City of Cupertino Transportation Study Guidelines

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Introduction

Transportation Study (TS) Guidelines

The TS 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 nearby transportation system to ensure infrastructure supports the traveling public.

The Transportation Study (TS) Guidelines provide a clear and consistent technical approach for evaluating the transportation effects (adverse or beneficial) of projects on the City's transportation system and services.

A transportation study provides essential information for decision-makers and the public when evaluating individual development projects, small- and large-scale area plans, and transportation infrastructure projects. Transportation studies for projects in Cupertino serve three primary purposes:

- To evaluate a project's consistency with the City's *General Plan*, including its compliance with transportation standards set in the *Mobility Element*.
- To evaluate a project's consistency with the Santa Clara County Congestion Management Program (CMP).
- To evaluate significant impacts and mitigation measures per the California Environmental Quality Act (CEQA).

Outcomes of the transportation study process include mitigation measures under CEQA and/or other conditions of approval that result in changes to the project site plan or program, or the implementation of off-site transportation system improvements.

Intent of the Guidelines

The Mobility Element of the Cupertino General Plan seeks to "implement strategies that make alternative modes of transportation attractive choices…[and] help reduce the strain on the automobile network, and improve health and quality of life for Cupertino residents and businesses." The TS Guidelines support this goal by evaluating new projects against the policies of the *General Plan* and other relevant documents. In addition, these Guidelines fulfill Goal M-7 of the Cupertino General Plan, which requires that the City "review and update TIA [transportation impact analysis] policies and guidelines that allow for adequate consideration for all modes of transportation including automobiles, walking, bicycles, and transit."

For environmental analysis, the TS Guidelines incorporate the requirements of California's Senate Bill 743 (SB 743) and subsequent changes to *CEQA Statute & Guidelines* where vehicle delay is replaced with vehicle miles traveled (VMT).

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

- Local Transportation Analysis (LTA) for small projects. An LTA focuses on site plan review, assessment of the site integration with the transportation system, and a VMT analysis showing less than 836 daily VMT (the threshold for a small project).
- Transportation Analysis (non-CEQA) to assess medium and large projects for consistency with the City's *General Plan* and the Santa Clara County CMP.
- Transportation Analysis for analyzing and determining impacts under CEQA.

City staff will review transportation studies based on the process presented in these guidelines. ***However, each project is unique, and the TS 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 Community Development Department and Public Works Department staff is encouraged to confirm the type and level of analysis required for each study.***

The resulting transportation study is intended to provide decision-makers with information about the transportation system impacts of a project and, when appropriate, recommend conditions of approval or mitigation measures under CEQA.

Environmental Evaluation

SB 743 changed some of the transportation significance criteria used in CEQA analyses. Specifically, vehicle level of service (LOS) is no longer used as a determinant of significant environmental impacts, and a VMT analysis is required. These guidelines outline the required methods and thresholds with which to evaluate projects consistent with the latest *CEQA Statute & Guidelines*.

Project Types

A transportation study is typically prepared for projects before a discretionary action is taken. The following types of projects, which involve land development and/or construction activity in and around Cupertino and affect the adjacent transportation system, may require a transportation study.

- **Land use entitlements** requiring discretionary approval by Cupertino, which include *General Plan* amendments, precise roadway plans and specific plans (and related amendments), zoning changes, use permits, planned developments, site plan review committee approval, and tentative subdivision maps.
- **Land use activity** advanced by agencies other than Cupertino, such as school districts, that is subject to jurisdictional review under state and federal law, or advanced within Cupertino 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, county roads and state highways that may impact City facilities and services. Certain projects fall under the purview of the state, whereby comments are typically received from Caltrans, and may require a level of impact analysis upon state facilities such highways, freeways, ramps, and intersections.
- **Subsequent phased projects,** such as projects that were phased with no plans of implementation or projects that remained stagnant for more than seven years.

The *Determining the Need for a Transportation Study* chapter identifies specific project parameters that may necessitate a transportation study.

CEQA and Non-CEQA Terminology

To distinguish the CEQA analysis from the non-CEQA analysis, the analyses apply different terminologies as summarized below in **Table 1**.

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

Non-CEQA Term	CEQA Term
Transportation Analysis	CEQA Transportation Analysis
Threshold or performance standard	Significance criteria
Substantial effect or deficiency	Significant impact
Required improvement	Mitigation measure
Existing Conditions	Baseline Conditions
Background Conditions	Not applicable

Determining the Level of Transportation Study

What level of transportation study is required?

The need for a transportation study may stem from General Plan consistency, CMP 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.

The screening criteria vary by the type of analysis being completed. This section outlines the different screening thresholds for General Plan consistency, CMP consistency, and CEQA compliance. All projects need to document and justify the applied screening criteria for City review and concurrence. The process used to determine the level and type of study required is discussed below and helps determine if projects are a) subject to CEQA analysis and b) required to prepare a transportation study (either a simple Local Transportation Analysis (LTA) or a comprehensive Transportation Analysis (TA)). This screening is to be performed by Traffic Engineering staff in the Public Works Department, Planners in the Community Development Department, and/or consultants retained to assist City staff.

Trip Generation Screening

The amount of detail required in a transportation study is generally based on the project's expected level of daily vehicle trip generation; however, even relatively small projects may require more detailed analysis depending on the project location, such as near a school or other sensitive site, or project characteristics, such as a high level of truck trip generation. At a minimum, each transportation study will document the project's estimated vehicle trips (daily and peak hour), daily vehicle miles traveled, results of a site plan review, and results of an assessment of the site integration with the existing transportation network. Projects with fewer than 110 daily trips will typically use non-model VMT analysis methods and will require a local transportation analysis (LTA). Projects generating more than 110 daily trips will typically require a detailed VMT assessment using a travel model and a TA report. As discussed later in this document, the non-CEQA and CEQA analysis will be clearly documented for each transportation study.

- ***Tier 1: Less than 110 daily trips***: The transportation study should focus on site plan review and assessment of site integration within the existing transportation system. For most projects, this review would likely be conducted at the staff level. For CEQA screening, a project generating less than 110 daily trips may only require a VMT analysis to show the project generates less than 836 daily VMT (the threshold for a small project). Typical projects that would fall under the 110 daily trip thresholds would be 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. Projects of this size will require a LTA, at the discretion of the Community Development Department. However, if the project is controversial or has unusual characteristics that could lead to unusually long trip lengths, staff may request a more comprehensive TA.

- ***Tier 2: Between 110 and 1,000 daily trips and less than 100 peak hour trips***: The transportation study should include site plan review, site access assessment for all travel modes, and may include off-site intersection evaluation including level of service, vehicle queues, signal warrants and collision assessment for approximately two to four intersections near the Project site. The 1,000 daily trip threshold equates to approximately 100 peak hour trips; prototypical examples include multi-family home developments up to 165 units, office developments up to 100,000 square-feet, or retail uses up to 25,000 square feet (not accounting for pass-by trips). A project generating more than 110 daily trips will need to conduct a detailed VMT assessment to determine a project's effect on the environment under CEQA, and would be required to prepare a comprehensive transportation study referred to as a TA.
- ***Tier 3: Greater than 1,000 daily trips or greater than 100 peak hour trips***: The transportation study should include the elements discussed above, as well as additional intersection evaluation based on the expected geographic influence of project trips. In addition, the study should discuss cumulative / long-term effects, and incorporate changes based on reasonably expected land use and transportation projects. A project generating more than 1,000 daily trips will need to conduct a detailed VMT assessment to determine a project's effect on the environment under CEQA, and would be required to prepare a comprehensive transportation study referred to as a TA. This level of trip generation also meets the requirements for additional transportation study from the Santa Clara County CMP.

All projects are required to provide a site access and circulation analysis, including parking supply and passenger and/or freight loading zone size and location evaluation to demonstrate that the project conforms to City policies and development standards as defined in the Cupertino Municipal Code. Key elements of this assessment are included in the checklist in **Appendix A: Site Access and Circulation Plan Review**.

CEQA VMT Screening

Projects that meet certain screening criteria may be exempt from the preparation of a VMT assessment for CEQA transportation assessment purposes (although VMT calculations may still be needed for air quality, noise and climate change evaluations). However, even if a project is exempt from VMT analysis, it may still be required to evaluate the following CEQA requirements listed in Appendix G of the *CEQA Statute & Guidelines*:

- Conflicts with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities;
- Substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

- Results in inadequate emergency access.

CEQA screening criteria used in Cupertino 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).

Land Use and Transportation Project VMT Screening

The concept of project screening is that some projects have characteristics that readily lead to the conclusion that they would not cause a VMT impact, and therefore could be screened out of doing a detailed VMT analysis. A project may rely on screening if consistent with applicable general plan policies and supported by substantial evidence demonstrating cumulative VMT is declining.

The Cupertino City Council adopted Chapter 17.08: "Evaluation of Transportation Impacts under the California Environmental Quality Act" of the Cupertino Municipal Code in March 2021. This chapter includes definitions, a purpose, applicability of regulations and VMT standards for transportation impact analysis under CEQA. In addition to the small project screening described in the "Trip Generation Screening" section, the City of Cupertino will allow a relatively quick assessment of the project based on the screening criteria listed in the "Applicability of Regulations" (17.08.030), which includes:

- *A project located within one-quarter mile of High-Quality Transit Corridor or transit stop as defined by CEQA;*
- *Local-serving retail of 50,000 square feet or less;*
- *Land-use projects consisting of 100% affordable housing.*

To complete the screening process a transportation study needs to document what was considered and the screening results. Additional detail is provided below for each screening criteria used to determine if a detailed VMT analysis is needed.

- **Small Projects**: As discussed in the "Trip Generation Screening" section, small land use projects may be screened out of further VMT analysis if they are very small or can be demonstrated to primarily attract trips that would otherwise travel longer distance. Projects defined as generating 836 or fewer average daily vehicle miles traveled, absent substantial evidence indicating that a project would generate a potentially significant level of VMT, may not need any additional VMT analysis. Based on research for small project triggers (see **Appendix B: Small Project Screening for SB 743**), this equates to approximately 10,000 square feet or fewer of nonresidential (e.g., office) land use or residential projects of 20 units or fewer. Each project is required to document the estimated vehicle miles traveled it will generate.

- **Transit Priority Areas (TPA)**: Projects located within a 1/4-mile walkshed around an existing major transit corridor or a major transit stop[1] (i.e., along Stevens Creek Boulevard in Cupertino (where the VTA 23 bus operates)) may be screened out of further VMT analysis. However, TPA screening will **not** apply if the project meets *any* of the following criteria:
    - The project has a Floor Area Ratio (FAR) of 0.75 or less;
    - The proposed parking exceeds the minimum required by the Zoning Code or applicable plan;
    - The Project is inconsistent with the *City's General Plan*, applicable Specific Plan, or applicable Sustainable Communities Strategy (as determined by the lead agency, with input from ABAG and MTC);
    - The Project removes or reduces the number of existing on-site affordable residential units; or,
    - Significant levels of VMT generation are anticipated due to project-specific or location-specific information.
- **Affordable Housing**: 100 percent restricted affordable residential projects in infill locations (i.e., development within unused and underutilized lands within existing development patterns).
- **Neighborhood-Serving Retail Project**: Neighborhood-serving retail projects that are less than 50,000 square feet, which serve the immediate neighborhoods. Examples include grocery stores, pharmacies, dry cleaners, coffee shops, convenience markets, and tutoring centers.
- **Transportation Projects that do not Add Vehicle Capacity**: Some transportation projects are highly unlikely to create VMT impacts, and can be presumed to have a less than significant impact on VMT. These include projects that reduce the number of lanes on a roadway ("road diets"), bicycle and pedestrian infrastructure projects, traffic calming projects, minor signal timing adjustments, and other roadway projects that are not intended to add vehicle capacity or reduce vehicle delay. (See additional discussion in the *Transportation Analysis (CEQA) for Transportation Projects* chapter).

Projects that do not require CEQA VMT analysis may still require a transportation study to assess other CEQA considerations such as consistency with programs, plans or, policies, design hazards, or emergency access.

Recommended TS Process and Documentation

City staff will generally retain a transportation consultant to conduct the required transportation study and manage the consultant contract. Though funding for a required transportation study is generally supplied by the project applicant, the consultant contract will be executed with the City to avoid

[1] "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.

perceived conflict of interest. In some cases, review by other affected jurisdictions will be required. **Appendix C: Transportation Study Report Outline** contains a recommended outline for the transportation study documentation.

Each transportation study 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 study 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.

Role of City Staff

The transportation study will be prepared at the direction of City Public Works and Community Development Department staff. This will ensure that potential transportation improvements and environmental impacts are considered as early as possible in the planning process. Development of a transportation study should include:

- Pre-application coordination, which will include a discussion of the LTA or TA requirements.
- Approval of the scope of work, which includes project, site location, analysis methods, area-wide assumptions, study elements, study time periods, and transportation data collection methods.
- Approval of the project trip generation (person and vehicle), trip distribution, and VMT approach and results.
- Review of all assumptions and the results of Existing Conditions analysis.
- Review of the administrative draft report, with adequate time for comments.
- Review of a draft report, with adequate time for comments.

If information from a transportation study will be incorporated into the transportation and circulation section of an environmental document (e.g., Initial Study, Mitigated Negative Declaration or Environmental Impact Report), the format of the transportation study report should be coordinated with the environmental consultant and City staff.

Consultation and Coordination with Other Jurisdictions

Section 15086 of the *CEQA Statute & Guidelines*[2] shall be followed as the basis for satisfying consultation requirements. For Tier 2 and Tier 3 transportation studies, the study area may include study intersections in other jurisdictions and 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 methods, 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 I-280 and State Route 85.

[2] *The California Environmental Quality Act Statutes & Guidelines*, California, 2020.

Roadway crossings of rail lines are another overlap area that requires coordination with the California Public Utilities Commission (CPUC).

Trip Generation and Forecasting Tools

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

For Tier 3 projects, the guidance presented below should be used alongside guidance and methods presented in the Santa Clara Valley Transportation Authority (VTA) *Transportation Impact Analysis Guidelines* (2014) ("VTA TIA Guidelines").

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 transit, bicycle, and pedestrian trips; and vehicle trip generation should be reported for each vehicle type including single-occupant vehicle, carpool, and rideshare/transportation network company (TNC) (i.e., Uber/Lyft) vehicle 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 generation. 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 conducting new 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*[3] or other relevant sources may be used for trip rate estimation. When using ITE vehicle trip 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 sizes (fewer than 20 studies) or containing a low R^2 value (less than 0.75).[4]

[3] *Trip Generation Manual* (10th Edition), Institute of Transportation Engineers, 2017.

[4] 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).

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).

The City reserves the right to require the project applicant to conduct local trip generation surveys for select projects depending on project characteristics as well as land use and travel 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, person trip generation should be presented by mode (e.g., single occupant vehicles (SOV), carpool, rideshare/TNCs, 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 and adjustments based on travel behavior at the study location. In addition, person trip generation by mode may be derived using an approved analysis tool that incorporates data from the above sources. Either method may be used to apply a vehicle trip credit to the previously calculated vehicle trip generation totals using the processes discussed below.

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 transportation impacts.
- **Option 2:** Estimates can be made using a lower intensity use if the City and project applicant 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 study 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. Uses are considered as existing if they are actively present on the project site at the time data is gathered for the transportation impact analysis. Additionally, if a planned (but not constructed) use was already permitted for the site, the baseline for analysis may be the permitted use if all mitigation measures from the approved use remain applicable, subject to City staff approval.

For the evaluation of vehicle miles of travel, VMT credit for the prior use depends on how the project changes the baseline condition, if the project sponsor had ownership and control of the previous land use, and the reason for stopping the previous land use. Baseline conditions are typically defined at the beginning of an environmental analysis and a CEQA analysis needs to isolate the effects of the project

to clearly define the project's effect on the baseline condition. To receive VMT credit, the project sponsor needs to demonstrate continuous ownership of site, with on-site occupancy paused only due to the redevelopment activity and not because of some economic or other condition outside the control of the project sponsor. However, this credit should only be applied to total project generated VMT, and should not be included when calculating a VMT rate.

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 Cupertino recognizes that the rates may overstate the traffic impact for developments that contain a mix of uses (and "capture" some vehicle trips internally). Additionally, certain commercial land uses attract vehicles already using 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 like active transportation trips (e.g., walking or bicycling) or transit trips in a setting like Cupertino, where destinations may be reached on foot (a "park once" environment). These trips do not add vehicle traffic to the local roadway system. At mixed-use sites, trip generation estimates may use trip adjustments due to land use variables such as **D**ensity, **D**iversity, **D**esign and **D**estination to enhance its sensitivity to the built environment. These four most discussed built environment factors and their effects on vehicle trips are summarized below:

- Net Residential and Employment **D**ensity – A wide body of research suggests that, all else being equal, denser developments generate fewer vehicle trips per unit than less dense developments.
- Jobs/Housing **D**iversity – Research suggests that having residences and jobs in close proximity will reduce the vehicle-trips generated by each land use by allowing some trips to be made on foot or by bicycle.
- Walkable/Bikeable **D**esign – Many pedestrian and bicycle improvement projects assume (supported by research findings) that improving the walking/biking environment will result in more active travel trips (e.g., walking, bicycling, etc.) and a resulting reduction in vehicle travel.
- **D**estination Accessibility – Research shows that, all else being equal, households situated near regional centers of activity generate fewer vehicle trips and VMT.

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 study 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 study.

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 *ITE Trip Generation Handbook* Chapter 10 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 like 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.

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 enhancements, car sharing programs, traffic calming, and site design to support other travel modes;
- **Parking Policy / Pricing** – Parking supply limits, unbundled parking costs, and public parking pricing;
- **Transit System Improvements** – Built environment and transit stop access improvements; and,
- **Commute Trip Reduction** – Transit fare subsidies, employee parking cash-outs, alternative work schedules, priced workplace parking, shuttles, and employer sponsored vanpools.

TDM strategies committed to by a project in their application and project description should be included in the analysis, with the corresponding recommended reduction in vehicle trip generation for each element clearly stated. Calculations of the VMT or vehicle trip benefits of TDM programs may be

performed in accordance with the California Air Pollution Control Officers Association (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures* (2010), local empirical data, or other sources (subject to approval by City staff). Any trip rate reductions claimed for a TDM strategy are subject to City approval, and may require ongoing monitoring of program effectiveness as a condition of approval.

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 Santa Clara Valley Transportation Authority (VTA)-City/County Association of Governments of San Mateo County (C/CAG) Bi-County Model ("VTA Travel Model") or other model as approved by City staff, for Tier 3 plans or projects[5] that require a quantitative VMT assessment, 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 results of the travel model sensitivity tests, a sub area validation of the travel model may be needed. Once sensitivity tests (and sub-area validation, if needed) of the travel model are completed, the following travel model runs shall be evaluated:

- Baseline without Project
- Baseline with Project
- Cumulative without Project
- Cumulative with 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.

For Tier 2 projects that require a quantitative VMT assessment or Tier 1 projects where use of a travel demand model may not be appropriate, alternative methods for quantifying VMT may be used including the Santa Clara County VMT Evaluation Tool (available at https://vmttool.vta.org/ as of April 2021), applying daily trip generation forecasts, trip length data for comparable uses from the VTA Travel Model or other applicable data sources, and project population estimates.

[5] Projects requiring a tier 3 transportation study would generally include General Plan Updates, major General Plan Amendments, Specific Plans, and employment uses of 100,000 gross square feet or more.

Transportation and Circulation Studies (non-CEQA)

What is included in a Local Transportation Analysis or Transportation Analysis?

The contents and extent of a transportation study 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. In general, projects will prepare either:

a. A Local Transportation Analysis (Tier 1 projects); or,
b. A Transportation Analysis (Tier 2 and Tier 3 projects)

The City is committed to a balanced level of analysis for all modes of travel. The methods presented in this chapter include robust data collection and analysis techniques for pedestrian, bicycle, and transit networks, in addition to vehicle circulation. For Tier 3 projects, the guidance presented below should be used alongside guidance and methods presented in the VTA TIA Guidelines.

Scope of Analysis

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 transportation study will evaluate the ability of the transportation system to provide multimodal site access for land development projects, and complete street elements for transportation projects.

Local Transportation Analysis

The study area for tier 1 projects should consist of, at a minimum, the roadways providing immediate access to the Project site, including any pedestrian, bicycle, or transit facilities. For most projects in this tier, analysis will focus on project driveways, and 2-4 intersections near the project.

Transportation Analysis

In addition to the level of study required for a Local Transportation Analysis, the City requires that Tier 2 projects provide additional 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 ten or more peak hour trips per lane to any movement should be considered for analysis. The study area should include the nearest CMP facility

or CMP-monitored intersection to evaluate the proposed project's conformity with the CMP, even if fewer than ten peak hour trips per lane are expected at the intersection.

For Tier 3 projects, the VTA TIA Guidelines should be followed to identify additional CMP intersections that may require study.

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. The consultant is expected to perform field reviews to completely assess existing conditions.

Key Study Elements

The extent and complexity of a transportation study can vary greatly. **Table 2** summarizes the basic requirements for every project requiring a complete transportation study, including both Local Transportation Analysis (LTA) and Transportation Analysis (TA). Note that while most topics are required for both LTAs and TAs, the study area for a Tier 1 project is expected to be much smaller and limited in scope. 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 circumvent substantial changes to the project site plan/description after the transportation study is completed, a preliminary site-plan shall be included for a "fatal flaw" evaluation.

Table 2: Transportation Study – 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*.
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, 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 should evaluate vehicle queues at the drive-through. Projects with a gas station component should evaluate how fuel delivery trucks would access the site. The City may require other analyses based on specific uses. School transportation studies will require on-site circulation plan integral to their preferred routes to school. Include on-site drop off / pick up plan.
Pedestrian Facilities	Identify any 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 comfort).

Table 2: Transportation Study – Key Study Elements and Evaluation Criteria

Study Element	Evaluation Criteria
Bicycle Facilities	Identify any existing or planned facilities (per the City of Cupertino *Bicycle Transportation Plan*) that may be affected by the project.
Transit	Identify any existing or planned transit facilities that may be affected by the project. If appropriate, document how the project improves access to or utilization of transit.
Transportation Demand Management (TA Only)	Describe and quantify the effectiveness of the proposed transportation demand management measures included in the project description.
Safety Assessment	Assess site access and egress for potential geometric design hazards or other safety concerns.
Trucks (or Other Large Vehicles)	For relevant industrial projects, identify the number of truck trips that will be generated, including Surface Transportation Assistance Act (STAA) trucks, and design facilities necessary to accommodate these trucks.
Passenger Loading and Pick-up/Drop-Off (TA Only)	For projects that may have a large concentration of pick-up/drop-off activity, the project site circulation and pick-up/drop-off areas must be reviewed to ensure sufficient passenger/freight loading space and circulation routes are provided. Modifications to the site circulation and/or pick-up/drop-off may be recommended. This analysis should include a discussion of transportation network companies (TNC) activity as appropriate.
Off-Site Traffic Operations	Vehicle Level of Service analysis should be conducted for all roadway segments and intersections included in the study area for Tier 2 and Tier 3 projects. 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) unless other methods or tools that are more applicable to the study area or project context are approved by City staff.
Intersection Traffic Control	Evaluate unsignalized intersections located within the study area to determine appropriate traffic control.
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)
Other Jurisdictional Requirements	In situations where several agencies must approve a development or are responsible for affected roadways, the applicant must contact lead and responsible agencies to determine issues to be addressed, scope of study, etc. In general, the applicant will be responsible for analyzing project impacts against appropriate jurisdictional thresholds; however, the analysis method will be determined by the City in compliance with CEQA and the impacts will be mitigated consistent with City standards.

Multimodal Site Access and Circulation

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

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 – 10:00 AM)
- Weekday evening peak (4:00 – 7:00 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)
- 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.

Scenarios for a Transportation Study (non-CEQA)

How many transportation study scenarios are required?

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
- Consistency with the *General Plan*
- Consistency with the CMP

The range of scenarios includes Existing Conditions (typically for projects that generate between 110 and 1,000 daily trips), Background Conditions (potentially some that generate between 110 and 1,000 daily trips, and all projects that generate more than 1,000 daily trips), and Cumulative Conditions (all projects that generate more than 1,000 daily trips). Projects consistent with the *General Plan* will only

be required to complete the Existing and Background conditions analysis, where Existing Conditions looks at the effect of the proposed project on the existing system within the next year or two, and Background Conditions typically looks at a longer time frame of about three to five years. Inclusion of all three analysis conditions (e.g., Existing, Background, and Cumulative), would typically occur for large development projects generating more than 1,000 daily vehicle trips, General Plan Amendments, Precise Plans, and Specific Plans (and related amendments), with Cumulative Conditions having a time horizon of 15 to 20 years.

The following analysis scenarios are intended to document existing or future conditions, any existing 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 study scenario are presented below.

Existing Conditions

Existing without Project

These conditions are based on recent field observations and recent (less than two years old) traffic count data.

Existing with Project

Traffic volume forecasts for roadway analysis reflecting Existing Conditions with traffic generated by the proposed project. For re-use or conversion projects, this will involve accounting for any existing use of the site that remains or will be removed. It should also qualitatively describe how the project will affect transportation for other modes including compliance or relation to other City documents.

Background Conditions

Background without Project

Traffic volume forecasts for roadway segment and intersection analysis should reflect Existing Conditions with growth due to approved development that is expected to be operational before or concurrently with the proposed project. This scenario may not be needed if the study area has limited or no approved developments. A list of approved and pending projects can be obtained from City of Cupertino Community Development Department.

Background with Project

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 with all recently approved development and physical improvements including the proposed project.

Cumulative Conditions

Cumulative without Project

Transportation conditions for all travel modes in the study area reflecting all approved projects, pending projects, or expected development of other areas of Cupertino designated for growth under the *General Plan*. In most cases, the project site will likely be vacant under this scenario. In some cases, this scenario may need to account for any existing uses on the site that could continue, and potential increases in development allowed by ministerial approvals.

Cumulative with Project

This scenario represents the cumulative future transportation conditions with anticipated changes to the transportation system and the additions of project trips.

Data Collection

Accurate data is essential to achieve a high level of confidence in transportation study 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 City of Cupertino *Bicycle Transportation Plan, Pedestrian Transportation 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.
    - Traffic volumes should not be influenced by a holiday, weather, construction, or other temporary change, and should occur when area schools are in typical session.
    - 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.
- **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 City of Cupertino, County, Caltrans, or other adjacent jurisdiction) and verified during site visits.

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 and the associated level of defensibility of the transportation study. For traffic operations, this requires following the procedures and techniques published in the most recent *Highway Capacity Manual* (HCM).

Traffic Signal Parameters

Traffic signal parameters are as important as accurate turning moving counts for determining intersection LOS. As summarized in **Table 3**, 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, Caltrans or other adjacent jurisdiction staff, and verified by field observations. Please note, CMP and Santa Clara County intersections may require specific traffic signal parameters that vary from the guidance below.

Table 3: 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 *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 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.
Yellow Phase	Ranges from three to six seconds, with longer values in this range used with phases serving high-speed movements. If a traffic signal is present under Existing Conditions, use existing yellow phase (HCM, Chapter 19).
All Red Phase	One second per phase (if a traffic signal is present under Existing Conditions, use existing length of all red phase). This phase may be greater on high-speed roadways.
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 centers – limit signal cycle lengths to 120 seconds or less. Ensure that minimum pedestrian crossing times and bicycle clearance intervals are satisfied.
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%.
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.

Methods and Software

Intersection operations shall be analyzed using Highway Capacity Manual (HCM) methods. **Table 4** provides a matrix of software options for analysis. Cupertino does not require use of a particular software suite for analysis. While Traffix has historically been used for assessment of traffic conditions in Santa Clara County, use of Synchro or a similar program can better integrate specific timing and phasing parameters, the interaction in delay between adjacent intersections, as well as the number of pedestrian calls and bicycles present. Special considerations related to congested conditions, state highway facilities, and roundabouts are discussed in more detail below.

Table 4: Software Analysis Options

Software/ Method[1]	Traffic Studies		Roundabouts		Arterial/ Interchange Operations	Congested or Non-Standard Conditions[4]		
	Operations[2]	Signal Coor-dination[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. Care should be taken in analyzing intersection LOS at closely spaced intersections, as standard intersection analysis does not adequately show the compound effects of intersection delay.

Transportation Study Deficiencies

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

State Highway Analysis

The analysis of state highways, including freeways and on- and off-ramps, should be conducted consistent with the VTA TIA Guidelines.

Roundabout Analysis

Typically, roundabout operations are analyzed in conjunction with a conceptual roundabout design. Different roundabout analysis methods (FHWA, Australian Gap Acceptance, UK Empirical, HCM 2010, and microsimulation) provide different delay results and corresponding capacities. The deterministic roundabout analysis methods described in the HCM can be used for roundabouts operating under low volume and isolated conditions (without influence from nearby intersections). HCM methods allow the use of calibration factors to reflect regional differences in roundabout capacity. Calibration factors specific to California are available in the report *Roundabout Geometric Design Guidance*, 2007, California Department of Transportation Division of Research and Innovation. Roundabout 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.

As described in the HCM, the use of alternative analysis methods is needed for complex multi-lane roundabout designs, roundabouts operating near or at capacity, roundabouts with high pedestrian and/or bicycle volume, and at roundabout locations where upstream or downstream operation may interact with adjacent roundabouts or signals. Microsimulation of the roundabout and surrounding intersections 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 roundabout versus signal control at a given location, long-term maintenance costs should be estimated and considered in the evaluation.

Mobility Deficiency Criteria

Transportation analyses evaluate intersection operations focused on specific traffic issues such as vehicular delay, queuing and safety. An emphasis is placed on the existence and provision of pedestrian, bicycle, and transit facilities and services, in part to reduce traffic congestion and air quality impacts associated with automobile use. **Table 5** outlines mobility deficiency criteria for each study element, with deficiency criteria and applicability to a local transportation or CEQA analysis presented below. The mobility deficiency criteria can be used to identify conflicts with existing or planned multimodal facilities. **Table 5** also notes if the criteria is applicable for CEQA review or for local transportation study review only.

CMP Deficiency Criteria

To determine consistency with the CMP, the analyst should refer to the most current VTA Congestion Management Program policy document as well as the VTA TIA Guidelines.

Improvements

When deficiencies are identified, improvements should be incorporated into projects either as conditions of approval or CEQA mitigation, presuming that they are deemed feasible and consistent with the General Plan. Applicants will also be required to pay all applicable local and regional transportation impact fees. To the extent a project is conditioned to construct an improvement that is included within the local or regional fee program, a reimbursement agreement may be sought for a portion of the improvement. **Table 6** 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. This list is not intended to be all-inclusive but provides some options to consider. All improvements are subject to review and approval by City staff.

Improvements should be identified 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, the improvement description should describe how the improvement contributes to the multimodal transportation system in Cupertino. In addition, the secondary effects of a transportation improvement on VMT needs to be evaluated [i.e., whether the improvement is VMT inducing per guidance in **Appendix D: List of Transportation Projects Exempt from Environmental Analysis (CEQA)**].

Table 5: Mobility Deficiency Criteria

Study Element	Deficiency Determination	Applicability
Parking	Project increases off-site parking demand above estimated available supply.	Local
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 (*Highway Design Manual*, MUTCD, 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.	Local and CEQA
Pedestrian Facilities	Project fails to provide safe and accessible pedestrian connections between project buildings and adjacent streets, trails, and transit facilities. Project is inconsistent with the City of Cupertino *Pedestrian Transportation Plan* or future plans. Project adds trips to an existing facility along the project frontage that does not meet current pedestrian design standards.	Local and CEQA
Bicycle Facilities	Project disrupts existing or planned bicycle facilities or is otherwise inconsistent with the City of Cupertino *Bicycle Transportation Plan* or future plans. Project adds bicycle trips along project frontage to an existing facility that does not meet current bicycle design standards.	Local and CEQA
Transit	Project disrupts existing or planned transit facilities and services or conflicts with City adopted plans, guidelines, policies, or standards pertaining to transit.	Local and CEQA
Heavy Vehicles (Trucks and Buses)	A project fails to provide adequate accommodation of forecasted heavy traffic or temporary construction-related truck traffic consistent with City or industry standards (*Highway Design Manual*, MUTCD, etc.).	Local and CEQA
Off-Site Traffic Operations	95th percentile vehicle queues exceed the existing or planned length of a turn pocket or freeway off-ramp, resulting in a speed differential with the adjacent lane of travel; or where a queue exceeds the available storage without the project, project traffic increases the queue by more than 50-feet. The proposed project introduces a design feature that substantially increases safety hazards.	Local and CEQA

Table 5: Mobility Deficiency Criteria

Study Element	Deficiency Determination	Applicability
Intersection Traffic Control	Addition of project traffic causes an intersection to fail to maintain LOS Standards as specified in General Plan Policy M-1.2 • **LOS D** or better at most major intersections • **LOS E+** or better at the intersections of Stevens Creek Boulevard/De Anza Boulevard; Stevens Creek Boulevard/Stelling Road; and De Anza Boulevard/Bollinger Road. ***Or,*** • Exacerbates unacceptable operations by increasing the average critical delay by four seconds or more and increasing the critical volume-to-capacity (V/C) ratio by 0.01 or more; or • Increases the V/C ratio by 0.01 or more at an intersection with unacceptable operations when the change in critical delay is negative (i.e., decreases). This can occur if the critical movements change.	Local
General Plan Consistency	Project conflicts with one or more mobility, safety, or other related goals, policies, or actions set forth in the *General Plan*.	CEQA
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.).	Local and CEQA
Requirements for Other Jurisdictions	The project exceeds established deficiency thresholds for transportation facilities and services under the jurisdiction of other agencies.	CEQA

Table 6: 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 for access to, from, and through the development for pedestrians and bicyclist • Construct Class I bicycle paths, 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 bulbouts, 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 • Evaluate unsignalized intersections with substandard LOS for conversion to roundabout intersection control or for signalization. • Provide improvements to traffic signal phasing, or lengthen existing turning pocket • 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 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

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, 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* (6th Edition) contains methods for evaluating 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 which can be 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.

Transportation Analysis (CEQA) for Land Use Projects

Does my land use project result in an environmental impact?

On September 27, 2013, Governor Jerry Brown signed SB 743 into law and started a process intended to fundamentally change transportation impact analysis as part of CEQA compliance. Specifically, **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 necessary to balance the needs of congestion management more appropriately 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 Statute & Guidelines*. OPR selected VMT as the preferred metric for assessing passenger vehicle-related impacts and issued revised *CEQA Statute & Guidelines* in December 2018, along with a *Technical Advisory: On Evaluating Transportation Impacts in CEQA* (December 2018) to assist practitioners in implementing the *CEQA Statute & Guidelines* revisions to use VMT as the new metric. The City of Cupertino City Council adopted Chapter 17.08: "Evaluation of Transportation Impacts under the California Environmental Quality Act" of the Cupertino Municipal Code in March 2021. This document includes thresholds of significance for land use projects and transportation projects under CEQA.

Methods

Initial Screening

Cupertino's process for screening out projects that may be exempt from the preparation of a VMT assessment for CEQA is discussed in the Determining the Level of Transportation Study section.

Assessment for Non-Screened Projects

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

1. **Total project generated VMT per service population**[6] is the daily VMT of all vehicle trips, for all vehicle types and trip purposes for all project land uses, divided by the service population (i.e., sum of residents plus employees) in the analysis area generating the VMT. Total project generated VMT is calculated by summing the "VMT from" and "VMT to" the project site (or a larger area when the project is a plan such as a Specific Plan or General Plan). These calculations are usually performed using outputs from a travel forecasting model.
2. **Project's effect on VMT** is the total boundary VMT that occurs within a selected geographic boundary (e.g., City, County, or region) by any type of vehicle, for any trip purpose, and includes local trips as well as trips that pass through the area without stopping. The total boundary VMT captures the project's combined effect of new VMT, shifting of existing VMT to/from other neighborhoods, and/or shifts in existing VMT to alternate travel routes or modes.

The following scenarios should be evaluated:

- **Baseline Conditions** evaluates total project generated VMT per service population under existing with project or baseline with project conditions, and compares the result to the citywide average.
- **Cumulative Conditions** evaluates the project's effect on VMT in a future year, linked to the future year used in the most current version of the VTA Travel Model.

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

Scenarios for Transportation Analysis (CEQA)

Baseline Conditions

An impact under CEQA begins with a change to the existing environment, and, therefore, Existing (or Baseline) Conditions must be evaluated. 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, when the environmental analysis commences, from both a local and regional perspective.

Baseline without Project

Baseline VMT estimates will be prepared based on the most recent base year using the VTA Travel Model and may require adjustment to the baseline year of study.

[6] "Service population" most typically includes residents and employees, it may also include any other populations used to estimate trip generation: for instance, at a school site, the service population may include both employees and students. The precise definition of the service population will vary based on model specifications and land use.

Baseline with Project

All projects that do not meet the VMT screening criteria are required to estimate total project generated VMT per service population under Baseline with 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.

Cumulative Conditions

Cumulative Conditions provide a long-range view of future travel patterns based on the region's land use and transportation system projections. An environmental analysis must evaluate a project's effect on VMT (*CEQA Statute & Guidelines* Section 21100(b)(5)). Because VMT will fluctuate with population and employment growth, changes in economic activity, and changes in travel modes including the expansion of new vehicle travel choices (e.g., the emergence of transportation network companies such as Uber and Lyft, autonomous vehicles, etc.), an impact analysis must consider the cumulative effects of the proposed project, these changes, and all other projects.

An evaluation of the project's effect on VMT is a comparison of the total boundary VMT within Santa Clara County between Cumulative without Project Conditions and Cumulative with Project Conditions. This evaluation of the project's effect on VMT identifies the direct, indirect, and cumulative effects of a project on VMT and considers uncertainty of new travel trends. Projects requiring a General Plan Amendment or which have not otherwise been studied in a CEQA analysis are required to evaluate the project's effect on VMT under Cumulative Conditions.

Cumulative without Project

Cumulative without Project total boundary VMT estimates should be based on the horizon year of the VTA Travel Model, ensuring the travel model does not already contain the land uses or transportation improvements associated with the Project.

Cumulative with Project

Cumulative with Project total boundary VMT estimates should be based on the horizon year of the VTA Travel Model and include the land use and transportation improvements associated with the Project. Depending on the land use project, the land use inputs may either reflect: 1) an increase in the total regional land use supply with the addition of project land use, or 2) no net change in the regional land use supply but with project land use reallocated to the project site, from a different location than under Cumulative without Project Conditions.

CEQA Thresholds of Significance

Based on Appendix G: Environmental Checklist Form in the *CEQA Statute & Guidelines*, (shown in *italics and underlined* below), Cupertino's Municipal Code or refined deficiency criteria listed earlier in this document in **Table 5**, 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 transit, roadway, bicycle and pedestrian facilities*

- Transit System – Analysis of transit-related impacts encompasses two components: (1) transit capacity, and (2) the Project's consistency with local transit plans. For transit capacity, a significant impact would occur if the Project creates demand for public transit above the capacity which is provided or planned.

  To determine the Project's consistency with local transit plans, significant impacts would occur if the Project or any part of the Project:

  1. Disrupts existing transit services or facilities;[7] or
  2. Conflicts with an existing or planned transit facility; or
  3. Conflicts with transit policies adopted by the City of Cupertino, or the Santa Clara Valley Transportation Authority for their respective facilities in the study area.

- Roadway System – To determine the Project's consistency with local roadway plans, significant impacts would occur if the Project or any part of the Project:

  1. Disrupts existing or planned roadway facilities or conflicts with applicable program, plan, ordinance or policy.

- Bicycle System – The project would create a significant impact related to the bicycle system if the Project or any part of the Project:

  1. Disrupts existing bicycle facilities;
  2. Interferes with planned bicycle facilities; or,
  3. Conflicts with applicable bicycle system plans, guidelines, policies, or standards.

- Pedestrian System – The project would create a significant impact related to the pedestrian system if the Project or any part of the Project:

  1. Disrupts existing pedestrian facilities; or
  2. Interferes with planned pedestrian facilities; or
  3. Conflicts with applicable pedestrian system plans, guidelines, policies, or standards.

[7] This includes disruptions caused by the Project relative to transit street operations and transit stops/shelters; or impacts to transit operations from traffic improvements proposed or resulting from the Project.

B. *Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)*[8]

The following summarizes the land use project or land use plan VMT thresholds per the Cupertino Municipal Code "Chapter 17.08: Evaluation of Transportation Impacts under the California Environmental Quality Act" as of March 2021 (italics and bolding used for citation of Municipal Code).

- The VMT significance thresholds for land use projects and plans compared to baseline conditions are:

    1. Project Impact: A significant impact would occur if the total project generated VMT per service population for the project would exceed a level of 14.4% below the citywide baseline VMT rate.
    2. Project Effect: A significant impact would occur if the project increases total (boundary) countywide VMT compared to baseline conditions.

- The VMT significance thresholds for land use and transportation projects and plans under cumulative conditions are:

    1. Project Effect: A significant impact would occur if the project increases total (boundary) countywide VMT compared to cumulative no project conditions.
    2. All land use and transportation projects: A significant impact would occur if the project is inconsistent with the Regional Transportation Plan/Sustainable Community Strategy Plan (Plan Bay Area).

- The VMT significance thresholds for transportation projects are:

    1. Baseline Transportation Thresholds: A significant impact would occur if a project causes a net increase in total (boundary) citywide VMT compared to baseline conditions or opening year no project conditions.
    2. Cumulative Transportation Thresholds: A significant impact would occur if a project causes a net increase in total (boundary) citywide VMT compared to cumulative no project conditions.

C. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

D. Result in inadequate emergency access

[8] This section of the CEQA Statute & Guidelines relates to the evaluation of vehicle miles of travel (VMT).

These criteria should be cross-referenced with the information presented in **Table 5** as additional specific criteria may need to be evaluated depending on the project.

Mitigation Measures

When VMT impacts are identified, there are currently two types of project-based mitigation measures to consider:

- Physical Design (land use or transportation); and,
- Transportation Demand Management (TDM).

Project-based features consider whether modifying the project in some way could reduce VMT. The two basic modifications include changing the physical land use or transportation network design of the project, or implementing transportation demand management (TDM) strategies such that residents, workers, or visitors of the site could make fewer or shorter vehicle trips.

When VMT impacts are identified, applicants shall coordinate with the City on the most appropriate VMT mitigation measures. 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.

It should be noted that program-based mitigation measures such as VMT impact fees, exchanges, and banks, are an emerging concept that will likely evolve over the next few years. Since these are newer concepts and the City has not implemented such program-based mitigation measures, these are currently not valid options for consideration in Cupertino. The City will update these guidelines to incorporate program-based mitigations measures as they become available.

Transportation Analysis (CEQA) for Transportation Projects

Transportation 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.

Does my transportation project result in an environmental impact?

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 highways, including general purpose lanes, HOV lanes, peak period lanes, auxiliary lanes, or grade separated interchanges. 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.

Methods

Screening Criteria

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

- Added travel lanes;
- New roadway connections, including new roads or freeway overpasses; and,
- Lanes through grade-separated interchanges.

In contrast, other specific types of transportation 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; and,
- Roadway reconfigurations that are not intended to add vehicle capacity or substantially reduce vehicle delay, such as signal modifications, traffic calming projects, or intelligent transportation system (ITS) improvements.

Appendix D: List of Transportation Projects Exempt from Environmental Analysis (CEQA) includes the complete list provided in the OPR *Technical Advisory* 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 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 the other items listed in Appendix G: Environmental Checklist Form in the *CEQA Statute & Guidelines*.

All projects need to document and justify the applied VMT screening criteria.

Assessment for Non-Screened Projects

Projects not screened out through the criteria outlined above are required to complete a VMT analysis. Analysis methods and thresholds to evaluate the VMT effect of roadway projects will be assessed on a case-by-case basis, since the appropriate tool and methods will vary based on the type and scope of transportation project proposed.

Mitigation Measures

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

Appendix A: Site Access and Circulation Plan Review

A detailed site plan review is required for all projects. The transportation study should include a review and summary of findings of the following qualitative and quantitative features, in addition to the site-plan criteria identified in Table 2.

- Existence of any current traffic problems in the local area such as a high-collision location, non-standard intersection or roadway, or an intersection in need of a traffic signal.
- 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 convey 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, bicycles, and pedestrians and provision of direct pedestrian paths from residential areas to school sites, from public streets to commercial and residential areas, and from 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 B: Small Screening for SB 743

The following document provides substantial evidence to support the screening of 'small' projects for SB 743 purposes. The California Office of Planning and Research *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) relies on a trip trigger based on *CEQA Statute & Guidelines* exemptions for the screening threshold for small projects as cited below.

> *Screening Threshold for Small Projects*
>
> *Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day[19] generally may be assumed to cause a less-than-significant transportation impact.*
>
> *[19] 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.* (Quote from page 12 of the *Technical Advisory: On Evaluating Transportation Impacts* in CEQA, December 2018).

Two potential limitations of this trigger have been identified. First, the trigger is not tied to a VMT estimate. Second, the trigger does not consider residential land uses. To strengthen the evidence, we used specific California Environmental Quality Act (CEQA) exemptions related to residential projects and 2012 California Household Travel Survey (CHTS) household VMT estimates to develop the following modification to the OPR approach. The CEQA exemption sections are provided below (see the listed items (a) to (c) below and underlined text for minor land use divisions).

> ***15303. NEW CONSTRUCTION OR CONVERSION OF SMALL STRUCTURES***
>
> *Class 3 consists of construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure. The numbers of structures described in this section are the maximum allowable on any legal parcel. Examples of this exemption include, but are not limited to:*

(a) One single-family residence, or a second dwelling unit in a residential zone. In urbanized areas, up to three single-family residences may be constructed or converted under this exemption.

(b) A duplex or similar multi-family residential structure, totaling no more than four dwelling units. In urbanized areas, this exemption applies to apartments, duplexes and similar structures designed for not more than six dwelling units.

(c) A store, motel, office, restaurant or similar structure not involving the use of significant amounts of hazardous substances, and not exceeding 2500 square feet in floor area. In urbanized areas, the exemption also applies to up to four such commercial buildings not exceeding 10,000 square feet in floor area on sites zoned for such use if not involving the use of significant amounts of hazardous substances where all necessary public services and facilities are available and the surrounding area is not environmentally sensitive.

***Note**: Authority cited: Section 21083, Public Resources Code; Reference: Sections 21084, Public Resources Code.*

15315. MINOR LAND DIVISIONS

Class 15 consists of the division of property in urbanized areas zoned for residential, commercial, or industrial use into four or fewer parcels when the division is in conformance with the General Plan and zoning, no variances or exceptions are required, all services and access to the proposed parcels to local standards are available, the parcel was not involved in a division of a larger parcel within the previous 2 years, and the parcel does not have an average slope greater than 20 percent.

Note: Authority cited: Sections Section 21083, Public Resources Code; Reference: Section 21084, Public Resources Code.

Based on the 2012 CHTS, here are a range of VMT estimates for 2, 4, and 6 units based on the CA average VMT generation per household.

- CA Average – 41.6 VMT per household
  - 2 units = 83.2 VMT per day
  - 4 units = 166.4 VMT per day
  - 6 units = 249.6 VMT per day (urban areas only)

Another option is to rely on the maximum level of development allowed by CEQA exemptions and convert that value to a 'dwelling unit equivalent' measure like that used in impact fee programs. OPR estimated that non-residential uses could generate 110-124 daily trips based on a maximum project exemption size of 10,000 square feet (KSF). Using the lower end of the range and CHTS trip lengths produces a VMT equivalent for 10 KSF for CA of 836. This equates to about 20 residential households.

Appendix C: Transportation Study Report Outline

Sections for All Transportation Studies

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, pedestrians, and truck loading)
- Location map (include major streets, study intersections, and neighboring zoning and land uses)
- Scope of transportation study

3. Project Screening

- Description of whether the project meets General Plan Consistency screening criteria
- Description of whether the project meets CMP 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 systems serving the project
- Location and routes of nearest pedestrian and bicycle facilities serving the project
- Off-site intersection analysis (likely using vehicle level of service and queuing analysis) to evaluate the ability of the transportation system to provide multimodal site access
- Evaluation of CMP facilities per the VTA TIA Guidelines

- 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 delays and levels of service (LOS)

- Environmental Analysis (if VMT screening criteria are not met)
  - Description of baseline total project generated VMT per service population estimates (include site and City, and may include County and/or regional, VMT estimates for additional context), and total (boundary) VMT estimates (include City and may include County and/or regional VMT estimates for additional context)

5. Project Trip Generation and Vehicle Miles Traveled

- Table of project generated trip estimates
- Figure/map of trip distribution (in percent)
- Table of total project generated VMT per service population 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
- Other Technical Analysis discussion: LOS, Queueing, Signal Warrants, Transit, Bicycles, Pedestrians, Trucks, Parking, Traffic Calming, Access Management, Sight Distance, Park & Ride, Compliance with Policies.

CEQA Transportation Analysis Report Section

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

- Summary of total project generated VMT per service population under Baseline Conditions
- Summary of project's effect on VMT under Cumulative Conditions
- Identification of significant impacts
- Discussion of mitigation measures
- Evaluation of impacts of mitigation measures

8. 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.
- 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)

9. 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 within the project's area of influence
- Findings of project deficiencies
- Improvements for project deficiencies (include a map showing physical improvements)
- Scheduling and implementation responsibility of improvements
- Secondary effects of proposed improvements

10. Baseline without Project Conditions

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

11. Baseline with Project Conditions

- Similar content to Existing with Project Conditions

12. 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 delays and LOS (or other multimodal performance measure)
- Changes/Deficiencies to bike, pedestrian, and transit networks within the project's area of influence
- 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
- Secondary effects of proposed improvements

As-Needed Sections for Transportation Analysis Reports

13. Construction Deficiencies

- Trips due to construction workers
- Truck trips and truck access routes
- Construction worker parking impacts

14. Phasing Deficiencies (For Large Projects Only)

15. Appendices

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

Appendix D: 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.
- 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.