City of Stockton Transportation Impact Analysis Guidelines:

Adopted May 2, 2023

FEHR PEERS

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Executive Summary

The purpose of this document is to detail specific requirements for the preparation of transportation impact assessments to meet local requirements, as well as for the preparation of California Environmental Quality Act (CEQA) documents. Transportation impact assessments are required for a variety of project types to ensure that the transportation system is developed consistent with the plans and policies of the City of Stockton, and that adverse environmental effects are minimized to the greatest extent feasible. Chapter 1 provides additional details related to the overall purpose and need, and when specific transportation studies are required.

This update to the City's Guidelines is warranted not only because of changes in analysis techniques and methods, but moreover because of Senate Bill (SB) 743. This landmark law requires that environmental analyses performed under the California Environmental Quality Act (CEQA) do not use level of service (LOS) as the basis for identifying impacts of a proposed project to the roadway system.

SB 743, passed in 2013, required the California Governor's Office of Planning and Research (OPR) to develop new CEQA guidelines that address traffic metrics under CEQA. In December 2018, OPR published Technical Advisory on Evaluating Transportation Impacts in CEQA, which provided guidance for implementing SB 743. Under this guideline, Vehicle Miles Traveled (VMT) is the primary metric used to identify transportation impacts. On July 1, 2020, the provisions of Section 15064.3 became effective statewide.

Although no longer permitted within CEQA documents, the LOS analysis (and the corresponding identification of locations whose operations would be adversely affected) is still prepared as part of a Local Transportation Study to provide helpful information to decisionmakers and the public, to assist staff in understanding what types of improvements should be considered as a Condition of Approval for the project, and to evaluate the project's consistency with the City's General Plan LOS policy.

Elements of a Local Transportation Study

All studies start with the preparation of a detailed trip generation estimate, which informs the overall level of analysis and study area. In general, for projects that generate fewer than 110 daily vehicle trips[1], the

[1] The *Technical Advisory on Evaluating Transportation Impacts in CEQA*, California Governor's Office of Planning and Research, December 2018 recommends this trigger according to the following evidence.

"CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).) Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact."

transportation study should focus on site plan review and assessment to ensure the project's access is consistent with applicable design standards and the city's goals related to integration of new land uses with the existing transportation system. For most projects, this review would likely be conducted at the staff level.

For projects that generate between 110 and 2,000 daily vehicle trips, the transportation study should include site plan review, site access assessment for all travel modes, and intersection evaluation including vehicle level of service (LOS), vehicle queues, and signal warrants, as well as a collision assessment. Chapter 2 details the criteria to consult when determining the study area. A near-term analysis may be required if there are approved/pending development projects in proximity that could appreciably change the level of travel in the project vicinity.

As project sizes increase, especially above 2,000 daily vehicle trips, , additional analysis of the project's long-term effects in combination with other cumulative development may also be required. City staff will make this determination based on available evidence at the time of project application considering the City's progress towards fully funding the general plan circulation element improvements necessary to accommodate planned population and employment growth within the transportation network performance expectations established by the general plan.

Each study should consider the local transportation and land use context in determining the appropriate level of analysis, and analysis time periods. Additional details are provided in Chapter 2.

Elements of a CEQA Transportation Study

When discretionary action is taken on a project, CEQA transportation analysis is typically required. In those instances, projects are required to prepare study elements to address CEQA expectations in addition to a local transportation study. Transportation impacts under CEQA can include changes to vehicle miles of travel (VMT), safety, transit service, active transportation, or emergency access. Additional details are provided in Chapter 3.

1. Introduction

Transportation Impact Analysis (TIA) Guidelines

The TIA guidelines define how to evaluate a project's effect on transportation access and circulation for all travel modes. The analysis may focus solely on the project site and access points and may also include an evaluation of the surrounding transportation system to ensure the project is compatible with the general plan's transportation network performance expectations.

These Transportation Impact Analysis (TIA) Guidelines are intended to provide a clear and consistent technical approach for projects that could have effects (whether adverse or beneficial) on the City's transportation system and services.

A transportation impact analysis provides essential information for decision-makers and the public when evaluating individual development, small- and large-scale area plans, and transportation infrastructure projects. A transportation impact analysis for projects in Stockton serves three primary purposes:

- Evaluate a project's consistency with the City's *General Plan*.
- Evaluate a project's consistency with applicable local and regional plans.
- Provide an evaluation of CEQA transportation impacts and propose mitigation measures to reduce any significant impacts to the extent feasible.

Outcomes of the transportation impact analysis process may be conditions of approval and/or mitigation measures under CEQA that result in changes to the project site plan or program, or that require implementation of off-site transportation system improvements. This document will be periodically updated, and TIA preparers should confirm that they are referring to the most current guidelines.

Intent of the Guidelines

Stockton's Envision Stockton 2040 General Plan (General Plan) adopted in 2018 seeks to "provide an integrated transportation system that enables safe and efficient movement of people and goods for all modes of travel." The TIA Guidelines support this goal by evaluating new projects against the policies of the *General Plan* and other relevant documents, including but not limited to the Bicycle Master Plan (2017), Neighborhood Traffic Management Program Guidelines (2020), Systemic Safety Analysis Report (2021), Pedestrian Safety and Crosswalk Installation Guidelines (2020), Short Range Transit Plan, Capital Improvement Plan, and Development Code. For projects that require CEQA review, the March 2021 version of the TIA Guidelines are the first to incorporate California's Senate Bill 743 (SB 743), where vehicle delay is replaced with vehicle miles traveled (VMT).

The TIA Guidelines outline the City's approach for determining the need for a transportation analysis, its content, and identifying acceptable transportation improvements for land use and transportation projects proposed within Stockton. The TIA Guidelines establish protocols for performing the following:

- Site Access and Circulation Plan Review (on-site and in surroundings as determined by the City).
- Local Transportation Analysis (non-CEQA) for consistency with the City's *General Plan*.
- Transportation Analysis for analyzing and determining impacts under CEQA.

City staff will review transportation studies and reports based on the process presented in these guidelines. The resulting TIA document is intended to provide decision makers with sufficient information about general plan and transportation network design standards consistency as well as the transportation system impacts of a project under CEQA. When appropriate, the TIA will also recommend conditions of approval to comply with consistency requirements and/or identify mitigation measures under CEQA to reduce significant impacts.

However, each project is unique, and the TIA Guidelines are not intended to be prescriptive beyond practical limits. Not all criteria and analyses described in these Guidelines will apply to every project. Early and consistent communication with the Community Development Department and Public Works Department staff is encouraged to confirm the type and level of analysis required for each study, as some projects may require less analysis and some projects may require more analysis given their local context.

Project Types

A transportation impact analysis is typically prepared for the following types of land use and transportation projects before a discretionary action is taken.

- **Land use entitlements** requiring discretionary approval by Stockton are all potentially subject to the TIA Guidelines. All three components of the TIA Guidelines are likely to apply to General Plan amendments, precise roadway plans and specific plans (and related amendments), zoning changes, and projects requiring certification of an Environmental Impact Report (EIR). Projects consistent with the general plan but involving use permits, planned developments, site plan review committee approval, and tentative subdivision maps are most likely to require site access and circulation plan review and a local transportation analysis.
- **Land use activity** advanced by agencies other than Stockton that is subject to jurisdictional review under state and federal law such as school districts, or advanced within Stockton by agencies other than the City that is inconsistent with the City's *General Plan*.
- **Transportation infrastructure modification or expansion**, including capital improvement projects on City roads including traffic calming, county roads and county or state highways that

may impact City facilities and services. Certain projects fall within the purview of the State whereby comments are typically received from Caltrans will require a level of impact analysis upon State facilities such highways, freeways, ramps and intersections.

- **Controversial projects** that create transportation impact concerns with the local community or organizational groups may require preparation of a transportation impact assessment to address identified concerns. The scope of analysis should be developed in consultation with Community Development Department.
- **Subsequent Phased projects.** Projects that were phased with no future plans of implementation or projects that remained stagnant for more than 7 years.

The *Determining the Need for a Transportation Analysis* section identifies specific project parameters or "triggers" that may necessitate a transportation analysis.

CEQA and Non-CEQA Terminology

To distinguish the CEQA analysis from the non-CEQA analysis (i.e., the local transportation analysis), the analyses apply different terminologies as summarized below in **Table 1**. A full glossary of commonly used terms in this document is provided in **Appendix A.**

Table 1: Comparison of Select Non-CEQA and CEQA Terms

Non-CEQA Term	CEQA Term
Local Transportation Analysis	CEQA Transportation Analysis
Threshold or performance standard	Significance criteria
Substantial effect or deficiency	Significant impact
Required improvement	Mitigation measure

Determining the Level of Transportation Analysis

What level of transportation analysis is required?

The need for a transportation analysis may stem from General Plan or transportation network design standard consistency, CEQA compliance requirements, projects that are controversial in nature, or some combination thereof. The scope of the content will vary based on the type and scale of the project per the City's established screening criteria.

Screening Criteria

The applied screening criteria varies by the type of analysis being completed. While all projects are expected to comply with the City's transportation network design standards, some discretion is allowed to screen projects from formal analysis of General Plan consistency and CEQA impacts. All projects need to document and justify the applied screening criteria for City review and concurrence. The screening process is discussed below and illustrated in **Figure 1**. Preparation of an initial assessment form **(Appendix B)** is required. This initial screening is to be performed by staff in the Community Development Department, with the project applicant or proponent providing needed information. For some projects, assistance from a transportation consultant may be required.

Trip Generation Screening

The level of transportation analysis required for projects is generally based on the expected level of daily vehicle trip generation; however, there may be exceptions based on the project location, such as in close proximity to a school, or project characteristics, such as a high level of truck trip generation.

- ***Tier 1 - Less than 110 daily trips:*** The transportation study focuses on site plan review and assessment of site integration with existing transportation system. For most projects, this review would likely be conducted at the staff level. Below 110 daily vehicle trips, projects will not typically be required to perform a VMT analysis but may be required to evaluate potential transit, bicycle/scooter, pedestrian, safety, and construction impacts. The 110 daily vehicle trip threshold equates to approximately 10 single-family units, 15 multi-family units, office developments of up to 10,000 square feet, and retail uses up to 3,000 square feet. However, if the project is controversial in nature, level of analysis will be determined relevant to the expressed concerns.
- ***Tier 2 - Between 110 and 2,000 daily trips***: The transportation study includes site plan review, site access assessment for all travel modes, and intersection evaluation including vehicle LOS, vehicle queues, and signal warrants and safety assessment. A near-term analysis may be required if there are approved/pending development projects in proximity that could appreciably change traffic operating conditions in the project vicinity. Longer term cumulative analysis may also be required for this tier in those areas of the City where General Plan circulation element improvements are not fully funded. Most development projects in Stockton are expected to fall within the Tier 1 or Tier 2 threshold. The 2,000 daily trip threshold equates to approximately 200 peak hour trips. Single-family home developments up to 210 units, office developments up to 200,000 square-feet, and retail uses up to 50,000 square feet (not accounting for pass-by trips) would fall into the Tier 2 level of analysis category.
- ***Tier 3 - Greater than 2,000 daily trips***: Same analysis as Tier 2, plus inclusion of near-term and cumulative assessment, and potential for other transportation metrics to address community concerns.

This tier would typically include single-family home developments greater than 210 units, office developments greater than 200,000 square-feet, and retail uses greater than 50,000 square feet.

All projects are required to provide a site access and circulation analysis, including parking supply and loading evaluation to demonstrate that the project conforms to City policies and development standards as defined in the Stockton Municipal Code. Key elements of this assessment are included in the checklist in **Appendix C: Site Access and Circulation Plan Review**. Trip generation estimates should be accompanied by a map showing the estimated percent of trip distribution for both inbound and outbound trips.

Vehicle and Truck Trip Equivalencies

Projects with a high level of truck trip generation may require additional study. **Table 2** provides an overview of the equivalent levels of truck trips that may trigger a study.

Table 2: Truck Equivalency Triggers for Study

Vehicle Classification	Description	Trigger for Study (New Trips per Day)
Small Truck	2 axles/6 tires (includes buses)	50
Medium Truck	3 & 4 axles	20
Large Truck	5 plus axles	5

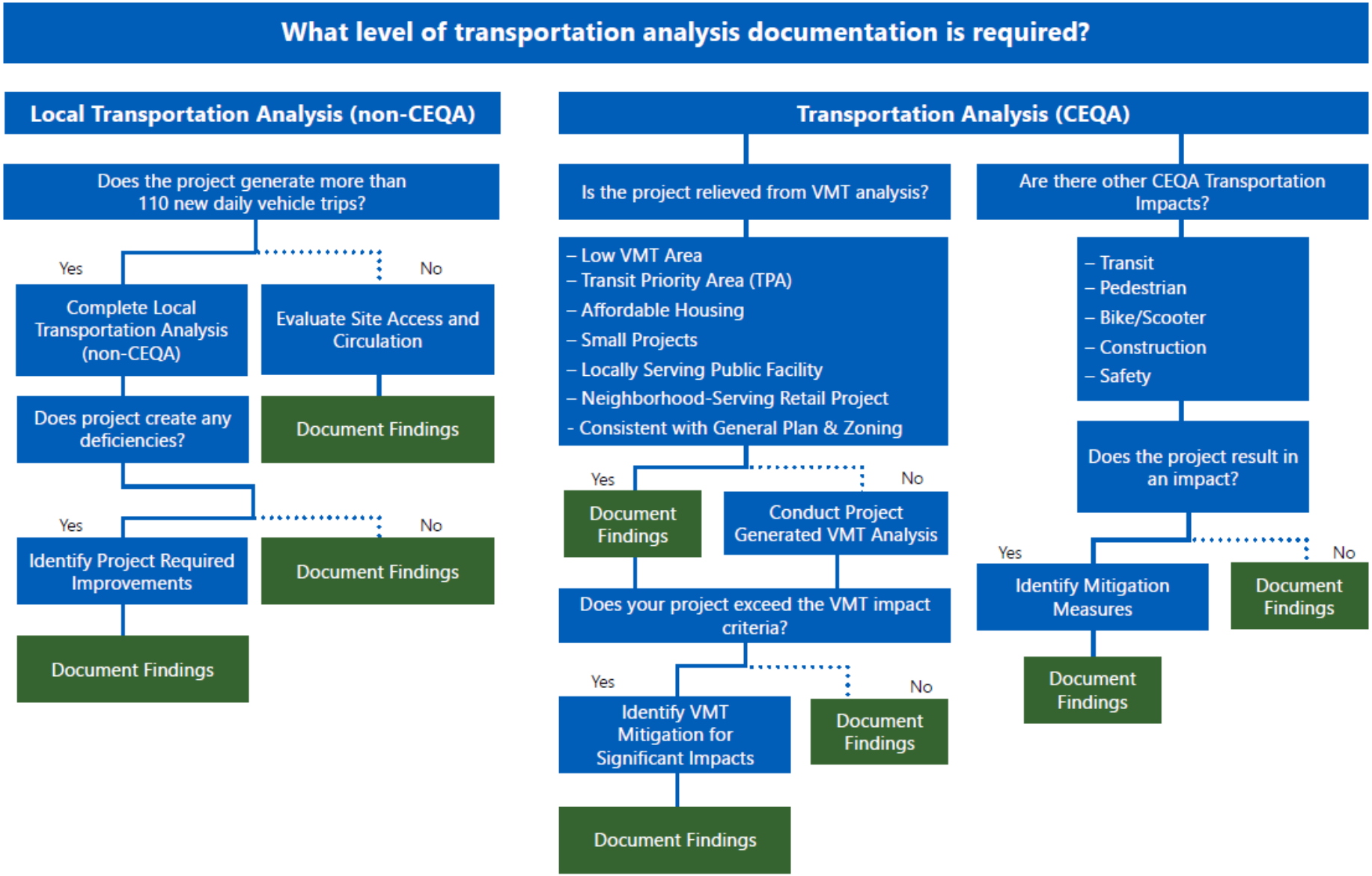
CEQA Screening

Projects that meet certain screening criteria may be relieved from the preparation of a VMT assessment for CEQA transportation assessment purposes (VMT calculations may still be needed for air quality, noise and climate change evaluations). However, even if a project is relieved from VMT analysis, it may still be required to evaluate potential transit, bicycle, pedestrian, and safety impacts.

CEQA screening criteria for land use and transportation projects are listed below. Projects that do not meet the screening criteria must conduct a VMT analysis [see *Transportation Analysis (CEQA) for Land Use Projects* and *Transportation Analysis (CEQA) for Transportation Projects* chapters].

Figure 1: Transportation Analysis Process

Transportation Analysis Process



Land Use Project Screening

Based on guidance from the State of California's Office of Planning and Research (OPR) *Technical Advisory* (December 2018, pages 13-15), land use projects that meet at least one of the following screening criteria may be presumed to not require CEQA VMT analysis:

- **Transit Priority Areas (TPA)**: Projects located within ½ mile walkshed around major transit stops[2] (i.e., Downtown ACE Station and Amtrak Station) or within ¼ mile walkshed around stops on high-quality transit corridors[3] (i.e., Hammer Lane and Pacific Avenue) in Stockton as shown on **Figure 2**. However, TPA screening will only apply if the project meets *any* of the following criteria:
  - The project has a Floor Area Ratio (FAR) of 0.75 or more;
  - The total square footage is 500,000 square feet or less;
  - The proposed parking does not exceed minimum required by the Zoning Code or applicable plan;
  - The Project is consistent with the *City's General Plan*, applicable Specific Plan, or applicable Sustainable Communities Strategy (as determined by the lead agency, with input from SJCOG);
  - Existing on-site affordable residential units are maintained or increased; and,
  - Less than significant levels of VMT are projected through project-specific or location-specific information.
- **Affordable Housing**: 100% restricted affordable residential projects in infill locations (i.e., development within unused and underutilized lands within existing development patterns) and near transit (i.e., is within half a mile of a transit stop).
- **Small Projects**: Projects defined as generating 110 or fewer average daily vehicle trips, absent substantial evidence indicating that a project would generate a potentially significant level of VMT. Examples of projects that may generate less than 110 average daily vehicle trips include:
  - ~10 units of single-family residential
  - ~15 units of multifamily residential
  - ~10,000 square-feet office
  - ~15,000 square-feet industrial
- **Locally Serving Public Facility**: Locally serving public facilities that encompasses government, civic, cultural, health, and infrastructure uses and activity which contribute to and support community needs. Locally serving public facilities include police stations, fire stations, passive parks

[2] "Major transit stop" is defined in Public Resources Code 21064.3 as a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.
[3] "High-quality transit corridor" is defined in Public Resources Code 21155 as a corridor with fixed-route bus service with service intervals no longer than 15 minutes during peak commute hours.

(parks designed for use in an informal way and typically less developed), branch libraries, community centers, public utilities, and neighborhood public schools. This exemption would not apply to charter schools, private schools, colleges/universities, hospitals, or other quasi-public uses that are privately operated.

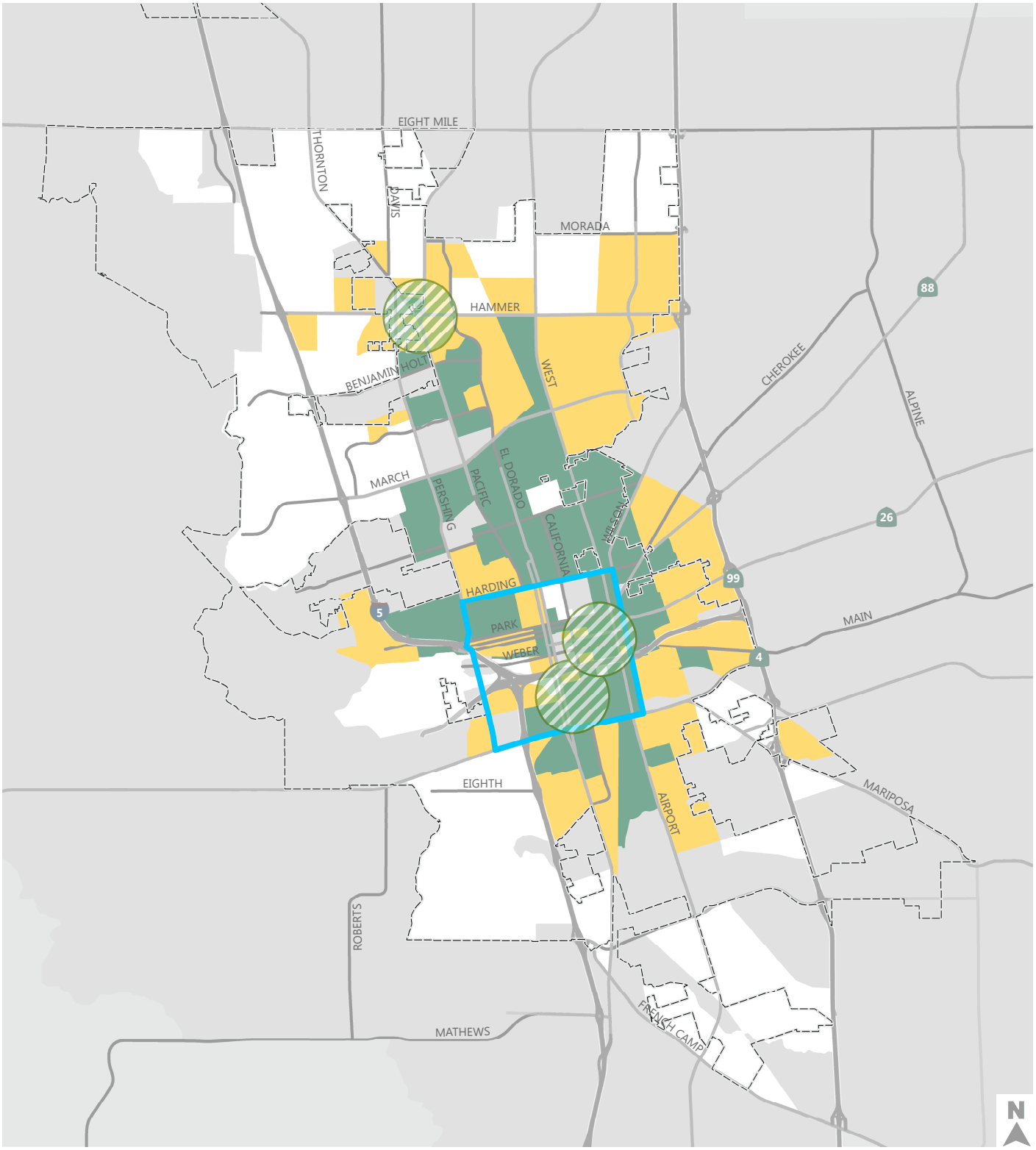
- **Neighborhood-Serving Retail Project**: Neighborhood-serving retail projects that are less than 50,000 square feet, which serve the immediate neighborhoods and may have a similar use within three miles. Examples include dry cleaners, coffee shops, convenience markets, tutoring centers and daycare centers.[4] Retail uses with a drive-through component would not be required to prepare a VMT assessment, unless part of a larger project that exceeded 50,000 square-feet, unless that use was not considered locally serving. Other analysis may be required for projects with a drive-through component. Retail projects less than 50,000 square-feet that are expected to have a regional customer base may be required to conduct a VMT assessment.
- **Low VMT Area**: The project is in a TAZ that generates VMT at a rate at least 15 percent lower than the most recently established baseline VMT level as shown in **Figure 2** for residential development and **Figure 3** for office/employment uses.

The City of Stockton has further identified VMT impact analysis relief for specific types of projects that are consistent with the General Plan and zoning standards, and do not trigger an EIR:

- **Housing**: Residential projects within the City Limits that are consistent with all General Plan and zoning standards, are near transit (i.e., is within half a mile of a transit stop), or included as a housing capacity site needed to meet the City's fair share of Regional Housing Needs Allocation (RHNA), as outlined in the City's Housing Element.
- **General Plan and Zoning Consistency**: The City may relieve projects from further VMT impact analysis if the projects achieve the following:
    - Projects consistent with the General Plan and Zoning that do not require a General Plan land use map amendment.
    - Projects that do not require an EIR for project related impacts beyond the General Plan EIR.
    - Projects located within the Greater Downtown Planning area, as defined in the General Plan, and shown in **Figure 2,** and do not require a land use map amendment or EIR.

Each project is required to document the estimated number of trips it will generate. For mixed-use projects, each component of the project should be considered separately during screening assessments; therefore, each of the project's individual land uses should be compared to the screening criteria. It is possible for some of the mixed-use project's land uses to be screened out and some to require further analysis. If a complete analysis is required, then the analysis methodology should ensure that the overall project VMT forecasts account for the influence that mixed uses have on VMT generation.

[4] Daycare centers of 7,500 square feet or less would apply to the screening criteria.



No Value

VMT is Greater than -15% below City Average

VMT is 0 to -15% below City Average

VMT is Higher than City Average

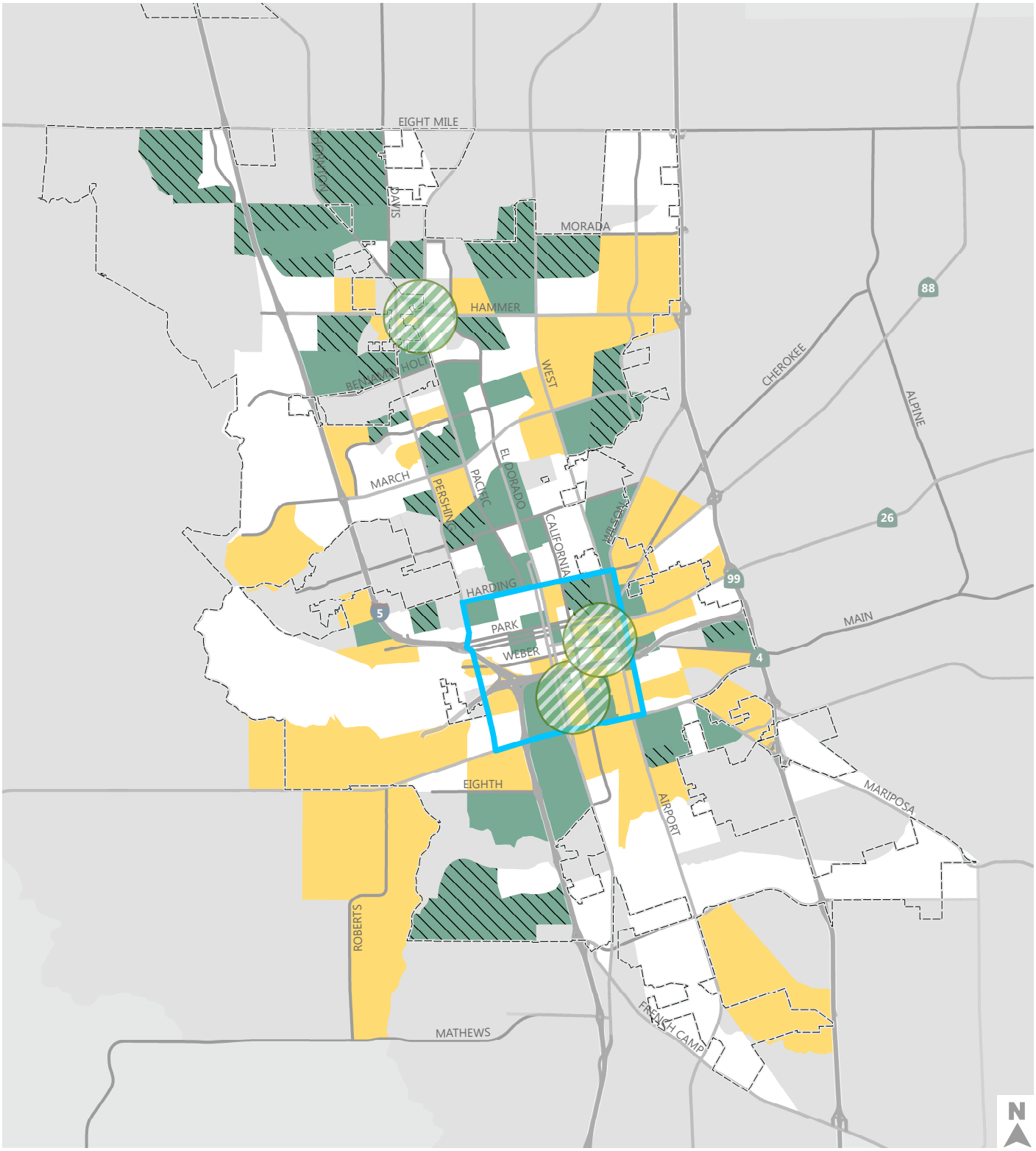
City Limits

Transit Priority Area

Greater Downtown Planning Area

Figure 2

Stockton Model (2015)
Daily Home-Based VMT per Capita
Comparison to City Average



No Value

VMT is Greater than -15% below City Average

VMT is 0 to -15% below City Average

VMT is Higher than City Average

City Limits

Transit Priority Area

Greater Downtown Planning Area

Additional investigation required

Figure 3

Stockton Model (2015)
Daily Home-Based-Work VMT per Employee
Comparison to City Average

Recommended Process and Documentation

The project applicant shall retain a transportation professional consultant to conduct the required transportation analysis; the City may seek to develop a list of qualified firms and it is the applicant's responsibility to ensure that the selected firm is acceptable to the City to ensure consistency and quality, as well as to limit the time spent by City staff in guiding and reviewing work by consultants. The firm shall be licensed to perform such work in the State of California, and its preparation shall be overseen by a licensed Professional Engineer or Traffic Engineer. Only the Principal Civil Engineer with the Community Development Department may grant an exception to other consultants outside the list to perform a TIA. The applicant's consultant should seek City acceptance of the scope of work before initiation. In some cases, review by other affected jurisdictions will be required. **Appendix D: Transportation Analysis Report Outline** contains a recommended outline for the transportation analysis documentation.

Each transportation analysis will begin by preparing a scope of work that describes the project, site location, analysis methods, area-wide assumptions, study elements, study time periods, and transportation data collection methods. The transportation analysis scope of work along with initial estimates of the project trip generation, trip distribution, and VMT screening evaluation should be submitted to City staff for review and approval. The final report must be signed and stamped by a traffic engineer registered in the State of California.

Consultation with Other Jurisdictions

Section 15086 of the *CEQA Guidelines*[5] shall be followed as the basis for satisfying consultation requirements. In most cases, overlap will occur for roadway system analysis (i.e., not VMT) but may also include impact analysis of active transportation modes (bicycling and walking), as well as transit system facilities and services. If the study area overlaps with other jurisdictions, staff from those jurisdictions must be consulted to verify study locations, analysis methodologies, and the substantial effect thresholds. As appropriate, adjacent jurisdictions should be contacted to provide current development applications. Caltrans should be consulted for projects that affect the state highway system, including State Route 4, Interstate 5, and State Route 99).

Roadway crossings of rail lines are another overlap area that requires coordination with the California Public Utilities Commission (CPUC). The focus of any analysis related to rail crossings should be on whether the current crossing complies with current design standards and if the project has the potential to result in vehicle queue spillback across an active crossing.

[5] *The California Environmental Quality Act Guidelines*, California, 2019.

2. Local Transportation Analysis (non-CEQA)

What is included in a local transportation analysis?

The contents and extent of a local transportation analysis depend on the location and size of the proposed development, the prevailing transportation conditions in the surrounding area, and the technical responses to address questions being asked by decision makers and the public.

The City is committed to a balanced level of analysis for all modes of travel. The methods presented in this chapter include data collection and analysis techniques for pedestrian, bicycle and transit networks, in addition to vehicle circulation.

Study Area

The study area can be thought of as the area of influence of a project and is determined by evaluating the project location and how it may affect all transportation modes and facilities. It is not simply a map showing where the project is located. Each local transportation analysis will consider the adjacent transportation system for site access and circulation of land development projects and street modifications for transportation projects.

To properly assess the site access, the City may require off-site intersection analysis or other multimodal analysis. Generally, intersections within a one-mile radius that are known to currently operate at LOS D or worse based on previous studies, and where the project adds at least 10 or more peak hour trips per lane to any movement should be considered for analysis.

Applicants should consult with the City early regarding the study area and need for off-site multimodal analysis based on local or site-specific issues, especially those related to pedestrians, bicycles, rail crossings, and transit. City requires the consultant to perform field reviews to completely assess existing conditions.

Multimodal Site Access and Circulation

A detailed multimodal site access and circulation plan review is required for all projects. The transportation analysis should include a review and summary of findings of the following qualitative and quantitative features included in the checklist in **Attachment C: Site Access and Circulation Plan Review**.

An important aspect of a transportation analysis is to provide sufficient information for the City to determine if a project is consistent with the *General Plan*, other applicable City plans, and relevant transportation network design standards. Individual projects must be reviewed against relevant policies contained in the *General Plan* and other plans, policies, and standards. The *Introduction* chapter highlights a key goal of the *General Plan Circulation Element*. Applicants should review the full policy statements in the latest *General Plan Circulation Element*.

If the study area extends into an adjacent jurisdiction, the applicant may be responsible for analyzing project-generated operational impacts in these jurisdictions. These include intersection or segment locations in any other jurisdiction, including Caltrans-maintained facilities. The applicant shall refer to current policies in the respective jurisdiction to identify the appropriate significance criteria.

Details on how intersection and roadway segment LOS will be analyzed, and operations addressed, are discussed in the deficiency sections toward the end of this chapter. Per the *General Plan* (Chapter 4, Transportation) physical improvements focus on operational efficiencies (i.e., signal coordination, modified timings) and enhancements to improve bicycle and pedestrian travel as needed. Roadway expansions are considered in the developing areas of the City, but within the cross-section identified in the *General Plan*.

Key Study Elements

The extent and complexity of a transportation analysis can vary greatly. **Table 3** summarizes the basic requirements for a transportation and circulation report for every project requiring a complete transportation analysis. Specific significance criteria for each of the listed elements are described in further detail in the *Transportation Analysis (CEQA) for Land Use Projects* and *Transportation Analysis (CEQA) for Transportation Projects* chapters. To avoid substantial off-site improvements or changes to the project site plan/description after the transportation analysis is completed, a preliminary site-plan shall be included for a "fatal flaw" evaluation, which could include a driveway that does not meet spacing requirements, or a proposed signalized access that is too close to adjacent intersections.

Table 3: Local Transportation Analysis – Key Study Elements and Evaluation Criteria

Study Element	Evaluation Criteria
***General Plan* Consistency**	Evaluate the project against goals, policies, and actions set forth in the *General Plan*. Of particular importance is to ensure that the project complies with transportation network performance expectations established in the general plan. In some cases, this may require cumulative analysis for even smaller projects to ensure that general plan performance expectations are maintained.
Parking	Compare the project parking plan with City standards and expected demand and discuss how the proposed supply will affect demand for walking, bicycling, and transit modes. If a mix of land uses is proposed on-site, or complements adjacent land uses, justify how the development will make use of shared on-site parking.
On-Site Circulation	Review and evaluate site access locations, sight-distance at driveways, driveway traffic controls, including access restrictions, turning radii, truck loading areas, emergency access, and other site characteristics with respect to operations and safety for all modes of transportation. Projects with a drive-through component are required to evaluate vehicle queues at the drive-through. Projects with a gas station component are required to evaluate how fuel delivery trucks would access the site. The City may require other analyses based on specific uses. School TIAs will require an on-site circulation plan, including an on-site drop off/pick up plan, and a map of preferred routes to school, City staff will identify specific design standards that apply to each project.
Pedestrian Facilities	Identify existing or planned pedestrian facilities that may be affected by the project. Document how the project will affect local pedestrian circulation (e.g., disclose how widening a road or adding a driveway will affect pedestrian safety and walking time), and ensure that ADA requirements are met.
Bicycle Facilities	Identify existing or planned facilities (per *Bike Plan*) that may be affected by the project.
Transit	Identify existing or planned transit facilities that may be affected by the project, with a focus on transit stop access. If appropriate, document how the project improves access to or utilization of transit. For system planning, use crush load as capacity, not seated capacity. Coordination with the San Joaquin Regional Transit District (SJRTD) may be required.
TDM Program Consistency	Evaluate project against mode split targets and other elements outlined in the latest TDM Program ordinance.
Safety Evaluation and Analysis	All projects will evaluate consistency with applicable transportation network design standards and City adopted safety plans. Changes in volume, mix, or speed of traffic not compatible with the existing transportation network design should be addressed by upgrading affected facilities to current design standards. At the City's discretion, collision history and collision risks may also be evaluated in the vicinity of the project along with crash modification factors that could be implemented to avoid or reduce severe injury collisions especially those involving vulnerable network users.
Trucks (or Other Large Vehicles)	For relevant industrial projects, identify the number of truck trips that will be generated, including STAA trucks, and identify upgrades to existing roadways serving the project site necessary to accommodate these trucks. Upgrades may be required to ensure that existing roadways are constructed to current city design standards given the amount and type of truck trips including an evaluation of the Traffic Index (TI) change caused by the project. Upgrades may also include, but are not limited to, the addition of acceleration/deceleration lanes at site access locations, modified turning movement radiuses, and expanded vehicle storage for turn pockets.

Table 3: Local Transportation Analysis – Key Study Elements and Evaluation Criteria

Study Element	Evaluation Criteria
Autonomous Vehicles or Transportation Network Company Pick-up/Drop-Off	For projects where autonomous vehicles and/or transportation network companies may have a large concentration of pick-up/drop-off, the project site circulation and pick-up/drop-off areas must be reviewed to identify opportunities and constraints of the project site. Modifications to the site circulation and/or pick-up/drop-off may be recommended.
Off-Site Traffic Operations	Roadway facilities within one mile that are known to operate at LOS D or worse under Existing Condition and where the project adds 10 or more peak hour trips may be required to be analyzed. The City reserves the right to define the study area. All roadway facility analysis should be conducted using the latest version of the *Highway Capacity Manual* (HCM).
Intersection Traffic Control	Evaluate unsignalized intersections located within the study area to determine appropriate traffic control. Analysis should consider the appropriateness of roundabouts as an alternative to traffic signals (see Attachment E).
High Intensity Uses	For projects with high-intensity trip generation uses, such as "drive-thru service" type land uses, applicants may be required to submit trip generation data and drive-thru queue observations for at least three existing sites in similar land use contexts. The study shall also evaluate vehicle storage requirements to ensure that vehicles will not queue into the public right-of-way or block adjacent business operations.
Other Issues	Consider other issues on a case-by-case basis (e.g., construction deficiencies, queuing between closely spaced intersections, emergency access, special event traffic)

Data Collection

Accurate data is essential to achieve a high level of confidence in transportation analysis results. Existing transportation data shall be collected using the requirements set forth below. Data should be presented on maps or figures where appropriate. To address the specific needs of each project, the extent of data collected shall be at the discretion of City staff.

- **Pedestrian/Bicycle Facilities** – The report will document the existing pedestrian and bicycle facilities serving the project site. Elements will include presence and width of sidewalks, curb ramps, crosswalks or other pedestrian facilities within ½-mile walking distance of the project site, and bicycle facilities (e.g., routes, lanes or shared use paths) within a two-mile bicycling distance of the project site. Document barriers, deficiencies and high-pedestrian demand land uses including schools, parking, senior housing facilities, and transit stops or centers. Consider using evaluation tools such as *www.walkscore.com* or similar tools to quantify walkability. The report will note any deficiencies or enhancements planned or recommended in the *Bicycle Master Plan* or other planning documents.
- **Transit Analysis** – The report will document transit lines that serve the project site (e.g., within ½-mile walking distance), including stop locations, frequency of service, and any capacity issues. It will also describe transit stop amenities (e.g., benches, shelters, etc.).

- **Multimodal Peak-Period Turning Movement Counts** – Turning movement counts, including vehicles, heavy vehicles, bicycles, and pedestrians, will be collected for each study time period at all study intersections. The following parameters will be followed:
  - Data collection will cover at least two hours to ensure the peak hour is observed.
  - As applicable, 48-hour to 72-hour machine counts shall be used to identify the peak period before conducting other counts or analysis.
  - Turning movement traffic volume estimates should be based on at least 3 days of counts (Tuesday through Thursday) and should not be influenced by a holiday, weather, construction, or other temporary change, and should occur when area schools are in typical session. If mobile device data is used for volume estimation, then the analysis days should focus on Tuesdays through Thursdays during the months of September, October, November, February, March, April, and May. A validation report for the mobile device data volume estimates must be reviewed and approved by the City before applying this approach to turning movement volume estimation.
  - The percent of traffic that consists of heavy trucks will be noted/estimated during data collection.
  - Some projects may require vehicle classification or occupancy counts. Consult with City staff on a case-by-case basis.
  - Traffic counts that are older than two years at study initiation will not be used without consultation and approval by City staff. These counts may need to be re-counted or adjusted to reflect current year traffic volumes.
- **Roadway Geometry** – Document existing roadway and intersection geometries and lane configurations. Information from aerial photography and street views should be verified based on a site visit(s).
- **Intersection Controls, and Signal Timings** – For use in intersection analysis, intersection control types and signal timings and phasing should be based on signal timing sheets (available from Stockton or Caltrans) and verified during site visits.

Scenarios for Local Transportation Analysis (non-CEQA)

When a LOS analysis is required, the range of analysis scenarios is dependent on several factors:

- Project size and complexity
- Planned construction schedule (i.e., phasing)
- Location and potential impact relative to other approved development
- General Plan implementation status
- Consistency with the *General Plan*

How many local transportation analysis scenarios are required?

The range of scenarios includes Existing Conditions (typically for projects that generate between 110 and 2,000 daily vehicle trips), Background Conditions (potentially some that generate between 110 and 2,000 daily vehicle trips, and all projects that generate more than 2,000 daily trips), and Cumulative Conditions (all projects that generate more than 2,000 daily trips with some exceptions for small projects as noted above). The addition of a project to existing conditions (also referred to as Baseline conditions under CEQA) is intended to capture the effect of the proposed project on the existing transportation system within the next year or two. Background Conditions typically looks at a longer time frame of about three to five years and is typically appropriate when a project will take longer to advance to completion (i.e., all buildings constructed and operational). Inclusion of all three analysis conditions (e.g., Existing, Background, and Cumulative), would typically occur for larger development projects, General Plan Amendments, Precise Plans, and Specific Plans (and related amendments), with Cumulative Conditions having a time horizon of 10 to 20 years.

The following analysis scenarios will document existing or future conditions, any deficiencies, and identify deficiencies that will result from the addition of the project. Each scenario will include a qualitative description of transportation facilities for all modes (and any planned enhancements), traffic volumes, and a quantitative analysis of intersection LOS. Key study elements are identified in the *Multimodal Analysis Methods* section of this chapter. Details regarding each transportation analysis scenario are presented below.

Existing Conditions

These conditions are based on recent field observations and recent (within one year, unless approved by the Community Development Department) traffic count data and volume estimates. Typically, the project is added to existing conditions for existing plus project conditions. However, in some cases, this approach will overstate the projects effect. This is particularly true for re-use or conversion projects. For appropriate land

uses (i.e., adding a grocery store in a neighborhood without one) or for re-use or conversion projects, the existing plus project analysis will involve accounting for the net effect of the project. This can be done through use of the City's general plan travel demand model including effects such as removing existing uses on a site or the re-distribution of existing shopping trips because of a new opportunity to shop closer to existing households. Existing plus project conditions should also qualitatively describe how the project will affect transportation for other modes (i.e., transit, bicycle/scooter, pedestrian), safety, and other relevant topics that may apply from Table 3 above.

Background Conditions

Traffic volume forecasts for roadway segment and intersection analysis should reflect Existing Conditions plus traffic from anticipated population and employment growth that is expected to occur by the time the proposed project would be operational. This scenario may not be needed if the study area has limited or no growth potential. Background population and employment growth should reflect current and expected absorption rates based on the City's travel demand model or similar forecasts prepared by SJCOG for the RTP/SCS.

This scenario represents the Background Conditions with vehicle trips added by the proposed project. This scenario provides decision-makers and the public with a view of conditions that are anticipated to occur in the future when the project is completed and generating traffic. This scenario can also be helpful in identifying the phasing of off-site improvements.

Cumulative Conditions

Cumulative conditions are those that are reasonably foreseeable related to land use development and expansion of the transportation network. This scenario should include the population and employment growth anticipated by the general plan and the transportation network modifications that are expected to be fully funded and operational by the general plan horizon year. Some projects consistent with the general plan will already be included in the planned population and employment growth associated with land use element and any needed improvements to the transportation network will have been identified in the circulation element. However, full funding for circulation element transportation improvements may not have been committed for all areas of the City so projects consistent with the general plan may still be required to perform a cumulative analysis to verify that general plan transportation network performance expectations are being met.

When performing cumulative analysis, the control totals for cumulative population and employment should be held constant between the cumulative no project and cumulative plus project scenarios. Individual land use projects rarely change the long-term population and growth for a City. Instead, they change land use supply through general plan land use or zoning amendments on specific parcels that influence the allocation of future population and employment growth. The City's general plan travel demand model is

capable of capturing this type of subtle change to growth allocations and should be used when making cumulative comparisons.

Analysis Time Periods

What time periods need to be analyzed?

Based on the land use of the proposed project and upon consultation with City staff, the study should typically analyze traffic operations during the peak one-hour of the following time periods:

- Weekday morning peak (7:00 – 9:00 AM)
- Weekday evening peak (4:00 – 6:00 PM)

For some projects, the City may substitute or require additional peak hour analysis for the following time periods.

- Weekday afternoon peak (2:00 – 4:00 PM)
- Friday evening peak (4:00 – 7:00 PM)
- Weekend mid-day peak (11:00 AM – 1:00 PM)
- Sunday or holiday evening peak (4:00 – 7:00 PM)

For example, retail commercial projects that are 100,000 square feet or larger should evaluate operations for Saturday mid-day peak hour conditions, in addition to the standard weekday morning and evening peak periods. The determination of study time periods should be made separately for each proposed project based upon the peaking characteristics of the project-generated traffic and peaking characteristics of the adjacent street system and land uses.

These analysis periods are subject to change after statewide COVID-19-related restrictions have been lifted and travel behavior stabilizes.

Multimodal Analysis Methods

The report should provide a qualitative evaluation of the project's potential adverse or beneficial effects on transportation facilities and services related to pedestrians, bicycles/scooters, transit, and rail crossings.

For some projects, more detailed multimodal analysis may be required. Such analysis shall be decided upon in consultation with City staff and consider new tools, methods, and performance measures such as those listed below.

- **Multimodal LOS** – The *Highway Capacity Manual* (Current Edition) contains methods for multimodal LOS. Alternatively, simulation models can be used to measure performance (i.e., person-delay) for all modes within a transportation network.
- **Level of Stress (LTS)** – There are several methodologies for evaluating LTS for bicycle facilities. These methodologies generally rely on street widths/number of vehicle lanes, vehicle speeds, daily volumes, and type of bicycle facility to evaluate "low stress" bike networks.
- **Transit Capacity** – The project's person trip estimates can be used to forecast transit demand and evaluated against available transit capacity.
- **Activity Connectedness** – Travel time for each mode (e.g., walking, bicycles, transit, and vehicles) between the project and surrounding land uses can be used to gauge the degree of accessibility for a project. The City desires to minimize travel time to necessary destinations while minimizing unnecessary vehicle travel.

  Tools such as geographic information systems or online tools (e.g., Index and Walk Score) can be used to gauge this measure specifically for walking. The main idea is to evaluate activity centers and destinations around projects to ensure that walk times to necessary destinations are minimized and the walking experience is comfortable.

Traffic Operations Analysis

Traffic operational deficiencies shall be analyzed using standard or state-of-the-practice professional procedures. The main issues related to traffic operations analysis are the method, input data, and assumptions. These three items influence the level of confidence in the transportation analysis. For traffic operations, this requires following the procedures and techniques published in the most recent *Highway Capacity Manual* (HCM). The analysis of state highways, including freeway segments and on- and off-ramps, may also require using methodology recommended by Caltrans. Details related to analysis parameters, signal warrants, and software programs is provided in **Appendix E**.

Mobility Deficiency Criteria

Transportation Analysis Deficiencies

A transportation analysis evaluates all modes of transportation and includes analysis of elements such as parking and traffic operations that are not considered environmental impacts.

The overall goal of the *General Plan Circulation Element* is to "[p]rovide an integrated transportation system that enables safe and efficient movement of people and goods for all modes of travel." Transportation analyses evaluate intersection operations focused on specific traffic issues such as queuing and safety. An emphasis is placed on pedestrian, bicycle, and transit facilities and services, in part to reduce traffic congestion and air quality impacts associated with automobile use. **Table 4** outlines deficiency criteria for each mode, with local analysis thresholds presented below.

Table 4: Deficiency Criteria

Study Element	Deficiency Determination
Parking	Project increases off-site parking demand above a level required by the City Zoning Code or estimated demand.
On-Site Circulation	Project designs for on-street circulation, access, and parking fail to meet City design guidelines. Where City standards are not defined, industry standards (Caltrans *Highway Design Manual*, California Manual on Uniform Traffic Control Devices (CA MUTCD), National Association of City Transportation Officials (NACTO) *Urban Street Guide*, etc.) should be referenced, as appropriate. Failure to provide adequate access for service and delivery trucks on-site, including access to loading areas. Project will result in a hazard or potentially unsafe conditions without improvements.
Pedestrian Facilities	Project fails to provide pedestrian connections consistent with City standards or current ADA standards between project buildings and adjacent streets, trails, and transit facilities. Project adds trips to an existing facility along the project frontage that does not meet current pedestrian or ADA design standards.
Bicycle Facilities	Project disrupts existing or planned bicycle facilities or is otherwise inconsistent with the *Bicycle Master Plan* or future plans. Project adds bicycle trips along project frontage to an existing facility that does not meet current bicycle design standards.
Transit	Project disrupts existing or planned transit facilities and services or conflicts with City adopted plans, guidelines, policies, or standards.
TDM Program	A project does not comply with the City's TDM policies.
Heavy Vehicles (Trucks and Buses)	A project fails to provide adequate accommodation of heavy vehicle traffic or temporary construction-related truck traffic consistent with City or industry standards (*Caltrans Highway Design Manual*, CA MUTCD, etc.).
Off-Site Traffic Operations	A project causes a 95th percentile vehicle queue to exceed available turn or travel lane storage or exacerbates a 95th percentile vehicle queue that already exceeds available storage. The proposed project introduces a design feature that does not comply with City transportation network design standards.

Study Element	Deficiency Determination
Signalized Intersection	Addition of project traffic causes a signalized intersection to perform at an unacceptable LOS E or F condition during a peak hour or exacerbates an existing LOS E or F condition by increasing the delay by 5 or more seconds. Specific LOS D, E, or F thresholds have been identified in General Plan Policy and Action TR-4.1. Refer to this action for the applicable threshold and note that new unacceptable LOS conditions caused by a project that are not already identified in this action may require a general plan amendment for the affected location.
Stop-Controlled Intersection	Addition of project traffic causes a stop-controlled intersection to perform at an unacceptable LOS E or F condition during a peak hour or exacerbates an existing LOS E or F condition by increasing the delay by 5 or more seconds; and, addition of project traffic causes the intersection to meet the CA MUTCD signal warrant criteria; and, there are no acceptable alternative routes which can be reasonably used.
General Plan Consistency	A project includes or creates an inconsistency with mobility, safety, and other related goals, policies, and actions set forth in the *General Plan*.
Safety	A project includes or creates an inconsistency with applicable transportation network design standards or City adopted safety plans. A project increases the rate or risk of severe collisions.
Other Subject Areas	Consider other areas on a case-by-case basis (e.g., construction impacts, queuing between closely spaced intersections, emergency access, special event traffic, etc.).
Requirements for Other Jurisdictions	The project causes or exacerbates significant impacts to the transportation system under the jurisdiction of other agencies.

Transportation Analysis CEQA thresholds are provided in Chapter 3.

Required Improvements

When deficiencies from a local transportation analysis are identified, improvements should be incorporated into projects as conditions of approval. Applicants will also be required to pay all applicable local and regional transportation impact fees. To the extent a project is conditioned to construct a project that is included within the local or regional fee program, a reimbursement agreement may be sought for a portion of the improvement project costs beyond the project's fair share.

All project deficiencies should be addressed consistent with the policies of the *General Plan*. Under these circumstances, the applicant should meet with City staff to identify transportation improvements that address the deficiencies. **Table 5** shows example types of improvements to address transportation deficiencies. Potential improvements may require a more detailed review, often including traffic operations, to demonstrate how they address a specific deficiency. Improvements may also be subject to CEQA review. This list is not intended to be an all-inclusive list but provide some options to consider. All improvements are subject to review and approval by City staff.

Selected improvements should be identified whether they will be implemented under Existing Conditions, Background Conditions or Cumulative Conditions. Background Conditions generally reflect conditions at the time of full occupancy of a project.

If a transportation improvement is selected to address a deficiency, it should include a description of the benefit to traffic reduction generated by a proposed development and how the improvement contributes to the multimodal transportation system in Stockton. In addition, all transportation improvements need to consider whether they have secondary effects to VMT [i.e., whether the improvement is or is not VMT inducing per guidance in **Appendix F: List of Transportation Projects Exempt from Environmental Analysis (CEQA)**].

Table 5: Example Improvements

Study Element	Improvement
Project Modifications and Transportation Demand Management	• Alter density or diversity of project uses • Encourage flexible employee working hours • Allow parking "cash out" or require employee paid parking • Institute preferential parking for carpools • Encourage employees to use carpools and public transportation • Provide employee walk/bike incentives
Pedestrian and Bicycle Facilities	• Provide a continuous and clear path of travel for access to, from, and through the development for pedestrians and bicyclists • Construct Class I bicycle paths, Class IV separated bikeways, Class II bicycle lanes, and other facilities • Provide secure bicycle parking and shower amenities • Reduce travel lanes on a street to install a two-way left-turn lane and Class II bicycle lanes • Add corner bulb-outs, reduce curb radii, add pedestrian refuges or implement other walking-related improvements • Dedicate right-of-way to provide bicycle or pedestrian facilities
Transit Facilities	• Provide bus turnouts, bus shelters, additional bus stops, and park-and-ride lots • Fund increases in transit service
Parking Facilities	• Design parking facilities to allow free-flow access to and from the street • Provide off-street parking per City standards or recommendations • Implement shared parking among complementary land uses
Traffic Control Modifications	• Provide for yield or stop control • Install roundabouts where appropriate (consider the Caltrans Intersection Control Evaluation (ICE) process for this evaluation). • Provide coordination/synchronization of traffic signals along a corridor • Provide turn-lane channelization through raised islands • Restrict selected turning movements

Street Operations Modifications	• Optimize location of access driveway(s) • Provide improvements to traffic signal phasing, or lengthen existing turning pocket • Provide additional through traffic lane(s), right-turn lane(s), and left-turn lane(s) if they do not adversely impact other modes or induce additional vehicle travel • Reduce travel lanes on a street to install a two-way left-turn lane • Congestion pricing on roads or within a specific area • Install a roundabout • Signalize an intersection, or replace a signalized intersection with a roundabout

3. CEQA Transportation Analysis

Does the Project result in an environmental impact?

SB 743 removes the use of automobile delay, LOS, and other similar measures of vehicular capacity or traffic congestion for determining transportation impacts in environmental review. According to the legislative intent contained in SB 743, the move away from LOS is intended to more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.

The legislation also directed the State of California's Office of Planning and Research (OPR) to look at different metrics for identifying transportation impacts and make corresponding revisions to the *CEQA Guidelines*. OPR determined VMT shall be used for assessing passenger vehicle-related impacts and issued revised *CEQA Guidelines* in December 2018, along with a *Technical Advisory: On Evaluating Transportation Impacts in CEQA* (December 2018) to assist practitioners in implementing the *CEQA Guidelines* revisions to use VMT as the new metric. The shift to VMT did not change the need to analyze potential transportation impacts to transit, active transportation modes, and safety.

Land Use Projects

The following section provides details on if and how a VMT analysis should be conducted for land use plans and projects that require transportation impact analysis. Information about analyzing transit, bicycle/scooter, pedestrian, safety and construction impacts that may be appropriate to include in the CEQA evaluation of a project is provided in the previous chapter.

Initial Screening

The section details Stockton's VMT screening process for projects that can be presumed to cause a less-than-significant impact without conducting a detailed study. However, even if a project is relieved from VMT analysis, it may still be required to evaluate potential transit, bicycle, pedestrian, and safety impacts.

Additionally, other non-CEQA analysis may be required based on the project type, location, and level of daily trip generation. All projects need to document and justify the applied VMT screening criteria.

Projects not screened out through the criteria listed in the *Determining the Level of Transportation Analysis* section are required to complete a VMT analysis using the City of Stockton General Plan Model to determine if there would be a significant VMT impact. The impact analysis includes two types of VMT:

1. **Project generated VMT** per capita. The project generated VMT method relies on tracking trips to/from an individual project. In simple terms, it looks at the total number and distance each trip travels divided by the population that generated those trips (i.e., residents, employees, students, visitors, etc. as appropriate). The most common VMT per capita metrics include the following.
    a. Residential VMT per resident (consists of home-based vehicle trips to and from the home)
    b. Home-based work VMT per employee
    c. Total VMT per service population (service population consists of residents plus employees and students)
2. **Project effect on VMT** compares how the project changes total VMT on the network. This VMT applies what is known as the boundary method, which captures all VMT on a network within a defined boundary (i.e., Stockton/Model Area). This VMT captures the project's overall influence on the VMT generation of surrounding land uses.

The types of VMT analysis should be evaluated for the following scenarios:

- **Baseline (Existing) Conditions** evaluates project generated VMT. For the project scenarios the VMT generation rate by land use type is compared back to the applicable citywide average. For example, a residential project would compare its home-based VMT per resident to the citywide average.
- **Year 2040 Cumulative Conditions** evaluates project effect on VMT. The citywide total VMT per service population is compared between the "no project" and "plus project" scenarios.

The model output should also include total VMT, which includes all vehicle trips and trip purposes.

Scenarios for Transportation Analysis (CEQA)

Baseline Conditions

For compliance with CEQA Section 15125(a), the transportation impact analysis must include a description of the physical environmental conditions near the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. If the VMT analysis is conducted with the Stockton model, baseline VMT estimates can be prepared based on the most recent base year version of the model or interpolated for a specific year using the base and future year models.

All projects that do not meet the VMT screening criteria are required to forecast project generated VMT for each land use type under Baseline Plus Project conditions. The project's land use characteristics will be entered into the model in the appropriate location, a model run will be completed, and the relevant VMT values will be generated. The Baseline Plus Project model run can also be used to assess the project's effect

on VMT. This may be appropriate for unique land uses that largely re-distribute existing trips, such as retail, and for redevelopment projects that may involve eliminating an existing land use as part of the project.

Year 2040 Cumulative Conditions

Some projects may also be required to evaluate the project effect on VMT under Year 2040 Cumulative Conditions. Cumulative without Project VMT estimates should be based on the horizon year of the Stockton model, ensuring the model does not already contain the land uses or transportation improvements associated with the Project. Any transportation network modifications for the cumulative year must be limited to those that are fully funded and will be open to traffic by 2040.

The environmental analysis also must evaluate a project's effect on VMT (*CEQA Guidelines* Section 21100(b)(5)). The project-generated VMT analysis considers all trips as new trips and does not consider how the project influences travel within Stockton. The project's effect on VMT under Year 2040 Cumulative Conditions considers the project's influence on the VMT generation of surrounding land uses.

The cumulative project effect on VMT shall be estimated using the City limit boundary and extracting the total link-level VMT for both the no project and with project conditions.

VMT Impact Criteria for Land Use Projects

Based on guidance from OPR and a detailed modeling effort, the City has established the following VMT thresholds for the most common land uses:

- **Residential.** 15% below the Citywide average for home-based VMT per resident.
- **Office.** 15% below the Citywide average for home-based work VMT per employee.[6]
- **Retail.** No-net increase in total VMT.
- **Other Land Uses.** To be established on a case-by-case basis, reflecting the City's commitment to achieving VMT reductions while also being sensitive to the characteristics of the project being evaluated. In general, work-related land uses may be treated like the office land use subject to city approval. Likewise, land uses that generate a high proportion of their vehicle trips from visitors or customers may be treated like the retail land use subject to city approval.

Specific VMT thresholds are summarized in **Table 6**. The baseline year presented in Table 6 is representative of pre-COVID travel behavior. As projects are initiated in 2021 and beyond, the baseline year data may change, and analysts should consult updated screening maps on the City of Stockton

[6] OPR guidance recommends using a regional average as the VMT benchmark. However, due to limitations of the City of Stockton General Plan Model, a citywide average is only applicable at this time.

website. City staff reserves the right to adjustments on all model inputs prior to a final project model run, as different rates may be appropriate depending on project type.

Table 6: VMT Impact Criteria for Land Use Projects under Baseline Conditions

Project Type	Significance Criteria	Baseline Level[7]	Impact Threshold
Residential	A project exceeds existing citywide home-based VMT per resident minus 15 percent.	17.46 Home-based VMT per resident (citywide average)	15% below baseline (14.84 Home-based VMT per resident)
Office	A project exceeds citywide home-based work VMT per employee minus 15 percent.	18.56 Home-based work VMT per Employee (citywide average)	15% below baseline (15.78 Home-based work VMT per Employee)
Retail	A net increase in total VMT	Can be measured for a project's influence area or citywide	Can be measured for a project's influence area or citywide
Mixed-Use	For screening, evaluate each component of a mixed-use development independently, taking credit for internal capture, and apply the significance criteria for each project type.		
Other Land Use Types	The City's TIA Guidelines explicitly addresses residential, office and retail projects because those are very common land use types. In general, work-related land uses may be treated like the office land use subject to city approval. Likewise, land uses that generate a high proportion of their vehicle trips from visitors or customers may be treated like the retail land use subject to city approval. Applicants must coordinate with the City to affirm the appropriate, project-based VMT thresholds for other land uses.		

[7] Values subject to change based on changes to baseline year or the City's travel demand model.

CEQA Thresholds of Significance

Based on the updated CEQA Appendix G Environmental Checklist Form, and City of Stockton policies, a significant transportation-related impact could occur if a project would:

A. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including roadway, transit, bicycle and pedestrian facilities?

Roadway System – The project would create a significant impact related to the roadway system if any of the following criteria are met:

1. At unsignalized intersections, the project results in any of the traffic signal warrants included in the *CA Manual on Uniform Traffic Control Devices* (MUTCD) to be satisfied, or for a location where any of the warrants are satisfied prior to the project, the project increases overall travel through the intersection.
2. The project creates the potential for 95th percentile vehicle queues that exceed available storage and could periodically block or interfere with pedestrian, bicycle or transit facilities.
3. The project would physically modify an existing or planned roadway in a manner inconsistent with the City's General Plan.

Transit System - The project would create a significant impact related to transit service if the following criterion is met:

1. The project disrupts an existing transit facility or service or interferes with the implementation of future transit service.[8]

Bicycle System - The project would create a significant impact related to the bicycle system if any of the following criteria are met:

1. Disrupt existing bicycle facilities;[9]
2. Interfere with planned bicycle facilities; or,
3. Cause other changes to the bicycle system that would be inconsistent with performance expectations established in adopted bicycle system plans, guidelines, policies, or standards.

[8] Disruption or interference includes any change to physical transit facilities or the operation of transit service that would result in a worse experience for transit riders.
[9] Disruption or interference includes any change to physical bicycle facilities or their use that would result in a worse experience for bicyclists, pedestrians, or drivers.

Pedestrian System - The project would create a significant impact related to the pedestrian system if any of the following criteria are met:

1. Disrupt existing pedestrian facilities;[10] or
2. Interfere with planned pedestrian facilities; or
3. Cause other changes to the pedestrian system that would be inconsistent with performance expectations established in adopted pedestrian system plans, guidelines, policies, or standards, including the Americans with Disabilities Act (ADA).

B. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)11? This means that the project would cause a significant impact if it exceeds the VMT thresholds established above.

C. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? This means that the project would cause a significant impact if the project adds demand to facilities that do not meet applicable design standards or if the project proposes transportation network modifications that are inconsistent with applicable design standards.

These criteria should be cross-referenced with the information presented in **Table 3** as additional specific criteria may need to be evaluated depending on the project.

Mitigation Measures

When VMT impacts are identified, mitigation may consider on-site and off-site measures.

Applicants shall coordinate with the City on the most appropriate VMT mitigation measures given the project location and land use context. A list of mitigation measures applicable for consideration at the project-site level can be found in the *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* (GHG Handbook)[12]. To reduce an impact to less-than-significant levels the applicant would need to demonstrate, through substantial evidence, that the VMT would be reduced to the City's identified thresholds. Project/site mitigation strategies include but are not limited to:

- Implementing commute trip reduction programs
- Providing ridesharing programs

[11] This section of the CEQA Guidelines relates to the evaluation of vehicle miles of travel (VMT).
[12] http://www.airquality.org/air-quality-health/climate-change/ghg-handbook-caleemod

- Providing end-of-trip bicycle facilities
- Implementing subsidized or discounted transit programs
- Modifying parking pricing or limiting parking supply

It should be noted that broad program-based mitigation measures such as VMT impact fees, exchanges, or banks, are an emerging concept that will likely evolve over the next few years but are not currently available in the City. The City will update these guidelines to incorporate program-based mitigations measures as they become available.

If potential transit impacts are identified, mitigation measures should focus on strategies to improve access to transit stops or improve transit reliability (such as the provision of queue jump lanes). Measures should not include expansions of roadway capacity that also benefit automobile travel, such as adding additional general purpose through lanes. Physical expansion of a transit system, such as the construction of bus only lanes, could have adverse effects on the environmental and may be subject to separate environmental review.

The City may require mitigation monitoring for both the implementation and performance, if the selected mitigation measure includes a performance goal.

Transportation Infrastructure Projects

Infrastructure projects have the potential to change travel patterns and may lead to additional vehicle travel on the roadway network, also referred to as induced vehicle travel. This is particularly true for roadway capacity expansion projects. Project types that would likely lead to a measurable and substantial increase in vehicle travel generally include addition of through lanes on existing or new roadways. For transportation projects that increase roadway capacity, the VMT estimates and forecasts will also need to include induced travel effects. However, not all roadway projects lead to induced travel.

VMT Evaluation Methodology

The following sections provide details on if and how a VMT analysis should be conducted for transportation projects.

Screening Criteria

OPR's *Technical Advisory* identifies specific types of infrastructure projects that would likely lead to an increase in VMT, and, therefore, should undergo analysis. Transportation infrastructure projects relevant to the City of Stockton include:

- Added travel lanes

- New roadway connections, including new roads or freeway overpasses
- Lanes through grade-separated interchanges

Specific types of transportation infrastructure projects are presumed to have a less-than-significant transportation impact because they would not likely lead to a substantial measurable increase in VMT. Projects that would not require a VMT analysis fall into four categories:

- Transit projects (except for on-demand transit)
- Bicycle projects, such as bike lanes, protected bike lanes, or bike paths
- Pedestrian projects, such as added sidewalks, crosswalks, or new trails
- Roadway reconfigurations or other infrastructure that is intended to improve the safety or operations of the system, such as signal modifications, traffic calming projects, intelligent transportation system (ITS) improvements, or adding or extending a turn-pocket

Typically, local roadways that are designed solely to support a new development area would not be subject to induced travel. However, if the roadway causes substantial travel time savings for existing trips, then an assessment of induced vehicle travel may be necessary.

Appendix F includes a complete list provided in the OPR *Technical Advisory* for infrastructure projects that would ***not*** likely lead to a substantial or measurable increase in vehicle travel, and therefore generally should not require an induced travel analysis, and are presumed to have a less-than-significant impact on VMT. However, even if a project is exempt from VMT analysis, it may still be required to evaluate other CEQA criteria, and document/justify the applied VMT screening criteria.

Assessment Methodology

Projects not screened out through the criteria outlined above are required to complete a VMT analysis. In general, the City of Stockton model will be the appropriate tool for evaluating the short-term VMT effects of a roadway project combined with the National Center for Sustainable Transportation (NCST) Calculator to forecast long-term induced vehicle travel effects (https://ncst.ucdavis.edu/research-product/induced-travel-calculator). VMT thresholds will be determined on a case-by-case basis since the appropriate methodology will vary based on the type and scope of transportation project proposed.

Mitigation Measures

When VMT impacts are identified for roadway projects, mitigation measures should consider and evaluate the reduction in scope of the capacity increase and/or enhancements to active transportation components.

APPENDIX A: GLOSSARY OF TERMS

AM Peak Hour. Defined as weekday peak hour of adjacent street traffic between 7 a.m. and 9 a.m., or weekday AM peak hour of generator if this occurs between 7 a.m. and 9 a.m.

Analyst. The person conducting the impact analysis, usually a City staff person or a transportation or CEQA consultant.

Application. Any request for the development of property which requires analysis of traffic impacts.

Approving Body. The person, commission, council or group authorized by State law or the Stockton Municipal Code to approve a project or issue a permit for a project.

Base Year. In reference to the Stockton Model, the base year of the model is used to represent existing conditions. As the model is not updated every year, there may be a discrepancy between the base year of the model and the current year. The model is able to interpolate certain metrics between different model years in order to match the current year more closely. In all cases, CEQA requires using the best data that is currently available.

Baseline. Under CEQA, the impacts of a proposed project must be evaluated by comparing expected environmental conditions after project implementation to conditions at a point in time referred to as the baseline. The changes in environmental conditions between those two scenarios represent the environmental impacts of the proposed project. The description of the environmental conditions in the project study area under baseline conditions is referred to as the environmental setting. For most projects, the baseline reflects conditions at the time the Notice of Preparation (NOP) is issued. However, for some projects, a different baseline may be used. Consultation with City staff is required to establish a baseline other than the year the NOP is issued.

CEQA. The California Environmental Quality Act. This statute requires identification of any significant environmental impacts due to certain state or local actions including approval of new development or infrastructure projects. The process of identifying these impacts is typically referred to as the environmental review process.

CEQA Transportation Analysis. Refers to the analysis required to assess the transportation impacts of the project under CEQA.

Cumulative Traffic Conditions. Traffic volume forecasts obtained from the travel demand forecasting model under build-out conditions.

Employment Generating Uses/Projects. Office, industrial, logistics or other land uses where most of the activity at the site is related to employment functions.[13]

Feasible Improvement. Any improvement consistent with the *General Plan* Transportation Element of the City of Stockton, the cost of which is not so disproportionate to the size of and traffic generated by the project that it would be unreasonable for the City to require construction of new improvements as determined by the Community Development Department as a condition of approval.

Independent Variable. A physical, measurable, or predictable unit describing the study site or trips generator that can be used to predict the value of the trips generated (dependent variable). Some examples of independent variables used for trip generation are gross floor area (GFA), employees, seats, and dwelling units.

Intersection Volume-to-Capacity Ratio (v/c). The sum of the volume-to-capacity ratios for all of the critical movements at the intersection.

ITE. Institute of Transportation Engineers.

Home-based VMT. VMT for trips that begin or end at a residence.

Home-work VMT. VMT associated with commute trips between a residence and an employment-generating use, also referred to as home-based-work trips.

Horizon year. The planning horizon year used for cumulative analysis. Currently, the horizon year of the Stockton model is 2040.

Lead Agency. A government agency responsible for preparing and certifying a given CEQA document.

Level of Service (LOS). A metric that assigns a letter grade to transportation network performance. The most common application of LOS has been to measure the average amount of delay experienced by vehicle drivers along a roadway segment or at an intersection during the most congested time of day and to assign a rating that ranges from LOS A (fewer than 10 seconds of delay) to LOS F (more than 80 seconds of delay). Per the requirements of SB 743, LOS and other measures of vehicle delay are no longer to be used in determining significant impacts under CEQA. However, this metric can be used in local transportation analysis to identify potential project modifications or conditions of approval.

Local-Serving Uses/Projects. Land uses that are expected to draw users from a local area, typically no more than a three-mile radius. These uses may generally include local-serving public facilities such as a

[13] Analysis of non-employee trips (such as those made by trucks) is not required for Employment-Based Uses since it is assumed that these trips are either 1) incidental compared to employee trips and/or 2) constitute trips to and from way points along a trip from a product's ultimate origin to its ultimate destination.

branch library, a police or fire station, neighborhood-based schools, and local-serving retail businesses such as grocery stores, coffee shops or dry cleaners. As part of the screening process, the analyst should consider the proximity of other similar uses, and if there are no other similar uses within a three-mile radius the use may not be locally serving, unless it is fulfilling a specific need that is missing from the area.

Local Transportation Analysis. A focused assessment of the transportation network surrounding a project following the guidance of the City's TIA Guidelines.

Low VMT Areas. Areas of the City that have existing VMT per capita or VMT per worker that is 85% or less of the existing Bay Area region-wide average.

Major Improvement. Any substantial physical change to an intersection or roadway or construction of a new roadway, operational enhancements, traffic signal system management upgrades, except for re-surfacing, rehabilitation, re-striping or other similar changes.

Major Street. Streets, intersections and freeway interchanges identified in the Transportation Element of the Stockton *General Plan*.

Mixed Use Projects/Uses. Projects that consist of a mix of uses otherwise described in this document.

Mitigation Measure. Measure identified through the application of the CEQA thresholds that must be implemented to reduce a significant CEQA impact to a less-than-significant level.

Off-Site Improvement. Any improvement beyond the boundaries of a project which does not otherwise constitute an "on-site" improvement.

On-Site Improvement. Any improvement within or along the boundaries of a project. Examples include internal circulation and parking areas; curb, gutter, and sidewalk improvements along the frontage(s) of the development; and ingress/egress improvements such as driveways, turn lanes, or signal installations/modifications.

Other Uses/Other Projects. Uses and projects which do not qualify as Residential, Employment-Generating, Local-Serving, or Regional-Serving (all of which are defined in this document).

Performance Standard. Standards used to identify a project effect based on non-CEQA criteria.

Physical Design Measures. VMT reduction strategies that involve changes to the built environment. Examples include changes to the density or mixture of land uses, or the installation of new pedestrian or bicycle facilities.

PM Peak Hour. Defined as weekday peak hour of adjacent street traffic between 4 p.m. and 6 p.m., or weekday PM peak hour of generator if this occurs between 4 p.m. and 6 p.m.

Prior Approved Project. A project whose development permit(s) have not expired.

Project. Any development proposal for a new or changed use for a new construction, alteration, or enlargement of any structure. This term also refers to any action that qualifies as a "project" as defined by CEQA.

Regional-Serving Uses/Projects. Land uses that are expected to draw users from a region that is larger than that for "local-serving uses," meaning a radius that is typically larger than three miles. These uses may generally include regional-serving public facilities such as a regional library or museum, private schools and colleges, hospitals, movie theaters and other entertainment, and regional retailers such as furniture stores, shopping malls and big box retailers.

Required Improvement. Measure identified through the local transportation analysis and application of non-CEQA thresholds that are required as a condition on the project.

Residential Uses/Projects. Uses and projects consisting solely of residential units such as single-family and multi-family units.

Significance Criteria. Standards used to identify a project impact based on CEQA criteria.

Street Improvement. Any physical change to an intersection or roadway or construction of a new roadway, including all related items, such as drainage upgrades, lighting improvements, etc.

Study Intersection. Any intersection included in the transportation impact study analysis for a project.

Target VMT Reduction. The level of VMT reduction defined by Stockton as being necessary to avoid a significant VMT impact. As of November 2020, the target VMT reduction in Stockton was set at 15% below the existing regional VMT (which can also be expressed as 85% of existing VMT).

Total VMT. All of the VMT from all types of vehicles and for all trip purposes.

Traffic Analysis Zone (TAZ). A geographic polygon somewhat similar to a Census block group that is used in a travel model to represent an area of relatively homogenous travel behavior.

Transit Priority Area (TPA). An area of close proximity to a significant transit mode, defined as a one-half mile area around an existing major transit stop or an existing stop along a high-quality transit corridor. Public Resources Code, § 21064.3 defines major transit stop as a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of 15 minutes or less during the morning and afternoon peak commute periods. Public Resources Code, § 21155 defines a 'high-quality transit corridor' as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

Transportation Demand Management (TDM). Strategies that are intended to reduce vehicular travel through programs and projects that maximizes traveler choices through information, encouragement and incentives geared toward modifying travel behavior and choices.

Truck Trips. Trips made by heavy vehicles. Per the OPR recommendations and their interpretation of Public Resources Code, §15064.3, VMT analysis for CEQA transportation impact purposes can focus solely on automobile travel and can exclude truck trips. Truck trips are included in the analysis of other environmental topic areas, such as air quality, noise, and greenhouse gas.

Vehicle Miles Traveled (VMT). A metric that captures the total amount of vehicular travel through measuring the number of vehicle trips generated and the length or distance of those trips. For transportation impact analysis purposes, VMT is usually measured on a typical weekday, and can be expressed in several ways, such as total VMT, total VMT per service population (residents plus employees), home-based VMT per resident, and home-based work VMT per employee.

VMT Reduction Strategies. Strategies intended to reduce VMT, including TDM and physical design measures.

VMT Study Area. A geographic area over which the project's effect on total VMT will be evaluated. The study area should be defined such that it captures the reasonably foreseeable VMT changes associated with the project, but not so large that the effects of the project get swamped by broader economic and land use changes. In many instances, the city boundary would be a reasonable study area; in cases where a project is located at the edge of the city, or if the project is very large such that it is likely to affect travel patterns in neighboring cities, then a subregion of the County or even the entire County might be a more appropriate study area.

Unsatisfactory Level of Service. A LOS not meeting the applicable benchmark, as specified in the Growth management Element of the Stockton General Plan.

APPENDIX B: TIA INITIAL ASSESSMENT (FORM 1)

SECTION 1: PROJECT AND APPLICANT INFORMATION *(TO BE COMPLETED BY APPLICANT)*

PROJECT TITLE	PROJECT LOCATION	APPLICATION NO.
APPLICANT	APPLICANT CONTACT	APPLICANT PHONE

SECTION 2: APPLICATION TYPE AND PROJECT DESCRIPTION *(TO BE COMPLETED BY APPLICANT)*

TYPE OF APPLICATION	(check)		(check)
ZONING		AMENDMENT TO DEVELOPMENT APPROVAL	
TENTATIVE MAP		NEW DEVELOPMENT / CONSTRUCTION	
USE PERMIT		OTHER:	

PROJECT DESCRIPTION (please attach a site plan, and include information on any existing land uses that would be removed or eliminated by the proposed project):

PROPOSED LAND USE	(check)	**Answer the corresponding question regarding the proposed project:**	**Yes**	**No**
RESIDENTIAL		Is the proposed residential project greater than 10 single family or 15 multi-family dwelling units?		
COMMERCIAL		Is the proposed commercial project building larger than 1,500 sq. ft.?		
		Does the proposed commercial project have a fast-food restaurant?		
		Does the project have a drive-through window?		
OFFICE		Is the proposed office project building larger than 10,000 sq. ft.?		
INDUSTRIAL		Is the proposed industrial project building larger than 15,000 sq. ft.?		
OTHER: (please describe)				

TRAFFIC GENERATION (AVERAGE WEEKDAY)

ITE Land Use Code	Size	Unit Name (e.g. sq ft, apts)

Total Vehicle trips _____Vehicle trips per day

Peak Hour Trips	_____A.M. Peak Hour	_____P.M. Peak Hour
* New vehicle trips	_____Vehicle trips per hour	_____Vehicle trips per hour
* Pass-by vehicle trips	_____Vehicle trips per hour	_____Vehicle trips per hour
* Total vehicle trips	_____Vehicle trips per hour	_____Vehicle trips per hour
Total trips IN	_____Vehicle trips per hour	_____Vehicle trips per hour
Total trips OUT	_____Vehicle trips per hour	_____Vehicle trips per hour

Will the project generate new or additional truck traffic? ____ Yes ____ No

Submitted by:

_____ _____
Signature of Applicant Date

REMAINING SECTIONS TO BE COMPLETED BY CITY

SECTION 3: TRANSPORTATION IMPACT EVALUATION

Transportation / Circulation **Could the proposed project:**	**NO**	**MAYBE**	**YES**
Cause a substantial increase in traffic (110 peak hour trips) in relation to the existing traffic load and capacity of the street system?			
Cause any public or private street intersection to function below level of service as specified in the City of Stockton General Plan?			
Pose a potential safety hazard (i.e. change in the mix, volume or speed of vehicle, bicycle, and/or pedestrian traffic that would create an inconsistency with the applicable design standards for the transportation network)?			
Disrupt or interfere with truck, passenger vehicle, transit, bicycle or pedestrian access to surrounding uses?			

SECTION 4: DETERMINATION

On the basis of this initial assessment the following study requirements are recommended:

____ Perform a local impact study

____ Perform a CEQA only study

____ Perform both a local impact and CEQA study

____ No further study required

_____ _____

Public Works Department Date

APPENDIX C: SITE ACCESS AND CIRCULATION PLAN REVIEW

A detailed site plan review is required for all projects, as outlined in Chapter 16.152 of the Stockton Municipal Code. The transportation analysis should include a review and summary of findings of the following qualitative and quantitative features, in addition to the site-plan criteria identified previously in **Table 3**:

- Existence of any current traffic problems in the local area such as a high-collision location, intersection or roadway not consistent with current design standards, or an intersection warranting a traffic control change.
- Applicability of context-sensitive design practices compatible with adjacent neighborhoods or other areas that may be impacted by the project traffic.
- Proximity of proposed site driveway(s) to other driveways or intersections.
- Adequacy of the project site design to accommodate all vehicle types.
- Number and type of parking provided, including vehicle and bicycle parking.
- On- and off-street loading requirements.
- Adequacy of site access and circulation for vehicles, bicycle, and pedestrian and provision of direct pedestrian paths from residential areas to school sites, public streets to commercial and residential areas, and the project site to nearby transit facilities. Delivery vehicle access and circulation, and the potential for vehicle queues at drive-through windows should be considered.

APPENDIX D: TRANSPORTATION IMPACT ANALYSIS REPORT OUTLINE

Sections for All Transportation Impact Analysis

The preparer has the discretion to use the most appropriate documentation format depending on the complexity of the analysis, including memorandum and formal reports, so long as the required information is provided. Not all information noted below is appropriate for all studies, nor is the list inclusive of everything that may be required to fully analyze a project.

1. Introductory Items

- Front Cover/Title Page
- Table of Contents, List of Figures, and List of Tables
- Executive Summary

2. Introduction/Background

- Project description
- Type and size of development
- Site plan (include proposed driveways, roadways, traffic control, parking facilities, emergency vehicle access, and internal circulation for vehicles, bicyclists, and pedestrians)
- Location map (include major streets, study intersections, and neighboring zoning and land uses)
- Scope of transportation analysis

3. Project Screening

- Description of whether the project meets General Plan Consistency screening criteria
- Description of whether the project meets RCMP Consistency screening criteria
- Description of whether the project meets VMT screening criteria

4. Current Conditions

- Description of existing street system within project site and surrounding area
- Location and routes of nearest public transit system serving the project
- Location and routes of nearest pedestrian and bicycle facilities serving the project
- Off-site intersection analysis for site access and circulation evaluation and RCMP evaluation (if applicable)

- Figure of study intersections with peak hour turning movement counts, lane geometries, and traffic control (if applicable)
- Map of study area showing average daily traffic (ADT) of study roadways (if applicable)
- Table of existing peak hour average vehicle delay and level of service (LOS)

- Environmental Analysis (if VMT screening criteria are not met)
  - Description of baseline VMT estimates (may include site and regional VMT estimates)

5. Project Trip Generation and Vehicle Miles Traveled

- Table of project generated trip estimates
- Figure/map of trip distribution (in percent)
- Table of project generated vehicle miles traveled estimates

6. Project Site Access and Circulation Evaluation

- Summary of a detailed site review for all modes of travel
- Mobility deficiency analysis for vehicle, transit, bicycle and pedestrian facilities (under Existing, Background, and Cumulative Conditions)
- Summary of transportation improvements

CEQA Transportation Analysis Report Section[14]

1. VMT Analysis (For projects not meeting VMT screening criteria)

- Summary of project generated VMT under Baseline Conditions
- Summary of project's effect on VMT under Year 2040 Cumulative Conditions
- Identification of significant impacts
- Discussion of mitigation measures
- Evaluation of impacts of mitigation measures

2. Other CEQA Requirements

- Summary of conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths. Present mitigation measures, as needed.

[14] It is recommended that the transportation consultant prepare the transportation chapter for the environmental document, to minimize the cost of preparation and the chance for errors to be introduced into the analysis.

- Evaluation of hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Present mitigation measures, as needed.
- Emergency access evaluation. Present mitigation measures, as needed.

Local Transportation Analysis Report Section (Project Requiring Off-Site Analysis)

1. Existing with Project Conditions

- Maps of study area with applicable peak hour turning movements (Project Only and Existing with Project)
- Table of Existing and Existing with Project intersection peak hour average vehicle delay and LOS (or other multimodal performance measure)
- Traffic signal and other warrants
- Changes/Deficiencies to bike, pedestrian, and transit networks
- Findings of project deficiencies
- Improvements for project deficiencies (include a map showing physical improvements)
- Scheduling and implementation responsibility of improvements
- Deficiencies of proposed improvements

2. Background without Project Conditions

- Table of trip generation for approved project(s)
- Figure and/or table of approved projects trip distribution (in percent)
- Map of study area with applicable peak hour turning movements (Background without Project)
- Table of intersection peak hour average vehicle delay and LOS (or other multimodal performance measure)
- Changes/deficiencies to bike, pedestrian, and transit networks
- Traffic signal and other warrants

3. Background with Project Conditions

- Similar content to Existing with Project Conditions

4. Cumulative without and with Project Conditions

- Map of study area with Cumulative without Project peak hour turning movements
- Map of study area with Cumulative with Project peak hour turning movements

- Table of Cumulative without Project and Cumulative with Project intersection peak hour average vehicle delay and LOS (or other multimodal performance measure)
- Changes/Deficiencies to bike, pedestrian, and transit networks
- Traffic signal and other warrants
- Findings of project deficiencies
- Improvements for project deficiencies (include a map showing physical improvements)
- Scheduling and implementation responsibility of improvements
- Deficiencies of proposed improvements

As Needed Sections for Transportation Analysis Reports

1. Construction Deficiencies

- Trips due to construction workers
- Truck trips and truck access routes

2. Phasing Deficiencies (For Large Projects Only)

3. Appendices

- List of references
- List of authors
- Pedestrian, bicycle, and vehicle counts
- Technical calculations for all analyses

APPENDIX E: TRIP GENERATION AND FORECASTING TOOLS

The local transportation analysis for General Plan consistency is based on vehicle trip generation, while CEQA analysis is based on VMT generation. This section describes how vehicle trip generation and VMT can be estimated, and how cumulative traffic forecasts are developed.

Project Trip Generation

How do I Estimate the Project's Trip Generation Characteristics?

Person and vehicle trip generation rates are a way to estimate the number of expected pedestrian, bicycle, transit, and vehicle trips a proposed development will generate. These rates establish the basis of analysis for a proposed project and its effect on the transportation network. Person trip generation should be reported for walking, bicycle, and pedestrian trips; and vehicle trip generation should be reported for single-occupant, carpool and transportation network company (TNC) (i.e., Uber/Lyft) trips.

Vehicle Trips

The state-of-the-practice is deriving vehicle trip generation rates from local empirical data, as this will provide the most accurate forecast for future land use vehicle trip making. This typically requires surveying a similar existing land use at three unique locations to quantify the number of daily and morning, mid-day, and evening peak period person and vehicle trips generated.

The City understands that trip generation surveys may not be practical in all cases and that the latest Institute of Transportation Engineers' (ITE) *Trip Generation Manual* is a reasonable alternative when local data is not available. In the absence of empirical studies, the most recent vehicle rates published by ITE in the *Trip Generation Manual*[15] or other relevant sources may be used for trip rate estimation. When using ITE rates, the time period selected should reflect peak travel periods on adjacent streets and care shall be exercised in utilizing rates developed from a small study size (fewer than 20 studies) or containing a low R^2 value (less than 0.75).[16]

In some cases, the peak hour of the generator may occur outside the typical peak commute hours and may require additional analysis (e.g., a regional shopping center on a Saturday or a school during the afternoon pick-up period).

[15] *Trip Generation Manual* (Current Edition), Institute of Transportation Engineers, 2017.
[16] R^2 is the coefficient of determination defined as the percent of variance in the dependent variable (number of vehicle trips) associated from the independent variable (size of the project).

The City reserves the right to require the project applicant to conduct local trip generation surveys for select projects depending on land use and conditions in the field.

Person Trips

If a project is located in an area where significant levels of walking, bicycling and/or transit use are expected, and a trip reduction to account for non-auto trips is applied, such that there is a significant reduction in vehicle trip generation as compared to standard ITE rates, then the use of person trip generation should considered. The total person trips would be estimated, which are then converted to the available modes, including single occupant vehicles (SOV), carpool, rideshare, transit, bicycle, and pedestrian trips. Person trip generation rates should be developed from empirical studies, person travel survey data, or conversion of vehicle trip rates to person trip rates using a vehicle occupancy factor. In addition, person trip generation by mode may be derived using an approved analysis tool that incorporates data from the above sources.

Establishing Trip Generation Rates for an Unknown or Unique Use

For projects where the ultimate land-use is not certain (for example, a large subdivision of flexible commercial-industrial parcels), there are two options for establishing the trip generation rates:

- **Option 1:** City staff will recommend the use of the highest traffic intensity among all permitted uses to establish traffic impacts.
- **Option 2:** Estimates can be made using a lower traffic intensity use if the City and developer establish a maximum trip allowance. Once a proposed land use has been identified, then 1) the subdivision trip generation allowance must be monitored by the City as development occurs; and 2) the transportation analysis may need to be updated.

Trip Rate Credits for Existing Uses

The estimate of new trips generated by the proposed development project may include credit for trips associated with existing uses on the site. For local transportation analysis, uses are considered as existing if the project proposes to remove or eliminate them and they are actively present on the project site at the time data is gathered for the transportation impact analysis. The credit shall be based on observed traffic counts at the driveways of the existing uses.

For the evaluation of vehicle miles of travel, VMT credit for the prior use may be considered if that use was active within the past three years, and if a similar type of use could re-occupy the building without needing to obtain a conditional use permit.

Trip Rate Reductions for ITE Rates

Standard rates published by ITE are generally developed for suburban sites where access is primarily made via personal automobile. The City of Stockton recognizes that the rates may overstate the traffic impact for developments that contain a mix of uses (and "capture" some vehicle trips internally) or are in denser areas such as downtown Stockton. Additionally, certain commercial land uses attract vehicles on the roadway, rather than generating new trips. This section discusses reductions that may be taken under these circumstances.

Internalization / Walking, Bicycling or Transit Trips

Internal or captured trips are trips that do not enter or leave the driveways of a project within a mixed-use development. They are similar to active transportation trips (e.g., walking or bicycling) or transit trips in a setting like Stockton, where destinations may be reached on foot (a "park once" environment), provided the appropriate bicycle, pedestrian, and transit facilities exist within the area. These trips do not add vehicle traffic to the local roadway system. Trip rate reductions are allowed for internalization for internal trips at mixed-use sites or in downtown Stockton. Specifically, trip generation estimates may use trip adjustments due to land use variables such as Density, Diversity, Design and Destination to enhance its sensitivity to the built environment.

Other built environment factors such as demographics, distance to transit, and employment within 30 minutes by transit also affect vehicle trip making. Reductions shall be based on empirical and peer-reviewed data, and quantitatively supported in the transportation analysis report. If trip rates are derived from a local survey of a similar land use or derived by a mixed-use trip generation estimator, additional trip reductions may be permitted based on location and other factors. Tools are available from ITE and other sources to estimate these reductions. City staff may provide direction on which analysis tools are most appropriate for a project's transportation analysis. Any reductions would need to be reviewed and approved by City staff.

Pass-by / Diverted Link

Restaurants, convenience stores, gas stations, banks, and similar commercial land uses often locate on high traffic volume roads to attract motorists already on the street. These attracted trips are not new traffic to the adjacent street system, but simply access a new use as part of their current travel path. These trips are known as pass-by trips. For commercial land uses on arterial or collector streets, a reduction for pass-by trips supported by analysis may be used. Analysis resources may include the current *ITE Trip Generation Handbook* or a documented and relevant study. To ensure adequacy of project driveways, the access analysis at these locations should reflect total site-generated trips, and not include any pass-by or similar reductions.

Diverted link trips are similar to pass-by trips in that they are vehicle trips already on the roadway network. However, the key difference is that diverted link (link meaning roadway) trips pull traffic from other

roadways (not adjacent to the project site) onto the roadway(s) serving the development. Thus, these trips *do* add traffic to adjacent streets serving the site and should *not* be included as a reduction for the assessment of site access and circulation, but could be included as a reduction in the preparation of new vehicle trip estimates as inputs to air and noise analyses and could also be considered in the VMT assessment, depending on the project context and other characteristics. For projects with diverted trip links, a list of diverted link trip locations should be provided for analysis along with project trip generation data and trip arrival/distribution maps. This information, along with a map or figure showing the trip locations, should be provided as attachments to the study report.

As an example, a new gas station is proposed on a minor street one block away from a major arterial street. The trips that are attracted to the station site from existing traffic on the major arterial are diverted link trips. Those trips attracted to the site from existing traffic on the minor street in front of the new gas station are defined as pass-by trips. In both cases, these are not new trips to the overall network but come from existing volumes on adjacent or nearby roadways.

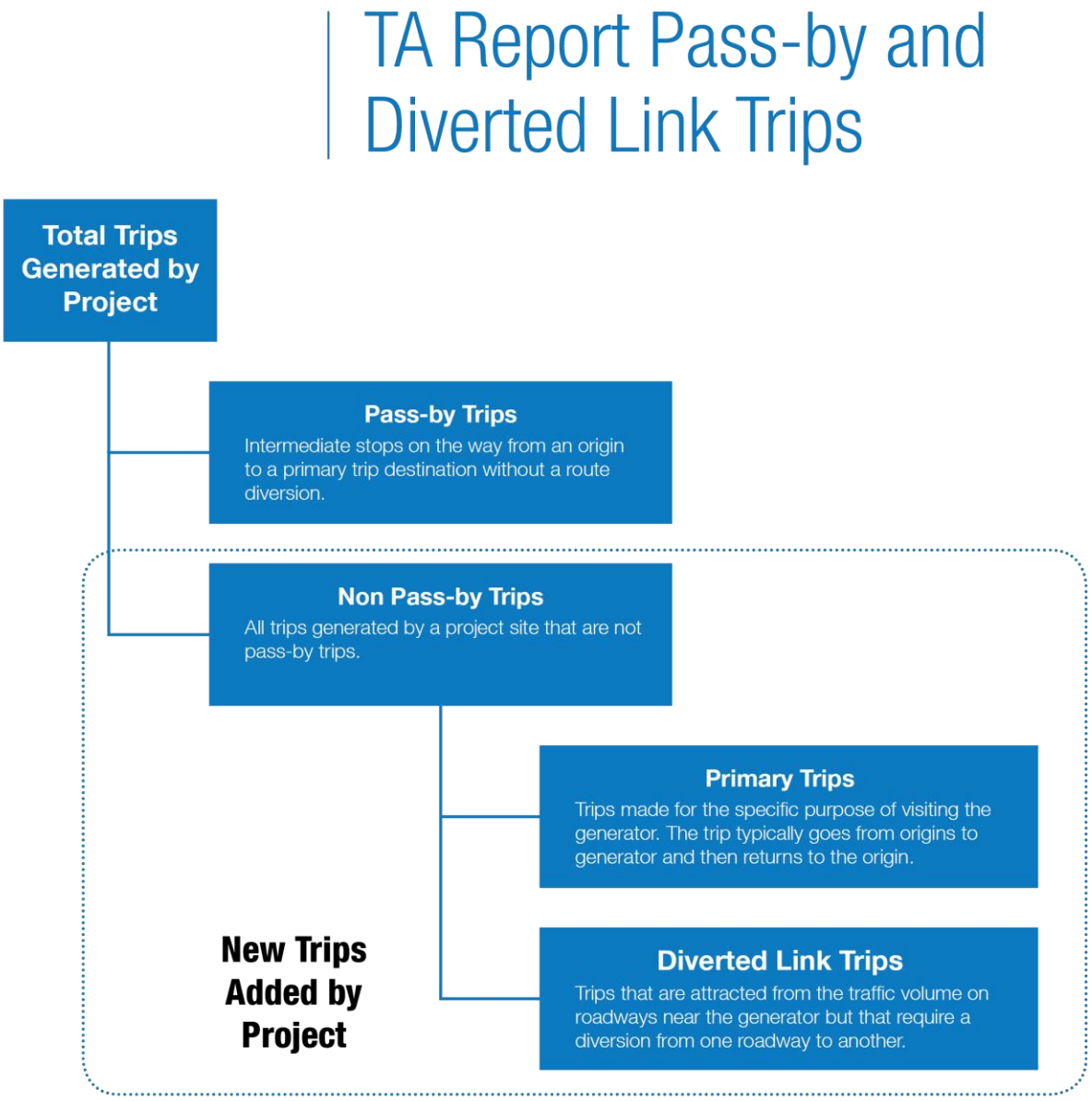
Transportation Demand Management Reductions

In addition to project characteristics that can reduce trip generation, transportation demand management (TDM) strategies can further reduce the vehicle trips from a project site such as:

- **Neighborhood / Site Enhancement** – Bicycle and pedestrian network, car sharing programs, traffic calming, and site design to support other travel modes.
- **Parking Policy / Pricing** – Parking supply limits, unbundled parking cost from property cost, and public parking pricing.
- **Transit System Improvements** – Built environment and access transit stop improvements.
- **Commute Trip Reduction** – Transit fare subsidy, employee parking cash-out, alternative work schedules, priced workplace parking, shuttles, and employer sponsored vanpools.

TDM strategies planned for a project should be included in the analysis, with the corresponding recommended reduction in vehicle trip generation for each element clearly stated. Any trip rate reductions claimed for a TDM strategy is subject to approval by City staff.

Figure E-1: TIA Report Pass-by and Diverted Link Trips



VMT Estimation and Cumulative Travel Forecasts

To conduct transportation forecasts and VMT analysis that meets environmental regulatory conditions and provides a high level of confidence in the analysis results, analysts should follow state-of-the-practice or best practice methods for transportation forecasting.

For consistency, analysts are required to use the City of Stockton General Plan Model and conduct checks to ensure it is sufficiently accurate and sensitive within the study area and for the types of land use and transportation changes associated with the project. Depending on the specific year represented by "base year" conditions, model output may need to be adjusted to represent "baseline" conditions for CEQA purposes. Representing conditions post-COVID may also be required since the model was last calibrated and validate to pre-COVID conditions.

Traffic Signal and Intersection Analysis

Traffic Signal Parameters

Traffic signal parameters are as important as accurate turning movement counts for determining intersection LOS. As summarized in **Table E-1**, the following intersection data should be collected and/or calculated along with the traffic counts. Traffic signal timing information should be collected from City, County, or Caltrans staff, and verified by field observations.

Table E-1: Traffic Signal Parameters

Parameter	Recommendation
Peak Hour Factor (PHF)	PHF for Existing Conditions should be collected and calculated from the traffic count data. It should be calculated individually for each isolated intersection and grouped for closely spaced intersections. For cumulative scenarios or Existing Conditions where the PHF is not available, refer to the most recent Caltrans *Highway Capacity Manual* (HCM) and maintain consistency throughout the analysis periods. If a simulation model is used for analysis, the PHF should be applied over more than a 15-minute period.
Saturation Flow Rate	A field measurement of the saturation flow rate is recommended in accordance with procedure in the HCM, Chapter 31, Signalized Intersections: Supplemental. For Cumulative Conditions, use the value recommended in the most recent HCM unless physical conditions and traffic controls warrant a change. The HCM recommends 1,900 vehicles per hour per lane.
Yellow Phase	Refer to the current City operating standards. Existing signal timing plans must be requested by the project engineer. If a traffic signal is present under Existing Conditions, use existing yellow phase (Current City of Stockton Traffic Signal Design and Operations Guide).
All Red Phase	Refer to the current City operating standards. Existing signal timing plans must be requested by the project engineer. If a traffic signal is present under Existing Conditions, use existing length of all red phase.

Table E-1: Traffic Signal Parameters

Parameter	Recommendation
Pedestrian and Bicycle Conflicts	Pedestrian and bicycle signal calls and crossing conflicts at intersections can increase delay for vehicles. Outside of dedicated phases, they generally conflict with right-turning motorists and motorists making permitted left turns. The volume of each should be collected during traffic counts and used in the analysis. Otherwise refer to the most current version of the HCM.
Cycle Lengths	Replicate existing cycle length and phasing (e.g., leading left turns) when possible. For new signalized locations, use the cycle lengths of the following three categories unless other cycle lengths can be justified through the traffic operations analysis. • In and around downtown – limit signal cycle lengths to 60 seconds or less. • In and around suburban areas – limit signal cycle lengths to 90 seconds or less. • Near freeway interchanges/regional commercial – limit signal cycle lengths to 120 seconds or less. Ensure that minimum pedestrian crossing times and bicycle clearance intervals are satisfied. Signal coordination analysis may be required, including coordination with upstream and downstream signals and/or roundabouts.
Heavy Truck Percentages	Based on the existing heavy-truck percentage and adjusted to account for future planned development. In general, heavy-truck percentages should be greater on truck routes and main thoroughfares than on local streets. Minimum recommended value is 2%. Vehicle classification counts should be included as a part of all turning movement counts and this guidance is only for new intersections outside of industrial areas.
Lane Utilization Factor	If applicable, adjust lane utilization factors based on field observations.

Evaluation of Side Street Stop-Controlled Intersections

In addition to reporting the worst individual approach delay, the delay for the overall intersection shall be calculated and reported. This information will allow reviewers to gauge potential impacts to individual approaches against those for the entire intersection. The analysis should also identify whether alternative routes are available for drivers when individual approach delays reach LOS F. Intersection modifications may not be required simply because an isolated intersection analysis shows new demand causing the worst movement to reach unacceptable conditions. Drivers will choose alternative routes to avoid unnecessary delays when they are available.

Methodology and Software

Intersection operations shall be analyzed using HCM methodology. **Table E-2** provides a matrix of software options for analysis. Stockton does not require use of a particular software suite for analysis. However, the preferred method of analysis for signalized and unsignalized intersections is Synchro or a similar program that considers specific timing and phasing parameters, as well as the number of pedestrian calls and bicycles present. Special conditions related to congested conditions, state highway facilities, and roundabouts are

discussed in more detail below.

Table E-2: Software Analysis Options

Software/ Method[1]	Traffic Studies		Roundabouts		Arterial/ Interchange Operations	Microsimulation Analysis[4]		
	Operations[2]	Signal Coordination[3]	Planning	Design		Unique Geometrics	Heavily Congested Conditions	Multi-modal
Synchro/SimTraffic	X	X	X		X	X		
VISTRO/TRAFFIX	X		X					
HCS	X				X			
SIDRA Intersection			X	X				
FHWA Roundabout Guidelines			X					
Microsimulation[5]		X		X	X	X	X	X

Notes:

1. The most current version of analysis software (with updated software patches) should be used.
2. Appropriate for isolated intersection operations or for signal systems that are not coordinated.
3. Mandatory for coordinated signal systems to maximize vehicle progression.
4. Should be applied to analyzing operations of congested conditions or non-standard conditions where traditional analytical approaches may not be appropriate.
5. Specific software program selection should be conducted in consultation with the City and consider the types of technical questions being asked in the study and the modes to be included.

Congested Conditions

Analysts should note that the HCM recommends the use of simulation models to analyze congested conditions or closely spaced intersections. Because simulation tools (e.g., VISSIM, SimTraffic, etc.) can simultaneously evaluate vehicle interactions across a complete network (including the interaction of multiple modes), they can provide a more complete understanding of traffic operating conditions during peak congested periods and what may happen when a specific bottleneck is modified or eliminated. Specifically, care should be taken in analyzing intersection LOS at closely spaced intersections. In such cases, standard intersection analysis does not adequately show the compound effects of intersection delay. If study intersections are within 300 feet of upstream or downstream intersections, or if the estimated 95% queue lengths exceed the distance between intersections, microsimulation using the average of 10 or more runs should be used to calculate delay. A corridor study consisting of 5 or more intersections may be required to evaluated congested conditions, including intersections outside of the development study area.

State Highway Analysis

The analysis of state highways, including freeways and on- and off-ramps, should be conducted consistent with Caltrans and HCM guidance.

Roundabout Analysis

The HCM 6th Edition provides analysis methods for roundabouts with one or two circulating lanes. This deterministic method is most appropriate for low volumes and isolated intersections. The capacity can be calibrated to observed driver behavior at roundabouts. Calibration factors specific to California are available in HCM Chapter 33. Approach queue lengths should also be reviewed to ensure they do not spill beyond available storage or interfere with overall operations of the roundabout and/or transportation system.

The HCM recommends the use of alternative analysis methods for larger and more complex multi-lane roundabouts, roundabouts operating near or at capacity, intersections with high pedestrian and/or bicycle volume, and intersections where upstream or downstream operation may interact with adjacent intersections. Microsimulation of the roundabout and surrounding network may also be useful. Care must be taken in coding and calibrating the microsimulation models to accurately reflect the proposed roundabout design and operational characteristics.

When comparing traffic control options (roundabout, signal, or stop) for a given location, refer to the Caltrans Intersection Control Evaluation (ICE) directive dated August 30, 2013. Long-term maintenance costs should also be estimated and considered in the evaluation.

APPENDIX F: LIST OF TRANSPORTATION PROJECTS EXEMPT FROM ENVIRONMENTAL ANALYSIS (CEQA)

The following complete list is provided in the OPR *Technical Advisory* (December 2018, Pages 20-21) for transportation projects that "would **not** likely lead to a substantial or measurable increase in vehicle travel, and therefore generally should not require an induced travel analysis:"

- Rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation assets (e.g., highways; roadways; bridges; culverts; Transportation Management System field elements such as cameras, message signs, detection, or signals; tunnels; transit systems; and assets that serve bicycle and pedestrian facilities) and that do not add additional motor vehicle capacity.
- Roadside safety devices or hardware installation such as median barriers and guard rails
- Roadway shoulder enhancements to provide "breakdown space," dedicated space for use only by transit vehicles, to provide bicycle access, or to otherwise improve safety, but which will not be used as automobile vehicle travel lanes.
- Addition of an auxiliary lane of less than one mile in length designed to improve roadway safety
- Installation, removal, or reconfiguration of traffic lanes that are not for through traffic such as left, right, and U-turn pockets, two-way left turn lanes, or emergency breakdown lanes that are not utilized as through lanes.
- Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit.
- Conversion of existing general-purpose lanes (including ramps) to managed lanes or transit lanes, or changing lane management in a manner that would not substantially increase vehicle travel.
- Addition of a new lane that is permanently restricted to use only by transit vehicles.
- Reduction in number of through lanes (also referred to as a road diet)
- Grade separation to separate vehicles from rail, transit, pedestrians or bicycles, or to replace a lane in order to separate preferential vehicles (e.g., HOV, HOT, or trucks) from general vehicles.
- Installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority (TSP) features.
- Installation of traffic metering systems, detection systems, cameras, changeable message signs and other electronics designed to optimize vehicle, bicycle, or pedestrian flow.
- Timing of signals to optimize vehicle, bicycle, or pedestrian flow.
- Installation of roundabouts or traffic circles.
- Installation or reconfiguration of traffic calming devices.
- Adoption of or increase in tolls.

- Addition of tolled lanes, where tolls are sufficient to mitigate VMT increase.
- Initiation of new transit service.
- Conversion of streets from one-way to two-way operation with no net increase in number of traffic lanes.
- Removal or relocation of off-street or on-street parking spaces.
- Adoption or modification of on-street parking or loading restrictions (including meters, time limits, accessible spaces, and preferential/reserved parking permit programs).
- Addition of traffic wayfinding signage.
- Rehabilitation and maintenance projects that do not add motor vehicle capacity.
- Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way.
- Addition of Class I bike paths, trails, multi-use paths, or other off-road facilities that serve non-motorized travel.
- Installation of publicly available alternative fuel/charging infrastructure.
- Addition of passing lanes, truck climbing lanes, or truck brake-check lanes in rural areas that do not increase overall vehicle capacity along the corridor.