposa Road southbound on-ramp (PM peak hour)

The addition of project traffic would worsen the operation of these merge/diverge areas, and would result in deficient conditions at the Mariposa Road northbound on and off-ramps during the PM peak hour (which are both projected to operate deficiently in the AM peak hour).

TABLE 20
NEAR-TERM WITHOUT AND WITH PROJECT FREEWAY RAMP ANALYSIS

Ramp	Peak Hour	Near-Term Without Project		Near-Term With Project (No Freeway Improvements)		Near-Term With Project (With Freeway Improvements)	
		Density[1]	LOS[2]	Density[1]	LOS[2]	Density[1]	LOS[2]
SR-99 at Arch-Airport Road Northbound Off-Ramp	AM	**39.2**	**E**	***> 45***	***F***	29.7	D
	PM	27.4	C	28.8	D	21.6	C
SR-99 at Arch-Airport Road Northbound On-Ramp	AM	22.1	C	22.5	C	11.4	B
	PM	19.4	B	20.2	C	12.1	B
SR-99 at Arch-Airport Road Southbound Off-Ramp	AM	20.8	C	21.6	C	25.4	C
	PM	23.5	C	23.9	C	29.1	D
SR-99 at Arch-Airport Road Southbound On-Ramp	AM	19.4	B	20.3	C	14.7	B
	PM	**> 45**	**F**	***>45***	***F***	28.2	D
SR-99 at Mariposa Road Northbound Off-Ramp	AM	**36.5**	**E**	***36.9***	***E***	25.6	C
	PM	34.3	D	***35.3***	***E***	24.6	C
SR-99 at Mariposa Road Northbound On-Ramp	AM	**36.4**	**E**	***> 45***	***F***	25.7	C
	PM	34.0	D	***36.5***	***E***	25.0	C
SR-99 at Mariposa Road Southbound Off-Ramp	AM	30.9	D	33.1	D	23.3	C
	PM	**> 45**	**F**	***> 45***	***F***	28.8	D
SR-99 at Mariposa Road Southbound On-Ramp	AM	26.2	C	26.9	C	17.2	B
	PM	**35.7**	**E**	***36.2***	***E***	23.0	C

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicate potential significant impact.
Density measured in passenger cars per mile per lane.
Ramp merge and diverge area LOS based on vehicle density, according to the *Highway Capacity Manual* (TRB, 2000).
Source: Fehr & Peers, 2013.

5.4 NEAR-TERM PROJECT IMPACTS AND MITIGATION MEASURES

The following describes the impacts and mitigation measures of the proposed project under Near-Term conditions.

5.4.1 INTERSECTIONS

Project traffic is expected to worsen the operation of four study intersections if none of the planned roadway improvements are constructed by the time the project is fully built-out and occupied. Measures to mitigate these impacts are discussed below. The effectiveness of the measures was presented in Table 18.

Impact 4 – Arch Road/Frontier Way (Intersection 4): The unsignalized intersection of Arch Road/Frontier Way is projected to operate at an overall acceptable service level in the near-term prior to the addition of project traffic during both the AM and PM peak hours. The side-street movement during the PM peak hour is projected to operate at LOS F with an average delay around 50 seconds. The addition of project traffic would increase delay for the side-street movement to over 200 seconds. However, because peak hour signal warrants would not be met, this impact is considered ***less-than-significant*** based on the significance criteria.

> ***Mitigation Measure 4:*** The project impact to this intersection is ***less-than-significant***. The project applicant shall pay the PFF which would constitute their fair share contribution to the construction of improvements identified in the *Arch-Airport Road/Sperry Road Specific Road Plan* (August 2003), which includes the widening of Arch Road to provide two travel lanes in each direction in addition to an eastbound left-turn lane from Arch Road to Frontier Way. With construction of the improvement, the intersection would operate at an overall acceptable level during the PM peak hour, as shown previously in Table 18.

Impact 5 – Arch Road/Fite Court (Intersection 5): The signalized intersection of Arch Road/Fite Court is projected to operate at an acceptable LOS B during both the AM and PM peak hours and is projected to degrade to an unacceptable level of service F during both peak hours with the addition of project traffic, resulting in a ***significant*** impact. This impact is anticipated to occur when the project is approximately 50 percent built-out and occupied, considering the connection to Mariposa Road.

> ***Mitigation Measure 5:*** The project applicant shall pay the PFF which would constitute their fair share to the construction of planned improvements identified in the *Arch-Airport Road/Sperry Road Specific Road Plan* (August 2003), which includes the widening of Arch Road to provide two travel lanes in each direction as shown on Figure 10. With construction of the improvements, the

intersection would operate acceptably during the AM and PM peak hours, as shown in Table 18, reducing the project's impact to a ***less-than-significant*** level. Should these improvements not be constructed in time to accommodate development along the Arch Road corridor, the project impact would remain ***significant and unavoidable*** until the improvements are constructed.

Impact 6 – Arch Road/Newcastle Road (Intersection 6): The signalized intersection of Arch Road/ Newcastle Road is projected to operate at acceptable levels in the near-term condition prior to the addition of project traffic. The addition of project traffic would result in LOS F conditions during both the AM and PM peak hours, resulting in a ***significant*** impact. Deficient conditions would occur at this intersection when the project is approximately 15 percent built-out and occupied even with the connection to Mariposa Road.

Mitigation Measure 6: The project applicant shall pay the PFF which would constitute their fair share to the construction of planned improvements identified in the *Arch-Airport Road/Sperry Road Specific Road Plan* (August 2003). However, improvements beyond those included in the PFF are needed to provide acceptable intersection operations, including the include construction of right-turn only lanes on both the eastbound and westbound approaches, as shown on Figure 10. Should the PFF be modified to include these improvements, payment of the fee would constitute the project applicants fair share contribution.

With construction of the improvements, the intersection would operate acceptably during the AM and PM peak hours, as shown in Table 18, reducing the project's impact to a ***less-than-significant*** level. Should these improvements not be constructed in time to accommodate development along the Arch Road corridor, the project impact would remain ***significant and unavoidable*** until the improvements are constructed.

Impact 7 – Arch Road/Logistics Drive (Intersection 7): This intersection is projected to operate at an acceptable level of service during both peak hours prior to the addition of project traffic. The addition of project traffic would result in LOS E conditions during the PM peak hour, resulting in a ***significant*** impact. This impact would not occur until Lots 3 through 6 on the northern site and lots 5 and 6 on the southern site are approximately 90 percent completed and occupied, because these are the parcels that take primary access from Logistics Drive.

Mitigation Measure 7: The project applicant shall pay the PFF which would constitute their fair share to the construction of planned improvements identified in the *Arch-Airport Road/Sperry Road Specific Road Plan* (August 2003). The ultimate lane configurations are shown on Figure 10. With construction of the improvements, the intersection would operate acceptably during the AM and PM peak hours, as shown in Table 18, reducing the project's impact to a ***less-than-***

significant level. Should these improvements not be constructed in time to accommodate development along the Arch Road corridor, the project impact would remain ***significant and unavoidable*** until the improvements are constructed.

Alternatively, modify the southbound approach to provide a shared left-through lane and a right-turn only lane. Construction of this improvement would result in LOS C operations during the PM peak hour and mitigate the project specific impact to a ***less-than-significant*** level.

5.4.2 FREEWAY SEGMENTS

The addition of project traffic would increase the vehicle density on freeway segments projected to operate deficiently prior to the addition of project traffic.

Impact 8 – SR 99 Freeway Segments:

- ***SR 99 Northbound, South of Arch Road:*** Prior to the addition of project traffic, SR 99 northbound, south of Arch Road freeway segment is projected to operate an unacceptable service levels during the AM peak hour (LOS E). The addition of project traffic would increase vehicle density in the AM peak hour, resulting in a ***significant*** impact.
- ***SR 99 Northbound, North of Mariposa Road***: Prior to the addition of project traffic, SR 99 northbound, north of Mariposa Road freeway segment is projected to operate an unacceptable service levels during both the AM (LOS E) and PM (LOS E) peak hours. The addition of project traffic would increase vehicle density resulting in a ***significant*** impact.
- ***SR 99 Southbound, North of Mariposa Road***: Prior to the addition of project traffic, southbound SR 99, north of Mariposa Road is projected to operate an unacceptable LOS F during the PM peak hour. The addition of project traffic would increase vehicle density resulting in a ***significant*** impact.
- ***SR 99 Southbound, Between Arch Road and Mariposa Road:*** Prior to the addition of project traffic, southbound SR 99, between Arch Road and Mariposa Road is projected to operate an unacceptable LOS E during the PM peak hour. The addition of project traffic would increase vehicle density resulting in a ***significant*** impact.
- ***SR 99 Southbound, South of Arch Road:*** Prior to the addition of project traffic, southbound SR 99, south of Arch Road freeway is projected to operate an unacceptable service levels during the PM (LOS F) peak hour. The addition of project traffic would increase vehicle density resulting in a ***significant*** impact.

Mitigation Measure 8 – ***Implement Mitigation Measure 2 (widen SR 99 to 6 lanes from SR 120 to the Crosstown Freeway):*** The project applicant shall contribute its fair share towards on-going widening of SR 99 from SR 120 to the Crosstown Freeway to provide three travel lanes in each direction through the payment of the PFF. The effectiveness of these improvements was presented previously in Table 19. With implementation of this improvement, the freeway segments would operate at acceptable service levels during both peak hours, reducing the project's impact to a ***less-than-significant*** level.

5.4.3 RAMP MERGE/DIVERGE

The addition of project traffic would increase the vehicle density at six ramp merge/diverge segments projected to operate deficiently prior to the addition of project traffic.

Impact 9 – SR 99 Ramp Merge/Diverge Segments:

- ***SR-99 Northbound at Arch-Airport Road Off-Ramp:*** Prior to the addition of project traffic, the SR 99 southbound Arch Road on-ramp merge area is projected to operate at an unacceptable service level E during the AM peak hour. The addition of project traffic would increase vehicle density and result in LOS F conditions, resulting in a ***significant*** impact.
- ***SR 99 Southbound Arch Road On-Ramp:*** Prior to the addition of project traffic, the SR 99 southbound Arch Road on-ramp merge area is projected to operate at an unacceptable service level F during the PM peak hour. The addition of project traffic would increase vehicle density, resulting in a ***significant*** impact.
- ***SR 99 Northbound Mariposa Road Off-Ramp:*** Prior to the addition of project traffic, the SR 99 northbound Mariposa Road off-ramp diverge area is projected to operate at unacceptable LOS E during the AM peak hour. The addition of project traffic would increase vehicle density during the AM peak hour and result in LOS E conditions during the PM peak hour, resulting in a ***significant*** impact.
- ***SR 99 Northbound Mariposa Road On-Ramp:*** Prior to the addition of project traffic, the SR 99 northbound Mariposa Road on-ramp merge area is projected to operate at unacceptable LOS E during the AM peak hour. The addition of project traffic would increase vehicle density during the AM peak hour, resulting in LOS F conditions, and result in LOS E conditions during the PM peak hour, resulting in a ***significant*** impact.
- ***SR 99 Southbound Mariposa Road Off-Ramp:*** Prior to the addition of project traffic, the SR 99 Southbound Mariposa Road off-ramp diverge area is projected to operate at unacceptable LOS F during the PM peak hour. The addition of project traffic would increase vehicle density during the PM peak hour, resulting in a ***significant*** impact.

- ***SR 99 Southbound Mariposa Road On-Ramp:*** Prior to the addition of project traffic, the SR 99 Southbound Mariposa Road on-ramp merge area is projected to operate at unacceptable LOS E during the PM peak hour. The addition of project traffic would increase vehicle density during the PM peak hour, resulting in a ***significant*** impact.

Mitigation Measure 9 – Implement Mitigation Measure 2 (widen SR 99 to 6 lanes from SR 120 to the Crosstown Freeway): The effectiveness of the measure is presented in Table 20. With implementation of this improvement, the ramp merge/diverge areas would operate at acceptable service levels during both peak hours, reducing the project's impact to a ***less-than-significant*** level.

5.5 TIMING OF MARIPOSA ROAD CONNECTION

The timing of construction of the Project connection of Newcastle Road to Mariposa Road is uncertain and would likely occur when development occurs on the north side of Little John's Creek. With the planned improvements on Arch Road (as discussed previously) in place, the connection to Mariposa Road would not need to be constructed until the Northern are developed.

Prior to the Mariposa Road connection, it is expected that the majority of traffic from SR 99 would use the Arch Road interchange to access the project site. With increased traffic at the Arch Road interchange, approximately 60 percent of the project could be constructed without impacting either the Arch Road/SR 99 or Arch Road/Frontage Road intersections. Improvements at these intersections, such as a free northbound right-turn lane at Arch Road/SR 99 interchange and construction of a third eastbound through lane at the Arch Road/Frontage Road intersection, may be necessary to accommodate project traffic if the Mariposa Road connection is not constructed.

Without any improvements along the Arch Road corridor, approximately 30 percent of the project could be constructed until improvements would need to occur at the Arch Road/Fite Court intersection (as opposed to approximately 50 percent of the project with the Mariposa Road connection). There is little additional capacity at the Arch Road/Newcastle Road intersection to accommodate increased traffic when considering the traffic generated by approved projects expected to be constructed and the re-occupation of vacant parcels in the area. With improvements on the northbound approach to the Arch Road/ Newcastle Road intersection to provide a left-turn lane in addition to a through-right shared lane, and restriping along the project frontage to provide a second westbound through lane from approximately 500 feet east of Newcastle Road to Fite Court, approximately 75 percent of the project site could be constructed and occupied prior to connecting Newcastle Road to Mariposa Road.

6.0 CUMULATIVE CONDITIONS

This chapter discusses the methods used to develop General Plan Build-out traffic forecasts for conditions without and with the project, based on the *2035 General Plan Update* and the resulting roadway operations. The *2035 General Plan Update* was adopted in December 2007.

The *2035 General Plan Update* envisions a citywide population of over 600,000 (with 210,000 residential units and 200 million square feet of non-residential uses citywide) after build-out of the plan. In the *2035 General Plan Update*, substantial new development activity is anticipated in the areas west of I-5 and south of French Camp Road, as well as the areas east of SR 99. In addition, the *2035 General Plan Update* accounts for continued growth outside of Stockton to the year 2035. For the assessment of potential project impacts in the cumulative condition, ***daily roadway segment volumes*** have been compared to the segment capacities presented in the General Plan.

6.1 CUMULATIVE ROADWAY IMPROVEMENTS

Several major roadway improvements in the study area are being considered as part of the *2035 General Plan Update*, including a new interchange on SR 99 between Arch Road and French Camp Road and a new east-west arterial, south of Arch Road, connecting Austin Road to Airport Road via the new interchange. Widening of Arch Road to provide 6 travel lanes from east of the Frontage Road to Newcastle Road was also assumed. Widening of SR 99 to provide 8 travel lanes south of Mariposa Road and 10 travel lanes north to Eight Mile Road was also assumed.

6.2 CUMULATIVE TRAFFIC VOLUME FORECASTS

General Plan Buildout Without and With project intersection traffic forecasts were developed using the General Plan Update travel demand model as of August 2008. The model allows the analysis to account for the likely interactions between the large amount of proposed development within the South Stockton area and the City and region as a whole. The model land use inputs were modified to better reflect current development proposals and roadway modifications for the South Stockton Area, including Mariposa Lakes and Tidewater. Traffic forecasts from the model were adjusted using the delta method. The traffic forecasts for the roadway segments included in the cumulative assessment are summarized in **Table 21**.

6.3 CUMULATIVE CONDITIONS ANALYSIS

6.3.1 ROADWAY SEGMENT LEVEL OF SERVICE

The projected roadway segment volumes with General Plan build-out were compared to the segment capacity for each roadway type and a LOS was assigned, as presented in **Table 21**. With the roadway improvements assumed in the General Plan Build-out network, the roadway segments in the vicinity of the project site are expected to have sufficient capacity to accommodate the anticipated vehicle traffic from build-out of the General Plan land uses, including development on the project site.

TABLE 21
CUMULATIVE ROADWAY SEGMENT ANALYSIS

Roadway Segment	Facility Type	Number of Lanes	Cumulative Without Project		Cumulative With Project			
			Daily Volume	LOS	Project Volume	Total Volume	LOS	Project %
Arch-Airport Road between SR 99 and Qantas Lane	Arterial	8	48,080	C	3,680	51,760	C	7%
Arch Road, east of SR 99 Frontage Road	Arterial	6	20,816	A	10,840	31,656	A	34%
Arch Road, east of Frontier Way	Arterial	6	28,096	A	10,840	38,936	C	28%
Arch Road, east of Fite Court	Arterial	6	25,266	A	10,840	36,106	B	30%
Arch Road, east of Newcastle Road	Arterial	4	17,640	A	5,070	22,710	A	22%
Arch Road, east of Logistics Drive	Arterial	4	13,882	A	1,600	15,482	A	10%
Mariposa Road, west of Austin Road	Arterial	6	20,214	A	1,020	21,234	A	5%
Mariposa Road, west of Project Driveway	Arterial	6	28,184	A	5,500	33,684	B	16%
Mariposa Road, west of Carpenter Road	Arterial	6	38,044	C	5,500	43,544	C	13%
SR 99, north of Mariposa Road	Freeway	10	175,080	D	5,310	180,390	D	3%

TABLE 21
CUMULATIVE ROADWAY SEGMENT ANALYSIS

Roadway Segment	Facility Type	Number of Lanes	Cumulative Without Project		Cumulative With Project			
			Daily Volume	LOS	Project Volume	Total Volume	LOS	Project %
SR 99, north of Arch-Airport Road	Freeway	8	145,186	D	1,860	147,046	D	1%
SR 99, south of Arch-Airport Road	Freeway	8	120,774	C	5,110	125,884	C	4%

Source: Fehr & Peers, 2013.

7.0 PROJECT ALTERNATIVE ANALYSIS

This chapter presents the analysis results of a circulation alternative that would not construct a connection between Arch Road and Mariposa Road. Under this alternative, all access to the parcels north of Little John's Creek would occur from Mariposa Road and all access to the parcels south of Little John's Creek would occur from Arch Road via Logistics Drive or Newcastle Road. With no roadway over Little John's Creek, approximately 1,692,000 square feet of development would take access from Mariposa Road and the remaining 4,588,480 square feet of development taking access from Arch Road (Project Alternative).

7.1 TRAFFIC VOLUMES AND ROADWAY IMPROVEMENTS WITH PROJECT ALTERNATIVE

Project trip generation would remain the same under Project Alternative conditions (see Table 11); however, based on the level of development that could occur on both sides of the creek, approximately 27 percent of project traffic would take access from Mariposa Road while the remaining 73 percent of traffic would take access from Arch Road at either Logistics Drive or Newcastle Road.

Project Alternative trips were then assigned to the roadway network based on the same trip distribution percentages shown on Figure 5, but considering no through connection between Arch Road and Mariposa Road. The project trip assignment under this condition is shown on **Figure 13**. These trips were then added to the existing peak hour traffic volumes (Figure 3) to estimate the Existing Plus Project Alternative peak hour traffic volumes, as shown on **Figure 14**. Project Alternative trips were also added to the Near-term Without Project volumes (Figure 11) to estimate Near-term With Project Alternative volumes, as presented in **Figure 15.**

No roadway improvements were assumed under either the existing or near-term conditions, except for the construction of internal roadways and a new connection to Mariposa Road, which would not connect to Arch Road. A separate analysis of near-term conditions with planned roadway improvements in place, as discussed in Section 5.1, was also conducted.

7.2 ANALYSIS OF PROJECT ALTERNATIVE CONDITIONS

7.2.1 INTERSECTION OPERATIONS

Level of service calculations were conducted for the study intersections to evaluate their operations under Existing and Near-Term With Project Alternative conditions using the methods described in Chapter 2. The results of the LOS analysis are presented in **Table 22**. Results of the without project analyses are also presented in Table 22 for comparison purposes.

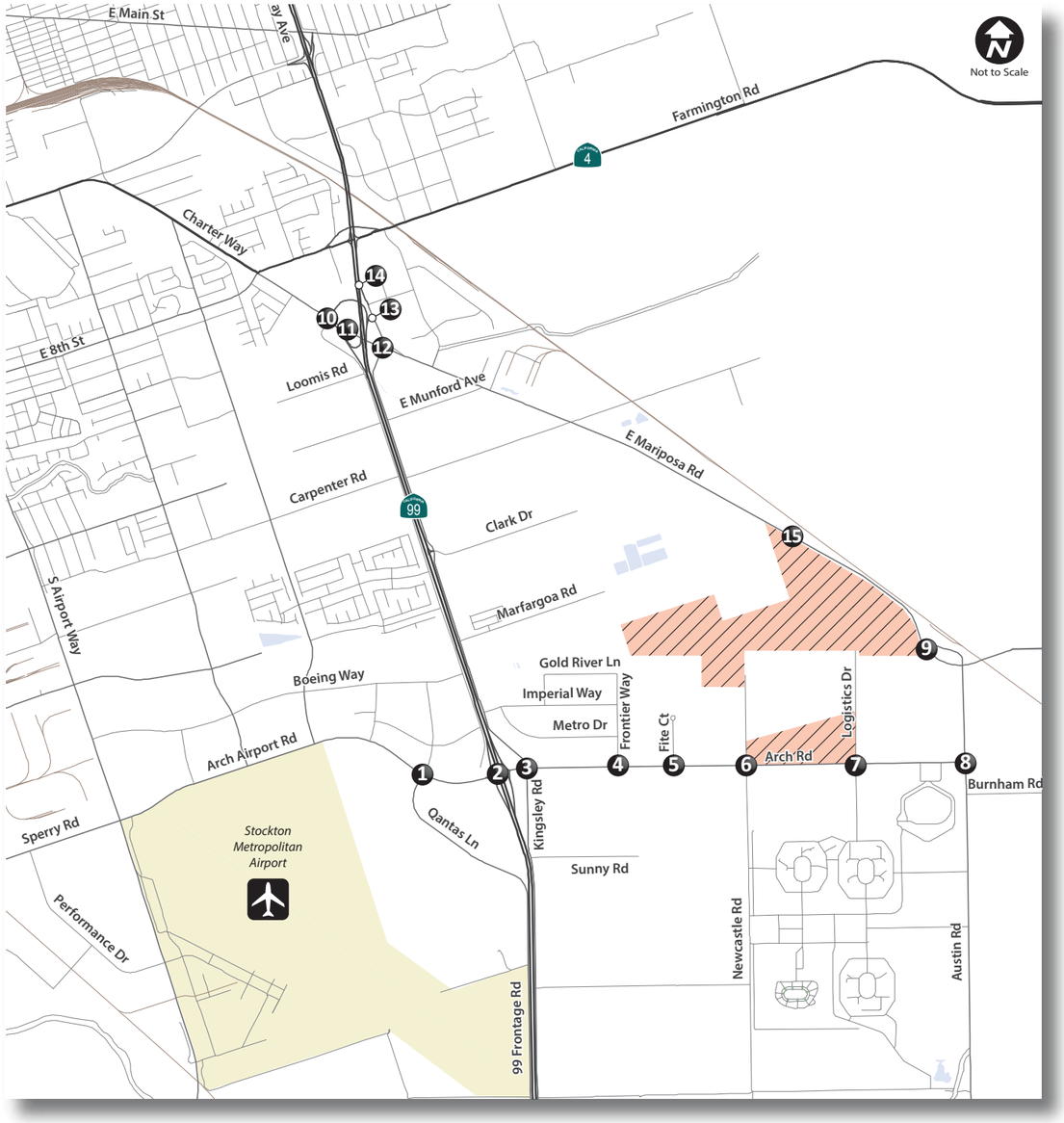
In the Existing Plus Project Alternative scenario, the Arch Road/Newcastle Road intersection is projected to degrade to LOS F with the addition of Project Alterative traffic. The remaining study intersections are expected to continue operating within level of service standards set by the City of Stockton, Caltrans and SJCOG (for RCMP intersections). The LOS calculation worksheets are in Appendix B. Peak hour signal warrants would not be satisfied at the unsignalized study intersections with the addition of project traffic.

The Near-Term with Project Alternative analysis results are similar to the Proposed Project, with operations along the Arch Road corridor worsening to unacceptable levels at these intersections:

- Arch-Airport Road/SR 99
- Arch Road/Frontier Way
- Arch Road/Fite Court
- Arch Road/Newcastle Road
- Arch Road/Logistics Drive

The Arch-Airport Road/State Route (SR) 99 intersection does not degrade with the Proposed Project, but is anticipated to degrade to LOS E during the AM peak hour with the Project Alternative. The LOS calculation worksheets are in Appendix B.

The 95th percentile vehicle queues at the Mariposa Road ramp terminal intersections are projected to be accommodated within the available vehicle storage in the existing and near-term scenarios with the Project Alternative. At the Arch Road interchange, vehicle queues are expected to increase for the eastbound through movement at the Arch Road/Frontage Road intersection, spilling back to the Arch-Airport Road/SR 99 intersection and for the northbound right-turn movement at the Arch-Airport Road/ SR 99 intersection. Vehicle queues at the off-ramp are not expected to spill-back to the freeway mainline. Monitoring of signal timings could optimize traffic flow through the area, minimizing vehicle queue spillback. A vehicle queue summary is provided in Appendix D for intersections 1 through 3, and 10 through 14.



MAP KEY

1 Study Intersection

Project

VOLUMES KEY

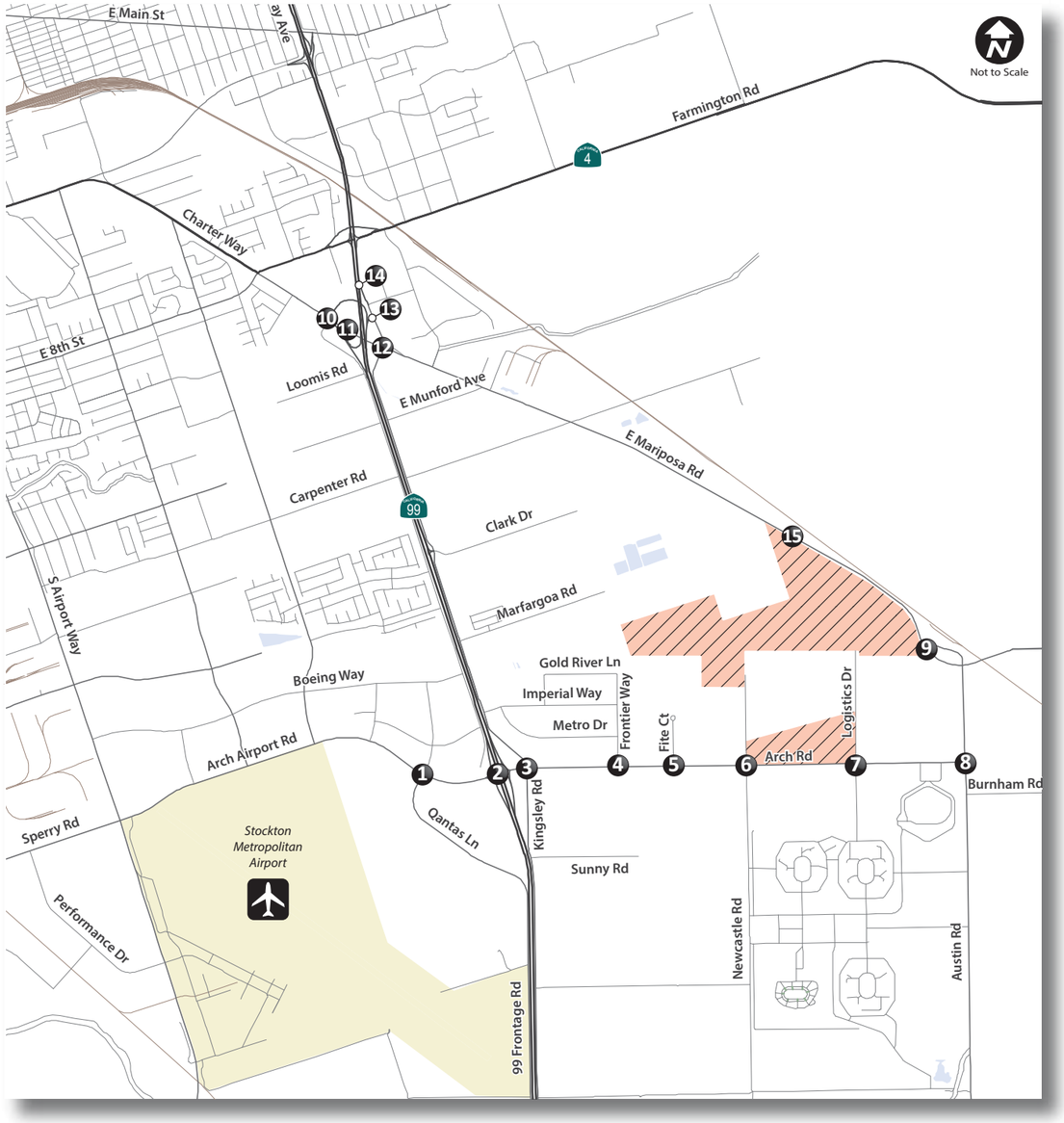
XX (YY) AM (PM) Peak Hour Traffic Volumes

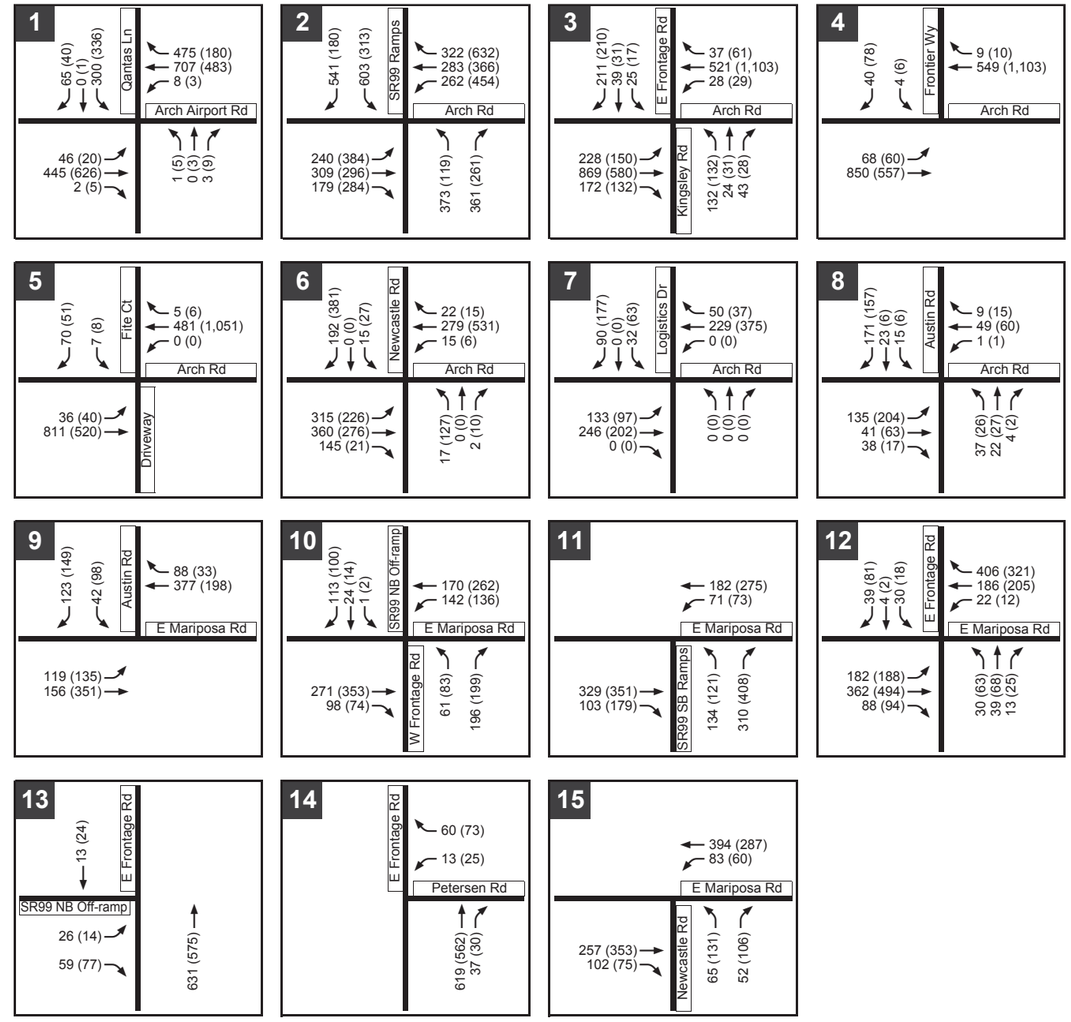
Figure 13.

Existing and Near-Term
Peak Hour Project Alternative Trip Assignment (No Thru Access)

WC12-2959_13_ExNTtripassgnNoThru

FEHR & PEERS





MAP KEY

1 Study Intersection

Project

VOLUMES KEY

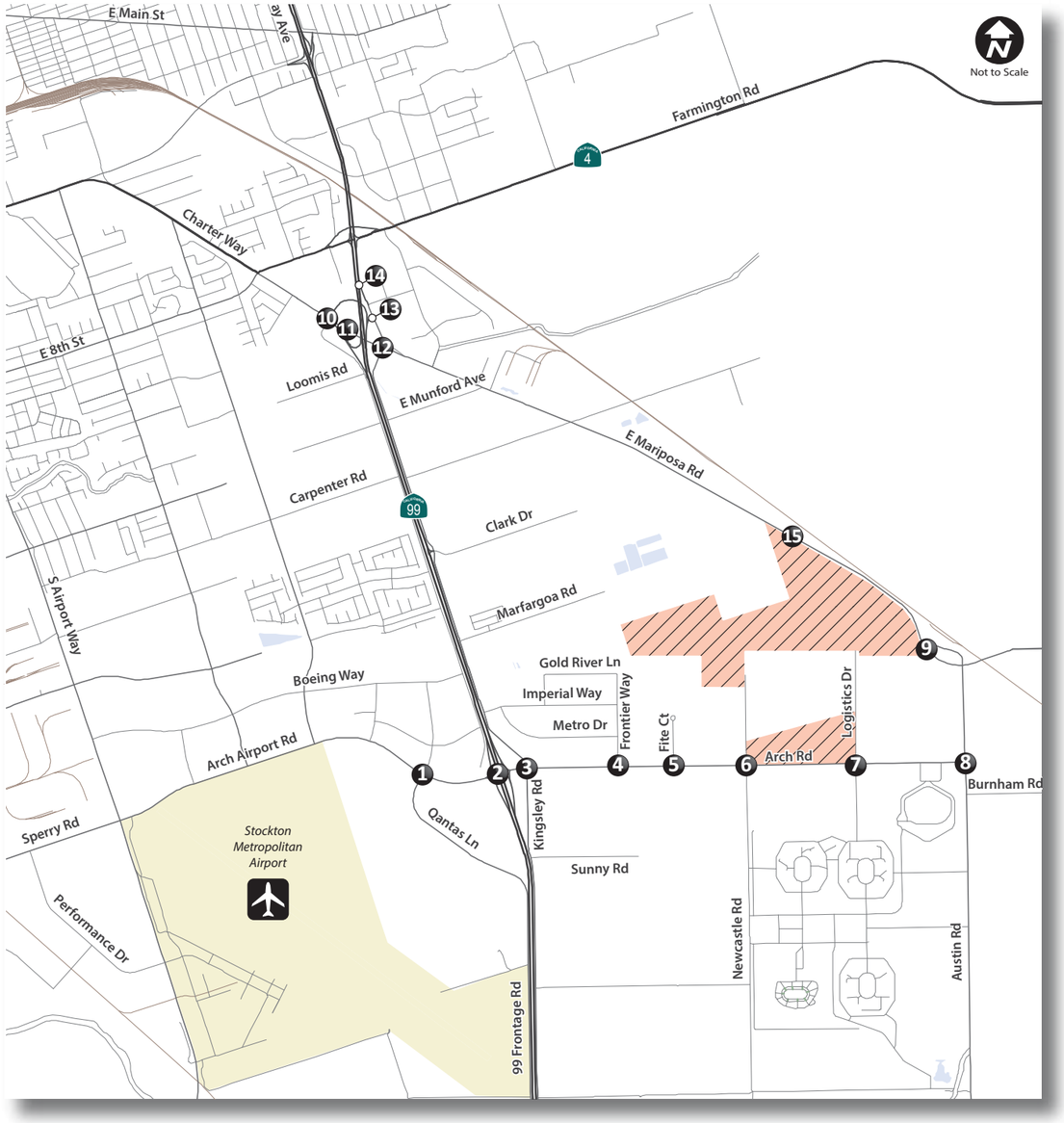
XX (YY) AM (PM) Peak Hour Traffic Volumes

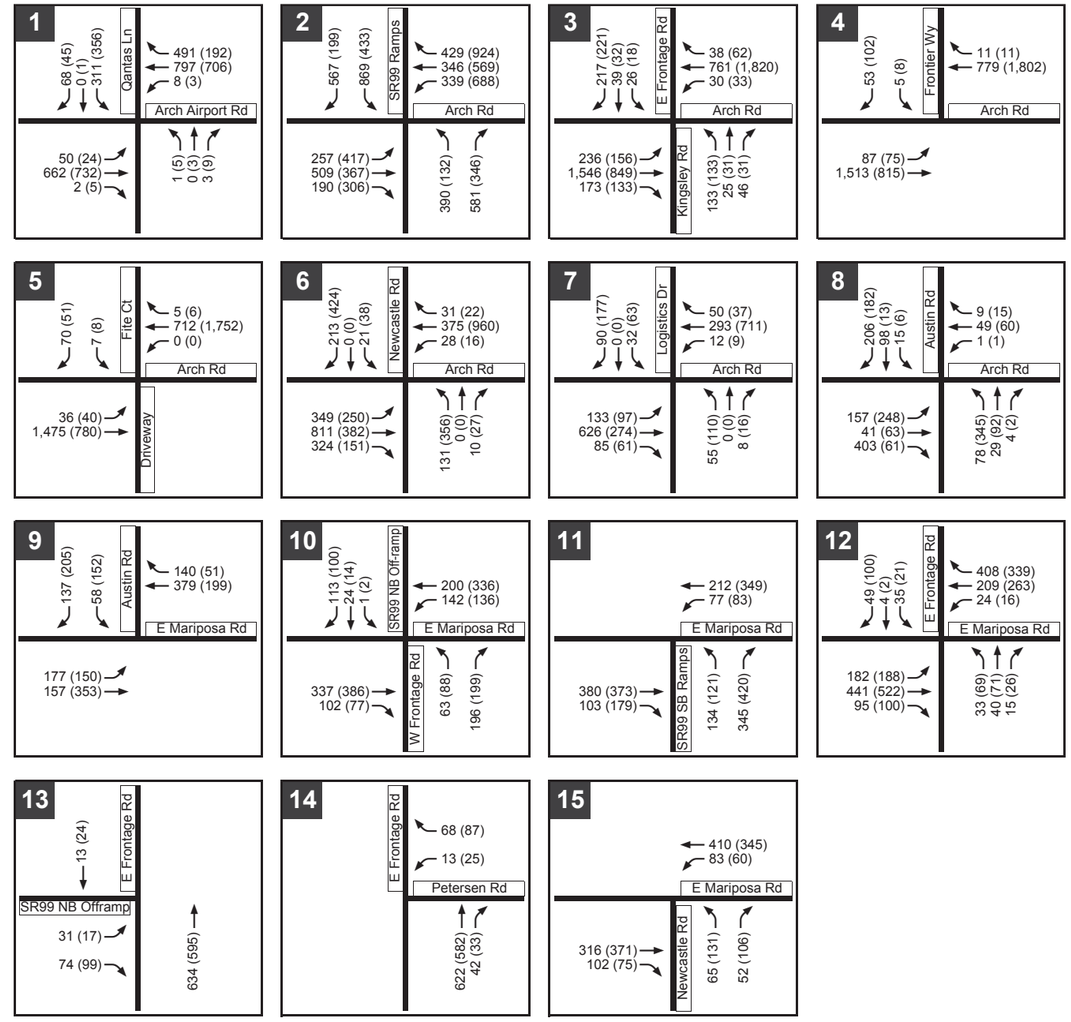
Figure 14.

Existing Plus Project Alternative
Peak Hour Intersection Traffic Volumes

WC12-2959_14_ExPPvolNoThru

FEHR & PEERS





MAP KEY

1 Study Intersection

Project

VOLUMES KEY

XX (YY) AM (PM) Peak Hour Traffic Volumes

Figure 15.

Near-Term with Project Alternative Peak Hour Intersection Traffic Volumes

WC12-2959_15_NTPPvolNoThru

FEHR & PEERS

TABLE 22
PROJECT ALTERNATIVE LEVEL OF SERVICE RESULTS

Intersection	Control Type[1]	Peak Hour	Existing		Existing Plus Project		Near-Term Without Project		Near-Term With Project		Near-Term With Project + Improvements	
			Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]
1. Arch-Airport Road/ Qantas Lane	Signal	AM PM	23 21	C C	23 21	C C	21 21	C C	21 21	C C	--	--
2. Arch-Airport Road/ State Route (SR) 99	Signal	AM PM	12 10	B A	19 12	B B	25 12	C B	**60** 17	**E** B	**--**	**--**
3. Arch Road/Frontage Road	Signal	AM PM	27 28	C C	34 31	C C	32 31	C C	54 48	D D	--	--
4. Arch Road/Frontier Way	SSSC	AM PM	2 (12) 2 (14)	A (B) A (B)	1 (20) 3 (47)	A (C) A (E)	1 (18) 4 (48)	A (C) A (E)	2 (48) 17 (416)	A (E) C (F)	1 (24) 4 (72)	A (C) A (F)
5. Arch Road/Fite Court	Signal	AM PM	13 10	B A	22 28	C C	19 20	B B	**108** **149**	**F** **F**	13 11	B B
6. Arch Road/Newcastle Road	Signal	AM PM	9 21	A C	33 **110**	C **F**	40 51	D D	**88** **158**	**F** **F**	26 53	C D
7. Arch Road/Logistics Drive	Signal	AM PM	3 3	A A	16 30	B C	14 15	B B	30 **75**	C **E**	21 31	C C
8. Arch Road/Austin Road	Signal	AM PM	21 21	C C	36 33	D C	36 29	D C	49 51	D D	--	--
9. Austin Road/ Mariposa Road	Signal	AM PM	9 14	A B	17 21	B C	14 18	B B	19 23	B C	--	--

TABLE 22
PROJECT ALTERNATIVE LEVEL OF SERVICE RESULTS

Intersection	Control Type[1]	Peak Hour	Existing		Existing Plus Project		Near-Term Without Project		Near-Term With Project		Near-Term With Project + Improvements	
			Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]	Delay[2,3]	LOS[4]
10. SR 99 NB Off-Ramp/ Mariposa Rd/SR 99 W. Frontage Rd/SR 99 SB On-Ramp	Signal	AM PM	34 32	C C	41 33	D C	34 33	C C	39 37	D D	14 11	B B
11. SR 99 Southbound Ramps/Mariposa Road	Signal	AM PM	22 21	C C	22 21	C C	22 20	C B	22 20	C B	15 15	B B
12. SR 99 East Frontage Road/Mariposa Road	Signal	AM PM	23 24	C C	24 25	C C	22 24	C C	23 27	C C	22 21	C C
13. SR 99 NB Mariposa Off-Ramp/SR 99 E. Frontage Rd	SSSC	AM PM	1 (13) 1 (11)	A (B) A (B)	1 (12) 1 (10)	A (B) A (A)	1 (12) 1 (11)	A (B) A (B)	2 (12) 2 (10)	A (B) A (A)	6 7	A A
14. SR 99 East Frontage Road/Peterson Road	SSSC	AM PM	2 (16) 2 (13)	A (C) A (B)	2 (16) 2 (14)	A (C) A (B)	2 (15) 2 (14)	A (B) A (C)	2 (16) 2 (15)	A (C) A (B)	Eliminated with interchange improvements	
15. Newcastle Road/Mariposa Road	Signal	AM PM	-- --	-- --	11 13	B B	-- --	-- --	12 14	B B	--	--

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicates potential significant impact.
[1] Signal =Signalized Intersection; SSSC = Side-Street Stop-Controlled intersection.
[2] Signalized intersection level of service based on weighted average control delay per vehicle, according to the 2000 *HCM*.
[3] Side-street control intersection LOS presented as: intersection average and (worst approach) control delay per vehicle, according to the 2000 *HCM*.
[4] LOS = level of service. LOS calculations conducted using the TRAFFIX 8.0 level of service analysis software package, except for 1 -3 and 10-13 which were analyzed with the Synchro 7.0 level of service analysis software package.
Source: Fehr & Peers, 2013.

7.2.2 FREEWAY MAINLINE OPERATIONS

Project traffic expected to use SR 99 in the project vicinity was added to the existing and near-term freeway volumes based on the trip generation/distribution shown previously and the expected travel routes to the site under Project Alternative conditions. SR 99 freeway mainline segments were analyzed based on the peak hour volumes shown in **Table 23** for the Existing plus Project condition and **Table 24** for the Near-Term With Project condition. Conditions with the planned improvements in place along the SR 99 corridor were also analyzed with the Project Alternative. These planned improvements, to which the Project would contribute through the payment of fees, would result in acceptable operations along the freeway corridor in the project vicinity.

TABLE 23
EXISTING PLUS PROJECT ALTERNATIVE PEAK HOUR FREEWAY MAINLINE ANALYSIS

Segment	Peak Hour	Existing			Existing Plus Project			With Project With SR 99 Improvements		% Increase
		Volume	Density	LOS	Volume	Density	LOS	Density	LOS	
Northbound SR 99 South of Arch Road SR 99	AM PM	3,380 2,340	31.8 20.9	D C	3,573 2,476	34.7 22.2	D C	21.4 14.8	C B	6% 6%
Northbound SR 99 between Arch Road and Mariposa Road	AM PM	3,260 2,850	30.2 25.7	D C	3,401 3,112	32.1 28.4	D D	20.3 18.6	C C	4% 9%
Northbound SR 99, North of Mariposa Road	AM PM	3,720 3,260	**37.4** 30.2	**E** D	3,813 3,452	**39.4** 32.8	**E** D	22.8 20.6	C C	3% 6%
Southbound North of Mariposa Road	AM PM	2,690 3,940	24.1 **42.3**	C **E**	2,957 4,130	26.7 **> 45**	D **F**	17.7 24.7	B C	10% 5%
Southbound SR 99 between Arch Road and Mariposa Road	AM PM	2,480 3,690	22.2 **36.8**	C **E**	2,687 3,853	24.1 **40.3**	C **E**	16.1 23.0	B C	8% 4%
Southbound SR 99 South of Arch Road	AM PM	1,860 3,850	16.7 **40.2**	B **E**	1,984 4,098	17.8 **> 45**	B **F**	11.9 24.5	B C	7% 6%

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicates potential significant impact.
Density measured in passenger cars per mile per lane.
Mainline segment level of service based on vehicle density, according to the Highway Capacity Manual, TRB 2000.
Source: Fehr & Peers, 2013.

TABLE 24
NEAR-TERM WITH PROJECT ALTERNATIVE PEAK HOUR FREEWAY MAINLINE ANALYSIS

Segment	Peak Hour	Without Project			With Project			With Project With SR 99 Improvements		% Increase
		Volume	Density	LOS	Volume	Density	LOS	Density	LOS	
Northbound SR 99 South of Arch Road SR 99	AM PM	3,626 2,441	**35.7** 21.9	**E** C	3,809 2,581	***39.5*** 23.1	***E*** C	22.8 15.4	C B	5% 6%
Northbound SR 99 between Arch Road and Mariposa Road	AM PM	3,393 3,182	32.0 29.2	D D	3,524 3,444	32.7 30.5	D D	21.1 20.6	C C	4% 8%
Northbound SR 99, North of Mariposa Road	AM PM	3,841 3,600	**40.0** **35.2**	**E** **E**	3,916 3,759	***43.5*** ***40.9***	***E*** ***E***	23.4 22.5	C C	2% 4%
Southbound North of Mariposa Road	AM PM	3,018 4,088	27.4 **> 45**	D **F**	3,284 4,281	29.9 ***> 45***	D ***F***	19.6 25.7	C C	9% 5%
Southbound SR 99 between Arch Road and Mariposa Road	AM PM	2,778 3,839	25.0 **39.9**	C **E**	2,985 4,002	25.7 ***41.3***	C ***E***	17.8 23.9	B C	8% 4%
Southbound SR 99 South of Arch Road	AM PM	1,956 4,118	17.5 **> 45**	B **F**	2,078 4,364	18.6 ***> 45***	C ***F***	12.4 26.3	B D	6% 6%

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicates potential significant impact.
Density measured in passenger cars per mile per lane.
Mainline segment level of service based on vehicle density, according to the Highway Capacity Manual (Transportation Research Board 2000.
Source: Fehr & Peers, 2013.

In the existing condition, addition of Project Alternative traffic would worsen the operation of segments that currently operate at deficient levels:

- SR 99 Northbound, North of Mariposa Road (1 Segment – AM peak hour)
- SR 99 Southbound, North of Mariposa Road to South of Arch Road (3 segments – PM peak hour)

The addition of Project Alternative traffic would not cause any new segments to operate at a deficient level. These results are the same as with the Proposed Project.

In the near-term condition, the analysis results indicate that in the study area, SR 99 is expected to degrade to deficient LOS E or LOS F conditions during either one or both the AM and PM peak hours in

prior to the addition of project traffic. With the addition of Project Alternative traffic the vehicle density per mile would increase on the following deficient segments:

- SR 99 Northbound, North of Mariposa Road (1 Segment – AM and PM peak hours)
- SR 99 Southbound, From North of Mariposa Road to South of Arch Road (3 segments – PM peak hour)
- SR 99 Northbound, South of Arch Road (1 Segment – AM peak hour)

These results are the same as with the Proposed Project.

7.2.3 FREEWAY RAMP OPERATIONS

Ramp merge and diverge operations were evaluated for Existing Plus Project Alternative and Near-term With Project Alternative conditions at the SR-99 Arch-Airport Road and Mariposa Road interchanges, as presented in **Table 26** and **Table 27**.

The addition of Project Alternative traffic would worsen the operation of the ramp merge/diverge areas that currently operate at a deficient level:

- SR-99 at Arch-Airport Road Southbound On-Ramp (AM peak hour)
- SR-99 at Mariposa Road Northbound On-Ramp (AM peak hour)
- SR-99 at Mariposa Road Southbound Off-Ramp (PM peak hour)

Operations of the SR-99 at Mariposa Road Southbound On-Ramp merge/diverge, which currently operates at acceptable levels, would degrade with the addition of Project Alternative traffic. Although this would be a new impact under existing conditions, the Proposed Project would result in an impact to this location in the near-term condition.

The following ramp junctions are projected to operate deficiently in the near-term prior to the addition of project traffic:

- SR-99 at Arch-Airport Road northbound off-ramp (AM peak hour)
- SR-99 at Arch-Airport Road southbound on-ramp (PM peak hour)
- SR-99 at Mariposa Road northbound off-ramp (AM peak hour)
- SR-99 at Mariposa Road northbound on-ramp (AM peak hour)
- SR-99 at Mariposa Road southbound off-ramp (PM peak hour)
- SR-99 at Mariposa Road southbound on-ramp (PM peak hour)

The addition of Project Alternative traffic would worsen the operation of these merge/diverge areas, and would result in deficient conditions at the Mariposa Road northbound on and off-ramps during the PM peak hour. These results are the same as the Proposed Project analysis.

TABLE 25
EXISTING PLUS PROJECT ALTERNATIVE FREEWAY RAMP ANALYSIS

Ramp	Peak Hour	Existing		Existing Plus Project		Existing Plus Project (With Interchange Improvements)	
		Density[1]	LOS[2]	Density[1]	LOS[2]	Density[1]	LOS[2]
SR-99 at Arch-Airport Road Northbound Off-Ramp	AM PM	31.2 23.8	D C	31.4 23.9	D C	23.7 18.4	C B
SR-99 at Arch-Airport Road Northbound On-Ramp	AM PM	20.9 16.6	C B	22.1 18.8	C B	11.1 10.6	B B
SR-99 at Arch-Airport Road Southbound Off-Ramp	AM PM	13.6 20.7	B C	14.7 20.8	B C	14.7 20.8	B C
SR-99 at Arch-Airport Road Southbound On-Ramp	AM PM	18.4 **36.1**	B **E**	19.5 ***> 45***	B ***F***	13.8 25.9	B C
SR-99 at Mariposa Road Northbound Off-Ramp	AM PM	33.3 29.6	D D	34.3 31.6	D D	24.1 22.5	C C
SR-99 at Mariposa Road Northbound On-Ramp	AM PM	**35.2** 31.0	**E** D	***36.1*** 32.7	***E*** D	24.1 22.0	C C
SR-99 at Mariposa Road Southbound Off-Ramp	AM PM	23.9 **35.3**	C **E**	25.8 ***36.7***	C ***E***	18.9 25.3	B C
SR-99 at Mariposa Road Southbound On-Ramp	AM PM	23.5 34.5	C D	25.4 ***35.8***	C ***E***	16.3 22.8	B C

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicate potential significant impact.
Density measured in passenger cars per mile per lane.
Ramp merge and diverge area LOS based on vehicle density, according to the *2000 HCM*.
Source: Fehr & Peers, 2013.

TABLE 26
NEAR-TERM WITH PROJECT ALTERNATIVE FREEWAY RAMP ANALYSIS

Ramp	Peak Hour	Near-Term Without Project		Near-Term With Project (No Interchange Improvements)		Near-Term With Project (With Interchange Improvements)	
		Density[1]	LOS[2]	Density[1]	LOS[2]	Density[1]	LOS[2]
SR-99 at Arch-Airport Road Northbound Off-Ramp	AM	**39.2**	**E**	***> 45***	***F***	29.6	D
	PM	27.4	C	28.8	D	21.6	C
SR-99 at Arch-Airport Road Northbound On-Ramp	AM	22.1	C	22.5	C	12.2	B
	PM	19.4	B	20.2	C	13.4	B
SR-99 at Arch-Airport Road Southbound Off-Ramp	AM	20.8	C	21.6	C	26.5	C
	PM	23.5	C	23.9	C	29.8	D
SR-99 at Arch-Airport Road Southbound On-Ramp	AM	19.4	B	20.3	C	14.6	B
	PM	**> 45**	**F**	***> 45***	***F***	28.1	D
SR-99 at Mariposa Road Northbound Off-Ramp	AM	**36.5**	**E**	***36.9***	***E***	26.1	C
	PM	34.3	D	***35.3***	***E***	25.6	C
SR-99 at Mariposa Road Northbound On-Ramp	AM	**36.4**	**E**	***> 45***	***F***	25.0	C
	PM	34.0	D	***36.5***	***E***	23.7	C
SR-99 at Mariposa Road Southbound Off-Ramp	AM	30.9	D	33.1	D	23.4	C
	PM	**> 45**	**F**	***> 45***	***F***	28.8	D
SR-99 at Mariposa Road Southbound On-Ramp	AM	26.2	C	26.9	C	18.0	B
	PM	**35.7**	**E**	***36.2***	***E***	23.6	C

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicate potential significant impact.
Density measured in passenger cars per mile per lane.
Ramp merge and diverge area LOS based on vehicle density, according to the *2000 HCM*.
Source: Fehr & Peers, 2013.

7.2.4 CUMULATIVE CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

Daily traffic volumes generated by the Project Alternative were added to the roadway segment volumes under General Plan, as described in Chapter 6. The resulting volumes were compared to the segment capacity for each roadway type and a LOS was assigned, as presented in **Table 27**. With the roadway improvements assumed in the General Plan Build-out network, the roadway segments in the vicinity of the project site are expected to have sufficient capacity to accommodate the anticipated vehicle traffic from build-out of the General Plan land uses, including development on the Project Alternative.

TABLE 27
PROJECT ALTERNATIVE CUMULATIVE ROADWAY SEGMENT ANALYSIS

Roadway Segment	Facility Type	Number of Lanes	Cumulative Without Project		Cumulative With Project			
			Daily Volume	LOS	Project Volume	Total Volume	LOS	Project %
Arch-Airport Road between SR 99 and Qantas Lane	Arterial	8	48,080	C	3,680	51,760	C	7%
Arch Road, east of SR 99 Frontage Road	Arterial	6	20,816	A	13,120	33,936	B	39%
Arch Road, east of Frontier Way	Arterial	6	28,096	A	13,120	41,216	C	32%
Arch Road, east of Fite Court	Arterial	6	25,266	A	13,120	38,386	C	34%
Arch Road, east of Newcastle Road	Arterial	4	17,640	A	7,180	24,820	B	29%
Arch Road, east of Logistics Drive	Arterial	4	13,882	A	5,820	19,702	A	30%
Mariposa Road, west of Austin Road	Arterial	6	20,214	A	4,880	25,094	A	19%
Mariposa Road, west of Project Driveway	Arterial	6	28,184	A	3,220	31,404	A	10%
Mariposa Road, west of Carpenter Road	Arterial	6	38,044	C	3,220	41,264	C	8%
SR 99, north of Mariposa Road	Freeway	10	175,080	D	5,310	180,390	D	3%
SR 99, north of Arch-Airport Road	Freeway	8	145,186	D	4,960	150,146	D	3%
SR 99, south of Arch-Airport Road	Freeway	8	120,774	C	5,110	125,884	C	4%

Source: Fehr & Peers, 2013.

7.3 PROJECT ALTERNATIVE IMPACTS AND MITIGATION MEASURES

The following describes the impacts and mitigation measures of the Project Alternative.

7.3.1 INTERSECTIONS

In the Existing Plus Project Alternative condition, the project would worsen the operation of one study intersection. This is the same impact as the Proposed Project. Measures to mitigate these impacts are discussed below.

Impact 10 – Arch Road/Newcastle Road (Intersection 6): The signalized intersection of Arch Road/Newcastle Road operates at acceptable levels prior to the addition of Project Alternative traffic in the existing condition. The addition of Project Alternative traffic would result in LOS F conditions during the PM peak hour, resulting in a ***significant*** impact.

> ***Mitigation Measure 10:*** Implement Mitigation Measure 1. In addition to measure 1, the project applicant shall modify the signal to provide a southbound right-turn overlap phase. With implementation of this mitigation measure, the intersection would operate acceptably during the AM and PM peak hours, as shown in **Table 28**, reducing the project's impact to a ***less-than-significant*** level.

TABLE 28
EXISTING PLUS PROJECT ALTERNATIVE PLUS MITIGATION INTERSECTION LEVELS OF SERVICE

Intersection	Control Type[1]	Peak Hour	Existing		Existing Plus Project		Existing Plus Project Plus Mitigation	
			Delay[2]	LOS	Delay[2]	LOS[4]	Delay[2]	LOS[4]
6. Arch Road/Newcastle Road	Signal	AM	9	A	33	C	15	B
		PM	21	C	**110**	**F**	29	C

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicates potential significant impact.
[1] Signal =Signalized Intersection;
[2] Signalized intersection level of service based on weighted average control delay per vehicle, according to the 2000 *HCM*.
Source: Fehr & Peers, 2013.

In the near-term condition, the Project Alterative would result in similar impacts to the Arch Road corridor if none of the planned roadway improvements are constructed by the time the project is fully built-out

and occupied. Analysis with improvements in place indicates that the intersections would operate acceptably, as shown in **Table 22**, except for the SR 99/Arch Road ramp terminal intersection.

Impact 11 – Arch Road/SR 99 Interchange (Intersection 2): The signalized intersection of Arch Road/ SR 99 is projected to operate at an acceptable level of service prior to the addition of Project Alternative traffic in the near-term condition. The addition of project traffic would result in LOS E conditions during the AM peak hour, resulting in a ***significant*** impact.

> ***Mitigation Measure 11:*** Widening of Arch Road between the northbound off-ramp to east of the Frontage Road to provide a third eastbound through lane would permit the conversion of the northbound right-turn "stop-controlled" movement to a "yield" movement from the off-ramp to Arch Road, improving the overall operation of the intersection. With implementation of this mitigation measure, the intersection would operate acceptably during the AM and PM peak hours, as shown in **Table 29**, reducing the project's impact to a ***less-than-significant*** level. Arch Road is identified in the City's General Plan as a six lane arterial from SR 99 to Newcastle Road. Should this widening be included in the PFF, payment of fees would constitute a fair-share payment. Should this improvement not be included in the PFF, the project applicant should pay their fair share towards the improvement. Should the improvement not be in place by the time the Project Alternative is approximately 85 percent occupied, the impact would be ***significant and unavoidable***.

TABLE 29
NEAR-TERM WITH PROJECT ALTERNATIVE PLUS MITIGATION
INTERSECTION LEVELS OF SERVICE

Intersection	Control Type[1]	Peak Hour	Near-term Without Project		Near-term With Project		Near-term With Project Plus Mitigation	
			Delay[2]	LOS	Delay[2]	LOS[4]	Delay[2]	LOS[4]
2. Arch Road/SR 99 Interchange	Signal	AM PM	25 12	C B	**60** 17	**E** B	19 15	B B

Notes: **Bold** denotes locations where level of service threshold is exceeded. ***Bold italics*** indicates potential significant impact.
[1] Signal =Signalized Intersection;
[2] Signalized intersection level of service based on weighted average control delay per vehicle, according to the 2000 *HCM*.
Source: Fehr & Peers, 2013.

Mitigation measures for the remaining other intersections along Arch Road under the Project Alterative condition are the same as for the proposed project, as detailed in Chapter 5.

7.3.2 FREEWAY SEGMENTS AND RAMPS

In the Existing Plus Project Alternative condition, one additional impact was identified with the Project Alternative as compared to the Proposed Project. No additional impacts to freeway segments or ramp merge/diverge areas were identified and the mitigation measures are the same as identified in Chapters 4 and 5 for the Existing and Near-term conditions.

Impact 12 – SR 99 Ramp Merge/Diverge Segments:

> ***SR 99 Southbound Mariposa Road On-Ramp:*** Prior to the addition of project traffic, the SR 99 southbound Mariposa Road on-ramp merge area is projected to operate at LOS D during the PM peak hour. The addition of project traffic would result in LOS E operations, which is considered a ***significant*** impact.

Mitigation Measure 12 – Implement Mitigation Measure 2 (widen SR 99 to 6 lanes from SR 120 to the Crosstown Freeway): The effectiveness of the measure is presented in Table 26 for all merge segments. As these improvements are fully funded and construction is expected to be completed in 2015/2016, payment of applicable regional and local transportation impact fees would constitute the project's fair share to this improvement. With implementation of this improvement, the ramp merge/diverge areas would operate at acceptable service levels during both peak hours, reducing the project's impact to SR 99 ramp merge/diverge areas at Arch and Mariposa Roads to a ***less-than-significant*** level.

8.0 SITE ACCESS, ON-SITE CIRCULATION AND PARKING

This chapter discusses project site access and internal circulation for vehicles, pedestrians, bicycles, and emergency vehicles based on the conceptual lotting plan presented on Figures 2A and 2B (in Chapter 1).

8.1 SITE ACCESS

The *2035 General Plan Update* envisions Arch Road as a six-lane arterial roadway from east of Frontier Way to Newcastle Road and a four-lane arterial from Newcastle Road to Austin Road. Based on the results of the General Plan Build-out intersection analysis, the 6-lane to 4-lane transition should occur east of the Newcastle Road intersection. In the eastbound direction, the third travel lane does not need to extend through the intersection. The transition to begin the third through lane in the westbound direction should be at least 450 feet to the east of the Newcastle Road intersection. A geometric plan line created for the Newcastle Road/Arch Road intersection shows the transition to three lanes occurring 500 feet east of the Newcastle Road intersection. This is sufficient to accommodate the projected traffic volumes at this intersection under General Plan Build-out plus Project conditions.

8.1.1 SITE ACCESS DRIVEWAYS

Access to the project site would be provided from driveways on Newcastle Road and Logistics Drive. Newcastle Road would be extended through the site and connect to Mariposa Road (on the north end of the site). It is recommended that all driveways serving the project site be designed to accommodate STAA trucks. Turn pocket length recommendations are discussed in further detail below.

8.1.1.1 Arch Road/Newcastle Road

To accommodate project traffic at this signalized intersection, the eastbound left-turn lane should be designed to provide approximately 350 feet of vehicle storage. The 95th percentile southbound vehicle queue on Newcastle Road approaching Arch Road is expected to be approximately 225 feet. Based on the expected vehicle queues, it is recommended that the first driveway on Newcastle Road, serving Southern Lot 1 be at least 300 feet from the Arch Road/Newcastle Road intersection, or be restricted to right-in/right-out operation.

Without the connection over Little John's Creek, the 95th percentile southbound vehicle queue on Newcastle Road approaching Arch Road is expected to be increase to approximately 250 feet. The eastbound left-turn queue into the site would also increase to approximately 375 feet. Should the

connection over Little John's Creek not be constructed, the eastbound left-turn pocket from Arch Road to Newcastle Road should be extended to approximately 400 feet.

8.1.1.2 Arch Road/Logistics Drive

To accommodate project traffic at this signalized intersection, the eastbound left-turn lane should be designed to provide 300 feet of vehicle storage, and the southbound right-turn lane should be designed to provide 300 feet of vehicle storage.

There are no recommended changes to the overall design of this intersection if the connection over Little John's Creek is not constructed.

8.1.1.3 Mariposa Road/Newcastle Road

To accommodate project traffic at this signalized intersection, the eastbound right-turn should be designed to provide 150 feet of vehicle storage and the northbound left-turn should be designed to provide 300 feet of storage.

There are no recommended changes to the overall design of this intersection if the connection over Little John's Creek is not constructed.

8.1.2 EMERGENCY VEHICLE ACCESS

Factors such as number of access points, roadway widths, and proximity to fire stations determine whether a project provides sufficient emergency vehicle access. The project provides multiple points of entry from Arch Road and one point of entry off of Mariposa Road. If one of these roadways or entrances is blocked or obstructed, an emergency vehicle could use the other roadway or an alternate entrance to access the site. Since the site plan has not yet been developed, the internal project roadways should be designed to provide adequate lane widths for emergency vehicle circulation. The applicant should consult with the City of Stockton fire department to ensure that the site plan provides adequate emergency vehicle access.

8.2 ON-SITE CIRCULATION

Because the site plan has not been developed, a detailed site plan review cannot be prepared. However, items that should be considered in the development of the final plan include: drive aisle widths and layouts, throat depths, dead-end drive aisles, vehicle/pedestrian conflicts, delivery vehicles, and parking stall dimensions. The *City of Stockton Municipal Code* should be used in conjunction with consultation by

the City of Stockton Public Works Department to ensure the site plan meets all *Municipal Code* requirements.

8.3 PARKING

Because a detailed site plan has not been prepared, a parking analysis cannot be completed. However, the site should provide sufficient parking to satisfy *City of Stockton Municipal Code* requirements, as illustrated in the *Stockton Municipal Code*.

8.3.1 PARKING STALL DIMENSIONS

The City of Stockton requires that 90-degree-angle parking stalls be at least 19 feet long and 9 feet wide with 25-foot-wide drive aisles. A maximum of 25 percent of the site's parking can be designated "compact" spaces, with dimensions of 9 feet wide and 15 feet long. Because the site is envisioned to potentially accommodate light industrial or warehousing type uses, sufficient truck parking should also be provided.

8.3.2 HANDICAPPED ACCESSIBLE PARKING

The requirement for accessible parking is based on the total proposed parking supply. Table 3-10 of the City of Stockton Municipal Code should be reviewed to determine the total accessible parking requirement for the project.

Technical Appendix for

NORCAL LOGISTICS CENTER

Prepared for:

ESA

January 2014

FEHR & PEERS

WC12-2959

APPENDIX A: TRAFFIC COUNTS

INTERSECTION TURNING MOVEMENT COUNTS
TOTAL VOLUMES

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-001 Quantas-Arch Airport
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Unshifted

	Quantas Lane Southbound				Arch Airport Road Westbound				Quantas Lane Northbound				Arch Airport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	35	1	7	43	3	68	36	107	0	0	3	3	3	69	1	73	226
07:15	44	0	6	50	2	123	76	201	0	0	1	1	7	67	1	75	327
07:30	68	0	8	76	2	125	127	254	0	0	2	2	12	84	0	96	428
07:45	83	0	16	99	1	217	156	374	1	0	0	1	14	77	1	92	566
Total	230	1	37	268	8	533	395	936	1	0	6	7	36	297	3	336	1547
08:00	105	0	35	140	3	163	116	282	0	0	0	0	13	93	0	106	528
08:15	55	0	9	64	0	135	65	200	1	0	1	2	2	65	1	68	334
08:30	48	0	7	55	2	106	57	165	2	0	0	2	6	71	1	78	300
08:45	21	0	5	26	3	126	53	182	0	0	3	3	4	66	1	71	282
Total	229	0	56	285	8	530	291	829	3	0	4	7	25	295	3	323	1444
16:00	53	1	8	62	0	66	52	118	1	1	4	6	10	121	0	131	317
16:15	73	0	15	88	0	73	66	139	2	0	2	4	9	101	2	112	343
16:30	93	0	8	101	2	90	38	130	0	0	2	2	6	186	1	193	426
16:45	62	1	7	70	1	83	40	124	1	1	2	4	2	109	1	112	310
Total	281	2	38	321	3	312	196	511	4	2	10	16	27	517	4	548	1396
17:00	108	0	10	118	0	79	36	115	2	2	3	7	3	140	1	144	384
17:15	62	0	10	72	0	67	29	96	0	0	0	0	2	99	0	101	269
17:30	69	1	6	76	3	55	18	76	0	0	1	1	3	80	1	84	237
17:45	40	0	7	47	7	66	14	87	1	0	1	2	3	87	4	94	230
Total	279	1	33	313	10	267	97	374	3	2	5	10	11	406	6	423	1120
Grand Total	1019	4	164	1187	29	1642	979	2650	11	4	25	40	99	1515	16	1630	5507
Apprch %	85.8	0.3	13.8		1.1	62	36.9		27.5	10	62.5		6.1	92.9	1		
Total %	18.5	0.1	3	21.6	0.5	29.8	17.8	48.1	0.2	0.1	0.5	0.7	1.8	27.5	0.3	29.6	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-002 SR 99 Ramps-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Unshifted

	SR-99 Ramps Southbound				Arch Road Westbound				SR-99 Ramps Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	101	0	15	116	21	30	32	83	47	0	41	88	37	33	50	120	407
07:15	106	0	79	185	32	42	41	115	93	0	44	137	35	33	37	105	542
07:30	102	0	115	217	30	48	57	135	76	0	52	128	57	45	27	129	609
07:45	119	0	151	270	41	61	56	158	125	0	50	175	76	49	50	175	778
Total	428	0	360	788	124	181	186	491	341	0	187	528	205	160	164	529	2336
08:00	78	0	196	274	46	53	42	141	79	0	37	116	72	58	65	195	726
08:15	64	0	105	169	48	40	40	128	41	0	45	86	29	35	67	131	514
08:30	68	0	95	163	35	43	52	130	41	0	37	78	42	30	41	113	484
08:45	63	0	72	135	44	56	45	145	51	0	36	87	34	32	33	99	466
Total	273	0	468	741	173	192	179	544	212	0	155	367	177	155	206	538	2190
16:00	52	0	71	123	59	41	118	218	29	0	34	63	72	45	26	143	547
16:15	40	0	42	82	54	50	84	188	35	0	40	75	92	43	68	203	548
16:30	47	0	58	105	46	62	78	186	25	0	30	55	109	56	48	213	559
16:45	42	0	38	80	50	44	99	193	31	0	37	68	67	58	121	246	587
Total	181	0	209	390	209	197	379	785	120	0	141	261	340	202	263	805	2241
17:00	41	0	42	83	78	52	120	250	28	0	25	53	116	49	47	212	598
17:15	33	0	35	68	46	34	85	165	20	0	19	39	70	39	85	194	466
17:30	31	0	27	58	51	31	62	144	21	0	23	44	66	36	42	144	390
17:45	46	0	24	70	49	29	49	127	26	0	26	52	46	41	46	133	382
Total	151	0	128	279	224	146	316	686	95	0	93	188	298	165	220	683	1836
Grand Total	1033	0	1165	2198	730	716	1060	2506	768	0	576	1344	1020	682	853	2555	8603
Apprch %	47	0	53		29.1	28.6	42.3		57.1	0	42.9		39.9	26.7	33.4		
Total %	12	0	13.5	25.5	8.5	8.3	12.3	29.1	8.9	0	6.7	15.6	11.9	7.9	9.9	29.7	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-003 Kingsley-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Unshifted

	Kingsley Road Southbound				Arch Road Westbound				Kingsley Road Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	4	12	35	51	4	30	8	42	20	7	11	38	37	96	38	171	302
07:15	4	7	53	64	7	43	6	56	20	7	5	32	47	93	44	184	336
07:30	8	10	45	63	7	45	9	61	48	5	15	68	55	88	55	198	390
07:45	6	9	58	73	2	57	9	68	38	9	7	54	69	111	36	216	411
Total	22	38	191	251	20	175	32	227	126	28	38	192	208	388	173	769	1439
08:00	7	13	55	75	8	58	13	79	26	3	9	38	57	78	37	172	364
08:15	7	4	51	62	7	51	6	64	25	14	8	47	52	67	26	145	318
08:30	13	3	51	67	2	51	4	57	26	9	9	44	52	59	26	137	305
08:45	5	8	39	52	5	49	6	60	62	38	20	120	46	56	13	115	347
Total	32	28	196	256	22	209	29	260	139	64	46	249	207	260	102	569	1334
16:00	6	3	52	61	7	133	18	158	32	10	2	44	60	44	33	137	400
16:15	6	12	62	80	2	93	12	107	33	8	6	47	37	55	32	124	358
16:30	4	7	43	54	4	104	6	114	34	8	7	49	35	55	39	129	346
16:45	4	6	35	45	6	126	11	143	35	11	6	52	41	58	38	137	377
Total	20	28	192	240	19	456	47	522	134	37	21	192	173	212	142	527	1481
17:00	3	6	70	79	8	145	32	185	30	4	4	38	37	49	23	109	411
17:15	5	8	43	56	4	85	11	100	33	10	7	50	28	28	29	85	291
17:30	3	6	38	47	4	74	10	88	32	2	5	39	32	42	22	96	270
17:45	9	2	48	59	4	51	9	64	25	5	6	36	43	39	32	114	273
Total	20	22	199	241	20	355	62	437	120	21	22	163	140	158	106	404	1245
Grand Total	94	116	778	988	81	1195	170	1446	519	150	127	796	728	1018	523	2269	5499
Apprch %	9.5	11.7	78.7		5.6	82.6	11.8		65.2	18.8	16		32.1	44.9	23		
Total %	1.7	2.1	14.1	18	1.5	21.7	3.1	26.3	9.4	2.7	2.3	14.5	13.2	18.5	9.5	41.3	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-004 Frontier-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Unshifted

	Frontier Way Southbound				Arch Road Westbound				Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	2	0	9	11	0	34	2	36	0	0	0	0	19	92	0	111	158
07:15	1	0	13	14	0	42	1	43	0	0	0	0	12	87	0	99	156
07:30	2	0	8	10	0	54	3	57	0	0	0	0	13	90	0	103	170
07:45	0	0	9	9	0	65	3	68	0	0	0	0	22	100	0	122	199
Total	5	0	39	44	0	195	9	204	0	0	0	0	66	369	0	435	683
08:00	1	0	10	11	0	66	2	68	0	0	0	0	21	67	0	88	167
08:15	0	0	8	8	0	51	2	53	0	0	0	0	11	62	0	73	134
08:30	6	0	8	14	0	50	2	52	0	0	0	0	11	66	0	77	143
08:45	1	0	10	11	0	56	0	56	0	0	0	0	14	67	0	81	148
Total	8	0	36	44	0	223	6	229	0	0	0	0	57	262	0	319	592
16:00	1	0	10	11	0	149	6	155	0	0	0	0	12	33	0	45	211
16:15	2	0	13	15	0	90	2	92	0	0	0	0	17	44	0	61	168
16:30	0	0	24	24	0	82	2	84	0	0	0	0	16	50	0	66	174
16:45	2	0	22	24	0	117	5	122	0	0	0	0	10	54	0	64	210
Total	5	0	69	74	0	438	15	453	0	0	0	0	55	181	0	236	763
17:00	2	0	19	21	0	170	1	171	0	0	0	0	17	41	0	58	250
17:15	0	0	8	8	0	87	1	88	0	0	0	0	9	29	0	38	134
17:30	0	0	17	17	0	64	1	65	0	0	0	0	8	34	0	42	124
17:45	2	0	8	10	0	51	2	53	0	0	0	0	9	42	0	51	114
Total	4	0	52	56	0	372	5	377	0	0	0	0	43	146	0	189	622
Grand Total	22	0	196	218	0	1228	35	1263	0	0	0	0	221	958	0	1179	2660
Apprch %	10.1	0	89.9		0	97.2	2.8		0	0	0		18.7	81.3	0		
Total %	0.8	0	7.4	8.2	0	46.2	1.3	47.5	0	0	0	0	8.3	36	0	44.3	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-005 Fite-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Unshifted

	Fite Court Southbound				Arch Road Westbound				Driveway Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	6	6	0	30	0	30	0	0	0	0	21	72	0	93	129
07:15	0	0	3	3	0	40	0	40	0	0	0	0	10	77	0	87	130
07:30	0	0	14	14	0	44	3	47	0	0	0	0	7	84	0	91	152
07:45	3	0	23	26	0	39	0	39	1	0	0	1	17	80	0	97	163
Total	3	0	46	49	0	153	3	156	1	0	0	1	55	313	0	368	574
08:00	4	0	30	34	0	36	2	38	0	0	0	0	2	64	0	66	138
08:15	6	0	21	27	0	32	0	32	0	0	0	0	16	46	1	63	122
08:30	4	0	11	15	0	37	1	38	0	0	0	0	21	48	0	69	122
08:45	1	0	18	19	0	40	1	41	0	0	0	0	20	48	0	68	128
Total	15	0	80	95	0	145	4	149	0	0	0	0	59	206	1	266	510
16:00	2	0	8	10	0	136	0	136	1	0	0	1	9	26	0	35	182
16:15	1	0	10	11	0	84	1	85	0	0	0	0	8	37	0	45	141
16:30	2	0	7	9	0	73	0	73	0	0	0	0	10	42	0	52	134
16:45	1	0	10	11	0	110	3	113	0	0	0	0	15	41	0	56	180
Total	6	0	35	41	0	403	4	407	1	0	0	1	42	146	0	188	637
17:00	4	0	24	28	0	140	2	142	0	0	0	0	7	32	0	39	209
17:15	0	0	12	12	0	77	4	81	0	0	0	0	15	16	0	31	124
17:30	2	0	13	15	0	52	2	54	0	0	0	0	12	21	0	33	102
17:45	1	0	13	14	0	40	0	40	0	0	0	0	13	31	0	44	98
Total	7	0	62	69	0	309	8	317	0	0	0	0	47	100	0	147	533
Grand Total	31	0	223	254	0	1010	19	1029	2	0	0	2	203	765	1	969	2254
Apprch %	12.2	0	87.8		0	98.2	1.8		100	0	0		20.9	78.9	0.1		
Total %	1.4	0	9.9	11.3	0	44.8	0.8	45.7	0.1	0	0	0.1	9	33.9	0	43	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-006 Newcastle-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Unshifted

	Newcastle Road Southbound				Arch Road Westbound				Newcastle Road Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	2	2	2	25	0	27	3	0	0	3	1	41	31	73	105
07:15	0	0	1	1	4	32	0	36	6	0	0	6	3	39	34	76	119
07:30	1	0	0	1	6	40	0	46	6	0	1	7	1	42	42	85	139
07:45	0	0	1	1	4	38	1	43	3	0	1	4	5	37	41	83	131
Total	1	0	4	5	16	135	1	152	18	0	2	20	10	159	148	317	494
08:00	0	0	1	1	1	35	0	36	2	0	0	2	4	37	28	69	108
08:15	0	0	1	1	1	25	1	27	3	0	0	3	1	32	16	49	80
08:30	0	0	1	1	2	29	0	31	2	0	1	3	0	27	19	46	81
08:45	0	0	0	0	3	27	0	30	2	0	0	2	0	25	17	42	74
Total	0	0	3	3	7	116	1	124	9	0	1	10	5	121	80	206	343
16:00	1	0	11	12	1	64	0	65	62	0	7	69	2	22	5	29	175
16:15	0	0	3	3	3	46	0	49	28	0	2	30	1	32	5	38	120
16:30	0	0	2	2	1	32	0	33	39	0	5	44	2	33	5	40	119
16:45	0	0	1	1	2	95	0	97	29	0	1	30	1	34	8	43	171
Total	1	0	17	18	7	237	0	244	158	0	15	173	6	121	23	150	585
17:00	0	0	0	0	0	89	0	89	31	0	2	33	3	28	3	34	156
17:15	0	0	2	2	1	47	1	49	32	0	2	34	1	15	3	19	104
17:30	0	0	2	2	0	34	1	35	23	0	1	24	1	22	0	23	84
17:45	0	0	3	3	2	24	0	26	12	0	1	13	2	28	1	31	73
Total	0	0	7	7	3	194	2	199	98	0	6	104	7	93	7	107	417
Grand Total	2	0	31	33	33	682	4	719	283	0	24	307	28	494	258	780	1839
Apprch %	6.1	0	93.9		4.6	94.9	0.6		92.2	0	7.8		3.6	63.3	33.1		
Total %	0.1	0	1.7	1.8	1.8	37.1	0.2	39.1	15.4	0	1.3	16.7	1.5	26.9	14	42.4	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-007 Logistics-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Unshifted

	Logistics Drive Southbound				Arch Road Westbound				Driveway Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	0	0	0	28	0	28	0	0	0	0	0	43	0	43	71
07:15	1	0	0	1	0	39	1	40	0	0	0	0	0	39	0	39	80
07:30	0	0	0	0	0	44	0	44	0	0	0	0	0	45	0	45	89
07:45	0	0	0	0	0	44	0	44	0	0	0	0	0	40	0	40	84
Total	1	0	0	1	0	155	1	156	0	0	0	0	0	167	0	167	324
08:00	0	0	1	1	0	35	0	35	0	0	0	0	0	37	0	37	73
08:15	0	0	0	0	0	27	0	27	0	0	0	0	0	32	0	32	59
08:30	0	0	1	1	0	37	0	37	0	0	0	0	1	37	0	38	76
08:45	0	0	0	0	0	34	0	34	0	0	0	0	0	28	0	28	62
Total	0	0	2	2	0	133	0	133	0	0	0	0	1	134	0	135	270
16:00	0	0	1	1	0	45	0	45	0	0	0	0	0	22	0	22	68
16:15	1	0	0	1	0	41	1	42	0	0	0	0	0	38	0	38	81
16:30	0	0	0	0	0	37	0	37	0	0	0	0	0	31	0	31	68
16:45	0	0	0	0	0	104	0	104	0	0	0	0	0	32	0	32	136
Total	1	0	1	2	0	227	1	228	0	0	0	0	0	123	0	123	353
17:00	0	0	0	0	0	86	0	86	0	0	0	0	0	22	0	22	108
17:15	0	0	0	0	0	44	0	44	0	0	0	0	0	34	0	34	78
17:30	0	0	0	0	0	39	0	39	0	0	0	0	0	34	0	34	73
17:45	0	0	0	0	0	26	0	26	0	0	0	0	1	22	0	23	49
Total	0	0	0	0	0	195	0	195	0	0	0	0	1	112	0	113	308
Grand Total	2	0	3	5	0	710	2	712	0	0	0	0	2	536	0	538	1255
Apprch %	40	0	60		0	99.7	0.3		0	0	0		0.4	99.6	0		
Total %	0.2	0	0.2	0.4	0	56.6	0.2	56.7	0	0	0	0	0.2	42.7	0	42.9	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-008 Austin-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Unshifted

	Austin Road Southbound				Arch Road Westbound				Austin Road Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	2	4	10	16	1	12	2	15	8	4	0	12	5	13	4	22	65
07:15	3	11	11	25	0	12	1	13	7	2	1	10	3	9	11	23	71
07:30	4	6	25	35	0	11	0	11	6	6	0	12	3	10	10	23	81
07:45	2	3	19	24	1	15	7	23	6	6	3	15	10	13	5	28	90
Total	11	24	65	100	2	50	10	62	27	18	4	49	21	45	30	96	307
08:00	6	1	11	18	0	11	1	12	8	4	0	12	9	9	6	24	66
08:15	2	3	4	9	0	11	2	13	9	4	0	13	7	8	1	16	51
08:30	3	7	6	16	0	15	3	18	8	5	0	13	7	5	12	24	71
08:45	4	5	5	14	0	11	1	12	7	7	1	15	7	9	5	21	62
Total	15	16	26	57	0	48	7	55	32	20	1	53	30	31	24	85	250
16:00	2	2	8	12	1	23	3	27	3	6	1	10	17	12	6	35	84
16:15	3	0	4	7	1	18	5	24	8	7	1	16	13	17	1	31	78
16:30	0	1	5	6	0	11	6	17	3	9	0	12	18	15	2	35	70
16:45	2	0	6	8	0	18	4	22	6	4	0	10	19	20	0	39	79
Total	7	3	23	33	2	70	18	90	20	26	2	48	67	64	9	140	311
17:00	1	0	7	8	0	13	0	13	2	4	1	7	25	11	1	37	65
17:15	6	0	5	11	0	20	8	28	4	3	0	7	7	12	0	19	65
17:30	2	0	5	7	0	12	4	16	1	4	0	5	12	11	2	25	53
17:45	3	1	6	10	0	8	5	13	1	4	0	5	13	20	1	34	62
Total	12	1	23	36	0	53	17	70	8	15	1	24	57	54	4	115	245
Grand Total	45	44	137	226	4	221	52	277	87	79	8	174	175	194	67	436	1113
Apprch %	19.9	19.5	60.6		1.4	79.8	18.8		50	45.4	4.6		40.1	44.5	15.4		
Total %	4	4	12.3	20.3	0.4	19.9	4.7	24.9	7.8	7.1	0.7	15.6	15.7	17.4	6	39.2	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-009 Austin-Mariposa
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Unshifted

	Austin Road Southbound				Mariposa Road Westbound				Northbound				Mariposa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	5	0	5	10	0	76	13	89	0	0	0	0	7	22	0	29	128
07:15	2	0	2	4	0	81	14	95	0	0	0	0	8	32	0	40	139
07:30	8	0	4	12	0	118	25	143	0	0	0	0	11	40	0	51	206
07:45	12	0	11	23	0	84	16	100	0	0	0	0	6	50	0	56	179
Total	27	0	22	49	0	359	68	427	0	0	0	0	32	144	0	176	652
08:00	7	0	5	12	0	87	13	100	0	0	0	0	7	29	0	36	148
08:15	6	0	7	13	0	68	4	72	0	0	0	0	4	42	0	46	131
08:30	9	0	9	18	0	78	8	86	0	0	0	0	7	49	0	56	160
08:45	7	0	7	14	0	62	5	67	0	0	0	0	7	26	0	33	114
Total	29	0	28	57	0	295	30	325	0	0	0	0	25	146	0	171	553
16:00	15	0	12	27	0	43	7	50	0	0	0	0	3	98	0	101	178
16:15	13	0	11	24	0	50	4	54	0	0	0	0	3	85	0	88	166
16:30	21	0	14	35	0	48	3	51	0	0	0	0	2	88	0	90	176
16:45	17	0	9	26	0	52	4	56	0	0	0	0	3	77	0	80	162
Total	66	0	46	112	0	193	18	211	0	0	0	0	11	348	0	359	682
17:00	21	0	9	30	0	43	7	50	0	0	0	0	2	92	0	94	174
17:15	8	0	10	18	0	45	6	51	0	0	0	0	6	91	0	97	166
17:30	11	0	9	20	0	45	5	50	0	0	0	0	1	79	0	80	150
17:45	10	0	10	20	0	45	6	51	0	0	0	0	4	60	0	64	135
Total	50	0	38	88	0	178	24	202	0	0	0	0	13	322	0	335	625
Grand Total	172	0	134	306	0	1025	140	1165	0	0	0	0	81	960	0	1041	2512
Apprch %	56.2	0	43.8		0	88	12		0	0	0		7.8	92.2	0		
Total %	6.8	0	5.3	12.2	0	40.8	5.6	46.4	0	0	0	0	3.2	38.2	0	41.4	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-010 SR 99 NB Off-Mariposa
Site Code : 00000000
Start Date : 8/28/2012
Page No : 1

Groups Printed- Unshifted

	SR-99 NB Off-Ramp Southbound				Mariposa Road Westbound				SR-99 NB Off-Ramp Northbound				Mariposa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	10	29	39	30	24	0	54	10	0	52	62	0	37	9	46	201
07:15	0	7	34	41	29	20	0	49	16	0	47	63	0	42	20	62	215
07:30	0	4	28	32	31	21	0	52	10	0	53	63	0	41	23	64	211
07:45	1	8	36	45	50	28	0	78	13	0	52	65	0	51	39	90	278
Total	1	29	127	157	140	93	0	233	49	0	204	253	0	171	91	262	905
08:00	0	5	15	20	32	35	0	67	22	0	44	66	0	34	16	50	203
08:15	0	5	20	25	25	20	0	45	14	0	22	36	0	48	7	55	161
08:30	1	5	24	30	23	28	0	51	11	0	42	53	0	39	12	51	185
08:45	1	7	19	27	25	21	0	46	14	0	28	42	0	44	11	55	170
Total	2	22	78	102	105	104	0	209	61	0	136	197	0	165	46	211	719
16:00	1	3	23	27	34	30	0	64	21	0	67	88	0	69	25	94	273
16:15	0	4	20	24	27	26	0	53	17	0	56	73	0	74	21	95	245
16:30	0	3	22	25	30	39	0	69	34	0	43	77	0	83	11	94	265
16:45	2	6	25	33	47	26	0	73	11	0	41	52	0	61	20	81	239
Total	3	16	90	109	138	121	0	259	83	0	207	290	0	287	77	364	1022
17:00	0	1	33	34	32	39	0	71	21	0	59	80	0	60	22	82	267
17:15	0	5	12	17	32	27	0	59	10	0	34	44	0	82	20	102	222
17:30	0	3	21	24	41	19	0	60	12	0	39	51	0	63	15	78	213
17:45	0	5	13	18	33	17	0	50	33	0	28	61	0	52	22	74	203
Total	0	14	79	93	138	102	0	240	76	0	160	236	0	257	79	336	905
Grand Total	6	81	374	461	521	420	0	941	269	0	707	976	0	880	293	1173	3551
Apprch %	1.3	17.6	81.1		55.4	44.6	0		27.6	0	72.4		0	75	25		
Total %	0.2	2.3	10.5	13	14.7	11.8	0	26.5	7.6	0	19.9	27.5	0	24.8	8.3	33	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-011 SR 99 SB Ramps-Mariposa
Site Code : 00000000
Start Date : 8/28/2012
Page No : 1

Groups Printed- Unshifted

	SR-99 SB Ramps Southbound				Mariposa Road Westbound				SR-99 SB Ramps Northbound				Mariposa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	0	0	8	24	0	32	34	0	43	77	0	69	18	87	196
07:15	0	0	0	0	20	19	0	39	27	0	53	80	0	67	26	93	212
07:30	0	0	0	0	12	32	0	44	24	0	65	89	0	66	23	89	222
07:45	0	0	0	0	12	30	0	42	49	0	65	114	0	82	33	115	271
Total	0	0	0	0	52	105	0	157	134	0	226	360	0	284	100	384	901
08:00	0	0	0	0	17	35	0	52	34	0	58	92	0	56	21	77	221
08:15	0	0	0	0	8	21	0	29	27	0	52	79	0	49	21	70	178
08:30	0	0	0	0	9	27	0	36	21	0	61	82	0	60	23	83	201
08:45	0	0	0	0	2	26	0	28	22	0	54	76	0	54	14	68	172
Total	0	0	0	0	36	109	0	145	104	0	225	329	0	219	79	298	772
16:00	0	0	0	0	14	31	0	45	29	0	78	107	0	92	48	140	292
16:15	0	0	0	0	11	24	0	35	28	0	83	111	0	86	43	129	275
16:30	0	0	0	0	17	38	0	55	30	0	98	128	0	77	53	130	313
16:45	0	0	0	0	8	39	0	47	38	0	87	125	0	63	40	103	275
Total	0	0	0	0	50	132	0	182	125	0	346	471	0	318	184	502	1155
17:00	0	0	0	0	17	42	0	59	25	0	90	115	0	83	43	126	300
17:15	0	0	0	0	4	28	0	32	32	0	77	109	0	68	41	109	250
17:30	0	0	0	0	11	29	0	40	31	0	88	119	0	67	31	98	257
17:45	0	0	0	0	15	24	0	39	24	0	55	79	0	47	34	81	199
Total	0	0	0	0	47	123	0	170	112	0	310	422	0	265	149	414	1006
Grand Total	0	0	0	0	185	469	0	654	475	0	1107	1582	0	1086	512	1598	3834
Apprch %	0	0	0		28.3	71.7	0		30	0	70		0	68	32		
Total %	0	0	0	0	4.8	12.2	0	17.1	12.4	0	28.9	41.3	0	28.3	13.4	41.7	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-012 99 Frontage-Mariposa
Site Code : 00000000
Start Date : 8/28/2012
Page No : 1

Groups Printed- Unshifted

	99 Frontage Road Southbound				Mariposa Road Westbound				99 Frontage Road Northbound				Mariposa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	4	3	1	8	2	22	90	114	6	9	1	16	46	56	12	114	252
07:15	3	0	4	7	5	31	85	121	4	8	3	15	47	52	18	117	260
07:30	1	2	2	5	3	36	104	143	7	7	3	17	43	59	27	129	294
07:45	7	2	2	11	11	37	101	149	8	13	6	27	51	61	25	137	324
Total	15	7	9	31	21	126	380	527	25	37	13	75	187	228	82	497	1130
08:00	3	0	2	5	3	35	72	110	11	11	1	23	41	63	18	122	260
08:15	4	2	2	8	4	18	79	101	9	6	5	20	16	53	27	96	225
08:30	5	2	4	11	1	20	52	73	10	14	3	27	39	51	34	124	235
08:45	1	1	4	6	5	18	75	98	6	9	7	22	24	47	33	104	230
Total	13	5	12	30	13	91	278	382	36	40	16	92	120	214	112	446	950
16:00	3	2	6	11	5	26	62	93	13	20	2	35	56	82	25	163	302
16:15	4	0	6	10	5	14	47	66	15	18	8	41	57	93	28	178	295
16:30	0	2	9	11	3	31	57	91	14	16	4	34	37	107	29	173	309
16:45	3	0	4	7	2	29	71	102	18	13	7	38	42	95	20	157	304
Total	10	4	25	39	15	100	237	352	60	67	21	148	192	377	102	671	1210
17:00	0	0	4	4	2	37	58	97	16	21	6	43	52	106	17	175	319
17:15	4	1	5	10	3	13	48	64	14	15	6	35	30	95	18	143	252
17:30	2	2	4	8	3	27	48	78	9	24	3	36	42	84	28	154	276
17:45	3	3	2	8	2	24	43	69	12	10	1	23	25	65	18	108	208
Total	9	6	15	30	10	101	197	308	51	70	16	137	149	350	81	580	1055
Grand Total	47	22	61	130	59	418	1092	1569	172	214	66	452	648	1169	377	2194	4345
Apprch %	36.2	16.9	46.9		3.8	26.6	69.6		38.1	47.3	14.6		29.5	53.3	17.2		
Total %	1.1	0.5	1.4	3	1.4	9.6	25.1	36.1	4	4.9	1.5	10.4	14.9	26.9	8.7	50.5	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-013 99 Frontage-SR 99 NB Off
Site Code : 00000000
Start Date : 8/28/2012
Page No : 1

Groups Printed- Unshifted

	99 Frontage Road Southbound				Westbound				99 Frontage Road Northbound				SR-99 NB Off-Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	4	0	4	0	0	0	0	0	140	0	140	11	0	4	15	159
07:15	0	4	0	4	0	0	0	0	0	139	0	139	7	0	2	9	152
07:30	0	4	0	4	0	0	0	0	0	161	0	161	9	0	1	10	175
07:45	0	3	0	3	0	0	0	0	0	164	0	164	6	0	8	14	181
Total	0	15	0	15	0	0	0	0	0	604	0	604	33	0	15	48	667
08:00	0	2	0	2	0	0	0	0	0	123	0	123	4	0	3	7	132
08:15	0	5	0	5	0	0	0	0	0	99	0	99	7	0	3	10	114
08:30	0	7	0	7	0	0	0	0	0	112	0	112	3	0	4	7	126
08:45	0	4	0	4	0	0	0	0	0	104	0	104	3	0	2	5	113
Total	0	18	0	18	0	0	0	0	0	438	0	438	17	0	12	29	485
16:00	0	8	0	8	0	0	0	0	0	142	0	142	5	0	4	9	159
16:15	0	6	0	6	0	0	0	0	0	123	0	123	4	0	3	7	136
16:30	0	11	0	11	0	0	0	0	0	109	0	109	6	0	0	6	126
16:45	0	3	0	3	0	0	0	0	0	126	0	126	1	0	4	5	134
Total	0	28	0	28	0	0	0	0	0	500	0	500	16	0	11	27	555
17:00	0	4	0	4	0	0	0	0	0	129	0	129	3	0	1	4	137
17:15	0	4	0	4	0	0	0	0	0	97	0	97	4	0	5	9	110
17:30	0	6	0	6	0	0	0	0	0	110	0	110	2	0	2	4	120
17:45	0	5	0	5	0	0	0	0	0	80	0	80	4	0	3	7	92
Total	0	19	0	19	0	0	0	0	0	416	0	416	13	0	11	24	459
Grand Total	0	80	0	80	0	0	0	0	0	1958	0	1958	79	0	49	128	2166
Apprch %	0	100	0		0	0	0		0	100	0		61.7	0	38.3		
Total %	0	3.7	0	3.7	0	0	0	0	0	90.4	0	90.4	3.6	0	2.3	5.9	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-014 99 Frontage-Peterson
Site Code : 00000000
Start Date : 8/28/2012
Page No : 1

Groups Printed- Unshifted

	SR-99 NB On-Ramp Southbound				Peterson Road Westbound				99 Frontage Road Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	0	0	2	0	5	7	0	135	15	150	0	0	0	0	157
07:15	0	0	0	0	4	0	6	10	0	135	11	146	0	0	0	0	156
07:30	0	0	0	0	4	0	18	22	0	159	11	170	0	0	0	0	192
07:45	0	0	0	0	3	0	14	17	0	158	10	168	0	0	0	0	185
Total	0	0	0	0	13	0	43	56	0	587	47	634	0	0	0	0	690
08:00	0	0	0	0	2	0	22	24	0	123	5	128	0	0	0	0	152
08:15	0	0	0	0	5	0	7	12	0	97	9	106	0	0	0	0	118
08:30	0	0	0	0	7	0	5	12	0	107	8	115	0	0	0	0	127
08:45	0	0	0	0	4	0	6	10	0	104	6	110	0	0	0	0	120
Total	0	0	0	0	18	0	40	58	0	431	28	459	0	0	0	0	517
16:00	0	0	0	0	8	0	25	33	0	131	10	141	0	0	0	0	174
16:15	0	0	0	0	6	0	17	23	0	117	10	127	0	0	0	0	150
16:30	0	0	0	0	11	0	16	27	0	104	13	117	0	0	0	0	144
16:45	0	0	0	0	4	0	13	17	0	125	3	128	0	0	0	0	145
Total	0	0	0	0	29	0	71	100	0	477	36	513	0	0	0	0	613
17:00	0	0	0	0	4	0	27	31	0	128	4	132	0	0	0	0	163
17:15	0	0	0	0	5	0	16	21	0	91	9	100	0	0	0	0	121
17:30	0	0	0	0	4	0	13	17	0	105	5	110	0	0	0	0	127
17:45	0	0	0	0	6	0	6	12	0	81	6	87	0	0	0	0	99
Total	0	0	0	0	19	0	62	81	0	405	24	429	0	0	0	0	510
Grand Total	0	0	0	0	79	0	216	295	0	1900	135	2035	0	0	0	0	2330
Apprch %	0	0	0		26.8	0	73.2		0	93.4	6.6		0	0	0		
Total %	0	0	0	0	3.4	0	9.3	12.7	0	81.5	5.8	87.3	0	0	0	0	

INTERSECTION TURNING MOVEMENT COUNTS
TRUCK VOLUMES

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-001 Quantas-Arch Airport
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Bank 1

	Quantas Lane Southbound				Arch Airport Road Westbound				Quantas Lane Northbound				Arch Airport Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	2	0	3	5	0	19	3	22	0	0	0	0	1	15	0	16	43
07:15	5	0	2	7	0	29	4	33	0	0	0	0	1	15	0	16	56
07:30	4	0	2	6	0	20	3	23	0	0	0	0	0	26	0	26	55
07:45	2	0	0	2	0	17	1	18	0	0	0	0	0	18	0	18	38
Total	13	0	7	20	0	85	11	96	0	0	0	0	2	74	0	76	192
08:00	1	0	3	4	0	18	4	22	0	0	0	0	1	18	0	19	45
08:15	2	0	2	4	0	32	1	33	0	0	0	0	1	15	0	16	53
08:30	3	0	3	6	0	14	4	18	0	0	0	0	1	22	0	23	47
08:45	4	0	3	7	0	25	3	28	0	0	0	0	2	27	0	29	64
Total	10	0	11	21	0	89	12	101	0	0	0	0	5	82	0	87	209
16:00	8	0	0	8	0	15	0	15	0	0	2	2	0	12	0	12	37
16:15	6	0	1	7	0	22	2	24	0	0	0	0	0	18	0	18	49
16:30	2	0	0	2	0	19	4	23	0	0	0	0	3	22	0	25	50
16:45	6	0	2	8	0	18	2	20	0	0	0	0	0	15	0	15	43
Total	22	0	3	25	0	74	8	82	0	0	2	2	3	67	0	70	179
17:00	6	0	3	9	0	19	4	23	0	0	1	1	0	10	0	10	43
17:15	1	0	1	2	0	12	4	16	0	0	0	0	0	12	0	12	30
17:30	6	0	3	9	0	10	3	13	0	0	0	0	1	13	0	14	36
17:45	2	0	0	2	0	13	0	13	0	0	0	0	0	18	0	18	33
Total	15	0	7	22	0	54	11	65	0	0	1	1	1	53	0	54	142
Grand Total	60	0	28	88	0	302	42	344	0	0	3	3	11	276	0	287	722
Apprch %	68.2	0	31.8		0	87.8	12.2		0	0	100		3.8	96.2	0		
Total %	8.3	0	3.9	12.2	0	41.8	5.8	47.6	0	0	0.4	0.4	1.5	38.2	0	39.8	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-002 SR 99 Ramps-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Bank 1

	SR-99 Ramps Southbound				Arch Road Westbound				SR-99 Ramps Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	14	0	11	25	11	10	7	28	5	0	11	16	2	6	9	17	86
07:15	16	0	6	22	14	5	13	32	21	0	3	24	8	12	4	24	102
07:30	12	0	13	25	6	6	8	20	5	0	6	11	11	8	12	31	87
07:45	8	0	5	13	9	6	19	34	7	0	8	15	5	5	12	22	84
Total	50	0	35	85	40	27	47	114	38	0	28	66	26	31	37	94	359
08:00	11	0	7	18	23	8	9	40	9	0	7	16	4	7	8	19	93
08:15	12	0	13	25	18	15	10	43	6	0	8	14	4	6	9	19	101
08:30	7	0	4	11	15	9	18	42	5	0	5	10	14	5	9	28	91
08:45	12	0	10	22	24	12	13	49	8	0	3	11	10	10	10	30	112
Total	42	0	34	76	80	44	50	174	28	0	23	51	32	28	36	96	397
16:00	10	0	7	17	15	5	11	31	4	0	13	17	5	4	5	14	79
16:15	9	0	8	17	10	13	8	31	3	0	16	19	12	7	9	28	95
16:30	10	0	14	24	5	9	7	21	2	0	9	11	6	10	9	25	81
16:45	8	0	8	16	10	8	7	25	6	0	19	25	5	9	5	19	85
Total	37	0	37	74	40	35	33	108	15	0	57	72	28	30	28	86	340
17:00	14	0	9	23	7	12	6	25	3	0	5	8	7	6	4	17	73
17:15	4	0	4	8	9	3	4	16	6	0	4	10	6	5	2	13	47
17:30	7	0	3	10	7	5	5	17	5	0	10	15	6	10	4	20	62
17:45	11	0	4	15	5	5	2	12	3	0	9	12	1	8	8	17	56
Total	36	0	20	56	28	25	17	70	17	0	28	45	20	29	18	67	238
Grand Total	165	0	126	291	188	131	147	466	98	0	136	234	106	118	119	343	1334
Apprch %	56.7	0	43.3		40.3	28.1	31.5		41.9	0	58.1		30.9	34.4	34.7		
Total %	12.4	0	9.4	21.8	14.1	9.8	11	34.9	7.3	0	10.2	17.5	7.9	8.8	8.9	25.7	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-003 Kingsley-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Bank 1

	Kingsley Road Southbound				Arch Road Westbound				Kingsley Road Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	1	1	8	10	0	14	1	15	2	0	1	3	11	20	2	33	61
07:15	0	0	6	6	2	25	1	28	0	0	0	0	5	24	3	32	66
07:30	1	0	6	7	1	13	3	17	2	1	3	6	3	20	4	27	57
07:45	2	0	9	11	0	26	1	27	5	2	0	7	8	16	3	27	72
Total	4	1	29	34	3	78	6	87	9	3	4	16	27	80	12	119	256
08:00	3	1	14	18	2	31	8	41	3	0	2	5	7	17	3	27	91
08:15	2	0	13	15	5	25	2	32	5	0	1	6	4	21	2	27	80
08:30	0	0	9	9	0	33	2	35	1	0	1	2	1	15	2	18	64
08:45	0	0	5	5	3	27	2	32	10	6	5	21	2	17	3	22	80
Total	5	1	41	47	10	116	14	140	19	6	9	34	14	70	10	94	315
16:00	0	0	4	4	0	30	4	34	2	0	0	2	6	20	2	28	68
16:15	2	2	4	8	0	24	2	26	2	0	0	2	5	29	2	36	72
16:30	1	0	1	2	1	18	2	21	2	0	0	2	6	21	5	32	57
16:45	1	0	3	4	0	19	0	19	1	0	1	2	1	31	3	35	60
Total	4	2	12	18	1	91	8	100	7	0	1	8	18	101	12	131	257
17:00	0	0	3	3	0	21	0	21	3	0	0	3	6	22	1	29	56
17:15	1	1	1	3	0	14	4	18	0	0	2	2	5	7	4	16	39
17:30	0	0	2	2	0	12	2	14	3	0	0	3	3	22	4	29	48
17:45	1	1	8	10	0	6	2	8	1	1	2	4	7	20	3	30	52
Total	2	2	14	18	0	53	8	61	7	1	4	12	21	71	12	104	195
Grand Total	15	6	96	117	14	338	36	388	42	10	18	70	80	322	46	448	1023
Apprch %	12.8	5.1	82.1		3.6	87.1	9.3		60	14.3	25.7		17.9	71.9	10.3		
Total %	1.5	0.6	9.4	11.4	1.4	33	3.5	37.9	4.1	1	1.8	6.8	7.8	31.5	4.5	43.8	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-004 Frontier-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Bank 1

	Frontier Way Southbound				Arch Road Westbound				Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	1	0	4	5	0	14	0	14	0	0	0	0	6	17	0	23	42
07:15	0	0	9	9	0	18	0	18	0	0	0	0	3	18	0	21	48
07:30	1	0	4	5	0	12	1	13	0	0	0	0	2	21	0	23	41
07:45	0	0	5	5	0	24	0	24	0	0	0	0	3	13	0	16	45
Total	2	0	22	24	0	68	1	69	0	0	0	0	14	69	0	83	176
08:00	1	0	7	8	0	30	1	31	0	0	0	0	3	19	0	22	61
08:15	0	0	2	2	0	23	1	24	0	0	0	0	4	15	0	19	45
08:30	1	0	6	7	0	26	0	26	0	0	0	0	2	11	0	13	46
08:45	0	0	3	3	0	27	0	27	0	0	0	0	4	21	0	25	55
Total	2	0	18	20	0	106	2	108	0	0	0	0	13	66	0	79	207
16:00	0	0	3	3	0	28	3	31	0	0	0	0	1	17	0	18	52
16:15	1	0	4	5	0	23	1	24	0	0	0	0	5	25	0	30	59
16:30	0	0	3	3	0	14	2	16	0	0	0	0	0	20	0	20	39
16:45	1	0	2	3	0	17	5	22	0	0	0	0	3	29	0	32	57
Total	2	0	12	14	0	82	11	93	0	0	0	0	9	91	0	100	207
17:00	0	0	3	3	0	20	1	21	0	0	0	0	3	19	0	22	46
17:15	0	0	1	1	0	15	1	16	0	0	0	0	1	7	0	8	25
17:30	0	0	3	3	0	11	1	12	0	0	0	0	0	19	0	19	34
17:45	0	0	0	0	0	9	3	12	0	0	0	0	1	23	0	24	36
Total	0	0	7	7	0	55	6	61	0	0	0	0	5	68	0	73	141
Grand Total	6	0	59	65	0	311	20	331	0	0	0	0	41	294	0	335	731
Apprch %	9.2	0	90.8		0	94	6		0	0	0		12.2	87.8	0		
Total %	0.8	0	8.1	8.9	0	42.5	2.7	45.3	0	0	0	0	5.6	40.2	0	45.8	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-005 Fite-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Bank 1

	Fite Court Southbound				Arch Road Westbound				Driveway Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	1	1	0	16	0	16	0	0	0	0	4	14	0	18	35
07:15	0	0	2	2	0	16	0	16	0	0	0	0	2	19	0	21	39
07:30	0	0	2	2	0	13	0	13	0	0	0	0	0	20	0	20	35
07:45	3	0	8	11	0	18	0	18	0	0	0	0	2	13	0	15	44
Total	3	0	13	16	0	63	0	63	0	0	0	0	8	66	0	74	153
08:00	2	0	17	19	0	20	0	20	0	0	0	0	0	19	0	19	58
08:15	2	0	14	16	0	17	0	17	0	0	0	0	3	17	0	20	53
08:30	2	0	5	7	0	21	0	21	0	0	0	0	4	10	0	14	42
08:45	0	0	12	12	0	22	0	22	0	0	0	0	8	14	0	22	56
Total	6	0	48	54	0	80	0	80	0	0	0	0	15	60	0	75	209
16:00	1	0	0	1	0	31	0	31	0	0	0	0	5	14	0	19	51
16:15	0	0	3	3	0	20	0	20	0	0	0	0	5	22	0	27	50
16:30	0	0	1	1	0	14	0	14	0	0	0	0	6	15	0	21	36
16:45	0	0	2	2	0	18	2	20	0	0	0	0	11	22	0	33	55
Total	1	0	6	7	0	83	2	85	0	0	0	0	27	73	0	100	192
17:00	0	0	3	3	0	18	1	19	0	0	0	0	3	15	0	18	40
17:15	0	0	1	1	0	15	2	17	0	0	0	0	2	6	0	8	26
17:30	0	0	0	0	0	12	1	13	0	0	0	0	7	14	0	21	34
17:45	0	0	2	2	0	10	0	10	0	0	0	0	4	19	0	23	35
Total	0	0	6	6	0	55	4	59	0	0	0	0	16	54	0	70	135
Grand Total	10	0	73	83	0	281	6	287	0	0	0	0	66	253	0	319	689
Apprch %	12	0	88		0	97.9	2.1		0	0	0		20.7	79.3	0		
Total %	1.5	0	10.6	12	0	40.8	0.9	41.7	0	0	0	0	9.6	36.7	0	46.3	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-006 Newcastle-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Bank 1

	Newcastle Road Southbound				Arch Road Westbound				Newcastle Road Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	1	1	0	16	0	16	0	0	0	0	1	15	0	16	33
07:15	0	0	0	0	0	12	0	12	1	0	0	1	1	18	0	19	32
07:30	1	0	0	1	0	18	0	18	0	0	0	0	0	19	1	20	39
07:45	0	0	0	0	0	18	1	19	1	0	1	2	3	14	1	18	39
Total	1	0	1	2	0	64	1	65	2	0	1	3	5	66	2	73	143
08:00	0	0	0	0	0	21	0	21	0	0	0	0	2	18	0	20	41
08:15	0	0	1	1	0	15	1	16	0	0	0	0	1	12	0	13	30
08:30	0	0	1	1	0	16	0	16	0	0	0	0	0	11	1	12	29
08:45	0	0	0	0	0	14	0	14	0	0	0	0	0	9	0	9	23
Total	0	0	2	2	0	66	1	67	0	0	0	0	3	50	1	54	123
16:00	1	0	3	4	0	30	0	30	0	0	0	0	2	12	1	15	49
16:15	0	0	1	1	0	18	0	18	0	0	0	0	1	20	1	22	41
16:30	0	0	1	1	0	12	0	12	1	0	0	1	2	12	0	14	28
16:45	0	0	1	1	0	18	0	18	0	0	0	0	1	21	0	22	41
Total	1	0	6	7	0	78	0	78	1	0	0	1	6	65	2	73	159
17:00	0	0	0	0	0	14	0	14	0	0	0	0	2	11	0	13	27
17:15	0	0	1	1	1	16	1	18	0	0	0	0	1	7	0	8	27
17:30	0	0	1	1	0	12	1	13	0	0	0	0	1	13	0	14	28
17:45	0	0	3	3	1	7	0	8	0	0	0	0	1	17	0	18	29
Total	0	0	5	5	2	49	2	53	0	0	0	0	5	48	0	53	111
Grand Total	2	0	14	16	2	257	4	263	3	0	1	4	19	229	5	253	536
Apprch %	12.5	0	87.5		0.8	97.7	1.5		75	0	25		7.5	90.5	2		
Total %	0.4	0	2.6	3	0.4	47.9	0.7	49.1	0.6	0	0.2	0.7	3.5	42.7	0.9	47.2	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-007 Logistics-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Bank 1

	Logistics Drive Southbound				Arch Road Westbound				Driveway Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	0	0	0	16	0	16	0	0	0	0	0	15	0	15	31
07:15	1	0	0	1	0	12	1	13	0	0	0	0	0	18	0	18	32
07:30	0	0	0	0	0	12	0	12	0	0	0	0	0	23	0	23	35
07:45	0	0	0	0	0	21	0	21	0	0	0	0	0	15	0	15	36
Total	1	0	0	1	0	61	1	62	0	0	0	0	0	71	0	71	134
08:00	0	0	0	0	0	19	0	19	0	0	0	0	0	20	0	20	39
08:15	0	0	0	0	0	15	0	15	0	0	0	0	0	17	0	17	32
08:30	0	0	0	0	0	19	0	19	0	0	0	0	0	13	0	13	32
08:45	0	0	0	0	0	18	0	18	0	0	0	0	0	11	0	11	29
Total	0	0	0	0	0	71	0	71	0	0	0	0	0	61	0	61	132
16:00	0	0	0	0	0	20	0	20	0	0	0	0	0	6	0	6	26
16:15	1	0	0	1	0	23	1	24	0	0	0	0	0	20	0	20	45
16:30	0	0	0	0	0	16	0	16	0	0	0	0	0	18	0	18	34
16:45	0	0	0	0	0	15	0	15	0	0	0	0	0	16	0	16	31
Total	1	0	0	1	0	74	1	75	0	0	0	0	0	60	0	60	136
17:00	0	0	0	0	0	14	0	14	0	0	0	0	0	11	0	11	25
17:15	0	0	0	0	0	11	0	11	0	0	0	0	0	12	0	12	23
17:30	0	0	0	0	0	16	0	16	0	0	0	0	0	21	0	21	37
17:45	0	0	0	0	0	10	0	10	0	0	0	0	0	9	0	9	19
Total	0	0	0	0	0	51	0	51	0	0	0	0	0	53	0	53	104
Grand Total	2	0	0	2	0	257	2	259	0	0	0	0	0	245	0	245	506
Apprch %	100	0	0		0	99.2	0.8		0	0	0		0	100	0		
Total %	0.4	0	0	0.4	0	50.8	0.4	51.2	0	0	0	0	0	48.4	0	48.4	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-008 Austin-Arch
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Bank 1

	Austin Road Southbound				Arch Road Westbound				Austin Road Northbound				Arch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	1	2	1	4	0	12	1	13	2	2	0	4	2	9	2	13	34
07:15	2	8	0	10	0	10	0	10	2	2	1	5	1	8	9	18	43
07:30	3	4	0	7	0	10	0	10	0	4	0	4	1	9	4	14	35
07:45	2	1	0	3	1	14	5	20	3	6	2	11	2	12	4	18	52
Total	8	15	1	24	1	46	6	53	7	14	3	24	6	38	19	63	164
08:00	5	1	1	7	0	10	1	11	3	4	0	7	2	9	4	15	40
08:15	2	2	0	4	0	8	2	10	5	4	0	9	2	7	1	10	33
08:30	3	6	0	9	0	14	2	16	2	5	0	7	1	3	8	12	44
08:45	2	2	0	4	0	9	0	9	3	4	0	7	3	5	3	11	31
Total	12	11	1	24	0	41	5	46	13	17	0	30	8	24	16	48	148
16:00	1	1	0	2	0	23	3	26	0	3	1	4	1	12	1	14	46
16:15	3	0	1	4	1	15	4	20	0	3	1	4	1	16	0	17	45
16:30	0	0	1	1	0	10	5	15	1	1	0	2	0	14	1	15	33
16:45	1	0	2	3	0	18	3	21	2	1	0	3	0	18	0	18	45
Total	5	1	4	10	1	66	15	82	3	8	2	13	2	60	2	64	169
17:00	1	0	1	2	0	14	0	14	0	2	1	3	0	10	0	10	29
17:15	5	0	1	6	0	14	5	19	1	0	0	1	0	9	0	9	35
17:30	0	0	0	0	0	11	4	15	0	2	0	2	0	11	0	11	28
17:45	1	0	1	2	0	6	3	9	0	3	0	3	1	17	0	18	32
Total	7	0	3	10	0	45	12	57	1	7	1	9	1	47	0	48	124
Grand Total	32	27	9	68	2	198	38	238	24	46	6	76	17	169	37	223	605
Apprch %	47.1	39.7	13.2		0.8	83.2	16		31.6	60.5	7.9		7.6	75.8	16.6		
Total %	5.3	4.5	1.5	11.2	0.3	32.7	6.3	39.3	4	7.6	1	12.6	2.8	27.9	6.1	36.9	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-009 Austin-Mariposa
Site Code : 00000000
Start Date : 8/29/2012
Page No : 1

Groups Printed- Bank 1

	Austin Road Southbound				Mariposa Road Westbound				Northbound				Mariposa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	2	0	3	5	0	12	1	13	0	0	0	0	7	11	0	18	36
07:15	1	0	2	3	0	10	0	10	0	0	0	0	7	7	0	14	27
07:30	2	0	3	5	0	8	0	8	0	0	0	0	7	10	0	17	30
07:45	3	0	10	13	0	9	0	9	0	0	0	0	4	19	0	23	45
Total	8	0	18	26	0	39	1	40	0	0	0	0	25	47	0	72	138
08:00	2	0	5	7	0	10	2	12	0	0	0	0	7	5	0	12	31
08:15	3	0	7	10	0	7	0	7	0	0	0	0	3	15	0	18	35
08:30	3	0	7	10	0	10	2	12	0	0	0	0	6	16	0	22	44
08:45	2	0	4	6	0	11	0	11	0	0	0	0	4	8	0	12	29
Total	10	0	23	33	0	38	4	42	0	0	0	0	20	44	0	64	139
16:00	0	0	8	8	0	8	0	8	0	0	0	0	2	7	0	9	25
16:15	0	0	5	5	0	4	0	4	0	0	0	0	3	1	0	4	13
16:30	0	0	8	8	0	7	0	7	0	0	0	0	1	4	0	5	20
16:45	0	0	4	4	0	3	1	4	0	0	0	0	2	3	0	5	13
Total	0	0	25	25	0	22	1	23	0	0	0	0	8	15	0	23	71
17:00	0	0	2	2	0	4	1	5	0	0	0	0	1	6	0	7	14
17:15	0	0	5	5	0	4	2	6	0	0	0	0	5	7	0	12	23
17:30	0	0	6	6	0	2	0	2	0	0	0	0	0	7	0	7	15
17:45	0	0	7	7	0	7	1	8	0	0	0	0	1	1	0	2	17
Total	0	0	20	20	0	17	4	21	0	0	0	0	7	21	0	28	69
Grand Total	18	0	86	104	0	116	10	126	0	0	0	0	60	127	0	187	417
Apprch %	17.3	0	82.7		0	92.1	7.9		0	0	0		32.1	67.9	0		
Total %	4.3	0	20.6	24.9	0	27.8	2.4	30.2	0	0	0	0	14.4	30.5	0	44.8	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-010 SR 99 NB Off-Mariposa
Site Code : 00000000
Start Date : 8/28/2012
Page No : 1

Groups Printed- Bank 1

	SR-99 NB Off-Ramp Southbound				Mariposa Road Westbound				SR-99 NB Off-Ramp Northbound				Mariposa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	1	1	1	1	0	2	1	0	7	8	0	6	3	9	20
07:15	0	3	4	7	2	3	0	5	1	0	6	7	0	12	0	12	31
07:30	0	0	2	2	4	2	0	6	0	0	10	10	0	12	1	13	31
07:45	1	1	2	4	4	1	0	5	0	0	4	4	0	10	0	10	23
Total	1	4	9	14	11	7	0	18	2	0	27	29	0	40	4	44	105
08:00	0	2	1	3	1	4	0	5	0	0	7	7	0	11	1	12	27
08:15	0	2	3	5	4	1	0	5	1	0	9	10	0	10	1	11	31
08:30	0	1	3	4	1	4	0	5	0	0	8	8	0	5	1	6	23
08:45	0	1	4	5	7	4	0	11	1	0	5	6	0	6	0	6	28
Total	0	6	11	17	13	13	0	26	2	0	29	31	0	32	3	35	109
16:00	0	1	3	4	5	3	0	8	2	0	7	9	0	4	2	6	27
16:15	0	3	4	7	5	7	0	12	0	0	7	7	0	8	1	9	35
16:30	0	2	3	5	4	2	0	6	2	0	4	6	0	4	0	4	21
16:45	0	4	5	9	10	3	0	13	1	0	3	4	0	7	1	8	34
Total	0	10	15	25	24	15	0	39	5	0	21	26	0	23	4	27	117
17:00	0	0	4	4	3	2	0	5	1	0	6	7	0	4	1	5	21
17:15	0	3	3	6	6	5	0	11	1	0	3	4	0	6	1	7	28
17:30	0	1	3	4	6	3	0	9	0	0	2	2	0	10	2	12	27
17:45	0	3	2	5	8	0	0	8	1	0	4	5	0	3	1	4	22
Total	0	7	12	19	23	10	0	33	3	0	15	18	0	23	5	28	98
Grand Total	1	27	47	75	71	45	0	116	12	0	92	104	0	118	16	134	429
Apprch %	1.3	36	62.7		61.2	38.8	0		11.5	0	88.5		0	88.1	11.9		
Total %	0.2	6.3	11	17.5	16.6	10.5	0	27	2.8	0	21.4	24.2	0	27.5	3.7	31.2	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-011 SR 99 SB Ramps-Mariposa
Site Code : 00000000
Start Date : 8/28/2012
Page No : 1

Groups Printed- Bank 1

	SR-99 SB Ramps Southbound				Mariposa Road Westbound				SR-99 SB Ramps Northbound				Mariposa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	0	0	2	0	0	2	3	0	10	13	0	8	3	11	26
07:15	0	0	0	0	9	4	0	13	0	0	10	10	0	8	9	17	40
07:30	0	0	0	0	3	5	0	8	3	0	16	19	0	15	6	21	48
07:45	0	0	0	0	4	3	0	7	2	0	12	14	0	11	5	16	37
Total	0	0	0	0	18	12	0	30	8	0	48	56	0	42	23	65	151
08:00	0	0	0	0	6	2	0	8	6	0	12	18	0	11	7	18	44
08:15	0	0	0	0	3	3	0	6	3	0	11	14	0	15	6	21	41
08:30	0	0	0	0	7	1	0	8	1	0	11	12	0	10	7	17	37
08:45	0	0	0	0	1	5	0	6	6	0	20	26	0	7	3	10	42
Total	0	0	0	0	17	11	0	28	16	0	54	70	0	43	23	66	164
16:00	0	0	0	0	5	6	0	11	2	0	13	15	0	7	4	11	37
16:15	0	0	0	0	4	7	0	11	5	0	13	18	0	10	5	15	44
16:30	0	0	0	0	3	4	0	7	3	0	13	16	0	5	4	9	32
16:45	0	0	0	0	0	5	0	5	7	0	13	20	0	5	4	9	34
Total	0	0	0	0	12	22	0	34	17	0	52	69	0	27	17	44	147
17:00	0	0	0	0	8	4	0	12	1	0	9	10	0	8	2	10	32
17:15	0	0	0	0	9	8	0	17	3	0	3	6	0	4	4	8	31
17:30	0	0	0	0	4	5	0	9	4	0	9	13	0	7	6	13	35
17:45	0	0	0	0	1	5	0	6	2	0	8	10	0	4	2	6	22
Total	0	0	0	0	22	22	0	44	10	0	29	39	0	23	14	37	120
Grand Total	0	0	0	0	69	67	0	136	51	0	183	234	0	135	77	212	582
Apprch %	0	0	0		50.7	49.3	0		21.8	0	78.2		0	63.7	36.3		
Total %	0	0	0	0	11.9	11.5	0	23.4	8.8	0	31.4	40.2	0	23.2	13.2	36.4	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-012 99 Frontage-Mariposa
Site Code : 00000000
Start Date : 8/28/2012
Page No : 1

Groups Printed- Bank 1

	99 Frontage Road Southbound				Mariposa Road Westbound				99 Frontage Road Northbound				Mariposa Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	2	1	1	4	0	2	15	17	0	1	0	1	3	15	1	19	41
07:15	1	0	2	3	0	9	11	20	1	0	1	2	4	13	2	19	44
07:30	1	1	1	3	0	7	25	32	1	0	1	2	8	25	2	35	72
07:45	4	1	2	7	1	6	19	26	0	3	0	3	4	13	6	23	59
Total	8	3	6	17	1	24	70	95	2	4	2	8	19	66	11	96	216
08:00	1	0	1	2	0	5	20	25	0	3	1	4	4	18	2	24	55
08:15	2	1	1	4	0	3	15	18	1	2	3	6	4	14	5	23	51
08:30	2	2	3	7	0	5	14	19	2	2	0	4	4	12	2	18	48
08:45	0	1	1	2	0	2	16	18	1	2	1	4	3	16	6	25	49
Total	5	4	6	15	0	15	65	80	4	9	5	18	15	60	15	90	203
16:00	2	0	1	3	1	8	14	23	3	3	1	7	8	9	0	17	50
16:15	3	0	2	5	1	4	1	6	4	2	1	7	3	15	3	21	39
16:30	0	1	1	2	0	7	19	26	0	2	1	3	5	10	3	18	49
16:45	3	0	1	4	0	2	11	13	3	1	2	6	2	13	3	18	41
Total	8	1	5	14	2	21	45	68	10	8	5	23	18	47	9	74	179
17:00	0	0	2	2	0	10	4	14	2	1	1	4	1	9	4	14	34
17:15	2	0	3	5	0	6	7	13	1	0	5	6	2	3	1	6	30
17:30	1	1	2	4	2	5	7	14	2	4	1	7	5	8	2	15	40
17:45	1	0	1	2	1	1	5	7	2	2	0	4	1	9	2	12	25
Total	4	1	8	13	3	22	23	48	7	7	7	21	9	29	9	47	129
Grand Total	25	9	25	59	6	82	203	291	23	28	19	70	61	202	44	307	727
Apprch %	42.4	15.3	42.4		2.1	28.2	69.8		32.9	40	27.1		19.9	65.8	14.3		
Total %	3.4	1.2	3.4	8.1	0.8	11.3	27.9	40	3.2	3.9	2.6	9.6	8.4	27.8	6.1	42.2	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-013 99 Frontage-SR 99 NB Off
Site Code : 00000000
Start Date : 8/28/2012
Page No : 1

Groups Printed- Bank 1

	99 Frontage Road Southbound				Westbound				99 Frontage Road Northbound				SR-99 NB Off-Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	1	0	1	0	0	0	0	0	18	0	18	1	0	3	4	23
07:15	0	1	0	1	0	0	0	0	0	17	0	17	1	0	1	2	20
07:30	0	3	0	3	0	0	0	0	0	33	0	33	2	0	1	3	39
07:45	0	2	0	2	0	0	0	0	0	25	0	25	0	0	5	5	32
Total	0	7	0	7	0	0	0	0	0	93	0	93	4	0	10	14	114
08:00	0	1	0	1	0	0	0	0	0	24	0	24	0	0	1	1	26
08:15	0	3	0	3	0	0	0	0	0	24	0	24	1	0	1	2	29
08:30	0	5	0	5	0	0	0	0	0	22	0	22	1	0	2	3	30
08:45	0	2	0	2	0	0	0	0	0	23	0	23	0	0	2	2	27
Total	0	11	0	11	0	0	0	0	0	93	0	93	2	0	6	8	112
16:00	0	1	0	1	0	0	0	0	0	24	0	24	2	0	3	5	30
16:15	0	2	0	2	0	0	0	0	0	6	0	6	2	0	1	3	11
16:30	0	2	0	2	0	0	0	0	0	25	0	25	1	0	0	1	28
16:45	0	0	0	0	0	0	0	0	0	12	0	12	0	0	4	4	16
Total	0	5	0	5	0	0	0	0	0	67	0	67	5	0	8	13	85
17:00	0	2	0	2	0	0	0	0	0	11	0	11	1	0	1	2	15
17:15	0	2	0	2	0	0	0	0	0	11	0	11	1	0	2	3	16
17:30	0	3	0	3	0	0	0	0	0	15	0	15	2	0	1	3	21
17:45	0	1	0	1	0	0	0	0	0	9	0	9	1	0	1	2	12
Total	0	8	0	8	0	0	0	0	0	46	0	46	5	0	5	10	64
Grand Total	0	31	0	31	0	0	0	0	0	299	0	299	16	0	29	45	375
Apprch %	0	100	0		0	0	0		0	100	0		35.6	0	64.4		
Total %	0	8.3	0	8.3	0	0	0	0	0	79.7	0	79.7	4.3	0	7.7	12	

All Traffic Data

(916) 771-8700

City of Stockton
Heavy Trucks on Bank 1

File Name : 12-7352-014 99 Frontage-Peterson
Site Code : 00000000
Start Date : 8/28/2012
Page No : 1

Groups Printed- Bank 1

	SR-99 NB On-Ramp Southbound				Peterson Road Westbound				99 Frontage Road Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	0	0	1	0	2	3	0	16	2	18	0	0	0	0	21
07:15	0	0	0	0	1	0	1	2	0	15	3	18	0	0	0	0	20
07:30	0	0	0	0	3	0	5	8	0	33	3	36	0	0	0	0	44
07:45	0	0	0	0	2	0	4	6	0	22	2	24	0	0	0	0	30
Total	0	0	0	0	7	0	12	19	0	86	10	96	0	0	0	0	115
08:00	0	0	0	0	1	0	7	8	0	24	1	25	0	0	0	0	33
08:15	0	0	0	0	3	0	0	3	0	21	3	24	0	0	0	0	27
08:30	0	0	0	0	5	0	2	7	0	22	1	23	0	0	0	0	30
08:45	0	0	0	0	2	0	1	3	0	23	0	23	0	0	0	0	26
Total	0	0	0	0	11	0	10	21	0	90	5	95	0	0	0	0	116
16:00	0	0	0	0	1	0	0	1	0	22	3	25	0	0	0	0	26
16:15	0	0	0	0	2	0	2	4	0	7	1	8	0	0	0	0	12
16:30	0	0	0	0	2	0	0	2	0	21	5	26	0	0	0	0	28
16:45	0	0	0	0	0	0	2	2	0	11	1	12	0	0	0	0	14
Total	0	0	0	0	5	0	4	9	0	61	10	71	0	0	0	0	80
17:00	0	0	0	0	2	0	3	5	0	10	2	12	0	0	0	0	17
17:15	0	0	0	0	3	0	1	4	0	10	2	12	0	0	0	0	16
17:30	0	0	0	0	2	0	2	4	0	13	4	17	0	0	0	0	21
17:45	0	0	0	0	1	0	2	3	0	9	1	10	0	0	0	0	13
Total	0	0	0	0	8	0	8	16	0	42	9	51	0	0	0	0	67
Grand Total	0	0	0	0	31	0	34	65	0	279	34	313	0	0	0	0	378
Apprch %	0	0	0		47.7	0	52.3		0	89.1	10.9		0	0	0		
Total %	0	0	0	0	8.2	0	9	17.2	0	73.8	9	82.8	0	0	0	0	

ROADWAY SEGMENT TUBE COUNTS

Volumes for: Tuesday, August 28, 2012 City: Stockton Project #: 12-7353-001 1

Location: Arch Airport Road between Quantas Lane and Highway 99 Ramps.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	32	134			29	150				
12:15	35	162			25	137				
12:30	29	142			17	170				
12:45	27	174	123	612	29	207	100	664	223	1276
1:00	11	207			27	187				
1:15	22	179			27	185				
1:30	24	159			25	147				
1:45	13	199	70	744	21	177	100	696	170	1440
2:00	26	140			15	174				
2:15	24	195			35	160				
2:30	21	151			40	195				
2:45	44	243	115	729	37	173	127	702	242	1431
3:00	30	188			31	180				
3:15	45	218			31	171				
3:30	28	210			33	155				
3:45	52	255	155	871	65	119	160	625	315	1496
4:00	24	191			67	152				
4:15	52	198			37	143				
4:30	35	208			62	141				
4:45	44	291	155	888	81	131	247	567	402	1455
5:00	52	185			97	128				
5:15	70	264			66	93				
5:30	65	158			84	98				
5:45	103	166	290	773	140	81	387	400	677	1173
6:00	106	88			185	92				
6:15	105	109			125	99				
6:30	78	82			130	101				
6:45	120	88	409	367	207	81	647	373	1056	740
7:00	108	121			259	85				
7:15	120	118			187	70				
7:30	120	115			220	61				
7:45	148	96	496	450	286	64	952	280	1448	730
8:00	182	68			398	83				
8:15	191	85			249	56				
8:30	137	78			196	50				
8:45	103	59	613	290	176	64	1019	253	1632	543
9:00	111	58			161	50				
9:15	100	70			104	56				
9:30	105	45			137	58				
9:45	110	54	426	227	132	55	534	219	960	446
10:00	102	43			113	61				
10:15	118	57			131	52				
10:30	132	46			88	51				
10:45	123	47	475	193	120	67	452	231	927	424
11:00	129	33			108	54				
11:15	131	92			112	34				
11:30	139	44			138	46				
11:45	141	54	540	223	132	26	490	160	1030	383
Total	3867	6367	3867	6367	5215	5170	5215	5170	9082	11537
Combined Total	10234		10234		10385		10385		20619	
AM Peak	7:45 AM				7:30 AM					
Vol.	658				1153					
P.H.F.	0.861				0.724					
PM Peak		4:30 PM				12:30 PM				
Vol.		948				749				
P.H.F.		0.814				0.905				

Volumes for: Wednesday, August 29, 2012 City: Stockton Project #: 12-7353-001 1

Location: Arch Airport Road between Quantas Lane and Highway 99 Ramps.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	39	126			23	173				
12:15	46	183			17	163				
12:30	21	131			16	179				
12:45	27	161	133	601	24	209	80	724	213	1325
1:00	12	189			18	210				
1:15	20	162			25	182				
1:30	9	141			12	253				
1:45	16	239	57	731	27	186	82	831	139	1562
2:00	25	166			20	143				
2:15	26	162			28	178				
2:30	25	173			39	218				
2:45	40	252	116	753	41	194	128	733	244	1486
3:00	21	161			28	202				
3:15	37	260			23	157				
3:30	46	208			34	137				
3:45	36	277	140	906	44	152	129	648	269	1554
4:00	32	217			54	147				
4:15	39	208			43	115				
4:30	48	188			53	146				
4:45	55	255	174	868	77	131	227	539	401	1407
5:00	65	156			94	118				
5:15	56	218			51	117				
5:30	68	167			85	72				
5:45	117	147	306	688	120	78	350	385	656	1073
6:00	92	133			228	86				
6:15	90	128			96	92				
6:30	85	100			146	89				
6:45	113	92	380	453	197	99	667	366	1047	819
7:00	99	83			242	78				
7:15	105	97			174	76				
7:30	107	132			224	81				
7:45	152	94	463	406	257	67	897	302	1360	708
8:00	185	58			360	64				
8:15	196	70			223	40				
8:30	104	53			181	62				
8:45	108	67	593	248	164	56	928	222	1521	470
9:00	99	61			178	57				
9:15	121	68			153	50				
9:30	90	46			159	67				
9:45	116	48	426	223	158	56	648	230	1074	453
10:00	108	49			161	55				
10:15	99	66			182	51				
10:30	122	33			129	53				
10:45	115	50	444	198	129	81	601	240	1045	438
11:00	108	27			158	53				
11:15	127	101			154	33				
11:30	130	35			143	34				
11:45	189	59	554	222	166	37	621	157	1175	379
Total	3786	6297	3786	6297	5358	5377	5358	5377	9144	11674
Combined Total	10083		10083		10735		10735		20818	
AM Peak	7:30 AM				7:30 AM					
Vol.	640				1064					
P.H.F.	0.816				0.739					
PM Peak		3:15 PM				12:45 PM				
Vol.		962				854				
P.H.F.		0.868				0.844				

Volumes for: Tuesday, August 28, 2012 City: Stockton Project #: 12-7353-002

Location: Arch Road between Highway 99 Ramps and Frontier Way (Day 1).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	9	58			28	71				
12:15	15	77			9	58				
12:30	12	83			18	71				
12:45	15	84	51	302	11	60	66	260	117	562
1:00	6	78			28	63				
1:15	8	69			7	54				
1:30	15	70			18	64				
1:45	11	110	40	327	9	45	62	226	102	553
2:00	15	90			14	122				
2:15	14	54			10	66				
2:30	11	49			22	121				
2:45	14	57	54	250	12	105	58	414	112	664
3:00	22	69			15	160				
3:15	28	63			10	168				
3:30	15	63			9	246				
3:45	30	79	95	274	10	199	44	773	139	1047
4:00	26	57			19	151				
4:15	36	54			17	115				
4:30	32	62			19	99				
4:45	35	56	129	229	23	68	78	433	207	662
5:00	58	53			18	115				
5:15	67	54			24	146				
5:30	126	51			23	179				
5:45	240	43	491	201	24	89	89	529	580	730
6:00	329	50			47	86				
6:15	253	42			34	62				
6:30	121	40			62	69				
6:45	164	37	867	169	27	75	170	292	1037	461
7:00	160	39			60	44				
7:15	124	32			40	42				
7:30	98	42			56	40				
7:45	119	28	501	141	45	38	201	164	702	305
8:00	120	28			61	40				
8:15	102	24			57	29				
8:30	86	20			56	30				
8:45	71	35	379	107	73	21	247	120	626	227
9:00	80	18			58	11				
9:15	62	27			56	23				
9:30	53	28			54	19				
9:45	59	43	254	116	44	20	212	73	466	189
10:00	51	23			40	54				
10:15	48	17			48	28				
10:30	49	19			56	69				
10:45	53	21	201	80	43	47	187	198	388	278
11:00	54	20			59	66				
11:15	69	13			53	19				
11:30	50	17			51	17				
11:45	54	7	227	57	58	15	221	117	448	174
Total	3289	2253	3289	2253	1635	3599	1635	3599	4924	5852
Combined Total	5542		5542		5234		5234		10776	
AM Peak	5:30 AM				11:45 AM					
Vol.	948				258					
P.H.F.	0.720				0.908					
PM Peak		1:15 PM				3:00 PM				
Vol.		339				773				
P.H.F.		0.770				0.786				

Volumes for: Wednesday, August 29, 2012 City: Stockton Project #: 12-7353-002
Location: Arch Road between Highway 99 Ramps and Frontier Way (Day 2).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	10	58			17	75				
12:15	8	84			16	77				
12:30	8	84			21	70				
12:45	13	95	39	321	9	71	63	293	102	614
1:00	12	74			11	67				
1:15	7	78			18	53				
1:30	7	76			17	59				
1:45	18	107	44	335	8	55	54	234	98	569
2:00	13	92			14	107				
2:15	14	47			6	57				
2:30	11	43			19	112				
2:45	13	68	51	250	13	91	52	367	103	617
3:00	27	64			11	153				
3:15	30	67			8	196				
3:30	25	76			11	234				
3:45	31	55	113	262	11	162	41	745	154	1007
4:00	30	61			33	176				
4:15	25	47			15	113				
4:30	27	66			14	160				
4:45	52	67	134	241	22	96	84	545	218	786
5:00	84	69			15	112				
5:15	74	56			35	133				
5:30	128	39			17	151				
5:45	266	48	552	212	31	95	98	491	650	703
6:00	349	51			52	87				
6:15	224	35			43	58				
6:30	147	46			56	63				
6:45	129	53	849	185	46	58	197	266	1046	451
7:00	159	40			54	46				
7:15	111	25			46	37				
7:30	99	44			44	46				
7:45	107	25	476	134	59	45	203	174	679	308
8:00	118	30			65	41				
8:15	97	29			78	36				
8:30	80	40			78	25				
8:45	72	40	367	139	55	38	276	140	643	279
9:00	80	28			62	23				
9:15	80	27			67	20				
9:30	43	31			39	14				
9:45	47	38	250	124	52	18	220	75	470	199
10:00	52	33			57	65				
10:15	53	22			50	26				
10:30	56	15			54	84				
10:45	57	15	218	85	47	34	208	209	426	294
11:00	59	13			56	61				
11:15	47	16			51	17				
11:30	60	9			53	22				
11:45	56	12	222	50	49	13	209	113	431	163
Total	3315	2338	3315	2338	1705	3652	1705	3652	5020	5990
Combined Total	5653		5653		5357		5357		11010	
AM Peak	5:45 AM				7:45 AM					
Vol.	986				280					
P.H.F.	0.706				0.897					
PM Peak		1:15 PM				3:15 PM				
Vol.		353				768				
P.H.F.		0.825				0.821				

Volumes for: Wednesday, September 05, 2012 City: Stockton Project #: 12-7353-003
Location: Arch Road between Frontier Way and Fite Court (Day 1).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	8	46			12	76				
12:15	14	53			11	60				
12:30	7	63			19	73				
12:45	7	72	36	234	14	55	56	264	92	498
1:00	8	80			7	57				
1:15	5	70			20	62				
1:30	14	63			8	55				
1:45	8	80	35	293	10	59	45	233	80	526
2:00	11	81			14	86				
2:15	12	85			9	58				
2:30	5	53			20	100				
2:45	14	45	42	264	8	77	51	321	93	585
3:00	20	56			12	80				
3:15	28	50			11	67				
3:30	9	52			7	86				
3:45	17	54	74	212	8	183	38	416	112	628
4:00	12	47			12	295				
4:15	17	44			12	270				
4:30	17	50			11	129				
4:45	20	49	66	190	16	86	51	780	117	970
5:00	24	45			15	108				
5:15	29	40			19	86				
5:30	46	42			19	82				
5:45	56	49	155	176	19	87	72	363	227	539
6:00	118	29			43	86				
6:15	200	43			35	88				
6:30	183	45			54	58				
6:45	280	28	781	145	49	46	181	278	962	423
7:00	342	16			59	46				
7:15	189	29			44	40				
7:30	109	23			36	37				
7:45	92	19	732	87	38	20	177	143	909	230
8:00	89	28			50	31				
8:15	119	15			73	25				
8:30	79	13			72	27				
8:45	82	23	369	79	41	16	236	99	605	178
9:00	60	27			38	15				
9:15	63	14			45	15				
9:30	53	9			45	9				
9:45	53	20	229	70	42	16	170	55	399	125
10:00	65	40			48	33				
10:15	53	19			49	11				
10:30	44	14			54	65				
10:45	47	8	209	81	48	24	199	133	408	214
11:00	41	8			55	39				
11:15	56	10			49	10				
11:30	51	9			53	9				
11:45	72	11	220	38	46	9	203	67	423	105
Total	2948	1869	2948	1869	1479	3152	1479	3152	4427	5021
Combined Total	4817		4817		4631		4631		9448	
AM Peak	6:15 AM				11:45 AM					
Vol.	1005				255					
P.H.F.	0.735				0.839					
PM Peak		1:30 PM				3:45 PM				
Vol.		309				877				
P.H.F.		0.909				0.743				

Volumes for: Thursday, September 06, 2012 City: Stockton Project #: 12-7353-003

Location: Arch Road between Frontier Way and Fite Court (Day 2).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	9	55			12	77				
12:15	2	61			8	62				
12:30	7	70			9	83				
12:45	12	83	30	269	6	55	35	277	65	546
1:00	7	77			8	52				
1:15	13	68			11	42				
1:30	4	56			21	59				
1:45	8	70	32	271	6	44	46	197	78	468
2:00	9	98			14	50				
2:15	11	74			9	57				
2:30	7	62			16	110				
2:45	11	47	38	281	11	72	50	289	88	570
3:00	16	47			4	97				
3:15	33	44			11	73				
3:30	10	55			5	141				
3:45	16	46	75	192	7	171	27	482	102	674
4:00	22	44			16	327				
4:15	30	43			16	204				
4:30	23	39			8	111				
4:45	19	39	94	165	29	85	69	727	163	892
5:00	29	50			39	104				
5:15	31	46			18	85				
5:30	37	49			15	102				
5:45	60	49	157	194	16	118	88	409	245	603
6:00	125	35			41	116				
6:15	181	34			38	77				
6:30	194	30			50	58				
6:45	290	30	790	129	37	49	166	300	956	429
7:00	310	30			48	34				
7:15	183	26			50	48				
7:30	107	25			49	30				
7:45	119	20	719	101	62	18	209	130	928	231
8:00	99	24			59	27				
8:15	134	19			74	16				
8:30	80	15			59	15				
8:45	65	24	378	82	38	19	230	77	608	159
9:00	66	29			30	15				
9:15	68	19			43	18				
9:30	56	23			38	18				
9:45	38	21	228	92	37	15	148	66	376	158
10:00	46	34			38	41				
10:15	51	25			41	18				
10:30	60	8			49	65				
10:45	56	8	213	75	45	39	173	163	386	238
11:00	44	18			40	24				
11:15	62	8			46	8				
11:30	55	10			64	16				
11:45	52	11	213	47	53	19	203	67	416	114
Total	2967	1898	2967	1898	1444	3184	1444	3184	4411	5082
Combined Total	4865		4865		4628		4628		9493	
AM Peak	6:30 AM				11:45 AM					
Vol.	977				275					
P.H.F.	0.788				0.828					
PM Peak		1:45 PM				3:30 PM				
Vol.		304				843				
P.H.F.		0.776				0.644				
Percentage	61.0%	39.0%			31.2%	68.8%				

Volumes for: Tuesday, August 28, 2012 City: Stockton Project #: 12-7353-004
Location: Arch Road between Fite Court and Newcastle Road (Day 1).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	6	44			9	46				
12:15	7	43			5	53				
12:30	8	48			10	42				
12:45	8	61	29	196	4	45	28	186	57	382
1:00	8	58			7	40				
1:15	3	53			3	43				
1:30	2	39			7	51				
1:45	13	49	26	199	7	37	24	171	50	370
2:00	7	94			2	81				
2:15	5	81			8	53				
2:30	5	41			14	73				
2:45	6	30	23	246	12	94	36	301	59	547
3:00	6	26			4	103				
3:15	3	50			8	117				
3:30	6	51			9	197				
3:45	11	47	26	174	1	232	22	649	48	823
4:00	15	48			10	146				
4:15	16	43			12	110				
4:30	15	37			15	101				
4:45	15	36	61	164	17	63	54	420	115	584
5:00	22	41			13	87				
5:15	32	32			14	72				
5:30	54	32			11	174				
5:45	88	39	196	144	20	88	58	421	254	565
6:00	202	19			14	63				
6:15	276	37			23	45				
6:30	255	25			43	48				
6:45	101	20	834	101	37	37	117	193	951	294
7:00	129	27			30	41				
7:15	110	20			45	30				
7:30	63	22			42	14				
7:45	69	19	371	88	41	24	158	109	529	197
8:00	72	12			34	20				
8:15	80	14			52	23				
8:30	73	16			42	23				
8:45	43	7	268	49	33	15	161	81	429	130
9:00	59	14			31	13				
9:15	66	9			20	9				
9:30	40	20			29	12				
9:45	37	19	202	62	26	16	106	50	308	112
10:00	46	33			35	13				
10:15	43	24			29	11				
10:30	34	11			31	47				
10:45	24	16	147	84	26	46	121	117	268	201
11:00	38	10			34	66				
11:15	40	11			28	24				
11:30	47	13			45	12				
11:45	38	9	163	43	38	7	145	109	308	152
Total	2346	1550	2346	1550	1030	2807	1030	2807	3376	4357
Combined Total	3896		3896		3837		3837		7733	
AM Peak	6:00 AM				11:30 AM					
Vol.	834				182					
P.H.F.	0.755				0.858					
PM Peak		1:45 PM				3:15 PM				
Vol.		265				692				
P.H.F.		0.705				0.746				

Volumes for: Wednesday, August 29, 2012 City: Stockton Project #: 12-7353-004
Location: Arch Road between Fite Court and Newcastle Road (Day 2).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	7	38			15	42				
12:15	7	42			6	68				
12:30	6	58			5	50				
12:45	4	63	24	201	9	48	35	208	59	409
1:00	7	59			7	43				
1:15	5	50			4	49				
1:30	5	62			5	46				
1:45	5	44	22	215	3	39	19	177	41	392
2:00	9	92			5	68				
2:15	6	77			11	41				
2:30	7	41			8	73				
2:45	6	36	28	246	10	84	34	266	62	512
3:00	2	43			11	100				
3:15	9	48			6	138				
3:30	7	47			5	244				
3:45	11	55	29	193	6	183	28	665	57	858
4:00	12	33			12	131				
4:15	10	51			8	93				
4:30	11	30			12	97				
4:45	19	37	52	151	14	108	46	429	98	580
5:00	38	40			7	122				
5:15	56	46			29	83				
5:30	58	32			15	76				
5:45	90	19	242	137	18	55	69	336	311	473
6:00	220	24			28	47				
6:15	334	32			29	37				
6:30	242	13			45	43				
6:45	125	20	921	89	48	50	150	177	1071	266
7:00	110	27			41	32				
7:15	83	25			34	25				
7:30	76	10			33	20				
7:45	75	23	344	85	40	21	148	98	492	183
8:00	83	17			36	20				
8:15	91	13			47	20				
8:30	69	19			44	29				
8:45	50	19	293	68	47	20	174	89	467	157
9:00	59	18			37	16				
9:15	45	12			37	14				
9:30	54	14			25	10				
9:45	36	15	194	59	35	11	134	51	328	110
10:00	35	27			36	12				
10:15	34	27			31	7				
10:30	32	13			25	45				
10:45	39	16	140	83	27	53	119	117	259	200
11:00	38	10			40	60				
11:15	50	9			40	20				
11:30	43	10			41	12				
11:45	38	9	169	38	42	9	163	101	332	139
Total	2458	1565	2458	1565	1119	2714	1119	2714	3577	4279
Combined Total	4023		4023		3833		3833		7856	
AM Peak	6:00 AM				11:45 AM					
Vol.	921				202					
P.H.F.	0.689				0.743					
PM Peak		1:30 PM				3:15 PM				
Vol.		275				696				
P.H.F.		0.747				0.713				

Volumes for: Tuesday, August 28, 2012 City: Stockton Project #: 12-7353-005
Location: Arch Road between Newcastle Road and Logistics Drive (Day 1).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	5	34			1	22				
12:15	8	42			4	28				
12:30	6	51			3	17				
12:45	10	41	29	168	5	26	13	93	42	261
1:00	1	34			1	20				
1:15	1	35			6	27				
1:30	10	34			0	19				
1:45	6	54	18	157	3	44	10	110	28	267
2:00	6	44			6	20				
2:15	3	32			4	28				
2:30	7	32			3	56				
2:45	5	25	21	133	1	82	14	186	35	319
3:00	4	47			8	123				
3:15	6	46			3	189				
3:30	6	42			3	165				
3:45	10	46	26	181	6	84	20	561	46	742
4:00	10	35			10	59				
4:15	15	36			14	45				
4:30	15	34			12	25				
4:45	11	37	51	142	12	48	48	177	99	319
5:00	20	30			14	89				
5:15	57	29			11	128				
5:30	81	34			16	53				
5:45	176	23	334	116	14	33	55	303	389	419
6:00	238	32			27	20				
6:15	234	21			28	27				
6:30	77	22			17	23				
6:45	88	21	637	96	48	8	120	78	757	174
7:00	47	15			33	9				
7:15	46	17			35	11				
7:30	34	14			42	13				
7:45	55	9	182	55	42	13	152	46	334	101
8:00	43	12			43	13				
8:15	56	19			34	13				
8:30	43	4			37	9				
8:45	44	12	186	47	26	7	140	42	326	89
9:00	44	7			22	5				
9:15	27	13			22	9				
9:30	23	16			21	7				
9:45	42	13	136	49	29	9	94	30	230	79
10:00	29	14			14	5				
10:15	25	11			20	13				
10:30	20	13			17	20				
10:45	31	9	105	47	27	18	78	56	183	103
11:00	30	8			21	14				
11:15	35	10			20	2				
11:30	30	9			24	4				
11:45	37	6	132	33	30	9	95	29	227	62
Total	1857	1224	1857	1224	839	1711	839	1711	2696	2935
Combined Total	3081		3081		2550		2550		5631	
AM Peak	5:30 AM				7:15 AM					
Vol.	729				162					
P.H.F.	0.766				0.942					
PM Peak		3:00 PM				3:00 PM				
Vol.		181				561				
P.H.F.		0.963				0.742				

Volumes for: Wednesday, August 29, 2012 City: Stockton Project #: 12-7353-005
Location: Arch Road between Newcastle Road and Logistics Drive (Day 2).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	9	33			8	44				
12:15	3	46			3	31				
12:30	3	54			6	27				
12:45	8	49	23	182	4	27	21	129	44	311
1:00	3	36			1	26				
1:15	5	42			5	24				
1:30	3	36			1	20				
1:45	9	49	20	163	4	17	11	87	31	250
2:00	4	35			6	21				
2:15	7	38			6	25				
2:30	3	34			9	35				
2:45	3	39	17	146	3	83	24	164	41	310
3:00	7	36			4	145				
3:15	7	35			3	227				
3:30	6	39			6	106				
3:45	10	34	30	144	14	81	27	559	57	703
4:00	8	44			5	44				
4:15	9	30			9	49				
4:30	19	34			12	39				
4:45	21	41	57	149	12	42	38	174	95	323
5:00	17	34			25	93				
5:15	55	30			11	108				
5:30	80	16			20	47				
5:45	204	23	356	103	27	24	83	272	439	375
6:00	285	28			33	17				
6:15	225	14			32	16				
6:30	92	18			35	22				
6:45	87	21	689	81	34	16	134	71	823	152
7:00	60	22			35	9				
7:15	38	13			28	11				
7:30	40	16			37	13				
7:45	46	11	184	62	50	9	150	42	334	104
8:00	43	11			42	12				
8:15	38	11			38	9				
8:30	36	14			30	13				
8:45	33	15	150	51	37	6	147	40	297	91
9:00	30	9			35	7				
9:15	39	6			12	5				
9:30	21	12			26	3				
9:45	28	19	118	46	22	7	95	22	213	68
10:00	21	12			14	4				
10:15	32	13			16	6				
10:30	29	8			18	4				
10:45	31	10	113	43	18	22	66	36	179	79
11:00	44	6			27	9				
11:15	29	9			24	8				
11:30	31	7			18	6				
11:45	27	5	131	27	38	5	107	28	238	55
Total	1888	1197	1888	1197	903	1624	903	1624	2791	2821
Combined Total	3085		3085		2527		2527		5612	
AM Peak	5:45 AM				7:30 AM					
Vol.	806				167					
P.H.F.	0.707				0.835					
PM Peak		12:15 PM				2:45 PM				
Vol.		185				561				
P.H.F.		0.856				0.618				

Volumes for: Wednesday, September 05, 2012 City: Stockton Project #: 12-7353-006
Location: Arch Road between Logistics Drive and Austin Road (Eastbound Outside Lane - Day 1).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	12			0	0				
12:15	0	11			0	0				
12:30	0	12			0	0				
12:45	0	19	0	54	0	0	0	0	0	54
1:00	0	18			0	0				
1:15	0	12			0	0				
1:30	0	12			0	0				
1:45	0	6	0	48	0	0	0	0	0	48
2:00	1	16			0	0				
2:15	0	13			0	0				
2:30	0	13			0	0				
2:45	0	12	1	54	0	0	0	0	1	54
3:00	0	20			0	0				
3:15	0	15			0	0				
3:30	0	11			0	0				
3:45	0	29	0	75	0	0	0	0	0	75
4:00	0	44			0	0				
4:15	2	25			0	0				
4:30	0	12			0	0				
4:45	0	11	2	92	0	0	0	0	2	92
5:00	0	4			0	0				
5:15	2	7			0	0				
5:30	3	1			0	0				
5:45	4	3	9	15	0	0	0	0	9	15
6:00	6	7			0	0				
6:15	10	7			0	0				
6:30	8	4			0	0				
6:45	4	1	28	19	0	0	0	0	28	19
7:00	13	1			0	0				
7:15	15	2			0	0				
7:30	12	0			0	0				
7:45	12	1	52	4	0	0	0	0	52	4
8:00	7	2			0	0				
8:15	21	0			0	0				
8:30	10	1			0	0				
8:45	13	0	51	3	0	0	0	0	51	3
9:00	11	1			0	0				
9:15	15	0			0	0				
9:30	8	0			0	0				
9:45	8	0	42	1	0	0	0	0	42	1
10:00	15	0			0	0				
10:15	10	0			0	0				
10:30	12	2			0	0				
10:45	14	0	51	2	0	0	0	0	51	2
11:00	9	0			0	0				
11:15	12	1			0	0				
11:30	16	0			0	0				
11:45	11	1	48	2	0	0	0	0	48	2
Total	284	369	284	369	0	0	0	0	284	369
Combined Total	653		653		0		0		653	
AM Peak	8:15 AM									
Vol.	55									
P.H.F.	0.655									
PM Peak		3:45 PM								
Vol.		110								
P.H.F.		0.625								

Volumes for: Thursday, September 06, 2012 City: Stockton Project #: 12-7353-006

Location: Arch Road between Logistics Drive and Austin Road (Eastbound Outside Lane - Day 2).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	8			0	0				
12:15	1	10			0	0				
12:30	0	11			0	0				
12:45	0	15	1	44	0	0	0	0	1	44
1:00	0	12			0	0				
1:15	0	14			0	0				
1:30	0	13			0	0				
1:45	0	12	0	51	0	0	0	0	0	51
2:00	0	10			0	0				
2:15	0	13			0	0				
2:30	0	9			0	0				
2:45	0	13	0	45	0	0	0	0	0	45
3:00	0	14			0	0				
3:15	0	11			0	0				
3:30	0	6			0	0				
3:45	0	35	0	66	0	0	0	0	0	66
4:00	0	50			0	0				
4:15	0	19			0	0				
4:30	1	10			0	0				
4:45	0	5	1	84	0	0	0	0	1	84
5:00	0	8			0	0				
5:15	1	3			0	0				
5:30	3	6			0	0				
5:45	5	12	9	29	0	0	0	0	9	29
6:00	5	9			0	0				
6:15	8	2			0	0				
6:30	3	3			0	0				
6:45	7	3	23	17	0	0	0	0	23	17
7:00	7	1			0	0				
7:15	11	1			0	0				
7:30	20	1			0	0				
7:45	9	2	47	5	0	0	0	0	47	5
8:00	20	2			0	0				
8:15	21	0			0	0				
8:30	16	2			0	0				
8:45	13	1	70	5	0	0	0	0	70	5
9:00	7	0			0	0				
9:15	14	1			0	0				
9:30	10	0			0	0				
9:45	7	1	38	2	0	0	0	0	38	2
10:00	10	2			0	0				
10:15	5	3			0	0				
10:30	10	0			0	0				
10:45	6	0	31	5	0	0	0	0	31	5
11:00	12	0			0	0				
11:15	5	0			0	0				
11:30	6	1			0	0				
11:45	15	2	38	3	0	0	0	0	38	3
Total	258	356	258	356	0	0	0	0	258	356
Combined Total	614		614		0		0		614	
AM Peak	7:30 AM									
Vol.	70									
P.H.F.	0.833									
PM Peak		3:45 PM								
Vol.		114								
P.H.F.		0.570								

Volumes for: Wednesday, September 05, 2012 City: Stockton Project #: 12-7353-006
Location: Arch Road between Logistics Drive and Austin Road (Eastbound Total Volume).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	10	34			0	0				
12:15	9	40			0	0				
12:30	6	38			0	0				
12:45	7	45	32	157	0	0	0	0	32	157
1:00	6	44			0	0				
1:15	6	45			0	0				
1:30	9	39			0	0				
1:45	6	38	27	166	0	0	0	0	27	166
2:00	9	61			0	0				
2:15	10	51			0	0				
2:30	4	59			0	0				
2:45	3	45	26	216	0	0	0	0	26	216
3:00	6	59			0	0				
3:15	4	59			0	0				
3:30	5	36			0	0				
3:45	11	90	26	244	0	0	0	0	26	244
4:00	8	106			0	0				
4:15	8	72			0	0				
4:30	11	46			0	0				
4:45	16	50	43	274	0	0	0	0	43	274
5:00	9	40			0	0				
5:15	12	39			0	0				
5:30	17	23			0	0				
5:45	18	32	56	134	0	0	0	0	56	134
6:00	23	34			0	0				
6:15	36	42			0	0				
6:30	15	32			0	0				
6:45	21	24	95	132	0	0	0	0	95	132
7:00	33	11			0	0				
7:15	42	17			0	0				
7:30	24	16			0	0				
7:45	28	11	127	55	0	0	0	0	127	55
8:00	22	19			0	0				
8:15	33	12			0	0				
8:30	31	12			0	0				
8:45	36	9	122	52	0	0	0	0	122	52
9:00	29	7			0	0				
9:15	35	11			0	0				
9:30	21	13			0	0				
9:45	30	9	115	40	0	0	0	0	115	40
10:00	39	20			0	0				
10:15	36	9			0	0				
10:30	26	9			0	0				
10:45	42	10	143	48	0	0	0	0	143	48
11:00	25	7			0	0				
11:15	39	12			0	0				
11:30	37	8			0	0				
11:45	52	10	153	37	0	0	0	0	153	37
Total	965	1555	965	1555	0	0	0	0	965	1555
Combined Total	2520		2520		0		0		2520	
AM Peak	11:45 AM									
Vol.	164									
P.H.F.	0.788									
PM Peak		3:45 PM								
Vol.		314								
P.H.F.		0.741								

Volumes for: Wednesday, September 05, 2012 City: Stockton Project #: 12-7353-006
Location: Arch Road between Logistics Drive and Austin Road (Westbound Only - Day 1).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	0			7	30				
12:15	0	0			5	24				
12:30	0	0			5	17				
12:45	0	0	0	0	8	33	25	104	25	104
1:00	0	0			4	37				
1:15	0	0			8	29				
1:30	0	0			4	28				
1:45	0	0	0	0	8	26	24	120	24	120
2:00	0	0			6	40				
2:15	0	0			7	26				
2:30	0	0			10	35				
2:45	0	0	0	0	4	20	27	121	27	121
3:00	0	0			5	26				
3:15	0	0			10	20				
3:30	0	0			5	33				
3:45	0	0	0	0	5	32	25	111	25	111
4:00	0	0			8	38				
4:15	0	0			8	26				
4:30	0	0			12	29				
4:45	0	0	0	0	11	24	39	117	39	117
5:00	0	0			11	23				
5:15	0	0			18	19				
5:30	0	0			17	31				
5:45	0	0	0	0	18	19	64	92	64	92
6:00	0	0			30	17				
6:15	0	0			48	14				
6:30	0	0			44	22				
6:45	0	0	0	0	63	13	185	66	185	66
7:00	0	0			82	26				
7:15	0	0			50	16				
7:30	0	0			20	10				
7:45	0	0	0	0	28	10	180	62	180	62
8:00	0	0			48	14				
8:15	0	0			37	15				
8:30	0	0			31	18				
8:45	0	0	0	0	17	7	133	54	133	54
9:00	0	0			17	7				
9:15	0	0			27	13				
9:30	0	0			18	6				
9:45	0	0	0	0	24	7	86	33	86	33
10:00	0	0			19	7				
10:15	0	0			31	6				
10:30	0	0			22	7				
10:45	0	0	0	0	19	3	91	23	91	23
11:00	0	0			26	15				
11:15	0	0			20	4				
11:30	0	0			18	8				
11:45	0	0	0	0	16	4	80	31	80	31
Total	0	0	0	0	959	934	959	934	959	934
Combined Total	0		0		1893		1893		1893	
AM Peak					6:30 AM					
Vol.					239					
P.H.F.					0.729					
PM Peak						3:30 PM				
Vol.						129				
P.H.F.						0.849				

Volumes for: Thursday, September 06, 2012 City: Stockton Project #: 12-7353-006
Location: Arch Road between Logistics Drive and Austin Road (Westbound Only - Day 2).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	0			6	26				
12:15	0	0			5	20				
12:30	0	0			4	29				
12:45	0	0	0	0	3	23	18	98	18	98
1:00	0	0			4	22				
1:15	0	0			5	30				
1:30	0	0			8	22				
1:45	0	0	0	0	4	30	21	104	21	104
2:00	0	0			4	21				
2:15	0	0			5	23				
2:30	0	0			3	23				
2:45	0	0	0	0	5	33	17	100	17	100
3:00	0	0			4	44				
3:15	0	0			6	19				
3:30	0	0			5	28				
3:45	0	0	0	0	7	48	22	139	22	139
4:00	0	0			8	41				
4:15	0	0			11	32				
4:30	0	0			6	32				
4:45	0	0	0	0	10	22	35	127	35	127
5:00	0	0			20	18				
5:15	0	0			14	15				
5:30	0	0			11	23				
5:45	0	0	0	0	18	20	63	76	63	76
6:00	0	0			26	22				
6:15	0	0			43	27				
6:30	0	0			57	19				
6:45	0	0	0	0	51	10	177	78	177	78
7:00	0	0			76	13				
7:15	0	0			43	14				
7:30	0	0			37	9				
7:45	0	0	0	0	35	12	191	48	191	48
8:00	0	0			38	15				
8:15	0	0			34	11				
8:30	0	0			21	13				
8:45	0	0	0	0	28	10	121	49	121	49
9:00	0	0			28	10				
9:15	0	0			22	7				
9:30	0	0			27	16				
9:45	0	0	0	0	20	6	97	39	97	39
10:00	0	0			25	5				
10:15	0	0			18	6				
10:30	0	0			25	2				
10:45	0	0	0	0	20	9	88	22	88	22
11:00	0	0			22	12				
11:15	0	0			28	6				
11:30	0	0			28	7				
11:45	0	0	0	0	17	5	95	30	95	30
Total	0	0	0	0	945	910	945	910	945	910
Combined Total	0		0		1855		1855		1855	
AM Peak					6:15 AM					
Vol.					227					
P.H.F.					0.747					
PM Peak						3:45 PM				
Vol.						153				
P.H.F.						0.797				

Volumes for: Tuesday, August 28, 2012 City: Stockton Project #: 12-7353-007

Location: Mariposa Road between Austin Road and Carpenter Road (Day 1).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	4	50			9	28				
12:15	7	38			19	58				
12:30	10	42			7	41				
12:45	5	36	26	166	3	52	38	179	64	345
1:00	4	43			3	42				
1:15	4	45			9	50				
1:30	3	41			5	53				
1:45	9	56	20	185	7	36	24	181	44	366
2:00	10	37			6	40				
2:15	2	48			7	43				
2:30	7	77			4	48				
2:45	4	52	23	214	3	56	20	187	43	401
3:00	2	51			7	76				
3:15	3	61			8	69				
3:30	8	68			8	61				
3:45	5	67	18	247	7	91	30	297	48	544
4:00	6	71			6	59				
4:15	5	72			15	58				
4:30	8	72			17	56				
4:45	8	81	27	296	24	58	62	231	89	527
5:00	16	77			25	68				
5:15	17	92			31	73				
5:30	22	99			25	56				
5:45	40	107	95	375	38	51	119	248	214	623
6:00	71	80			59	44				
6:15	72	62			39	50				
6:30	58	44			64	35				
6:45	48	57	249	243	65	24	227	153	476	396
7:00	54	45			64	35				
7:15	65	31			98	45				
7:30	44	21			88	20				
7:45	71	34	234	131	90	28	340	128	574	259
8:00	69	25			120	29				
8:15	47	34			100	23				
8:30	57	30			76	18				
8:45	46	23	219	112	58	22	354	92	573	204
9:00	28	25			74	30				
9:15	39	22			82	21				
9:30	38	25			55	12				
9:45	43	19	148	91	58	15	269	78	417	169
10:00	31	15			48	17				
10:15	49	21			45	11				
10:30	43	19			51	4				
10:45	48	16	171	71	45	11	189	43	360	114
11:00	40	14			44	16				
11:15	43	14			52	9				
11:30	37	10			52	11				
11:45	42	12	162	50	41	8	189	44	351	94
Total	1392	2181	1392	2181	1861	1861	1861	1861	3253	4042
Combined Total	3573		3573		3722		3722		7295	
AM Peak	6:00 AM				7:30 AM					
Vol.	249				398					
P.H.F.	0.865				0.829					
PM Peak		5:15 PM				3:00 PM				
Vol.		378				297				
P.H.F.		0.883				0.816				

Volumes for: Wednesday, August 29, 2012 City: Stockton Project #: 12-7353-007
Location: Mariposa Road between Austin Road and Carpenter Road (Day 2).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	10	51			7	51				
12:15	6	48			4	49				
12:30	12	44			7	64				
12:45	8	53	36	196	2	43	20	207	56	403
1:00	7	46			5	51				
1:15	5	41			8	57				
1:30	4	44			2	49				
1:45	5	46	21	177	2	49	17	206	38	383
2:00	6	42			6	41				
2:15	8	60			4	45				
2:30	1	43			3	68				
2:45	2	66	17	211	4	64	17	218	34	429
3:00	5	52			2	62				
3:15	5	62			4	73				
3:30	8	65			6	115				
3:45	2	66	20	245	2	64	14	314	34	559
4:00	9	54			11	64				
4:15	5	78			14	54				
4:30	6	99			11	53				
4:45	8	94	28	325	11	59	47	230	75	555
5:00	12	74			18	66				
5:15	27	89			39	60				
5:30	30	95			27	58				
5:45	63	100	132	358	33	50	117	234	249	592
6:00	55	82			49	58				
6:15	87	65			54	53				
6:30	50	45			66	63				
6:45	48	45	240	237	63	38	232	212	472	449
7:00	60	54			80	22				
7:15	52	32			84	25				
7:30	37	41			66	32				
7:45	41	57	190	184	76	22	306	101	496	285
8:00	54	42			117	19				
8:15	58	40			99	20				
8:30	38	19			90	25				
8:45	46	25	196	126	73	18	379	82	575	208
9:00	53	40			84	14				
9:15	39	24			64	12				
9:30	35	26			49	14				
9:45	44	22	171	112	53	17	250	57	421	169
10:00	33	20			69	17				
10:15	51	24			52	13				
10:30	32	18			54	10				
10:45	45	17	161	79	54	17	229	57	390	136
11:00	36	11			45	10				
11:15	45	14			57	3				
11:30	44	12			52	5				
11:45	52	12	177	49	44	12	198	30	375	79
Total	1389	2299	1389	2299	1826	1948	1826	1948	3215	4247
Combined Total	3688		3688		3774		3774		7462	
AM Peak	5:45 AM				7:45 AM					
Vol.	255				382					
P.H.F.	0.733				0.816					
PM Peak		5:15 PM				3:15 PM				
Vol.		366				316				
P.H.F.		0.915				0.687				

Volumes for: Tuesday, August 28, 2012 City: Stockton Project #: 12-7353-008
Location: Mariposa Road between Munford Avenue and Carpenter Road (Day 1).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	8	39			22	65				
12:15	12	52			5	46				
12:30	5	44			3	63				
12:45	5	49	30	184	5	52	35	226	65	410
1:00	3	49			9	62				
1:15	4	46			4	61				
1:30	14	70			9	45				
1:45	5	44	26	209	6	69	28	237	54	446
2:00	3	83			8	49				
2:15	11	60			5	51				
2:30	4	57			4	66				
2:45	3	53	21	253	7	81	24	247	45	500
3:00	5	65			9	76				
3:15	4	69			11	80				
3:30	7	80			8	100				
3:45	6	84	22	298	6	99	34	355	56	653
4:00	5	73			14	68				
4:15	12	77			17	66				
4:30	13	97			32	53				
4:45	33	104	63	351	27	76	90	263	153	614
5:00	49	83			35	86				
5:15	33	101			31	88				
5:30	53	106			42	53				
5:45	74	83	209	373	59	60	167	287	376	660
6:00	75	64			46	56				
6:15	46	54			67	43				
6:30	56	63			63	35				
6:45	65	51	242	232	61	43	237	177	479	409
7:00	53	41			104	45				
7:15	48	27			97	20				
7:30	51	40			82	34				
7:45	72	25	224	133	134	42	417	141	641	274
8:00	53	37			97	26				
8:15	53	34			77	27				
8:30	52	23			64	26				
8:45	48	30	206	124	67	31	305	110	511	234
9:00	18	23			78	29				
9:15	38	25			56	15				
9:30	44	22			65	16				
9:45	52	25	152	95	59	19	258	79	410	174
10:00	39	21			56	15				
10:15	61	18			51	3				
10:30	48	17			61	13				
10:45	61	11	209	67	51	16	219	47	428	114
11:00	45	15			62	9				
11:15	45	9			58	10				
11:30	58	6			54	9				
11:45	53	11	201	41	33	8	207	36	408	77
Total	1605	2360	1605	2360	2021	2205	2021	2205	3626	4565
Combined Total	3965		3965		4226		4226		8191	
AM Peak	5:45 AM				7:00 AM					
Vol.	251				417					
P.H.F.	0.837				0.778					
PM Peak		4:45 PM				3:00 PM				
Vol.		394				355				
P.H.F.		0.929				0.888				

Volumes for: Wednesday, August 29, 2012 City: Stockton Project #: 12-7353-008
Location: Mariposa Road between Munford Avenue and Carpenter Road (Day 2).

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	6	51			2	59				
12:15	11	52			7	72				
12:30	13	54			6	59				
12:45	5	57	35	214	5	60	20	250	55	464
1:00	4	36			8	61				
1:15	6	59			1	60				
1:30	7	54			3	60				
1:45	8	47	25	196	6	72	18	253	43	449
2:00	7	65			5	57				
2:15	1	66			2	74				
2:30	5	56			6	66				
2:45	3	66	16	253	4	63	17	260	33	513
3:00	8	68			6	91				
3:15	4	63			7	122				
3:30	4	85			2	75				
3:45	11	75	27	291	11	81	26	369	53	660
4:00	7	92			12	64				
4:15	8	93			17	68				
4:30	7	108			13	67				
4:45	25	96	47	389	22	74	64	273	111	662
5:00	57	83			41	76				
5:15	54	95			29	75				
5:30	57	88			38	69				
5:45	72	96	240	362	51	74	159	294	399	656
6:00	76	55			61	61				
6:15	52	55			70	63				
6:30	59	59			67	46				
6:45	64	48	251	217	88	35	286	205	537	422
7:00	52	42			85	33				
7:15	34	47			91	42				
7:30	53	56			85	29				
7:45	56	43	195	188	131	22	392	126	587	314
8:00	64	41			100	25				
8:15	46	27			99	33				
8:30	60	36			83	24				
8:45	57	44	227	148	93	17	375	99	602	247
9:00	36	21			81	19				
9:15	53	32			56	14				
9:30	51	22			51	19				
9:45	45	24	185	99	82	16	270	68	455	167
10:00	50	27			57	20				
10:15	32	25			63	10				
10:30	53	16			59	18				
10:45	56	9	191	77	56	12	235	60	426	137
11:00	40	16			60	5				
11:15	57	9			64	5				
11:30	61	11			46	17				
11:45	61	6	219	42	54	10	224	37	443	79
Total	1658	2476	1658	2476	2086	2294	2086	2294	3744	4770
Combined Total	4134		4134		4380		4380		8514	
AM Peak	5:15 AM				7:30 AM					
Vol.	259				415					
P.H.F.	0.852				0.792					
PM Peak		4:00 PM				3:00 PM				
Vol.		389				369				
P.H.F.		0.900				0.756				

APPENDIX B: LEVEL OF SERVICE WORKSHEETS

TRAFFIX LOS ANALYSIS WORKSHEETS

SCENARIO 1: EXISTING

NorCal Logistics Center
Existing Conditions
AM Peak Hour

Scenario Report

Scenario:	Existing AM
Command:	Existing AM
Volume:	Existing AM
Geometry:	Existing AM
Impact Fee:	Default Impact Fee
Trip Generation:	No Project
Trip Distribution:	No Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Existing Conditions
AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 4 Arch/Frontier	B	11.5	0.069	B	11.5	0.069	+ 0.000 D/V
# 5 Arch/Fite	B	12.5	0.370	B	12.5	0.370	+ 0.000 D/V
# 6 Arch/Newcastle	A	9.1	0.301	A	9.1	0.301	+ 0.000 D/V
# 7 Arch/Logistics	A	2.7	0.173	A	2.7	0.173	+ 0.000 D/V
# 8 Arch/Austin	C	21.3	0.300	C	21.3	0.300	+ 0.000 D/V
# 9 E Mariposa/Austin	A	9.2	0.361	A	9.2	0.361	+ 0.000 D/V
# 14 SR 99 East Frontage Road / Pet	C	15.5	0.165	C	15.5	0.165	+ 0.000 D/V
# 15 E Mariposa/Newcastle	A	0.1	0.229	A	0.1	0.229	+ 0.000 D/V

NorCal Logistics Center
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[11.5]

Street Name:	Frontier Way								Arch Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Channel				Include				Include			
Lanes:	0 0 0 0 0				1 0 0 0 1				0 1 0 0 0				0 0 0 1 0			
Volume Module: >> Count Date: 29 Aug 2012 <<																
Base Vol:	0	0	0		4	0	40		68	344	0		0	227	9	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		4	0	40		68	344	0		0	227	9	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		4	0	40		68	344	0		0	227	9	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.87	0.87	0.87		0.87	0.87	0.87		0.87	0.87	0.87		0.87	0.87	0.87	
PHF Volume:	0	0	0		5	0	46		78	396	0		0	261	10	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		5	0	46		78	396	0		0	261	10	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		6.9	xxxx	6.7		4.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	xxxxx		4.0	xxxx	3.8		2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		819	xxxx	266		272	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		288	xxxx	670		1190	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		272	xxxx	670		1190	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.02	xxxx	0.07		0.07	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		0.1	xxxx	0.2		0.2	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		18.4	xxxx	10.8		8.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		C	*	B		A	*	*		*	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		0.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		8.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		A	*	*		*	*	*	
ApproachDel:	xxxxxx				11.5				xxxxxx				xxxxxx			
ApproachLOS:	*				B				*				*			

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.370
Loss Time (sec):	12	Average Delay (sec/veh):	12.5
Optimal Cycle:	32	Level Of Service:	B

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	1 0	0	0 0	1 0	0	0 1	1 0	1	0 0	1 0	1	0 1
Volume Module:												
Base Vol:	1	0	0	7	0	70	36	305	0	0	159	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	0	7	0	70	36	305	0	0	159	5
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	0	7	0	70	36	305	0	0	159	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	1	0	0	8	0	78	40	341	0	0	178	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	0	8	0	78	40	341	0	0	178	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	0	8	0	78	40	341	0	0	178	6
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.64	1.00	0.57	0.77	0.81	1.00	1.00	0.68	0.58
Lanes:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	1805	0	0	1211	0	1084	1455	1531	0	1900	1292	1098
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.07	0.03	0.22	0.00	0.00	0.14	0.01
Crit Moves:	****					****		****		****		
Green/Cycle:	0.07	0.00	0.00	0.18	0.00	0.18	0.18	0.55	0.00	0.00	0.37	0.37
Volume/Cap:	0.01	0.00	0.00	0.04	0.00	0.40	0.15	0.40	0.00	0.00	0.37	0.01
Delay/Veh:	26.2	0.0	0.0	20.4	0.0	23.1	21.0	8.0	0.0	0.0	14.2	11.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.2	0.0	0.0	20.4	0.0	23.1	21.0	8.0	0.0	0.0	14.2	11.9
LOS by Move:	C	A	A	C	A	C	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	0	0	2	1	4	0	0	2	0

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2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	0.301
Loss Time (sec):	12	Average Delay (sec/veh):	9.1
Optimal Cycle:	31	Level Of Service:	A

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0	0	1! 0	0	0		0	1	0	0	1	0
Volume Module:												
Base Vol:	17	0	2	1	0	3	13	155	145	15	145	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	0	2	1	0	3	13	155	145	15	145	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	17	0	2	1	0	3	13	155	145	15	145	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	19	0	2	1	0	3	15	173	162	17	162	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	0	2	1	0	3	15	173	162	17	162	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	0	2	1	0	3	15	173	162	17	162	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.66	1.00	0.66	0.48	1.00	0.57	0.77	0.75	0.75	0.64	0.68	0.57
Lanes:	0.89	0.00	0.11	1.00	0.00	1.00	1.00	0.52	0.48	1.00	1.00	1.00
Final Sat.:	1120	0	132	921	0	1077	1455	734	687	1220	1284	1092
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.02	0.00	0.00	0.00	0.01	0.24	0.24	0.01	0.13	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.06	0.00	0.06	0.06	0.00	0.06	0.19	0.78	0.78	0.05	0.64	0.64
Volume/Cap:	0.30	0.00	0.30	0.02	0.00	0.06	0.05	0.30	0.30	0.30	0.20	0.00
Delay/Veh:	50.0	0.0	50.0	47.0	0.0	47.3	34.7	3.4	3.4	51.5	8.0	6.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.0	0.0	50.0	47.0	0.0	47.3	34.7	3.4	3.4	51.5	8.0	6.9
LOS by Move:	D	A	D	D	A	D	C	A	A	D	A	A
HCM2kAvgQ:	1	0	1	0	0	0	0	3	3	1	2	0

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2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.173
Loss Time (sec):	12	Average Delay (sec/veh):	2.7
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	0	0 1! 0	0	0	0 1! 0	0	1	0 0 1	0	0	0 0 1	0
Volume Module:												
Base Vol:	0	0	0	1	0	1	0	161	0	0	162	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	1	0	161	0	0	162	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1	0	1	0	161	0	0	162	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	1	0	1	0	176	0	0	177	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1	0	1	0	176	0	0	177	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	1	0	1	0	176	0	0	177	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.68	1.00	0.68	1.00	0.69	1.00	1.00	0.68	0.68
Lanes:	0.00	1.00	0.00	0.50	0.00	0.50	1.00	1.00	0.00	0.00	0.99	0.01
Final Sat.:	0	1900	0	651	0	651	1900	1319	0	0	1292	8
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.14	0.14
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.07	0.00	0.07	0.00	0.73	0.00	0.00	0.73	0.73
Volume/Cap:	0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.18	0.00	0.00	0.19	0.19
Delay/Veh:	0.0	0.0	0.0	26.3	0.0	26.3	0.0	2.6	0.0	0.0	2.6	2.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	26.3	0.0	26.3	0.0	2.6	0.0	0.0	2.6	2.6
LOS by Move:	A	A	A	C	A	C	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	1	0	0	1	1

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.300
Loss Time (sec):	16	Average Delay (sec/veh):	21.3
Optimal Cycle:	54	Level Of Service:	C

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	1	0	1 0 1
Volume Module:												
Base Vol:	27	18	4	15	21	66	25	41	32	1	49	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	18	4	15	21	66	25	41	32	1	49	9
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	18	4	15	21	66	25	41	32	1	49	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	32	21	5	18	25	77	29	48	37	1	57	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	21	5	18	25	77	29	48	37	1	57	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	21	5	18	25	77	29	48	37	1	57	11
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	0.63	0.63	0.69	0.69	0.69	0.59	0.62	0.53	0.51	0.54	0.46
Lanes:	0.55	0.37	0.08	0.15	0.20	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	659	439	98	193	271	850	1121	1180	1003	977	1028	874
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.09	0.09	0.09	0.03	0.04	0.04	0.00	0.06	0.01
Crit Moves:		****			****			****			****	
Green/Cycle:	0.17	0.17	0.17	0.27	0.27	0.27	0.13	0.17	0.17	0.13	0.17	0.17
Volume/Cap:	0.29	0.29	0.29	0.34	0.34	0.34	0.20	0.24	0.22	0.01	0.33	0.07
Delay/Veh:	22.7	22.7	22.7	18.3	18.3	18.3	23.8	22.4	22.3	22.6	23.2	21.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.7	22.7	22.7	18.3	18.3	18.3	23.8	22.4	22.3	22.6	23.2	21.3
LOS by Move:	C	C	C	B	B	B	C	C	C	C	C	C
HCM2kAvgQ:	1	1	1	2	2	2	0	1	1	0	1	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.361
Loss Time (sec):	12	Average Delay (sec/veh):	9.2
Optimal Cycle:	34	Level Of Service:	A

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	29	0	22	32	151	0	0	370	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	29	0	22	32	151	0	0	370	68
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	29	0	22	32	151	0	0	370	68
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.00	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	34	0	0	38	178	0	0	435	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	34	0	0	38	178	0	0	435	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	34	0	0	38	178	0	0	435	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.50	1.00	1.00	0.68	0.72	1.00	1.00	0.90	0.77
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	941	0	1900	1298	1366	0	0	1712	1455
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.00	0.03	0.13	0.00	0.00	0.25	0.05
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.10	0.00	0.00	0.08	0.79	0.00	0.00	0.70	0.70
Volume/Cap:	0.00	0.00	0.00	0.36	0.00	0.00	0.36	0.17	0.00	0.00	0.36	0.08
Delay/Veh:	0.0	0.0	0.0	46.4	0.0	0.0	47.8	2.9	0.0	0.0	6.3	4.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	46.4	0.0	0.0	47.8	2.9	0.0	0.0	6.3	4.9
LOS by Move:	A	A	A	D	A	A	D	A	A	A	A	A
HCM2kAvgQ:	0	0	0	1	0	0	1	1	0	0	6	1

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: C[15.5]

Street Name:	SR 99 East Frontage Road						Petersen Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:												
Base Vol:	0	575	37	0	0	0	0	0	0	13	0	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	575	37	0	0	0	0	0	0	13	0	60
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	575	37	0	0	0	0	0	0	13	0	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	645	41	0	0	0	0	0	0	15	0	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	645	41	0	0	0	0	0	0	15	0	67
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.7	xxxx	6.6
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.8	xxxx	3.6
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	665	xxxx	665
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	378	xxxx	407
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	378	xxxx	407
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	0.17
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	0.6
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.9	xxxx	15.6
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	C
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			15.5		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	100	Critical Vol./Cap.(X):	0.229
Loss Time (sec):	0	Average Delay (sec/veh):	0.1
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	0	0	1	0	0	0	0	1	0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	217	0	0	369	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	217	0	0	369	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	217	0	0	369	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	0	0	0	0	231	0	0	393	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	231	0	0	393	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	231	0	0	393	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.72	1.00	1.00	0.90	1.00
Lanes:	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Final Sat.:	0	1900	0	0	0	0	0	1366	0	0	1712	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.23	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.23	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	0	0	0	0	0

NorCal Logistics Center
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Scenario Report

Scenario:	Existing PM
Command:	Existing PM
Volume:	Existing PM
Geometry:	Existing PM
Impact Fee:	Default Impact Fee
Trip Generation:	No Project
Trip Distribution:	No Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Existing Conditions
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Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 4 Arch/Frontier	B	13.9	0.179	B	13.9	0.179	+ 0.000 D/V
# 5 Arch/Fite	A	9.0	0.435	A	9.0	0.435	+ 0.000 D/V
# 6 Arch/Newcastle	C	20.4	0.393	C	20.4	0.393	+ 0.000 D/V
# 7 Arch/Logistics	A	2.8	0.272	A	2.8	0.272	+ 0.000 D/V
# 8 Arch/Austin	C	21.0	0.264	C	21.0	0.264	+ 0.000 D/V
# 9 E Mariposa/Austin	B	14.1	0.383	B	14.1	0.383	+ 0.000 D/V
# 14 SR 99 East Frontage Road / Pet	B	13.0	0.150	B	13.0	0.150	+ 0.000 D/V
# 15 E Mariposa/Newcastle	A	0.1	0.279	A	0.1	0.279	+ 0.000 D/V

NorCal Logistics Center
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: B[13.9]

Street Name:	Frontier Way								Arch Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Channel				Include				Include			
Lanes:	0	0	0	0 0	1	0	0	0 1	0	1	0	0 0	0	0	0	1 0
Volume Module:																
Base Vol:	0	0	0		6	0	78		60	189	0		0	459	10	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		6	0	78		60	189	0		0	459	10	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		6	0	78		60	189	0		0	459	10	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.85	0.85	0.85		0.85	0.85	0.85		0.85	0.85	0.85		0.85	0.85	0.85	
PHF Volume:	0	0	0		7	0	92		71	222	0		0	540	12	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		7	0	92		71	222	0		0	540	12	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		6.6	xxxx	6.4		4.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	xxxxx		3.6	xxxx	3.4		2.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		909	xxxx	546		552	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		288	xxxx	512		849	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		269	xxxx	512		849	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.03	xxxx	0.18		0.08	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		0.1	xxxx	0.6		0.3	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		18.7	xxxx	13.6		9.6	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		C	*	B		A	*	*		*	*	*	
Movement:	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		0.3	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		9.6	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		A	*	*		*	*	*	
ApproachDel:	xxxxxx				13.9				xxxxxx				xxxxxx			
ApproachLOS:	*				B				*				*			

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
Existing Conditions
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.435
Loss Time (sec):	12	Average Delay (sec/veh):	9.0
Optimal Cycle:	35	Level Of Service:	A

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	1 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	8	0	51	40	152	0	0	407	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	8	0	51	40	152	0	0	407	6
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	8	0	51	40	152	0	0	407	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	9	0	60	47	179	0	0	479	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	9	0	60	47	179	0	0	479	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	9	0	60	47	179	0	0	479	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.85	1.00	0.76	0.63	0.66	1.00	1.00	0.83	0.71
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	0	0	0	1612	0	1442	1195	1258	0	1900	1583	1345
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.04	0.04	0.14	0.00	0.00	0.30	0.01
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.10	0.00	0.10	0.08	0.70	0.00	0.00	0.62	0.62
Volume/Cap:	0.00	0.00	0.00	0.06	0.00	0.43	0.49	0.20	0.00	0.00	0.49	0.01
Delay/Veh:	0.0	0.0	0.0	24.8	0.0	27.8	30.2	3.2	0.0	0.0	6.5	4.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	24.8	0.0	27.8	30.2	3.2	0.0	0.0	6.5	4.3
LOS by Move:	A	A	A	C	A	C	C	A	A	A	A	A
HCM2kAvgQ:	0	0	0	0	0	2	1	1	0	0	5	0

NorCal Logistics Center
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	0.393
Loss Time (sec):	12	Average Delay (sec/veh):	20.4
Optimal Cycle:	35	Level Of Service:	C

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0	0	1! 0	0	0	1	0	0	1	1	0	0	1	0	1	0	1
Volume Module:												
Base Vol:	127	0	10	0	0	6	7	127	21	6	262	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	0	10	0	0	6	7	127	21	6	262	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	127	0	10	0	0	6	7	127	21	6	262	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	149	0	12	0	0	7	8	149	25	7	308	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	0	12	0	0	7	8	149	25	7	308	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	149	0	12	0	0	7	8	149	25	7	308	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.65	1.00	0.65	1.00	1.00	0.57	0.64	0.66	0.66	0.73	0.77	1.00
Lanes:	0.93	0.00	0.07	0.00	1.00	1.00	1.00	0.86	0.14	1.00	1.00	1.00
Final Sat.:	1145	0	90	0	1900	1092	1211	1071	177	1388	1461	1900
Capacity Analysis Module:												
Vol/Sat:	0.13	0.00	0.13	0.00	0.00	0.01	0.01	0.14	0.14	0.01	0.21	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.32	0.00	0.32	0.00	0.00	0.32	0.04	0.44	0.44	0.12	0.52	0.00
Volume/Cap:	0.40	0.00	0.40	0.00	0.00	0.02	0.18	0.32	0.32	0.04	0.40	0.00
Delay/Veh:	28.3	0.0	28.3	0.0	0.0	24.2	50.8	19.4	19.4	40.9	15.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.3	0.0	28.3	0.0	0.0	24.2	50.8	19.4	19.4	40.9	15.4	0.0
LOS by Move:	C	A	C	A	A	C	D	B	B	D	B	A
HCM2kAvgQ:	4	0	4	0	0	0	0	4	4	0	6	0

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.272
Loss Time (sec):	12	Average Delay (sec/veh):	2.8
Optimal Cycle:	29	Level Of Service:	A

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	0	0	1! 0	0	1	0	0	0	1	0	0	0	1	0
Volume Module:												
Base Vol:	0	0	0	1	0	0	0	123	0	0	268	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	0	0	123	0	0	268	1
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1	0	0	0	123	0	0	268	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	1	0	0	0	145	0	0	315	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1	0	0	0	145	0	0	315	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	1	0	0	0	145	0	0	315	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.63	1.00	1.00	1.00	0.68	1.00	1.00	0.77	0.77
Lanes:	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.99	0.01
Final Sat.:	0	1900	0	1204	0	0	1900	1284	0	0	1454	5
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.22	0.22
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.73	0.00	0.00	0.73	0.73
Volume/Cap:	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.15	0.00	0.00	0.30	0.30
Delay/Veh:	0.0	0.0	0.0	26.2	0.0	0.0	0.0	2.5	0.0	0.0	2.9	2.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	26.2	0.0	0.0	0.0	2.5	0.0	0.0	2.9	2.9
LOS by Move:	A	A	A	C	A	A	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	1	0	0	2	2

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.264
Loss Time (sec):	16	Average Delay (sec/veh):	21.0
Optimal Cycle:	54	Level Of Service:	C

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	1	0	1 0 1
Volume Module:												
Base Vol:	19	24	2	6	1	22	75	63	4	1	60	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	24	2	6	1	22	75	63	4	1	60	15
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	24	2	6	1	22	75	63	4	1	60	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	21	26	2	6	1	24	81	68	4	1	65	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	26	2	6	1	24	81	68	4	1	65	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	21	26	2	6	1	24	81	68	4	1	65	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.62	0.62	0.62	0.69	0.69	0.69	0.66	0.69	0.59	0.51	0.54	0.45
Lanes:	0.42	0.54	0.04	0.21	0.03	0.76	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	500	632	53	271	45	993	1253	1319	1121	966	1017	864
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.04	0.02	0.02	0.02	0.06	0.05	0.00	0.00	0.06	0.02
Crit Moves:	****			****			****				****	
Green/Cycle:	0.17	0.17	0.17	0.17	0.17	0.17	0.20	0.22	0.22	0.18	0.20	0.20
Volume/Cap:	0.25	0.25	0.25	0.14	0.14	0.14	0.32	0.23	0.02	0.01	0.32	0.09
Delay/Veh:	22.4	22.4	22.4	21.6	21.6	21.6	21.2	19.5	18.2	20.3	21.5	19.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.4	22.4	22.4	21.6	21.6	21.6	21.2	19.5	18.2	20.3	21.5	19.9
LOS by Move:	C	C	C	C	C	C	C	B	B	C	C	B
HCM2kAvgQ:	1	1	1	1	1	1	1	1	0	0	1	0

NorCal Logistics Center
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.383
Loss Time (sec):	12	Average Delay (sec/veh):	14.1
Optimal Cycle:	35	Level Of Service:	B

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	72	0	43	10	342	0	0	193	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	72	0	43	10	342	0	0	193	18
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	72	0	43	10	342	0	0	193	18
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	75	0	0	10	355	0	0	200	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	75	0	0	10	355	0	0	200	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	75	0	0	10	355	0	0	200	19
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.50	1.00	1.00	0.68	0.72	1.00	1.00	0.90	0.77
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	944	0	1900	1298	1366	0	0	1712	1455
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.00	0.01	0.26	0.00	0.00	0.12	0.01
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.21	0.00	0.00	0.20	0.68	0.00	0.00	0.48	0.48
Volume/Cap:	0.00	0.00	0.00	0.38	0.00	0.00	0.04	0.38	0.00	0.00	0.24	0.03
Delay/Veh:	0.0	0.0	0.0	37.1	0.0	0.0	34.3	7.6	0.0	0.0	16.1	14.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	37.1	0.0	0.0	34.3	7.6	0.0	0.0	16.1	14.3
LOS by Move:	A	A	A	D	A	A	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	2	0	0	0	5	0	0	4	0

NorCal Logistics Center
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: B[13.0]

Street Name:	SR 99 East Frontage Road						Petersen Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:												
Base Vol:	0	474	30	0	0	0	0	0	0	25	0	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	474	30	0	0	0	0	0	0	25	0	73
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	474	30	0	0	0	0	0	0	25	0	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	514	33	0	0	0	0	0	0	27	0	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	514	33	0	0	0	0	0	0	27	0	79
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	6.3
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.6	xxxx	3.4
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	530	xxxx	530
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	489	xxxx	526
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	489	xxxx	526
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	0.15
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.5
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	12.8	xxxx	13.0
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			13.0		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	100	Critical Vol./Cap.(X):	0.279
Loss Time (sec):	0	Average Delay (sec/veh):	0.1
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1! 0	0	0	0	0	0	1	0	0	0	0	1	0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	324	0	0	236	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	324	0	0	236	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	324	0	0	236	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	0	0	0	0	381	0	0	278	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	381	0	0	278	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	381	0	0	278	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.72	1.00	1.00	0.90	1.00
Lanes:	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Final Sat.:	0	1900	0	0	0	0	0	1366	0	0	1712	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.16	0.00
Crit Moves:								****			****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.16	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	0	0	0	0	0

SCENARIO 2: EXISTING PLUS PROJECT

NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Scenario Report

Scenario:	Existing Plus Project AM
Command:	Existing Plus Project AM
Volume:	Existing AM
Geometry:	Existing AM_With_Project
Impact Fee:	Default Impact Fee
Trip Generation:	Project AM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 4 Arch/Frontier	B	11.5	0.069	C	17.1	0.103	+ 5.673 D/V
# 5 Arch/Fite	B	12.5	0.370	B	15.8	0.737	+ 3.313 D/V
# 6 Arch/Newcastle	A	9.1	0.301	C	29.4	0.675	+20.239 D/V
# 7 Arch/Logistics	A	2.7	0.173	B	15.8	0.505	+13.115 D/V
# 8 Arch/Austin	C	21.3	0.300	C	21.8	0.368	+ 0.470 D/V
# 9 E Mariposa/Austin	A	9.2	0.361	B	11.0	0.396	+ 1.767 D/V
# 14 SR 99 East Frontage Road / Pet	C	15.5	0.165	C	17.4	0.191	+ 1.926 D/V
# 15 E Mariposa/Newcastle	A	1.6	0.287	B	11.3	0.423	+ 9.717 D/V

NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #4 Arch/Frontier [Arch/Frontier]

****

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: C[17.1]

****

Street Name:	Frontier Way								Arch Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Channel				Include				Include			
Lanes:	0 0 0 0 0				1 0 0 0 1				0 1 0 0 0				0 0 0 1 0			
Volume Module: >> Count Date: 29 Aug 2012 <<																
Base Vol:	0	0	0		4	0	40		68	344	0		0	227	9	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		4	0	40		68	344	0		0	227	9	
Added Vol:	0	0	0		0	0	0		0	402	0		0	256	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		4	0	40		68	746	0		0	483	9	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.87	0.87	0.87		0.87	0.87	0.87		0.87	0.87	0.87		0.87	0.87	0.87	
PHF Volume:	0	0	0		5	0	46		78	858	0		0	556	10	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		5	0	46		78	858	0		0	556	10	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		6.9	xxxx	6.7		4.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	xxxxx		4.0	xxxx	3.8		2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		1576	xxxx	561		566	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		93	xxxx	446		918	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		87	xxxx	446		918	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.05	xxxx	0.10		0.09	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		0.2	xxxx	0.3		0.3	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		48.6	xxxx	14.0		9.3	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		E	*	B		A	*	*		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		0.3	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		9.3	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		A	*	*		*	*	*	
ApproachDel:	xxxxxx				17.1				xxxxxx				xxxxxx			
ApproachLOS:	*				C				*				*			

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Note: Queue reported is the number of cars per lane.

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NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.737
Loss Time (sec):	12	Average Delay (sec/veh):	15.8
Optimal Cycle:	56	Level Of Service:	B

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	1 0	0	0 0	1 0	0	0 1	1 0	1	0 0	1 0	1	0 1
Volume Module:												
Base Vol:	1	0	0	7	0	70	36	305	0	0	159	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	0	7	0	70	36	305	0	0	159	5
Added Vol:	0	0	0	0	0	0	0	402	0	0	256	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	0	7	0	70	36	707	0	0	415	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	1	0	0	8	0	78	40	791	0	0	464	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	0	8	0	78	40	791	0	0	464	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	0	8	0	78	40	791	0	0	464	6
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.64	1.00	0.57	0.77	0.81	1.00	1.00	0.68	0.58
Lanes:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	1805	0	0	1211	0	1084	1455	1531	0	1900	1292	1098
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.07	0.03	0.52	0.00	0.00	0.36	0.01
Crit Moves:	****					****		****		****		
Green/Cycle:	0.07	0.00	0.00	0.09	0.00	0.09	0.10	0.64	0.00	0.00	0.54	0.54
Volume/Cap:	0.01	0.00	0.00	0.07	0.00	0.80	0.27	0.80	0.00	0.00	0.66	0.01
Delay/Veh:	26.2	0.0	0.0	25.3	0.0	63.2	26.0	12.7	0.0	0.0	12.2	6.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.2	0.0	0.0	25.3	0.0	63.2	26.0	12.7	0.0	0.0	12.2	6.3
LOS by Move:	C	A	A	C	A	E	C	B	A	A	B	A
HCM2kAvgQ:	0	0	0	0	0	3	1	11	0	0	6	0

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2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	0.675
Loss Time (sec):	12	Average Delay (sec/veh):	29.4
Optimal Cycle:	57	Level Of Service:	C

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0	0	1! 0	0	0	0	1	0	0	1	0	1	0	1
Volume Module:												
Base Vol:	17	0	2	1	0	3	13	155	145	15	145	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	0	2	1	0	3	13	155	145	15	145	1
Added Vol:	0	0	0	28	0	170	269	133	0	0	86	24
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	17	0	2	29	0	173	282	288	145	15	231	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	19	0	2	32	0	194	315	322	162	17	258	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	0	2	32	0	194	315	322	162	17	258	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	0	2	32	0	194	315	322	162	17	258	28
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.74	1.00	0.74	0.52	1.00	0.57	0.77	0.77	0.77	0.64	0.68	0.57
Lanes:	0.89	0.00	0.11	1.00	0.00	1.00	1.00	0.67	0.33	1.00	1.00	1.00
Final Sat.:	1257	0	148	988	0	1077	1455	968	487	1220	1284	1092
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.02	0.03	0.00	0.18	0.22	0.33	0.33	0.01	0.20	0.03
Crit Moves:						****	****				****	
Green/Cycle:	0.27	0.00	0.27	0.27	0.00	0.27	0.32	0.56	0.56	0.06	0.30	0.30
Volume/Cap:	0.06	0.00	0.06	0.12	0.00	0.67	0.67	0.60	0.60	0.22	0.67	0.09
Delay/Veh:	28.8	0.0	28.8	29.4	0.0	40.7	34.8	16.8	16.8	48.1	37.1	26.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.8	0.0	28.8	29.4	0.0	40.7	34.8	16.8	16.8	48.1	37.1	26.7
LOS by Move:	C	A	C	C	A	D	C	B	B	D	D	C
HCM2kAvgQ:	1	0	1	1	0	7	8	10	10	1	7	1

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2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.505
Loss Time (sec):	12	Average Delay (sec/veh):	15.8
Optimal Cycle:	38	Level Of Service:	B

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	0 1	0	0	0 1 0
Volume Module:												
Base Vol:	0	0	0	1	0	1	0	161	0	0	162	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	1	0	161	0	0	162	1
Added Vol:	0	0	0	15	0	99	154	7	0	0	11	24
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	16	0	100	154	168	0	0	173	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	17	0	109	168	183	0	0	189	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	17	0	109	168	183	0	0	189	27
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	17	0	109	168	183	0	0	189	27
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.66	1.00	0.66	0.66	0.69	1.00	1.00	0.67	0.67
Lanes:	0.00	1.00	0.00	0.14	0.00	0.86	1.00	1.00	0.00	0.00	0.87	0.13
Final Sat.:	0	1900	0	173	0	1081	1253	1319	0	0	1118	162
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.10	0.13	0.14	0.00	0.00	0.17	0.17
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.20	0.00	0.20	0.27	0.60	0.00	0.00	0.33	0.33
Volume/Cap:	0.00	0.00	0.00	0.51	0.00	0.51	0.51	0.23	0.00	0.00	0.51	0.51
Delay/Veh:	0.0	0.0	0.0	23.0	0.0	23.0	19.9	5.7	0.0	0.0	17.0	17.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	23.0	0.0	23.0	19.9	5.7	0.0	0.0	17.0	17.0
LOS by Move:	A	A	A	C	A	C	B	A	A	A	B	B
HCM2kAvgQ:	0	0	0	3	0	3	3	2	0	0	3	3

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.368
Loss Time (sec):	16	Average Delay (sec/veh):	21.8
Optimal Cycle:	54	Level Of Service:	C

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 0	1	0	1 0 1
Volume Module:												
Base Vol:	27	18	4	15	21	66	25	41	32	1	49	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	18	4	15	21	66	25	41	32	1	49	9
Added Vol:	12	2	0	0	1	22	14	0	8	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	39	20	4	15	22	88	39	41	40	1	49	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	46	23	5	18	26	103	46	48	47	1	57	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	23	5	18	26	103	46	48	47	1	57	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	23	5	18	26	103	46	48	47	1	57	11
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	0.63	0.63	0.69	0.69	0.69	0.59	0.62	0.53	0.51	0.54	0.46
Lanes:	0.62	0.32	0.06	0.12	0.18	0.70	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	739	379	76	156	230	918	1121	1180	1003	977	1028	874
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.11	0.11	0.11	0.04	0.04	0.05	0.00	0.06	0.01
Crit Moves:	****			****			****				****	
Green/Cycle:	0.17	0.17	0.17	0.27	0.27	0.27	0.13	0.17	0.17	0.13	0.17	0.17
Volume/Cap:	0.37	0.37	0.37	0.42	0.42	0.42	0.30	0.24	0.28	0.01	0.33	0.07
Delay/Veh:	23.4	23.4	23.4	19.0	19.0	19.0	24.6	22.4	22.8	22.6	23.2	21.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.4	23.4	23.4	19.0	19.0	19.0	24.6	22.4	22.8	22.6	23.2	21.3
LOS by Move:	C	C	C	B	B	B	C	C	C	C	C	C
HCM2kAvgQ:	2	2	2	3	3	3	1	1	1	0	1	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.396
Loss Time (sec):	12	Average Delay (sec/veh):	11.0
Optimal Cycle:	35	Level Of Service:	B

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	29	0	22	32	151	0	0	370	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	29	0	22	32	151	0	0	370	68
Added Vol:	0	0	0	7	0	9	12	11	0	0	17	11
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	36	0	31	44	162	0	0	387	79
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.00	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	42	0	0	52	191	0	0	455	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	42	0	0	52	191	0	0	455	93
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	42	0	0	52	191	0	0	455	93
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.49	1.00	1.00	0.68	0.72	1.00	1.00	0.90	0.77
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	939	0	1900	1298	1366	0	0	1712	1455
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.00	0.04	0.14	0.00	0.00	0.27	0.06
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.11	0.00	0.00	0.10	0.77	0.00	0.00	0.67	0.67
Volume/Cap:	0.00	0.00	0.00	0.40	0.00	0.00	0.40	0.18	0.00	0.00	0.40	0.10
Delay/Veh:	0.0	0.0	0.0	45.6	0.0	0.0	46.2	3.3	0.0	0.0	8.0	6.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	45.6	0.0	0.0	46.2	3.3	0.0	0.0	8.0	6.1
LOS by Move:	A	A	A	D	A	A	D	A	A	A	A	A
HCM2kAvgQ:	0	0	0	2	0	0	2	2	0	0	7	1

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: C[17.4]

Street Name:	SR 99 East Frontage Road						Petersen Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:												
Base Vol:	0	575	37	0	0	0	0	0	0	13	0	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	575	37	0	0	0	0	0	0	13	0	60
Added Vol:	0	92	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	667	37	0	0	0	0	0	0	13	0	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	748	41	0	0	0	0	0	0	15	0	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	748	41	0	0	0	0	0	0	15	0	67
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.7	xxxx	6.6
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.8	xxxx	3.6
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	768	xxxx	768
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	327	xxxx	353
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	327	xxxx	353
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	0.19
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	0.7
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	16.5	xxxx	17.6
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	C
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			17.4		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.423
Loss Time (sec):	12	Average Delay (sec/veh):	11.3
Optimal Cycle:	34	Level Of Service:	B

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lanes:	1 0	0 0	1	0 0	0 0	0	0 0	1 0	1	1 0	1 0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	217	0	0	369	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	217	0	0	369	0
Added Vol:	150	0	12	0	0	0	0	11	236	18	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	0	12	0	0	0	0	228	236	18	376	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	160	0	13	0	0	0	0	243	251	19	400	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	0	13	0	0	0	0	243	251	19	400	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	160	0	13	0	0	0	0	243	251	19	400	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	1.00	0.68	1.00	1.00	1.00	1.00	0.72	0.61	0.86	0.90	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1444	0	1292	0	0	0	0	1366	1161	1626	1712	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.00	0.01	0.00	0.00	0.00	0.00	0.18	0.22	0.01	0.23	0.00
Crit Moves:	****								****	****		
Green/Cycle:	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.49	0.49	0.07	0.55	0.00
Volume/Cap:	0.45	0.00	0.04	0.00	0.00	0.00	0.00	0.37	0.45	0.18	0.42	0.00
Delay/Veh:	20.0	0.0	17.2	0.0	0.0	0.0	0.0	10.0	10.7	27.2	8.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.0	0.0	17.2	0.0	0.0	0.0	0.0	10.0	10.7	27.2	8.2	0.0
LOS by Move:	B	A	B	A	A	A	A	B	B	C	A	A
HCM2kAvgQ:	3	0	0	0	0	0	0	3	4	0	4	0

NorCal Logistics Center
Existing Plus Project
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Scenario Report

Scenario:	Existing Plus Project PM
Command:	Existing Plus Project PM
Volume:	Existing PM
Geometry:	Existing PM_With_Project
Impact Fee:	Default Impact Fee
Trip Generation:	Project PM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Existing Plus Project
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Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 4 Arch/Frontier	B	13.9	0.179	D	33.8	0.405	+19.862 D/V
# 5 Arch/Fite	A	9.0	0.435	C	31.6	0.910	+22.560 D/V
# 6 Arch/Newcastle	C	20.4	0.393	E	70.4	1.037	+50.036 D/V
# 7 Arch/Logistics	A	2.8	0.272	C	24.3	0.739	+21.496 D/V
# 8 Arch/Austin	C	21.0	0.264	C	21.3	0.330	+ 0.274 D/V
# 9 E Mariposa/Austin	B	14.1	0.383	B	15.4	0.419	+ 1.289 D/V
# 14 SR 99 East Frontage Road / Pet	B	13.0	0.150	C	15.9	0.196	+ 2.933 D/V
# 15 E Mariposa/Newcastle	A	1.7	0.349	B	17.4	0.667	+15.648 D/V

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: D[33.8]

Street Name:	Frontier Way								Arch Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Channel				Include				Include			
Lanes:	0	0	0	0 0	1	0	0	0 1	0	1	0	0 0	0	0	0	1 0
Volume Module:																
Base Vol:	0	0	0		6	0	78		60	189	0		0	459	10	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		6	0	78		60	189	0		0	459	10	
Added Vol:	0	0	0		0	0	0		0	293	0		0	512	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		6	0	78		60	482	0		0	971	10	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.85	0.85	0.85		0.85	0.85	0.85		0.85	0.85	0.85		0.85	0.85	0.85	
PHF Volume:	0	0	0		7	0	92		71	567	0		0	1142	12	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		7	0	92		71	567	0		0	1142	12	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		6.6	xxxx	6.4		4.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	xxxxx		3.6	xxxx	3.4		2.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		1856	xxxx	1148		1154	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		74	xxxx	227		484	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		66	xxxx	227		484	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.11	xxxx	0.41		0.15	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		0.3	xxxx	1.8		0.5	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		66.3	xxxx	31.3		13.7	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		F	*	D		B	*	*		*	*	*	
Movement:	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		0.5	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		13.7	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		B	*	*		*	*	*	
ApproachDel:	xxxxxx				33.8				xxxxxx				xxxxxx			
ApproachLOS:	*				D				*				*			

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.910
Loss Time (sec):	12	Average Delay (sec/veh):	31.6
Optimal Cycle:	84	Level Of Service:	C

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	1 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	8	0	51	40	152	0	0	407	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	8	0	51	40	152	0	0	407	6
Added Vol:	0	0	0	0	0	0	0	293	0	0	512	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	8	0	51	40	445	0	0	919	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	9	0	60	47	524	0	0	1081	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	9	0	60	47	524	0	0	1081	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	9	0	60	47	524	0	0	1081	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.85	1.00	0.76	0.63	0.66	1.00	1.00	0.83	0.71
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	0	0	0	1612	0	1442	1195	1258	0	1900	1583	1345
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.04	0.04	0.42	0.00	0.00	0.68	0.01
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.07	0.00	0.07	0.07	0.73	0.00	0.00	0.67	0.67
Volume/Cap:	0.00	0.00	0.00	0.09	0.00	0.62	0.59	0.57	0.00	0.00	1.02	0.01
Delay/Veh:	0.0	0.0	0.0	26.6	0.0	39.4	38.4	4.5	0.0	0.0	44.1	3.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	26.6	0.0	39.4	38.4	4.5	0.0	0.0	44.1	3.4
LOS by Move:	A	A	A	C	A	D	D	A	A	A	D	A
HCM2kAvgQ:	0	0	0	0	0	2	1	4	0	0	23	0

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	1.037
Loss Time (sec):	12	Average Delay (sec/veh):	70.4
Optimal Cycle:	105	Level Of Service:	E

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0	0	1! 0	0	0	1	0	0	1	1	0	1
Volume Module:												
Base Vol:	127	0	10	0	0	6	7	127	21	6	262	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	0	10	0	0	6	7	127	21	6	262	0
Added Vol:	0	0	0	29	0	340	196	97	0	0	171	35
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	127	0	10	29	0	346	203	224	21	6	433	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	149	0	12	34	0	407	239	264	25	7	509	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	0	12	34	0	407	239	264	25	7	509	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	149	0	12	34	0	407	239	264	25	7	509	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	1.00	0.63	0.49	1.00	0.57	0.64	0.66	0.66	0.73	0.77	0.65
Lanes:	0.93	0.00	0.07	1.00	0.00	1.00	1.00	0.91	0.09	1.00	1.00	1.00
Final Sat.:	1109	0	87	932	0	1092	1211	1150	108	1388	1461	1242
Capacity Analysis Module:												
Vol/Sat:	0.13	0.00	0.13	0.04	0.00	0.37	0.20	0.23	0.23	0.01	0.35	0.03
Crit Moves:						****	****				****	
Green/Cycle:	0.36	0.00	0.36	0.36	0.00	0.36	0.19	0.45	0.45	0.08	0.34	0.34
Volume/Cap:	0.37	0.00	0.37	0.10	0.00	1.04	1.04	0.51	0.51	0.07	1.04	0.10
Delay/Veh:	25.4	0.0	25.4	22.5	0.0	89.0	111.9	21.3	21.3	45.4	85.4	24.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.4	0.0	25.4	22.5	0.0	89.0	111.9	21.3	21.3	45.4	85.4	24.0
LOS by Move:	C	A	C	C	A	F	F	C	C	D	F	C
HCM2kAvgQ:	4	0	4	1	0	20	10	6	6	0	20	1

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.739
Loss Time (sec):	12	Average Delay (sec/veh):	24.3
Optimal Cycle:	56	Level Of Service:	C

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	0	0	1! 0	0	0	1! 0	1	0	0 1	0	0	0 1 0
Volume Module:												
Base Vol:	0	0	0	1	0	0	0	123	0	0	268	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	0	0	123	0	0	268	1
Added Vol:	0	0	0	30	0	199	113	13	0	0	8	17
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	31	0	199	113	136	0	0	276	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	36	0	234	133	160	0	0	325	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	36	0	234	133	160	0	0	325	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	36	0	234	133	160	0	0	325	21
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.58	1.00	0.58	0.64	0.68	1.00	1.00	0.76	0.76
Lanes:	0.00	1.00	0.00	0.13	0.00	0.87	1.00	1.00	0.00	0.00	0.94	0.06
Final Sat.:	0	1900	0	150	0	961	1220	1284	0	0	1361	89
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.24	0.00	0.24	0.11	0.12	0.00	0.00	0.24	0.24
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.33	0.00	0.33	0.15	0.47	0.00	0.00	0.32	0.32
Volume/Cap:	0.00	0.00	0.00	0.74	0.00	0.74	0.74	0.26	0.00	0.00	0.74	0.74
Delay/Veh:	0.0	0.0	0.0	25.6	0.0	25.6	39.4	9.8	0.0	0.0	24.2	24.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	25.6	0.0	25.6	39.4	9.8	0.0	0.0	24.2	24.2
LOS by Move:	A	A	A	C	A	C	D	A	A	A	C	C
HCM2kAvgQ:	0	0	0	6	0	6	3	2	0	0	6	6

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.330
Loss Time (sec):	16	Average Delay (sec/veh):	21.3
Optimal Cycle:	54	Level Of Service:	C

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	1	0	1 0 1
Volume Module:												
Base Vol:	19	24	2	6	1	22	75	63	4	1	60	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	24	2	6	1	22	75	63	4	1	60	15
Added Vol:	9	1	0	0	2	16	28	0	15	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	28	25	2	6	3	38	103	63	19	1	60	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	30	27	2	6	3	41	111	68	21	1	65	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	27	2	6	3	41	111	68	21	1	65	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	27	2	6	3	41	111	68	21	1	65	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.62	0.62	0.62	0.69	0.69	0.69	0.66	0.69	0.59	0.51	0.54	0.45
Lanes:	0.51	0.45	0.04	0.13	0.06	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	601	537	43	166	83	1054	1253	1319	1121	966	1017	864
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.04	0.04	0.04	0.09	0.05	0.02	0.00	0.06	0.02
Crit Moves:	****			****			****				****	
Green/Cycle:	0.17	0.17	0.17	0.17	0.17	0.17	0.23	0.22	0.22	0.18	0.17	0.17
Volume/Cap:	0.30	0.30	0.30	0.23	0.23	0.23	0.38	0.23	0.08	0.01	0.38	0.11
Delay/Veh:	22.8	22.8	22.8	22.2	22.2	22.2	20.2	19.5	18.6	20.3	23.7	21.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.8	22.8	22.8	22.2	22.2	22.2	20.2	19.5	18.6	20.3	23.7	21.6
LOS by Move:	C	C	C	C	C	C	C	B	B	C	C	C
HCM2kAvgQ:	1	1	1	1	1	1	2	1	0	0	2	0

NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.419
Loss Time (sec):	12	Average Delay (sec/veh):	15.4
Optimal Cycle:	36	Level Of Service:	B

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	72	0	43	10	342	0	0	193	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	72	0	43	10	342	0	0	193	18
Added Vol:	0	0	0	14	0	16	10	21	0	0	12	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	86	0	59	20	363	0	0	205	26
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	89	0	0	21	377	0	0	213	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	89	0	0	21	377	0	0	213	27
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	89	0	0	21	377	0	0	213	27
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.49	1.00	1.00	0.68	0.72	1.00	1.00	0.90	0.77
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	938	0	1900	1298	1366	0	0	1712	1455
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.00	0.02	0.28	0.00	0.00	0.12	0.02
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.23	0.00	0.00	0.18	0.66	0.00	0.00	0.48	0.48
Volume/Cap:	0.00	0.00	0.00	0.42	0.00	0.00	0.09	0.42	0.00	0.00	0.26	0.04
Delay/Veh:	0.0	0.0	0.0	36.0	0.0	0.0	35.8	8.8	0.0	0.0	16.6	14.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	36.0	0.0	0.0	35.8	8.8	0.0	0.0	16.6	14.7
LOS by Move:	A	A	A	D	A	A	D	A	A	A	B	B
HCM2kAvgQ:	0	0	0	3	0	0	1	6	0	0	4	0

NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: C[15.9]

Street Name:	SR 99 East Frontage Road						Petersen Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:												
Base Vol:	0	474	30	0	0	0	0	0	0	25	0	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	474	30	0	0	0	0	0	0	25	0	73
Added Vol:	0	184	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	658	30	0	0	0	0	0	0	25	0	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	713	33	0	0	0	0	0	0	27	0	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	713	33	0	0	0	0	0	0	27	0	79
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	6.3
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.6	xxxx	3.4
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	729	xxxx	729
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	373	xxxx	403
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	373	xxxx	403
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	0.20
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.7
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.4	xxxx	16.1
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	C
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			15.9		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.667
Loss Time (sec):	12	Average Delay (sec/veh):	17.4
Optimal Cycle:	49	Level Of Service:	B

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lanes:	1 0	0	0 1	0	0	0 0 0	0	0	1 0 1	1	0	1 0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	324	0	0	236	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	324	0	0	236	0
Added Vol:	300	0	24	0	0	0	0	8	172	13	14	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	0	24	0	0	0	0	332	172	13	250	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	353	0	28	0	0	0	0	391	202	15	294	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	353	0	28	0	0	0	0	391	202	15	294	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	353	0	28	0	0	0	0	391	202	15	294	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	1.00	0.70	1.00	1.00	1.00	1.00	0.72	0.61	0.86	0.90	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1480	0	1324	0	0	0	0	1366	1161	1626	1712	0
Capacity Analysis Module:												
Vol/Sat:	0.24	0.00	0.02	0.00	0.00	0.00	0.00	0.29	0.17	0.01	0.17	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.33	0.00	0.33	0.00	0.00	0.00	0.00	0.40	0.40	0.07	0.47	0.00
Volume/Cap:	0.72	0.00	0.06	0.00	0.00	0.00	0.00	0.72	0.44	0.14	0.37	0.00
Delay/Veh:	22.4	0.0	13.7	0.0	0.0	0.0	0.0	19.6	13.7	27.0	10.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.4	0.0	13.7	0.0	0.0	0.0	0.0	19.6	13.7	27.0	10.6	0.0
LOS by Move:	C	A	B	A	A	A	A	B	B	C	B	A
HCM2kAvgQ:	7	0	0	0	0	0	0	8	3	0	3	0

SCENARIO 2: EXISTING PLUS PROJECT PLUS MITIGATION

NorCal Logistics Center
Existing Plus Project Plus Mitigation
AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 6 Arch/Newcastle	B	10.3	0.301	C	27.2	0.594	+16.951 D/V

NorCal Logistics Center
Existing Plus Project Plus Mitigation
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	0.594
Loss Time (sec):	12	Average Delay (sec/veh):	27.2
Optimal Cycle:	48	Level Of Service:	C

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0	0	1! 0	0	0	0	1	0	0	1	0	1	0	2	0	1
Volume Module:												
Base Vol:	17	0	2	1	0	3	13	155	145	15	145	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	0	2	1	0	3	13	155	145	15	145	1
Added Vol:	0	0	0	28	0	170	269	133	0	0	86	24
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	17	0	2	29	0	173	282	288	145	15	231	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	19	0	2	32	0	194	315	322	162	17	258	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	0	2	32	0	194	315	322	162	17	258	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	0	2	32	0	194	315	322	162	17	258	28
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.74	1.00	0.74	0.52	1.00	0.57	0.77	0.77	0.77	0.64	0.64	0.57
Lanes:	0.89	0.00	0.11	1.00	0.00	1.00	1.00	0.67	0.33	1.00	2.00	1.00
Final Sat.:	1263	0	149	995	0	1077	1455	968	487	1220	2440	1092
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.02	0.03	0.00	0.18	0.22	0.33	0.33	0.01	0.11	0.03
Crit Moves:						****		****		****		
Green/Cycle:	0.30	0.00	0.30	0.30	0.00	0.30	0.40	0.55	0.55	0.04	0.19	0.19
Volume/Cap:	0.05	0.00	0.05	0.11	0.00	0.60	0.55	0.60	0.60	0.36	0.55	0.13
Delay/Veh:	26.4	0.0	26.4	27.0	0.0	34.9	25.6	17.2	17.2	54.0	39.6	35.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.4	0.0	26.4	27.0	0.0	34.9	25.6	17.2	17.2	54.0	39.6	35.4
LOS by Move:	C	A	C	C	A	C	C	B	B	D	D	D
HCM2kAvgQ:	0	0	0	1	0	6	7	10	10	1	4	1

NorCal Logistics Center
Existing Plus Project Plus Mitigation
PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 6 Arch/Newcastle	C	23.0	0.310	D	41.4	0.851	+18.453 D/V

NorCal Logistics Center
Existing Plus Project Plus Mitigation
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	0.851
Loss Time (sec):	12	Average Delay (sec/veh):	41.4
Optimal Cycle:	93	Level Of Service:	D

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	1! 0	0	0	1 0	0 1	1 0	0 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	127	0	10	0	0	6	7	127	21	6	262	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	0	10	0	0	6	7	127	21	6	262	0
Added Vol:	0	0	0	29	0	340	196	97	0	0	171	35
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	127	0	10	29	0	346	203	224	21	6	433	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	149	0	12	34	0	407	239	264	25	7	509	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	0	12	34	0	407	239	264	25	7	509	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	149	0	12	34	0	407	239	264	25	7	509	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.64	1.00	0.64	0.50	1.00	0.57	0.64	0.66	0.66	0.73	0.73	0.65
Lanes:	0.93	0.00	0.07	1.00	0.00	1.00	1.00	0.91	0.09	1.00	2.00	1.00
Final Sat.:	1119	0	88	943	0	1092	1211	1150	108	1388	2776	1242
Capacity Analysis Module:												
Vol/Sat:	0.13	0.00	0.13	0.04	0.00	0.37	0.20	0.23	0.23	0.01	0.18	0.03
Crit Moves:						****	****				****	
Green/Cycle:	0.44	0.00	0.44	0.44	0.00	0.44	0.23	0.38	0.38	0.06	0.22	0.22
Volume/Cap:	0.30	0.00	0.30	0.08	0.00	0.85	0.85	0.60	0.60	0.08	0.85	0.15
Delay/Veh:	19.4	0.0	19.4	17.3	0.0	40.0	59.8	27.9	27.9	46.6	50.7	33.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.4	0.0	19.4	17.3	0.0	40.0	59.8	27.9	27.9	46.6	50.7	33.7
LOS by Move:	B	A	B	B	A	D	E	C	C	D	D	C
HCM2kAvgQ:	3	0	3	1	0	15	8	7	7	0	9	1

SCENARIO 3: EXISTING PLUS APPROVED PROJECTS (NEAR-TERM)

NorCal Logistics Center
Near-Term Without Project
AM Peak Hour

Scenario Report

Scenario:	Near-Term AM
Command:	Near-Term AM
Volume:	Near-term AM
Geometry:	Near-Term AM
Impact Fee:	Default Impact Fee
Trip Generation:	Vacant AM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Near-Term Without Project
AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 4 Arch/Frontier	B	11.2	0.063	C	18.0	0.118	+ 6.802 D/V
# 5 Arch/Fite	B	16.5	0.320	B	19.4	0.843	+ 2.904 D/V
# 6 Arch/Newcastle	A	9.5	0.288	D	39.5	0.955	+30.024 D/V
# 7 Arch/Logistics	A	3.3	0.147	B	13.8	0.632	+10.570 D/V
# 8 Arch/Austin	C	28.7	0.203	C	34.5	0.676	+ 5.733 D/V
# 9 E Mariposa/Austin	A	8.2	0.348	B	14.1	0.414	+ 5.824 D/V
# 14 SR 99 East Frontage Road / Pet	C	15.1	0.156	C	15.4	0.178	+ 0.325 D/V
# 15 E Mariposa/Newcastle	A	1.3	0.306	A	1.4	0.320	+ 0.040 D/V

NorCal Logistics Center
Near-Term Without Project
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[18.0]

Street Name:	Frontier Way								Arch Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Channel				Include				Include			
Lanes:	0 0 0 0 0				1 0 0 0 1				1 0 1 0 0				0 0 1 0 1			
Volume Module: >> Count Date: 29 Aug 2012 <<																
Base Vol:	0	0	0		4	0	40		68	344	0		0	227	9	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		4	0	40		68	344	0		0	227	9	
Added Vol:	0	0	0		1	0	13		19	663	0		0	230	2	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		5	0	53		87	1007	0		0	457	11	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	0	0		5	0	58		95	1095	0		0	497	12	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		5	0	58		95	1095	0		0	497	12	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		6.9	xxxx	6.7		4.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	xxxxx		4.0	xxxx	3.8		2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		1780	xxxx	497		509	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		68	xxxx	488		961	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		63	xxxx	488		961	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.09	xxxx	0.12		0.10	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		0.3	xxxx	0.4		0.3	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		67.2	xxxx	13.4		9.2	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		F	*	B		A	*	*		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				18.0				xxxxxx				xxxxxx			
ApproachLOS:	*				C				*				*			

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
Near-Term Without Project
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.843
Loss Time (sec):	12	Average Delay (sec/veh):	19.4
Optimal Cycle:	90	Level Of Service:	B

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	1 0	0 0	0	1 0	0 0	1	1 0	1 0	0	1 0	1 0	1
Volume Module:												
Base Vol:	1	0	0	7	0	70	36	305	0	0	159	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	0	7	0	70	36	305	0	0	159	5
Added Vol:	0	0	0	0	0	0	0	664	0	0	231	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	0	7	0	70	36	969	0	0	390	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	0	0	8	0	76	39	1053	0	0	424	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	0	8	0	76	39	1053	0	0	424	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	0	8	0	76	39	1053	0	0	424	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.64	1.00	0.57	0.78	0.82	1.00	1.00	0.82	0.70
Lanes:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	1805	0	0	1211	0	1084	1480	1558	0	1900	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.07	0.03	0.68	0.00	0.00	0.27	0.00
Crit Moves:	****					****		****		****		
Green/Cycle:	0.04	0.00	0.00	0.08	0.00	0.08	0.09	0.77	0.00	0.00	0.67	0.67
Volume/Cap:	0.02	0.00	0.00	0.08	0.00	0.88	0.28	0.88	0.00	0.00	0.40	0.01
Delay/Veh:	48.7	0.0	0.0	45.1	0.0	106.9	45.3	16.6	0.0	0.0	7.9	5.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.7	0.0	0.0	45.1	0.0	106.9	45.3	16.6	0.0	0.0	7.9	5.6
LOS by Move:	D	A	A	D	A	F	D	B	A	A	A	A
HCM2kAvgQ:	0	0	0	0	0	5	1	23	0	0	6	0

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	0.955
Loss Time (sec):	12	Average Delay (sec/veh):	39.5
Optimal Cycle:	105	Level Of Service:	D

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0	0	1! 0	0	0	1	0	0	1	1	0	1	0	1
Volume Module:												
Base Vol:	17	0	2	1	0	3	13	155	145	15	145	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	0	2	1	0	3	13	155	145	15	145	1
Added Vol:	114	0	8	6	0	21	34	451	179	13	96	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	131	0	10	7	0	24	47	606	324	28	241	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	142	0	11	8	0	26	51	659	352	30	262	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	0	11	8	0	26	51	659	352	30	262	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	142	0	11	8	0	26	51	659	352	30	262	11
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.57	1.00	0.57	0.67	1.00	0.68	0.78	0.78	0.78	0.78	0.82	0.70
Lanes:	0.93	0.00	0.07	1.00	0.00	1.00	1.00	0.65	0.35	1.00	1.00	1.00
Final Sat.:	1011	0	77	1274	0	1292	1480	962	515	1480	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.14	0.00	0.14	0.01	0.00	0.02	0.03	0.68	0.68	0.02	0.17	0.01
Crit Moves:	****							****		****		
Green/Cycle:	0.14	0.00	0.14	0.14	0.00	0.14	0.14	0.70	0.70	0.04	0.60	0.60
Volume/Cap:	0.97	0.00	0.97	0.04	0.00	0.14	0.25	0.97	0.97	0.54	0.28	0.01
Delay/Veh:	108.3	0.0	108.3	38.7	0.0	39.5	41.2	36.4	36.4	59.7	10.1	8.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	108.3	0.0	108.3	38.7	0.0	39.5	41.2	36.4	36.4	59.7	10.1	8.3
LOS by Move:	F	A	F	D	A	D	D	D	D	E	B	A
HCM2kAvgQ:	9	0	9	0	0	1	1	32	32	1	4	0

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	75	Critical Vol./Cap.(X):	0.632
Loss Time (sec):	16	Average Delay (sec/veh):	13.8
Optimal Cycle:	57	Level Of Service:	B

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	1	0	1	0	161	0	0	162	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	1	0	161	0	0	162	1
Added Vol:	55	0	8	0	0	0	0	380	85	12	64	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	0	8	1	0	1	0	541	85	12	226	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	60	0	9	1	0	1	0	588	92	13	246	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	0	9	1	0	1	0	588	92	13	246	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	0	9	1	0	1	0	588	92	13	246	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	1.00	0.68	0.73	1.00	0.73	1.00	0.80	0.80	0.78	0.82	0.82
Lanes:	1.00	0.00	1.00	0.50	0.00	0.50	1.00	0.86	0.14	1.00	0.99	0.01
Final Sat.:	1444	0	1292	692	0	692	1900	1320	207	1480	1550	7
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.45	0.45	0.01	0.16	0.16
Crit Moves:	****			****				****		****		
Green/Cycle:	0.06	0.00	0.06	0.05	0.00	0.05	0.00	0.62	0.62	0.05	0.68	0.68
Volume/Cap:	0.72	0.00	0.12	0.03	0.00	0.03	0.00	0.72	0.72	0.17	0.23	0.23
Delay/Veh:	60.3	0.0	34.2	33.8	0.0	33.8	0.0	12.3	12.3	34.9	4.8	4.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.3	0.0	34.2	33.8	0.0	33.8	0.0	12.3	12.3	34.9	4.8	4.8
LOS by Move:	E	A	C	C	A	C	A	B	B	C	A	A
HCM2kAvgQ:	3	0	0	0	0	0	0	10	10	0	2	2

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	90	Critical Vol./Cap.(X):	0.676
Loss Time (sec):	16	Average Delay (sec/veh):	34.5
Optimal Cycle:	64	Level Of Service:	C

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 0	1	0	1 0 1
Volume Module:												
Base Vol:	27	18	4	15	21	66	25	41	32	1	49	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	18	4	15	21	66	25	41	32	1	49	9
Added Vol:	41	7	0	0	75	35	22	0	365	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	25	4	15	96	101	47	41	397	1	49	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	74	27	4	16	104	110	51	45	432	1	53	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	27	4	16	104	110	51	45	432	1	53	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	74	27	4	16	104	110	51	45	432	1	53	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.79	0.79	0.76	0.76	0.76	0.78	0.82	0.70	0.78	0.82	0.70
Lanes:	0.70	0.26	0.04	0.07	0.45	0.48	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1049	386	62	103	658	692	1480	1558	1324	1480	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.07	0.16	0.16	0.16	0.03	0.03	0.33	0.00	0.03	0.01
Crit Moves:	****			****					****	****		
Green/Cycle:	0.11	0.11	0.11	0.20	0.20	0.20	0.23	0.42	0.42	0.09	0.28	0.28
Volume/Cap:	0.63	0.63	0.63	0.78	0.78	0.78	0.15	0.07	0.78	0.01	0.12	0.03
Delay/Veh:	46.1	46.1	46.1	46.3	46.3	46.3	28.2	15.7	29.5	37.4	24.2	23.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.1	46.1	46.1	46.3	46.3	46.3	28.2	15.7	29.5	37.4	24.2	23.4
LOS by Move:	D	D	D	D	D	D	C	B	C	D	C	C
HCM2kAvgQ:	4	4	4	8	8	8	1	1	10	0	1	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.414
Loss Time (sec):	12	Average Delay (sec/veh):	14.1
Optimal Cycle:	36	Level Of Service:	B

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	29	0	22	32	151	0	0	370	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	29	0	22	32	151	0	0	370	68
Added Vol:	0	0	0	16	0	14	58	1	0	0	2	52
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	45	0	36	90	152	0	0	372	120
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.00	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	49	0	0	98	165	0	0	404	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	49	0	0	98	165	0	0	404	130
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	49	0	0	98	165	0	0	404	130
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.63	1.00	1.00	0.78	0.82	1.00	1.00	0.82	0.70
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1198	0	1900	1480	1558	0	0	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.00	0.07	0.11	0.00	0.00	0.26	0.10
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.10	0.00	0.00	0.16	0.79	0.00	0.00	0.63	0.63
Volume/Cap:	0.00	0.00	0.00	0.41	0.00	0.00	0.41	0.13	0.00	0.00	0.41	0.16
Delay/Veh:	0.0	0.0	0.0	46.8	0.0	0.0	40.9	2.7	0.0	0.0	10.1	8.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	46.8	0.0	0.0	40.9	2.7	0.0	0.0	10.1	8.2
LOS by Move:	A	A	A	D	A	A	D	A	A	A	B	A
HCM2kAvgQ:	0	0	0	2	0	0	3	1	0	0	7	2

NorCal Logistics Center
Near-Term Without Project
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C[15.4]

Street Name:	SR 99 East Frontage Road						Petersen Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:												
Base Vol:	0	575	37	0	0	0	0	0	0	13	0	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	575	37	0	0	0	0	0	0	13	0	60
Added Vol:	0	3	5	0	0	0	0	0	0	0	0	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	578	42	0	0	0	0	0	0	13	0	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	628	46	0	0	0	0	0	0	14	0	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	628	46	0	0	0	0	0	0	14	0	74
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.7	xxxx	6.6
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.8	xxxx	3.6
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	651	xxxx	651
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	385	xxxx	415
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	385	xxxx	415
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	0.18
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	0.6
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.7	xxxx	15.5
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	C
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			15.4		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
Near-Term Without Project
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	75	Critical Vol./Cap.(X):	0.320
Loss Time (sec):	12	Average Delay (sec/veh):	1.4
Optimal Cycle:	31	Level Of Service:	A

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	1	0 1	1 0	1	0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	217	0	0	369	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	217	0	0	369	0
Added Vol:	0	0	0	0	0	0	0	59	0	0	16	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	276	0	0	385	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	0	0	0	0	300	0	0	418	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	300	0	0	418	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	300	0	0	418	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.82	1.00	1.00	0.82	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1900	0	1900	0	0	0	0	1558	1900	1900	1558	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.27	0.00
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.84	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.32	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.5	0.0
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	2	0	0	2	0

NorCal Logistics Center
Near-Term Without Project
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Scenario Report

Scenario:	Near-Term PM
Command:	Near-Term PM
Volume:	Near-term PM
Geometry:	Near-Term PM
Impact Fee:	Default Impact Fee
Trip Generation:	Vacant PM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Near-Term Without Project
PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 4 Arch/Frontier	B	13.1	0.156	E	47.6	0.570	+34.484 D/V
# 5 Arch/Fite	B	11.4	0.383	B	19.7	0.912	+ 8.275 D/V
# 6 Arch/Newcastle	C	21.2	0.352	D	51.2	0.969	+29.960 D/V
# 7 Arch/Logistics	A	3.3	0.230	B	15.4	0.618	+12.066 D/V
# 8 Arch/Austin	C	27.3	0.176	C	28.9	0.567	+ 1.577 D/V
# 9 E Mariposa/Austin	B	13.2	0.314	B	17.9	0.367	+ 4.731 D/V
# 14 SR 99 East Frontage Road / Pet	B	13.0	0.150	B	13.5	0.185	+ 0.534 D/V
# 15 E Mariposa/Newcastle	A	1.3	0.258	A	1.3	0.272	+ 0.045 D/V

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 3.5 Worst Case Level Of Service: E[47.6]

Street Name:	Frontier Way								Arch Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Channel				Include				Include			
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	1	0 0	0	0	1	0 1
Volume Module:																
Base Vol:	0	0	0		6	0	78		60	189	0		0	459	10	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		6	0	78		60	189	0		0	459	10	
Added Vol:	0	0	0		2	0	24		15	258	0		0	699	1	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		8	0	102		75	447	0		0	1158	11	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	0	0		9	0	111		82	486	0		0	1259	12	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		9	0	111		82	486	0		0	1259	12	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		6.6	xxxx	6.4		4.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	xxxxx		3.6	xxxx	3.4		2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		1908	xxxx	1259		1271	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		69	xxxx	195		499	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		60	xxxx	195		499	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.14	xxxx	0.57		0.16	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		0.5	xxxx	3.1		0.6	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		74.4	xxxx	45.5		13.6	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		F	*	E		B	*	*		*	*	*	
Movement:	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				47.6				xxxxxx				xxxxxx			
ApproachLOS:	*				E				*				*			

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.912
Loss Time (sec):	12	Average Delay (sec/veh):	19.7
Optimal Cycle:	105	Level Of Service:	B

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	1 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	8	0	51	40	152	0	0	407	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	8	0	51	40	152	0	0	407	6
Added Vol:	0	0	0	0	0	0	0	260	0	0	701	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	8	0	51	40	412	0	0	1108	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	9	0	55	43	448	0	0	1204	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	9	0	55	43	448	0	0	1204	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	9	0	55	43	448	0	0	1204	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.85	1.00	0.76	0.81	0.86	1.00	1.00	0.86	0.73
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	0	0	0	1612	0	1442	1543	1625	0	1900	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.04	0.03	0.28	0.00	0.00	0.74	0.00
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.04	0.00	0.04	0.04	0.84	0.00	0.00	0.81	0.81
Volume/Cap:	0.00	0.00	0.00	0.13	0.00	0.92	0.74	0.33	0.00	0.00	0.92	0.01
Delay/Veh:	0.0	0.0	0.0	49.3	0.0	137.5	88.9	1.9	0.0	0.0	18.3	2.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	49.3	0.0	137.5	88.9	1.9	0.0	0.0	18.3	2.0
LOS by Move:	A	A	A	D	A	F	F	A	A	A	B	A
HCM2kAvgQ:	0	0	0	0	0	4	1	3	0	0	28	0

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	0.969
Loss Time (sec):	12	Average Delay (sec/veh):	51.2
Optimal Cycle:	105	Level Of Service:	D

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0	0	1! 0	0	0	1	0	0	1	1	0	1
Volume Module:												
Base Vol:	127	0	10	0	0	6	7	127	21	6	262	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	0	10	0	0	6	7	127	21	6	262	0
Added Vol:	229	0	17	11	0	43	24	106	130	10	429	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	356	0	27	11	0	49	31	233	151	16	691	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	387	0	29	12	0	53	34	253	164	17	751	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	387	0	29	12	0	53	34	253	164	17	751	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	387	0	29	12	0	53	34	253	164	17	751	8
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	1.00	0.59	0.62	1.00	0.70	0.81	0.80	0.80	0.81	0.86	0.73
Lanes:	0.93	0.00	0.07	1.00	0.00	1.00	1.00	0.61	0.39	1.00	1.00	1.00
Final Sat.:	1033	0	78	1181	0	1324	1543	928	601	1543	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.37	0.00	0.37	0.01	0.00	0.04	0.02	0.27	0.27	0.01	0.46	0.01
Crit Moves:	****						****				****	
Green/Cycle:	0.38	0.00	0.38	0.38	0.00	0.38	0.04	0.44	0.44	0.06	0.47	0.47
Volume/Cap:	0.99	0.00	0.99	0.03	0.00	0.11	0.57	0.61	0.61	0.18	0.99	0.01
Delay/Veh:	72.7	0.0	72.7	20.5	0.0	21.2	62.6	24.0	24.0	47.6	57.0	14.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	72.7	0.0	72.7	20.5	0.0	21.2	62.6	24.0	24.0	47.6	57.0	14.9
LOS by Move:	E	A	E	C	A	C	E	C	C	D	E	B
HCM2kAvgQ:	19	0	19	0	0	1	1	10	10	1	28	0

NorCal Logistics Center
Near-Term Without Project
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	75	Critical Vol./Cap.(X):	0.618
Loss Time (sec):	16	Average Delay (sec/veh):	15.4
Optimal Cycle:	55	Level Of Service:	B

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	1 0	0	1 0	1 0	0	0 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	0	0	0	1	0	0	0	123	0	0	268	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	0	0	123	0	0	268	1
Added Vol:	110	0	16	0	0	0	0	72	61	9	336	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	0	16	1	0	0	0	195	61	9	604	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	120	0	17	1	0	0	0	212	66	10	657	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	0	17	1	0	0	0	212	66	10	657	1
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	120	0	17	1	0	0	0	212	66	10	657	1
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	1.00	0.70	0.78	1.00	1.00	1.00	0.82	0.82	0.81	0.86	0.86
Lanes:	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.76	0.24	1.00	0.99	0.01
Final Sat.:	1480	0	1324	1480	0	0	1900	1193	373	1543	1622	3
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.01	0.00	0.00	0.00	0.00	0.18	0.18	0.01	0.40	0.40
Crit Moves:	****			****			****				****	
Green/Cycle:	0.12	0.00	0.12	0.05	0.00	0.00	0.00	0.47	0.47	0.14	0.61	0.61
Volume/Cap:	0.66	0.00	0.11	0.01	0.00	0.00	0.00	0.38	0.38	0.04	0.66	0.66
Delay/Veh:	40.3	0.0	29.6	33.7	0.0	0.0	0.0	13.1	13.1	27.9	11.2	11.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.3	0.0	29.6	33.7	0.0	0.0	0.0	13.1	13.1	27.9	11.2	11.2
LOS by Move:	D	A	C	C	A	A	A	B	B	C	B	B
HCM2kAvgQ:	4	0	0	0	0	0	0	4	4	0	10	10

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	90	Critical Vol./Cap.(X):	0.567
Loss Time (sec):	16	Average Delay (sec/veh):	28.9
Optimal Cycle:	54	Level Of Service:	C

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 0	1	0	1 0 1
Volume Module:												
Base Vol:	19	24	2	6	1	22	75	63	4	1	60	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	24	2	6	1	22	75	63	4	1	60	15
Added Vol:	319	65	0	0	7	25	44	0	44	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	338	89	2	6	8	47	119	63	48	1	60	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	366	96	2	6	9	51	129	68	52	1	65	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	366	96	2	6	9	51	129	68	52	1	65	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	366	96	2	6	9	51	129	68	52	1	65	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.82	0.82	0.82	0.76	0.76	0.76	0.81	0.86	0.73	0.81	0.86	0.73
Lanes:	0.79	0.20	0.01	0.10	0.13	0.77	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1230	324	7	142	190	1116	1543	1625	1381	1543	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.30	0.05	0.05	0.05	0.08	0.04	0.04	0.00	0.04	0.01
Crit Moves:			****		****		****				****	
Green/Cycle:	0.47	0.47	0.47	0.11	0.11	0.11	0.13	0.13	0.13	0.11	0.11	0.11
Volume/Cap:	0.63	0.63	0.63	0.41	0.41	0.41	0.63	0.31	0.28	0.01	0.36	0.11
Delay/Veh:	19.9	19.9	19.9	39.0	39.0	39.0	43.5	36.0	35.8	35.9	38.3	36.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.9	19.9	19.9	39.0	39.0	39.0	43.5	36.0	35.8	35.9	38.3	36.3
LOS by Move:	B	B	B	D	D	D	D	D	D	D	D	D
HCM2kAvgQ:	10	10	10	2	2	2	3	2	1	0	2	0

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.367
Loss Time (sec):	12	Average Delay (sec/veh):	17.9
Optimal Cycle:	34	Level Of Service:	B

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0	1	0	1
Volume Module:												
Base Vol:	0	0	0	72	0	43	10	342	0	0	193	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	72	0	43	10	342	0	0	193	18
Added Vol:	0	0	0	54	0	56	15	2	0	0	1	18
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	126	0	99	25	344	0	0	194	36
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	131	0	0	26	357	0	0	201	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	131	0	0	26	357	0	0	201	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	131	0	0	26	357	0	0	201	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.66	1.00	1.00	0.81	0.86	1.00	1.00	0.86	0.73
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1249	0	1900	1543	1625	0	0	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.00	0.02	0.22	0.00	0.00	0.12	0.03
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.29	0.00	0.00	0.17	0.60	0.00	0.00	0.43	0.43
Volume/Cap:	0.00	0.00	0.00	0.37	0.00	0.00	0.10	0.37	0.00	0.00	0.29	0.06
Delay/Veh:	0.0	0.0	0.0	30.6	0.0	0.0	37.3	11.0	0.0	0.0	19.5	17.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	30.6	0.0	0.0	37.3	11.0	0.0	0.0	19.5	17.4
LOS by Move:	A	A	A	C	A	A	D	B	A	A	B	B
HCM2kAvgQ:	0	0	0	4	0	0	1	6	0	0	4	1

NorCal Logistics Center
Near-Term Without Project
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: B[13.5]

Street Name:	SR 99 East Frontage Road						Petersen Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:												
Base Vol:	0	474	30	0	0	0	0	0	0	25	0	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	474	30	0	0	0	0	0	0	25	0	73
Added Vol:	0	20	3	0	0	0	0	0	0	0	0	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	494	33	0	0	0	0	0	0	25	0	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	535	36	0	0	0	0	0	0	27	0	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	535	36	0	0	0	0	0	0	27	0	94
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	6.3
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.6	xxxx	3.4
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	553	xxxx	553
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	474	xxxx	510
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	474	xxxx	510
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	0.18
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.7
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	13.1	xxxx	13.6
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			13.5		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
Near-Term Without Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	75	Critical Vol./Cap.(X):	0.272
Loss Time (sec):	12	Average Delay (sec/veh):	1.3
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	1	0 1	1 0	1	0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	324	0	0	236	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	324	0	0	236	0
Added Vol:	0	0	0	0	0	0	0	18	0	0	58	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	342	0	0	294	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	0	0	0	0	372	0	0	320	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	0	372	0	0	320	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	0	372	0	0	320	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	1.00	1.00	0.86	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1900	0	1900	0	0	0	0	1625	1900	1900	1625	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.20	0.00
Crit Moves:								****		****		
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.84	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.23	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	1.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	1.3	0.0
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	0	0	0	0	2	0	0	2	0

SCENARIO 4: EXISTING PLUS APPROVED PROJECTS WITH PROJECT

NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Scenario Report

Scenario:	Near-Term With Project AM
Command:	Near-Term Plus Project AM
Volume:	Near-term AM
Geometry:	Near-Term AM
Impact Fee:	Default Impact Fee
Trip Generation:	NT Project AM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 4 Arch/Frontier	B	11.2	0.063	E	37.2	0.269	+25.990 D/V
# 5 Arch/Fite	B	16.5	0.320	F	84.1	1.160	+67.673 D/V
# 6 Arch/Newcastle	A	9.5	0.288	E	70.1	1.085	+60.631 D/V
# 7 Arch/Logistics	A	3.3	0.147	C	25.7	0.757	+22.409 D/V
# 8 Arch/Austin	C	28.7	0.203	D	38.3	0.719	+ 9.533 D/V
# 9 E Mariposa/Austin	A	8.2	0.348	B	15.0	0.444	+ 6.797 D/V
# 14 SR 99 East Frontage Road / Pet	C	15.1	0.156	C	17.3	0.204	+ 2.207 D/V
# 15 E Mariposa/Newcastle	A	1.3	0.306	B	12.0	0.460	+10.627 D/V

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: E[37.2]

Street Name:	Frontier Way								Arch Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Channel				Include				Include			
Lanes:	0 0 0 0 0				1 0 0 0 1				1 0 1 0 0				0 0 1 0 1			
Volume Module: >> Count Date: 29 Aug 2012 <<																
Base Vol:	0	0	0		4	0	40		68	344	0		0	227	9	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		4	0	40		68	344	0		0	227	9	
Added Vol:	0	0	0		1	0	13		19	1065	0		0	485	2	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		5	0	53		87	1409	0		0	712	11	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	0	0		5	0	58		95	1532	0		0	774	12	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		5	0	58		95	1532	0		0	774	12	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		6.9	xxxx	6.7		4.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	xxxxx		4.0	xxxx	3.8		2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		2495	xxxx	774		786	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		22	xxxx	331		751	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		20	xxxx	331		751	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.27	xxxx	0.17		0.13	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		0.8	xxxx	0.6		0.4	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		239.2	xxxx	18.1		10.5	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		F	*	C		B	*	*		*	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				37.2				xxxxxx				xxxxxx			
ApproachLOS:	*				E				*				*			

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	105	Critical Vol./Cap.(X):	1.160
Loss Time (sec):	12	Average Delay (sec/veh):	84.1
Optimal Cycle:	105	Level Of Service:	F

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	1 0	0	0 0	1 0	0	0 1	1 0	1	0 0	1 0	1	0 1
Volume Module:												
Base Vol:	1	0	0	7	0	70	36	305	0	0	159	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	0	7	0	70	36	305	0	0	159	5
Added Vol:	0	0	0	0	0	0	0	1066	0	0	487	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	0	7	0	70	36	1371	0	0	646	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	0	0	8	0	76	39	1490	0	0	702	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	0	8	0	76	39	1490	0	0	702	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	0	8	0	76	39	1490	0	0	702	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.64	1.00	0.57	0.78	0.82	1.00	1.00	0.82	0.70
Lanes:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	1805	0	0	1211	0	1084	1480	1558	0	1900	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.07	0.03	0.96	0.00	0.00	0.45	0.00
Crit Moves:	****					****		****		****		
Green/Cycle:	0.04	0.00	0.00	0.06	0.00	0.06	0.06	0.79	0.00	0.00	0.73	0.73
Volume/Cap:	0.02	0.00	0.00	0.11	0.00	1.21	0.43	1.21	0.00	0.00	0.62	0.01
Delay/Veh:	48.7	0.0	0.0	47.6	0.0	230.7	50.7	114	0.0	0.0	8.1	3.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.7	0.0	0.0	47.6	0.0	230.7	50.7	114	0.0	0.0	8.1	3.9
LOS by Move:	D	A	A	D	A	F	D	F	A	A	A	A
HCM2kAvgQ:	0	0	0	0	0	6	1	76	0	0	11	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	1.085
Loss Time (sec):	12	Average Delay (sec/veh):	70.1
Optimal Cycle:	105	Level Of Service:	E

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	17	0	2	1	0	3	13	155	145	15	145	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	0	2	1	0	3	13	155	145	15	145	1
Added Vol:	114	0	8	34	0	191	303	584	179	13	182	33
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	131	0	10	35	0	194	316	739	324	28	327	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	142	0	11	38	0	211	343	803	352	30	355	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	0	11	38	0	211	343	803	352	30	355	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	142	0	11	38	0	211	343	803	352	30	355	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.56	1.00	0.56	0.64	1.00	0.68	0.78	0.78	0.78	0.78	0.82	0.70
Lanes:	0.93	0.00	0.07	1.00	0.00	1.00	1.00	0.70	0.30	1.00	1.00	1.00
Final Sat.:	981	0	75	1225	0	1292	1480	1033	453	1480	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.15	0.00	0.15	0.03	0.00	0.16	0.23	0.78	0.78	0.02	0.23	0.03
Crit Moves:						****		****		****		
Green/Cycle:	0.15	0.00	0.15	0.15	0.00	0.15	0.37	0.70	0.70	0.04	0.37	0.37
Volume/Cap:	0.99	0.00	0.99	0.21	0.00	1.11	0.62	1.11	1.11	0.54	0.62	0.08
Delay/Veh:	112.6	0.0	112.6	40.0	0.0	142.5	29.1	78.8	78.8	59.7	29.5	21.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	112.6	0.0	112.6	40.0	0.0	142.5	29.1	78.8	78.8	59.7	29.5	21.8
LOS by Move:	F	A	F	D	A	F	C	E	E	E	C	C
HCM2kAvgQ:	9	0	9	1	0	13	8	49	49	1	9	1

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	75	Critical Vol./Cap.(X):	0.757
Loss Time (sec):	16	Average Delay (sec/veh):	25.7
Optimal Cycle:	70	Level Of Service:	C

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	1 0	0	1 0	0	0	1! 0	0	1 0	0 1	0	1 0	0 1 0
Volume Module:												
Base Vol:	0	0	0	1	0	1	0	161	0	0	162	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	1	0	161	0	0	162	1
Added Vol:	55	0	8	15	0	99	154	387	85	12	74	24
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	0	8	16	0	100	154	548	85	12	236	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	60	0	9	17	0	109	167	596	92	13	257	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	0	9	17	0	109	167	596	92	13	257	27
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	0	9	17	0	109	167	596	92	13	257	27
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	1.00	0.68	0.70	1.00	0.70	0.78	0.80	0.80	0.78	0.81	0.81
Lanes:	1.00	0.00	1.00	0.14	0.00	0.86	1.00	0.87	0.13	1.00	0.90	0.10
Final Sat.:	1444	0	1292	184	0	1150	1480	1322	205	1480	1389	147
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.01	0.09	0.00	0.09	0.11	0.45	0.45	0.01	0.18	0.18
Crit Moves:	****					****		****		****		
Green/Cycle:	0.05	0.00	0.05	0.12	0.00	0.12	0.23	0.56	0.56	0.05	0.38	0.38
Volume/Cap:	0.78	0.00	0.13	0.80	0.00	0.80	0.48	0.80	0.80	0.17	0.48	0.48
Delay/Veh:	73.1	0.0	34.7	57.0	0.0	57.0	25.9	18.5	18.5	34.9	18.2	18.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.1	0.0	34.7	57.0	0.0	57.0	25.9	18.5	18.5	34.9	18.2	18.2
LOS by Move:	E	A	C	E	A	E	C	B	B	C	B	B
HCM2kAvgQ:	3	0	0	5	0	5	3	12	12	0	5	5

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	90	Critical Vol./Cap.(X):	0.719
Loss Time (sec):	16	Average Delay (sec/veh):	38.3
Optimal Cycle:	69	Level Of Service:	D

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0	0	1! 0	0	0	1! 0	1	0	1 0	1	0	1 0 1
Volume Module:												
Base Vol:	27	18	4	15	21	66	25	41	32	1	49	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	18	4	15	21	66	25	41	32	1	49	9
Added Vol:	53	9	0	0	76	57	36	0	373	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	27	4	15	97	123	61	41	405	1	49	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	87	29	4	16	105	134	66	45	440	1	53	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	29	4	16	105	134	66	45	440	1	53	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	29	4	16	105	134	66	45	440	1	53	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.79	0.79	0.76	0.76	0.76	0.78	0.82	0.70	0.78	0.82	0.70
Lanes:	0.72	0.24	0.04	0.06	0.41	0.53	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1078	364	54	92	596	755	1480	1558	1324	1480	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.08	0.18	0.18	0.18	0.04	0.03	0.33	0.00	0.03	0.01
Crit Moves:		****		****					****	****		
Green/Cycle:	0.11	0.11	0.11	0.22	0.22	0.22	0.22	0.41	0.41	0.09	0.27	0.27
Volume/Cap:	0.73	0.73	0.73	0.82	0.82	0.82	0.20	0.07	0.82	0.01	0.12	0.03
Delay/Veh:	53.4	53.4	53.4	49.1	49.1	49.1	29.0	16.4	33.4	37.4	24.6	23.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.4	53.4	53.4	49.1	49.1	49.1	29.0	16.4	33.4	37.4	24.6	23.9
LOS by Move:	D	D	D	D	D	D	C	B	C	D	C	C
HCM2kAvgQ:	5	5	5	9	9	9	1	1	11	0	1	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.444
Loss Time (sec):	12	Average Delay (sec/veh):	15.0
Optimal Cycle:	38	Level Of Service:	B

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	29	0	22	32	151	0	0	370	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	29	0	22	32	151	0	0	370	68
Added Vol:	0	0	0	23	0	23	70	12	0	0	19	63
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	52	0	45	102	163	0	0	389	131
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.00	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	57	0	0	111	177	0	0	423	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	57	0	0	111	177	0	0	423	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	57	0	0	111	177	0	0	423	142
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.63	1.00	1.00	0.78	0.82	1.00	1.00	0.82	0.70
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1198	0	1900	1480	1558	0	0	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.00	0.07	0.11	0.00	0.00	0.27	0.11
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.11	0.00	0.00	0.17	0.78	0.00	0.00	0.61	0.61
Volume/Cap:	0.00	0.00	0.00	0.44	0.00	0.00	0.44	0.15	0.00	0.00	0.44	0.18
Delay/Veh:	0.0	0.0	0.0	46.5	0.0	0.0	40.5	2.9	0.0	0.0	11.2	9.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	46.5	0.0	0.0	40.5	2.9	0.0	0.0	11.2	9.0
LOS by Move:	A	A	A	D	A	A	D	A	A	A	B	A
HCM2kAvgQ:	0	0	0	2	0	0	3	1	0	0	7	2

NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

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Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C[17.3]

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Street Name:	SR 99 East Frontage Road									Petersen Road								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign					
Rights:	Include				Include				Include				Include					
Lanes:	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Volume Module:																				
Base Vol:	0	575		37		0	0		0		0		0			13		0		60
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00			1.00		1.00		1.00
Initial Bse:	0	575		37		0	0		0		0		0			13		0		60
Added Vol:	0	95		5		0	0		0		0		0			0		0		8
PasserByVol:	0	0		0		0	0		0		0		0			0		0		0
Initial Fut:	0	670		42		0	0		0		0		0			13		0		68
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00			1.00		1.00		1.00
PHF Adj:	0.92	0.92		0.92		0.92	0.92		0.92		0.92		0.92			0.92		0.92		0.92
PHF Volume:	0	728		46		0	0		0		0		0			14		0		74
Reduct Vol:	0	0		0		0	0		0		0		0			0		0		0
FinalVolume:	0	728		46		0	0		0		0		0			14		0		74
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx			xxxxx		6.7	xxxx	6.6
FollowUpTim:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx			xxxxx		3.8	xxxx	3.6
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx			xxxxx		751	xxxx	751
Potent Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx			xxxxx		335	xxxx	362
Move Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx			xxxxx		335	xxxx	362
Volume/Cap:	xxxx	xxxx		xxxx		xxxx	xxxx		xxxx		xxxx		xxxx			xxxx		0.04	xxxx	0.20
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx			xxxxx		0.1	xxxx	0.8
Control Del:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx			xxxxx		16.2	xxxx	17.5
LOS by Move:	*	*		*		*	*		*		*		*			*		C	*	C
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx		xxxx			xxxxx		xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx			xxxxx		xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx		xxxx			xxxxx		xxxxx	xxxx	xxxxx
Shared LOS:	*	*		*		*	*		*		*		*			*		*	*	*
ApproachDel:	xxxxxx					xxxxxx					xxxxxx							17.3		
ApproachLOS:	*					*					*							C		

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Note: Queue reported is the number of cars per lane.

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NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	75	Critical Vol./Cap.(X):	0.460
Loss Time (sec):	12	Average Delay (sec/veh):	12.0
Optimal Cycle:	37	Level Of Service:	B

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 0	1	0 0	0 0	0	0 0	1 0	1	1 0	1 0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	217	0	0	369	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	217	0	0	369	0
Added Vol:	150	0	12	0	0	0	0	71	236	18	23	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	0	12	0	0	0	0	288	236	18	392	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	163	0	13	0	0	0	0	313	257	20	426	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	0	13	0	0	0	0	313	257	20	426	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	163	0	13	0	0	0	0	313	257	20	426	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	1.00	0.68	1.00	1.00	1.00	1.00	0.82	0.70	0.78	0.82	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1444	0	1292	0	0	0	0	1558	1324	1480	1558	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.00	0.01	0.00	0.00	0.00	0.00	0.20	0.19	0.01	0.27	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.56	0.56	0.04	0.59	0.00
Volume/Cap:	0.46	0.00	0.04	0.00	0.00	0.00	0.00	0.36	0.35	0.36	0.46	0.00
Delay/Veh:	25.0	0.0	21.6	0.0	0.0	0.0	0.0	9.4	9.4	39.3	8.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.0	0.0	21.6	0.0	0.0	0.0	0.0	9.4	9.4	39.3	8.8	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	D	A	A
HCM2kAvgQ:	4	0	0	0	0	0	0	4	3	0	5	0

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Scenario Report

Scenario:	Near-Term With Project PM
Command:	Near-Term Plus Project PM
Volume:	Near-term PM
Geometry:	Near-Term PM
Impact Fee:	Default Impact Fee
Trip Generation:	NT Project PM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 4 Arch/Frontier	B	13.1	0.156	F	272.3	1.243	+259.168 D/V
# 5 Arch/Fite	B	11.4	0.383	F	118.0	1.299	+106.525 D/V
# 6 Arch/Newcastle	C	21.2	0.352	F	123.5	1.269	+102.235 D/V
# 7 Arch/Logistics	A	3.3	0.230	E	56.5	0.974	+53.234 D/V
# 8 Arch/Austin	C	27.3	0.176	C	31.0	0.618	+ 3.756 D/V
# 9 E Mariposa/Austin	B	13.2	0.314	B	18.5	0.395	+ 5.332 D/V
# 14 SR 99 East Frontage Road / Pet	B	13.0	0.150	C	16.8	0.241	+ 3.850 D/V
# 15 E Mariposa/Newcastle	A	1.3	0.258	B	17.1	0.552	+15.783 D/V

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 12.1 Worst Case Level Of Service: F[272.3]

Street Name:	Frontier Way								Arch Road							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Channel				Include				Include			
Lanes:	0	0	0	0 0	1	0	0	0 1	1	0	1	0 0	0	0	1	0 1
Volume Module:																
Base Vol:	0	0	0		6	0		78	60	189		0	0	459		10
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	0	0		6	0		78	60	189		0	0	459		10
Added Vol:	0	0	0		2	0		24	15	551		0	0	1211		1
PasserByVol:	0	0	0		0	0		0	0	0		0	0	0		0
Initial Fut:	0	0	0		8	0		102	75	740		0	0	1670		11
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92
PHF Volume:	0	0	0		9	0		111	82	804		0	0	1815		12
Reduct Vol:	0	0	0		0	0		0	0	0		0	0	0		0
FinalVolume:	0	0	0		9	0		111	82	804		0	0	1815		12
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		6.6	xxxx		6.4	4.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	xxxxx		3.6	xxxx		3.4	2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		2783	xxxx		1815	1827	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		19	xxxx		89	300	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		15	xxxx		89	300	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.59	xxxx		1.24	0.27	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		1.5	xxxx		7.9	1.1	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		430.0	xxxx		259.9	21.4	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		F	*		F	C	*	*		*	*	*	
Movement:	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				272.3				xxxxxx				xxxxxx			
ApproachLOS:	*				F				*				*			

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	105	Critical Vol./Cap.(X):	1.299
Loss Time (sec):	12	Average Delay (sec/veh):	118.0
Optimal Cycle:	105	Level Of Service:	F

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	1 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	8	0	51	40	152	0	0	407	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	8	0	51	40	152	0	0	407	6
Added Vol:	0	0	0	0	0	0	0	553	0	0	1213	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	8	0	51	40	705	0	0	1620	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	9	0	55	43	766	0	0	1761	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	9	0	55	43	766	0	0	1761	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	9	0	55	43	766	0	0	1761	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.85	1.00	0.76	0.81	0.86	1.00	1.00	0.86	0.73
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	0	0	0	1612	0	1442	1543	1625	0	1900	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.04	0.03	0.47	0.00	0.00	1.08	0.00
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.04	0.00	0.04	0.04	0.85	0.00	0.00	0.81	0.81
Volume/Cap:	0.00	0.00	0.00	0.14	0.00	1.01	0.74	0.56	0.00	0.00	1.34	0.01
Delay/Veh:	0.0	0.0	0.0	49.9	0.0	174.5	88.9	2.8	0.0	0.0	168	1.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	49.9	0.0	174.5	88.9	2.8	0.0	0.0	168	1.9
LOS by Move:	A	A	A	D	A	F	F	A	A	A	F	A
HCM2kAvgQ:	0	0	0	0	0	4	1	7	0	0	107	0

NorCal Logistics Center
Near-Term With Project
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	1.269
Loss Time (sec):	12	Average Delay (sec/veh):	123.5
Optimal Cycle:	105	Level Of Service:	F

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0	0	1! 0	0	0	1	0	0	1	1	0	0	1	0	1	0	1
Volume Module:												
Base Vol:	127	0	10	0	0	6	7	127	21	6	262	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	0	10	0	0	6	7	127	21	6	262	0
Added Vol:	229	0	17	40	0	383	220	203	130	10	601	41
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	356	0	27	40	0	389	227	330	151	16	863	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	387	0	29	43	0	423	247	359	164	17	938	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	387	0	29	43	0	423	247	359	164	17	938	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	387	0	29	43	0	423	247	359	164	17	938	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.57	1.00	0.57	0.62	1.00	0.70	0.81	0.81	0.81	0.81	0.86	0.73
Lanes:	0.93	0.00	0.07	1.00	0.00	1.00	1.00	0.69	0.31	1.00	1.00	1.00
Final Sat.:	1002	0	76	1170	0	1324	1543	1062	486	1543	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.39	0.00	0.39	0.04	0.00	0.32	0.16	0.34	0.34	0.01	0.58	0.03
Crit Moves:	****						****				****	
Green/Cycle:	0.30	0.00	0.30	0.30	0.00	0.30	0.13	0.52	0.52	0.06	0.46	0.46
Volume/Cap:	1.27	0.00	1.27	0.12	0.00	1.05	1.27	0.65	0.65	0.19	1.27	0.07
Delay/Veh:	179.3	0.0	179.3	26.5	0.0	94.6	200.8	19.9	19.9	48.1	160	16.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	179.3	0.0	179.3	26.5	0.0	94.6	200.8	19.9	19.9	48.1	160	16.2
LOS by Move:	F	A	F	C	A	F	F	B	B	D	F	B
HCM2kAvgQ:	27	0	27	1	0	21	15	12	12	0	53	1

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	75	Critical Vol./Cap.(X):	0.974
Loss Time (sec):	16	Average Delay (sec/veh):	56.5
Optimal Cycle:	105	Level Of Service:	E

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	1	0	0	0	123	0	0	268	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	0	0	123	0	0	268	1
Added Vol:	110	0	16	30	0	199	113	86	61	9	344	17
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	0	16	31	0	199	113	209	61	9	612	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	120	0	17	34	0	216	123	227	66	10	665	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	0	17	34	0	216	123	227	66	10	665	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	120	0	17	34	0	216	123	227	66	10	665	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	1.00	0.70	0.72	1.00	0.72	0.81	0.83	0.83	0.81	0.85	0.85
Lanes:	1.00	0.00	1.00	0.13	0.00	0.87	1.00	0.77	0.23	1.00	0.97	0.03
Final Sat.:	1480	0	1324	184	0	1182	1543	1215	355	1543	1572	46
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.01	0.18	0.00	0.18	0.08	0.19	0.19	0.01	0.42	0.42
Crit Moves:	****			****			****				****	
Green/Cycle:	0.08	0.00	0.08	0.19	0.00	0.19	0.08	0.40	0.40	0.11	0.43	0.43
Volume/Cap:	0.97	0.00	0.16	0.97	0.00	0.97	0.97	0.47	0.47	0.06	0.97	0.97
Delay/Veh:	107.3	0.0	32.6	79.2	0.0	79.2	106.3	17.1	17.1	29.7	48.4	48.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	107.3	0.0	32.6	79.2	0.0	79.2	106.3	17.1	17.1	29.7	48.4	48.4
LOS by Move:	F	A	C	E	A	E	F	B	B	C	D	D
HCM2kAvgQ:	6	0	1	10	0	10	4	5	5	0	19	19

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	90	Critical Vol./Cap.(X):	0.618
Loss Time (sec):	16	Average Delay (sec/veh):	31.0
Optimal Cycle:	58	Level Of Service:	C

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0 1	1	0	1 0 1
Volume Module:												
Base Vol:	19	24	2	6	1	22	75	63	4	1	60	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	24	2	6	1	22	75	63	4	1	60	15
Added Vol:	328	67	0	0	10	41	72	0	59	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	347	91	2	6	11	63	147	63	63	1	60	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	376	98	2	6	12	68	159	68	68	1	65	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	376	98	2	6	12	68	159	68	68	1	65	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	376	98	2	6	12	68	159	68	68	1	65	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.82	0.82	0.82	0.76	0.76	0.76	0.81	0.86	0.73	0.81	0.86	0.73
Lanes:	0.79	0.20	0.01	0.07	0.14	0.79	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1231	323	7	108	199	1139	1543	1625	1381	1543	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.31	0.31	0.31	0.06	0.06	0.06	0.10	0.04	0.05	0.00	0.04	0.01
Crit Moves:			****	****			****				****	
Green/Cycle:	0.45	0.45	0.45	0.11	0.11	0.11	0.15	0.15	0.15	0.12	0.11	0.11
Volume/Cap:	0.68	0.68	0.68	0.54	0.54	0.54	0.68	0.29	0.34	0.01	0.36	0.11
Delay/Veh:	22.4	22.4	22.4	41.4	41.4	41.4	44.0	34.9	35.5	35.1	38.3	36.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.4	22.4	22.4	41.4	41.4	41.4	44.0	34.9	35.5	35.1	38.3	36.3
LOS by Move:	C	C	C	D	D	D	D	C	D	D	D	D
HCM2kAvgQ:	11	11	11	3	3	3	4	2	2	0	2	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.395
Loss Time (sec):	12	Average Delay (sec/veh):	18.5
Optimal Cycle:	35	Level Of Service:	B

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	72	0	43	10	342	0	0	193	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	72	0	43	10	342	0	0	193	18
Added Vol:	0	0	0	67	0	72	25	24	0	0	14	26
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	139	0	115	35	366	0	0	207	44
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	144	0	0	36	380	0	0	215	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	144	0	0	36	380	0	0	215	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	144	0	0	36	380	0	0	215	46
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.66	1.00	1.00	0.81	0.86	1.00	1.00	0.86	0.73
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1249	0	1900	1543	1625	0	0	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.12	0.00	0.00	0.02	0.23	0.00	0.00	0.13	0.03
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.29	0.00	0.00	0.16	0.59	0.00	0.00	0.44	0.44
Volume/Cap:	0.00	0.00	0.00	0.39	0.00	0.00	0.15	0.39	0.00	0.00	0.30	0.08
Delay/Veh:	0.0	0.0	0.0	30.4	0.0	0.0	38.5	11.6	0.0	0.0	19.5	17.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	30.4	0.0	0.0	38.5	11.6	0.0	0.0	19.5	17.3
LOS by Move:	A	A	A	C	A	A	D	B	A	A	B	B
HCM2kAvgQ:	0	0	0	4	0	0	1	6	0	0	5	1

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: C[16.8]

Street Name:	SR 99 East Frontage Road						Petersen Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:												
Base Vol:	0	474	30	0	0	0	0	0	0	25	0	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	474	30	0	0	0	0	0	0	25	0	73
Added Vol:	0	205	3	0	0	0	0	0	0	0	0	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	679	33	0	0	0	0	0	0	25	0	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	736	36	0	0	0	0	0	0	27	0	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	736	36	0	0	0	0	0	0	27	0	94
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	6.3
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.6	xxxx	3.4
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	754	xxxx	754
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	360	xxxx	391
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	360	xxxx	391
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.08	xxxx	0.24
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.9
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.8	xxxx	17.1
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	C
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			16.8		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	75	Critical Vol./Cap.(X):	0.552
Loss Time (sec):	12	Average Delay (sec/veh):	17.1
Optimal Cycle:	43	Level Of Service:	B

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	1	0 1	1 0	1	0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	324	0	0	236	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	324	0	0	236	0
Added Vol:	300	0	24	0	0	0	0	26	172	13	72	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	0	24	0	0	0	0	350	172	13	308	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	326	0	26	0	0	0	0	380	187	14	335	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	326	0	26	0	0	0	0	380	187	14	335	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	326	0	26	0	0	0	0	380	187	14	335	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	1.00	0.70	1.00	1.00	1.00	1.00	0.86	0.73	0.81	0.86	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1480	0	1324	0	0	0	0	1625	1381	1543	1625	0
Capacity Analysis Module:												
Vol/Sat:	0.22	0.00	0.02	0.00	0.00	0.00	0.00	0.23	0.14	0.01	0.21	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.40	0.00	0.40	0.00	0.00	0.00	0.00	0.42	0.42	0.02	0.44	0.00
Volume/Cap:	0.55	0.00	0.05	0.00	0.00	0.00	0.00	0.55	0.32	0.55	0.47	0.00
Delay/Veh:	18.5	0.0	13.8	0.0	0.0	0.0	0.0	17.2	14.7	60.1	15.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.5	0.0	13.8	0.0	0.0	0.0	0.0	17.2	14.7	60.1	15.3	0.0
LOS by Move:	B	A	B	A	A	A	A	B	B	E	B	A
HCM2kAvgQ:	6	0	0	0	0	0	0	7	3	0	5	0

SCENARIO 4: EXISTING PLUS APPROVED PROJECTS WITH PROJECT WITH MITIGATION

Scenario Report

Scenario:	Near-Term With Project AM MIT
Command:	Near-Term Plus Project AM MIT
Volume:	Near-term AM
Geometry:	Near-Term AM MIT
Impact Fee:	Default Impact Fee
Trip Generation:	NT Project AM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in D/V
# 4 Arch/Frontier	B	10.6	0.063	C	21.0	0.133	+10.417
# 5 Arch/Fite	B	14.5	0.197	B	11.8	0.718	-2.676
# 6 Arch/Newcastle	B	11.5	0.165	C	24.8	0.582	+13.251
# 7 Arch/Logistics	A	2.6	0.074	C	22.1	0.452	+19.489

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: C[21.0]

Street Name:	Frontier Way						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Channel			Include			Include		
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 2 0 0			0 0 1 1 0		
Volume Module: >> Count Date: 29 Aug 2012 <<												
Base Vol:	0	0	0	4	0	40	68	344	0	0	227	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	4	0	40	68	344	0	0	227	9
Added Vol:	0	0	0	1	0	13	19	1065	0	0	485	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	5	0	53	87	1409	0	0	712	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	5	0	58	95	1532	0	0	774	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	5	0	58	95	1532	0	0	774	12
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	7.8	xxxx	7.9	4.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	4.0	xxxx	3.8	2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1735	xxxx	393	786	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	47	xxxx	489	711	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	43	xxxx	489	711	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.13	xxxx	0.12	0.13	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.4	xxxx	0.4	0.5	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	101.7	xxxx	13.3	10.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	F	*	B	B	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			21.0			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.718
Loss Time (sec):	12	Average Delay (sec/veh):	11.8
Optimal Cycle:	54	Level Of Service:	B

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	1 0	0	0 0	1 0	0	0 1	1 0	2	0 0	1 0	1	1 0
Volume Module:												
Base Vol:	1	0	0	7	0	70	36	305	0	0	159	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	0	7	0	70	36	305	0	0	159	5
Added Vol:	0	0	0	0	0	0	0	1066	0	0	487	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	0	7	0	70	36	1371	0	0	646	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	0	0	8	0	76	39	1490	0	0	702	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	0	8	0	76	39	1490	0	0	702	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	0	8	0	76	39	1490	0	0	702	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.64	1.00	0.57	0.78	0.78	1.00	1.00	0.78	0.78
Lanes:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	1.00	1.98	0.02
Final Sat.:	1805	0	0	1211	0	1084	1480	2960	0	1900	2935	23
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.07	0.03	0.50	0.00	0.00	0.24	0.24
Crit Moves:	****					****		****		****		
Green/Cycle:	0.07	0.00	0.00	0.09	0.00	0.09	0.14	0.64	0.00	0.00	0.50	0.50
Volume/Cap:	0.01	0.00	0.00	0.07	0.00	0.78	0.19	0.78	0.00	0.00	0.48	0.48
Uniform Del:	26.1	0.0	0.0	25.0	0.0	26.7	22.8	7.7	0.0	0.0	9.7	9.7
IncremntDel:	0.0	0.0	0.0	0.3	0.0	32.7	0.4	2.2	0.0	0.0	0.2	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	26.2	0.0	0.0	25.3	0.0	59.4	23.2	9.8	0.0	0.0	10.0	10.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.2	0.0	0.0	25.3	0.0	59.4	23.2	9.8	0.0	0.0	10.0	10.0
LOS by Move:	C	A	A	C	A	E	C	A	A	A	A	A
HCM2kAvgQ:	0	0	0	0	0	3	1	10	0	0	4	4

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	120	Critical Vol./Cap.(X):	0.582
Loss Time (sec):	12	Average Delay (sec/veh):	24.8
Optimal Cycle:	47	Level Of Service:	C

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	1 0	0 1	0	0 1	0	0 1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	17	0	2	1	0	3	13	155	145	15	145	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	0	2	1	0	3	13	155	145	15	145	1
Added Vol:	114	0	8	34	0	191	303	584	179	13	182	33
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	131	0	10	35	0	194	316	739	324	28	327	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	142	0	11	38	0	211	343	803	352	30	355	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	0	11	38	0	211	343	803	352	30	355	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	142	0	11	38	0	211	343	803	352	30	355	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.59	1.00	0.68	0.62	1.00	0.68	0.78	0.78	0.70	0.78	0.78	0.70
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1120	0	1292	1180	0	1292	1480	2960	1324	1480	2960	1324
Capacity Analysis Module:												
Vol/Sat:	0.13	0.00	0.01	0.03	0.00	0.16	0.23	0.27	0.27	0.02	0.12	0.03
Crit Moves:						****	****				****	
Green/Cycle:	0.28	0.00	0.28	0.28	0.00	0.28	0.40	0.53	0.53	0.07	0.21	0.21
Volume/Cap:	0.45	0.00	0.03	0.11	0.00	0.58	0.58	0.51	0.50	0.28	0.58	0.14
Uniform Del:	31.1	0.0	27.4	28.1	0.0	32.5	24.7	15.9	15.8	45.9	37.6	34.0
IncremntDel:	1.0	0.0	0.0	0.2	0.0	2.4	1.5	0.3	0.6	1.4	1.4	0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	32.2	0.0	27.4	28.2	0.0	34.9	26.2	16.2	16.3	47.3	39.0	34.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	32.2	0.0	27.4	28.2	0.0	34.9	26.2	16.2	16.3	47.3	39.0	34.2
LOS by Move:	C	A	C	C	A	C	C	B	B	D	D	C
HCM2kAvgQ:	4	0	0	1	0	7	8	8	7	1	5	1

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	90	Critical Vol./Cap.(X):	0.452
Loss Time (sec):	16	Average Delay (sec/veh):	22.1
Optimal Cycle:	45	Level Of Service:	C

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	0	0	0	1	0	1	0	161	0	0	162	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	1	0	161	0	0	162	1
Added Vol:	55	0	8	15	0	99	154	387	85	12	74	24
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	0	8	16	0	100	154	548	85	12	236	25
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	60	0	9	17	0	109	167	596	92	13	257	27
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	0	9	17	0	109	167	596	92	13	257	27
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	0	9	17	0	109	167	596	92	13	257	27
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	1.00	0.68	0.76	1.00	0.68	0.78	0.76	0.76	0.78	0.77	0.77
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.73	0.27	1.00	1.81	0.19
Final Sat.:	1444	0	1292	1444	0	1292	1480	2511	390	1480	2639	280
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.01	0.01	0.00	0.08	0.11	0.24	0.24	0.01	0.10	0.10
Crit Moves:	****					****		****		****		
Green/Cycle:	0.09	0.00	0.09	0.23	0.00	0.18	0.30	0.51	0.51	0.04	0.26	0.26
Volume/Cap:	0.47	0.00	0.08	0.05	0.00	0.47	0.38	0.47	0.47	0.20	0.38	0.38
Uniform Del:	39.0	0.0	37.6	26.7	0.0	33.0	25.0	14.2	14.2	41.5	27.6	27.6
IncremntDel:	2.7	0.0	0.3	0.1	0.0	1.5	0.6	0.2	0.2	1.5	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.6	0.0	37.9	26.8	0.0	34.5	25.6	14.5	14.5	42.9	27.9	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.6	0.0	37.9	26.8	0.0	34.5	25.6	14.5	14.5	42.9	27.9	27.9
LOS by Move:	D	A	D	C	A	C	C	B	B	D	C	C
HCM2kAvgQ:	2	0	0	0	0	3	4	6	6	0	3	3

Scenario Report

Scenario:	Near-Term With Project PM MIT
Command:	Near-Term Plus Project PM MIT
Volume:	Near-term PM
Geometry:	Near-Term PM MIT
Impact Fee:	Default Impact Fee
Trip Generation:	NT Project PM
Trip Distribution:	No Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 4 Arch/Frontier	B	11.3	0.120	F	52.0	0.484	+40.757 D/V
# 5 Arch/Fite	A	9.4	0.224	B	10.0	0.758	+ 0.575 D/V
# 6 Arch/Newcastle	C	24.3	0.240	D	43.1	0.906	+18.835 D/V
# 7 Arch/Logistics	A	2.5	0.116	C	30.8	0.665	+28.288 D/V

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: F[52.0]

Street Name:	Frontier Way						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Channel			Include			Include		
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 2 0 0			0 0 1 1 0		
Volume Module:												
Base Vol:	0	0	0	6	0	78	60	189	0	0	459	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	6	0	78	60	189	0	0	459	10
Added Vol:	0	0	0	2	0	24	15	551	0	0	1211	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	8	0	102	75	740	0	0	1670	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	9	0	111	82	804	0	0	1815	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	9	0	111	82	804	0	0	1815	12
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	7.1	xxxx	7.2	4.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.7	xxxx	3.5	2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	2386	xxxx	914	1827	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	23	xxxx	250	274	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	18	xxxx	250	274	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.48	xxxx	0.44	0.30	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	1.3	xxxx	2.1	1.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	328.1	xxxx	30.4	23.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	F	*	D	C	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			52.0			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.758
Loss Time (sec):	12	Average Delay (sec/veh):	10.0
Optimal Cycle:	58	Level Of Service:	B

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	2	0 0	1 0	1	1 0
Volume Module:												
Base Vol:	0	0	0	8	0	51	40	152	0	0	407	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	8	0	51	40	152	0	0	407	6
Added Vol:	0	0	0	0	0	0	0	553	0	0	1213	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	8	0	51	40	705	0	0	1620	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	9	0	55	43	766	0	0	1761	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	9	0	55	43	766	0	0	1761	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	9	0	55	43	766	0	0	1761	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.85	1.00	0.76	0.81	0.81	1.00	1.00	0.81	0.81
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	1.00	1.99	0.01
Final Sat.:	0	0	0	1612	0	1442	1543	3087	0	1900	3072	11
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.04	0.03	0.25	0.00	0.00	0.57	0.57
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.07	0.00	0.07	0.07	0.73	0.00	0.00	0.67	0.67
Volume/Cap:	0.00	0.00	0.00	0.08	0.00	0.58	0.42	0.34	0.00	0.00	0.86	0.86
Uniform Del:	0.0	0.0	0.0	26.3	0.0	27.2	26.9	2.8	0.0	0.0	7.8	7.8
IncremntDel:	0.0	0.0	0.0	0.3	0.0	8.4	2.8	0.1	0.0	0.0	3.9	3.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	0.0	0.0	0.0	26.6	0.0	35.5	29.7	2.9	0.0	0.0	11.7	11.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	26.6	0.0	35.5	29.7	2.9	0.0	0.0	11.7	11.7
LOS by Move:	A	A	A	C	A	D	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	0	0	2	1	2	0	0	13	13

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	120	Critical Vol./Cap.(X):	0.906
Loss Time (sec):	12	Average Delay (sec/veh):	43.1
Optimal Cycle:	105	Level Of Service:	D

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	1 0	0 1	0	0 1	0	0 1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	127	0	10	0	0	6	7	127	21	6	262	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	0	10	0	0	6	7	127	21	6	262	0
Added Vol:	229	0	17	40	0	383	220	203	130	10	601	41
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	356	0	27	40	0	389	227	330	151	16	863	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	387	0	29	43	0	423	247	359	164	17	938	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	387	0	29	43	0	423	247	359	164	17	938	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	387	0	29	43	0	423	247	359	164	17	938	45
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.60	1.00	0.70	0.63	1.00	0.70	0.81	0.81	0.73	0.81	0.81	0.73
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1142	0	1324	1195	0	1324	1543	3087	1381	1543	3087	1381
Capacity Analysis Module:												
Vol/Sat:	0.34	0.00	0.02	0.04	0.00	0.32	0.16	0.12	0.12	0.01	0.30	0.03
Crit Moves:	****						****				****	
Green/Cycle:	0.37	0.00	0.37	0.37	0.00	0.37	0.18	0.39	0.39	0.12	0.34	0.34
Volume/Cap:	0.91	0.00	0.06	0.10	0.00	0.85	0.91	0.30	0.31	0.09	0.91	0.10
Uniform Del:	31.1	0.0	21.0	21.4	0.0	30.2	42.4	22.3	22.3	40.7	33.3	24.0
IncremntDel:	22.6	0.0	0.1	0.1	0.0	13.5	31.2	0.1	0.3	0.2	11.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	53.7	0.0	21.1	21.5	0.0	43.7	73.6	22.4	22.7	40.9	44.6	24.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.7	0.0	21.1	21.5	0.0	43.7	73.6	22.4	22.7	40.9	44.6	24.1
LOS by Move:	D	A	C	C	A	D	E	C	C	D	D	C
HCM2kAvgQ:	16	0	1	1	0	15	9	4	4	0	16	1

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

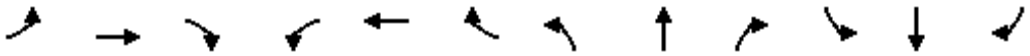
Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	90	Critical Vol./Cap.(X):	0.665
Loss Time (sec):	16	Average Delay (sec/veh):	30.8
Optimal Cycle:	63	Level Of Service:	C

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	1	0	1 0	1	0
Volume Module:												
Base Vol:	0	0	0	1	0	0	0	123	0	0	268	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	0	0	123	0	0	268	1
Added Vol:	110	0	16	30	0	199	113	86	61	9	344	17
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	0	16	31	0	199	113	209	61	9	612	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	120	0	17	34	0	216	123	227	66	10	665	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	0	17	34	0	216	123	227	66	10	665	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	120	0	17	34	0	216	123	227	66	10	665	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	1.00	0.70	0.78	1.00	0.70	0.81	0.78	0.78	0.81	0.81	0.81
Lanes:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.55	0.45	1.00	1.94	0.06
Final Sat.:	1480	0	1324	1480	0	1324	1543	2308	674	1543	2986	88
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.01	0.02	0.00	0.16	0.08	0.10	0.10	0.01	0.22	0.22
Crit Moves:	****					****	****				****	
Green/Cycle:	0.12	0.00	0.26	0.32	0.00	0.25	0.12	0.31	0.31	0.14	0.34	0.34
Volume/Cap:	0.66	0.00	0.05	0.07	0.00	0.66	0.66	0.31	0.31	0.04	0.66	0.66
Uniform Del:	37.8	0.0	24.8	21.4	0.0	30.6	37.9	23.5	23.5	33.4	25.6	25.6
IncremntDel:	9.0	0.0	0.1	0.1	0.0	5.1	8.8	0.2	0.2	0.1	1.7	1.7
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	46.8	0.0	24.8	21.4	0.0	35.7	46.7	23.7	23.7	33.5	27.2	27.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.8	0.0	24.8	21.4	0.0	35.7	46.7	23.7	23.7	33.5	27.2	27.2
LOS by Move:	D	A	C	C	A	D	D	C	C	C	C	C
HCM2kAvgQ:	4	0	0	1	0	7	3	3	3	0	9	9

SYNCHRO LOS ANALYSIS WORKSHEETS

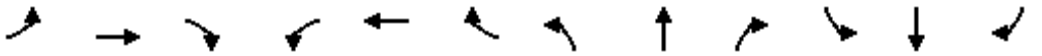
SCENARIO 1: EXISTING



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	321	2	8	628	475	1	0	3	300	0	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0		4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (prot)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2982	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (perm)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2982	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	54	378	2	9	739	559	1	0	4	353	0	76
RTOR Reduction (vph)	0	0	1	0	0	200	0	0	0	0	25	0
Lane Group Flow (vph)	54	378	1	9	739	359	1	0	4	176	228	0
Heavy Vehicles (%)	25%	25%	25%	11%	11%	11%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	9.4	33.8	33.8	6.1	30.5	30.5	5.9		83.4	16.6	16.6	
Effective Green, g (s)	9.4	33.8	33.8	6.1	30.5	30.5	5.9		83.4	16.6	16.6	
Actuated g/C Ratio	0.11	0.41	0.41	0.07	0.37	0.37	0.07		1.00	0.20	0.20	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0			5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)	163	1682	524	231	1709	532	248		1615	306	594	
v/s Ratio Prot	c0.04	c0.09		0.00	0.16		0.00			c0.11	0.08	
v/s Ratio Perm			0.00			c0.25			c0.00			
v/c Ratio	0.33	0.22	0.00	0.04	0.43	0.68	0.00		0.00	0.58	0.38	
Uniform Delay, d1	34.1	16.2	14.8	35.9	19.9	22.3	36.0		0.0	30.2	29.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.1	0.0	0.1	0.2	3.4	0.0		0.0	2.6	0.4	
Delay (s)	35.3	16.3	14.8	36.0	20.1	25.7	36.0		0.0	32.8	29.4	
Level of Service	D	B	B	D	C	C	D		A	C	C	
Approach Delay (s)		18.7			22.6			7.2			30.8	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	83.4	Sum of lost time (s)	22.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	185	179	149	204	196	373	0	183	405	0	541
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	282	218	211	175	240	231	439	0	215	476	0	636
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	185	0	0	0
Lane Group Flow (vph)	282	218	211	175	240	231	439	0	30	476	0	636
Heavy Vehicles (%)	18%	18%	18%	28%	28%	28%	13%	13%	13%	11%	11%	11%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	7.9	11.7	47.0	6.5	10.3	47.0	10.3		6.5	10.3		47.0
Effective Green, g (s)	7.9	11.7	47.0	6.5	10.3	47.0	10.3		6.5	10.3		47.0
Actuated g/C Ratio	0.17	0.25	1.00	0.14	0.22	1.00	0.22		0.14	0.22		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	499	761	1369	378	618	1262	679		198	691		1455
v/s Ratio Prot	0.10	0.07		0.06	0.09		0.14			c0.15		
v/s Ratio Perm			0.15			0.18			0.02			c0.44
v/c Ratio	0.57	0.29	0.15	0.46	0.39	0.18	0.65		0.15	0.69		0.44
Uniform Delay, d1	18.0	14.3	0.0	18.6	15.7	0.0	16.7		17.8	16.9		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	0.9	0.1	0.2	0.3	0.2	0.3	1.6		0.1	2.3		1.0
Delay (s)	18.8	14.4	0.2	19.0	15.9	0.3	18.3		17.9	19.2		1.0
Level of Service	B	B	A	B	B	A	B		B	B		A
Approach Delay (s)		12.0			11.1			18.2			8.8	
Approach LOS		B			B			B			A	

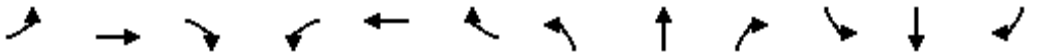
Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	5.6
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	228	370	172	24	203	37	132	24	36	25	39	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.98		1.00	0.91		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1556	2964		1228	3446		1626	1556		1556	1431	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1556	2964		1228	3446		1626	1556		1556	1431	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	251	407	189	26	223	41	145	26	40	27	43	232
RTOR Reduction (vph)	0	43	0	0	23	0	0	27	0	0	157	0
Lane Group Flow (vph)	251	553	0	26	241	0	145	39	0	27	118	0
Heavy Vehicles (%)	16%	16%	16%	47%	47%	47%	11%	11%	11%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	18.3	30.0		3.0	14.7		12.9	25.7		2.7	15.5	
Effective Green, g (s)	18.3	30.0		3.0	14.7		12.9	25.7		2.7	15.5	
Actuated g/C Ratio	0.23	0.38		0.04	0.18		0.16	0.32		0.03	0.19	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	356	1112		46	633		262	500		53	277	
v/s Ratio Prot	c0.16	c0.19		0.02	0.07		c0.09	0.02		0.02	c0.08	
v/s Ratio Perm												
v/c Ratio	0.71	0.50		0.57	0.38		0.55	0.08		0.51	0.43	
Uniform Delay, d1	28.4	19.2		37.9	28.7		30.9	18.9		38.0	28.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.2	0.4		14.9	0.4		2.5	0.1		7.5	1.1	
Delay (s)	34.6	19.6		52.8	29.0		33.4	19.0		45.5	29.4	
Level of Service	C	B		D	C		C	B		D	C	
Approach Delay (s)		24.0			31.2			28.9			30.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	168	98	142	104	0	61	0	196	1	24	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.95		1.00	1.00			0.90			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (prot)		1543		1641	1727			1491			1694	1442
Flt Permitted		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (perm)		1543		1641	1727			1491			1694	1442
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	198	115	167	122	0	72	0	231	1	28	133
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	0	121
Lane Group Flow (vph)	0	294	0	167	122	0	0	303	0	0	29	12
Heavy Vehicles (%)	17%	17%	17%	10%	10%	10%	13%	13%	13%	12%	12%	12%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		21.2		13.7	39.0			20.5			7.5	7.5
Effective Green, g (s)		21.2		13.7	39.0			20.5			7.5	7.5
Actuated g/C Ratio		0.26		0.17	0.48			0.25			0.09	0.09
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		399		275	822			373			155	132
v/s Ratio Prot		c0.19		c0.10	0.07			c0.20			c0.02	
v/s Ratio Perm												0.01
v/c Ratio		0.74		0.61	0.15			0.81			0.19	0.09
Uniform Delay, d1		27.8		31.6	12.1			28.9			34.4	34.1
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		6.9		3.8	0.1			12.6			0.6	0.3
Delay (s)		34.7		35.4	12.2			41.5			35.0	34.4
Level of Service		C		D	B			D			C	C
Approach Delay (s)		34.7			25.6			41.5			34.5	
Approach LOS		C			C			D			C	

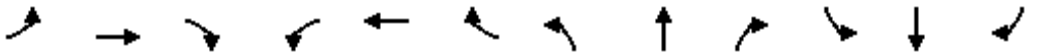
Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	19.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	271	103	61	116	134	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1597	1357	1517	1597	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1597	1357	1517	1597	1530	1369
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	319	121	72	136	158	284
RTOR Reduction (vph)	0	0	0	0	0	239
Lane Group Flow (vph)	319	121	72	136	158	45
Heavy Vehicles (%)	19%	19%	19%	19%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	55.7	94.3	8.7	69.0	15.0	15.0
Effective Green, g (s)	55.7	94.3	8.7	69.0	15.0	15.0
Actuated g/C Ratio	0.59	1.00	0.09	0.73	0.16	0.16
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	943	1357	140	1169	243	218
v/s Ratio Prot	c0.20		c0.05	0.09	c0.10	
v/s Ratio Perm		0.09				0.03
v/c Ratio	0.34	0.09	0.51	0.12	0.65	0.21
Uniform Delay, d1	9.9	0.0	40.8	3.7	37.2	34.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	3.2	0.2	6.1	0.5
Delay (s)	10.8	0.1	44.0	3.9	43.3	35.0
Level of Service	B	A	D	A	D	C
Approach Delay (s)	7.9			17.8	37.9	
Approach LOS	A			B	D	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

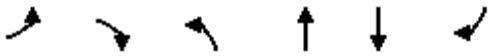
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	182	235	88	22	139	362	30	39	13	14	4	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1504	1583	1346	1517	1597	1357		1574			1204	1062
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1504	1583	1346	1517	1597	1357		1574			1204	1062
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	207	267	100	25	158	411	34	44	15	16	5	11
RTOR Reduction (vph)	0	0	40	0	0	227	0	8	0	0	0	10
Lane Group Flow (vph)	207	267	60	25	158	184	0	85	0	0	21	1
Heavy Vehicles (%)	20%	20%	20%	19%	19%	19%	16%	16%	16%	52%	52%	52%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	18.0	56.5	56.5	3.4	41.9	41.9		9.1			5.0	5.0
Effective Green, g (s)	18.0	56.5	56.5	3.4	41.9	41.9		9.1			5.0	5.0
Actuated g/C Ratio	0.19	0.60	0.60	0.04	0.45	0.45		0.10			0.05	0.05
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	290	957	813	55	716	608		153			64	57
v/s Ratio Prot	c0.14	0.17		0.02	0.10			c0.05			c0.02	
v/s Ratio Perm			0.04			c0.14						0.00
v/c Ratio	0.71	0.28	0.07	0.45	0.22	0.30		0.55			0.33	0.01
Uniform Delay, d1	35.3	8.8	7.7	44.1	15.8	16.5		40.3			42.6	41.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	8.1	0.7	0.2	5.9	0.7	1.3		4.3			3.0	0.1
Delay (s)	43.4	9.5	7.8	50.0	16.5	17.8		44.6			45.6	42.0
Level of Service	D	A	A	D	B	B		D			D	D
Approach Delay (s)		21.5			18.8			44.6			44.4	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	19.5
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

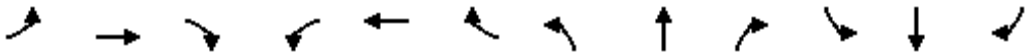
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	26	14	0	587	13	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	30	16	0	667	15	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				770		
pX, platoon unblocked						
vC, conflicting volume	682	15	15			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	682	15	15			
tC, single (s)	6.7	6.5	4.3			
tC, 2 stage (s)						
tF (s)	3.8	3.6	2.4			
p0 queue free %	92	98	100			
cM capacity (veh/h)	377	992	1505			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	45	667	15
Volume Left	30	0	0
Volume Right	16	0	0
cSH	481	1700	1700
Volume to Capacity	0.09	0.39	0.01
Queue Length 95th (ft)	8	0	0
Control Delay (s)	13.3	0.0	0.0
Lane LOS	B		
Approach Delay (s)	13.3	0.0	0.0
Approach LOS	B		

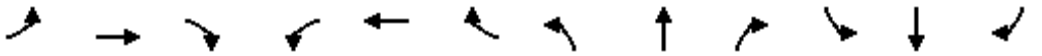
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	536	5	3	325	180	5	3	9	336	1	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (prot)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3017	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (perm)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3017	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	23	623	6	3	378	209	6	3	10	391	1	47
RTOR Reduction (vph)	0	0	3	0	0	160	0	0	0	0	11	0
Lane Group Flow (vph)	23	623	3	3	378	49	6	3	10	195	233	0
Heavy Vehicles (%)	13%	13%	13%	17%	17%	17%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	6.7	15.9	15.9	5.7	14.9	14.9	5.7	5.7	63.2	14.9	14.9	
Effective Green, g (s)	6.7	15.9	15.9	5.7	14.9	14.9	5.7	5.7	63.2	14.9	14.9	
Actuated g/C Ratio	0.11	0.25	0.25	0.09	0.24	0.24	0.09	0.09	1.00	0.24	0.24	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	169	1155	360	270	1045	325	316	326	1615	362	711	
v/s Ratio Prot	c0.01	c0.14		0.00	0.09		c0.00	0.00		c0.13	0.08	
v/s Ratio Perm			0.00			0.04			c0.01			
v/c Ratio	0.14	0.54	0.01	0.01	0.36	0.15	0.02	0.01	0.01	0.54	0.33	
Uniform Delay, d1	25.6	20.5	17.7	26.2	20.2	19.1	26.2	26.2	0.0	21.1	20.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	1.5	0.3	
Delay (s)	26.0	21.0	17.7	26.2	20.4	19.4	26.2	26.2	0.0	22.7	20.3	
Level of Service	C	C	B	C	C	B	C	C	A	C	C	
Approach Delay (s)		21.1			20.1			12.4			21.3	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

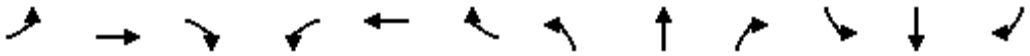
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	384	206	284	228	208	381	119	0	132	170	0	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	400	215	296	238	217	397	124	0	138	177	0	188
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	116	0	0	0
Lane Group Flow (vph)	400	215	296	238	217	397	124	0	22	177	0	188
Heavy Vehicles (%)	10%	10%	10%	12%	12%	12%	13%	13%	13%	19%	19%	19%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	8.4	11.7	41.4	6.6	9.9	41.4	4.6		6.6	4.6		41.4
Effective Green, g (s)	8.4	11.7	41.4	6.6	9.9	41.4	4.6		6.6	4.6		41.4
Actuated g/C Ratio	0.20	0.28	1.00	0.16	0.24	1.00	0.11		0.16	0.11		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	646	928	1468	499	771	1442	344		228	327		1357
v/s Ratio Prot	c0.13	0.07		0.08	0.07		0.04			0.06		
v/s Ratio Perm			0.20			c0.28			0.02			0.14
v/c Ratio	0.62	0.23	0.20	0.48	0.28	0.28	0.36		0.10	0.54		0.14
Uniform Delay, d1	15.0	11.4	0.0	15.8	12.8	0.0	17.0		14.9	17.4		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.3	0.1	0.3	0.3	0.1	0.5	0.2		0.1	1.0		0.2
Delay (s)	16.3	11.5	0.3	16.1	13.0	0.5	17.3		14.9	18.4		0.2
Level of Service	B	B	A	B	B	A	B		B	B		A
Approach Delay (s)		10.0			8.0			16.0			9.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	41.4	Sum of lost time (s)	5.6
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

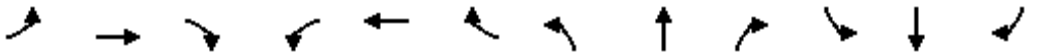
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	217	132	20	468	61	132	31	23	25	39	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.98		1.00	0.94		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1444	2724		1543	4357		1612	1589		1556	1431	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1444	2724		1543	4357		1612	1589		1556	1431	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	165	238	145	22	514	67	145	34	25	27	43	232
RTOR Reduction (vph)	0	70	0	0	14	0	0	17	0	0	158	0
Lane Group Flow (vph)	165	313	0	22	567	0	145	42	0	27	117	0
Heavy Vehicles (%)	25%	25%	25%	17%	17%	17%	12%	12%	12%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	15.4	33.6		2.6	20.8		13.2	26.1		2.8	15.7	
Effective Green, g (s)	15.4	33.6		2.6	20.8		13.2	26.1		2.8	15.7	
Actuated g/C Ratio	0.18	0.40		0.03	0.25		0.16	0.31		0.03	0.19	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	266	1094		48	1083		254	495		52	268	
v/s Ratio Prot	c0.11	0.11		0.01	c0.13		c0.09	0.03		0.02	c0.08	
v/s Ratio Perm												
v/c Ratio	0.62	0.29		0.46	0.52		0.57	0.08		0.52	0.43	
Uniform Delay, d1	31.5	16.9		39.9	27.2		32.6	20.4		39.8	30.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	0.1		6.8	0.5		3.1	0.1		8.5	1.1	
Delay (s)	35.9	17.1		46.6	27.6		35.7	20.4		48.3	31.2	
Level of Service	D	B		D	C		D	C		D	C	
Approach Delay (s)		22.7			28.3			31.3			32.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	18.6
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	278	74	136	130	0	83	0	199	2	14	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.97		1.00	1.00			0.90			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)		1709		1583	1667			1499			1548	1324
Flt Permitted		1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)		1709		1583	1667			1499			1548	1324
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	293	78	143	137	0	87	0	209	2	15	105
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	0	98
Lane Group Flow (vph)	0	362	0	143	137	0	0	296	0	0	17	7
Heavy Vehicles (%)	8%	8%	8%	14%	14%	14%	13%	13%	13%	22%	22%	22%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		23.2		13.2	40.5			20.9			5.8	5.8
Effective Green, g (s)		23.2		13.2	40.5			20.9			5.8	5.8
Actuated g/C Ratio		0.28		0.16	0.49			0.25			0.07	0.07
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		483		255	822			382			109	94
v/s Ratio Prot		c0.21		c0.09	0.08			c0.20			c0.01	
v/s Ratio Perm												0.01
v/c Ratio		0.75		0.56	0.17			0.77			0.16	0.08
Uniform Delay, d1		26.8		31.8	11.5			28.4			35.8	35.7
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		6.5		2.8	0.1			9.5			0.7	0.4
Delay (s)		33.3		34.6	11.6			37.9			36.5	36.0
Level of Service		C		C	B			D			D	D
Approach Delay (s)		33.3			23.3			37.9			36.1	
Approach LOS		C			C			D			D	

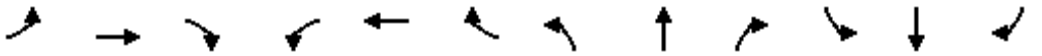
Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	82.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	309	179	53	143	121	358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1743	1482	1480	1557	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1743	1482	1480	1557	1530	1369
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	332	192	57	154	130	385
RTOR Reduction (vph)	0	0	0	0	0	329
Lane Group Flow (vph)	332	192	57	154	130	56
Heavy Vehicles (%)	9%	9%	22%	22%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	57.6	94.3	8.0	70.2	13.8	13.8
Effective Green, g (s)	57.6	94.3	8.0	70.2	13.8	13.8
Actuated g/C Ratio	0.61	1.00	0.08	0.74	0.15	0.15
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1065	1482	126	1159	224	200
v/s Ratio Prot	c0.19		c0.04	0.10	c0.08	
v/s Ratio Perm		0.13				0.04
v/c Ratio	0.31	0.13	0.45	0.13	0.58	0.28
Uniform Delay, d1	8.8	0.0	41.1	3.4	37.5	35.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.2	2.6	0.2	3.8	0.8
Delay (s)	9.6	0.2	43.6	3.7	41.3	36.6
Level of Service	A	A	D	A	D	D
Approach Delay (s)	6.1			14.5	37.8	
Approach LOS	A			B	D	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

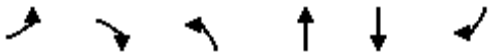
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	401	94	12	111	223	63	68	25	7	2	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1641	1727	1468	1530	1610	1369		1557			1316	1162
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1641	1727	1468	1530	1610	1369		1557			1316	1162
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	196	418	98	12	116	232	66	71	26	7	2	24
RTOR Reduction (vph)	0	0	41	0	0	134	0	8	0	0	0	23
Lane Group Flow (vph)	196	418	57	12	116	98	0	155	0	0	9	1
Heavy Vehicles (%)	10%	10%	10%	18%	18%	18%	17%	17%	17%	39%	39%	39%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	16.4	54.1	54.1	1.6	39.3	39.3		14.0			4.3	4.3
Effective Green, g (s)	16.4	54.1	54.1	1.6	39.3	39.3		14.0			4.3	4.3
Actuated g/C Ratio	0.18	0.58	0.58	0.02	0.42	0.42		0.15			0.05	0.05
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	288	999	849	26	677	575		233			61	53
v/s Ratio Prot	c0.12	c0.24		0.01	0.07			c0.10			c0.01	
v/s Ratio Perm			0.04			0.07						0.00
v/c Ratio	0.68	0.42	0.07	0.46	0.17	0.17		0.67			0.15	0.02
Uniform Delay, d1	36.1	11.0	8.6	45.5	16.9	16.9		37.5			42.8	42.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	6.5	1.3	0.2	12.4	0.5	0.6		7.0			1.1	0.2
Delay (s)	42.6	12.2	8.8	57.9	17.5	17.6		44.6			44.0	42.7
Level of Service	D	B	A	E	B	B		D			D	D
Approach Delay (s)		20.1			18.9			44.6			43.1	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

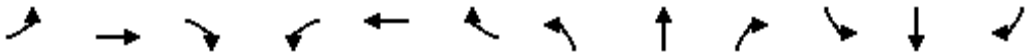


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	14	8	0	487	24	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	9	0	529	26	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				776		
pX, platoon unblocked						
vC, conflicting volume	555	26	26			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	555	26	26			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	100			
cM capacity (veh/h)	492	1050	1588			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	24	529	26
Volume Left	15	0	0
Volume Right	9	0	0
cSH	610	1700	1700
Volume to Capacity	0.04	0.31	0.02
Queue Length 95th (ft)	3	0	0
Control Delay (s)	11.1	0.0	0.0
Lane LOS	B		
Approach Delay (s)	11.1	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		

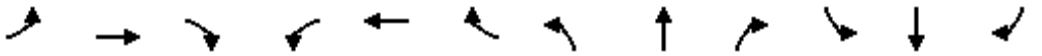
SCENARIO 2: EXISTING PLUS PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	445	2	8	707	475	1	0	3	300	0	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0		4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (prot)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2982	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (perm)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2982	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	54	524	2	9	832	559	1	0	4	353	0	76
RTOR Reduction (vph)	0	0	1	0	0	171	0	0	0	0	25	0
Lane Group Flow (vph)	54	524	1	9	832	388	1	0	4	176	228	0
Heavy Vehicles (%)	25%	25%	25%	11%	11%	11%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	9.5	37.6	37.6	6.1	34.2	34.2	5.8		87.5	17.0	17.0	
Effective Green, g (s)	9.5	37.6	37.6	6.1	34.2	34.2	5.8		87.5	17.0	17.0	
Actuated g/C Ratio	0.11	0.43	0.43	0.07	0.39	0.39	0.07		1.00	0.19	0.19	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0			5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)	157	1783	555	220	1826	569	232		1615	298	579	
v/s Ratio Prot	c0.04	c0.13		0.00	0.18		0.00			c0.11	0.08	
v/s Ratio Perm			0.00			c0.27			c0.00			
v/c Ratio	0.34	0.29	0.00	0.04	0.46	0.68	0.00		0.00	0.59	0.39	
Uniform Delay, d1	36.1	16.3	14.2	38.0	19.8	22.1	38.2		0.0	32.1	30.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.1	0.0	0.1	0.2	3.4	0.0		0.0	3.1	0.4	
Delay (s)	37.4	16.4	14.2	38.0	19.9	25.5	38.2		0.0	35.2	31.2	
Level of Service	D	B	B	D	B	C	D		A	D	C	
Approach Delay (s)		18.3			22.3			7.6			32.8	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	22.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

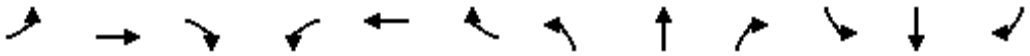
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	309	179	272	283	245	373	0	376	482	0	541
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	282	364	211	320	333	288	439	0	442	567	0	636
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	117	0	0	0
Lane Group Flow (vph)	282	364	211	320	333	288	439	0	325	567	0	636
Heavy Vehicles (%)	18%	18%	18%	28%	28%	28%	13%	13%	13%	11%	11%	11%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	9.2	13.1	66.0	19.6	23.5	66.0	14.8		19.6	14.8		66.0
Effective Green, g (s)	9.2	13.1	66.0	19.6	23.5	66.0	14.8		19.6	14.8		66.0
Actuated g/C Ratio	0.14	0.20	1.00	0.30	0.36	1.00	0.22		0.30	0.22		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	414	607	1369	813	1004	1262	695		424	707		1455
v/s Ratio Prot	0.10	0.12		0.12	0.12		0.14			c0.18		
v/s Ratio Perm			0.15			0.23			c0.23			c0.44
v/c Ratio	0.68	0.60	0.15	0.39	0.33	0.23	0.63		0.77	0.80		0.44
Uniform Delay, d1	27.0	24.1	0.0	18.5	15.5	0.0	23.1		21.1	24.2		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	3.7	1.2	0.2	0.1	0.1	0.4	1.4		7.3	6.2		1.0
Delay (s)	30.7	25.2	0.2	18.6	15.6	0.4	24.5		28.4	30.4		1.0
Level of Service	C	C	A	B	B	A	C		C	C		A
Approach Delay (s)		20.9			12.0			26.5			14.8	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

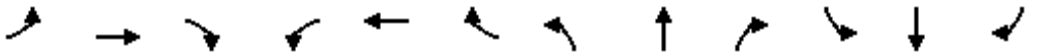
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	228	765	172	28	454	37	132	24	43	25	39	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1556	3026		1228	3488		1626	1546		1556	1431	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1556	3026		1228	3488		1626	1546		1556	1431	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	251	841	189	31	499	41	145	26	47	27	43	232
RTOR Reduction (vph)	0	15	0	0	8	0	0	33	0	0	160	0
Lane Group Flow (vph)	251	1015	0	31	532	0	145	40	0	27	115	0
Heavy Vehicles (%)	16%	16%	16%	47%	47%	47%	11%	11%	11%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	19.8	37.5		5.0	22.7		13.6	26.9		2.9	16.2	
Effective Green, g (s)	19.8	37.5		5.0	22.7		13.6	26.9		2.9	16.2	
Actuated g/C Ratio	0.22	0.41		0.06	0.25		0.15	0.30		0.03	0.18	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	339	1248		68	871		243	458		50	255	
v/s Ratio Prot	c0.16	c0.34		0.03	0.15		c0.09	0.03		0.02	c0.08	
v/s Ratio Perm												
v/c Ratio	0.74	0.81		0.46	0.61		0.60	0.09		0.54	0.45	
Uniform Delay, d1	33.2	23.6		41.6	30.2		36.1	23.1		43.3	33.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.4	4.2		4.8	1.3		3.9	0.1		11.4	1.3	
Delay (s)	41.6	27.8		46.4	31.5		40.0	23.2		54.7	34.6	
Level of Service	D	C		D	C		D	C		D	C	
Approach Delay (s)		30.5			32.3			34.4			36.4	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	18.6
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	271	98	142	170	0	61	0	196	1	24	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.96		1.00	1.00			0.90			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (prot)		1566		1641	1727			1491			1694	1442
Flt Permitted		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (perm)		1566		1641	1727			1491			1694	1442
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	319	115	167	200	0	72	0	231	1	28	133
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	0	122
Lane Group Flow (vph)	0	423	0	167	200	0	0	303	0	0	29	11
Heavy Vehicles (%)	17%	17%	17%	10%	10%	10%	13%	13%	13%	12%	12%	12%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		30.0		14.6	48.7			20.5			7.7	7.7
Effective Green, g (s)		30.0		14.6	48.7			20.5			7.7	7.7
Actuated g/C Ratio		0.33		0.16	0.53			0.22			0.08	0.08
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		512		261	916			333			142	121
v/s Ratio Prot		c0.27		c0.10	0.12			c0.20			c0.02	
v/s Ratio Perm												0.01
v/c Ratio		0.83		0.64	0.22			0.91			0.20	0.09
Uniform Delay, d1		28.5		36.1	11.4			34.7			39.2	38.8
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		10.5		5.1	0.1			27.4			0.7	0.3
Delay (s)		39.0		41.2	11.6			62.1			39.9	39.2
Level of Service		D		D	B			E			D	D
Approach Delay (s)		39.0			25.1			62.1			39.3	
Approach LOS		D			C			E			D	

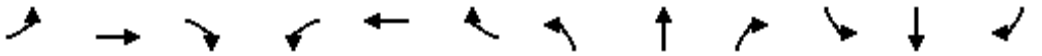
Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	373	103	61	182	134	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1597	1357	1517	1597	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1597	1357	1517	1597	1530	1369
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	439	121	72	214	158	454
RTOR Reduction (vph)	0	0	0	0	0	380
Lane Group Flow (vph)	439	121	72	214	158	74
Heavy Vehicles (%)	19%	19%	19%	19%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	55.3	94.3	8.7	68.6	15.4	15.4
Effective Green, g (s)	55.3	94.3	8.7	68.6	15.4	15.4
Actuated g/C Ratio	0.59	1.00	0.09	0.73	0.16	0.16
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	937	1357	140	1162	250	224
v/s Ratio Prot	c0.27		c0.05	0.13	c0.10	
v/s Ratio Perm		0.09				0.05
v/c Ratio	0.47	0.09	0.51	0.18	0.63	0.33
Uniform Delay, d1	11.1	0.0	40.8	4.0	36.8	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.1	3.2	0.3	5.1	0.9
Delay (s)	12.8	0.1	44.0	4.4	41.9	35.8
Level of Service	B	A	D	A	D	D
Approach Delay (s)	10.1			14.4	37.4	
Approach LOS	B			B	D	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

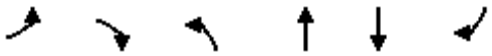
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	182	482	88	22	204	454	30	39	13	14	4	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1504	1583	1346	1517	1597	1357		1574			1204	1062
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1504	1583	1346	1517	1597	1357		1574			1204	1062
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	207	548	100	25	232	516	34	44	15	16	5	12
RTOR Reduction (vph)	0	0	39	0	0	285	0	8	0	0	0	11
Lane Group Flow (vph)	207	548	61	25	232	231	0	85	0	0	21	1
Heavy Vehicles (%)	20%	20%	20%	19%	19%	19%	16%	16%	16%	52%	52%	52%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	18.0	56.5	56.5	3.4	41.9	41.9		9.1			5.0	5.0
Effective Green, g (s)	18.0	56.5	56.5	3.4	41.9	41.9		9.1			5.0	5.0
Actuated g/C Ratio	0.19	0.60	0.60	0.04	0.45	0.45		0.10			0.05	0.05
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	290	957	813	55	716	608		153			64	57
v/s Ratio Prot	c0.14	c0.35		0.02	0.15			c0.05			c0.02	
v/s Ratio Perm			0.05			0.17						0.00
v/c Ratio	0.71	0.57	0.07	0.45	0.32	0.38		0.55			0.33	0.01
Uniform Delay, d1	35.3	11.2	7.7	44.1	16.7	17.2		40.3			42.6	41.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	8.1	2.5	0.2	5.9	1.2	1.8		4.3			3.0	0.1
Delay (s)	43.4	13.7	7.8	50.0	17.9	19.0		44.6			45.6	42.0
Level of Service	D	B	A	D	B	B		D			D	D
Approach Delay (s)		20.2			19.6			44.6			44.3	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

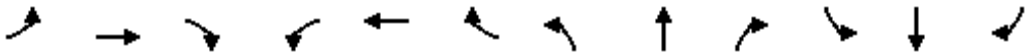
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	26	15	0	679	13	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	30	17	0	772	15	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				770		
pX, platoon unblocked						
vC, conflicting volume	786	15	15			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	786	15	15			
tC, single (s)	6.7	6.5	4.3			
tC, 2 stage (s)						
tF (s)	3.8	3.6	2.4			
p0 queue free %	91	98	100			
cM capacity (veh/h)	326	992	1505			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	47	772	15
Volume Left	30	0	0
Volume Right	17	0	0
cSH	432	1700	1700
Volume to Capacity	0.11	0.45	0.01
Queue Length 95th (ft)	9	0	0
Control Delay (s)	14.3	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.3	0.0	0.0
Approach LOS	B		

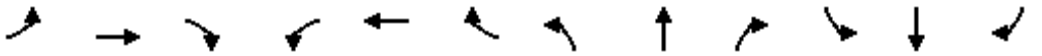
Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	627	5	3	483	180	5	3	9	336	1	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (prot)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3017	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (perm)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3017	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	23	729	6	3	562	209	6	3	10	391	1	47
RTOR Reduction (vph)	0	0	3	0	0	115	0	0	0	0	11	0
Lane Group Flow (vph)	23	729	3	3	562	94	6	3	10	195	233	0
Heavy Vehicles (%)	13%	13%	13%	17%	17%	17%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	6.8	18.4	18.4	5.7	17.3	17.3	5.7	5.7	66.3	15.5	15.5	
Effective Green, g (s)	6.8	18.4	18.4	5.7	17.3	17.3	5.7	5.7	66.3	15.5	15.5	
Actuated g/C Ratio	0.10	0.28	0.28	0.09	0.26	0.26	0.09	0.09	1.00	0.23	0.23	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	1274	397	257	1157	360	301	310	1615	359	705	
v/s Ratio Prot	c0.01	c0.16		0.00	0.13		c0.00	0.00		c0.13	0.08	
v/s Ratio Perm			0.00			0.07			c0.01			
v/c Ratio	0.14	0.57	0.01	0.01	0.49	0.26	0.02	0.01	0.01	0.54	0.33	
Uniform Delay, d1	27.1	20.6	17.3	27.7	20.7	19.4	27.7	27.7	0.0	22.3	21.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.6	0.0	0.0	0.3	0.4	0.0	0.0	0.0	1.7	0.3	
Delay (s)	27.5	21.2	17.3	27.7	21.1	19.8	27.8	27.7	0.0	24.0	21.4	
Level of Service	C	C	B	C	C	B	C	C	A	C	C	
Approach Delay (s)		21.4			20.8			13.2			22.5	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

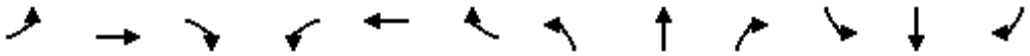
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	384	297	284	474	366	480	119	0	273	227	0	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	400	309	296	494	381	500	124	0	284	236	0	188
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	219	0	0	0
Lane Group Flow (vph)	400	309	296	494	381	500	124	0	65	236	0	188
Heavy Vehicles (%)	10%	10%	10%	12%	12%	12%	13%	13%	13%	19%	19%	19%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	9.4	10.9	47.5	10.8	12.3	47.5	7.3		10.8	7.3		47.5
Effective Green, g (s)	9.4	10.9	47.5	10.8	12.3	47.5	7.3		10.8	7.3		47.5
Actuated g/C Ratio	0.20	0.23	1.00	0.23	0.26	1.00	0.15		0.23	0.15		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	630	753	1468	711	835	1442	476		325	452		1357
v/s Ratio Prot	0.13	0.09		c0.16	0.12		0.04			0.08		
v/s Ratio Perm			0.20			c0.35			0.05			0.14
v/c Ratio	0.63	0.41	0.20	0.69	0.46	0.35	0.26		0.20	0.52		0.14
Uniform Delay, d1	17.5	15.6	0.0	16.8	14.8	0.0	17.7		14.8	18.5		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.5	0.2	0.3	2.4	0.2	0.7	0.1		0.1	0.5		0.2
Delay (s)	19.0	15.8	0.3	19.2	15.0	0.7	17.8		15.0	19.0		0.2
Level of Service	B	B	A	B	B	A	B		B	B		A
Approach Delay (s)		12.5			11.3			15.8			10.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	47.5	Sum of lost time (s)	5.6
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

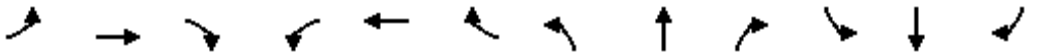
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	505	132	29	971	61	132	31	28	17	31	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1444	2798		1543	4394		1612	1575		1556	1424	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1444	2798		1543	4394		1612	1575		1556	1424	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	165	555	145	32	1067	67	145	34	31	19	34	231
RTOR Reduction (vph)	0	16	0	0	5	0	0	23	0	0	197	0
Lane Group Flow (vph)	165	684	0	32	1129	0	145	42	0	19	68	0
Heavy Vehicles (%)	25%	25%	25%	17%	17%	17%	12%	12%	12%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	16.1	45.5		4.8	34.2		13.4	24.6		2.8	14.0	
Effective Green, g (s)	16.1	45.5		4.8	34.2		13.4	24.6		2.8	14.0	
Actuated g/C Ratio	0.17	0.47		0.05	0.36		0.14	0.26		0.03	0.15	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	241	1322		77	1560		224	402		45	207	
v/s Ratio Prot	c0.11	0.24		0.02	c0.26		c0.09	0.03		0.01	c0.05	
v/s Ratio Perm												
v/c Ratio	0.68	0.52		0.42	0.72		0.65	0.10		0.42	0.33	
Uniform Delay, d1	37.7	17.7		44.4	27.0		39.2	27.4		46.0	36.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.8	0.3		3.6	1.7		6.3	0.1		6.3	0.9	
Delay (s)	45.5	18.1		48.0	28.6		45.5	27.5		52.2	37.8	
Level of Service	D	B		D	C		D	C		D	D	
Approach Delay (s)		23.3			29.2			39.9			38.8	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	29.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	353	74	136	262	0	83	0	199	2	14	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.98		1.00	1.00			0.90			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)		1718		1583	1667			1499			1548	1324
Flt Permitted		1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)		1718		1583	1667			1499			1548	1324
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	372	78	143	276	0	87	0	209	2	15	105
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	98
Lane Group Flow (vph)	0	443	0	143	276	0	0	296	0	0	17	7
Heavy Vehicles (%)	8%	8%	8%	14%	14%	14%	13%	13%	13%	22%	22%	22%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		28.1		13.6	45.8			20.9			5.8	5.8
Effective Green, g (s)		28.1		13.6	45.8			20.9			5.8	5.8
Actuated g/C Ratio		0.32		0.16	0.52			0.24			0.07	0.07
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		552		246	874			358			103	88
v/s Ratio Prot		c0.26		c0.09	0.17			c0.20			c0.01	
v/s Ratio Perm												0.01
v/c Ratio		0.80		0.58	0.32			0.83			0.17	0.08
Uniform Delay, d1		27.1		34.3	11.9			31.5			38.5	38.3
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		8.3		3.5	0.2			14.4			0.8	0.4
Delay (s)		35.4		37.7	12.1			46.0			39.3	38.7
Level of Service		D		D	B			D			D	D
Approach Delay (s)		35.4			20.8			46.0			38.8	
Approach LOS		D			C			D			D	

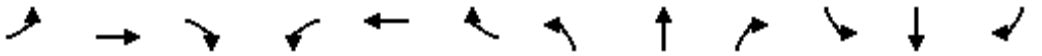
Intersection Summary			
HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	383	179	53	275	121	463
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1743	1482	1480	1557	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1743	1482	1480	1557	1530	1369
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	412	192	57	296	130	498
RTOR Reduction (vph)	0	0	0	0	0	421
Lane Group Flow (vph)	412	192	57	296	130	77
Heavy Vehicles (%)	9%	9%	22%	22%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	56.8	94.3	8.0	69.4	14.6	14.6
Effective Green, g (s)	56.8	94.3	8.0	69.4	14.6	14.6
Actuated g/C Ratio	0.60	1.00	0.08	0.74	0.15	0.15
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1050	1482	126	1146	237	212
v/s Ratio Prot	c0.24		c0.04	0.19	c0.08	
v/s Ratio Perm		0.13				0.06
v/c Ratio	0.39	0.13	0.45	0.26	0.55	0.36
Uniform Delay, d1	9.8	0.0	41.1	4.1	36.8	35.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.2	2.6	0.5	2.6	1.1
Delay (s)	10.9	0.2	43.6	4.6	39.4	36.8
Level of Service	B	A	D	A	D	D
Approach Delay (s)	7.5			10.9	37.3	
Approach LOS	A			B	D	

Intersection Summary			
HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

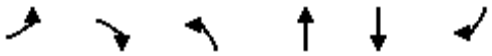
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	581	94	12	241	417	63	68	25	7	2	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1641	1727	1468	1530	1610	1369		1557			1316	1162
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1641	1727	1468	1530	1610	1369		1557			1316	1162
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	196	605	98	12	251	434	66	71	26	7	2	26
RTOR Reduction (vph)	0	0	37	0	0	252	0	8	0	0	0	25
Lane Group Flow (vph)	196	605	61	12	251	182	0	155	0	0	9	1
Heavy Vehicles (%)	10%	10%	10%	18%	18%	18%	17%	17%	17%	39%	39%	39%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	16.4	54.1	54.1	1.6	39.3	39.3		14.0			4.3	4.3
Effective Green, g (s)	16.4	54.1	54.1	1.6	39.3	39.3		14.0			4.3	4.3
Actuated g/C Ratio	0.18	0.58	0.58	0.02	0.42	0.42		0.15			0.05	0.05
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	288	999	849	26	677	575		233			61	53
v/s Ratio Prot	c0.12	c0.35		0.01	0.16			c0.10			c0.01	
v/s Ratio Perm			0.04			0.13						0.00
v/c Ratio	0.68	0.61	0.07	0.46	0.37	0.32		0.67			0.15	0.02
Uniform Delay, d1	36.1	12.8	8.7	45.5	18.6	18.1		37.5			42.8	42.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	6.5	2.7	0.2	12.4	1.6	1.4		7.0			1.1	0.2
Delay (s)	42.6	15.5	8.8	57.9	20.2	19.6		44.6			44.0	42.8
Level of Service	D	B	A	E	C	B		D			D	D
Approach Delay (s)		20.7			20.4			44.6			43.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

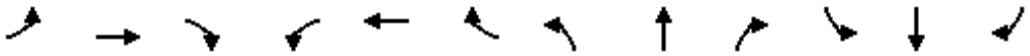


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	14	10	0	671	24	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	11	0	729	26	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				776		
pX, platoon unblocked						
vC, conflicting volume	755	26	26			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	755	26	26			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	376	1050	1588			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	26	729	26
Volume Left	15	0	0
Volume Right	11	0	0
cSH	513	1700	1700
Volume to Capacity	0.05	0.43	0.02
Queue Length 95th (ft)	4	0	0
Control Delay (s)	12.4	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.4	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

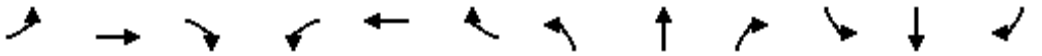
SCENARIO 3: EXISTING PLUS APPROVED PROJECTS (NEAR-TERM)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	538	2	8	718	491	1	0	3	311	0	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0		4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (prot)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2981	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (perm)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2981	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	585	2	9	780	534	1	0	3	338	0	74
RTOR Reduction (vph)	0	0	1	0	0	322	0	0	0	0	37	0
Lane Group Flow (vph)	54	585	1	9	780	212	1	0	3	169	206	0
Heavy Vehicles (%)	25%	25%	25%	11%	11%	11%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	8.2	27.0	27.0	4.1	22.9	22.9	5.7		71.7	13.9	13.9	
Effective Green, g (s)	8.2	27.0	27.0	4.1	22.9	22.9	5.7		71.7	13.9	13.9	
Actuated g/C Ratio	0.11	0.38	0.38	0.06	0.32	0.32	0.08		1.00	0.19	0.19	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0			5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)	165	1563	487	180	1492	465	278		1615	298	578	
v/s Ratio Prot	c0.04	c0.14		0.00	c0.17		c0.00			c0.11	0.07	
v/s Ratio Perm			0.00			0.15			0.00			
v/c Ratio	0.33	0.37	0.00	0.05	0.52	0.46	0.00		0.00	0.57	0.36	
Uniform Delay, d1	29.2	16.2	13.9	32.0	19.9	19.4	30.4		0.0	26.2	25.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.2	0.0	0.1	0.3	0.7	0.0		0.0	2.5	0.4	
Delay (s)	30.4	16.4	13.9	32.1	20.3	20.2	30.4		0.0	28.6	25.4	
Level of Service	C	B	B	C	C	C	C		A	C	C	
Approach Delay (s)		17.5			20.3			7.6			26.7	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	27.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

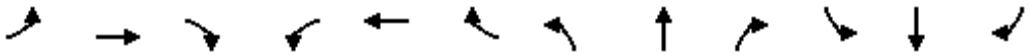
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	257	385	190	226	267	303	390	0	403	671	0	567
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	418	207	246	290	329	424	0	438	729	0	616
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	31	0	0	0
Lane Group Flow (vph)	279	418	207	246	290	329	424	0	407	729	0	616
Heavy Vehicles (%)	18%	18%	18%	28%	28%	28%	13%	13%	13%	11%	11%	11%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	12.1	17.8	91.8	30.4	36.1	91.8	25.1		30.4	25.1		91.8
Effective Green, g (s)	12.1	17.8	91.8	30.4	36.1	91.8	25.1		30.4	25.1		91.8
Actuated g/C Ratio	0.13	0.19	1.00	0.33	0.39	1.00	0.27		0.33	0.27		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	391	593	1369	906	1109	1262	847		473	863		1455
v/s Ratio Prot	0.09	c0.14		0.09	0.10		0.14			c0.23		
v/s Ratio Perm			0.15			0.26			c0.28			0.42
v/c Ratio	0.71	0.70	0.15	0.27	0.26	0.26	0.50		0.86	0.84		0.42
Uniform Delay, d1	38.2	34.5	0.0	22.6	18.8	0.0	28.1		28.7	31.5		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	5.1	3.3	0.2	0.1	0.1	0.5	0.2		13.9	7.3		0.9
Delay (s)	43.3	37.8	0.2	22.6	18.9	0.5	28.2		42.6	38.8		0.9
Level of Service	D	D	A	C	B	A	C		D	D		A
Approach Delay (s)		30.9			13.0			35.6			21.5	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	18.5
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

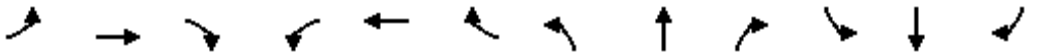
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	236	1047	173	26	443	38	133	25	39	26	39	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.91		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1556	3046		1228	3487		1626	1555		1556	1429	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1556	3046		1228	3487		1626	1555		1556	1429	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	257	1138	188	28	482	41	145	27	42	28	42	236
RTOR Reduction (vph)	0	10	0	0	8	0	0	32	0	0	191	0
Lane Group Flow (vph)	257	1316	0	28	515	0	145	37	0	28	87	0
Heavy Vehicles (%)	16%	16%	16%	47%	47%	47%	11%	11%	11%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	20.9	47.4		2.6	29.1		11.7	22.7		3.1	14.1	
Effective Green, g (s)	20.9	47.4		2.6	29.1		11.7	22.7		3.1	14.1	
Actuated g/C Ratio	0.22	0.50		0.03	0.31		0.12	0.24		0.03	0.15	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	344	1529		34	1075		202	374		51	213	
v/s Ratio Prot	c0.17	c0.43		0.02	0.15		c0.09	0.02		0.02	c0.06	
v/s Ratio Perm												
v/c Ratio	0.75	0.86		0.82	0.48		0.72	0.10		0.55	0.41	
Uniform Delay, d1	34.3	20.6		45.7	26.5		39.8	27.9		45.0	36.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.6	5.2		85.0	0.3		11.5	0.1		11.5	1.3	
Delay (s)	42.9	25.8		130.6	26.8		51.3	28.0		56.5	37.6	
Level of Service	D	C		F	C		D	C		E	D	
Approach Delay (s)		28.6			32.1			43.8			39.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	234	102	142	134	0	63	0	196	1	24	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.96		1.00	1.00			0.90			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (prot)		1557		1641	1727			1491			1693	1442
Flt Permitted		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (perm)		1557		1641	1727			1491			1693	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	254	111	154	146	0	68	0	213	1	26	123
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	0	112
Lane Group Flow (vph)	0	351	0	154	146	0	0	281	0	0	27	11
Heavy Vehicles (%)	17%	17%	17%	10%	10%	10%	13%	13%	13%	12%	12%	12%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		24.7		13.5	42.3			20.6			7.5	7.5
Effective Green, g (s)		24.7		13.5	42.3			20.6			7.5	7.5
Actuated g/C Ratio		0.29		0.16	0.50			0.24			0.09	0.09
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		451		260	856			360			149	127
v/s Ratio Prot		c0.23		c0.09	0.08			c0.19			c0.02	
v/s Ratio Perm												0.01
v/c Ratio		0.78		0.59	0.17			0.78			0.18	0.09
Uniform Delay, d1		27.8		33.3	11.8			30.2			36.1	35.7
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		8.2		3.6	0.1			10.5			0.6	0.3
Delay (s)		36.0		36.9	11.9			40.7			36.6	36.0
Level of Service		D		D	B			D			D	D
Approach Delay (s)		36.0			24.8			40.7			36.1	
Approach LOS		D			C			D			D	

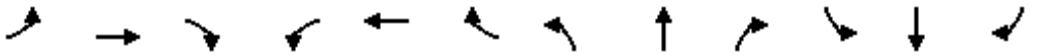
Intersection Summary			
HCM Average Control Delay	34.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	85.3	Sum of lost time (s)	19.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	322	103	67	146	134	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1597	1357	1517	1597	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1597	1357	1517	1597	1530	1369
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	350	112	73	159	146	300
RTOR Reduction (vph)	0	0	0	0	0	255
Lane Group Flow (vph)	350	112	73	159	146	45
Heavy Vehicles (%)	19%	19%	19%	19%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	56.3	94.3	8.8	69.7	14.3	14.3
Effective Green, g (s)	56.3	94.3	8.8	69.7	14.3	14.3
Actuated g/C Ratio	0.60	1.00	0.09	0.74	0.15	0.15
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	953	1357	142	1180	232	208
v/s Ratio Prot	c0.22		c0.05	0.10	c0.10	
v/s Ratio Perm		0.08				0.03
v/c Ratio	0.37	0.08	0.51	0.13	0.63	0.22
Uniform Delay, d1	9.8	0.0	40.7	3.6	37.5	35.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	3.1	0.2	5.3	0.5
Delay (s)	10.9	0.1	43.8	3.8	42.8	35.6
Level of Service	B	A	D	A	D	D
Approach Delay (s)	8.3			16.4	38.0	
Approach LOS	A			B	D	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

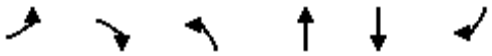
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	182	314	95	24	162	364	33	40	15	19	4	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1504	1583	1346	1517	1597	1357		1571			1200	1062
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1504	1583	1346	1517	1597	1357		1571			1200	1062
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	198	341	103	26	176	396	36	43	16	21	4	22
RTOR Reduction (vph)	0	0	41	0	0	218	0	9	0	0	0	21
Lane Group Flow (vph)	198	341	62	26	176	178	0	86	0	0	25	1
Heavy Vehicles (%)	20%	20%	20%	19%	19%	19%	16%	16%	16%	52%	52%	52%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	17.5	56.2	56.2	3.4	42.1	42.1		9.2			5.2	5.2
Effective Green, g (s)	17.5	56.2	56.2	3.4	42.1	42.1		9.2			5.2	5.2
Actuated g/C Ratio	0.19	0.60	0.60	0.04	0.45	0.45		0.10			0.06	0.06
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	281	951	809	55	719	611		155			67	59
v/s Ratio Prot	c0.13	c0.22		0.02	0.11			c0.05			c0.02	
v/s Ratio Perm			0.05			0.13						0.00
v/c Ratio	0.70	0.36	0.08	0.47	0.24	0.29		0.55			0.37	0.02
Uniform Delay, d1	35.6	9.5	7.8	44.2	15.9	16.3		40.2			42.6	41.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	7.8	1.1	0.2	6.3	0.8	1.2		4.3			3.5	0.1
Delay (s)	43.4	10.5	8.0	50.5	16.7	17.5		44.4			46.1	41.9
Level of Service	D	B	A	D	B	B		D			D	D
Approach Delay (s)		20.3			18.7			44.4			44.1	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

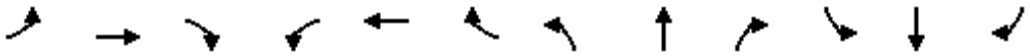
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	31	29	0	590	13	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	32	0	641	14	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				770		
pX, platoon unblocked						
vC, conflicting volume	655	14	14			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	655	14	14			
tC, single (s)	6.7	6.5	4.3			
tC, 2 stage (s)						
tF (s)	3.8	3.6	2.4			
p0 queue free %	91	97	100			
cM capacity (veh/h)	391	992	1506			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	65	641	14
Volume Left	34	0	0
Volume Right	32	0	0
cSH	553	1700	1700
Volume to Capacity	0.12	0.38	0.01
Queue Length 95th (ft)	10	0	0
Control Delay (s)	12.4	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.4	0.0	0.0
Approach LOS	B		

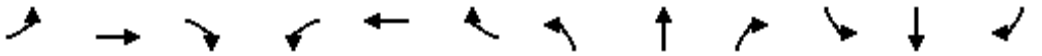
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	642	5	3	548	192	5	3	9	356	1	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (prot)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3015	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (perm)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3015	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	698	5	3	596	209	5	3	10	387	1	49
RTOR Reduction (vph)	0	0	4	0	0	155	0	0	0	0	19	0
Lane Group Flow (vph)	26	698	1	3	596	54	5	3	10	193	225	0
Heavy Vehicles (%)	13%	13%	13%	17%	17%	17%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	6.8	17.2	17.2	5.7	16.1	16.1	5.7	5.7	63.7	14.1	14.1	
Effective Green, g (s)	6.8	17.2	17.2	5.7	16.1	16.1	5.7	5.7	63.7	14.1	14.1	
Actuated g/C Ratio	0.11	0.27	0.27	0.09	0.25	0.25	0.09	0.09	1.00	0.22	0.22	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	170	1239	386	268	1120	349	313	323	1615	340	667	
v/s Ratio Prot	c0.02	c0.15		0.00	0.13		c0.00	0.00		c0.13	0.07	
v/s Ratio Perm			0.00			0.04			c0.01			
v/c Ratio	0.15	0.56	0.00	0.01	0.53	0.15	0.02	0.01	0.01	0.57	0.34	
Uniform Delay, d1	25.8	20.0	17.0	26.4	20.5	18.5	26.4	26.4	0.0	22.1	20.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.6	0.0	0.0	0.5	0.2	0.0	0.0	0.0	2.2	0.3	
Delay (s)	26.3	20.6	17.0	26.4	21.0	18.7	26.5	26.4	0.0	24.3	21.2	
Level of Service	C	C	B	C	C	B	C	C	A	C	C	
Approach Delay (s)		20.8			20.5			11.8			22.5	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

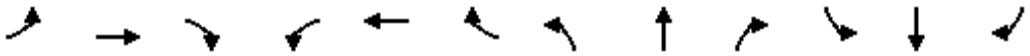
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	417	277	306	462	411	673	132	0	217	290	0	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	434	289	319	481	428	701	138	0	226	302	0	207
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	173	0	0	0
Lane Group Flow (vph)	434	289	319	481	428	701	138	0	53	302	0	207
Heavy Vehicles (%)	10%	10%	10%	12%	12%	12%	13%	13%	13%	19%	19%	19%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	11.1	12.2	51.9	12.1	13.2	51.9	9.1		12.1	9.1		51.9
Effective Green, g (s)	11.1	12.2	51.9	12.1	13.2	51.9	9.1		12.1	9.1		51.9
Actuated g/C Ratio	0.21	0.24	1.00	0.23	0.25	1.00	0.18		0.23	0.18		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	681	771	1468	729	820	1442	543		333	516		1357
v/s Ratio Prot	0.14	0.09		0.15	0.13		0.04			0.10		
v/s Ratio Perm			0.22			c0.49			0.04			0.15
v/c Ratio	0.64	0.37	0.22	0.66	0.52	0.49	0.25		0.16	0.59		0.15
Uniform Delay, d1	18.6	16.7	0.0	18.0	16.6	0.0	18.5		15.8	19.7		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.4	0.2	0.3	1.7	0.4	1.2	0.1		0.1	1.1		0.2
Delay (s)	20.0	16.8	0.3	19.7	17.0	1.2	18.6		15.9	20.8		0.2
Level of Service	C	B	A	B	B	A	B		B	C		A
Approach Delay (s)		13.1			10.9			16.9			12.4	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	51.9	Sum of lost time (s)	0.0
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

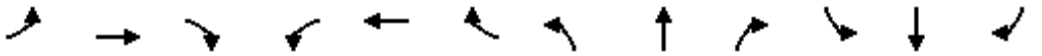
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	486	133	24	1185	62	133	31	26	18	32	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1444	2795		1543	4400		1612	1582		1556	1424	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1444	2795		1543	4400		1612	1582		1556	1424	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	528	145	26	1288	67	145	34	28	20	35	240
RTOR Reduction (vph)	0	18	0	0	4	0	0	21	0	0	199	0
Lane Group Flow (vph)	170	655	0	26	1351	0	145	41	0	20	76	0
Heavy Vehicles (%)	25%	25%	25%	17%	17%	17%	12%	12%	12%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	15.5	54.4		2.1	41.0		12.1	24.4		2.1	14.4	
Effective Green, g (s)	15.5	54.4		2.1	41.0		12.1	24.4		2.1	14.4	
Actuated g/C Ratio	0.15	0.54		0.02	0.40		0.12	0.24		0.02	0.14	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	220	1497		32	1776		192	380		32	202	
v/s Ratio Prot	c0.12	0.23		0.02	c0.31		c0.09	0.03		0.01	c0.05	
v/s Ratio Perm												
v/c Ratio	0.77	0.44		0.81	0.76		0.76	0.11		0.62	0.38	
Uniform Delay, d1	41.4	14.3		49.6	26.1		43.3	30.1		49.4	39.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.4	0.2		84.7	2.0		15.5	0.1		32.4	1.2	
Delay (s)	56.8	14.5		134.2	28.0		58.8	30.2		81.8	40.7	
Level of Service	E	B		F	C		E	C		F	D	
Approach Delay (s)		23.0			30.0			50.2			43.5	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	101.6	Sum of lost time (s)	18.6
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	311	77	136	204	0	88	0	199	2	14	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.97		1.00	1.00			0.91			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98			0.99	1.00
Satd. Flow (prot)		1712		1583	1667			1501			1548	1324
Flt Permitted		1.00		0.95	1.00			0.98			0.99	1.00
Satd. Flow (perm)		1712		1583	1667			1501			1548	1324
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	327	81	143	215	0	93	0	209	2	15	105
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	98
Lane Group Flow (vph)	0	400	0	143	215	0	0	302	0	0	17	7
Heavy Vehicles (%)	8%	8%	8%	14%	14%	14%	13%	13%	13%	22%	22%	22%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		25.6		13.4	43.1			21.0			5.8	5.8
Effective Green, g (s)		25.6		13.4	43.1			21.0			5.8	5.8
Actuated g/C Ratio		0.30		0.16	0.51			0.25			0.07	0.07
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		517		250	847			372			106	91
v/s Ratio Prot		c0.23		c0.09	0.13			c0.20			c0.01	
v/s Ratio Perm												0.01
v/c Ratio		0.77		0.57	0.25			0.81			0.16	0.08
Uniform Delay, d1		27.0		33.0	11.8			30.0			37.2	37.0
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		7.1		3.1	0.2			12.6			0.7	0.4
Delay (s)		34.1		36.2	11.9			42.7			37.9	37.4
Level of Service		C		D	B			D			D	D
Approach Delay (s)		34.1			21.6			42.7			37.4	
Approach LOS		C			C			D			D	

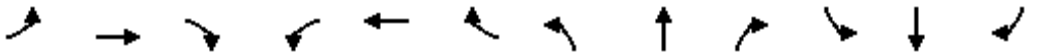
Intersection Summary			
HCM Average Control Delay	32.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	331	179	63	217	121	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1743	1482	1480	1557	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1743	1482	1480	1557	1530	1369
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	356	192	68	233	130	398
RTOR Reduction (vph)	0	0	0	0	0	339
Lane Group Flow (vph)	356	192	68	233	130	59
Heavy Vehicles (%)	9%	9%	22%	22%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	56.9	94.3	8.6	70.1	13.9	13.9
Effective Green, g (s)	56.9	94.3	8.6	70.1	13.9	13.9
Actuated g/C Ratio	0.60	1.00	0.09	0.74	0.15	0.15
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1052	1482	135	1157	226	202
v/s Ratio Prot	c0.20		c0.05	0.15	c0.08	
v/s Ratio Perm		0.13				0.04
v/c Ratio	0.34	0.13	0.50	0.20	0.58	0.29
Uniform Delay, d1	9.3	0.0	40.8	3.7	37.4	35.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.2	2.9	0.4	3.5	0.8
Delay (s)	10.2	0.2	43.8	4.0	41.0	36.6
Level of Service	B	A	D	A	D	D
Approach Delay (s)	6.7			13.0	37.7	
Approach LOS	A			B	D	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

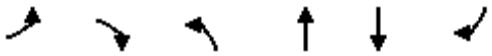
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	429	100	16	169	251	69	71	26	10	2	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1641	1727	1468	1530	1610	1369		1557			1312	1162
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1641	1727	1468	1530	1610	1369		1557			1312	1162
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	196	447	104	17	176	261	72	74	27	10	2	44
RTOR Reduction (vph)	0	0	46	0	0	153	0	8	0	0	0	42
Lane Group Flow (vph)	196	447	58	17	176	108	0	165	0	0	12	2
Heavy Vehicles (%)	10%	10%	10%	18%	18%	18%	17%	17%	17%	39%	39%	39%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	16.4	51.9	51.9	3.1	38.6	38.6		14.4			4.6	4.6
Effective Green, g (s)	16.4	51.9	51.9	3.1	38.6	38.6		14.4			4.6	4.6
Actuated g/C Ratio	0.18	0.56	0.56	0.03	0.41	0.41		0.15			0.05	0.05
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	288	959	815	51	665	565		240			65	57
v/s Ratio Prot	c0.12	c0.26		0.01	0.11			c0.11			c0.01	
v/s Ratio Perm			0.04			0.08						0.00
v/c Ratio	0.68	0.47	0.07	0.33	0.26	0.19		0.69			0.18	0.04
Uniform Delay, d1	36.1	12.5	9.6	44.2	18.1	17.5		37.4			42.7	42.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	6.5	1.6	0.2	3.8	1.0	0.7		8.0			1.4	0.3
Delay (s)	42.6	14.1	9.8	48.0	19.1	18.2		45.4			44.0	42.6
Level of Service	D	B	A	D	B	B		D			D	D
Approach Delay (s)		21.0			19.7			45.4			42.9	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

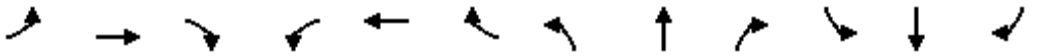


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	17	30	0	507	24	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	33	0	551	26	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				776		
pX, platoon unblocked						
vC, conflicting volume	577	26	26			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	577	26	26			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	97	100			
cM capacity (veh/h)	478	1050	1588			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	51	551	26
Volume Left	18	0	0
Volume Right	33	0	0
cSH	733	1700	1700
Volume to Capacity	0.07	0.32	0.02
Queue Length 95th (ft)	6	0	0
Control Delay (s)	10.3	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.3	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

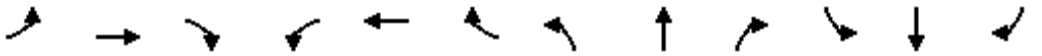
SCENARIO 4: EXISTING PLUS APPROVED PROJECTS WITH PROJECT



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	662	2	8	797	491	1	0	3	311	0	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0		4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (prot)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2981	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (perm)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2981	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	720	2	9	866	534	1	0	3	338	0	74
RTOR Reduction (vph)	0	0	1	0	0	281	0	0	0	0	37	0
Lane Group Flow (vph)	54	720	1	9	866	253	1	0	3	169	206	0
Heavy Vehicles (%)	25%	25%	25%	11%	11%	11%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	8.3	29.8	29.8	4.2	25.7	25.7	5.8		75.1	14.3	14.3	
Effective Green, g (s)	8.3	29.8	29.8	4.2	25.7	25.7	5.8		75.1	14.3	14.3	
Actuated g/C Ratio	0.11	0.40	0.40	0.06	0.34	0.34	0.08		1.00	0.19	0.19	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0			5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)	160	1647	513	176	1599	498	270		1615	292	568	
v/s Ratio Prot	c0.04	c0.17		0.00	c0.19		c0.00			c0.11	0.07	
v/s Ratio Perm			0.00			0.17			0.00			
v/c Ratio	0.34	0.44	0.00	0.05	0.54	0.51	0.00		0.00	0.58	0.36	
Uniform Delay, d1	30.9	16.5	13.7	33.6	19.9	19.7	32.0		0.0	27.7	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.2	0.0	0.1	0.4	0.8	0.0		0.0	2.8	0.4	
Delay (s)	32.1	16.7	13.7	33.7	20.3	20.5	32.0		0.0	30.4	26.8	
Level of Service	C	B	B	C	C	C	C		A	C	C	
Approach Delay (s)		17.8			20.5			8.0			28.3	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	27.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

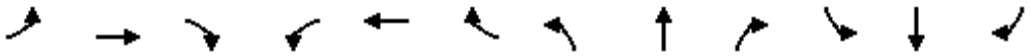
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	257	509	190	349	346	352	390	0	596	748	0	567
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	553	207	379	376	383	424	0	648	813	0	616
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	0	0
Lane Group Flow (vph)	279	553	207	379	376	383	424	0	638	813	0	616
Heavy Vehicles (%)	18%	18%	18%	28%	28%	28%	13%	13%	13%	11%	11%	11%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	13.8	23.0	119.5	48.4	57.6	119.5	29.6		48.4	29.6		119.5
Effective Green, g (s)	13.8	23.0	119.5	48.4	57.6	119.5	29.6		48.4	29.6		119.5
Actuated g/C Ratio	0.12	0.19	1.00	0.41	0.48	1.00	0.25		0.41	0.25		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	343	589	1369	1108	1359	1262	768		579	781		1455
v/s Ratio Prot	0.09	c0.18		0.14	0.13		0.14			c0.26		
v/s Ratio Perm			0.15			0.30			c0.45			0.42
v/c Ratio	0.81	0.94	0.15	0.34	0.28	0.30	0.55		1.10	1.04		0.42
Uniform Delay, d1	51.6	47.6	0.0	24.6	18.5	0.0	39.2		35.6	45.0		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	13.0	22.6	0.2	0.1	0.1	0.6	0.5		68.3	43.3		0.9
Delay (s)	64.6	70.2	0.2	24.6	18.6	0.6	39.7		103.9	88.3		0.9
Level of Service	E	E	A	C	B	A	D		F	F		A
Approach Delay (s)		54.8			14.5			78.5			50.6	
Approach LOS		D			B			E			D	

Intersection Summary			
HCM Average Control Delay	49.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	18.5
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

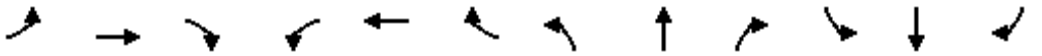
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	236	1442	173	31	694	38	133	25	46	26	39	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1556	3062		1228	3501		1626	1545		1556	1429	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1556	3062		1228	3501		1626	1545		1556	1429	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	257	1567	188	34	754	41	145	27	50	28	42	236
RTOR Reduction (vph)	0	6	0	0	4	0	0	41	0	0	195	0
Lane Group Flow (vph)	257	1749	0	34	791	0	145	36	0	28	83	0
Heavy Vehicles (%)	16%	16%	16%	47%	47%	47%	11%	11%	11%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	20.6	59.1		3.9	42.4		8.1	18.7		3.4	14.0	
Effective Green, g (s)	20.6	59.1		3.9	42.4		8.1	18.7		3.4	14.0	
Actuated g/C Ratio	0.20	0.57		0.04	0.41		0.08	0.18		0.03	0.14	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	309	1745		46	1431		127	279		51	193	
v/s Ratio Prot	c0.17	c0.57		0.03	0.23		c0.09	0.02		0.02	c0.06	
v/s Ratio Perm												
v/c Ratio	0.83	1.00		0.74	0.55		1.14	0.13		0.55	0.43	
Uniform Delay, d1	39.9	22.3		49.4	23.4		47.8	35.7		49.4	41.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.1	22.0		46.3	0.5		123.0	0.2		11.5	1.6	
Delay (s)	57.0	44.3		95.7	23.9		170.8	35.9		60.9	42.7	
Level of Service	E	D		F	C		F	D		E	D	
Approach Delay (s)		45.9			26.8			124.0			44.4	
Approach LOS		D			C			F			D	

Intersection Summary			
HCM Average Control Delay	46.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	103.7	Sum of lost time (s)	18.6
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	337	102	142	200	0	63	0	196	1	24	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.97		1.00	1.00			0.90			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (prot)		1573		1641	1727			1491			1693	1442
Flt Permitted		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (perm)		1573		1641	1727			1491			1693	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	366	111	154	217	0	68	0	213	1	26	123
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	0	113
Lane Group Flow (vph)	0	468	0	154	217	0	0	281	0	0	27	10
Heavy Vehicles (%)	17%	17%	17%	10%	10%	10%	13%	13%	13%	12%	12%	12%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		33.4		14.2	51.7			20.4			7.6	7.6
Effective Green, g (s)		33.4		14.2	51.7			20.4			7.6	7.6
Actuated g/C Ratio		0.35		0.15	0.55			0.22			0.08	0.08
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		555		246	944			322			136	116
v/s Ratio Prot		c0.30		c0.09	0.13			c0.19			c0.02	
v/s Ratio Perm												0.01
v/c Ratio		0.84		0.63	0.23			0.87			0.20	0.09
Uniform Delay, d1		28.2		37.7	11.1			35.8			40.7	40.3
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		11.2		4.9	0.1			21.9			0.7	0.3
Delay (s)		39.4		42.6	11.3			57.8			41.4	40.6
Level of Service		D		D	B			E			D	D
Approach Delay (s)		39.4			24.3			57.8			40.7	
Approach LOS		D			C			E			D	

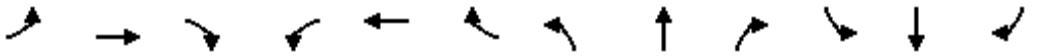
Intersection Summary			
HCM Average Control Delay	39.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	94.6	Sum of lost time (s)	19.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	424	103	67	212	134	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1597	1357	1517	1597	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1597	1357	1517	1597	1530	1369
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	461	112	73	230	146	458
RTOR Reduction (vph)	0	0	0	0	0	385
Lane Group Flow (vph)	461	112	73	230	146	73
Heavy Vehicles (%)	19%	19%	19%	19%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	55.6	94.3	8.8	69.0	15.0	15.0
Effective Green, g (s)	55.6	94.3	8.8	69.0	15.0	15.0
Actuated g/C Ratio	0.59	1.00	0.09	0.73	0.16	0.16
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	942	1357	142	1169	243	218
v/s Ratio Prot	c0.29		c0.05	0.14	c0.10	
v/s Ratio Perm		0.08				0.05
v/c Ratio	0.49	0.08	0.51	0.20	0.60	0.33
Uniform Delay, d1	11.2	0.0	40.7	4.0	36.9	35.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.1	3.1	0.4	4.1	0.9
Delay (s)	13.0	0.1	43.8	4.3	41.0	36.1
Level of Service	B	A	D	A	D	D
Approach Delay (s)	10.5			13.9	37.3	
Approach LOS	B			B	D	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

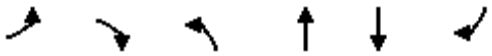
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	182	560	95	24	227	456	33	40	15	19	4	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1504	1583	1346	1517	1597	1357		1571			1200	1062
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1504	1583	1346	1517	1597	1357		1571			1200	1062
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	198	609	103	26	247	496	36	43	16	21	4	23
RTOR Reduction (vph)	0	0	37	0	0	273	0	9	0	0	0	22
Lane Group Flow (vph)	198	609	66	26	247	223	0	86	0	0	25	1
Heavy Vehicles (%)	20%	20%	20%	19%	19%	19%	16%	16%	16%	52%	52%	52%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	17.5	56.2	56.2	3.4	42.1	42.1		9.2			5.2	5.2
Effective Green, g (s)	17.5	56.2	56.2	3.4	42.1	42.1		9.2			5.2	5.2
Actuated g/C Ratio	0.19	0.60	0.60	0.04	0.45	0.45		0.10			0.06	0.06
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	281	951	809	55	719	611		155			67	59
v/s Ratio Prot	c0.13	c0.38		0.02	0.15			c0.05			c0.02	
v/s Ratio Perm			0.05			0.16						0.00
v/c Ratio	0.70	0.64	0.08	0.47	0.34	0.37		0.55			0.37	0.02
Uniform Delay, d1	35.6	12.1	7.8	44.2	16.7	16.9		40.2			42.6	41.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	7.8	3.3	0.2	6.3	1.3	1.7		4.3			3.5	0.1
Delay (s)	43.4	15.4	8.0	50.5	18.0	18.6		44.4			46.1	41.9
Level of Service	D	B	A	D	B	B		D			D	D
Approach Delay (s)		20.7			19.5			44.4			44.1	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

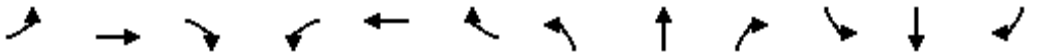
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	31	29	0	682	13	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	32	0	741	14	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				770		
pX, platoon unblocked						
vC, conflicting volume	755	14	14			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	755	14	14			
tC, single (s)	6.7	6.5	4.3			
tC, 2 stage (s)						
tF (s)	3.8	3.6	2.4			
p0 queue free %	90	97	100			
cM capacity (veh/h)	340	992	1506			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	65	741	14
Volume Left	34	0	0
Volume Right	32	0	0
cSH	498	1700	1700
Volume to Capacity	0.13	0.44	0.01
Queue Length 95th (ft)	11	0	0
Control Delay (s)	13.3	0.0	0.0
Lane LOS	B		
Approach Delay (s)	13.3	0.0	0.0
Approach LOS	B		

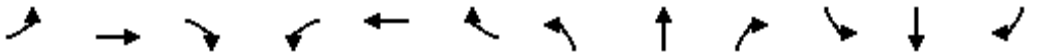
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	733	5	3	706	192	5	3	9	356	1	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (prot)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3015	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (perm)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3015	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	797	5	3	767	209	5	3	10	387	1	49
RTOR Reduction (vph)	0	0	3	0	0	119	0	0	0	0	19	0
Lane Group Flow (vph)	26	797	2	3	767	90	5	3	10	193	225	0
Heavy Vehicles (%)	13%	13%	13%	17%	17%	17%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	6.7	22.6	22.6	4.1	20.0	20.0	5.8	5.8	68.2	14.7	14.7	
Effective Green, g (s)	6.7	22.6	22.6	4.1	20.0	20.0	5.8	5.8	68.2	14.7	14.7	
Actuated g/C Ratio	0.10	0.33	0.33	0.06	0.29	0.29	0.09	0.09	1.00	0.22	0.22	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	157	1521	474	180	1300	405	298	307	1615	331	650	
v/s Ratio Prot	c0.02	c0.17		0.00	c0.17		c0.00	0.00		c0.13	0.07	
v/s Ratio Perm			0.00			0.06			0.01			
v/c Ratio	0.17	0.52	0.00	0.02	0.59	0.22	0.02	0.01	0.01	0.58	0.35	
Uniform Delay, d1	28.2	18.4	15.3	30.2	20.6	18.2	28.6	28.6	0.0	24.0	22.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.3	0.0	0.0	0.7	0.3	0.0	0.0	0.0	2.6	0.3	
Delay (s)	28.7	18.8	15.3	30.2	21.3	18.5	28.6	28.6	0.0	26.6	23.0	
Level of Service	C	B	B	C	C	B	C	C	A	C	C	
Approach Delay (s)		19.1			20.7			12.7			24.6	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	27.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

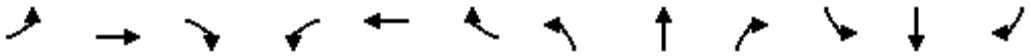
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	417	368	306	708	569	772	132	0	358	346	0	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	434	383	319	738	593	804	138	0	373	360	0	207
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	85	0	0	0
Lane Group Flow (vph)	434	383	319	738	593	804	138	0	288	360	0	207
Heavy Vehicles (%)	10%	10%	10%	12%	12%	12%	13%	13%	13%	19%	19%	19%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	12.8	13.4	63.5	19.8	20.4	63.5	11.8		19.8	11.8		63.5
Effective Green, g (s)	12.8	13.4	63.5	19.8	20.4	63.5	11.8		19.8	11.8		63.5
Actuated g/C Ratio	0.20	0.21	1.00	0.31	0.32	1.00	0.19		0.31	0.19		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	642	693	1468	975	1035	1442	576		446	547		1357
v/s Ratio Prot	0.14	0.12		c0.24	0.18		0.04			0.12		
v/s Ratio Perm			0.22			c0.56			0.20			0.15
v/c Ratio	0.68	0.55	0.22	0.76	0.57	0.56	0.24		0.64	0.66		0.15
Uniform Delay, d1	23.4	22.4	0.0	19.7	17.9	0.0	22.0		18.8	24.0		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	2.2	0.6	0.3	3.0	0.5	1.6	0.1		2.4	2.2		0.2
Delay (s)	25.7	23.0	0.3	22.7	18.5	1.6	22.1		21.2	26.2		0.2
Level of Service	C	C	A	C	B	A	C		C	C		A
Approach Delay (s)		17.7			13.6			21.5			16.7	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	5.6
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

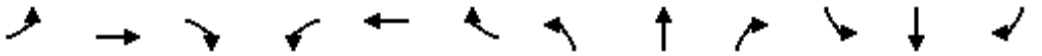
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	774	133	33	1688	62	133	31	31	18	32	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1444	2824		1543	4410		1612	1569		1556	1424	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1444	2824		1543	4410		1612	1569		1556	1424	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	841	145	36	1835	67	145	34	34	20	35	240
RTOR Reduction (vph)	0	10	0	0	3	0	0	26	0	0	140	0
Lane Group Flow (vph)	170	976	0	36	1899	0	145	42	0	20	135	0
Heavy Vehicles (%)	25%	25%	25%	17%	17%	17%	12%	12%	12%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	13.1	60.6		2.9	50.4		10.1	25.5		2.2	17.6	
Effective Green, g (s)	13.1	60.6		2.9	50.4		10.1	25.5		2.2	17.6	
Actuated g/C Ratio	0.12	0.55		0.03	0.46		0.09	0.23		0.02	0.16	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	172	1559		41	2024		148	364		31	228	
v/s Ratio Prot	c0.12	0.35		0.02	c0.43		c0.09	0.03		0.01	c0.09	
v/s Ratio Perm												
v/c Ratio	0.99	0.63		0.88	0.94		0.98	0.12		0.65	0.59	
Uniform Delay, d1	48.3	16.8		53.3	28.2		49.7	33.2		53.4	42.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	64.6	0.8		92.9	9.1		67.0	0.1		37.9	4.1	
Delay (s)	112.8	17.6		146.2	37.3		116.8	33.4		91.3	46.8	
Level of Service	F	B		F	D		F	C		F	D	
Approach Delay (s)		31.6			39.3			90.2			49.8	
Approach LOS		C			D			F			D	

Intersection Summary			
HCM Average Control Delay	40.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	109.8	Sum of lost time (s)	18.6
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	386	77	136	335	0	88	0	199	2	14	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.98		1.00	1.00			0.91			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98			0.99	1.00
Satd. Flow (prot)		1720		1583	1667			1501			1548	1324
Flt Permitted		1.00		0.95	1.00			0.98			0.99	1.00
Satd. Flow (perm)		1720		1583	1667			1501			1548	1324
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	406	81	143	353	0	93	0	209	2	15	105
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	0	97
Lane Group Flow (vph)	0	481	0	143	353	0	0	302	0	0	17	8
Heavy Vehicles (%)	8%	8%	8%	14%	14%	14%	13%	13%	13%	22%	22%	22%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		30.8		13.8	48.7			20.5			7.4	7.4
Effective Green, g (s)		30.8		13.8	48.7			20.5			7.4	7.4
Actuated g/C Ratio		0.34		0.15	0.53			0.22			0.08	0.08
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		579		239	887			336			125	107
v/s Ratio Prot		c0.28		c0.09	0.21			c0.20			c0.01	
v/s Ratio Perm												0.01
v/c Ratio		0.83		0.60	0.40			0.90			0.14	0.08
Uniform Delay, d1		28.0		36.3	12.7			34.5			39.1	38.9
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		9.8		4.0	0.3			25.2			0.5	0.3
Delay (s)		37.8		40.3	13.0			59.7			39.6	39.2
Level of Service		D		D	B			E			D	D
Approach Delay (s)		37.8			20.9			59.7			39.3	
Approach LOS		D			C			E			D	

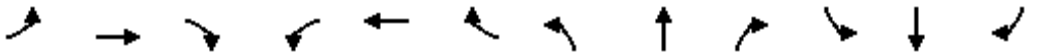
Intersection Summary			
HCM Average Control Delay	36.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	91.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	405	179	63	348	121	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1743	1482	1480	1557	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1743	1482	1480	1557	1530	1369
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	435	192	68	374	130	511
RTOR Reduction (vph)	0	0	0	0	0	431
Lane Group Flow (vph)	435	192	68	374	130	80
Heavy Vehicles (%)	9%	9%	22%	22%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	56.1	94.3	8.6	69.3	14.7	14.7
Effective Green, g (s)	56.1	94.3	8.6	69.3	14.7	14.7
Actuated g/C Ratio	0.59	1.00	0.09	0.73	0.16	0.16
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1037	1482	135	1144	239	213
v/s Ratio Prot	c0.25		c0.05	0.24	c0.08	
v/s Ratio Perm		0.13				0.06
v/c Ratio	0.42	0.13	0.50	0.33	0.54	0.37
Uniform Delay, d1	10.3	0.0	40.8	4.4	36.7	35.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.2	2.9	0.8	2.5	1.1
Delay (s)	11.6	0.2	43.8	5.1	39.2	36.8
Level of Service	B	A	D	A	D	D
Approach Delay (s)	8.1			11.1	37.3	
Approach LOS	A			B	D	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

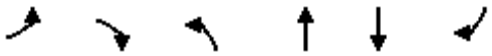
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	609	100	16	299	435	69	71	26	10	2	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1641	1727	1468	1530	1610	1369		1557			1312	1162
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1641	1727	1468	1530	1610	1369		1557			1312	1162
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	196	634	104	17	311	453	72	74	27	10	2	46
RTOR Reduction (vph)	0	0	40	0	0	266	0	8	0	0	0	44
Lane Group Flow (vph)	196	634	64	17	311	187	0	165	0	0	12	2
Heavy Vehicles (%)	10%	10%	10%	18%	18%	18%	17%	17%	17%	39%	39%	39%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	16.4	51.8	51.8	3.1	38.5	38.5		14.4			4.7	4.7
Effective Green, g (s)	16.4	51.8	51.8	3.1	38.5	38.5		14.4			4.7	4.7
Actuated g/C Ratio	0.18	0.55	0.55	0.03	0.41	0.41		0.15			0.05	0.05
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	288	957	813	51	663	564		240			66	58
v/s Ratio Prot	c0.12	c0.37		0.01	0.19			c0.11			c0.01	
v/s Ratio Perm			0.04			0.14						0.00
v/c Ratio	0.68	0.66	0.08	0.33	0.47	0.33		0.69			0.18	0.04
Uniform Delay, d1	36.1	14.7	9.7	44.2	20.0	18.7		37.4			42.6	42.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	6.5	3.6	0.2	3.8	2.4	1.6		8.0			1.3	0.3
Delay (s)	42.6	18.3	9.9	48.0	22.4	20.3		45.4			43.9	42.5
Level of Service	D	B	A	D	C	C		D			D	D
Approach Delay (s)		22.5			21.7			45.4			42.8	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	17	32	0	692	24	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	35	0	752	26	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				776		
pX, platoon unblocked						
vC, conflicting volume	778	26	26			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	778	26	26			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	97	100			
cM capacity (veh/h)	365	1050	1588			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	53	752	26
Volume Left	18	0	0
Volume Right	35	0	0
cSH	636	1700	1700
Volume to Capacity	0.08	0.44	0.02
Queue Length 95th (ft)	7	0	0
Control Delay (s)	11.2	0.0	0.0
Lane LOS	B		
Approach Delay (s)	11.2	0.0	0.0
Approach LOS	B		

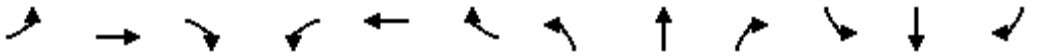
Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

SCENARIO 4: EXISTING PLUS APPROVED PROJECTS WITH PROJECT WITH MITIGATION

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	340	100	170	320	70	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	4252	1295	1480	4252	1480	1324
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	4252	1295	1480	4252	1480	1324
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	370	109	185	348	76	217
RTOR Reduction (vph)	0	86	0	0	0	180
Lane Group Flow (vph)	370	23	185	348	76	37
Confl. Peds. (#/hr)		1				
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	10.3	10.3	11.7	28.0	8.3	8.3
Effective Green, g (s)	10.3	10.3	11.7	28.0	8.3	8.3
Actuated g/C Ratio	0.21	0.21	0.24	0.58	0.17	0.17
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	907	276	359	2465	254	228
v/s Ratio Prot	c0.09		c0.13	0.08		
v/s Ratio Perm		0.02			c0.05	0.03
v/c Ratio	0.41	0.08	0.52	0.14	0.30	0.16
Uniform Delay, d1	16.4	15.2	15.8	4.6	17.5	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	1.3	0.0	0.7	0.3
Delay (s)	16.7	15.4	17.1	4.7	18.1	17.4
Level of Service	B	B	B	A	B	B
Approach Delay (s)	16.4			9.0	17.6	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	430	110	0	350	0	0	0	0	430	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0		5.1					5.1	5.1	5.1
Lane Util. Factor		0.91	0.91		0.95					0.95	0.95	1.00
Frt		1.00	0.85		1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00					0.95	0.95	1.00
Satd. Flow (prot)		2824	1205		2959					1406	1406	1324
Flt Permitted		1.00	1.00		1.00					0.95	0.95	1.00
Satd. Flow (perm)		2824	1205		2959					1406	1406	1324
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	467	120	0	380	0	0	0	0	467	0	152
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	114
Lane Group Flow (vph)	0	478	108	0	380	0	0	0	0	233	234	38
Turn Type			Free							Split		Perm
Protected Phases		2			6					4	4	
Permitted Phases			Free									4
Actuated Green, G (s)		56.5	90.0		56.5					21.5	21.5	21.5
Effective Green, g (s)		57.4	90.0		57.4					22.4	22.4	22.4
Actuated g/C Ratio		0.64	1.00		0.64					0.25	0.25	0.25
Clearance Time (s)		6.0			6.0					6.0	6.0	6.0
Vehicle Extension (s)		3.2			3.2					3.2	3.2	3.2
Lane Grp Cap (vph)		1801	1205		1887					350	350	330
v/s Ratio Prot		c0.17			0.13					0.17	c0.17	
v/s Ratio Perm			0.09									0.03
v/c Ratio		0.27	0.09		0.20					0.67	0.67	0.11
Uniform Delay, d1		7.1	0.0		6.8					30.4	30.5	26.1
Progression Factor		1.00	1.00		0.29					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.1		0.1					4.8	4.9	0.2
Delay (s)		7.5	0.1		2.0					35.2	35.3	26.3
Level of Service		A	A		A					D	D	C
Approach Delay (s)		6.1			2.0			0.0			33.1	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	620	100	30	780	40	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4163		1480	4252	1480	1324
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4163		1480	4252	1480	1324
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	109	33	848	43	76
RTOR Reduction (vph)	30	0	0	0	0	39
Lane Group Flow (vph)	753	0	33	848	43	37
Turn Type			Prot			custom
Protected Phases	4		3	8		
Permitted Phases					2	2
Actuated Green, G (s)	23.5		5.2	34.7	43.3	43.3
Effective Green, g (s)	23.5		5.2	34.7	43.3	43.3
Actuated g/C Ratio	0.26		0.06	0.39	0.48	0.48
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1087		86	1639	712	637
v/s Ratio Prot	c0.18		0.02	c0.20		
v/s Ratio Perm					c0.03	0.03
v/c Ratio	0.69		0.38	0.52	0.06	0.06
Uniform Delay, d1	30.0		40.9	21.2	12.5	12.5
Progression Factor	0.67		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9		2.8	0.3	0.2	0.2
Delay (s)	22.0		43.7	21.5	12.6	12.6
Level of Service	C		D	C	B	B
Approach Delay (s)	22.0			22.3	12.6	
Approach LOS	C			C	B	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	670	0	0	270	550	150	0	50	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	4.0	5.1	5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			
Frt		1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		2959			2959	1324	1406	1406	1324			
Flt Permitted		1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		2959			2959	1324	1406	1406	1324			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	728	0	0	293	598	163	0	54	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	48	0	0	0
Lane Group Flow (vph)	0	728	0	0	293	598	81	82	6	0	0	0
Confl. Peds. (#/hr)												1
Turn Type						Free	Split		Perm			
Protected Phases		2			6		8	8				
Permitted Phases						Free			8			
Actuated Green, G (s)		68.5			68.5	90.0	9.5	9.5	9.5			
Effective Green, g (s)		69.4			69.4	90.0	10.4	10.4	10.4			
Actuated g/C Ratio		0.77			0.77	1.00	0.12	0.12	0.12			
Clearance Time (s)		6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)		3.2			3.2		3.2	3.2	3.2			
Lane Grp Cap (vph)		2282			2282	1324	162	162	153			
v/s Ratio Prot		0.25			0.10		0.06	0.06				
v/s Ratio Perm						c0.45			0.00			
v/c Ratio		0.32			0.13	0.45	0.50	0.51	0.04			
Uniform Delay, d1		3.1			2.6	0.0	37.4	37.4	35.4			
Progression Factor		0.43			0.47	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.4			0.1	1.1	2.6	2.7	0.1			
Delay (s)		1.7			1.4	1.1	40.0	40.0	35.5			
Level of Service		A			A	A	D	D	D			
Approach Delay (s)		1.7			1.2			38.9			0.0	
Approach LOS		A			A			D			A	

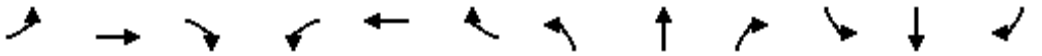
Intersection Summary			
HCM Average Control Delay	5.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	380	80	150	330	80	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	4322	1317	1504	4322	1504	1346
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	4322	1317	1504	4322	1504	1346
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	87	163	359	87	217
RTOR Reduction (vph)	0	64	0	0	0	169
Lane Group Flow (vph)	413	23	163	359	87	48
Confl. Peds. (#/hr)		1				
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	10.2	10.2	8.0	22.2	8.5	8.5
Effective Green, g (s)	10.2	10.2	8.0	22.2	8.5	8.5
Actuated g/C Ratio	0.26	0.26	0.21	0.57	0.22	0.22
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1139	347	311	2479	330	296
v/s Ratio Prot	c0.10		c0.11	0.08		
v/s Ratio Perm		0.02			c0.06	0.04
v/c Ratio	0.36	0.07	0.52	0.14	0.26	0.16
Uniform Delay, d1	11.6	10.7	13.7	3.8	12.5	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	1.6	0.0	0.4	0.3
Delay (s)	11.8	10.8	15.3	3.9	12.9	12.5
Level of Service	B	B	B	A	B	B
Approach Delay (s)	11.6			7.4	12.6	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

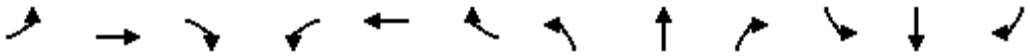


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	400	180	0	360	0	0	0	0	480	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0					4.0	4.0	4.0
Lane Util. Factor		0.91	0.91		0.95					0.95	0.95	1.00
Frt		0.99	0.85		1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00					0.95	0.95	1.00
Satd. Flow (prot)		2863	1225		3008					1429	1429	1346
Flt Permitted		1.00	1.00		1.00					0.95	0.95	1.00
Satd. Flow (perm)		2863	1225		3008					1429	1429	1346
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	435	196	0	391	0	0	0	0	522	0	130
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	95
Lane Group Flow (vph)	0	453	176	0	391	0	0	0	0	261	261	35
Turn Type			Free							Split		Perm
Protected Phases		2			6					4	4	
Permitted Phases			Free									4
Actuated Green, G (s)		56.8	90.0		56.8					23.4	23.4	23.4
Effective Green, g (s)		57.7	90.0		57.7					24.3	24.3	24.3
Actuated g/C Ratio		0.64	1.00		0.64					0.27	0.27	0.27
Clearance Time (s)		4.9			4.9					4.9	4.9	4.9
Vehicle Extension (s)		3.2			3.2					3.2	3.2	3.2
Lane Grp Cap (vph)		1836	1225		1928					386	386	363
v/s Ratio Prot		c0.16			0.13					c0.18	0.18	
v/s Ratio Perm			0.14									0.03
v/c Ratio		0.25	0.14		0.20					0.68	0.68	0.10
Uniform Delay, d1		6.9	0.0		6.7					29.3	29.3	24.6
Progression Factor		1.00	1.00		0.22					1.00	1.00	1.00
Incremental Delay, d2		0.3	0.2		0.1					4.7	4.7	0.1
Delay (s)		7.2	0.2		1.5					34.1	34.1	24.7
Level of Service		A	A		A					C	C	C
Approach Delay (s)		5.3			1.5			0.0			32.2	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	570	100	20	700	70	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4226		1504	4322	1504	1346
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4226		1504	4322	1504	1346
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	620	109	22	761	76	71
RTOR Reduction (vph)	36	0	0	0	0	29
Lane Group Flow (vph)	693	0	22	761	76	42
Turn Type			Prot			custom
Protected Phases	4		3	8		
Permitted Phases					2	2
Actuated Green, G (s)	22.0		3.3	29.3	52.7	52.7
Effective Green, g (s)	22.0		3.3	29.3	52.7	52.7
Actuated g/C Ratio	0.24		0.04	0.33	0.59	0.59
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1033		55	1407	881	788
v/s Ratio Prot	c0.16		0.01	c0.18		
v/s Ratio Perm					c0.05	0.03
v/c Ratio	0.67		0.40	0.54	0.09	0.05
Uniform Delay, d1	30.7		42.4	24.8	8.1	8.0
Progression Factor	0.51		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7		4.7	0.4	0.2	0.1
Delay (s)	17.3		47.1	25.3	8.3	8.1
Level of Service	B		D	C	A	A
Approach Delay (s)	17.3			25.9	8.2	
Approach LOS	B			C	A	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	620	0	0	310	460	120	0	50	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor		0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			
Frt		1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		3008			3008	1346	1429	1429	1346			
Flt Permitted		1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		3008			3008	1346	1429	1429	1346			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	674	0	0	337	500	130	0	54	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	48	0	0	0
Lane Group Flow (vph)	0	674	0	0	337	500	65	65	6	0	0	0
Confl. Peds. (#/hr)												1
Turn Type						Free	Split		Perm			
Protected Phases		2			6		8	8				
Permitted Phases						Free			8			
Actuated Green, G (s)		71.7			71.7	90.0	8.5	8.5	8.5			
Effective Green, g (s)		72.6			72.6	90.0	9.4	9.4	9.4			
Actuated g/C Ratio		0.81			0.81	1.00	0.10	0.10	0.10			
Clearance Time (s)		4.9			4.9		4.9	4.9	4.9			
Vehicle Extension (s)		3.2			3.2		3.2	3.2	3.2			
Lane Grp Cap (vph)		2426			2426	1346	149	149	141			
v/s Ratio Prot		0.22			0.11		0.05	0.05				
v/s Ratio Perm						c0.37			0.00			
v/c Ratio		0.28			0.14	0.37	0.44	0.44	0.04			
Uniform Delay, d1		2.2			1.9	0.0	37.8	37.8	36.2			
Progression Factor		2.21			0.10	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.3			0.1	0.8	2.2	2.2	0.1			
Delay (s)		5.1			0.3	0.8	40.0	40.0	36.4			
Level of Service		A			A	A	D	D	D			
Approach Delay (s)		5.1			0.6			38.9			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

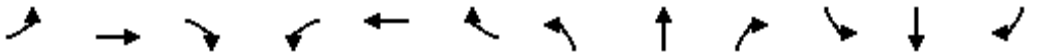
c Critical Lane Group

PROJECT ALTERNATIVE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	445	2	8	707	475	1	0	3	300	0	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0		4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (prot)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2982	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (perm)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2982	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	54	524	2	9	832	559	1	0	4	353	0	76
RTOR Reduction (vph)	0	0	1	0	0	171	0	0	0	0	25	0
Lane Group Flow (vph)	54	524	1	9	832	388	1	0	4	176	228	0
Heavy Vehicles (%)	25%	25%	25%	11%	11%	11%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	9.5	37.6	37.6	6.1	34.2	34.2	5.8		87.5	17.0	17.0	
Effective Green, g (s)	9.5	37.6	37.6	6.1	34.2	34.2	5.8		87.5	17.0	17.0	
Actuated g/C Ratio	0.11	0.43	0.43	0.07	0.39	0.39	0.07		1.00	0.19	0.19	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0			5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)	157	1783	555	220	1826	569	232		1615	298	579	
v/s Ratio Prot	c0.04	c0.13		0.00	0.18		0.00			c0.11	0.08	
v/s Ratio Perm			0.00			c0.27			c0.00			
v/c Ratio	0.34	0.29	0.00	0.04	0.46	0.68	0.00		0.00	0.59	0.39	
Uniform Delay, d1	36.1	16.3	14.2	38.0	19.8	22.1	38.2		0.0	32.1	30.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.1	0.0	0.1	0.2	3.4	0.0		0.0	3.1	0.4	
Delay (s)	37.4	16.4	14.2	38.0	19.9	25.5	38.2		0.0	35.2	31.2	
Level of Service	D	B	B	D	B	C	D		A	D	C	
Approach Delay (s)		18.3			22.3			7.6			32.8	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	22.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	309	179	262	283	322	373	0	361	603	0	541
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	282	364	211	308	333	379	439	0	425	709	0	636
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	115	0	0	0
Lane Group Flow (vph)	282	364	211	308	333	379	439	0	310	709	0	636
Heavy Vehicles (%)	18%	18%	18%	28%	28%	28%	13%	13%	13%	11%	11%	11%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	9.4	13.3	69.5	18.1	22.0	69.5	19.6		18.1	19.6		69.5
Effective Green, g (s)	9.4	13.3	69.5	18.1	22.0	69.5	19.6		18.1	19.6		69.5
Actuated g/C Ratio	0.14	0.19	1.00	0.26	0.32	1.00	0.28		0.26	0.28		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	401	585	1369	713	893	1262	874		372	890		1455
v/s Ratio Prot	0.10	0.12		0.11	0.12		0.14			c0.22		
v/s Ratio Perm			0.15			0.30			c0.22			c0.44
v/c Ratio	0.70	0.62	0.15	0.43	0.37	0.30	0.50		0.83	0.80		0.44
Uniform Delay, d1	28.7	25.8	0.0	21.4	18.4	0.0	20.9		24.3	23.1		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	4.5	1.6	0.2	0.2	0.1	0.6	0.2		14.1	4.7		1.0
Delay (s)	33.2	27.4	0.2	21.6	18.5	0.6	21.0		38.3	27.8		1.0
Level of Service	C	C	A	C	B	A	C		D	C		A
Approach Delay (s)		22.6			12.8			29.5			15.1	
Approach LOS		C			B			C			B	

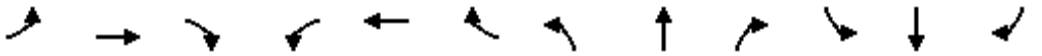
Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	69.5	Sum of lost time (s)	11.2
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	228	869	172	28	521	37	132	24	43	25	39	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1556	3035		1228	3493		1626	1546		1556	1431	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1556	3035		1228	3493		1626	1546		1556	1431	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	251	955	189	31	573	41	145	26	47	27	43	232
RTOR Reduction (vph)	0	12	0	0	7	0	0	33	0	0	161	0
Lane Group Flow (vph)	251	1132	0	31	607	0	145	40	0	27	114	0
Heavy Vehicles (%)	16%	16%	16%	47%	47%	47%	11%	11%	11%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	20.2	40.5		5.0	25.3		13.8	27.1		2.9	16.2	
Effective Green, g (s)	20.2	40.5		5.0	25.3		13.8	27.1		2.9	16.2	
Actuated g/C Ratio	0.21	0.43		0.05	0.27		0.15	0.29		0.03	0.17	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	334	1306		65	939		238	445		48	246	
v/s Ratio Prot	c0.16	c0.37		0.03	0.17		c0.09	0.03		0.02	c0.08	
v/s Ratio Perm												
v/c Ratio	0.75	0.87		0.48	0.65		0.61	0.09		0.56	0.46	
Uniform Delay, d1	34.6	24.3		43.3	30.4		37.6	24.5		45.0	35.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.2	6.3		5.4	1.5		4.4	0.1		14.2	1.4	
Delay (s)	43.8	30.6		48.7	32.0		42.0	24.6		59.2	36.4	
Level of Service	D	C		D	C		D	C		E	D	
Approach Delay (s)		33.0			32.8			36.2			38.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	18.6
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	271	98	142	170	0	61	0	196	1	24	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.96		1.00	1.00			0.90			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (prot)		1566		1641	1727			1491			1694	1442
Flt Permitted		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (perm)		1566		1641	1727			1491			1694	1442
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	319	115	167	200	0	72	0	231	1	28	133
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	0	122
Lane Group Flow (vph)	0	423	0	167	200	0	0	303	0	0	29	11
Heavy Vehicles (%)	17%	17%	17%	10%	10%	10%	13%	13%	13%	12%	12%	12%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		30.0		14.6	48.7			20.5			7.7	7.7
Effective Green, g (s)		30.0		14.6	48.7			20.5			7.7	7.7
Actuated g/C Ratio		0.33		0.16	0.53			0.22			0.08	0.08
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		512		261	916			333			142	121
v/s Ratio Prot		c0.27		c0.10	0.12			c0.20			c0.02	
v/s Ratio Perm												0.01
v/c Ratio		0.83		0.64	0.22			0.91			0.20	0.09
Uniform Delay, d1		28.5		36.1	11.4			34.7			39.2	38.8
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		10.5		5.1	0.1			27.4			0.7	0.3
Delay (s)		39.0		41.2	11.6			62.1			39.9	39.2
Level of Service		D		D	B			E			D	D
Approach Delay (s)		39.0			25.1			62.1			39.3	
Approach LOS		D			C			E			D	

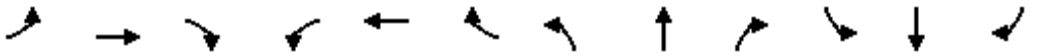
Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	329	103	71	182	134	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1597	1357	1517	1597	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1597	1357	1517	1597	1530	1369
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	387	121	84	214	158	365
RTOR Reduction (vph)	0	0	0	0	0	306
Lane Group Flow (vph)	387	121	84	214	158	59
Heavy Vehicles (%)	19%	19%	19%	19%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	54.9	94.3	9.3	68.8	15.2	15.2
Effective Green, g (s)	54.9	94.3	9.3	68.8	15.2	15.2
Actuated g/C Ratio	0.58	1.00	0.10	0.73	0.16	0.16
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	930	1357	150	1165	247	221
v/s Ratio Prot	c0.24		c0.06	0.13	c0.10	
v/s Ratio Perm		0.09				0.04
v/c Ratio	0.42	0.09	0.56	0.18	0.64	0.27
Uniform Delay, d1	10.9	0.0	40.5	4.0	37.0	34.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1	4.7	0.3	5.4	0.6
Delay (s)	12.2	0.1	45.3	4.3	42.3	35.3
Level of Service	B	A	D	A	D	D
Approach Delay (s)	9.4			15.9	37.4	
Approach LOS	A			B	D	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

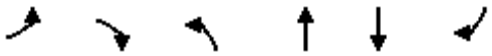
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	182	362	88	22	186	406	30	39	13	30	4	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1504	1583	1346	1517	1597	1357		1574			1198	1062
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1504	1583	1346	1517	1597	1357		1574			1198	1062
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	207	411	100	25	211	461	34	44	15	34	5	44
RTOR Reduction (vph)	0	0	42	0	0	267	0	8	0	0	0	40
Lane Group Flow (vph)	207	411	58	25	211	194	0	85	0	0	39	4
Heavy Vehicles (%)	20%	20%	20%	19%	19%	19%	16%	16%	16%	52%	52%	52%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	18.0	53.9	53.9	3.4	39.3	39.3		9.1			7.6	7.6
Effective Green, g (s)	18.0	53.9	53.9	3.4	39.3	39.3		9.1			7.6	7.6
Actuated g/C Ratio	0.19	0.58	0.58	0.04	0.42	0.42		0.10			0.08	0.08
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	290	913	776	55	671	570		153			97	86
v/s Ratio Prot	c0.14	c0.26		0.02	0.13			c0.05			c0.03	
v/s Ratio Perm			0.04			0.14						0.00
v/c Ratio	0.71	0.45	0.07	0.45	0.31	0.34		0.55			0.40	0.04
Uniform Delay, d1	35.3	11.3	8.8	44.1	18.1	18.3		40.3			40.8	39.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	8.1	1.6	0.2	5.9	1.2	1.6		4.3			2.7	0.2
Delay (s)	43.4	12.9	8.9	50.0	19.3	19.9		44.6			43.5	39.8
Level of Service	D	B	A	D	B	B		D			D	D
Approach Delay (s)		21.2			20.8			44.6			41.5	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

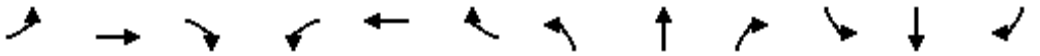
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	26	59	0	631	13	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	30	67	0	717	15	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				770		
pX, platoon unblocked						
vC, conflicting volume	732	15	15			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	732	15	15			
tC, single (s)	6.7	6.5	4.3			
tC, 2 stage (s)						
tF (s)	3.8	3.6	2.4			
p0 queue free %	92	93	100			
cM capacity (veh/h)	351	992	1505			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	97	717	15
Volume Left	30	0	0
Volume Right	67	0	0
cSH	637	1700	1700
Volume to Capacity	0.15	0.42	0.01
Queue Length 95th (ft)	13	0	0
Control Delay (s)	11.7	0.0	0.0
Lane LOS	B		
Approach Delay (s)	11.7	0.0	0.0
Approach LOS	B		

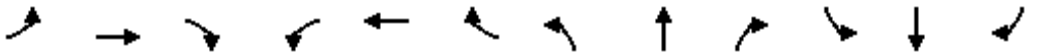
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	626	5	3	483	180	5	3	9	336	1	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (prot)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3017	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (perm)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3017	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	23	728	6	3	562	209	6	3	10	391	1	47
RTOR Reduction (vph)	0	0	3	0	0	115	0	0	0	0	11	0
Lane Group Flow (vph)	23	728	3	3	562	94	6	3	10	195	233	0
Heavy Vehicles (%)	13%	13%	13%	17%	17%	17%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	6.8	18.4	18.4	5.7	17.3	17.3	5.7	5.7	66.3	15.5	15.5	
Effective Green, g (s)	6.8	18.4	18.4	5.7	17.3	17.3	5.7	5.7	66.3	15.5	15.5	
Actuated g/C Ratio	0.10	0.28	0.28	0.09	0.26	0.26	0.09	0.09	1.00	0.23	0.23	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	1274	397	257	1157	360	301	310	1615	359	705	
v/s Ratio Prot	c0.01	c0.16		0.00	0.13		c0.00	0.00		c0.13	0.08	
v/s Ratio Perm			0.00			0.07			c0.01			
v/c Ratio	0.14	0.57	0.01	0.01	0.49	0.26	0.02	0.01	0.01	0.54	0.33	
Uniform Delay, d1	27.1	20.6	17.3	27.7	20.7	19.4	27.7	27.7	0.0	22.3	21.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.6	0.0	0.0	0.3	0.4	0.0	0.0	0.0	1.7	0.3	
Delay (s)	27.5	21.2	17.3	27.7	21.1	19.8	27.8	27.7	0.0	24.0	21.4	
Level of Service	C	C	B	C	C	B	C	C	A	C	C	
Approach Delay (s)		21.3			20.8			13.2			22.5	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

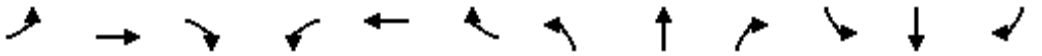
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	384	296	284	454	366	632	119	0	261	313	0	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	400	308	296	473	381	658	124	0	272	326	0	188
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	203	0	0	0
Lane Group Flow (vph)	400	308	296	473	381	658	124	0	69	326	0	188
Heavy Vehicles (%)	10%	10%	10%	12%	12%	12%	13%	13%	13%	19%	19%	19%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	9.7	11.1	49.4	10.9	12.3	49.4	8.9		10.9	8.9		49.4
Effective Green, g (s)	9.7	11.1	49.4	10.9	12.3	49.4	8.9		10.9	8.9		49.4
Actuated g/C Ratio	0.20	0.22	1.00	0.22	0.25	1.00	0.18		0.22	0.18		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	625	737	1468	690	802	1442	558		315	530		1357
v/s Ratio Prot	0.13	0.09		c0.15	0.12		0.04			0.11		
v/s Ratio Perm			0.20			c0.46			0.05			0.14
v/c Ratio	0.64	0.42	0.20	0.69	0.48	0.46	0.22		0.22	0.62		0.14
Uniform Delay, d1	18.2	16.4	0.0	17.7	15.8	0.0	17.3		15.8	18.7		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	1.7	0.2	0.3	2.3	0.2	1.0	0.1		0.1	1.5		0.2
Delay (s)	19.9	16.6	0.3	19.9	16.0	1.0	17.4		15.9	20.2		0.2
Level of Service	B	B	A	B	B	A	B		B	C		A
Approach Delay (s)		13.1			10.7			16.4			12.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	5.6
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

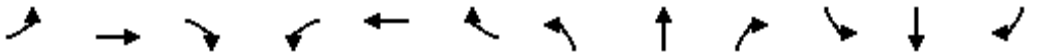
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	580	132	29	1103	61	132	31	28	17	31	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1444	2808		1543	4398		1612	1575		1556	1424	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1444	2808		1543	4398		1612	1575		1556	1424	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	165	637	145	32	1212	67	145	34	31	19	34	231
RTOR Reduction (vph)	0	13	0	0	4	0	0	23	0	0	197	0
Lane Group Flow (vph)	165	769	0	32	1275	0	145	42	0	19	68	0
Heavy Vehicles (%)	25%	25%	25%	17%	17%	17%	12%	12%	12%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	16.1	45.5		4.8	34.2		13.4	24.6		2.8	14.0	
Effective Green, g (s)	16.1	45.5		4.8	34.2		13.4	24.6		2.8	14.0	
Actuated g/C Ratio	0.17	0.47		0.05	0.36		0.14	0.26		0.03	0.15	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	241	1327		77	1562		224	402		45	207	
v/s Ratio Prot	c0.11	0.27		0.02	c0.29		c0.09	0.03		0.01	c0.05	
v/s Ratio Perm												
v/c Ratio	0.68	0.58		0.42	0.82		0.65	0.10		0.42	0.33	
Uniform Delay, d1	37.7	18.4		44.4	28.2		39.2	27.4		46.0	36.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.8	0.6		3.6	3.4		6.3	0.1		6.3	0.9	
Delay (s)	45.5	19.1		48.0	31.6		45.5	27.5		52.2	37.8	
Level of Service	D	B		D	C		D	C		D	D	
Approach Delay (s)		23.7			32.0			39.9			38.8	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	353	74	136	262	0	83	0	199	2	14	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.98		1.00	1.00			0.90			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)		1718		1583	1667			1499			1548	1324
Flt Permitted		1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (perm)		1718		1583	1667			1499			1548	1324
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	372	78	143	276	0	87	0	209	2	15	105
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	98
Lane Group Flow (vph)	0	443	0	143	276	0	0	296	0	0	17	7
Heavy Vehicles (%)	8%	8%	8%	14%	14%	14%	13%	13%	13%	22%	22%	22%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		28.1		13.6	45.8			20.9			5.8	5.8
Effective Green, g (s)		28.1		13.6	45.8			20.9			5.8	5.8
Actuated g/C Ratio		0.32		0.16	0.52			0.24			0.07	0.07
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		552		246	874			358			103	88
v/s Ratio Prot		c0.26		c0.09	0.17			c0.20			c0.01	
v/s Ratio Perm												0.01
v/c Ratio		0.80		0.58	0.32			0.83			0.17	0.08
Uniform Delay, d1		27.1		34.3	11.9			31.5			38.5	38.3
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		8.3		3.5	0.2			14.4			0.8	0.4
Delay (s)		35.4		37.7	12.1			46.0			39.3	38.7
Level of Service		D		D	B			D			D	D
Approach Delay (s)		35.4			20.8			46.0			38.8	
Approach LOS		D			C			D			D	

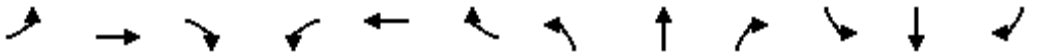
Intersection Summary			
HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	87.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	351	179	73	275	121	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1743	1482	1480	1557	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1743	1482	1480	1557	1530	1369
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	377	192	78	296	130	439
RTOR Reduction (vph)	0	0	0	0	0	373
Lane Group Flow (vph)	377	192	78	296	130	66
Heavy Vehicles (%)	9%	9%	22%	22%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	56.2	94.3	9.1	69.9	14.1	14.1
Effective Green, g (s)	56.2	94.3	9.1	69.9	14.1	14.1
Actuated g/C Ratio	0.60	1.00	0.10	0.74	0.15	0.15
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1039	1482	143	1154	229	205
v/s Ratio Prot	c0.22		c0.05	0.19	c0.08	
v/s Ratio Perm		0.13				0.05
v/c Ratio	0.36	0.13	0.55	0.26	0.57	0.32
Uniform Delay, d1	9.8	0.0	40.6	3.9	37.3	35.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	4.2	0.5	3.2	0.9
Delay (s)	10.8	0.2	44.8	4.4	40.5	36.7
Level of Service	B	A	D	A	D	D
Approach Delay (s)	7.2			12.9	37.6	
Approach LOS	A			B	D	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

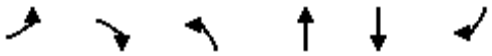
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	494	94	12	205	321	63	68	25	18	2	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1641	1727	1468	1530	1610	1369		1557			1308	1162
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1641	1727	1468	1530	1610	1369		1557			1308	1162
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	196	515	98	12	214	334	66	71	26	19	2	84
RTOR Reduction (vph)	0	0	44	0	0	201	0	8	0	0	0	78
Lane Group Flow (vph)	196	515	54	12	214	133	0	155	0	0	21	6
Heavy Vehicles (%)	10%	10%	10%	18%	18%	18%	17%	17%	17%	39%	39%	39%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	16.4	51.9	51.9	1.6	37.1	37.1		14.0			6.5	6.5
Effective Green, g (s)	16.4	51.9	51.9	1.6	37.1	37.1		14.0			6.5	6.5
Actuated g/C Ratio	0.18	0.56	0.56	0.02	0.40	0.40		0.15			0.07	0.07
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	288	959	815	26	639	543		233			91	81
v/s Ratio Prot	c0.12	c0.30		0.01	0.13			c0.10			c0.02	
v/s Ratio Perm			0.04			0.10						0.01
v/c Ratio	0.68	0.54	0.07	0.46	0.33	0.24		0.67			0.23	0.07
Uniform Delay, d1	36.1	13.2	9.6	45.5	19.6	18.8		37.5			41.1	40.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	6.5	2.2	0.2	12.4	1.4	1.1		7.0			1.3	0.4
Delay (s)	42.6	15.3	9.8	57.9	21.0	19.9		44.6			42.4	41.1
Level of Service	D	B	A	E	C	B		D			D	D
Approach Delay (s)		21.3			21.1			44.6			41.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

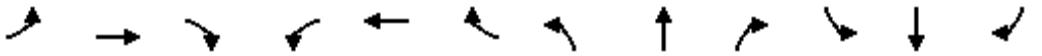
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	14	77	0	575	24	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	84	0	625	26	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				776		
pX, platoon unblocked						
vC, conflicting volume	651	26	26			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	651	26	26			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	92	100			
cM capacity (veh/h)	433	1050	1588			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	99	625	26
Volume Left	15	0	0
Volume Right	84	0	0
cSH	861	1700	1700
Volume to Capacity	0.11	0.37	0.02
Queue Length 95th (ft)	10	0	0
Control Delay (s)	9.7	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.7	0.0	0.0
Approach LOS	A		

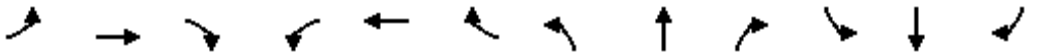
Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	662	2	8	797	491	1	0	3	311	0	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0		4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97		1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (prot)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2981	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	0.97	
Satd. Flow (perm)	1444	4150	1292	3155	4673	1455	3502		1615	1535	2981	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	720	2	9	866	534	1	0	3	338	0	74
RTOR Reduction (vph)	0	0	1	0	0	281	0	0	0	0	37	0
Lane Group Flow (vph)	54	720	1	9	866	253	1	0	3	169	206	0
Heavy Vehicles (%)	25%	25%	25%	11%	11%	11%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	8.3	29.8	29.8	4.2	25.7	25.7	5.8		75.1	14.3	14.3	
Effective Green, g (s)	8.3	29.8	29.8	4.2	25.7	25.7	5.8		75.1	14.3	14.3	
Actuated g/C Ratio	0.11	0.40	0.40	0.06	0.34	0.34	0.08		1.00	0.19	0.19	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0			5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	
Lane Grp Cap (vph)	160	1647	513	176	1599	498	270		1615	292	568	
v/s Ratio Prot	c0.04	c0.17		0.00	c0.19		c0.00			c0.11	0.07	
v/s Ratio Perm			0.00			0.17			0.00			
v/c Ratio	0.34	0.44	0.00	0.05	0.54	0.51	0.00		0.00	0.58	0.36	
Uniform Delay, d1	30.9	16.5	13.7	33.6	19.9	19.7	32.0		0.0	27.7	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.3	0.2	0.0	0.1	0.4	0.8	0.0		0.0	2.8	0.4	
Delay (s)	32.1	16.7	13.7	33.7	20.3	20.5	32.0		0.0	30.4	26.8	
Level of Service	C	B	B	C	C	C	C		A	C	C	
Approach Delay (s)		17.8			20.5			8.0			28.3	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	27.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

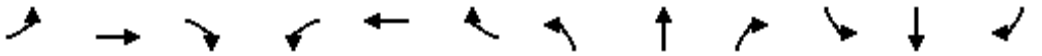
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	257	509	190	339	346	429	390	0	581	869	0	567
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	553	207	368	376	466	424	0	632	945	0	616
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	8	0	0	0
Lane Group Flow (vph)	279	553	207	368	376	466	424	0	624	945	0	616
Heavy Vehicles (%)	18%	18%	18%	28%	28%	28%	13%	13%	13%	11%	11%	11%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	13.8	23.0	119.5	48.4	57.6	119.5	29.6		48.4	29.6		119.5
Effective Green, g (s)	13.8	23.0	119.5	48.4	57.6	119.5	29.6		48.4	29.6		119.5
Actuated g/C Ratio	0.12	0.19	1.00	0.41	0.48	1.00	0.25		0.41	0.25		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	343	589	1369	1108	1359	1262	768		579	781		1455
v/s Ratio Prot	0.09	c0.18		0.13	0.13		0.14			c0.30		
v/s Ratio Perm			0.15			0.37			c0.44			0.42
v/c Ratio	0.81	0.94	0.15	0.33	0.28	0.37	0.55		1.08	1.21		0.42
Uniform Delay, d1	51.6	47.6	0.0	24.4	18.5	0.0	39.2		35.6	45.0		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	13.0	22.6	0.2	0.1	0.1	0.8	0.5		60.2	106.3		0.9
Delay (s)	64.6	70.2	0.2	24.5	18.6	0.8	39.7		95.8	151.2		0.9
Level of Service	E	E	A	C	B	A	D		F	F		A
Approach Delay (s)		54.8			13.5			73.2			91.9	
Approach LOS		D			B			E			F	

Intersection Summary			
HCM Average Control Delay	60.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	119.5	Sum of lost time (s)	18.5
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		

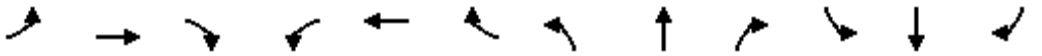
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	236	1546	173	30	761	38	133	25	46	26	39	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.90		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1556	3065		1228	3504		1626	1545		1556	1429	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1556	3065		1228	3504		1626	1545		1556	1429	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	257	1680	188	33	827	41	145	27	50	28	42	236
RTOR Reduction (vph)	0	6	0	0	4	0	0	41	0	0	194	0
Lane Group Flow (vph)	257	1862	0	33	864	0	145	36	0	28	84	0
Heavy Vehicles (%)	16%	16%	16%	47%	47%	47%	11%	11%	11%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	20.7	59.3		2.8	41.4		8.1	18.8		3.3	14.0	
Effective Green, g (s)	20.7	59.3		2.8	41.4		8.1	18.8		3.3	14.0	
Actuated g/C Ratio	0.20	0.58		0.03	0.40		0.08	0.18		0.03	0.14	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	313	1768		33	1411		128	283		50	195	
v/s Ratio Prot	c0.17	c0.61		0.03	0.25		c0.09	0.02		0.02	c0.06	
v/s Ratio Perm												
v/c Ratio	0.82	1.05		1.00	0.61		1.13	0.13		0.56	0.43	
Uniform Delay, d1	39.3	21.8		50.0	24.3		47.4	35.1		49.0	40.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.7	37.0		156.7	0.8		119.7	0.2		13.6	1.5	
Delay (s)	55.0	58.7		206.7	25.1		167.0	35.3		62.6	42.2	
Level of Service	D	E		F	C		F	D		E	D	
Approach Delay (s)		58.3			31.8			121.3			44.1	
Approach LOS		E			C			F			D	

Intersection Summary			
HCM Average Control Delay	54.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	102.8	Sum of lost time (s)	18.6
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	337	102	142	200	0	63	0	196	1	24	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.97		1.00	1.00			0.90			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (prot)		1573		1641	1727			1491			1693	1442
Flt Permitted		1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (perm)		1573		1641	1727			1491			1693	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	366	111	154	217	0	68	0	213	1	26	123
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	0	113
Lane Group Flow (vph)	0	468	0	154	217	0	0	281	0	0	27	10
Heavy Vehicles (%)	17%	17%	17%	10%	10%	10%	13%	13%	13%	12%	12%	12%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		33.4		14.2	51.7			20.4			7.6	7.6
Effective Green, g (s)		33.4		14.2	51.7			20.4			7.6	7.6
Actuated g/C Ratio		0.35		0.15	0.55			0.22			0.08	0.08
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		555		246	944			322			136	116
v/s Ratio Prot		c0.30		c0.09	0.13			c0.19			c0.02	
v/s Ratio Perm												0.01
v/c Ratio		0.84		0.63	0.23			0.87			0.20	0.09
Uniform Delay, d1		28.2		37.7	11.1			35.8			40.7	40.3
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		11.2		4.9	0.1			21.9			0.7	0.3
Delay (s)		39.4		42.6	11.3			57.8			41.4	40.6
Level of Service		D		D	B			E			D	D
Approach Delay (s)		39.4			24.3			57.8			40.7	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM Average Control Delay	39.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	94.6	Sum of lost time (s)	19.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	380	103	77	212	134	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1597	1357	1517	1597	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1597	1357	1517	1597	1530	1369
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	112	84	230	146	375
RTOR Reduction (vph)	0	0	0	0	0	317
Lane Group Flow (vph)	413	112	84	230	146	58
Heavy Vehicles (%)	19%	19%	19%	19%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	55.6	94.3	9.3	69.5	14.5	14.5
Effective Green, g (s)	55.6	94.3	9.3	69.5	14.5	14.5
Actuated g/C Ratio	0.59	1.00	0.10	0.74	0.15	0.15
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	942	1357	150	1177	235	211
v/s Ratio Prot	c0.26		c0.06	0.14	c0.10	
v/s Ratio Perm		0.08				0.04
v/c Ratio	0.44	0.08	0.56	0.20	0.62	0.27
Uniform Delay, d1	10.7	0.0	40.5	3.8	37.3	35.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	4.7	0.4	5.0	0.7
Delay (s)	12.2	0.1	45.3	4.2	42.4	36.0
Level of Service	B	A	D	A	D	D
Approach Delay (s)	9.6			15.2	37.7	
Approach LOS	A			B	D	

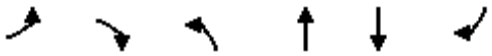
Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	182	441	95	24	209	408	33	40	15	35	4	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1504	1583	1346	1517	1597	1357		1571			1196	1062
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1504	1583	1346	1517	1597	1357		1571			1196	1062
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	198	479	103	26	227	443	36	43	16	38	4	53
RTOR Reduction (vph)	0	0	44	0	0	256	0	9	0	0	0	49
Lane Group Flow (vph)	198	479	59	26	227	187	0	86	0	0	42	4
Heavy Vehicles (%)	20%	20%	20%	19%	19%	19%	16%	16%	16%	52%	52%	52%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	17.5	53.6	53.6	3.4	39.5	39.5		9.2			7.8	7.8
Effective Green, g (s)	17.5	53.6	53.6	3.4	39.5	39.5		9.2			7.8	7.8
Actuated g/C Ratio	0.19	0.57	0.57	0.04	0.42	0.42		0.10			0.08	0.08
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	281	907	772	55	675	573		155			100	89
v/s Ratio Prot	c0.13	c0.30		0.02	0.14			c0.05			c0.04	
v/s Ratio Perm			0.04			0.14						0.00
v/c Ratio	0.70	0.53	0.08	0.47	0.34	0.33		0.55			0.42	0.05
Uniform Delay, d1	35.6	12.2	8.9	44.2	18.2	18.1		40.2			40.7	39.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	7.8	2.2	0.2	6.3	1.3	1.5		4.3			2.8	0.2
Delay (s)	43.4	14.4	9.1	50.5	19.5	19.6		44.4			43.5	39.7
Level of Service	D	B	A	D	B	B		D			D	D
Approach Delay (s)		21.1			20.7			44.4			41.4	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

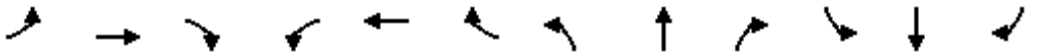
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	31	74	0	634	13	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	80	0	689	14	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				770		
pX, platoon unblocked						
vC, conflicting volume	703	14	14			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	703	14	14			
tC, single (s)	6.7	6.5	4.3			
tC, 2 stage (s)						
tF (s)	3.8	3.6	2.4			
p0 queue free %	91	92	100			
cM capacity (veh/h)	366	992	1506			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	114	689	14
Volume Left	34	0	0
Volume Right	80	0	0
cSH	659	1700	1700
Volume to Capacity	0.17	0.41	0.01
Queue Length 95th (ft)	16	0	0
Control Delay (s)	11.6	0.0	0.0
Lane LOS	B		
Approach Delay (s)	11.6	0.0	0.0
Approach LOS	B		

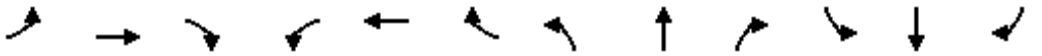
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	732	5	3	706	192	5	3	9	356	1	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0	4.0	5.0	5.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.91	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (prot)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3015	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	
Satd. Flow (perm)	1597	4590	1429	2993	4433	1380	3502	3610	1615	1535	3015	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	796	5	3	767	209	5	3	10	387	1	49
RTOR Reduction (vph)	0	0	3	0	0	119	0	0	0	0	19	0
Lane Group Flow (vph)	26	796	2	3	767	90	5	3	10	193	225	0
Heavy Vehicles (%)	13%	13%	13%	17%	17%	17%	0%	0%	0%	7%	7%	7%
Turn Type	Prot		Perm	Prot		Perm	Split		Free	Split		
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			Free		4	
Actuated Green, G (s)	6.7	22.6	22.6	4.1	20.0	20.0	5.8	5.8	68.2	14.7	14.7	
Effective Green, g (s)	6.7	22.6	22.6	4.1	20.0	20.0	5.8	5.8	68.2	14.7	14.7	
Actuated g/C Ratio	0.10	0.33	0.33	0.06	0.29	0.29	0.09	0.09	1.00	0.22	0.22	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	157	1521	474	180	1300	405	298	307	1615	331	650	
v/s Ratio Prot	c0.02	c0.17		0.00	c0.17		c0.00	0.00		c0.13	0.07	
v/s Ratio Perm			0.00			0.06			0.01			
v/c Ratio	0.17	0.52	0.00	0.02	0.59	0.22	0.02	0.01	0.01	0.58	0.35	
Uniform Delay, d1	28.2	18.4	15.3	30.2	20.6	18.2	28.6	28.6	0.0	24.0	22.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.3	0.0	0.0	0.7	0.3	0.0	0.0	0.0	2.6	0.3	
Delay (s)	28.7	18.8	15.3	30.2	21.3	18.5	28.6	28.6	0.0	26.6	23.0	
Level of Service	C	B	B	C	C	B	C	C	A	C	C	
Approach Delay (s)		19.1			20.7			12.7			24.6	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	27.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

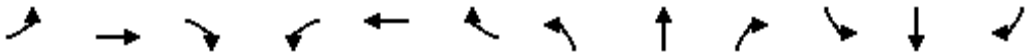
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	417	367	306	688	569	924	132	0	346	433	0	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		5.6	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	434	382	319	717	593	962	138	0	360	451	0	207
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	68	0	0	0
Lane Group Flow (vph)	434	382	319	717	593	962	138	0	292	451	0	207
Heavy Vehicles (%)	10%	10%	10%	12%	12%	12%	13%	13%	13%	19%	19%	19%
Turn Type	Prot		Free	Prot		Free	Prot		custom	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			1			Free
Actuated Green, G (s)	13.3	13.8	67.0	20.3	20.8	67.0	14.4		20.3	14.4		67.0
Effective Green, g (s)	13.3	13.8	67.0	20.3	20.8	67.0	14.4		20.3	14.4		67.0
Actuated g/C Ratio	0.20	0.21	1.00	0.30	0.31	1.00	0.21		0.30	0.21		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6		5.6	5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2		0.2	0.2		
Lane Grp Cap (vph)	632	676	1468	947	1001	1442	666		433	633		1357
v/s Ratio Prot	0.14	0.12		0.23	0.18		0.04			0.15		
v/s Ratio Perm			0.22			c0.67			0.20			0.15
v/c Ratio	0.69	0.57	0.22	0.76	0.59	0.67	0.21		0.68	0.71		0.15
Uniform Delay, d1	24.9	23.9	0.0	21.1	19.5	0.0	21.6		20.5	24.4		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	2.5	0.7	0.3	3.1	0.7	2.5	0.1		3.3	3.2		0.2
Delay (s)	27.4	24.6	0.3	24.2	20.2	2.5	21.7		23.7	27.5		0.2
Level of Service	C	C	A	C	C	A	C		C	C		A
Approach Delay (s)		18.9			14.0			23.2			19.0	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

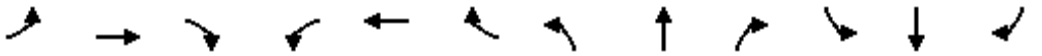
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	849	133	33	1820	62	133	31	31	18	32	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1444	2829		1543	4412		1612	1569		1556	1424	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1444	2829		1543	4412		1612	1569		1556	1424	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	923	145	36	1978	67	145	34	34	20	35	240
RTOR Reduction (vph)	0	9	0	0	3	0	0	26	0	0	139	0
Lane Group Flow (vph)	170	1059	0	36	2042	0	145	42	0	20	136	0
Heavy Vehicles (%)	25%	25%	25%	17%	17%	17%	12%	12%	12%	16%	16%	16%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	13.1	60.6		2.9	50.4		10.1	25.5		2.2	17.6	
Effective Green, g (s)	13.1	60.6		2.9	50.4		10.1	25.5		2.2	17.6	
Actuated g/C Ratio	0.12	0.55		0.03	0.46		0.09	0.23		0.02	0.16	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	172	1561		41	2025		148	364		31	228	
v/s Ratio Prot	c0.12	0.37		0.02	c0.46		c0.09	0.03		0.01	c0.10	
v/s Ratio Perm												
v/c Ratio	0.99	0.68		0.88	1.01		0.98	0.12		0.65	0.59	
Uniform Delay, d1	48.3	17.6		53.3	29.7		49.7	33.2		53.4	42.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	64.6	1.2		92.9	22.1		67.0	0.1		37.9	4.1	
Delay (s)	112.8	18.8		146.2	51.8		116.8	33.4		91.3	46.9	
Level of Service	F	B		F	D		F	C		F	D	
Approach Delay (s)		31.7			53.4			90.2			49.9	
Approach LOS		C			D			F			D	

Intersection Summary			
HCM Average Control Delay	48.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	109.8	Sum of lost time (s)	18.6
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	386	77	136	336	0	88	0	199	2	14	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Lane Util. Factor		1.00		1.00	1.00			1.00			1.00	1.00
Frt		0.98		1.00	1.00			0.91			1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98			0.99	1.00
Satd. Flow (prot)		1720		1583	1667			1501			1548	1324
Flt Permitted		1.00		0.95	1.00			0.98			0.99	1.00
Satd. Flow (perm)		1720		1583	1667			1501			1548	1324
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	406	81	143	354	0	93	0	209	2	15	105
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	0	97
Lane Group Flow (vph)	0	481	0	143	354	0	0	302	0	0	17	8
Heavy Vehicles (%)	8%	8%	8%	14%	14%	14%	13%	13%	13%	22%	22%	22%
Turn Type				Prot			Split			Split		Perm
Protected Phases		2		1	6		3	3		4	4	
Permitted Phases												4
Actuated Green, G (s)		30.8		13.8	48.7			20.5			7.4	7.4
Effective Green, g (s)		30.8		13.8	48.7			20.5			7.4	7.4
Actuated g/C Ratio		0.34		0.15	0.53			0.22			0.08	0.08
Clearance Time (s)		5.7		4.1	5.7			4.6			4.6	4.6
Vehicle Extension (s)		3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		579		239	887			336			125	107
v/s Ratio Prot		c0.28		c0.09	0.21			c0.20			c0.01	
v/s Ratio Perm												0.01
v/c Ratio		0.83		0.60	0.40			0.90			0.14	0.08
Uniform Delay, d1		28.0		36.3	12.7			34.5			39.1	38.9
Progression Factor		1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2		9.8		4.0	0.3			25.2			0.5	0.3
Delay (s)		37.8		40.3	13.0			59.7			39.6	39.2
Level of Service		D		D	B			E			D	D
Approach Delay (s)		37.8			20.8			59.7			39.3	
Approach LOS		D			C			E			D	

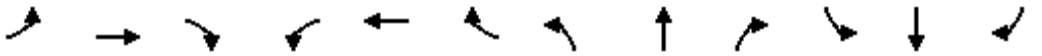
Intersection Summary			
HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	91.5	Sum of lost time (s)	19.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	373	179	83	349	121	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	4.0	4.6	5.7	4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1743	1482	1480	1557	1530	1369
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1743	1482	1480	1557	1530	1369
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	401	192	89	375	130	452
RTOR Reduction (vph)	0	0	0	0	0	387
Lane Group Flow (vph)	401	192	89	375	130	65
Heavy Vehicles (%)	9%	9%	22%	22%	18%	18%
Turn Type		Free	Prot			Perm
Protected Phases	2		1	6	3	
Permitted Phases		Free				3
Actuated Green, G (s)	56.1	94.3	9.8	70.5	13.5	13.5
Effective Green, g (s)	56.1	94.3	9.8	70.5	13.5	13.5
Actuated g/C Ratio	0.59	1.00	0.10	0.75	0.14	0.14
Clearance Time (s)	5.7		4.6	5.7	4.6	4.6
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1037	1482	154	1164	219	196
v/s Ratio Prot	c0.23		c0.06	0.24	c0.08	
v/s Ratio Perm		0.13				0.05
v/c Ratio	0.39	0.13	0.58	0.32	0.59	0.33
Uniform Delay, d1	10.0	0.0	40.3	4.0	37.8	36.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.2	5.2	0.7	4.3	1.0
Delay (s)	11.1	0.2	45.5	4.7	42.1	37.3
Level of Service	B	A	D	A	D	D
Approach Delay (s)	7.6			12.5	38.4	
Approach LOS	A			B	D	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	14.9
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

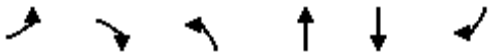
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	522	100	16	263	339	69	71	26	21	2	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1641	1727	1468	1530	1610	1369		1557			1307	1162
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	1641	1727	1468	1530	1610	1369		1557			1307	1162
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	196	544	104	17	274	353	72	74	27	22	2	104
RTOR Reduction (vph)	0	0	51	0	0	223	0	8	0	0	0	94
Lane Group Flow (vph)	196	544	53	17	274	130	0	165	0	0	24	10
Heavy Vehicles (%)	10%	10%	10%	18%	18%	18%	17%	17%	17%	39%	39%	39%
Turn Type	Prot		Perm	Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		8	8		7	7	
Permitted Phases			2			6						7
Actuated Green, G (s)	16.4	47.8	47.8	3.1	34.5	34.5		14.4			8.7	8.7
Effective Green, g (s)	16.4	47.8	47.8	3.1	34.5	34.5		14.4			8.7	8.7
Actuated g/C Ratio	0.18	0.51	0.51	0.03	0.37	0.37		0.15			0.09	0.09
Clearance Time (s)	4.6	5.7	5.7	4.6	5.7	5.7		4.6			4.6	4.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	288	883	750	51	594	505		240			122	108
v/s Ratio Prot	c0.12	c0.31		0.01	0.17			c0.11			c0.02	
v/s Ratio Perm			0.04			0.10						0.01
v/c Ratio	0.68	0.62	0.07	0.33	0.46	0.26		0.69			0.20	0.09
Uniform Delay, d1	36.1	16.3	11.6	44.2	22.4	20.6		37.4			39.2	38.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	6.5	3.2	0.2	3.8	2.6	1.2		8.0			0.8	0.4
Delay (s)	42.6	19.5	11.8	48.0	25.0	21.8		45.4			40.0	39.1
Level of Service	D	B	B	D	C	C		D			D	D
Approach Delay (s)		23.9			23.9			45.4			39.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	13.8
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	17	99	0	595	24	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	108	0	647	26	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				776		
pX, platoon unblocked						
vC, conflicting volume	673	26	26			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	673	26	26			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	90	100			
cM capacity (veh/h)	421	1050	1588			

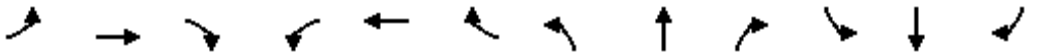
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	126	647	26
Volume Left	18	0	0
Volume Right	108	0	0
cSH	861	1700	1700
Volume to Capacity	0.15	0.38	0.02
Queue Length 95th (ft)	13	0	0
Control Delay (s)	9.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.9	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	300	100	170	305	70	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	4252	1295	1480	4252	1480	1324
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	4252	1295	1480	4252	1480	1324
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	326	109	185	332	76	217
RTOR Reduction (vph)	0	87	0	0	0	179
Lane Group Flow (vph)	326	22	185	332	76	38
Confl. Peds. (#/hr)		1				
Turn Type		Perm	Prot			custom
Protected Phases	4		3	8		
Permitted Phases		4			2	2
Actuated Green, G (s)	9.7	9.7	11.6	27.3	8.3	8.3
Effective Green, g (s)	9.7	9.7	11.6	27.3	8.3	8.3
Actuated g/C Ratio	0.20	0.20	0.24	0.57	0.17	0.17
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	866	264	361	2439	258	231
v/s Ratio Prot	c0.08		c0.13	0.08		
v/s Ratio Perm		0.02			c0.05	0.03
v/c Ratio	0.38	0.08	0.51	0.14	0.29	0.16
Uniform Delay, d1	16.3	15.4	15.6	4.7	17.1	16.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	1.2	0.0	0.6	0.3
Delay (s)	16.6	15.5	16.8	4.7	17.7	17.0
Level of Service	B	B	B	A	B	B
Approach Delay (s)	16.3			9.0	17.2	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	47.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	390	110	0	335	0	0	0	0	380	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	4.0		5.1					5.1	5.1	5.1
Lane Util. Factor		0.91	0.91		0.95					0.95	0.95	1.00
Frt		1.00	0.85		1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00					0.95	0.95	1.00
Satd. Flow (prot)		2823	1205		2959					1406	1406	1324
Flt Permitted		1.00	1.00		1.00					0.95	0.95	1.00
Satd. Flow (perm)		2823	1205		2959					1406	1406	1324
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	424	120	0	364	0	0	0	0	413	0	152
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	117
Lane Group Flow (vph)	0	435	108	0	364	0	0	0	0	206	207	35
Turn Type			Free							Split		Perm
Protected Phases		2			6					4	4	
Permitted Phases			Free									4
Actuated Green, G (s)		58.4	90.0		58.4					19.6	19.6	19.6
Effective Green, g (s)		59.3	90.0		59.3					20.5	20.5	20.5
Actuated g/C Ratio		0.66	1.00		0.66					0.23	0.23	0.23
Clearance Time (s)		6.0			6.0					6.0	6.0	6.0
Vehicle Extension (s)		3.2			3.2					3.2	3.2	3.2
Lane Grp Cap (vph)		1860	1205		1950					320	320	302
v/s Ratio Prot		c0.15			0.12					0.15	c0.15	
v/s Ratio Perm			0.09									0.03
v/c Ratio		0.23	0.09		0.19					0.64	0.65	0.11
Uniform Delay, d1		6.2	0.0		6.0					31.4	31.5	27.6
Progression Factor		1.00	1.00		0.26					1.00	1.00	1.00
Incremental Delay, d2		0.3	0.1		0.0					4.5	4.5	0.2
Delay (s)		6.5	0.1		1.6					35.9	36.0	27.7
Level of Service		A	A		A					D	D	C
Approach Delay (s)		5.2			1.6			0.0			33.7	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

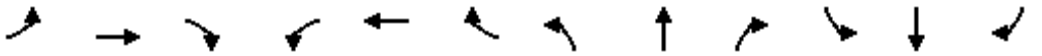
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	520	100	30	713	40	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4149		1480	4252	1480	1324
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4149		1480	4252	1480	1324
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	565	109	33	775	43	76
RTOR Reduction (vph)	40	0	0	0	0	38
Lane Group Flow (vph)	634	0	33	775	43	38
Turn Type			Prot			custom
Protected Phases	4		3	8		
Permitted Phases					2	2
Actuated Green, G (s)	21.4		5.2	32.6	45.4	45.4
Effective Green, g (s)	21.4		5.2	32.6	45.4	45.4
Actuated g/C Ratio	0.24		0.06	0.36	0.50	0.50
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	987		86	1540	747	668
v/s Ratio Prot	c0.15		0.02	c0.18		
v/s Ratio Perm					c0.03	0.03
v/c Ratio	0.64		0.38	0.50	0.06	0.06
Uniform Delay, d1	30.9		40.9	22.4	11.4	11.4
Progression Factor	0.65		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4		2.8	0.3	0.1	0.2
Delay (s)	21.5		43.7	22.6	11.5	11.5
Level of Service	C		D	C	B	B
Approach Delay (s)	21.5			23.5	11.5	
Approach LOS	C			C	B	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	580	0	0	250	503	150	0	40	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1			5.1	4.0	5.1	5.1	5.1			
Lane Util. Factor		0.95			0.95	1.00	0.95	0.95	1.00			
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			
Frt		1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected		1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)		2959			2959	1324	1406	1406	1324			
Flt Permitted		1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)		2959			2959	1324	1406	1406	1324			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	630	0	0	272	547	163	0	43	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	38	0	0	0
Lane Group Flow (vph)	0	630	0	0	272	547	81	82	5	0	0	0
Confl. Peds. (#/hr)												1
Turn Type						Free	Split		Perm			
Protected Phases		2			6		8	8				
Permitted Phases						Free			8			
Actuated Green, G (s)		68.5			68.5	90.0	9.5	9.5	9.5			
Effective Green, g (s)		69.4			69.4	90.0	10.4	10.4	10.4			
Actuated g/C Ratio		0.77			0.77	1.00	0.12	0.12	0.12			
Clearance Time (s)		6.0			6.0		6.0	6.0	6.0			
Vehicle Extension (s)		3.2			3.2		3.2	3.2	3.2			
Lane Grp Cap (vph)		2282			2282	1324	162	162	153			
v/s Ratio Prot		0.21			0.09		0.06	0.06				
v/s Ratio Perm						c0.41			0.00			
v/c Ratio		0.28			0.12	0.41	0.50	0.51	0.03			
Uniform Delay, d1		3.0			2.6	0.0	37.4	37.4	35.3			
Progression Factor		0.44			0.46	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.3			0.1	0.9	2.6	2.7	0.1			
Delay (s)		1.6			1.3	0.9	40.0	40.0	35.4			
Level of Service		A			A	A	D	D	D			
Approach Delay (s)		1.6			1.0			39.0			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM Average Control Delay	6.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

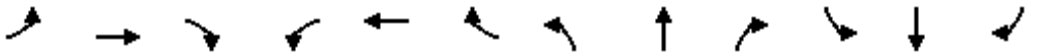
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	257	509	190	339	346	429	390	0	581	869	0	567
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		4.0	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2968	3059	1369	2736	2820	1262	3099		1429	3155		1455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	553	207	368	376	466	424	0	632	945	0	616
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	279	553	207	368	376	466	424	0	632	945	0	616
Heavy Vehicles (%)	18%	18%	18%	28%	28%	28%	13%	13%	13%	11%	11%	11%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	11.7	21.8	86.4	15.4	25.5	86.4	30.7		86.4	30.7		86.4
Effective Green, g (s)	11.7	21.8	86.4	15.4	25.5	86.4	30.7		86.4	30.7		86.4
Actuated g/C Ratio	0.14	0.25	1.00	0.18	0.30	1.00	0.36		1.00	0.36		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6			5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2			0.2		
Lane Grp Cap (vph)	402	772	1369	488	832	1262	1101		1429	1121		1455
v/s Ratio Prot	0.09	c0.18		c0.13	0.13		0.14			c0.30		
v/s Ratio Perm			0.15			0.37			c0.44			0.42
v/c Ratio	0.69	0.72	0.15	0.75	0.45	0.37	0.39		0.44	0.84		0.42
Uniform Delay, d1	35.6	29.5	0.0	33.7	24.8	0.0	20.8		0.0	25.6		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	4.2	2.8	0.2	5.8	0.2	0.8	0.1		1.0	5.7		0.9
Delay (s)	39.8	32.3	0.2	39.5	25.0	0.8	20.9		1.0	31.3		0.9
Level of Service	D	C	A	D	C	A	C		A	C		A
Approach Delay (s)		27.9			20.1			9.0			19.3	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	18.5
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	417	367	306	688	569	924	132	0	346	433	0	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	7.3	4.0	5.6	7.3	4.0	5.6		4.0	5.6		4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	3183	3282	1468	3127	3223	1442	3099		1429	2943		1357
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	434	382	319	717	593	962	138	0	360	451	0	207
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	434	382	319	717	593	962	138	0	360	451	0	207
Heavy Vehicles (%)	10%	10%	10%	12%	12%	12%	13%	13%	13%	19%	19%	19%
Turn Type	Prot		Free	Prot		Free	Prot		Free	Prot		Free
Protected Phases	5	2		1	6		3			7		
Permitted Phases			Free			Free			Free			Free
Actuated Green, G (s)	13.3	13.8	67.0	20.3	20.8	67.0	14.4		67.0	14.4		67.0
Effective Green, g (s)	13.3	13.8	67.0	20.3	20.8	67.0	14.4		67.0	14.4		67.0
Actuated g/C Ratio	0.20	0.21	1.00	0.30	0.31	1.00	0.21		1.00	0.21		1.00
Clearance Time (s)	5.6	7.3		5.6	7.3		5.6			5.6		
Vehicle Extension (s)	0.2	2.2		0.2	2.2		0.2			0.2		
Lane Grp Cap (vph)	632	676	1468	947	1001	1442	666		1429	633		1357
v/s Ratio Prot	0.14	0.12		0.23	0.18		0.04			0.15		
v/s Ratio Perm			0.22			c0.67			0.25			0.15
v/c Ratio	0.69	0.57	0.22	0.76	0.59	0.67	0.21		0.25	0.71		0.15
Uniform Delay, d1	24.9	23.9	0.0	21.1	19.5	0.0	21.6		0.0	24.4		0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2	2.5	0.7	0.3	3.1	0.7	2.5	0.1		0.4	3.2		0.2
Delay (s)	27.4	24.6	0.3	24.2	20.2	2.5	21.7		0.4	27.5		0.2
Level of Service	C	C	A	C	C	A	C		A	C		A
Approach Delay (s)		18.9			14.0			6.3			19.0	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: C[19.7]

Street Name:	Frontier Way									Arch Road								
Approach:	North Bound			South Bound			East Bound			West Bound								
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled								
Rights:	Include			Channel			Include			Include								
Lanes:	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	1	0
Volume Module: >> Count Date: 29 Aug 2012 <<																				
Base Vol:	0	0	0	4	0	40	68	344	0	0	227	9								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	4	0	40	68	344	0	0	227	9								
Added Vol:	0	0	0	0	0	0	0	506	0	0	322	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	0	0	0	4	0	40	68	850	0	0	549	9								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87								
PHF Volume:	0	0	0	5	0	46	78	978	0	0	632	10								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	5	0	46	78	978	0	0	632	10								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.9	xxxx	6.7	4.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	4.0	xxxx	3.8	2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	1772	xxxx	637	642	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	69	xxxx	401	858	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	64	xxxx	401	858	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.07	xxxx	0.11	0.09	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	0.4	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	65.3	xxxx	15.1	9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	F	*	C	A	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*								
ApproachDel:	xxxxxx			19.7			xxxxxx			xxxxxx										
ApproachLOS:	*			C			*			*										

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.832
Loss Time (sec):	12	Average Delay (sec/veh):	22.0
Optimal Cycle:	68	Level Of Service:	C

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	1 0 0	0 0		1 0 0	0 1		1 0	1 0	0	1 0	1 0	1
Volume Module:												
Base Vol:	1	0	0	7	0	70	36	305	0	0	159	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	0	7	0	70	36	305	0	0	159	5
Added Vol:	0	0	0	0	0	0	0	506	0	0	322	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	0	7	0	70	36	811	0	0	481	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	1	0	0	8	0	78	40	907	0	0	538	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	0	8	0	78	40	907	0	0	538	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	0	8	0	78	40	907	0	0	538	6
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.64	1.00	0.57	0.77	0.81	1.00	1.00	0.68	0.58
Lanes:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	1805	0	0	1211	0	1084	1455	1531	0	1900	1292	1098
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.07	0.03	0.59	0.00	0.00	0.42	0.01
Crit Moves:	****					****		****		****		
Green/Cycle:	0.07	0.00	0.00	0.08	0.00	0.08	0.09	0.65	0.00	0.00	0.56	0.56
Volume/Cap:	0.01	0.00	0.00	0.08	0.00	0.91	0.31	0.91	0.00	0.00	0.74	0.01
Delay/Veh:	26.2	0.0	0.0	25.9	0.0	93.9	26.9	20.4	0.0	0.0	13.8	5.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.2	0.0	0.0	25.9	0.0	93.9	26.9	20.4	0.0	0.0	13.8	5.8
LOS by Move:	C	A	A	C	A	F	C	C	A	A	B	A
HCM2kAvgQ:	0	0	0	0	0	4	1	15	0	0	7	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	0.773
Loss Time (sec):	12	Average Delay (sec/veh):	33.1
Optimal Cycle:	72	Level Of Service:	C

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	1! 0	0	0	1 0	0 1	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	17	0	2	1	0	3	13	155	145	15	145	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	0	2	1	0	3	13	155	145	15	145	1
Added Vol:	0	0	0	14	0	189	302	205	0	0	134	21
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	17	0	2	15	0	192	315	360	145	15	279	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	19	0	2	17	0	215	352	403	162	17	312	25
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	0	2	17	0	215	352	403	162	17	312	25
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	0	2	17	0	215	352	403	162	17	312	25
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.74	1.00	0.74	0.55	1.00	0.57	0.77	0.77	0.77	0.64	0.68	0.57
Lanes:	0.89	0.00	0.11	1.00	0.00	1.00	1.00	0.71	0.29	1.00	1.00	1.00
Final Sat.:	1265	0	149	1046	0	1077	1455	1045	421	1220	1284	1092
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.02	0.02	0.00	0.20	0.24	0.39	0.39	0.01	0.24	0.02
Crit Moves:						****	****				****	
Green/Cycle:	0.26	0.00	0.26	0.26	0.00	0.26	0.31	0.57	0.57	0.06	0.31	0.31
Volume/Cap:	0.06	0.00	0.06	0.06	0.00	0.77	0.77	0.67	0.67	0.24	0.77	0.07
Delay/Veh:	29.4	0.0	29.4	29.5	0.0	48.7	40.7	17.9	17.9	49.2	41.6	25.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.4	0.0	29.4	29.5	0.0	48.7	40.7	17.9	17.9	49.2	41.6	25.3
LOS by Move:	C	A	C	C	A	D	D	B	B	D	D	C
HCM2kAvgQ:	1	0	1	0	0	8	10	12	12	1	9	1

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.576
Loss Time (sec):	12	Average Delay (sec/veh):	15.5
Optimal Cycle:	42	Level Of Service:	B

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	1	0	1	0	161	0	0	162	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	1	0	161	0	0	162	1
Added Vol:	0	0	0	31	0	89	133	85	0	0	67	49
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	32	0	90	133	246	0	0	229	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	35	0	98	145	269	0	0	250	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	35	0	98	145	269	0	0	250	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	35	0	98	145	269	0	0	250	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.67	1.00	0.67	0.66	0.69	1.00	1.00	0.67	0.67
Lanes:	0.00	1.00	0.00	0.26	0.00	0.74	1.00	1.00	0.00	0.00	0.82	0.18
Final Sat.:	0	1900	0	333	0	936	1253	1319	0	0	1043	228
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.10	0.12	0.20	0.00	0.00	0.24	0.24
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.18	0.00	0.18	0.20	0.62	0.00	0.00	0.42	0.42
Volume/Cap:	0.00	0.00	0.00	0.58	0.00	0.58	0.58	0.33	0.00	0.00	0.58	0.58
Delay/Veh:	0.0	0.0	0.0	26.0	0.0	26.0	24.9	5.7	0.0	0.0	15.0	15.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	26.0	0.0	26.0	24.9	5.7	0.0	0.0	15.0	15.0
LOS by Move:	A	A	A	C	A	C	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	3	0	3	2	2	0	0	4	4

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.611
Loss Time (sec):	16	Average Delay (sec/veh):	35.4
Optimal Cycle:	54	Level Of Service:	D

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	27	18	4	15	21	66	25	41	32	1	49	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	18	4	15	21	66	25	41	32	1	49	9
Added Vol:	10	4	0	0	2	105	110	0	6	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	22	4	15	23	171	135	41	38	1	49	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	43	26	5	18	27	200	158	48	44	1	57	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	26	5	18	27	200	158	48	44	1	57	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	26	5	18	27	200	158	48	44	1	57	11
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	0.63	0.63	0.68	0.68	0.68	0.59	0.62	0.53	0.51	0.54	0.46
Lanes:	0.59	0.35	0.06	0.07	0.11	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	702	418	76	92	141	1051	1121	1180	1003	977	1028	874
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.19	0.19	0.19	0.14	0.04	0.04	0.00	0.06	0.01
Crit Moves:	****					****	****				****	
Green/Cycle:	0.17	0.17	0.17	0.23	0.23	0.23	0.17	0.19	0.19	0.15	0.17	0.17
Volume/Cap:	0.37	0.37	0.37	0.83	0.83	0.83	0.83	0.22	0.24	0.01	0.33	0.07
Delay/Veh:	23.4	23.4	23.4	39.2	39.2	39.2	48.8	21.2	21.4	21.7	23.2	21.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.4	23.4	23.4	39.2	39.2	39.2	48.8	21.2	21.4	21.7	23.2	21.3
LOS by Move:	C	C	C	D	D	D	D	C	C	C	C	C
HCM2kAvgQ:	2	2	2	7	7	7	3	1	1	0	1	0

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.474
Loss Time (sec):	12	Average Delay (sec/veh):	17.2
Optimal Cycle:	39	Level Of Service:	B

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	29	0	22	32	151	0	0	370	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	29	0	22	32	151	0	0	370	68
Added Vol:	0	0	0	13	0	101	87	5	0	0	7	20
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	42	0	123	119	156	0	0	377	88
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.00	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	49	0	0	140	184	0	0	444	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	49	0	0	140	184	0	0	444	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	49	0	0	140	184	0	0	444	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.49	1.00	1.00	0.68	0.72	1.00	1.00	0.90	0.77
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	937	0	1900	1298	1366	0	0	1712	1455
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.00	0.11	0.13	0.00	0.00	0.26	0.07
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.11	0.00	0.00	0.23	0.77	0.00	0.00	0.55	0.55
Volume/Cap:	0.00	0.00	0.00	0.47	0.00	0.00	0.47	0.17	0.00	0.00	0.47	0.13
Delay/Veh:	0.0	0.0	0.0	47.1	0.0	0.0	36.3	3.2	0.0	0.0	14.9	11.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	47.1	0.0	0.0	36.3	3.2	0.0	0.0	14.9	11.7
LOS by Move:	A	A	A	D	A	A	D	A	A	A	B	B
HCM2kAvgQ:	0	0	0	2	0	0	4	2	0	0	9	2

NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

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Average Delay (sec/veh): 1.6 Worst Case Level Of Service: C[16.3]

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Street Name:	SR 99 East Frontage Road						Petersen Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:												
Base Vol:	0	575	37	0	0	0	0	0	0	13	0	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	575	37	0	0	0	0	0	0	13	0	60
Added Vol:	0	44	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	619	37	0	0	0	0	0	0	13	0	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	0	694	41	0	0	0	0	0	0	15	0	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	694	41	0	0	0	0	0	0	15	0	67
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.7	xxxx	6.6
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.8	xxxx	3.6
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	715	xxxx	715
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	352	xxxx	380
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	352	xxxx	380
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	0.18
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	0.6
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.7	xxxx	16.5
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	C
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			16.3		
ApproachLOS:	*			*			*			C		

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Note: Queue reported is the number of cars per lane.

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NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.378
Loss Time (sec):	12	Average Delay (sec/veh):	10.2
Optimal Cycle:	33	Level Of Service:	B

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	1	0 1	1 0	1	0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	217	0	0	369	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	217	0	0	369	0
Added Vol:	65	0	52	0	0	0	0	40	102	83	25	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	0	52	0	0	0	0	257	102	83	394	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	69	0	55	0	0	0	0	273	109	88	419	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	0	55	0	0	0	0	273	109	88	419	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	0	55	0	0	0	0	273	109	88	419	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	1.00	0.68	1.00	1.00	1.00	1.00	0.72	0.61	0.86	0.90	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1444	0	1292	0	0	0	0	1366	1161	1626	1712	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.04	0.00	0.00	0.00	0.00	0.20	0.09	0.05	0.24	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.53	0.53	0.14	0.67	0.00
Volume/Cap:	0.38	0.00	0.34	0.00	0.00	0.00	0.00	0.38	0.18	0.38	0.36	0.00
Delay/Veh:	25.3	0.0	25.1	0.0	0.0	0.0	0.0	8.6	7.5	24.3	4.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.3	0.0	25.1	0.0	0.0	0.0	0.0	8.6	7.5	24.3	4.4	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	C	A	A
HCM2kAvgQ:	2	0	1	0	0	0	0	3	1	1	3	0

NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: E[47.1]

Street Name:	Frontier Way									Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R			
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled					
Rights:	Include			Channel			Include			Include					
Lanes:	0 0 0	0 0		1 0	0 0	1	0 1	0 0	0	0 0	0 1	0			
Volume Module:															
Base Vol:	0	0	0	6	0	78	60	189	0	0	459	10			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	0	0	0	6	0	78	60	189	0	0	459	10			
Added Vol:	0	0	0	0	0	0	0	368	0	0	644	0			
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	0	0	0	6	0	78	60	557	0	0	1103	10			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85			
PHF Volume:	0	0	0	7	0	92	71	655	0	0	1298	12			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
FinalVolume:	0	0	0	7	0	92	71	655	0	0	1298	12			
Critical Gap Module:															
Critical Gp:	xxxxx	xxxx	xxxxx	6.6	xxxx	6.4	4.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
FollowUpTim:	xxxxx	xxxx	xxxxx	3.6	xxxx	3.4	2.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Capacity Module:															
Cnflict Vol:	xxxx	xxxx	xxxxx	2100	xxxx	1304	1309	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Potent Cap.:	xxxx	xxxx	xxxxx	52	xxxx	183	418	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Move Cap.:	xxxx	xxxx	xxxxx	45	xxxx	183	418	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Volume/Cap:	xxxx	xxxx	xxxx	0.16	xxxx	0.50	0.17	xxxx	xxxx	xxxx	xxxx	xxxx			
Level Of Service Module:															
2Way95thQ:	xxxx	xxxx	xxxxx	0.5	xxxx	2.5	0.6	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx	99.5	xxxx	43.0	15.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	*	*	*	F	*	E	C	*	*	*	*	*			
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Shared LOS:	*	*	*	*	*	*	C	*	*	*	*	*			
ApproachDel:	xxxxxx			47.1			xxxxxx			xxxxxx					
ApproachLOS:	*			E			*			*					

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.973
Loss Time (sec):	12	Average Delay (sec/veh):	27.9
Optimal Cycle:	105	Level Of Service:	C

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	1 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	8	0	51	40	152	0	0	407	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	8	0	51	40	152	0	0	407	6
Added Vol:	0	0	0	0	0	0	0	368	0	0	644	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	8	0	51	40	520	0	0	1051	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	9	0	60	47	612	0	0	1236	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	9	0	60	47	612	0	0	1236	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	9	0	60	47	612	0	0	1236	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.85	1.00	0.76	0.63	0.66	1.00	1.00	0.83	0.71
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	0	0	0	1612	0	1442	1195	1258	0	1900	1583	1345
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.04	0.04	0.49	0.00	0.00	0.78	0.01
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.04	0.00	0.04	0.04	0.84	0.00	0.00	0.80	0.80
Volume/Cap:	0.00	0.00	0.00	0.14	0.00	0.97	0.97	0.58	0.00	0.00	0.97	0.01
Delay/Veh:	0.0	0.0	0.0	49.3	0.0	155.1	169.5	3.3	0.0	0.0	28.5	2.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	49.3	0.0	155.1	169.5	3.3	0.0	0.0	28.5	2.1
LOS by Move:	A	A	A	D	A	F	F	A	A	A	C	A
HCM2kAvgQ:	0	0	0	0	0	4	2	6	0	0	35	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	105	Critical Vol./Cap.(X):	1.194
Loss Time (sec):	12	Average Delay (sec/veh):	109.6
Optimal Cycle:	105	Level Of Service:	F

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	1! 0	0	0	1 0	0 1	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	127	0	10	0	0	6	7	127	21	6	262	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	0	10	0	0	6	7	127	21	6	262	0
Added Vol:	0	0	0	27	0	375	219	149	0	0	269	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	127	0	10	27	0	381	226	276	21	6	531	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	149	0	12	32	0	448	266	325	25	7	625	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	0	12	32	0	448	266	325	25	7	625	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	149	0	12	32	0	448	266	325	25	7	625	18
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.63	1.00	0.63	0.49	1.00	0.57	0.64	0.66	0.66	0.73	0.77	0.65
Lanes:	0.93	0.00	0.07	1.00	0.00	1.00	1.00	0.93	0.07	1.00	1.00	1.00
Final Sat.:	1109	0	87	939	0	1092	1211	1172	89	1388	1461	1242
Capacity Analysis Module:												
Vol/Sat:	0.13	0.00	0.13	0.03	0.00	0.41	0.22	0.28	0.28	0.01	0.43	0.01
Crit Moves:						****	****				****	
Green/Cycle:	0.34	0.00	0.34	0.34	0.00	0.34	0.18	0.48	0.48	0.07	0.36	0.36
Volume/Cap:	0.39	0.00	0.39	0.10	0.00	1.19	1.19	0.58	0.58	0.08	1.19	0.04
Delay/Veh:	26.7	0.0	26.7	23.5	0.0	145.1	165.6	21.4	21.4	46.4	139	22.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.7	0.0	26.7	23.5	0.0	145.1	165.6	21.4	21.4	46.4	139	22.0
LOS by Move:	C	A	C	C	A	F	F	C	C	D	F	C
HCM2kAvgQ:	4	0	4	1	0	26	14	8	8	0	32	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.850
Loss Time (sec):	12	Average Delay (sec/veh):	30.3
Optimal Cycle:	71	Level Of Service:	C

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	1	0	0	0	123	0	0	268	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	0	0	123	0	0	268	1
Added Vol:	0	0	0	62	0	177	97	79	0	0	107	36
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	63	0	177	97	202	0	0	375	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	74	0	208	114	238	0	0	441	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	74	0	208	114	238	0	0	441	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	74	0	208	114	238	0	0	441	44
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.59	1.00	0.59	0.64	0.68	1.00	1.00	0.76	0.76
Lanes:	0.00	1.00	0.00	0.26	0.00	0.74	1.00	1.00	0.00	0.00	0.91	0.09
Final Sat.:	0	1900	0	296	0	831	1220	1284	0	0	1314	130
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.25	0.00	0.25	0.09	0.19	0.00	0.00	0.34	0.34
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.29	0.00	0.29	0.11	0.51	0.00	0.00	0.40	0.40
Volume/Cap:	0.00	0.00	0.00	0.85	0.00	0.85	0.85	0.37	0.00	0.00	0.85	0.85
Delay/Veh:	0.0	0.0	0.0	38.2	0.0	38.2	63.4	9.4	0.0	0.0	28.1	28.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	38.2	0.0	38.2	63.4	9.4	0.0	0.0	28.1	28.1
LOS by Move:	A	A	A	D	A	D	E	A	A	A	C	C
HCM2kAvgQ:	0	0	0	8	0	8	2	3	0	0	9	9

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.590
Loss Time (sec):	16	Average Delay (sec/veh):	32.6
Optimal Cycle:	54	Level Of Service:	C

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	19	24	2	6	1	22	75	63	4	1	60	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	24	2	6	1	22	75	63	4	1	60	15
Added Vol:	7	3	0	0	5	135	129	0	13	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	26	27	2	6	6	157	204	63	17	1	60	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	28	29	2	6	6	170	221	68	18	1	65	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	29	2	6	6	170	221	68	18	1	65	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	29	2	6	6	170	221	68	18	1	65	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.62	0.62	0.62	0.68	0.68	0.68	0.66	0.69	0.59	0.51	0.54	0.45
Lanes:	0.47	0.49	0.04	0.04	0.03	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	560	581	43	46	46	1195	1253	1319	1121	966	1017	864
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.14	0.14	0.14	0.18	0.05	0.02	0.00	0.06	0.02
Crit Moves:	****			****			****			****		
Green/Cycle:	0.17	0.17	0.17	0.18	0.18	0.18	0.22	0.22	0.22	0.17	0.17	0.17
Volume/Cap:	0.30	0.30	0.30	0.80	0.80	0.80	0.80	0.24	0.08	0.01	0.38	0.11
Delay/Veh:	22.8	22.8	22.8	41.0	41.0	41.0	36.8	19.9	18.9	20.6	23.7	21.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.8	22.8	22.8	41.0	41.0	41.0	36.8	19.9	18.9	20.6	23.7	21.6
LOS by Move:	C	C	C	D	D	D	D	B	B	C	C	C
HCM2kAvgQ:	1	1	1	6	6	6	4	1	0	0	2	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.424
Loss Time (sec):	12	Average Delay (sec/veh):	20.9
Optimal Cycle:	37	Level Of Service:	C

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	72	0	43	10	342	0	0	193	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	72	0	43	10	342	0	0	193	18
Added Vol:	0	0	0	26	0	106	125	9	0	0	5	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	98	0	149	135	351	0	0	198	33
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	102	0	0	140	364	0	0	206	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	102	0	0	140	364	0	0	206	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	102	0	0	140	364	0	0	206	34
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.49	1.00	1.00	0.68	0.72	1.00	1.00	0.90	0.77
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	937	0	1900	1298	1366	0	0	1712	1455
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.11	0.00	0.00	0.11	0.27	0.00	0.00	0.12	0.02
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.26	0.00	0.00	0.30	0.63	0.00	0.00	0.33	0.33
Volume/Cap:	0.00	0.00	0.00	0.42	0.00	0.00	0.36	0.42	0.00	0.00	0.36	0.07
Delay/Veh:	0.0	0.0	0.0	33.8	0.0	0.0	29.6	10.2	0.0	0.0	27.1	24.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	33.8	0.0	0.0	29.6	10.2	0.0	0.0	27.1	24.1
LOS by Move:	A	A	A	C	A	A	C	B	A	A	C	C
HCM2kAvgQ:	0	0	0	3	0	0	3	6	0	0	5	1

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[14.2]

Street Name:	SR 99 East Frontage Road						Petersen Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:												
Base Vol:	0	474	30	0	0	0	0	0	0	25	0	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	474	30	0	0	0	0	0	0	25	0	73
Added Vol:	0	88	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	562	30	0	0	0	0	0	0	25	0	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	609	33	0	0	0	0	0	0	27	0	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	609	33	0	0	0	0	0	0	27	0	79
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	6.3
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.6	xxxx	3.4
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	625	xxxx	625
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	430	xxxx	464
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	430	xxxx	464
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	0.17
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.6
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	13.9	xxxx	14.4
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	B
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			14.2		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	60	Critical Vol./Cap.(X):	0.564
Loss Time (sec):	12	Average Delay (sec/veh):	13.4
Optimal Cycle:	42	Level Of Service:	B

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lanes:	1 0	0	0 1	0	0	0 0	0	0	1 0 1	1	0	1 0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	324	0	0	236	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	324	0	0	236	0
Added Vol:	131	0	106	0	0	0	0	29	75	60	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	131	0	106	0	0	0	0	353	75	60	287	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	154	0	125	0	0	0	0	415	88	71	338	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	154	0	125	0	0	0	0	415	88	71	338	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	154	0	125	0	0	0	0	415	88	71	338	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	1.00	0.70	1.00	1.00	1.00	1.00	0.72	0.61	0.86	0.90	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1480	0	1324	0	0	0	0	1366	1161	1626	1712	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.00	0.09	0.00	0.00	0.00	0.00	0.30	0.08	0.04	0.20	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.54	0.54	0.08	0.62	0.00
Volume/Cap:	0.56	0.00	0.51	0.00	0.00	0.00	0.00	0.56	0.14	0.56	0.32	0.00
Delay/Veh:	25.0	0.0	23.8	0.0	0.0	0.0	0.0	10.2	7.0	32.6	5.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.0	0.0	23.8	0.0	0.0	0.0	0.0	10.2	7.0	32.6	5.7	0.0
LOS by Move:	C	A	C	A	A	A	A	B	A	C	A	A
HCM2kAvgQ:	4	0	3	0	0	0	0	6	1	1	3	0

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: E[48.2]

Street Name:	Frontier Way									Arch Road								
Approach:	North Bound				South Bound					East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Channel					Include					Include				
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0	1	0	1
Volume Module: >> Count Date: 29 Aug 2012 <<																				
Base Vol:	0	0	0			4	0	40			68	344	0			0	227	9		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	0			4	0	40			68	344	0			0	227	9		
Added Vol:	0	0	0			1	0	13			19	1169	0			0	552	2		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	0	0	0			5	0	53			87	1513	0			0	779	11		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	0	0	0			5	0	58			95	1645	0			0	847	12		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
FinalVolume:	0	0	0			5	0	58			95	1645	0			0	847	12		
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx			6.9	xxxx	6.7			4.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx			4.0	xxxx	3.8			2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx			2680	xxxx	847			859	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx			17	xxxx	299			703	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx			15	xxxx	299			703	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx			0.36	xxxx	0.19			0.13	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx			1.0	xxxx	0.7			0.5	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx			348.7	xxxx	19.9			10.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*			F	*	C			B	*	*	*	*	*				
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			*	*	*		
ApproachDel:	xxxxxx					48.2					xxxxxx					xxxxxx				
ApproachLOS:	*					E					*					*				

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	105	Critical Vol./Cap.(X):	1.242
Loss Time (sec):	12	Average Delay (sec/veh):	108.0
Optimal Cycle:	105	Level Of Service:	F

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	1 0	0	0 0	1 0	0	0 1	1 0	1	0 0	1 0	1	0 1
Volume Module:												
Base Vol:	1	0	0	7	0	70	36	305	0	0	159	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	0	7	0	70	36	305	0	0	159	5
Added Vol:	0	0	0	0	0	0	0	1170	0	0	554	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	0	7	0	70	36	1475	0	0	713	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	1	0	0	8	0	76	39	1603	0	0	775	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	0	8	0	76	39	1603	0	0	775	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	0	8	0	76	39	1603	0	0	775	5
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	0.64	1.00	0.57	0.78	0.82	1.00	1.00	0.82	0.70
Lanes:	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	1805	0	0	1211	0	1084	1480	1558	0	1900	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.07	0.03	1.03	0.00	0.00	0.50	0.00
Crit Moves:	****					****		****		****		
Green/Cycle:	0.04	0.00	0.00	0.05	0.00	0.05	0.06	0.79	0.00	0.00	0.74	0.74
Volume/Cap:	0.02	0.00	0.00	0.12	0.00	1.30	0.47	1.30	0.00	0.00	0.67	0.01
Delay/Veh:	48.7	0.0	0.0	48.1	0.0	266.0	52.1	151	0.0	0.0	8.8	3.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.7	0.0	0.0	48.1	0.0	266.0	52.1	151	0.0	0.0	8.8	3.6
LOS by Move:	D	A	A	D	A	F	D	F	A	A	A	A
HCM2kAvgQ:	0	0	0	0	0	7	1	93	0	0	13	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	1.160
Loss Time (sec):	12	Average Delay (sec/veh):	87.9
Optimal Cycle:	105	Level Of Service:	F

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	1! 0	0	0	1 0	0 1	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	17	0	2	1	0	3	13	155	145	15	145	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	0	2	1	0	3	13	155	145	15	145	1
Added Vol:	114	0	8	19	0	210	336	656	179	13	230	30
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	131	0	10	20	0	213	349	811	324	28	375	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	142	0	11	22	0	232	379	882	352	30	408	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	0	11	22	0	232	379	882	352	30	408	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	142	0	11	22	0	232	379	882	352	30	408	34
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.56	1.00	0.56	0.65	1.00	0.68	0.78	0.78	0.78	0.78	0.82	0.70
Lanes:	0.93	0.00	0.07	1.00	0.00	1.00	1.00	0.71	0.29	1.00	1.00	1.00
Final Sat.:	997	0	76	1231	0	1292	1480	1065	426	1480	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.14	0.00	0.14	0.02	0.00	0.18	0.26	0.83	0.83	0.02	0.26	0.03
Crit Moves:						****		****		****		
Green/Cycle:	0.15	0.00	0.15	0.15	0.00	0.15	0.36	0.70	0.70	0.04	0.37	0.37
Volume/Cap:	0.95	0.00	0.95	0.12	0.00	1.19	0.70	1.19	1.19	0.54	0.70	0.07
Delay/Veh:	99.1	0.0	99.1	38.8	0.0	168.7	32.8	110	110.2	59.7	32.1	21.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	99.1	0.0	99.1	38.8	0.0	168.7	32.8	110	110.2	59.7	32.1	21.4
LOS by Move:	F	A	F	D	A	F	C	F	F	E	C	C
HCM2kAvgQ:	8	0	8	1	0	15	10	61	61	1	11	1

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	75	Critical Vol./Cap.(X):	0.831
Loss Time (sec):	16	Average Delay (sec/veh):	29.9
Optimal Cycle:	82	Level Of Service:	C

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	1	0	1	0	161	0	0	162	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	1	0	161	0	0	162	1
Added Vol:	55	0	8	31	0	89	133	465	85	12	130	49
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	0	8	32	0	90	133	626	85	12	292	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	60	0	9	35	0	98	145	680	92	13	317	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	0	9	35	0	98	145	680	92	13	317	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	0	9	35	0	98	145	680	92	13	317	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	1.00	0.68	0.71	1.00	0.71	0.78	0.81	0.81	0.78	0.80	0.80
Lanes:	1.00	0.00	1.00	0.26	0.00	0.74	1.00	0.88	0.12	1.00	0.85	0.15
Final Sat.:	1444	0	1292	354	0	996	1480	1347	183	1480	1301	223
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.01	0.10	0.00	0.10	0.10	0.51	0.51	0.01	0.24	0.24
Crit Moves:	****					****		****		****		
Green/Cycle:	0.05	0.00	0.05	0.11	0.00	0.11	0.18	0.57	0.57	0.05	0.44	0.44
Volume/Cap:	0.78	0.00	0.13	0.89	0.00	0.89	0.55	0.89	0.89	0.17	0.55	0.55
Delay/Veh:	73.1	0.0	34.7	75.2	0.0	75.2	30.5	25.0	25.0	34.9	16.3	16.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.1	0.0	34.7	75.2	0.0	75.2	30.5	25.0	25.0	34.9	16.3	16.3
LOS by Move:	E	A	C	E	A	E	C	C	C	C	B	B
HCM2kAvgQ:	3	0	0	6	0	6	3	14	14	0	6	6

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	90	Critical Vol./Cap.(X):	0.799
Loss Time (sec):	16	Average Delay (sec/veh):	49.2
Optimal Cycle:	83	Level Of Service:	D

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	27	18	4	15	21	66	25	41	32	1	49	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	18	4	15	21	66	25	41	32	1	49	9
Added Vol:	51	11	0	0	77	140	132	0	372	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	29	4	15	98	206	157	41	404	1	49	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	85	32	4	16	107	224	171	45	439	1	53	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	32	4	16	107	224	171	45	439	1	53	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	32	4	16	107	224	171	45	439	1	53	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	0.79	0.79	0.75	0.75	0.75	0.78	0.82	0.70	0.78	0.82	0.70
Lanes:	0.70	0.26	0.04	0.05	0.31	0.64	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1052	391	54	67	436	917	1480	1558	1324	1480	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.08	0.24	0.24	0.24	0.12	0.03	0.33	0.00	0.03	0.01
Crit Moves:	****					****			****	****		
Green/Cycle:	0.11	0.11	0.11	0.26	0.26	0.26	0.23	0.36	0.36	0.09	0.22	0.22
Volume/Cap:	0.73	0.73	0.73	0.93	0.93	0.93	0.51	0.08	0.93	0.01	0.16	0.03
Delay/Veh:	53.3	53.3	53.3	60.7	60.7	60.7	31.6	19.1	51.9	37.4	28.6	27.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.3	53.3	53.3	60.7	60.7	60.7	31.6	19.1	51.9	37.4	28.6	27.7
LOS by Move:	D	D	D	E	E	E	C	B	D	D	C	C
HCM2kAvgQ:	5	5	5	14	14	14	4	1	12	0	1	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.505
Loss Time (sec):	12	Average Delay (sec/veh):	19.2
Optimal Cycle:	41	Level Of Service:	B

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	29	0	22	32	151	0	0	370	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	29	0	22	32	151	0	0	370	68
Added Vol:	0	0	0	29	0	114	145	6	0	0	10	72
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	58	0	136	177	157	0	0	380	140
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.00	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	63	0	0	192	171	0	0	413	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	63	0	0	192	171	0	0	413	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	63	0	0	192	171	0	0	413	152
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.63	1.00	1.00	0.78	0.82	1.00	1.00	0.82	0.70
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1198	0	1900	1480	1558	0	0	1558	1324
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.00	0.13	0.11	0.00	0.00	0.27	0.11
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.10	0.00	0.00	0.26	0.78	0.00	0.00	0.52	0.52
Volume/Cap:	0.00	0.00	0.00	0.51	0.00	0.00	0.51	0.14	0.00	0.00	0.51	0.22
Delay/Veh:	0.0	0.0	0.0	47.8	0.0	0.0	34.4	2.9	0.0	0.0	16.7	13.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	47.8	0.0	0.0	34.4	2.9	0.0	0.0	16.7	13.6
LOS by Move:	A	A	A	D	A	A	C	A	A	A	B	B
HCM2kAvgQ:	0	0	0	3	0	0	5	1	0	0	9	3

NorCal Logistics Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C[16.3]

Street Name:	SR 99 East Frontage Road						Petersen Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:												
Base Vol:	0	575	37	0	0	0	0	0	0	13	0	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	575	37	0	0	0	0	0	0	13	0	60
Added Vol:	0	47	5	0	0	0	0	0	0	0	0	8
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	622	42	0	0	0	0	0	0	13	0	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	676	46	0	0	0	0	0	0	14	0	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	676	46	0	0	0	0	0	0	14	0	74
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.7	xxxx	6.6
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.8	xxxx	3.6
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	699	xxxx	699
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	360	xxxx	389
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	360	xxxx	389
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	0.19
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	0.7
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.4	xxxx	16.4
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	C
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			16.3		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

NorCal Logistics Center
Near-Term With Project
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	75	Critical Vol./Cap.(X):	0.399
Loss Time (sec):	12	Average Delay (sec/veh):	11.5
Optimal Cycle:	34	Level Of Service:	B

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0	0	0 0 0	0	0	1 0 1	1	0	1 0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	217	0	0	369	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	217	0	0	369	0
Added Vol:	65	0	52	0	0	0	0	99	102	83	41	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	0	52	0	0	0	0	316	102	83	410	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	71	0	57	0	0	0	0	343	111	90	446	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	0	57	0	0	0	0	343	111	90	446	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	0	57	0	0	0	0	343	111	90	446	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	1.00	0.68	1.00	1.00	1.00	1.00	0.82	0.70	0.78	0.82	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1444	0	1292	0	0	0	0	1558	1324	1480	1558	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.04	0.00	0.00	0.00	0.00	0.22	0.08	0.06	0.29	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.56	0.56	0.16	0.72	0.00
Volume/Cap:	0.40	0.00	0.36	0.00	0.00	0.00	0.00	0.39	0.15	0.39	0.40	0.00
Delay/Veh:	31.8	0.0	31.6	0.0	0.0	0.0	0.0	9.5	7.9	29.6	4.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.8	0.0	31.6	0.0	0.0	0.0	0.0	9.5	7.9	29.6	4.4	0.0
LOS by Move:	C	A	C	A	A	A	A	A	A	C	A	A
HCM2kAvgQ:	2	0	2	0	0	0	0	5	1	2	4	0

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Arch/Frontier [Arch/Frontier]

Average Delay (sec/veh): 16.9 Worst Case Level Of Service: F[416.1]

Street Name:	Frontier Way									Arch Road								
Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Channel					Include					Include				
Lanes:	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0	1	0	1
Volume Module:																				
Base Vol:	0	0	0			6	0	78			60	189	0			0	459	10		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	0			6	0	78			60	189	0			0	459	10		
Added Vol:	0	0	0			2	0	24			15	626	0			0	1344	1		
PasserByVol:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	0	0	0			8	0	102			75	815	0			0	1803	11		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92			0.92	0.92	0.92		
PHF Volume:	0	0	0			9	0	111			82	886	0			0	1960	12		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
FinalVolume:	0	0	0			9	0	111			82	886	0			0	1960	12		
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx			6.6	xxxx	6.4			4.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx			3.6	xxxx	3.4			2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx			3009	xxxx	1960			1972	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx			13	xxxx	73			263	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx			10	xxxx	73			263	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx			0.87	xxxx	1.53			0.31	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx			1.7	xxxx	9.3			1.3	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx			714.1	xxxx	392.7			24.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*			F	*	F			C	*	*	*	*	*				
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			*	*	*		
ApproachDel:	xxxxxx					416.1					xxxxxx					xxxxxx				
ApproachLOS:	*					F					*					*				

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Arch/Fite [Arch/Fite]

Cycle (sec):	105	Critical Vol./Cap.(X):	1.399
Loss Time (sec):	12	Average Delay (sec/veh):	149.4
Optimal Cycle:	105	Level Of Service:	F

Street Name:	Fite Court						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	1 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	8	0	51	40	152	0	0	407	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	8	0	51	40	152	0	0	407	6
Added Vol:	0	0	0	0	0	0	0	628	0	0	1345	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	8	0	51	40	780	0	0	1752	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	9	0	55	43	848	0	0	1904	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	9	0	55	43	848	0	0	1904	7
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	9	0	55	43	848	0	0	1904	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.85	1.00	0.76	0.81	0.86	1.00	1.00	0.86	0.73
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Sat.:	0	0	0	1612	0	1442	1543	1625	0	1900	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.04	0.03	0.52	0.00	0.00	1.17	0.00
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.04	0.00	0.04	0.04	0.85	0.00	0.00	0.81	0.81
Volume/Cap:	0.00	0.00	0.00	0.14	0.00	1.01	0.74	0.62	0.00	0.00	1.45	0.01
Delay/Veh:	0.0	0.0	0.0	49.9	0.0	174.5	88.9	3.4	0.0	0.0	216	1.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	49.9	0.0	174.5	88.9	3.4	0.0	0.0	216	1.9
LOS by Move:	A	A	A	D	A	F	F	A	A	A	F	A
HCM2kAvgQ:	0	0	0	0	0	4	1	8	0	0	129	0

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch/Newcastle [Arch/Newcastle]

Cycle (sec):	132	Critical Vol./Cap.(X):	1.360
Loss Time (sec):	12	Average Delay (sec/veh):	157.6
Optimal Cycle:	105	Level Of Service:	F

Street Name:	Newcastle Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lanes:	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	127	0	10	0	0	6	7	127	21	6	262	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	0	10	0	0	6	7	127	21	6	262	0
Added Vol:	229	0	17	39	0	418	243	255	130	10	698	22
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	356	0	27	39	0	424	250	382	151	16	960	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	387	0	29	42	0	461	272	415	164	17	1043	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	387	0	29	42	0	461	272	415	164	17	1043	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	387	0	29	42	0	461	272	415	164	17	1043	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.57	1.00	0.57	0.64	1.00	0.70	0.81	0.82	0.82	0.81	0.86	0.73
Lanes:	0.93	0.00	0.07	1.00	0.00	1.00	1.00	0.72	0.28	1.00	1.00	1.00
Final Sat.:	1003	0	76	1218	0	1324	1543	1115	441	1543	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.39	0.00	0.39	0.03	0.00	0.35	0.18	0.37	0.37	0.01	0.64	0.02
Crit Moves:	****						****				****	
Green/Cycle:	0.28	0.00	0.28	0.28	0.00	0.28	0.13	0.55	0.55	0.06	0.47	0.47
Volume/Cap:	1.36	0.00	1.36	0.12	0.00	1.23	1.36	0.68	0.68	0.20	1.36	0.04
Delay/Veh:	219.2	0.0	219.2	28.1	0.0	161.0	236.4	19.5	19.5	48.5	198	14.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	219.2	0.0	219.2	28.1	0.0	161.0	236.4	19.5	19.5	48.5	198	14.9
LOS by Move:	F	A	F	C	A	F	F	B	B	D	F	B
HCM2kAvgQ:	29	0	29	1	0	28	18	13	13	0	65	0

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Arch/Logistics [Arch/Logistics]

Cycle (sec):	75	Critical Vol./Cap.(X):	1.070
Loss Time (sec):	16	Average Delay (sec/veh):	74.7
Optimal Cycle:	105	Level Of Service:	E

Street Name:	Logistics Drive						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	4	4	4	4	4	4	4	4	4	4	4	4
Y+R:	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0
Lanes:	1 0	0	1 0	0	0	1! 0	0	1 0	0 1	0	1 0	0 1 0
Volume Module:												
Base Vol:	0	0	0	1	0	0	0	123	0	0	268	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	0	0	0	123	0	0	268	1
Added Vol:	110	0	16	62	0	177	97	152	61	9	443	36
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	0	16	63	0	177	97	275	61	9	711	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	120	0	17	68	0	192	105	299	66	10	773	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	0	17	68	0	192	105	299	66	10	773	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	120	0	17	68	0	192	105	299	66	10	773	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	1.00	0.70	0.73	1.00	0.73	0.81	0.83	0.83	0.81	0.85	0.85
Lanes:	1.00	0.00	1.00	0.26	0.00	0.74	1.00	0.82	0.18	1.00	0.95	0.05
Final Sat.:	1480	0	1324	364	0	1022	1543	1294	287	1543	1533	80
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.01	0.19	0.00	0.19	0.07	0.23	0.23	0.01	0.50	0.50
Crit Moves:	****			****			****				****	
Green/Cycle:	0.08	0.00	0.08	0.18	0.00	0.18	0.06	0.43	0.43	0.10	0.47	0.47
Volume/Cap:	1.07	0.00	0.17	1.07	0.00	1.07	1.07	0.53	0.53	0.06	1.07	1.07
Delay/Veh:	139.7	0.0	33.3	108.2	0.0	108.2	145.8	16.4	16.4	30.7	72.7	72.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	139.7	0.0	33.3	108.2	0.0	108.2	145.8	16.4	16.4	30.7	72.7	72.7
LOS by Move:	F	A	C	F	A	F	F	B	B	C	E	E
HCM2kAvgQ:	7	0	1	12	0	12	4	6	6	0	28	28

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 Arch/Austin [Arch/Austin]

Cycle (sec):	90	Critical Vol./Cap.(X):	0.818
Loss Time (sec):	16	Average Delay (sec/veh):	50.7
Optimal Cycle:	87	Level Of Service:	D

Street Name:	Austin Road						Arch Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	10	10	10	10	10	10	8	10	10	8	10	10
Y+R:	7.8	7.8	7.8	7.8	7.8	7.8	7.5	7.8	7.8	7.5	7.8	7.8
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	1 0	1	1 0	1 0	1
Volume Module:												
Base Vol:	19	24	2	6	1	22	75	63	4	1	60	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	24	2	6	1	22	75	63	4	1	60	15
Added Vol:	327	68	0	0	12	161	173	0	56	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	346	92	2	6	13	183	248	63	60	1	60	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	374	100	2	6	14	198	268	68	65	1	65	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	374	100	2	6	14	198	268	68	65	1	65	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	374	100	2	6	14	198	268	68	65	1	65	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.82	0.82	0.82	0.75	0.75	0.75	0.81	0.86	0.73	0.81	0.86	0.73
Lanes:	0.78	0.21	0.01	0.03	0.06	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1228	326	7	42	92	1291	1543	1625	1381	1543	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.31	0.31	0.31	0.15	0.15	0.15	0.17	0.04	0.05	0.00	0.04	0.01
Crit Moves:		****			****			****			****	
Green/Cycle:	0.34	0.34	0.34	0.17	0.17	0.17	0.20	0.17	0.17	0.14	0.11	0.11
Volume/Cap:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.25	0.28	0.01	0.36	0.11
Delay/Veh:	44.6	44.6	44.6	66.5	66.5	66.5	61.2	32.8	33.1	33.6	38.3	36.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.6	44.6	44.6	66.5	66.5	66.5	61.2	32.8	33.1	33.6	38.3	36.3
LOS by Move:	D	D	D	E	E	E	E	C	C	C	D	D
HCM2kAvgQ:	16	16	16	9	9	9	8	2	2	0	2	0

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 E Mariposa/Austin [E Mariposa/Austin]

Cycle (sec):	105	Critical Vol./Cap.(X):	0.400
Loss Time (sec):	12	Average Delay (sec/veh):	23.0
Optimal Cycle:	35	Level Of Service:	C

Street Name:	Austin Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ignore			Include			Include		
Min. Green:	10	10	10	5	5	5	5	8	8	5	8	8
Y+R:	7.8	7.8	7.8	4.6	4.6	4.6	4.6	5.7	5.7	4.6	5.7	5.7
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	72	0	43	10	342	0	0	193	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	72	0	43	10	342	0	0	193	18
Added Vol:	0	0	0	79	0	162	140	12	0	0	7	32
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	151	0	205	150	354	0	0	200	50
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	0	157	0	0	156	368	0	0	208	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	157	0	0	156	368	0	0	208	52
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	157	0	0	156	368	0	0	208	52
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.66	1.00	1.00	0.81	0.86	1.00	1.00	0.86	0.73
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1249	0	1900	1543	1625	0	0	1625	1381
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.00	0.10	0.23	0.00	0.00	0.13	0.04
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.31	0.00	0.00	0.25	0.57	0.00	0.00	0.32	0.32
Volume/Cap:	0.00	0.00	0.00	0.40	0.00	0.00	0.40	0.40	0.00	0.00	0.40	0.12
Delay/Veh:	0.0	0.0	0.0	28.9	0.0	0.0	33.3	12.7	0.0	0.0	28.4	25.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	28.9	0.0	0.0	33.3	12.7	0.0	0.0	28.4	25.4
LOS by Move:	A	A	A	C	A	A	C	B	A	A	C	C
HCM2kAvgQ:	0	0	0	4	0	0	4	6	0	0	5	1

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #14 SR 99 East Frontage Road / Petersen Road [SR 99 East Frontage R

****

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: B[14.9]

****

Street Name:	SR 99 East Frontage Road						Petersen Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Volume Module:												
Base Vol:	0	474	30	0	0	0	0	0	0	25	0	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	474	30	0	0	0	0	0	0	25	0	73
Added Vol:	0	108	3	0	0	0	0	0	0	0	0	14
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	582	33	0	0	0	0	0	0	25	0	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	631	36	0	0	0	0	0	0	27	0	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	631	36	0	0	0	0	0	0	27	0	94
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	6.3
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.6	xxxx	3.4
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	648	xxxx	648
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	416	xxxx	449
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	416	xxxx	449
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	0.21
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.8
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.2	xxxx	15.1
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	C
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			14.9		
ApproachLOS:	*			*			*			B		

****

Note: Queue reported is the number of cars per lane.

****

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 E Mariposa/Newcastle [E Mariposa/Newcastle]

Cycle (sec):	75	Critical Vol./Cap.(X):	0.460
Loss Time (sec):	12	Average Delay (sec/veh):	14.3
Optimal Cycle:	37	Level Of Service:	B

Street Name:	Newcastle Road						E Mariposa Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0	0	0 0 0	0	0	1 0 1	1	0	1 0 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	324	0	0	236	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	324	0	0	236	0
Added Vol:	131	0	106	0	0	0	0	47	75	60	108	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	131	0	106	0	0	0	0	371	75	60	344	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	142	0	115	0	0	0	0	403	82	65	374	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	0	115	0	0	0	0	403	82	65	374	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	142	0	115	0	0	0	0	403	82	65	374	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	1.00	0.70	1.00	1.00	1.00	1.00	0.86	0.73	0.81	0.86	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1480	0	1324	0	0	0	0	1625	1381	1543	1625	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.00	0.09	0.00	0.00	0.00	0.00	0.25	0.06	0.04	0.23	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.21	0.00	0.21	0.00	0.00	0.00	0.00	0.54	0.54	0.09	0.63	0.00
Volume/Cap:	0.46	0.00	0.42	0.00	0.00	0.00	0.00	0.46	0.11	0.46	0.36	0.00
Delay/Veh:	27.0	0.0	26.7	0.0	0.0	0.0	0.0	11.0	8.5	34.7	6.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.0	0.0	26.7	0.0	0.0	0.0	0.0	11.0	8.5	34.7	6.9	0.0
LOS by Move:	C	A	C	A	A	A	A	B	A	C	A	A
HCM2kAvgQ:	3	0	3	0	0	0	0	6	1	1	4	0

APPENDIX C: SIGNAL WARRANT WORKSHEETS

NorCal Logistics Center
Existing Conditions
AM Peak Hour

Scenario Report

Scenario:	Existing AM
Command:	Existing AM
Volume:	Existing AM
Geometry:	Existing AM
Impact Fee:	Default Impact Fee
Trip Generation:	No Project
Trip Distribution:	No Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Existing Conditions
AM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 Arch/Frontier	??? / ???	No / No
# 13 99 Mariposa Offramp / 99 East Front	??? / ???	No / No
# 14 SR 99 East Frontage Road / Petersen	??? / ???	No / No

NorCal Logistics Center
Existing Conditions
AM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0		1 0 0	0 1		0 1 0	0 0		0 0 0	1 0	
Initial Vol:	0	0	0	4	0	40	68	344	0	0	227	9
ApproachDel:	xxxxxx			11.5			xxxxxx			xxxxxx		

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=44]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=692]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Existing Conditions
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	1 0	0 0	1	0 1	0 0	0	0 0	0 1	0
Initial Vol:	0	0	0	4	0	40	68	344	0	0	227	9

Major Street Volume: 648
Minor Approach Volume: 44
Minor Approach Volume Threshold: 429

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Conditions
AM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0	0	0 1	0 0	0	0 0
Initial Vol:	0	587	0	0	13	0	26	0	14	0	0	0
ApproachDel:	0.0			0.0			0.0			0.0		

Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=587]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=640]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=13]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=640]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Conditions
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0 0	0	1	0 0 0	0	0
Initial Vol:	0	587	0	0	13	0	26	0	14	0	0	0

Major Street Volume: 40
Minor Approach Volume: 587
Minor Approach Volume Threshold: 1394

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Existing Conditions
AM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	575	37	0	0	0	0	0	0	13	0	60
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			15.5		

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=73]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=2][total volume=685]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Conditions
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	575	37	0	0	0	0	0	0	13	0	60

Major Street Volume: 612
Minor Approach Volume: 73
Minor Approach Volume Threshold: 447

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Conditions
PM Peak Hour

Scenario Report

Scenario:	Existing PM
Command:	Existing PM
Volume:	Existing PM
Geometry:	Existing PM
Impact Fee:	Default Impact Fee
Trip Generation:	No Project
Trip Distribution:	No Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Existing Conditions
PM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 Arch/Frontier	??? / ???	No / No
# 13 99 Mariposa Offramp / 99 East Front	??? / ???	No / No
# 14 SR 99 East Frontage Road / Petersen	??? / ???	No / No

NorCal Logistics Center
Existing Conditions
PM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	1 0	0 0	1	0 1	0 0	0	0 0	0 1	0
Initial Vol:	0	0	0	6	0	78	60	189	0	0	459	10
ApproachDel:	xxxxxx			13.9			xxxxxx			xxxxxx		

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=84]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=802]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Existing Conditions
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	1	0 0	1	0	1 0	0	0	0 0	1 0
Initial Vol:	0	0	0	6	0	78	60	189	0	0	459	10

Major Street Volume: 718
Minor Approach Volume: 84
Minor Approach Volume Threshold: 397

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Existing Conditions
PM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0	0	0 1	0 0	0	0 0
Initial Vol:	0	487	0	0	24	0	14	0	8	0	0	0
ApproachDel:	0.0			0.0			0.0			0.0		

Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=487]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=533]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=24]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=533]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Conditions
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0 0	0	1	0 0 0	0	0
Initial Vol:	0	487	0	0	24	0	14	0	8	0	0	0

Major Street Volume: 22
Minor Approach Volume: 487
Minor Approach Volume Threshold: 1600

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Conditions
PM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	474	30	0	0	0	0	0	0	25	0	73
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			13.0		

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=98]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=2][total volume=602]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Conditions
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	474	30	0	0	0	0	0	0	25	0	73

Major Street Volume: 504
Minor Approach Volume: 98
Minor Approach Volume Threshold: 508

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Scenario Report

Scenario:	Existing Plus Project AM
Command:	Existing Plus Project AM
Volume:	Existing AM
Geometry:	Existing AM_With_Project
Impact Fee:	Default Impact Fee
Trip Generation:	Project AM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 Arch/Frontier	??? / ???	No / No
# 13 99 Mariposa Offramp / 99 East Front	??? / ???	No / No
# 14 SR 99 East Frontage Road / Petersen	??? / ???	No / No

NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	1 0	0 0	1	0 1	0 0	0	0 0	0 1	0
Initial Vol:	0	0	0	4	0	40	68	746	0	0	483	9
ApproachDel:	xxxxxx			17.1			xxxxxx			xxxxxx		

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=44]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1350]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	1 0	0 0	1	0 1	0 0	0	0 0	0 1	0
Initial Vol:	0	0	0	4	0	40	68	746	0	0	483	9

Major Street Volume: 1306
Minor Approach Volume: 44
Minor Approach Volume Threshold: 208

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Peak Hour Delay Signal Warrant Report

****

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0	0	0 1	0 0	0	0 0
Initial Vol:	0	679	0	0	13	0	26	0	15	0	0	0
ApproachDel:		0.0			0.0			0.0			0.0	

Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=679]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=733]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=13]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=733]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0	0	0 1	0 0	0	0 0
Initial Vol:	0	679	0	0	13	0	26	0	15	0	0	0

Major Street Volume: 41
Minor Approach Volume: 679
Minor Approach Volume Threshold: 1385

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Peak Hour Delay Signal Warrant Report

****

Intersection #14 SR 99 East Frontage Road / Petersen Road

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	667	37	0	0	0	0	0	0	13	0	60
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			17.4		

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=73]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=2][total volume=777]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Plus Project
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	667	37	0	0	0	0	0	0	13	0	60

Major Street Volume: 704
Minor Approach Volume: 73
Minor Approach Volume Threshold: 403

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Scenario Report

Scenario:	Existing Plus Project PM
Command:	Existing Plus Project PM
Volume:	Existing PM
Geometry:	Existing PM_With_Project
Impact Fee:	Default Impact Fee
Trip Generation:	Project PM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 Arch/Frontier	??? / ???	No / No
# 13 99 Mariposa Offramp / 99 East Front	??? / ???	No / No
# 14 SR 99 East Frontage Road / Petersen	??? / ???	No / No

NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0		1 0 0	0 1		0 1 0	0 0		0 0 0	1 0	
Initial Vol:	0	0	0	6	0	78	60	482	0	0	971	10
ApproachDel:	xxxxxx			33.8			xxxxxx			xxxxxx		

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.8]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=84]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1607]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	1	0 0	1	0	1 0	0	0	0 0	1 0
Initial Vol:	0	0	0	6	0	78	60	482	0	0	971	10

Major Street Volume: 1523
Minor Approach Volume: 84
Minor Approach Volume Threshold: 160

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0	0	0 1	0 0	0	0 0
Initial Vol:	0	671	0	0	24	0	14	0	10	0	0	0
ApproachDel:		0.0			0.0			0.0			0.0	

Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=671]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=719]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=24]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=719]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0 0		0 0 1	0 0		1 0 0	0 1		0 0 0	0 0	
Initial Vol:	0	671	0	0	24	0	14	0	10	0	0	0

Major Street Volume: 24
Minor Approach Volume: 671
Minor Approach Volume Threshold: 1570

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	658	30	0	0	0	0	0	0	25	0	73
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			15.9		

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=98]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=2][total volume=786]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Existing Plus Project
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	658	30	0	0	0	0	0	0	25	0	73

Major Street Volume: 688
Minor Approach Volume: 98
Minor Approach Volume Threshold: 410

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Near-Term Without Project
AM Peak Hour

Scenario Report

Scenario:	Near-Term AM
Command:	Near-Term AM
Volume:	Near-term AM
Geometry:	Near-Term AM
Impact Fee:	Default Impact Fee
Trip Generation:	Vacant AM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Near-Term Without Project
AM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 Arch/Frontier	??? / ???	No / No
# 13 99 Mariposa Offramp / 99 East Front	??? / ???	No / No
# 14 SR 99 East Frontage Road / Petersen	??? / ???	No / No

NorCal Logistics Center
Near-Term Without Project
AM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	1 0	0	0 0	1 0	1
Initial Vol:	0	0	0	5	0	53	87	1007	0	0	457	11
ApproachDel:	xxxxxx			18.0			xxxxxx			xxxxxx		

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=58]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1620]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term Without Project
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	1 0 0	0 1		1 0	1 0	0	0 0	1 0	1
Initial Vol:	0	0	0	5	0	53	87	1007	0	0	457	11

Major Street Volume: 1562
Minor Approach Volume: 58
Minor Approach Volume Threshold: 182

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term Without Project
AM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0 0	0	1	0 0 0	0	0
Initial Vol:	0	590	0	0	13	0	31	0	29	0	0	0
ApproachDel:		0.0			0.0			0.0			0.0	

Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=590]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=663]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=13]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=663]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term Without Project
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0 0	0	1	0 0 0	0	0
Initial Vol:	0	590	0	0	13	0	31	0	29	0	0	0

Major Street Volume: 60
Minor Approach Volume: 590
Minor Approach Volume Threshold: 1254

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term Without Project
AM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	578	42	0	0	0	0	0	0	13	0	68
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			15.4		

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=81]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=2][total volume=701]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term Without Project
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	578	42	0	0	0	0	0	0	13	0	68

Major Street Volume: 620
Minor Approach Volume: 81
Minor Approach Volume Threshold: 443

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Near-Term Without Project
PM Peak Hour

Scenario Report

Scenario:	Near-Term PM
Command:	Near-Term PM
Volume:	Near-term PM
Geometry:	Near-Term PM
Impact Fee:	Default Impact Fee
Trip Generation:	Vacant PM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Near-Term Without Project
PM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 Arch/Frontier	??? / ???	No / No
# 13 99 Mariposa Offramp / 99 East Front	??? / ???	No / No
# 14 SR 99 East Frontage Road / Petersen	??? / ???	No / No

NorCal Logistics Center
Near-Term Without Project
PM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	1 0	0	0 0	1 0	1
Initial Vol:	0	0	0	8	0	102	75	447	0	0	1158	11
ApproachDel:	xxxxxx			47.6			xxxxxx			xxxxxx		

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.5]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=110]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1801]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Near-Term Without Project
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0	0	1 0 0	0 1		1 0	1 0	0	0 0	1 0	1
Initial Vol:	0	0	0	8	0	102	75	447	0	0	1158	11

Major Street Volume: 1691
Minor Approach Volume: 110
Minor Approach Volume Threshold: 148 [less than minimum of 150]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term Without Project
PM Peak Hour

Peak Hour Delay Signal Warrant Report

****

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0	0	0 1	0 0	0	0 0
Initial Vol:	0	507	0	0	24	0	17	0	30	0	0	0
ApproachDel:	0.0			0.0			0.0			0.0		

Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=507]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=578]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=24]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=578]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term Without Project
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0 0	0	1	0 0 0	0	0
Initial Vol:	0	507	0	0	24	0	17	0	30	0	0	0

Major Street Volume: 47
Minor Approach Volume: 507
Minor Approach Volume Threshold: 1338

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Near-Term Without Project
PM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	494	33	0	0	0	0	0	0	25	0	87
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			13.5		

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=112]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=2][total volume=639]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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NorCal Logistics Center
Near-Term Without Project
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	494	33	0	0	0	0	0	0	25	0	87

Major Street Volume: 527
Minor Approach Volume: 112
Minor Approach Volume Threshold: 494

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Scenario Report

Scenario:	Near-Term With Project AM
Command:	Near-Term Plus Project AM
Volume:	Near-term AM
Geometry:	Near-Term AM
Impact Fee:	Default Impact Fee
Trip Generation:	NT Project AM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 Arch/Frontier	??? / ???	No / No
# 13 99 Mariposa Offramp / 99 East Front	??? / ???	No / No
# 14 SR 99 East Frontage Road / Petersen	??? / ???	No / No

NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	1 0	0	0 0	1 0	1
Initial Vol:	0	0	0	5	0	53	87	1409	0	0	712	11
ApproachDel:	xxxxxx			37.2			xxxxxx			xxxxxx		

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.6]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=58]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2277]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	1 0	0	0 0	1 0	1
Initial Vol:	0	0	0	5	0	53	87	1409	0	0	712	11

Major Street Volume: 2219
Minor Approach Volume: 58
Minor Approach Volume Threshold: 31 [less than minimum of 150]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Peak Hour Delay Signal Warrant Report

****

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0 0		0 0 1	0 0		1 0 0	0 1		0 0 0	0 0	
Initial Vol:	0	682	0	0	13	0	31	0	29	0	0	0
ApproachDel:	0.0			0.0			0.0			0.0		

Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=682]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=755]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=13]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=755]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0 0	0	1	0 0 0	0	0
Initial Vol:	0	682	0	0	13	0	31	0	29	0	0	0

Major Street Volume: 60
Minor Approach Volume: 682
Minor Approach Volume Threshold: 1254

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	670	42	0	0	0	0	0	0	13	0	68
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			17.3		

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.4]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=81]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=2][total volume=793]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

NorCal Logistics Center
Near-Term With Project
AM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	670	42	0	0	0	0	0	0	13	0	68

Major Street Volume: 712
Minor Approach Volume: 81
Minor Approach Volume Threshold: 399

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Scenario Report

Scenario:	Near-Term With Project PM
Command:	Near-Term Plus Project PM
Volume:	Near-term PM
Geometry:	Near-Term PM
Impact Fee:	Default Impact Fee
Trip Generation:	NT Project PM
Trip Distribution:	Existing&Near-Term
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 4 Arch/Frontier	??? / ???	No / No
# 13 99 Mariposa Offramp / 99 East Front	??? / ???	No / No
# 14 SR 99 East Frontage Road / Petersen	??? / ???	No / No

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 0	0 0		1 0 0	0 1		1 0 1	0 0		0 0 1	0 1	
Initial Vol:	0	0	0	8	0	102	75	740	0	0	1670	11
ApproachDel:	xxxxxx			272.3			xxxxxx			xxxxxx		

Approach[southbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=8.3]
   SUCCEED - Vehicle-hours >= 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=110]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2606]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Arch/Frontier

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	1 0	0	0 0	1 0	1
Initial Vol:	0	0	0	8	0	102	75	740	0	0	1670	11

Major Street Volume: 2496
Minor Approach Volume: 110
Minor Approach Volume Threshold: -19 [less than minimum of 150]

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Peak Hour Delay Signal Warrant Report

****

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0	0	0 0 1	0	0	1 0	0	0 1	0 0	0	0 0
Initial Vol:	0	692	0	0	24	0	17	0	32	0	0	0
ApproachDel:		0.0			0.0			0.0			0.0	

Approach[northbound][lanes=1][control=Yield Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Controller not stop sign.
Signal Warrant Rule #2: [approach volume=692]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=765]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=24]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=765]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #13 99 Mariposa Offramp / 99 East Frontage Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Yield Sign			Stop Sign			Stop Sign			Stop Sign		
Lanes:	0 0 1	0 0		0 0 1	0 0		1 0 0	0 1		0 0 0	0 0	
Initial Vol:	0	692	0	0	24	0	17	0	32	0	0	0

Major Street Volume: 49
Minor Approach Volume: 692
Minor Approach Volume Threshold: 1324

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Peak Hour Delay Signal Warrant Report

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	679	33	0	0	0	0	0	0	25	0	87
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			16.8		

Approach[westbound][lanes=2][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=112]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=2][total volume=824]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

SIGNAL WARRANT DISCLAIMER

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The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

NorCal Logistics Center
Near-Term With Project
PM Peak Hour

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #14 SR 99 East Frontage Road / Petersen Road

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 0 1 0			0 0 0 0 0			0 0 0 0 0			1 0 0 0 1		
Initial Vol:	0	679	33	0	0	0	0	0	0	25	0	87

Major Street Volume: 712
Minor Approach Volume: 112
Minor Approach Volume Threshold: 399

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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APPENDIX D: VEHICLE QUEUE ANALYSIS

TABLE D-1
VEHICLE QUEUE SUMMARY IN FEET[1]

Intersection	Movement	Available Storage[2]	Existing		Existing With Project		Near-Term Without Project		Near-Term With Project	
			AM	PM	AM	PM	AM	PM	AM	PM
Arch-Airport Road/ Qantas Lane	Eastbound Left	110	75	25	75	50	75	50	100	50
	Eastbound Thru	> 1,000	75	125	100	150	125	150	150	175
	Eastbound Right	110	0	0	0	0	0	0	0	0
	Westbound Left	300	25	0	25	0	25	0	25	0
	Westbound Thru	> 1,000	175	75	175	125	175	125	225	175
	Westbound Right	150	**250**	50	**275**	75	125	50	325	75
	Northbound Left	300	0	0	0	0	0	0	0	0
	Northbound Thru	> 1,000	0	0	0	0	0	0	0	0
	Northbound Right	300	0	0	0	0	0	0	0	0
	Southbound Left	600	200	150	200	150	175	175	225	175
	Southbound Thru/right	200	125	75	125	75	100	100	125	100
Arch-Airport Road/ State Route (SR) 99	Eastbound Left	350	75	100	100	125	150	125	125	175
	Eastbound Thru	> 1,000	50	50	125	75	225	100	200	150
	Eastbound Right	> 1,000	0	0	0	0	0	0	0	0
	Westbound Left	250	75	75	100	150	100	150	150	250
	Westbound Thru	500	75	50	100	100	125	125	125	200
	Westbound Right	400	0	0	0	0	0	0	0	0
	Northbound Left	300	125	50	125	50	200	50	150	50
	Northbound Right	300	50	50	300	50	**450**	50	**700**	225
	Southbound Left	500	125	50	175	75	350	100	375	150
	Southbound Right	500	0	0	0	0	0	0	0	0

TABLE D-1
VEHICLE QUEUE SUMMARY IN FEET[1]

Intersection	Movement	Available Storage[2]	Existing		Existing With Project		Near-Term Without Project		Near-Term With Project	
			AM	PM	AM	PM	AM	PM	AM	PM
Arch Road/ Frontage Road	Eastbound Left	200	**250**	200	**300**	200	**275**	275	**300**	**300**
	Eastbound Thru	500	250	125	**550**	325	**675**	250	**>1,250**	400
	Westbound Left	100	50	50	75	75	75	50	75	100
	Westbound Thru	500	100	200	200	475	175	**425**	**350**	**725**
	Northbound Left	200	175	175	200	200	**250**	**250**	200	**275**
	Northbound Thru/Right	> 1,000	50	50	50	50	50	50	50	50
	Southbound Left	100	50	50	50	50	50	50	50	50
	Southbound Thru/Right	> 1,000	150	150	150	100	125	125	150	175
SR 99 NB Off-Ramp/ Mariposa Road/SR 99 West Frontage Road/SR 99 SB On-Ramp	Eastbound Thru	> 1,000	250	325	375	400	325	350	500	450
	Westbound Left	300	150	150	175	150	175	175	175	175
	Westbound Thru	450	75	75	100	150	75	125	125	200
	Northbound Thru	> 1,000	350	400	400	425	400	425	400	425
	Southbound Thru	> 1,000	50	50	50	50	50	50	50	50
	Southbound Right	250	50	50	50	50	50	50	50	50
SR 99 SB Ramps/ Mariposa Road	Eastbound Thru	500	175	200	275	275	225	225	350	300
	Eastbound Right	500	0	0	0	0	0	0	0	0
	Westbound Left	150	75	75	75	75	100	75	100	100
	Westbound Thru	850	50	50	75	125	50	75	100	150
	Northbound Left	500	150	125	150	125	150	125	125	125
	Northbound Right	100	50	100	50	100	75	75	75	100
SR 99 East Frontage Road/ Mariposa Road	Eastbound Left	125	**175**	**175**	**175**	**175**	**175**	**175**	**175**	**175**
	Eastbound Thru	750	175	275	425	525	225	325	575	575
	Eastbound Right	200	25	25	25	50	25	25	50	50

TABLE D-1
VEHICLE QUEUE SUMMARY IN FEET[1]

Intersection	Movement	Available Storage[2]	Existing		Existing With Project		Near-Term Without Project		Near-Term With Project	
			AM	PM	AM	PM	AM	PM	AM	PM
	Westbound Left	100	50	25	50	25	50	25	50	50
	Westbound Thru	> 1,000	125	100	200	225	150	150	225	300
	Westbound Right	300	75	50	75	100	75	75	100	100
	Northbound Thru	> 1,000	100	150	100	150	100	150	100	175
	Southbound Thru	700	50	25	50	25	50	50	50	50
	Southbound Right	50	25	25	25	25	25	50	25	50
SR 99 NB Mariposa Off-Ramp/SR 99 East Frontage Road	Eastbound	300	25	25	25	25	25	25	25	25
	Northbound	600	0	0	0	0	0	0	0	0
	Southbound	300	0	0	0	0	0	0	0	0
SR 99 East Frontage Road/ Peterson Road[3]	Westbound Left	450	0	0	0	0	0	0	0	0
	Westbound Right	50	25	25	25	25	25	25	25	25

Notes: **BOLD** indicates 95th percentile queue could exceed storage length.

1. 95th Percentile Vehicle queue (in feet) as calculated by Synchro. Bold indicates vehicle queues may periodically extend beyond the available storage space.
2. Vehicle storage presented in feet, not accounting for the bay taper.
3. Average design queue length (in feet) as calculated by Traffix.

Source: Fehr & Peers, January 2013

TABLE D-2
PROJECT ALTERNATIVE
VEHICLE QUEUES (IN FEET)[1]

Intersection	Movement	Available Storage[2]	Existing		Existing + Project		Near-Term No Project		Near-Term + Project	
			AM	PM	AM	PM	AM	PM	AM	PM
1. Arch-Airport Road/ Qantas Lane	Eastbound Left	110	75	25	75	25	75	50	75	50
	Eastbound Thru	> 1,000	75	125	100	125	125	150	125	150
	Eastbound Right	110	0	0	0	0	0	0	0	0
	Westbound Left	300	25	0	25	0	25	0	25	0
	Westbound Thru	> 1,000	175	75	175	100	175	125	175	150
	Westbound Right	150	**250**	50	**275**	75	125	50	150	75
	Northbound Left	300	0	0	0	0	0	0	0	0
	Northbound Thru	> 1,000	0	0	0	0	0	0	0	0
	Northbound Right	300	0	0	0	0	0	0	0	0
	Southbound Left	600	200	150	200	150	175	175	175	175
	Southbound Thru/right	200	125	75	125	75	100	100	100	75
2. Arch-Airport Road/ State Route (SR) 99	Eastbound Left	350	75	100	100	125	150	125	150	175
	Eastbound Thru	> 1,000	50	50	100	75	225	100	325	150
	Eastbound Right	> 1,000	0	0	0	0	0	0	0	0
	Westbound Left	250	75	75	100	150	100	150	150	250
	Westbound Thru	500	75	50	100	100	125	125	125	200
	Westbound Right	400	0	0	0	0	0	0	0	0
	Northbound Left	300	125	50	125	50	200	50	200	50
	Northbound Right	300	50	50	275	50	**450**	50	**775**	225
	Southbound Left	500	125	50	250	100	350	100	**600**	175
	Southbound Right	500	0	0	0	0	0	0	0	0

TABLE D-2
PROJECT ALTERNATIVE
VEHICLE QUEUES (IN FEET)[1]

Intersection	Movement	Available Storage[2]	Existing		Existing + Project		Near-Term No Project		Near-Term + Project	
			AM	PM	AM	PM	AM	PM	AM	PM
3. Arch Road/ Frontage Road	Eastbound Left	200	**250**	200	**300**	200	**275**	275	**325**	**300**
	Eastbound Thru	500	250	125	**650**	350	**675**	250	**1100**	450
	Westbound Left	100	50	50	50	50	75	50	75	75
	Westbound Thru	500	100	200	225	**550**	175	**425**	275	**775**
	Northbound Left	200	175	175	175	175	**250**	**250**	**275**	**250**
	Northbound Thru/Right	> 1,000	50	50	50	50	50	50	50	50
	Southbound Left	100	50	50	50	50	50	50	50	50
	Southbound Thru/Right	> 1,000	150	150	150	100	125	125	125	175
10. SR 99 NB Off-Ramp/ Mariposa Road/SR 99 West Frontage Road/SR 99 SB On-Ramp	Eastbound Thru	> 1,000	250	325	350	400	325	350	475	425
	Westbound Left	300	150	150	175	150	175	175	175	150
	Westbound Thru	450	75	75	100	150	75	125	100	200
	Northbound Thru	> 1,000	350	400	400	400	400	425	375	425
	Southbound Thru	> 1,000	50	50	50	25	50	50	50	25
	Southbound Right	250	50	50	50	50	50	50	50	50
11. SR 99 SB Ramps/ Mariposa Road	Eastbound Thru	500	175	200	225	225	225	225	275	275
	Eastbound Right	500	0	0	0	0	0	0	0	0
	Westbound Left	150	75	75	75	75	100	75	100	100
	Westbound Thru	850	50	50	75	100	50	75	75	150
	Northbound Left	500	150	125	125	125	150	125	125	125
	Northbound Right	100	50	100	50	75	75	75	75	75
12. SR 99 East Frontage Road/ Mariposa Road	Eastbound Left	125	**175**	**175**	**175**	**175**	**175**	**175**	**175**	**175**
	Eastbound Thru	750	175	275	275	400	225	325	375	475
	Eastbound Right	200	25	25	25	25	25	25	25	25

TABLE D-2
PROJECT ALTERNATIVE
VEHICLE QUEUES (IN FEET)[1]

Intersection	Movement	Available Storage[2]	Existing		Existing + Project		Near-Term No Project		Near-Term + Project	
			AM	PM	AM	PM	AM	PM	AM	PM
	Westbound Left	100	50	25	50	25	50	25	50	25
	Westbound Thru	> 1,000	125	100	175	175	150	150	200	275
	Westbound Right	300	75	50	75	75	75	75	75	75
	Northbound Thru	> 1,000	100	150	100	150	100	150	100	150
	Southbound Thru	700	50	25	50	25	50	50	50	25
	Southbound Right	50	25	25	25	50	25	50	25	50
SR 99 NB Mariposa Off-Ramp/SR 99 East Frontage Road	Eastbound	300	25	25	25	0	25	25	25	25
	Northbound	600	0	0	0	0	0	0	0	0
	Southbound	300	0	0	0	0	0	0	0	0
SR 99 East Frontage Road/ Peterson Road[3]	Westbound Left	450	0	0	0	0	0	0	0	0
	Westbound Right	50	25	25	25	25	25	25	25	25

Notes: **BOLD** indicates 95th percentile queue could exceed storage length.

1. 95th Percentile Vehicle queue (in feet) as calculated by Synchro. Bold indicates vehicle queues may periodically extend beyond the available storage space.
2. Vehicle storage presented in feet, not accounting for the bay taper.
3. Average design queue length (in feet) as calculated by Traffix.

Source: Fehr & Peers, August 2013

APPENDIX E: FREEWAY OPERATIONS

SCENARIO 1: EXISTING

HCM 2000
Basic Freeway Segments
Capacity Analysis

General Information				*Flow Rate Calculation*							*Speed Calculation*		*Results*	
	Freeway/ Direction	From/To	Analysis Time Period	Volume (vph)	PHF	Lanes	Terrain	Truck/ Bus %	RV %	Flow Rate v_p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	Level of Service
B-1	SR 99 NB	South of Arch	AM	3,380	0.92	2	Level	14%	1%	1,969	65.0	61.9	**31.8**	**D**
B-2	SR 99 NB	Arch to Mariposa	AM	3,260	0.92	2	Level	14%	1%	1,899	65.0	62.9	**30.2**	**D**
B-3	SR 99 NB	North of Mariposa	AM	3,717	0.92	2	Level	14%	1%	2,166	65.0	58.0	**37.4**	**E**
B-4	SR 99 SB	North of Mariposa	AM	2,691	0.92	2	Level	14%	1%	1,568	65.0	64.9	**24.1**	**C**
B-5	SR 99 SB	Mariposa to Arch	AM	2,480	0.92	2	Level	14%	1%	1,445	65.0	65.0	**22.2**	**C**
B-6	SR 99 SB	South of Arch	AM	1,862	0.92	2	Level	14%	1%	1,085	65.0	65.0	**16.7**	**B**
B-1	SR 99 NB	South of Arch	PM	2,336	0.92	2	Level	14%	1%	1,361	65.0	65.0	**20.9**	**C**
B-2	SR 99 NB	Arch to Mariposa	PM	2,850	0.92	2	Level	14%	1%	1,660	65.0	64.7	**25.7**	**C**
B-3	SR 99 NB	North of Mariposa	PM	3,259	0.92	2	Level	14%	1%	1,899	65.0	62.9	**30.2**	**D**
B-4	SR 99 SB	North of Mariposa	PM	3,937	0.92	2	Level	14%	1%	2,294	65.0	54.2	**42.3**	**E**
B-5	SR 99 SB	Mariposa to Arch	PM	3,690	0.92	2	Level	14%	1%	2,150	65.0	58.4	**36.8**	**E**
B-6	SR 99 SB	South of Arch	PM	3,852	0.92	2	Level	14%	1%	2,244	65.0	55.8	**40.2**	**E**

HCM 2000
Merge Ramp Junctions
Capacity Analysis

General Information				*Freeway Data*		*Freeway Volume Adjustment*					*On-Ramp Data*	
	Freeway/ Direction	On-ramp	Analysis Time Period	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	Flow Rate v_p (pcph)	Type	Lanes
M-1	SR 99 NB	Arch Road NB On	AM	2	65.0	2,824	0.92	Level	14%	1%	3,291	Right	2
M-4	SR 99 SB	Arch Road SB On	AM	2	65.0	1,534	0.92	Level	14%	1%	1,787	Right	1
M-1	SR 99 NB	Arch Road NB On	PM	2	65.0	2,085	0.92	Level	14%	1%	2,429	Right	2
M-4	SR 99 SB	Arch Road SB On	PM	2	65.0	3,340	0.92	Level	14%	1%	3,892	Right	1
M-2	SR 99 NB	Mariposa Road NB On	AM	2	65.0	3,082	0.92	Level	14%	1%	3,591	Right	1
M-3	SR 99 SB	Mariposa Road SB On	AM	2	65.0	2,316	0.92	Level	14%	1%	2,699	Right	1
M-2	SR 99 NB	Mariposa Road NB On	PM	2	65.0	2,712	0.92	Level	14%	1%	3,160	Right	1
M-3	SR 99 SB	Mariposa Road SB On	PM	2	65.0	3,458	0.92	Level	14%	1%	4,029	Right	1

HCM 2000
Merge Ramp Junctions
Capacity Analysis

General Information									*On-Ramp Volume Adjustment*				
	Freeway/ Direction	On-ramp	Analysis Time Period	Lane Add?	S_{FR} (mph)	V_R (vph)	Accel Lane (ft) L_{A1}	L_{A2}	L_{Aeff}	PHF	Terrain	Truck/ Bus %	RV %	f_{HV}
M-1	SR 99 NB	Arch Road NB On	AM	No	45.0	436	250	1,750	2,250	0.92	Level	21%	0%	0.905
M-4	SR 99 SB	Arch Road SB On	AM	No	45.0	328	650		650	0.92	Level	30%	0%	0.870
M-1	SR 99 NB	Arch Road NB On	PM	No	45.0	765	250	1,750	2,250	0.92	Level	7%	0%	0.966
M-4	SR 99 SB	Arch Road SB On	PM	No	45.0	512	650	0	650	0.92	Level	13%	0%	0.939
M-2	SR 99 NB	Mariposa Road NB On	AM	No	45.0	635	600		600	0.92	Level	18%	0%	0.917
M-3	SR 99 SB	Mariposa Road SB On	AM	No	45.0	164	700		725	0.92	Level	31%	0%	0.866
M-2	SR 99 NB	Mariposa Road NB On	PM	No	45.0	547	600		600	0.92	Level	11%	0%	0.948
M-3	SR 99 SB	Mariposa Road SB On	PM	No	45.0	232	700		700	0.92	Level	15%	0%	0.930

HCM 2000
Merge Ramp Junctions
Capacity Analysis

General Information					*Results*		*Speed Estimation*			
	Freeway/ Direction	On-ramp	Analysis Time Period	f_P	Flow Rate v_p (pcph)	Density, D (pcplpm)	Level of Service	Int. Var. M_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
M-1	SR 99 NB	Arch Road NB On	AM	1.00	524	**20.9**	**C**	0.295	58.2	0.0	58.2
M-4	SR 99 SB	Arch Road SB On	AM	1.00	410	**18.4**	**B**	0.298	58.2	0.0	58.2
M-1	SR 99 NB	Arch Road NB On	PM	1.00	861	**16.6**	**B**	0.223	59.9	0.0	59.9
M-4	SR 99 SB	Arch Road SB On	PM	1.00	593	**36.1**	**E**	0.608	51.0	0.0	51.0
M-2	SR 99 NB	Mariposa Road NB On	AM	1.00	752	**35.2**	**E**	0.567	52.0	0.0	52.0
M-3	SR 99 SB	Mariposa Road SB On	AM	1.00	206	**23.5**	**C**	0.327	57.5	0.0	57.5
M-2	SR 99 NB	Mariposa Road NB On	PM	1.00	627	**31.0**	**D**	0.439	54.9	0.0	54.9
M-3	SR 99 SB	Mariposa Road SB On	PM	1.00	271	**34.5**	**D**	0.546	52.5	0.0	52.5

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Freeway Data*		*Freeway Volume Adjustment*						Effective	*Off-Ram*
	Freeway/ Direction	Off-ramp	Period	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type
D-1	SR 99 NB	Arch Road NB Off	AM	2	65.0	2,824	0.92	Level	14%	1%	1.00	3,291	Right
D-4	SR 99 SB	Arch Road SB Off	AM	3	65.0	1,534	0.92	Level	14%	1%	1.00	1,787	Right
D-1	SR 99 NB	Arch Road NB Off	PM	2	65.0	2,085	0.92	Level	14%	1%	1.00	2,429	Right
D-4	SR 99 SB	Arch Road SB Off	PM	3	65.0	3,340	0.92	Level	14%	1%	1.00	3,892	Right
D-2	SR 99 NB	Mariposa Road NB Off	AM	2	65.0	3,082	0.92	Level	14%	1%	1.00	3,591	Right
D-3	SR 99 SB	Mariposa Road SB Off	AM	2	65.0	2,316	0.92	Level	14%	1%	1.00	2,699	Right
D-2	SR 99 NB	Mariposa Road NB Off	PM	2	65.0	2,712	0.92	Level	14%	1%	1.00	3,160	Right
D-3	SR 99 SB	Mariposa Road SB Off	PM	2	65.0	3,458	0.92	Level	14%	1%	1.00	4,029	Right

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*ıp Data*				*Off-Ramp Volume Adjustment*								
	Freeway/ Direction	Off-ramp	Period	Lanes	Lane Drop?	S_{FR} (mph)	V_R (vph)	Decel Lane (ft) L_{D1}	L_{D2}	L_{Deff}	PHF	Truck/ Terrain	Bus %	RV %	f_P
D-1	SR 99 NB	Arch Road NB Off	AM	1	No	45.0	556	150	0	150	0.92	Level	13%	0%	1.00
D-4	SR 99 SB	Arch Road SB Off	AM	2	Yes	45.0	946	150	0	300	0.92	Level	11%	0%	1.00
D-1	SR 99 NB	Arch Road NB Off	PM	1	No	45.0	251	150	0	150	0.92	Level	13%	0%	1.00
D-4	SR 99 SB	Arch Road SB Off	PM	2	Yes	45.0	350	150	0	300	0.92	Level	19%	0%	1.00
D-2	SR 99 NB	Mariposa Road NB Off	AM	1	No	45.0	178	200	0	200	0.92	Level	30%	0%	1.00
D-3	SR 99 SB	Mariposa Road SB Off	AM	1	No	45.0	375	400	0	400	0.92	Level	18%	0%	1.00
D-2	SR 99 NB	Mariposa Road NB Off	PM	1	No	45.0	138	200	0	200	0.92	Level	13%	0%	1.00
D-3	SR 99 SB	Mariposa Road SB Off	PM	1	No	45.0	479	400	0	400	0.92	Level	18%	0%	1.00

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Results*			*Speed Estimation*			
	Freeway/ Direction	Off-ramp	Period	Flow Rate v_p (pcph)	Density, D (pcplpm)	Level of Service	Int. Var. D_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
D-1	SR 99 NB	Arch Road NB Off	AM	644	**31.2**	**D**	0.356	56.8	0.0	56.8
D-4	SR 99 SB	Arch Road SB Off	AM	1,085	**13.6**	**B**	0.396	55.9	71.3	58.6
D-1	SR 99 NB	Arch Road NB Off	PM	291	**23.8**	**C**	0.324	57.5	0.0	57.5
D-4	SR 99 SB	Arch Road SB Off	PM	417	**20.7**	**C**	0.335	57.3	68.7	61.7
D-2	SR 99 NB	Mariposa Road NB Off	AM	223	**33.3**	**D**	0.318	57.7	0.0	57.7
D-3	SR 99 SB	Mariposa Road SB Off	AM	444	**23.9**	**C**	0.338	57.2	0.0	57.2
D-2	SR 99 NB	Mariposa Road NB Off	PM	160	**29.6**	**D**	0.312	57.8	0.0	57.8
D-3	SR 99 SB	Mariposa Road SB Off	PM	568	**35.3**	**E**	0.349	57.0	0.0	57.0

SCENARIO 2: EXISTING PLUS PROJECT

HCM 2000
Basic Freeway Segments
Capacity Analysis

	Freeway/ Direction	From/To	Per	Volume (vph)	PHF	Lanes	Terrain	Truck/ Bus %	RV %	Flow Rate v_p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	LOS
B-1	SR 99 NB	South of Arch	AM	3,573	0.92	2	Level	14%	1%	2,082	65.0	59.9	**34.7**	**D**
B-2	SR 99 NB	Arch to Mariposa	AM	3,309	0.92	2	Level	14%	1%	1,928	65.0	62.5	**30.8**	**D**
B-3	SR 99 NB	North of Mariposa	AM	3,857	0.92	2	Level	14%	1%	2,247	65.0	55.7	**40.4**	**E**
B-4	SR 99 SB	North of Mariposa	AM	2,913	0.92	2	Level	14%	1%	1,697	65.0	64.6	**26.3**	**D**
B-5	SR 99 SB	Mariposa to Arch	AM	2,557	0.92	2	Level	14%	1%	1,490	65.0	65.0	**22.9**	**C**
B-6	SR 99 SB	South of Arch	AM	1,985	0.92	2	Level	14%	1%	1,156	65.0	65.0	**17.8**	**B**
B-1	SR 99 NB	South of Arch	PM	2,477	0.92	2	Level	14%	1%	1,443	65.0	65.0	**22.2**	**C**
B-2	SR 99 NB	Arch to Mariposa	PM	2,949	0.92	2	Level	14%	1%	1,718	65.0	64.5	**26.7**	**D**
B-3	SR 99 NB	North of Mariposa	PM	3,540	0.92	2	Level	14%	1%	2,062	65.0	60.3	**34.2**	**D**
B-4	SR 99 SB	North of Mariposa	PM	4,099	0.92	2	Level	14%	1%	2,388	65.0	-	**-**	**F**
B-5	SR 99 SB	Mariposa to Arch	PM	3,747	0.92	2	Level	14%	1%	2,183	65.0	57.5	**38.0**	**E**
B-6	SR 99 SB	South of Arch	PM	4,098	0.92	2	Level	14%	1%	2,388	65.0	-	**-**	**F**

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	Analysis Time Period	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type	Lanes	Lane Add?
M-1	SR 99 NB	Arch Road NB On	AM	2	65.0	2,824	0.92	Level	14%	1%	1.00	3,291	Right	2	No
M-4	SR 99 SB	Arch Road SB On	AM	2	65.0	1,534	0.92	Level	14%	1%	1.00	1,787	Right	1	No
M-1	SR 99 NB	Arch Road NB On	PM	2	65.0	2,085	0.92	Level	14%	1%	1.00	2,429	Right	2	No
M-4	SR 99 SB	Arch Road SB On	PM	2	65.0	3,340	0.92	Level	14%	1%	1.00	3,892	Right	1	No
M-2	SR 99 NB	Mariposa Road NB On	AM	2	65.0	3,130	0.92	Level	14%	1%	1.00	3,647	Right	1	No
M-3	SR 99 SB	Mariposa Road SB On	AM	2	65.0	2,393	0.92	Level	14%	1%	1.00	2,788	Right	1	No
M-2	SR 99 NB	Mariposa Road NB On	PM	2	65.0	2,809	0.92	Level	14%	1%	1.00	3,273	Right	1	No
M-3	SR 99 SB	Mariposa Road SB On	PM	2	65.0	3,515	0.92	Level	14%	1%	1.00	4,096	Right	1	No

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	Analysis Time Period	S_{FR} (mph)	V_R (vph)	Accel Lane (ft) L_{A1}	L_{A2}	L_{Aeff}	PHF	Terrain	Truck/ Bus %	RV %	f_P
M-1	SR 99 NB	Arch Road NB On	AM	45.0	485	250	1,750	2,250	0.92	Level	21%	0%	1.00
M-4	SR 99 SB	Arch Road SB On	AM	45.0	451	650		650	0.92	Level	30%	0%	1.00
M-1	SR 99 NB	Arch Road NB On	PM	45.0	864	250	1,750	2,250	0.92	Level	7%	0%	1.00
M-4	SR 99 SB	Arch Road SB On	PM	45.0	758	650	0	650	0.92	Level	13%	0%	1.00
M-2	SR 99 NB	Mariposa Road NB On	AM	45.0	727	600		600	0.92	Level	18%	0%	1.00
M-3	SR 99 SB	Mariposa Road SB On	AM	45.0	164	725		725	0.92	Level	31%	0%	1.00
M-2	SR 99 NB	Mariposa Road NB On	PM	45.0	731	600		600	0.92	Level	11%	0%	1.00
M-3	SR 99 SB	Mariposa Road SB On	PM	45.0	232	725		725	0.92	Level	15%	0%	1.00

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	Analysis Time Period	Flow Rate v_p (pcph)	Density, D (pcplpm)	LOS	Int. Var. M_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
M-1	SR 99 NB	Arch Road NB On	AM	583	**21.3**	**C**	0.306	58.0	0.0	58.0
M-4	SR 99 SB	Arch Road SB On	AM	564	**19.5**	**B**	0.303	58.0	0.0	58.0
M-1	SR 99 NB	Arch Road NB On	PM	972	**17.5**	**B**	0.236	59.6	0.0	59.6
M-4	SR 99 SB	Arch Road SB On	PM	877	**-**	**F**	-	-	-	-
M-2	SR 99 NB	Mariposa Road NB On	AM	861	**36.5**	**E**	0.621	50.7	0.0	50.7
M-3	SR 99 SB	Mariposa Road SB On	AM	206	**24.2**	**C**	0.334	57.3	0.0	57.3
M-2	SR 99 NB	Mariposa Road NB On	PM	838	**33.4**	**D**	0.505	53.4	0.0	53.4
M-3	SR 99 SB	Mariposa Road SB On	PM	271	**34.9**	**D**	0.563	52.1	0.0	52.1

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Freeway Data*		*Freeway Volume Adjustment*						Effective	*Off-Ramp Data*	
	Freeway/ Direction	Off-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type	Lanes
D-1	SR 99 NB	Arch Road NB Off	AM	2	65.0	2,824	0.92	Level	14%	1%	1.00	3,291	Right	1
D-4	SR 99 SB	Arch Road SB Off	AM	3	65.0	1,534	0.92	Level	14%	1%	1.00	1,787	Right	2
D-1	SR 99 NB	Arch Road NB Off	PM	2	65.0	2,085	0.92	Level	14%	1%	1.00	2,429	Right	1
D-4	SR 99 SB	Arch Road SB Off	PM	3	65.0	3,340	0.92	Level	14%	1%	1.00	3,892	Right	2
D-2	SR 99 NB	Mariposa Road NB Off	AM	2	65.0	3,130	0.92	Level	14%	1%	1.00	3,647	Right	1
D-3	SR 99 SB	Mariposa Road SB Off	AM	2	65.0	2,393	0.92	Level	14%	1%	1.00	2,788	Right	1
D-2	SR 99 NB	Mariposa Road NB Off	PM	2	65.0	2,809	0.92	Level	14%	1%	1.00	3,273	Right	1
D-3	SR 99 SB	Mariposa Road SB Off	PM	2	65.0	3,515	0.92	Level	14%	1%	1.00	4,096	Right	1

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information								*Off-Ramp Volume Adjustment*								
	Freeway/ Direction	Off-ramp	Per	Lane Drop?	S_{FR} (mph)	V_R (vph)	Decel Lane (ft) L_{D1}	L_{D2}	L_{Deff}	PHF	Terrain	Truck/ Bus %	RV %	f_P
D-1	SR 99 NB	Arch Road NB Off	AM	No	45.0	749	150	0	150	0.92	Level	13%	0%	1.00
D-4	SR 99 SB	Arch Road SB Off	AM	Yes	45.0	1,023	150	0	300	0.92	Level	11%	0%	1.00
D-1	SR 99 NB	Arch Road NB Off	PM	No	45.0	392	150	0	150	0.92	Level	13%	0%	1.00
D-4	SR 99 SB	Arch Road SB Off	PM	Yes	45.0	407	150	0	300	0.92	Level	19%	0%	1.00
D-2	SR 99 NB	Mariposa Road NB Off	AM	No	45.0	179	200	0	200	0.92	Level	30%	0%	1.00
D-3	SR 99 SB	Mariposa Road SB Off	AM	No	45.0	520	400	0	400	0.92	Level	18%	0%	1.00
D-2	SR 99 NB	Mariposa Road NB Off	PM	No	45.0	140	200	0	200	0.92	Level	13%	0%	1.00
D-3	SR 99 SB	Mariposa Road SB Off	PM	No	45.0	584	400	0	400	0.92	Level	18%	0%	1.00

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Results*			*Speed Estimation*			
	Freeway/ Direction	Off-ramp	Per	Flow Rate v_p (pcph)	Density, D (pcplpm)	LOS	Int. Var. D_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
D-1	SR 99 NB	Arch Road NB Off	AM	867	**31.2**	**D**	0.376	56.4	0.0	56.4
D-4	SR 99 SB	Arch Road SB Off	AM	1,173	**14.0**	**B**	0.404	55.7	71.3	58.1
D-1	SR 99 NB	Arch Road NB Off	PM	454	**23.8**	**C**	0.339	57.2	0.0	57.2
D-4	SR 99 SB	Arch Road SB Off	PM	484	**20.7**	**C**	0.342	57.1	68.7	61.6
D-2	SR 99 NB	Mariposa Road NB Off	AM	224	**33.8**	**D**	0.318	57.7	0.0	57.7
D-3	SR 99 SB	Mariposa Road SB Off	AM	616	**24.6**	**C**	0.353	56.9	0.0	56.9
D-2	SR 99 NB	Mariposa Road NB Off	PM	162	**30.6**	**D**	0.313	57.8	0.0	57.8
D-3	SR 99 SB	Mariposa Road SB Off	PM	692	**35.9**	**E**	0.360	56.7	0.0	56.7

SCENARIO 2: EXISTING PLUS PROJECT PLUS MITIGATION

HCM 2000
Basic Freeway Segments
Capacity Analysis

	Freeway/			*General Information* Volume				Truck/			*Flow Rate Calculation* Flow Rate	*Speed Calculation* Measured	S	*Results* Density, D	
	Direction	From/To	Per	(vph)	PHF	Lanes	Terrain	Bus %	RV %	f_P	v_p (pcphpl)	FFS (mph)	(mph)	(pcplpm)	LOS
B-1	SR 99 NB	South of Arch	AM	3,573	0.92	3	Level	14%	1%	1.00	1,388	65.0	65.0	**21.4**	**C**
B-2	SR 99 NB	Arch to Mariposa	AM	3,309	0.92	3	Level	14%	1%	1.00	1,285	65.0	65.0	**19.8**	**C**
B-3	SR 99 NB	North of Mariposa	AM	3,857	0.92	3	Level	14%	1%	1.00	1,498	65.0	65.0	**23.0**	**C**
B-4	SR 99 SB	North of Mariposa	AM	2,913	0.92	3	Level	14%	1%	1.00	1,131	65.0	65.0	**17.4**	**B**
B-5	SR 99 SB	Mariposa to Arch	AM	2,557	0.92	3	Level	14%	1%	1.00	993	65.0	65.0	**15.3**	**B**
B-6	SR 99 SB	South of Arch	AM	1,985	0.92	3	Level	14%	1%	1.00	771	65.0	65.0	**11.9**	**B**
B-1	SR 99 NB	South of Arch	PM	2,477	0.92	3	Level	14%	1%	1.00	962	65.0	65.0	**14.8**	**B**
B-2	SR 99 NB	Arch to Mariposa	PM	2,949	0.92	3	Level	14%	1%	1.00	1,145	65.0	65.0	**17.6**	**B**
B-3	SR 99 NB	North of Mariposa	PM	3,540	0.92	3	Level	14%	1%	1.00	1,375	65.0	65.0	**21.2**	**C**
B-4	SR 99 SB	North of Mariposa	PM	4,099	0.92	3	Level	14%	1%	1.00	1,592	65.0	64.9	**24.5**	**C**
B-5	SR 99 SB	Mariposa to Arch	PM	3,747	0.92	3	Level	14%	1%	1.00	1,455	65.0	65.0	**22.4**	**C**
B-6	SR 99 SB	South of Arch	PM	4,098	0.92	3	Level	14%	1%	1.00	1,592	65.0	64.9	**24.5**	**C**

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/			*General Information*	*Freeway Data* S_{FF}	V	*Freeway Volume Adjustment*		Truck/			Effective Flow Rate	*On-Ramp Data*	
	Direction	On-ramp	Per	Lanes	(mph)	(vph)	PHF	Terrain	Bus %	RV %	f_P	v_p (pcph)	Type	Lanes
M-1	SR 99 NB	Arch Road NB On	AM	3	65.0	2,824	0.92	Level	14%	1%	1.00	3,291	Right	2
M-4	SR 99 SB	Arch Road SB On	AM	3	65.0	1,534	0.92	Level	14%	1%	1.00	1,787	Right	1
M-1	SR 99 NB	Arch Road NB On	PM	3	65.0	2,085	0.92	Level	14%	1%	1.00	2,429	Right	2
M-4	SR 99 SB	Arch Road SB On	PM	3	65.0	3,340	0.92	Level	14%	1%	1.00	3,892	Right	1
M-2	SR 99 NB	Mariposa Road NB On	AM	3	65.0	3,130	0.92	Level	14%	1%	1.00	3,647	Right	1
M-3	SR 99 SB	Mariposa Road SB On	AM	3	65.0	2,393	0.92	Level	14%	1%	1.00	2,788	Right	1
M-2	SR 99 NB	Mariposa Road NB On	PM	3	65.0	2,809	0.92	Level	14%	1%	1.00	3,273	Right	1
M-3	SR 99 SB	Mariposa Road SB On	PM	3	65.0	3,515	0.92	Level	14%	1%	1.00	4,096	Right	1

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/			*General Information* Lane	S_{FR}	V_R	Accel Lane (ft)			*On-Ramp Volume Adjustment*		Truck/			Flow Rate
	Direction	On-ramp	Per	Add?	(mph)	(vph)	L_{A1}	L_{A2}	L_{Aeff}	PHF	Terrain	Bus %	RV %	f_P	v_p (pcph)
M-1	SR 99 NB	Arch Road NB On	AM	No	45.0	485	250	1,750	2,250	0.92	Level	21%	0%	1.00	583
M-4	SR 99 SB	Arch Road SB On	AM	No	45.0	451	650		650	0.92	Level	30%	0%	1.00	564
M-1	SR 99 NB	Arch Road NB On	PM	No	45.0	864	250	1,750	2,250	0.92	Level	7%	0%	1.00	972
M-4	SR 99 SB	Arch Road SB On	PM	No	45.0	758	650	0	650	0.92	Level	13%	0%	1.00	877
M-2	SR 99 NB	Mariposa Road NB On	AM	No	45.0	727	600		600	0.92	Level	18%	0%	1.00	861
M-3	SR 99 SB	Mariposa Road SB On	AM	No	45.0	164	700		700	0.92	Level	31%	0%	1.00	206
M-2	SR 99 NB	Mariposa Road NB On	PM	No	45.0	731	600		600	0.92	Level	11%	0%	1.00	838
M-3	SR 99 SB	Mariposa Road SB On	PM	No	45.0	232	700		700	0.92	Level	15%	0%	1.00	271

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/			*General Information*	*Results* Density, D		*Speed Estimation* Int. Var.	Inf. Area	Out Lns.	All vehs.
	Direction	On-ramp	Per		(pcplpm)	LOS	M_S	S_R (mph)	S_O (mph)	S (mph)
M-1	SR 99 NB	Arch Road NB On	AM		**10.3**	**B**	0.164	61.2	61.7	61.4
M-4	SR 99 SB	Arch Road SB On	AM		**13.8**	**B**	0.282	58.5	64.2	60.1
M-1	SR 99 NB	Arch Road NB On	PM		**9.3**	**A**	0.160	61.3	63.1	61.8
M-4	SR 99 SB	Arch Road SB On	PM		**25.9**	**C**	0.358	56.8	61.1	58.1
M-2	SR 99 NB	Mariposa Road NB On	AM		**24.9**	**C**	0.348	57.0	61.5	58.4
M-3	SR 99 SB	Mariposa Road SB On	AM		**15.6**	**B**	0.283	58.5	62.8	60.0
M-2	SR 99 NB	Mariposa Road NB On	PM		**23.0**	**C**	0.330	57.4	62.0	58.8
M-3	SR 99 SB	Mariposa Road SB On	PM		**22.2**	**C**	0.317	57.7	60.9	58.9

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Freeway Data*		*Freeway Volume Adjustment*						*Off-Ramp Data*		
	Freeway/ Direction	Off-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type	Lanes	Lane Drop?
D-1	SR 99 NB	Arch Road NB Off	AM	3	65.0	2,824	0.92	Level	14%	1%	1.00	3,291	Right	1	No
D-4	SR 99 SB	Arch Road SB Off	AM	3	65.0	1,534	0.92	Level	14%	1%	1.00	1,787	Right	2	Yes
D-1	SR 99 NB	Arch Road NB Off	PM	3	65.0	2,085	0.92	Level	14%	1%	1.00	2,429	Right	1	No
D-4	SR 99 SB	Arch Road SB Off	PM	3	65.0	3,340	0.92	Level	14%	1%	1.00	3,892	Right	2	Yes
D-2	SR 99 NB	Mariposa Road NB Off	AM	3	65.0	3,130	0.92	Level	14%	1%	1.00	3,647	Right	1	No
D-3	SR 99 SB	Mariposa Road SB Off	AM	3	65.0	2,393	0.92	Level	14%	1%	1.00	2,788	Right	1	No
D-2	SR 99 NB	Mariposa Road NB Off	PM	3	65.0	2,809	0.92	Level	14%	1%	1.00	3,273	Right	1	No
D-3	SR 99 SB	Mariposa Road SB Off	PM	3	65.0	3,515	0.92	Level	14%	1%	1.00	4,096	Right	1	No

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Off-Ramp Volume Adjustment*										
	Freeway/ Direction	Off-ramp	Per	S_{FR} (mph)	V_R (vph)	Decel Lane (ft) L_{D1}	L_{D2}	L_{Deff}	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)
D-1	SR 99 NB	Arch Road NB Off	AM	45.0	749	150	0	150	0.92	Level	13%	0%	1.00	867
D-4	SR 99 SB	Arch Road SB Off	AM	45.0	1,023	150	0	300	0.92	Level	11%	0%	1.00	1,173
D-1	SR 99 NB	Arch Road NB Off	PM	45.0	392	150	0	150	0.92	Level	13%	0%	1.00	454
D-4	SR 99 SB	Arch Road SB Off	PM	45.0	407	150	0	300	0.92	Level	19%	0%	1.00	484
D-2	SR 99 NB	Mariposa Road NB Off	AM	45.0	179	200	0	200	0.92	Level	30%	0%	1.00	224
D-3	SR 99 SB	Mariposa Road SB Off	AM	45.0	520	400	0	400	0.92	Level	18%	0%	1.00	616
D-2	SR 99 NB	Mariposa Road NB Off	PM	45.0	140	200	0	200	0.92	Level	13%	0%	1.00	162
D-3	SR 99 SB	Mariposa Road SB Off	PM	45.0	584	400	0	400	0.92	Level	18%	0%	1.00	692

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Results*		*Speed Estimation*			
	Freeway/ Direction	Off-ramp	Per	Density, D (pcplpm)	LOS	Int. Var. D_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
D-1	SR 99 NB	Arch Road NB Off	AM	**23.7**	**C**	0.376	56.4	71.3	59.7
D-4	SR 99 SB	Arch Road SB Off	AM	**14.0**	**B**	0.404	55.7	71.3	58.1
D-1	SR 99 NB	Arch Road NB Off	PM	**18.3**	**B**	0.339	57.2	71.3	60.3
D-4	SR 99 SB	Arch Road SB Off	PM	**20.7**	**C**	0.342	57.1	68.7	61.6
D-2	SR 99 NB	Mariposa Road NB Off	AM	**23.8**	**C**	0.318	57.7	70.6	61.3
D-3	SR 99 SB	Mariposa Road SB Off	AM	**18.3**	**B**	0.353	56.9	71.3	60.1
D-2	SR 99 NB	Mariposa Road NB Off	PM	**21.8**	**C**	0.313	57.8	71.2	61.4
D-3	SR 99 SB	Mariposa Road SB Off	PM	**24.9**	**C**	0.360	56.7	70.2	60.3

SCENARIO 3: EXISTING PLUS APPROVED PROJECTS (NEAR-TERM)

HCM 2000
Basic Freeway Segments
Capacity Analysis

	Freeway/ Direction	From/To	Per	Volume (vph)	PHF	Lanes	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	LOS
	General Information			*Flow Rate Calculation*								*Speed Calculation*		*Results*	
B-1	SR 99 NB	South of Arch	AM	3,626	0.92	2	Level	14%	1%	1.00	2,113	65.0	59.2	**35.7**	**E**
B-2	SR 99 NB	Arch to Mariposa	AM	3,393	0.92	2	Level	14%	1%	1.00	1,977	65.0	61.8	**32.0**	**D**
B-3	SR 99 NB	North of Mariposa	AM	3,841	0.92	2	Level	14%	1%	1.00	2,238	65.0	56.0	**40.0**	**E**
B-4	SR 99 SB	North of Mariposa	AM	3,018	0.92	2	Level	14%	1%	1.00	1,758	65.0	64.2	**27.4**	**D**
B-5	SR 99 SB	Mariposa to Arch	AM	2,778	0.92	2	Level	14%	1%	1.00	1,618	65.0	64.8	**25.0**	**C**
B-6	SR 99 SB	South of Arch	AM	1,956	0.92	2	Level	14%	1%	1.00	1,140	65.0	65.0	**17.5**	**B**
B-1	SR 99 NB	South of Arch	PM	2,441	0.92	2	Level	14%	1%	1.00	1,422	65.0	65.0	**21.9**	**C**
B-2	SR 99 NB	Arch to Mariposa	PM	3,182	0.92	2	Level	14%	1%	1.00	1,854	65.0	63.4	**29.2**	**D**
B-3	SR 99 NB	North of Mariposa	PM	3,600	0.92	2	Level	14%	1%	1.00	2,097	65.0	59.6	**35.2**	**E**
B-4	SR 99 SB	North of Mariposa	PM	4,088	0.92	2	Level	14%	1%	1.00	2,382	65.0	-	**-**	**F**
B-5	SR 99 SB	Mariposa to Arch	PM	3,839	0.92	2	Level	14%	1%	1.00	2,237	65.0	56.0	**39.9**	**E**
B-6	SR 99 SB	South of Arch	PM	4,118	0.92	2	Level	14%	1%	1.00	2,399	65.0	-	**-**	**F**

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	Per	Freeway Data: Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Effective Flow Rate v_p (pcph)	On-Ramp Data: Type	Lanes	Lane Add?	S_{FR} (mph)	V_R (vph)
	General Information			*Freeway Data*			*Freeway Volume Adjustment*										
M-1	SR 99 NB	Arch Road NB On	AM	2	65.0	2,833	0.92	Level	14%	1%	1.00	3,301	Right	2	No	45.0	560
M-4	SR 99 SB	Arch Road SB On	AM	2	65.0	1,540	0.92	Level	14%	1%	1.00	1,794	Right	1	No	45.0	416
M-1	SR 99 NB	Arch Road NB On	PM	2	65.0	2,092	0.92	Level	14%	1%	1.00	2,438	Right	2	No	45.0	1,090
M-4	SR 99 SB	Arch Road SB On	PM	2	65.0	3,350	0.92	Level	14%	1%	1.00	3,903	Right	1	No	45.0	768
M-2	SR 99 NB	Mariposa Road NB On	AM	2	65.0	3,195	0.92	Level	14%	1%	1.00	3,723	Right	1	No	45.0	646
M-3	SR 99 SB	Mariposa Road SB On	AM	2	65.0	2,608	0.92	Level	14%	1%	1.00	3,039	Right	1	No	45.0	170
M-2	SR 99 NB	Mariposa Road NB On	PM	2	65.0	3,019	0.92	Level	14%	1%	1.00	3,518	Right	1	No	45.0	581
M-3	SR 99 SB	Mariposa Road SB On	PM	2	65.0	3,597	0.92	Level	14%	1%	1.00	4,191	Right	1	No	45.0	242

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	Per	Accel Lane (ft): L_{A1}	L_{A2}	L_{Aeff}	On-Ramp Volume Adjustment: PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Results: Density, D (pcplpm)	LOS	Speed Estimation: Int. Var. M_S	Inf. Area S_R (mph)
M-1	SR 99 NB	Arch Road NB On	AM	250	1,750	2,250	0.92	Level	21%	0%	1.00	673	**22.1**	**C**	0.326	57.5
M-4	SR 99 SB	Arch Road SB On	AM	650		650	0.92	Level	30%	0%	1.00	520	**19.2**	**B**	0.302	58.1
M-1	SR 99 NB	Arch Road NB On	PM	250	1,750	2,250	0.92	Level	7%	0%	1.00	1,226	**19.4**	**B**	0.271	58.8
M-4	SR 99 SB	Arch Road SB On	PM	650	0	650	0.92	Level	13%	0%	1.00	889	**-**	**F**	-	-
M-2	SR 99 NB	Mariposa Road NB On	AM	600		600	0.92	Level	18%	0%	1.00	765	**36.4**	**E**	0.614	50.9
M-3	SR 99 SB	Mariposa Road SB On	AM	725		725	0.92	Level	31%	0%	1.00	213	**26.2**	**C**	0.357	56.8
M-2	SR 99 NB	Mariposa Road NB On	PM	600		600	0.92	Level	11%	0%	1.00	666	**34.0**	**D**	0.523	53.0
M-3	SR 99 SB	Mariposa Road SB On	PM	725		725	0.92	Level	15%	0%	1.00	283	**35.7**	**E**	0.598	51.2

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	Per	Out Lns. S_O (mph)	All vehs. S (mph)
	General Information				
M-1	SR 99 NB	Arch Road NB On	AM	0.0	57.5
M-4	SR 99 SB	Arch Road SB On	AM	0.0	58.1
M-1	SR 99 NB	Arch Road NB On	PM	0.0	58.8
M-4	SR 99 SB	Arch Road SB On	PM	-	-
M-2	SR 99 NB	Mariposa Road NB On	AM	0.0	50.9
M-3	SR 99 SB	Mariposa Road SB On	AM	0.0	56.8
M-2	SR 99 NB	Mariposa Road NB On	PM	0.0	53.0
M-3	SR 99 SB	Mariposa Road SB On	PM	0.0	51.2

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Freeway Data*			*Freeway Volume Adjustment*					Effective	*Off-Ramp Data*					
	Freeway/ Direction	Off-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type	Lanes	Lane Drop?	S_{FR} (mph)	V_R (vph)
D-1	SR 99 NB	Arch Road NB Off	AM	2	65.0	3,626	0.92	Level	14%	1%	1.00	4,225	Right	1	No	45.0	793
D-4	SR 99 SB	Arch Road SB Off	AM	3	65.0	2,778	0.92	Level	14%	1%	1.00	3,237	Right	2	Yes	45.0	1,238
D-1	SR 99 NB	Arch Road NB Off	PM	2	65.0	2,441	0.92	Level	14%	1%	1.00	2,844	Right	1	No	45.0	349
D-4	SR 99 SB	Arch Road SB Off	PM	3	65.0	3,839	0.92	Level	14%	1%	1.00	4,473	Right	2	Yes	45.0	489
D-2	SR 99 NB	Mariposa Road NB Off	AM	2	65.0	3,393	0.92	Level	14%	1%	1.00	3,954	Right	1	No	45.0	198
D-3	SR 99 SB	Mariposa Road SB Off	AM	2	65.0	3,018	0.92	Level	14%	1%	1.00	3,517	Right	1	No	45.0	410
D-2	SR 99 NB	Mariposa Road NB Off	PM	2	65.0	3,182	0.92	Level	14%	1%	1.00	3,708	Right	1	No	45.0	163
D-3	SR 99 SB	Mariposa Road SB Off	PM	2	65.0	4,088	0.92	Level	14%	1%	1.00	4,763	Right	1	No	45.0	491

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Off-Ramp Volume Adjustment*										*Results*		*Speed Estimation*	
	Freeway/ Direction	Off-ramp	Per	Decel Lane (ft) L_{D1}	L_{D2}	L_{Deff}	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Density, D (pcplpm)	LOS	Int. Var. D_S	Inf. Area S_R (mph)
D-1	SR 99 NB	Arch Road NB Off	AM	150	0	150	0.92	Level	13%	0%	1.00	918	**39.2**	**E**	0.381	56.2
D-4	SR 99 SB	Arch Road SB Off	AM	150	0	300	0.92	Level	11%	0%	1.00	1,420	**20.8**	**C**	0.426	55.2
D-1	SR 99 NB	Arch Road NB Off	PM	150	0	150	0.92	Level	13%	0%	1.00	404	**27.4**	**C**	0.334	57.3
D-4	SR 99 SB	Arch Road SB Off	PM	150	0	300	0.92	Level	19%	0%	1.00	582	**23.5**	**C**	0.350	56.9
D-2	SR 99 NB	Mariposa Road NB Off	AM	200	0	200	0.92	Level	30%	0%	1.00	248	**36.5**	**E**	0.320	57.6
D-3	SR 99 SB	Mariposa Road SB Off	AM	400	0	400	0.92	Level	18%	0%	1.00	486	**30.9**	**D**	0.342	57.1
D-2	SR 99 NB	Mariposa Road NB Off	PM	200	0	200	0.92	Level	13%	0%	1.00	189	**34.3**	**D**	0.315	57.8
D-3	SR 99 SB	Mariposa Road SB Off	PM	400	0	400	0.92	Level	18%	0%	1.00	582	**-**	**F**	-	-

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information					
	Freeway/ Direction	Off-ramp	Per	Out Lns. S_O (mph)	All vehs. S (mph)
D-1	SR 99 NB	Arch Road NB Off	AM	0.0	56.2
D-4	SR 99 SB	Arch Road SB Off	AM	71.3	59.3
D-1	SR 99 NB	Arch Road NB Off	PM	0.0	57.3
D-4	SR 99 SB	Arch Road SB Off	PM	67.7	61.1
D-2	SR 99 NB	Mariposa Road NB Off	AM	0.0	57.6
D-3	SR 99 SB	Mariposa Road SB Off	AM	0.0	57.1
D-2	SR 99 NB	Mariposa Road NB Off	PM	0.0	57.8
D-3	SR 99 SB	Mariposa Road SB Off	PM	-	-

SCENARIO 4: EXISTING PLUS APPROVED PROJECTS WITH PROJECT

HCM 2000
Basic Freeway Segments
Capacity Analysis

	Freeway/ Direction	From/To	Per	Volume (vph)	PHF	Lanes	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	LOS
	General Information			*Flow Rate Calculation*								*Speed Calculation*		*Results*	
B-1	SR 99 NB	South of Arch	AM	3,819	0.92	2	Level	14%	1%	1.00	2,225	65.0	56.3	**39.5**	**E**
B-2	SR 99 NB	Arch to Mariposa	AM	3,442	0.92	2	Level	14%	1%	1.00	2,005	65.0	61.4	**32.7**	**D**
B-3	SR 99 NB	North of Mariposa	AM	3,982	0.92	2	Level	14%	1%	1.00	2,320	65.0	53.3	**43.5**	**E**
B-4	SR 99 SB	North of Mariposa	AM	3,240	0.92	2	Level	14%	1%	1.00	1,888	65.0	63.0	**29.9**	**D**
B-5	SR 99 SB	Mariposa to Arch	AM	2,855	0.92	2	Level	14%	1%	1.00	1,663	65.0	64.7	**25.7**	**C**
B-6	SR 99 SB	South of Arch	AM	2,079	0.92	2	Level	14%	1%	1.00	1,211	65.0	65.0	**18.6**	**C**
B-1	SR 99 NB	South of Arch	PM	2,582	0.92	2	Level	14%	1%	1.00	1,504	65.0	65.0	**23.1**	**C**
B-2	SR 99 NB	Arch to Mariposa	PM	3,281	0.92	2	Level	14%	1%	1.00	1,912	65.0	62.7	**30.5**	**D**
B-3	SR 99 NB	North of Mariposa	PM	3,882	0.92	2	Level	14%	1%	1.00	2,262	65.0	55.2	**40.9**	**E**
B-4	SR 99 SB	North of Mariposa	PM	4,250	0.92	2	Level	14%	1%	1.00	2,476	65.0	-	**-**	**F**
B-5	SR 99 SB	Mariposa to Arch	PM	3,896	0.92	2	Level	14%	1%	1.00	2,270	65.0	55.0	**41.3**	**E**
B-6	SR 99 SB	South of Arch	PM	4,365	0.92	2	Level	14%	1%	1.00	2,543	65.0	-	**-**	**F**

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Effective Flow Rate v_p (pcph)	Type	Lanes	Lane Add?	S_{FR} (mph)
	General Information			*Freeway Data*		*Freeway Volume Adjustment*							*On-Ramp Data*			
M-1	SR 99 NB	Arch Road NB On	AM	2	65.0	2,833	0.92	Level	14%	1%	1.00	3,301	Right	2	No	45.0
M-4	SR 99 SB	Arch Road SB On	AM	2	65.0	1,540	0.92	Level	14%	1%	1.00	1,794	Right	1	No	45.0
M-1	SR 99 NB	Arch Road NB On	PM	2	65.0	2,092	0.92	Level	14%	1%	1.00	2,438	Right	2	No	45.0
M-4	SR 99 SB	Arch Road SB On	PM	2	65.0	3,351	0.92	Level	14%	1%	1.00	3,905	Right	1	No	45.0
M-2	SR 99 NB	Mariposa Road NB On	AM	2	65.0	3,244	0.92	Level	14%	1%	1.00	3,780	Right	1	No	45.0
M-3	SR 99 SB	Mariposa Road SB On	AM	2	65.0	2,685	0.92	Level	14%	1%	1.00	3,129	Right	1	No	45.0
M-2	SR 99 NB	Mariposa Road NB On	PM	2	65.0	3,116	0.92	Level	14%	1%	1.00	3,631	Right	1	No	45.0
M-3	SR 99 SB	Mariposa Road SB On	PM	2	65.0	3,654	0.92	Level	14%	1%	1.00	4,258	Right	1	No	45.0

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	Per	V_R (vph)	Accel Lane (ft) L_{A1}	L_{A2}	L_{Aeff}	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Density, D (pcplpm)	LOS
	General Information							*On-Ramp Volume Adjustment*						*Results*	
M-1	SR 99 NB	Arch Road NB On	AM	609	250	1,750	2,250	0.92	Level	21%	0%	1.00	731	**22.5**	**C**
M-4	SR 99 SB	Arch Road SB On	AM	539	650		650	0.92	Level	30%	0%	1.00	674	**20.3**	**C**
M-1	SR 99 NB	Arch Road NB On	PM	1,189	250	1,750	2,250	0.92	Level	7%	0%	1.00	1,338	**20.2**	**C**
M-4	SR 99 SB	Arch Road SB On	PM	1,014	650	0	650	0.92	Level	13%	0%	1.00	1,174	**-**	**F**
M-2	SR 99 NB	Mariposa Road NB On	AM	738	600		600	0.92	Level	18%	0%	1.00	874	**-**	**F**
M-3	SR 99 SB	Mariposa Road SB On	AM	170	725		725	0.92	Level	31%	0%	1.00	213	**26.9**	**C**
M-2	SR 99 NB	Mariposa Road NB On	PM	766	600		600	0.92	Level	11%	0%	1.00	878	**36.5**	**E**
M-3	SR 99 SB	Mariposa Road SB On	PM	242	725		725	0.92	Level	15%	0%	1.00	283	**36.2**	**E**

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	Per	Int. Var. M_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
	General Information			*Speed Estimation*			
M-1	SR 99 NB	Arch Road NB On	AM	0.338	57.2	0.0	57.2
M-4	SR 99 SB	Arch Road SB On	AM	0.309	57.9	0.0	57.9
M-1	SR 99 NB	Arch Road NB On	PM	0.289	58.4	0.0	58.4
M-4	SR 99 SB	Arch Road SB On	PM	-	-	-	-
M-2	SR 99 NB	Mariposa Road NB On	AM	-	-	-	-
M-3	SR 99 SB	Mariposa Road SB On	AM	0.366	56.6	0.0	56.6
M-2	SR 99 NB	Mariposa Road NB On	PM	0.621	50.7	0.0	50.7
M-3	SR 99 SB	Mariposa Road SB On	PM	0.621	50.7	0.0	50.7

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Freeway Data*		*Freeway Volume Adjustment*						Effective	*Off-Ramp Data*	
	Freeway/ Direction	Off-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type	Lanes
D-1	SR 99 NB	Arch Road NB Off	AM	2	65.0	3,819	0.92	Level	14%	1%	1.00	4,450	Right	1
D-4	SR 99 SB	Arch Road SB Off	AM	3	65.0	2,855	0.92	Level	14%	1%	1.00	3,327	Right	2
D-1	SR 99 NB	Arch Road NB Off	PM	2	65.0	2,582	0.92	Level	14%	1%	1.00	3,009	Right	1
D-4	SR 99 SB	Arch Road SB Off	PM	3	65.0	3,896	0.92	Level	14%	1%	1.00	4,540	Right	2
D-2	SR 99 NB	Mariposa Road NB Off	AM	2	65.0	3,442	0.92	Level	14%	1%	1.00	4,011	Right	1
D-3	SR 99 SB	Mariposa Road SB Off	AM	2	65.0	3,240	0.92	Level	14%	1%	1.00	3,775	Right	1
D-2	SR 99 NB	Mariposa Road NB Off	PM	2	65.0	3,281	0.92	Level	14%	1%	1.00	3,823	Right	1
D-3	SR 99 SB	Mariposa Road SB Off	PM	2	65.0	4,250	0.92	Level	14%	1%	1.00	4,952	Right	1

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information							*Off-Ramp Volume Adjustment*										
	Freeway/ Direction	Off-ramp	Per	Lane Drop?	S_{FR} (mph)	V_R (vph)	Decel Lane (ft) L_{D1}	L_{D2}	L_{Deff}	PHF	Terrain	Truck/ Bus %	RV %	f_P
D-1	SR 99 NB	Arch Road NB Off	AM	No	45.0	986	150	0	150	0.92	Level	13%	0%	1.00
D-4	SR 99 SB	Arch Road SB Off	AM	Yes	45.0	1,315	150	0	300	0.92	Level	11%	0%	1.00
D-1	SR 99 NB	Arch Road NB Off	PM	No	45.0	490	150	0	150	0.92	Level	13%	0%	1.00
D-4	SR 99 SB	Arch Road SB Off	PM	Yes	45.0	545	150	0	300	0.92	Level	19%	0%	1.00
D-2	SR 99 NB	Mariposa Road NB Off	AM	No	45.0	198	200	0	200	0.92	Level	30%	0%	1.00
D-3	SR 99 SB	Mariposa Road SB Off	AM	No	45.0	555	400	0	400	0.92	Level	18%	0%	1.00
D-2	SR 99 NB	Mariposa Road NB Off	PM	No	45.0	165	200	0	200	0.92	Level	13%	0%	1.00
D-3	SR 99 SB	Mariposa Road SB Off	PM	No	45.0	596	400	0	400	0.92	Level	18%	0%	1.00

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Results*		*Speed Estimation*			
	Freeway/ Direction	Off-ramp	Per	Flow Rate v_p (pcph)	Density, D (pcplpm)	LOS	Int. Var. D_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
D-1	SR 99 NB	Arch Road NB Off	AM	1,141	-	F	-	-	-	-
D-4	SR 99 SB	Arch Road SB Off	AM	1,508	**21.6**	C	0.434	55.0	71.3	59.1
D-1	SR 99 NB	Arch Road NB Off	PM	567	**28.8**	D	0.349	57.0	0.0	57.0
D-4	SR 99 SB	Arch Road SB Off	PM	649	**23.9**	C	0.356	56.8	67.6	61.0
D-2	SR 99 NB	Mariposa Road NB Off	AM	248	**36.9**	E	0.320	57.6	0.0	57.6
D-3	SR 99 SB	Mariposa Road SB Off	AM	658	**33.1**	D	0.357	56.8	0.0	56.8
D-2	SR 99 NB	Mariposa Road NB Off	PM	191	**35.3**	E	0.315	57.8	0.0	57.8
D-3	SR 99 SB	Mariposa Road SB Off	PM	706	-	F	-	-	-	-

SCENARIO 4: EXISTING PLUS APPROVED PROJECTS WITH PROJECT WITH MITIGATION

HCM 2000
Basic Freeway Segments
Capacity Analysis

	Freeway/ Direction	From/To	Per	Volume (vph)	PHF	Lanes	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	LOS
B-1	SR 99 NB	South of Arch	AM	3,819	0.92	3	Level	14%	1%	1.00	1,483	65.0	65.0	**22.8**	**C**
B-2	SR 99 NB	Arch to Mariposa	AM	3,442	0.92	3	Level	14%	1%	1.00	1,337	65.0	65.0	**20.6**	**C**
B-3	SR 99 NB	North of Mariposa	AM	3,982	0.92	3	Level	14%	1%	1.00	1,547	65.0	65.0	**23.8**	**C**
B-4	SR 99 SB	North of Mariposa	AM	3,240	0.92	3	Level	14%	1%	1.00	1,258	65.0	65.0	**19.4**	**C**
B-5	SR 99 SB	Mariposa to Arch	AM	2,855	0.92	3	Level	14%	1%	1.00	1,109	65.0	65.0	**17.1**	**B**
B-6	SR 99 SB	South of Arch	AM	2,079	0.92	3	Level	14%	1%	1.00	807	65.0	65.0	**12.4**	**B**
B-1	SR 99 NB	South of Arch	PM	2,582	0.92	3	Level	14%	1%	1.00	1,003	65.0	65.0	**15.4**	**B**
B-2	SR 99 NB	Arch to Mariposa	PM	3,281	0.92	3	Level	14%	1%	1.00	1,274	65.0	65.0	**19.6**	**C**
B-3	SR 99 NB	North of Mariposa	PM	3,882	0.92	3	Level	14%	1%	1.00	1,508	65.0	65.0	**23.2**	**C**
B-4	SR 99 SB	North of Mariposa	PM	4,250	0.92	3	Level	14%	1%	1.00	1,651	65.0	64.7	**25.5**	**C**
B-5	SR 99 SB	Mariposa to Arch	PM	3,896	0.92	3	Level	14%	1%	1.00	1,513	65.0	65.0	**23.3**	**C**
B-6	SR 99 SB	South of Arch	PM	4,365	0.92	3	Level	14%	1%	1.00	1,695	65.0	64.6	**26.3**	**D**

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Effective Flow Rate v_p (pcph)	Type	Lanes	Lane Add?	S_{FR} (mph)
M-1	SR 99 NB	Arch Road NB On	AM	3	65.0	2,833	0.92	Level	14%	1%	1.00	3,301	Right	2	No	45.0
M-4	SR 99 SB	Arch Road SB On	AM	3	65.0	1,540	0.92	Level	14%	1%	1.00	1,794	Right	1	No	45.0
M-1	SR 99 NB	Arch Road NB On	PM	3	65.0	2,092	0.92	Level	14%	1%	1.00	2,438	Right	2	No	45.0
M-4	SR 99 SB	Arch Road SB On	PM	3	65.0	3,351	0.92	Level	14%	1%	1.00	3,905	Right	1	No	45.0
M-2	SR 99 NB	Mariposa Road NB On	AM	3	65.0	3,244	0.92	Level	14%	1%	1.00	3,780	Right	1	No	45.0
M-3	SR 99 SB	Mariposa Road SB On	AM	3	65.0	2,685	0.92	Level	14%	1%	1.00	3,129	Right	1	No	45.0
M-2	SR 99 NB	Mariposa Road NB On	PM	3	65.0	3,116	0.92	Level	14%	1%	1.00	3,631	Right	1	No	45.0
M-3	SR 99 SB	Mariposa Road SB On	PM	3	65.0	3,654	0.92	Level	14%	1%	1.00	4,258	Right	1	No	45.0

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	V_R (vph)	Accel Lane (ft) L_{A1}	L_{A2}	L_{Aeff}	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Density, D (pcplpm)	LOS	Int. Var. M_S
M-1	SR 99 NB	Arch Road NB On	609	250	1,750	2,250	0.92	Level	21%	0%	1.00	731	**11.4**	**B**	0.172
M-4	SR 99 SB	Arch Road SB On	539	650		650	0.92	Level	30%	0%	1.00	674	**14.7**	**B**	0.285
M-1	SR 99 NB	Arch Road NB On	1,189	250	1,750	2,250	0.92	Level	7%	0%	1.00	1,338	**12.1**	**B**	0.178
M-4	SR 99 SB	Arch Road SB On	1,014	650	0	650	0.92	Level	13%	0%	1.00	1,174	**28.2**	**D**	0.392
M-2	SR 99 NB	Mariposa Road NB On	738	600		600	0.92	Level	18%	0%	1.00	874	**25.7**	**C**	0.355
M-3	SR 99 SB	Mariposa Road SB On	170	700		700	0.92	Level	31%	0%	1.00	213	**17.2**	**B**	0.289
M-2	SR 99 NB	Mariposa Road NB On	766	600		600	0.92	Level	11%	0%	1.00	878	**25.0**	**C**	0.348
M-3	SR 99 SB	Mariposa Road SB On	242	700		700	0.92	Level	15%	0%	1.00	283	**23.0**	**C**	0.324

HCM 2000
Merge Ramp Junctions
Capacity Analysis

	Freeway/ Direction	On-ramp	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
M-1	SR 99 NB	Arch Road NB On	61.0	61.7	61.3
M-4	SR 99 SB	Arch Road SB On	58.5	64.2	60.0
M-1	SR 99 NB	Arch Road NB On	60.9	63.0	61.5
M-4	SR 99 SB	Arch Road SB On	56.0	61.1	57.5
M-2	SR 99 NB	Mariposa Road NB On	56.8	61.3	58.2
M-3	SR 99 SB	Mariposa Road SB On	58.3	62.3	59.8
M-2	SR 99 NB	Mariposa Road NB On	57.0	61.5	58.4
M-3	SR 99 SB	Mariposa Road SB On	57.6	60.6	58.7

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Freeway Data*		*Freeway Volume Adjustment*						*Off-Ramp Data*		
	Freeway/ Direction	Off-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Type	Lanes	Lane Drop?
D-1	SR 99 NB	Arch Road NB Off	AM	3	65.0	3,819	0.92	Level	14%	1%	1.00	Right	1	No
D-4	SR 99 SB	Arch Road SB Off	AM	3	65.0	2,855	0.92	Level	14%	1%	1.00	Right	1	No
D-1	SR 99 NB	Arch Road NB Off	PM	3	65.0	2,582	0.92	Level	14%	1%	1.00	Right	1	No
D-4	SR 99 SB	Arch Road SB Off	PM	3	65.0	3,896	0.92	Level	14%	1%	1.00	Right	1	No
D-2	SR 99 NB	Mariposa Road NB Off	AM	3	65.0	3,442	0.92	Level	14%	1%	1.00	Right	1	No
D-3	SR 99 SB	Mariposa Road SB Off	AM	3	65.0	3,240	0.92	Level	14%	1%	1.00	Right	1	No
D-2	SR 99 NB	Mariposa Road NB Off	PM	3	65.0	3,281	0.92	Level	14%	1%	1.00	Right	1	No
D-3	SR 99 SB	Mariposa Road SB Off	PM	3	65.0	4,250	0.92	Level	14%	1%	1.00	Right	1	No

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information			*Off-Ramp Volume Adjustment*										*Results*	
	Freeway/ Direction	Off-ramp	S_{FR} (mph)	V_R (vph)	Decel Lane (ft) L_{D1}	L_{D2}	L_{Deff}	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Density, D (pcplpm)
D-1	SR 99 NB	Arch Road NB Off	45.0	986	150	0	150	0.92	Level	13%	0%	1.00	1,141	**29.7**
D-4	SR 99 SB	Arch Road SB Off	45.0	1,315	150	0	150	0.92	Level	11%	0%	1.00	1,508	**25.4**
D-1	SR 99 NB	Arch Road NB Off	45.0	490	150	0	150	0.92	Level	13%	0%	1.00	567	**21.6**
D-4	SR 99 SB	Arch Road SB Off	45.0	545	150	0	150	0.92	Level	19%	0%	1.00	649	**29.1**
D-2	SR 99 NB	Mariposa Road NB Off	45.0	198	200	0	200	0.92	Level	30%	0%	1.00	248	**25.6**
D-3	SR 99 SB	Mariposa Road SB Off	45.0	555	400	0	400	0.92	Level	18%	0%	1.00	658	**23.3**
D-2	SR 99 NB	Mariposa Road NB Off	45.0	165	200	0	200	0.92	Level	13%	0%	1.00	191	**24.6**
D-3	SR 99 SB	Mariposa Road SB Off	45.0	596	400	0	400	0.92	Level	18%	0%	1.00	706	**28.8**

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information			*Speed Estimation*				
	Freeway/ Direction	Off-ramp	LOS	Int. Var. D_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
D-1	SR 99 NB	Arch Road NB Off	**D**	0.401	55.8	70.0	59.4
D-4	SR 99 SB	Arch Road SB Off	**C**	0.434	55.0	71.3	57.9
D-1	SR 99 NB	Arch Road NB Off	**C**	0.349	57.0	71.3	60.3
D-4	SR 99 SB	Arch Road SB Off	**D**	0.356	56.8	69.4	60.4
D-2	SR 99 NB	Mariposa Road NB Off	**C**	0.320	57.6	70.0	61.2
D-3	SR 99 SB	Mariposa Road SB Off	**C**	0.357	56.8	70.8	60.4
D-2	SR 99 NB	Mariposa Road NB Off	**C**	0.315	57.8	70.3	61.3
D-3	SR 99 SB	Mariposa Road SB Off	**D**	0.362	56.7	68.6	60.3

PROJECT ALTERNATIVE

HCM 2000
Basic Freeway Segments
Capacity Analysis - Existing Plus Project (No Thru Access)

General Information				*Flow Rate Calculation*							*Speed Calculation*		*Results*	
	Freeway/ Direction	From/To	Per	Volume (vph)	PHF	Lanes	Terrain	Truck/ Bus %	RV %	Flow Rate v_p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	LOS
B-1	SR 99 NB	South of Arch	AM	3,573	0.92	2	Level	14%	1%	2,082	65.0	59.9	**34.7**	**D**
B-2	SR 99 NB	Arch to Mariposa	AM	3,401	0.92	2	Level	14%	1%	1,981	65.0	61.8	**32.1**	**D**
B-3	SR 99 NB	North of Mariposa	AM	3,813	0.92	2	Level	14%	1%	2,221	65.0	56.4	**39.4**	**E**
B-4	SR 99 SB	North of Mariposa	AM	2,957	0.92	2	Level	14%	1%	1,723	65.0	64.4	**26.7**	**D**
B-5	SR 99 SB	Mariposa to Arch	AM	2,687	0.92	2	Level	14%	1%	1,565	65.0	64.9	**24.1**	**C**
B-6	SR 99 SB	South of Arch	AM	1,984	0.92	2	Level	14%	1%	1,156	65.0	65.0	**17.8**	**B**
B-1	SR 99 NB	South of Arch	PM	2,476	0.92	2	Level	14%	1%	1,443	65.0	65.0	**22.2**	**C**
B-2	SR 99 NB	Arch to Mariposa	PM	3,112	0.92	2	Level	14%	1%	1,813	65.0	63.8	**28.4**	**D**
B-3	SR 99 NB	North of Mariposa	PM	3,452	0.92	2	Level	14%	1%	2,011	65.0	61.3	**32.8**	**D**
B-4	SR 99 SB	North of Mariposa	PM	4,130	0.92	2	Level	14%	1%	2,406	65.0	-	**-**	**F**
B-5	SR 99 SB	Mariposa to Arch	PM	3,853	0.92	2	Level	14%	1%	2,245	65.0	55.8	**40.3**	**E**
B-6	SR 99 SB	South of Arch	PM	4,098	0.92	2	Level	14%	1%	2,388	65.0	-	**-**	**F**

HCM 2000
Merge Ramp Junctions
Capacity Analysis

General Information				*Freeway Data*	*Freeway Volume Adjustment*						*On-Ramp Data*		
	Freeway/ Direction	On-ramp	Analysis Time Period	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type	Lane Lanes	Lane Add?
M-1	SR 99 NB	Arch Road NB On	AM	2	65.0	2,839	0.92	Level	14%	1%	1.00	3,308	Right	2	No
M-4	SR 99 SB	Arch Road SB On	AM	2	65.0	1,543	0.92	Level	14%	1%	1.00	1,798	Right	1	No
M-1	SR 99 NB	Arch Road NB On	PM	2	65.0	2,096	0.92	Level	14%	1%	1.00	2,442	Right	2	No
M-4	SR 99 SB	Arch Road SB On	PM	2	65.0	3,360	0.92	Level	14%	1%	1.00	3,915	Right	1	No
M-2	SR 99 NB	Mariposa Road NB On	AM	2	65.0	3,178	0.92	Level	14%	1%	1.00	3,703	Right	1	No
M-3	SR 99 SB	Mariposa Road SB On	AM	2	65.0	2,513	0.92	Level	14%	1%	1.00	2,928	Right	1	No
M-2	SR 99 NB	Mariposa Road NB On	PM	2	65.0	2,905	0.92	Level	14%	1%	1.00	3,385	Right	1	No
M-3	SR 99 SB	Mariposa Road SB On	PM	2	65.0	3,601	0.92	Level	14%	1%	1.00	4,196	Right	1	No

HCM 2000
Merge Ramp Junctions
Capacity Analysis

General Information							*On-Ramp Volume Adjustment*						
	Freeway/ Direction	On-ramp	Analysis Time Period	S_{FR} (mph)	V_R (vph)	Accel Lane (ft) L_{A1}	L_{A2}	L_{Aeff}	PHF	Truck/ Terrain	Bus %	RV %	f_P
M-1	SR 99 NB	Arch Road NB On	AM	45.0	562	250	1,750	2,250	0.92	Level	21%	0%	1.00
M-4	SR 99 SB	Arch Road SB On	AM	45.0	441	650		650	0.92	Level	30%	0%	1.00
M-1	SR 99 NB	Arch Road NB On	PM	45.0	1,016	250	1,750	2,250	0.92	Level	7%	0%	1.00
M-4	SR 99 SB	Arch Road SB On	PM	45.0	738	650	0	650	0.92	Level	13%	0%	1.00
M-2	SR 99 NB	Mariposa Road NB On	AM	45.0	635	600		600	0.92	Level	18%	0%	1.00
M-3	SR 99 SB	Mariposa Road SB On	AM	45.0	174	725		725	0.92	Level	31%	0%	1.00
M-2	SR 99 NB	Mariposa Road NB On	PM	45.0	547	600		600	0.92	Level	11%	0%	1.00
M-3	SR 99 SB	Mariposa Road SB On	PM	45.0	252	725		725	0.92	Level	15%	0%	1.00

HCM 2000
Merge Ramp Junctions
Capacity Analysis

General Information				*Results*			*Speed Estimation*			
	Freeway/ Direction	On-ramp	Analysis Time Period	Flow Rate v_p (pcph)	Density, D (pcplpm)	LOS	Int. Var. M_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
M-1	SR 99 NB	Arch Road NB On	AM	675	**22.1**	**C**	0.328	57.5	0.0	57.5
M-4	SR 99 SB	Arch Road SB On	AM	551	**19.5**	**B**	0.303	58.0	0.0	58.0
M-1	SR 99 NB	Arch Road NB On	PM	1,143	**18.8**	**B**	0.259	59.0	0.0	59.0
M-4	SR 99 SB	Arch Road SB On	PM	854	**-**	**F**	-	-	-	-
M-2	SR 99 NB	Mariposa Road NB On	AM	752	**36.1**	**E**	0.603	51.1	0.0	51.1
M-3	SR 99 SB	Mariposa Road SB On	AM	218	**25.4**	**C**	0.346	57.0	0.0	57.0
M-2	SR 99 NB	Mariposa Road NB On	PM	627	**32.7**	**D**	0.483	53.9	0.0	53.9
M-3	SR 99 SB	Mariposa Road SB On	PM	294	**35.8**	**E**	0.603	51.1	0.0	51.1

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Freeway Data*		*Freeway Volume Adjustment*						Effective	*Off-Ramp Data*	
	Freeway/ Direction	Off-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type	Lanes
D-1	SR 99 NB	Arch Road NB Off	AM	2	65.0	2,839	0.92	Level	14%	1%	1.00	3,308	Right	1
D-4	SR 99 SB	Arch Road SB Off	AM	3	65.0	1,543	0.92	Level	14%	1%	1.00	1,798	Right	2
D-1	SR 99 NB	Arch Road NB Off	PM	2	65.0	2,096	0.92	Level	14%	1%	1.00	2,442	Right	1
D-4	SR 99 SB	Arch Road SB Off	PM	3	65.0	3,360	0.92	Level	14%	1%	1.00	3,915	Right	2
D-2	SR 99 NB	Mariposa Road NB Off	AM	2	65.0	3,178	0.92	Level	14%	1%	1.00	3,703	Right	1
D-3	SR 99 SB	Mariposa Road SB Off	AM	2	65.0	2,513	0.92	Level	14%	1%	1.00	2,928	Right	1
D-2	SR 99 NB	Mariposa Road NB Off	PM	2	65.0	2,905	0.92	Level	14%	1%	1.00	3,385	Right	1
D-3	SR 99 SB	Mariposa Road SB Off	PM	2	65.0	3,601	0.92	Level	14%	1%	1.00	4,196	Right	1

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information							*Off-Ramp Volume Adjustment*									
	Freeway/ Direction	Off-ramp	Per	Lane Drop?	S_{FR} (mph)	V_R (vph)	Decel Lane (ft) L_{D1}	L_{D2}	L_{Deff}	PHF	Terrain	Truck/ Bus %	RV %	f_P
D-1	SR 99 NB	Arch Road NB Off	AM	No	45.0	734	150	0	150	0.92	Level	13%	0%	1.00
D-4	SR 99 SB	Arch Road SB Off	AM	Yes	45.0	1,144	150	0	300	0.92	Level	11%	0%	1.00
D-1	SR 99 NB	Arch Road NB Off	PM	No	45.0	380	150	0	150	0.92	Level	13%	0%	1.00
D-4	SR 99 SB	Arch Road SB Off	PM	Yes	45.0	493	150	0	300	0.92	Level	19%	0%	1.00
D-2	SR 99 NB	Mariposa Road NB Off	AM	No	45.0	223	200	0	200	0.92	Level	30%	0%	1.00
D-3	SR 99 SB	Mariposa Road SB Off	AM	No	45.0	444	400	0	400	0.92	Level	18%	0%	1.00
D-2	SR 99 NB	Mariposa Road NB Off	PM	No	45.0	207	200	0	200	0.92	Level	13%	0%	1.00
D-3	SR 99 SB	Mariposa Road SB Off	PM	No	45.0	529	400	0	400	0.92	Level	18%	0%	1.00

HCM 2000
Diverge Ramp Junctions
Capacity Analysis

General Information				*Results*			*Speed Estimation*			
	Freeway/ Direction	Off-ramp	Per	Flow Rate v_p (pcph)	Density, D (pcplpm)	LOS	Int. Var. D_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
D-1	SR 99 NB	Arch Road NB Off	AM	850	**31.4**	**D**	0.374	56.4	0.0	56.4
D-4	SR 99 SB	Arch Road SB Off	AM	1,312	**14.7**	**B**	0.416	55.4	71.3	57.3
D-1	SR 99 NB	Arch Road NB Off	PM	440	**23.9**	**C**	0.338	57.2	0.0	57.2
D-4	SR 99 SB	Arch Road SB Off	PM	587	**20.8**	**C**	0.351	56.9	68.7	61.4
D-2	SR 99 NB	Mariposa Road NB Off	AM	279	**34.3**	**D**	0.323	57.6	0.0	57.6
D-3	SR 99 SB	Mariposa Road SB Off	AM	526	**25.8**	**C**	0.345	57.1	0.0	57.1
D-2	SR 99 NB	Mariposa Road NB Off	PM	240	**31.6**	**D**	0.320	57.6	0.0	57.6
D-3	SR 99 SB	Mariposa Road SB Off	PM	627	**36.7**	**E**	0.354	56.8	0.0	56.8

HCM 2000
Basic Freeway Segments
Capacity Analysis - Existing Plus Project (No Thru Access) Plus Mitigation

General Information				*Flow Rate Calculation*								*Speed Calculation*		*Results*	
	Freeway/ Direction	From/To	Per	Volume (vph)	PHF	Lanes	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	LOS
B-1	SR 99 NB	South of Arch	AM	3,573	0.92	3	Level	14%	1%	1.00	1,388	65.0	65.0	**21.4**	**C**
B-2	SR 99 NB	Arch to Mariposa	AM	3,401	0.92	3	Level	14%	1%	1.00	1,321	65.0	65.0	**20.3**	**C**
B-3	SR 99 NB	North of Mariposa	AM	3,813	0.92	3	Level	14%	1%	1.00	1,481	65.0	65.0	**22.8**	**C**
B-4	SR 99 SB	North of Mariposa	AM	2,957	0.92	3	Level	14%	1%	1.00	1,149	65.0	65.0	**17.7**	**B**
B-5	SR 99 SB	Mariposa to Arch	AM	2,687	0.92	3	Level	14%	1%	1.00	1,044	65.0	65.0	**16.1**	**B**
B-6	SR 99 SB	South of Arch	AM	1,984	0.92	3	Level	14%	1%	1.00	771	65.0	65.0	**11.9**	**B**
B-1	SR 99 NB	South of Arch	PM	2,476	0.92	3	Level	14%	1%	1.00	962	65.0	65.0	**14.8**	**B**
B-2	SR 99 NB	Arch to Mariposa	PM	3,112	0.92	3	Level	14%	1%	1.00	1,209	65.0	65.0	**18.6**	**C**
B-3	SR 99 NB	North of Mariposa	PM	3,452	0.92	3	Level	14%	1%	1.00	1,341	65.0	65.0	**20.6**	**C**
B-4	SR 99 SB	North of Mariposa	PM	4,130	0.92	3	Level	14%	1%	1.00	1,604	65.0	64.9	**24.7**	**C**
B-5	SR 99 SB	Mariposa to Arch	PM	3,853	0.92	3	Level	14%	1%	1.00	1,497	65.0	65.0	**23.0**	**C**
B-6	SR 99 SB	South of Arch	PM	4,098	0.92	3	Level	14%	1%	1.00	1,592	65.0	64.9	**24.5**	**C**

HCM 2000
Merge Ramp Junctions
Capacity Analysis - Existing Plus Project (No Thru Access) Plus Mitigation

General Information				*Freeway Data*		*Freeway Volume Adjustment*						Effective	*On-Ramp Data*	
	Freeway/ Direction	On-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type	Lanes
M-1	SR 99 NB	Arch Road NB On	AM	3	65.0	2,839	0.92	Level	14%	1%	1.00	3,308	Right	2
M-4	SR 99 SB	Arch Road SB On	AM	3	65.0	1,543	0.92	Level	14%	1%	1.00	1,798	Right	1
M-1	SR 99 NB	Arch Road NB On	PM	3	65.0	2,096	0.92	Level	14%	1%	1.00	2,442	Right	2
M-4	SR 99 SB	Arch Road SB On	PM	3	65.0	3,360	0.92	Level	14%	1%	1.00	3,915	Right	1
M-2	SR 99 NB	Mariposa Road NB On	AM	3	65.0	3,178	0.92	Level	14%	1%	1.00	3,703	Right	1
M-3	SR 99 SB	Mariposa Road SB On	AM	3	65.0	2,513	0.92	Level	14%	1%	1.00	2,928	Right	1
M-2	SR 99 NB	Mariposa Road NB On	PM	3	65.0	2,905	0.92	Level	14%	1%	1.00	3,385	Right	1
M-3	SR 99 SB	Mariposa Road SB On	PM	3	65.0	3,601	0.92	Level	14%	1%	1.00	4,196	Right	1

HCM 2000
Merge Ramp Junctions
Capacity Analysis - Existing Plus Project (No T

General Information									*On-Ramp Volume Adjustment*					
	Freeway/ Direction	On-ramp	Per	Lane Add?	S_{FR} (mph)	V_R (vph)	Accel Lane (ft) L_{A1}	L_{A2}	L_{Aeff}	PHF	Truck/ Terrain	Bus %	RV %	f_P	Flow Rate v_p (pcph)
M-1	SR 99 NB	Arch Road NB On	AM	No	45.0	562	250	1,750	2,250	0.92	Level	21%	0%	1.00	675
M-4	SR 99 SB	Arch Road SB On	AM	No	45.0	441	650		650	0.92	Level	30%	0%	1.00	551
M-1	SR 99 NB	Arch Road NB On	PM	No	45.0	1,016	250	1,750	2,250	0.92	Level	7%	0%	1.00	1,143
M-4	SR 99 SB	Arch Road SB On	PM	No	45.0	738	650	0	650	0.92	Level	13%	0%	1.00	854
M-2	SR 99 NB	Mariposa Road NB On	AM	No	45.0	635	600		600	0.92	Level	18%	0%	1.00	752
M-3	SR 99 SB	Mariposa Road SB On	AM	No	45.0	174	700		700	0.92	Level	31%	0%	1.00	218
M-2	SR 99 NB	Mariposa Road NB On	PM	No	45.0	547	600		600	0.92	Level	11%	0%	1.00	627
M-3	SR 99 SB	Mariposa Road SB On	PM	No	45.0	252	700		700	0.92	Level	15%	0%	1.00	294

HCM 2000
Merge Ramp Junctions
Capacity Analysis - Existing Plus Project (No T

General Information				*Results*		*Speed Estimation*			
	Freeway/ Direction	On-ramp	Per	Density, D (pcplpm)	LOS	Int. Var. M_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
M-1	SR 99 NB	Arch Road NB On	AM	**11.1**	**B**	0.169	61.1	61.7	61.3
M-4	SR 99 SB	Arch Road SB On	AM	**13.8**	**B**	0.282	58.5	64.2	60.2
M-1	SR 99 NB	Arch Road NB On	PM	**10.6**	**B**	0.168	61.1	63.0	61.7
M-4	SR 99 SB	Arch Road SB On	PM	**25.9**	**C**	0.357	56.8	61.1	58.2
M-2	SR 99 NB	Mariposa Road NB On	AM	**24.4**	**C**	0.342	57.1	61.4	58.5
M-3	SR 99 SB	Mariposa Road SB On	AM	**16.3**	**B**	0.286	58.4	62.6	59.9
M-2	SR 99 NB	Mariposa Road NB On	PM	**22.0**	**C**	0.322	57.6	61.9	59.0
M-3	SR 99 SB	Mariposa Road SB On	PM	**22.8**	**C**	0.322	57.6	60.7	58.7

HCM 2000
Diverge Ramp Junctions
Capacity Analysis - Existing Plus Project (No Thru Access) Plus Mitigation

	Freeway/ Direction	Off-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type	Lanes	Lane Drop?
	General Information			*Freeway Data*		*Freeway Volume Adjustment*						Effective	*Off-Ramp Data*		
D-1	SR 99 NB	Arch Road NB Off	AM	3	65.0	2,839	0.92	Level	14%	1%	1.00	3,308	Right	1	No
D-4	SR 99 SB	Arch Road SB Off	AM	3	65.0	1,543	0.92	Level	14%	1%	1.00	1,798	Right	2	Yes
D-1	SR 99 NB	Arch Road NB Off	PM	3	65.0	2,096	0.92	Level	14%	1%	1.00	2,442	Right	1	No
D-4	SR 99 SB	Arch Road SB Off	PM	3	65.0	3,360	0.92	Level	14%	1%	1.00	3,915	Right	2	Yes
D-2	SR 99 NB	Mariposa Road NB Off	AM	3	65.0	3,178	0.92	Level	14%	1%	1.00	3,703	Right	1	No
D-3	SR 99 SB	Mariposa Road SB Off	AM	3	65.0	2,513	0.92	Level	14%	1%	1.00	2,928	Right	1	No
D-2	SR 99 NB	Mariposa Road NB Off	PM	3	65.0	2,905	0.92	Level	14%	1%	1.00	3,385	Right	1	No
D-3	SR 99 SB	Mariposa Road SB Off	PM	3	65.0	3,601	0.92	Level	14%	1%	1.00	4,196	Right	1	No

HCM 2000
Diverge Ramp Junctions
Capacity Analysis - Existing Plus Project (No T

	Freeway/ Direction	Off-ramp	Per	S_{FR} (mph)	V_R (vph)	Decel Lane (ft) L_{D1}	L_{D2}	L_{Deff}	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)
	General Information							*Off-Ramp Volume Adjustment*						
D-1	SR 99 NB	Arch Road NB Off	AM	45.0	734	150	0	150	0.92	Level	13%	0%	1.00	850
D-4	SR 99 SB	Arch Road SB Off	AM	45.0	1,144	150	0	300	0.92	Level	11%	0%	1.00	1,312
D-1	SR 99 NB	Arch Road NB Off	PM	45.0	380	150	0	150	0.92	Level	13%	0%	1.00	440
D-4	SR 99 SB	Arch Road SB Off	PM	45.0	493	150	0	300	0.92	Level	19%	0%	1.00	587
D-2	SR 99 NB	Mariposa Road NB Off	AM	45.0	223	200	0	200	0.92	Level	30%	0%	1.00	279
D-3	SR 99 SB	Mariposa Road SB Off	AM	45.0	444	400	0	400	0.92	Level	18%	0%	1.00	526
D-2	SR 99 NB	Mariposa Road NB Off	PM	45.0	207	200	0	200	0.92	Level	13%	0%	1.00	240
D-3	SR 99 SB	Mariposa Road SB Off	PM	45.0	529	400	0	400	0.92	Level	18%	0%	1.00	627

HCM 2000
Diverge Ramp Junctions
Capacity Analysis - Existing Plus Project (No T

	Freeway/ Direction	Off-ramp	Per	Density, D (pcplpm)	LOS	Int. Var. D_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
	General Information			*Results*		*Speed Estimation*			
D-1	SR 99 NB	Arch Road NB Off	AM	**23.7**	**C**	0.374	56.4	71.3	59.7
D-4	SR 99 SB	Arch Road SB Off	AM	**14.7**	**B**	0.416	55.4	71.3	57.3
D-1	SR 99 NB	Arch Road NB Off	PM	**18.4**	**B**	0.338	57.2	71.3	60.4
D-4	SR 99 SB	Arch Road SB Off	PM	**20.8**	**C**	0.351	56.9	68.7	61.4
D-2	SR 99 NB	Mariposa Road NB Off	AM	**24.1**	**C**	0.323	57.6	70.6	61.2
D-3	SR 99 SB	Mariposa Road SB Off	AM	**18.9**	**B**	0.345	57.1	71.3	60.4
D-2	SR 99 NB	Mariposa Road NB Off	PM	**22.5**	**C**	0.320	57.6	71.1	61.3
D-3	SR 99 SB	Mariposa Road SB Off	PM	**25.3**	**C**	0.354	56.8	70.0	60.5

HCM 2000
Basic Freeway Segments
Capacity Analysis - Near Term Plus Project (No Thru Access)

General Information				*Flow Rate Calculation*								*Speed Calculation*		*Results*	
	Freeway/ Direction	From/To	Per	Volume (vph)	PHF	Lanes	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	LOS
B-1	SR 99 NB	South of Arch	AM	3,809	0.92	2	Level	14%	1%	1.00	2,225	65.0	56.3	**39.5**	**E**
B-2	SR 99 NB	Arch to Mariposa	AM	3,524	0.92	2	Level	14%	1%	1.00	2,005	65.0	61.4	**32.7**	**D**
B-3	SR 99 NB	North of Mariposa	AM	3,916	0.92	2	Level	14%	1%	1.00	2,320	65.0	53.3	**43.5**	**E**
B-4	SR 99 SB	North of Mariposa	AM	3,284	0.92	2	Level	14%	1%	1.00	1,888	65.0	63.0	**29.9**	**D**
B-5	SR 99 SB	Mariposa to Arch	AM	2,985	0.92	2	Level	14%	1%	1.00	1,663	65.0	64.7	**25.7**	**C**
B-6	SR 99 SB	South of Arch	AM	2,078	0.92	2	Level	14%	1%	1.00	1,211	65.0	65.0	**18.6**	**C**
B-1	SR 99 NB	South of Arch	PM	2,581	0.92	2	Level	14%	1%	1.00	1,504	65.0	65.0	**23.1**	**C**
B-2	SR 99 NB	Arch to Mariposa	PM	3,444	0.92	2	Level	14%	1%	1.00	1,912	65.0	62.7	**30.5**	**D**
B-3	SR 99 NB	North of Mariposa	PM	3,759	0.92	2	Level	14%	1%	1.00	2,262	65.0	55.2	**40.9**	**E**
B-4	SR 99 SB	North of Mariposa	PM	4,281	0.92	2	Level	14%	1%	1.00	2,476	65.0	-	**-**	**F**
B-5	SR 99 SB	Mariposa to Arch	PM	4,002	0.92	2	Level	14%	1%	1.00	2,270	65.0	55.0	**41.3**	**E**
B-6	SR 99 SB	South of Arch	PM	4,364	0.92	2	Level	14%	1%	1.00	2,543	65.0	-	**-**	**F**

HCM 2000
Merge Ramp Junctions
Capacity Analysis - Near Term Plus Project (No Thru Access)

General Information				*Freeway Data*		*Freeway Volume Adjustment*						Effective	*On-Ramp Data*			
	Freeway/ Direction	On-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type	Lanes	Lane Add?	S_{FR} (mph)
M-1	SR 99 NB	Arch Road NB On	AM	2	65.0	2,838	0.92	Level	14%	1%	1.00	3,301	Right	2	No	45.0
M-4	SR 99 SB	Arch Road SB On	AM	2	65.0	1,549	0.92	Level	14%	1%	1.00	1,794	Right	1	No	45.0
M-1	SR 99 NB	Arch Road NB On	PM	2	65.0	2,103	0.92	Level	14%	1%	1.00	2,438	Right	2	No	45.0
M-4	SR 99 SB	Arch Road SB On	PM	2	65.0	3,370	0.92	Level	14%	1%	1.00	3,905	Right	1	No	45.0
M-2	SR 99 NB	Mariposa Road NB On	AM	2	65.0	3,281	0.92	Level	14%	1%	1.00	3,780	Right	1	No	45.0
M-3	SR 99 SB	Mariposa Road SB On	AM	2	65.0	2,805	0.92	Level	14%	1%	1.00	3,129	Right	1	No	45.0
M-2	SR 99 NB	Mariposa Road NB On	PM	2	65.0	3,212	0.92	Level	14%	1%	1.00	3,631	Right	1	No	45.0
M-3	SR 99 SB	Mariposa Road SB On	PM	2	65.0	3,740	0.92	Level	14%	1%	1.00	4,258	Right	1	No	45.0

HCM 2000
Merge Ramp Junctions
Capacity Analysis - Near Term Plus Projec

General Information					*On-Ramp Volume Adjustment*							*Results*		*Speed Est*
	Freeway/ Direction	On-ramp	V_R (vph)	Accel Lane (ft) L_{A1}	L_{A2}	L_{Aeff}	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Density, D (pcplpm)	LOS	Int. Var. M_S
M-1	SR 99 NB	Arch Road NB On	609	250	1,750	2,250	0.92	Level	21%	0%	1.00	731	**22.5**	**C**	0.338
M-4	SR 99 SB	Arch Road SB On	539	650		650	0.92	Level	30%	0%	1.00	674	**20.3**	**C**	0.309
M-1	SR 99 NB	Arch Road NB On	1,189	250	1,750	2,250	0.92	Level	7%	0%	1.00	1,338	**20.2**	**C**	0.289
M-4	SR 99 SB	Arch Road SB On	1,014	650	0	650	0.92	Level	13%	0%	1.00	1,174	**-**	**F**	-
M-2	SR 99 NB	Mariposa Road NB On	738	600		600	0.92	Level	18%	0%	1.00	874	**-**	**F**	-
M-3	SR 99 SB	Mariposa Road SB On	170	725		725	0.92	Level	31%	0%	1.00	213	**26.9**	**C**	0.366
M-2	SR 99 NB	Mariposa Road NB On	766	600		600	0.92	Level	11%	0%	1.00	878	**36.5**	**E**	0.621
M-3	SR 99 SB	Mariposa Road SB On	242	725		725	0.92	Level	15%	0%	1.00	283	**36.2**	**E**	0.621

HCM 2000
Merge Ramp Junctions
Capacity Analysis - Near Term Plus Projec

General Information				*imation*		
	Freeway/ Direction	On-ramp	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
M-1	SR 99 NB	Arch Road NB On	57.2	0.0	57.2
M-4	SR 99 SB	Arch Road SB On	57.9	0.0	57.9
M-1	SR 99 NB	Arch Road NB On	58.4	0.0	58.4
M-4	SR 99 SB	Arch Road SB On	-	-	-
M-2	SR 99 NB	Mariposa Road NB On	-	-	-
M-3	SR 99 SB	Mariposa Road SB On	56.6	0.0	56.6
M-2	SR 99 NB	Mariposa Road NB On	50.7	0.0	50.7
M-3	SR 99 SB	Mariposa Road SB On	50.7	0.0	50.7

HCM 2000
Diverge Ramp Junctions
Capacity Analysis - Near Term Plus Project (No Thru Access)

General Information			*Freeway Data*			*Freeway Volume Adjustment*					*Off-Ramp Data*		
	Freeway/ Direction	Off-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Type	Lanes	Lane Drop?
D-1	SR 99 NB	Arch Road NB Off	AM	2	65.0	3,809	0.92	Level	14%	1%	1.00	Right	1	No
D-4	SR 99 SB	Arch Road SB Off	AM	3	65.0	2,985	0.92	Level	14%	1%	1.00	Right	2	Yes
D-1	SR 99 NB	Arch Road NB Off	PM	2	65.0	2,581	0.92	Level	14%	1%	1.00	Right	1	No
D-4	SR 99 SB	Arch Road SB Off	PM	3	65.0	4,002	0.92	Level	14%	1%	1.00	Right	2	Yes
D-2	SR 99 NB	Mariposa Road NB Off	AM	2	65.0	3,524	0.92	Level	14%	1%	1.00	Right	1	No
D-3	SR 99 SB	Mariposa Road SB Off	AM	2	65.0	3,284	0.92	Level	14%	1%	1.00	Right	1	No
D-2	SR 99 NB	Mariposa Road NB Off	PM	2	65.0	3,444	0.92	Level	14%	1%	1.00	Right	1	No
D-3	SR 99 SB	Mariposa Road SB Off	PM	2	65.0	4,281	0.92	Level	14%	1%	1.00	Right	1	No

HCM 2000
Diverge Ramp Junctions
Capacity Analysis - Near Term Plus Projec

General Information			*Off-Ramp Volume Adjustment*										*Results*	
	Freeway/ Direction	Off-ramp	S_{FR} (mph)	V_R (vph)	Decel Lane (ft) L_{D1}	L_{D2}	L_{Deff}	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Density, D (pcplpm)
D-1	SR 99 NB	Arch Road NB Off	45.0	986	150	0	150	0.92	Level	13%	0%	1.00	1,141	-
D-4	SR 99 SB	Arch Road SB Off	45.0	1,315	150	0	300	0.92	Level	11%	0%	1.00	1,508	**21.6**
D-1	SR 99 NB	Arch Road NB Off	45.0	490	150	0	150	0.92	Level	13%	0%	1.00	567	**28.8**
D-4	SR 99 SB	Arch Road SB Off	45.0	545	150	0	300	0.92	Level	19%	0%	1.00	649	**23.9**
D-2	SR 99 NB	Mariposa Road NB Off	45.0	198	200	0	200	0.92	Level	30%	0%	1.00	248	**36.9**
D-3	SR 99 SB	Mariposa Road SB Off	45.0	555	400	0	400	0.92	Level	18%	0%	1.00	658	**33.1**
D-2	SR 99 NB	Mariposa Road NB Off	45.0	165	200	0	200	0.92	Level	13%	0%	1.00	191	**35.3**
D-3	SR 99 SB	Mariposa Road SB Off	45.0	596	400	0	400	0.92	Level	18%	0%	1.00	706	-

HCM 2000
Diverge Ramp Junctions
Capacity Analysis - Near Term Plus Projec

General Information			*Speed Estimation*				
	Freeway/ Direction	Off-ramp	LOS	Int. Var. D_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
D-1	SR 99 NB	Arch Road NB Off	**F**	-	-	-	-
D-4	SR 99 SB	Arch Road SB Off	**C**	0.434	55.0	71.3	59.1
D-1	SR 99 NB	Arch Road NB Off	**D**	0.349	57.0	0.0	57.0
D-4	SR 99 SB	Arch Road SB Off	**C**	0.356	56.8	67.6	61.0
D-2	SR 99 NB	Mariposa Road NB Off	**E**	0.320	57.6	0.0	57.6
D-3	SR 99 SB	Mariposa Road SB Off	**D**	0.357	56.8	0.0	56.8
D-2	SR 99 NB	Mariposa Road NB Off	**E**	0.315	57.8	0.0	57.8
D-3	SR 99 SB	Mariposa Road SB Off	**F**	-	-	-	-

HCM 2000
Basic Freeway Segments
Capacity Analysis - Near-Term Plus Project (No Thru Access) With Mitigation

General Information				*Flow Rate Calculation*								*Speed Calculation*	*Results*	
	Freeway/ Direction	From/To	Per	Volume (vph)	PHF	Lanes	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcphpl)	Measured FFS (mph)	S (mph)	Density, D (pcplpm)	LOS
B-1	SR 99 NB	South of Arch	AM	3,809	0.92	3	Level	14%	1%	1.00	1,479	65.0	65.0	**22.8**	**C**
B-2	SR 99 NB	Arch to Mariposa	AM	3,524	0.92	3	Level	14%	1%	1.00	1,369	65.0	65.0	**21.1**	**C**
B-3	SR 99 NB	North of Mariposa	AM	3,916	0.92	3	Level	14%	1%	1.00	1,521	65.0	65.0	**23.4**	**C**
B-4	SR 99 SB	North of Mariposa	AM	3,284	0.92	3	Level	14%	1%	1.00	1,276	65.0	65.0	**19.6**	**C**
B-5	SR 99 SB	Mariposa to Arch	AM	2,985	0.92	3	Level	14%	1%	1.00	1,159	65.0	65.0	**17.8**	**B**
B-6	SR 99 SB	South of Arch	AM	2,078	0.92	3	Level	14%	1%	1.00	807	65.0	65.0	**12.4**	**B**
B-1	SR 99 NB	South of Arch	PM	2,581	0.92	3	Level	14%	1%	1.00	1,002	65.0	65.0	**15.4**	**B**
B-2	SR 99 NB	Arch to Mariposa	PM	3,444	0.92	3	Level	14%	1%	1.00	1,338	65.0	65.0	**20.6**	**C**
B-3	SR 99 NB	North of Mariposa	PM	3,759	0.92	3	Level	14%	1%	1.00	1,460	65.0	65.0	**22.5**	**C**
B-4	SR 99 SB	North of Mariposa	PM	4,281	0.92	3	Level	14%	1%	1.00	1,663	65.0	64.7	**25.7**	**C**
B-5	SR 99 SB	Mariposa to Arch	PM	4,002	0.92	3	Level	14%	1%	1.00	1,554	65.0	65.0	**23.9**	**C**
B-6	SR 99 SB	South of Arch	PM	4,364	0.92	3	Level	14%	1%	1.00	1,695	65.0	64.6	**26.3**	**D**

HCM 2000
Merge Ramp Junctions
Capacity Analysis - Near-Term Plus Project (No Thru Access) With Mitigation

General Information				*Freeway Data*		*Freeway Volume Adjustment*						Effective	*On-Ramp Data*			
	Freeway/ Direction	On-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Type	Lanes	Lane Add?	S_{FR} (mph)
M-1	SR 99 NB	Arch Road NB On	AM	3	65.0	2,838	0.92	Level	14%	1%	1.00	3,307	Right	2	No	45.0
M-4	SR 99 SB	Arch Road SB On	AM	3	65.0	1,549	0.92	Level	14%	1%	1.00	1,805	Right	1	No	45.0
M-1	SR 99 NB	Arch Road NB On	PM	3	65.0	2,103	0.92	Level	14%	1%	1.00	2,450	Right	2	No	45.0
M-4	SR 99 SB	Arch Road SB On	PM	3	65.0	3,370	0.92	Level	14%	1%	1.00	3,927	Right	1	No	45.0
M-2	SR 99 NB	Mariposa Road NB On	AM	3	65.0	3,281	0.92	Level	14%	1%	1.00	3,823	Right	1	No	45.0
M-3	SR 99 SB	Mariposa Road SB On	AM	3	65.0	2,805	0.92	Level	14%	1%	1.00	3,268	Right	1	No	45.0
M-2	SR 99 NB	Mariposa Road NB On	PM	3	65.0	3,212	0.92	Level	14%	1%	1.00	3,743	Right	1	No	45.0
M-3	SR 99 SB	Mariposa Road SB On	PM	3	65.0	3,740	0.92	Level	14%	1%	1.00	4,358	Right	1	No	45.0

HCM 2000
Merge Ramp Junctions
Capacity Analysis - Near-Term Plus Proje

General Information							*On-Ramp Volume Adjustment*						*Results*		*Speed Est*
	Freeway/ Direction	On-ramp	V_R (vph)	Accel Lane (ft) L_{A1}	L_{A2}	L_{Aeff}	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Density, D (pcplpm)	LOS	Int. Var. M_S
M-1	SR 99 NB	Arch Road NB On	686	250	1,750	2,250	0.92	Level	21%	0%	1.00	824	**12.2**	**B**	0.177
M-4	SR 99 SB	Arch Road SB On	529	650		650	0.92	Level	30%	0%	1.00	661	**14.6**	**B**	0.285
M-1	SR 99 NB	Arch Road NB On	1,341	250	1,750	2,250	0.92	Level	7%	0%	1.00	1,509	**13.4**	**B**	0.190
M-4	SR 99 SB	Arch Road SB On	994	650	0	650	0.92	Level	13%	0%	1.00	1,151	**28.1**	**D**	0.390
M-2	SR 99 NB	Mariposa Road NB On	635	600		600	0.92	Level	18%	0%	1.00	752	**25.0**	**C**	0.347
M-3	SR 99 SB	Mariposa Road SB On	180	700		700	0.92	Level	31%	0%	1.00	226	**18.0**	**B**	0.292
M-2	SR 99 NB	Mariposa Road NB On	547	600		600	0.92	Level	11%	0%	1.00	627	**23.7**	**C**	0.335
M-3	SR 99 SB	Mariposa Road SB On	262	700		700	0.92	Level	15%	0%	1.00	306	**23.6**	**C**	0.329

HCM 2000
Merge Ramp Junctions
Capacity Analysis - Near-Term Plus Proje

General Information				*imation*		
	Freeway/ Direction	On-ramp	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
M-1	SR 99 NB	Arch Road NB On	60.9	61.7	61.2
M-4	SR 99 SB	Arch Road SB On	58.5	64.2	60.0
M-1	SR 99 NB	Arch Road NB On	60.6	63.0	61.2
M-4	SR 99 SB	Arch Road SB On	56.0	61.1	57.5
M-2	SR 99 NB	Mariposa Road NB On	57.0	61.2	58.4
M-3	SR 99 SB	Mariposa Road SB On	58.3	62.1	59.6
M-2	SR 99 NB	Mariposa Road NB On	57.3	61.3	58.6
M-3	SR 99 SB	Mariposa Road SB On	57.4	60.5	58.5

HCM 2000
Diverge Ramp Junctions
Capacity Analysis - Near-Term Plus Project (No Thru Access) With Mitigation

General Information				*Freeway Data*			*Freeway Volume Adjustment*						*Off-Ramp Data*		
	Freeway/ Direction	Off-ramp	Per	Lanes	S_{FF} (mph)	V (vph)	PHF	Terrain	Truck/ Bus %	RV %	f_P		Type	Lanes	Lane Drop?
D-1	SR 99 NB	Arch Road NB Off	AM	3	65.0	3,809	0.92	Level	14%	1%	1.00		Right	1	No
D-4	SR 99 SB	Arch Road SB Off	AM	3	65.0	2,985	0.92	Level	14%	1%	1.00		Right	1	No
D-1	SR 99 NB	Arch Road NB Off	PM	3	65.0	2,581	0.92	Level	14%	1%	1.00		Right	1	No
D-4	SR 99 SB	Arch Road SB Off	PM	3	65.0	4,002	0.92	Level	14%	1%	1.00		Right	1	No
D-2	SR 99 NB	Mariposa Road NB Off	AM	3	65.0	3,524	0.92	Level	14%	1%	1.00		Right	1	No
D-3	SR 99 SB	Mariposa Road SB Off	AM	3	65.0	3,284	0.92	Level	14%	1%	1.00		Right	1	No
D-2	SR 99 NB	Mariposa Road NB Off	PM	3	65.0	3,444	0.92	Level	14%	1%	1.00		Right	1	No
D-3	SR 99 SB	Mariposa Road SB Off	PM	3	65.0	4,281	0.92	Level	14%	1%	1.00		Right	1	No

HCM 2000
Diverge Ramp Junctions
Capacity Analysis - Near-Term Plus Projec

General Information			*Off-Ramp Volume Adjustment*										*Results*	
	Freeway/ Direction	Off-ramp	S_{FR} (mph)	V_R (vph)	Decel Lane (ft) L_{D1}	L_{D2}	L_{Deff}	PHF	Terrain	Truck/ Bus %	RV %	f_P	Flow Rate v_p (pcph)	Density, D (pcplpm)
D-1	SR 99 NB	Arch Road NB Off	45.0	971	150	0	150	0.92	Level	13%	0%	1.00	1,124	**29.6**
D-4	SR 99 SB	Arch Road SB Off	45.0	1,436	150	0	150	0.92	Level	11%	0%	1.00	1,647	**26.5**
D-1	SR 99 NB	Arch Road NB Off	45.0	478	150	0	150	0.92	Level	13%	0%	1.00	553	**21.6**
D-4	SR 99 SB	Arch Road SB Off	45.0	632	150	0	150	0.92	Level	19%	0%	1.00	752	**29.8**
D-2	SR 99 NB	Mariposa Road NB Off	45.0	243	200	0	200	0.92	Level	30%	0%	1.00	304	**26.1**
D-3	SR 99 SB	Mariposa Road SB Off	45.0	479	400	0	400	0.92	Level	18%	0%	1.00	568	**23.4**
D-2	SR 99 NB	Mariposa Road NB Off	45.0	232	200	0	200	0.92	Level	13%	0%	1.00	269	**25.6**
D-3	SR 99 SB	Mariposa Road SB Off	45.0	541	400	0	400	0.92	Level	18%	0%	1.00	641	**28.8**

HCM 2000
Diverge Ramp Junctions
Capacity Analysis - Near-Term Plus Projec

General Information			*Speed Estimation*				
	Freeway/ Direction	Off-ramp	LOS	Int. Var. D_S	Inf. Area S_R (mph)	Out Lns. S_O (mph)	All vehs. S (mph)
D-1	SR 99 NB	Arch Road NB Off	**D**	0.399	55.8	70.0	59.4
D-4	SR 99 SB	Arch Road SB Off	**C**	0.446	54.7	71.3	57.6
D-1	SR 99 NB	Arch Road NB Off	**C**	0.348	57.0	71.3	60.4
D-4	SR 99 SB	Arch Road SB Off	**D**	0.366	56.6	69.2	60.2
D-2	SR 99 NB	Mariposa Road NB Off	**C**	0.325	57.5	69.9	61.1
D-3	SR 99 SB	Mariposa Road SB Off	**C**	0.349	57.0	70.6	60.6
D-2	SR 99 NB	Mariposa Road NB Off	**C**	0.322	57.6	70.1	61.2
D-3	SR 99 SB	Mariposa Road SB Off	**D**	0.356	56.8	68.5	60.4

APPENDIX F: APPROVED AND VACANT PARCEL INFORMATION

Table F-1
Trip Generation for Vacant Industrial Building Assumed to be Occupied in Near-Term Condition

					AM			PM		
	Address	**APN**	**Size (square Feet)**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
1	3727 METRO DR	17925044	6,616	20	1	0	1	1	1	1
2	3731 METRO DR	17925044	16,640	60	2	1	3	1	2	4
3	3731 METRO DR	17925044	8,800	30	1	1	2	1	1	2
4	3734 IMPERIAL WY	17925033	3,308	10	0	0	1	0	0	1
5	3838 IMPERIAL WY	17925032	80,350	270	9	6	14	6	11	18
6	4091 GOLD RIVER LN	17925005	56,858	190	6	4	10	5	8	13
7	4101 ARCH RD	17926013	24,000	80	3	2	4	2	3	5
8	4113 GOLD RIVER LN	17925042	22,672	80	2	2	4	2	3	5
9	4747 FRONTIER WY	17925031	45,000	150	5	3	8	4	6	10
10	4772 FRONTIER WY	17926039	10,926	40	1	1	2	1	2	2
11	4772 FRONTIER WY	17926039	11,000	40	1	1	2	1	2	2
12	4790 FRONTIER WY	17926040	22,080	80	2	2	4	2	3	5
13	3033 TRANSWORLD DR	17928019	5,000	20	1	0	1	0	1	1
14	3039 TRANSWORLD DR	17928019	28,970	100	3	2	5	2	4	6
15	4554 QANTAS LN	17928021	13,359	50	1	1	2	1	2	3
16	4554 QANTAS LN	17928021	9,559	30	1	1	2	1	1	2
17	4554 QANTAS LN	17928021	13,359	50	1	1	2	1	2	3
18	4590 QANTAS LN	17952001	20,160	70	2	1	4	2	3	4
19	4590 QANTAS LN	17952001	3,468	10	0	0	1	0	0	1
20	4590 QANTAS LN, Unit A2	17928017	9,972	30	1	1	2	1	1	2
21	4590 QANTAS LN, Unit A3	17928017	9,972	30	1	1	2	1	1	2
22	4590 QANTAS LN, Unit A5	17928017	6,828	20	1	0	1	1	1	2
23	4590 QANTAS LN, Unit A7	17928017	3,156	10	0	0	1	0	0	1
24	4646 QANTAS LN	17952019	39,181	130	4	3	7	3	5	9
25	4646 QANTAS LN, Unit B1	17928018	5,760	20	1	0	1	0	1	1
26	4646 QANTAS LN, Unit B10	17928018	7,501	30	1	1	1	1	1	2
27	4646 QANTAS LN, Unit B14	17928018	3,840	10	0	0	1	0	1	1
28	4646 QANTAS LN, Unit B2	17928018	5,760	20	1	0	1	0	1	1
29	4646 QANTAS LN, Unit B6	17928018	8,640	30	1	1	2	1	1	2
30	4646 QANTAS LN, Unit B7	17928018	8,640	30	1	1	2	1	1	2

Table F-1

Trip Generation for Vacant Industrial Building Assumed to be Occupied in Near-Term Condition

					AM			PM		
	Address	**APN**	**Size (square Feet)**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
31	4646 QANTAS LN, Unit B8	17928018	8,640	30	1	1	2	1	1	2
32	2135 STAGECOACH RD	17332019	40,271	140	4	3	7	3	6	9
33	2403 STAGECOACH RD	17332018	12,904	40	1	1	2	1	2	3
34	2444 Station Drive	17333013	81,000	280	9	6	15	6	11	18
35	3632 PETERSEN RD	17307025	72,000	250	8	5	13	6	10	16
36	3745 PETERSEN RD	17307023	78,000	270	9	5	14	6	11	17
37	3861 DUCK CREEK DR	17334029	7,500	30	1	1	1	1	1	2
38	1918 INDUSTRIAL DR	17733002	37,260	130	4	3	7	3	5	8
39	1928 BOEING WY	17731018	48,735	170	5	3	9	4	7	11
40	2001 ARCH AIRPORT RD	17731002	49,745	170	5	3	9	4	7	11
41	2109 ARCH AIRPORT RD	17731002	51,092	170	6	4	9	4	7	11
42	440 INDUSTRIAL DR	17728021	522,405	1,790	57	37	94	42	73	115
43	4611 Newcastle Road (FOXX)		388,000	1,330	43	27	70	31	54	85
	Total	**Total**	**1,908,927**	**5,180**	**207**	**136**	**345**	**154**	**264**	**421**

Notes: Based on information from Advantage Stockton (http://www.stocktongov.com/government/departments/econDev/eDevBusAdv.html) as of November 2012.

Table F-2
Approved Proejcts Expected to be Constructed and Occuped in Near-Term Condition

				AM			PM		
Project	**Location**	**Size (square Feet)**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
California Health Care Facility	Austin Road, south of Arch Road		3,566	452	40	492	40	393	433
Arch Road Light Industrial	South of Arch Road, west of Newcastle Road	1,401,760	4,790	154	98	252	112	196	308
Arch Road Light Industrial	South of Arch Road, east of Newcastle Road	1,241,000	4,240	136	87	223	98	175	273

1. Trip Generation from Traffic and Circulation Section of the California Health Care Facility Stockton EIR prepared by EDAW, based on a study prepared by DKS in 2008.
2. Trip Genration based on the square footage and rates presented in Table 10.