PROCEDURES FOR
TRAFFIC IMPACT ANALYSIS (TIA)

City of Visalia

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INTRODUCTION

Goal 1 of the City of Visalia Circulation Element Update is to provide an integrated transportation system for the safe and efficient movement of people and goods in the Visalia planning area. The review and management of development-generated traffic is an integral part of operating and maintaining a safe and efficient roadway system and meeting this goal. The Traffic Impact Analysis (TIA) Procedures as outlined in this document have been established to meet this objective, as well as to comply with the requirements of the California Environmental Quality Act (CEQA). The City of Visalia General Plan Circulation Element outlines policies and objectives for transportation system efficiency, safety and connectivity, with emphasis on a delay and Level of Service (LOS)-based efficiency measurement system. The CEQA Transportation criteria measure project efficiency on the basis of a project-generated traffic and vehicle miles traveled (VMT) profile. Therefore, the TIA Guidelines document is divided into the following two analysis procedures:

1. Local Transportation Analysis: LOS Analysis Procedure.

2. CEQA Transportation Impact Analysis: VMT Analysis Procedure.

The procedures establish a range of traffic impact study categories based on the characteristics of the development and the estimated daily and peak hour traffic volumes, while also outlining the analysis approach and methods.

LOCAL TRANSPORTATION ANALYSIS: LOS ANALYSIS

A Local Transportation Analysis (LTA) identifies existing traffic volumes and conditions, development traffic volumes and conditions, delay, LOS, and other operational issues created by the combined traffic on the existing and future roadway system. LTA is a useful tool for early identification of potential traffic problems and can play an important part in the success of a development as well as the overall City network. When insufficient attention is given to traffic operational deficiencies, the following problems may result:

- On-site congestion and/or congestion on adjacent roadways;
- Inadequate site access;
- High accident experience; and/or

- Limited flexibility to modify the development to eliminate problems or adjust to changed conditions.

These problems can negatively affect the success of a development and can damage the marketability and return on investment of the development. The performance of an LTA provides an opportunity for the City and the developer to share information and jointly address traffic efficiency-related problems. It provides a means of balancing development needs with the functional integrity of the roadways that serve both the development and the region.

CEQA TRANSPORTATION ANALYSIS: VMT ANALYSIS

Senate Bill 743 (SB 743), signed in 2013 and effective on July 1, 2020, has changed the way transportation impacts are analyzed in the CEQA process. VMT has replaced motorist delay and LOS as the new metric for determining CEQA transportation impacts. For land development projects, VMT is the product of the daily trips generated by a new development and the distance those trips travel to their destinations. For transportation projects, impacts are identified based on induced VMT, i.e., the new VMT attributable to the installation of the new facility and induced growth generated as a result of induced land use.

In January 2019, the Natural Resources Agency and the Governor's Office of Planning and Research (OPR) codified SB 743 into the Public Resources Code (PRC) and the *State CEQA Guidelines*. *CEQA Guidelines* Section 15064.3 subdivision (b) states that a lead agency (the City, in this case) has discretion to choose the most appropriate methodology to evaluate a project's impacts within its jurisdiction. The *City of Visalia VMT Thresholds and Implementation Guidelines* (*VMT Analysis Guide*) will be used as a reference document for each project for the purpose of VMT analysis. The various terminologies used in this document are defined in the *VMT Analysis Guide*.

However, as stated earlier, while VMT is the new CEQA metric, the City will also continue to use LOS as a metric for measurement of safe and effective movements within the City, as outlined in the City's General Plan. As such, any upcoming project in the City will still need to perform an LOS analysis based on requirements outlined in the "LTA Classifications and Requirements" section, in addition to a VMT analysis, as outlined in the "CEQA Transportation Analysis: VMT Analysis" section of this document.

The need for an LTA should be assessed as early as possible in the development process when there is maximum flexibility for eliminating traffic-related problems adjacent to and near the proposed development. Preparation of an LTA, at this stage in the development process, is also recommended in Chapter 2 “Site Planning” of the Institute of Transportation Engineers (ITE) publication *Transportation and Land Development*.

The procedures contained herein are provided to:

- Assist developers through the approval process by outlining the requirements and level of detail of LOS analysis that will be required of them during the approval process.
- Standardize the types and details of analysis required in the assessment of traffic impacts for developments with similar levels of size and intensity.
- Ensure consistency in the preparation and review of an LTA through standardization of the reports.

1. LOCAL TRANSPORTATION ANALYSIS (LTA) STUDY

INTRODUCTION

The City Engineer or designee in accordance with Table 1 and the intent of these guidelines will determine the scope for the initial LTA or the need for a revised LTA. This can be done through the City's pre-application process or through a separate meeting for this purpose. If an LTA was done for the project at a site plan review level or with a discretionary entitlement, an addendum or update will be required if the original study is greater than two years old, if additional intersections or driveways are being added, if the new development is different from what was assumed in the master study causing an increase in trips generated, or if surrounding development has changed the background assumptions in the original study.

LTA CLASSIFICATIONS AND REQUIREMENTS

Completing a Traffic Impact Questionnaire (TIQ) is the first step to determine the size and scope of the LOS analysis, as well as the category of LTA required for the project. The LTA can be a simple Traffic Impact Statement (TIS) as described under LTA Category I to a comprehensive LOS analysis under LTA Categories II through III. Although the TIQ and TIS do not require preparation by a Registered Professional Engineer or a Registered Traffic Engineer in California, an LTA does. An LTA pursuant to the following guidelines will be required of all developments or additions to existing developments. The number of trips generated is to be determined from the ITE *Trip Generation Manual*, most recent edition. The developer must first estimate the number of vehicle trips generated by the proposed development using the procedures outlined in this document. The LTA category is determined by the number of trips generated in the development's peak hour. The development then needs to be analyzed to determine how its peak hour affects the surrounding streets. The developer must obtain the concurrence of the City Engineer or designated representative on the number of new trips generated by the development and the appropriate analysis category. The LTA must document all assumptions made, such as for internal capture, pass-by, trip reduction, etc. Should the developer be unable to meet the approval of the City Engineer, the developer may make an appeal to the City Engineer. The specific analysis requirements and level of detail are determined by the following categories:

Traffic Impact Questionnaire

At the Site Plan Review level, all developments, including additions and/or changes in use to existing developments, are to complete the LTA section of the Site Plan Review

TABLE 1

Analysis Category	Development Characteristic (a)(f)	Study Horizons (b)	Minimum Study Area (c)(d)(e)
I	Traffic Impact Statement Fewer than 100 peak hour trips (Not required for residential) (g)	• Opening year	• Site access drives • Any existing driveways or intersections in the vicinity
II	Non-Residential Development 100–999 peak hour trips Residential Development 200–999 peak hour trips	• Opening year • 5 year	• Site access drives • All major intersections within ½ mile of the study site, either signalized or unsignalized • All driveways/intersections where traffic movements could be affected by new driveway traffic movements • Additional locations as requested by the reviewing agency
III	Large Development 1,000 plus peak hour trips	• Opening year • 5 year • 10 year • 20 year	• Site access drives • All major intersections within 1 mile, either signalized or unsignalized • All driveways/intersections where traffic movements could be affected by new driveway traffic movements • Additional locations as requested by the reviewing agency

(a) The developer should first estimate the number of vehicle trips that will be generated by the proposed development and provide this information along with the other suggested study elements of the Traffic Impact Analysis to the City for review and approval prior to the start of any work. Mixed use developments may subtract internal trip capture when determining total trip generation.
(b) Assume full occupancy and buildout for single-phase developments. Multiphase developments may require assessment of up to two horizon years corresponding to key phases as directed by the City Engineer.
(c) An enlarged study area may be required when the minimum study areas identified in Table 1 do not provide sufficient information to meet the intent of the TIA guidelines.
(d) Vicinity (where traffic movements could be affected) shall be the area along the perimeter of and adjacent to the development.
(e) Intersections, if just outside of the designated radius of site to be studied, shall also be included in the study area.
(f) For residential developments, TIA not required unless generating 200 or more peak hour trips.
(g) Analysis required at discretion of City Engineer. Analysis may be required if requesting deviation from City standard, or intersection/roadway segment in immediate vicinity of site is currently operating at a LOS D or lower, or a focused site study is needed.

application, or a TIQ. In many cases, if the information provided by the applicant within the Site Plan Review application is completed in its entirety, it may be sufficient to serve as the project's initial TIQ. The TIQ is a tool used by the City to gather information regarding the type and scope of development. Information provided in this questionnaire will be reviewed to determine if an LTA outlined herein needs to be completed in order to address a traffic concern.

LTA Category I

Developments (non-residential) generating fewer than 100 peak hour trips will generally not require an analysis. At the discretion of the City Engineer and depending on characteristics of the development, an analysis may be required if a deviation from City standards is being requested such as driveway spacing and location, or if an intersection or roadway segment in the immediate vicinity of the proposed site is operating at a LOS of D or lower. Analysis to include an existing condition analysis, including any existing driveways or intersections in the vicinity, a sight distance evaluation, the traffic generation, the access number and spacing, an access queuing evaluation, and an on-site circulation evaluation.

LTA Category II

Developments (non-residential) that generate 100 or more peak hour trips but fewer than 1000 trips; and residential developments generating 200 or more peak hour trips but fewer than 1000 trips.

LTA Category III

All developments that generate 1,000 plus peak hour trips.

LTA LOS ANALYSIS APPROACH AND METHODS

Study Area

The minimum study area for the LOS-based traffic operations analysis will be determined by project type and size in accordance with the criteria in Table 1. The City Engineer or designee may require expansion of the study area when the minimum study areas identified in Table 1 do not provide sufficient information to meet the intent of the LTA guidelines. For example, a large development in a rural area located two miles from a

freeway interchange from which most of the trips are anticipated to access the development may require an enlarged study area to include assessment of the freeway interchange. Also an arterial intersection that falls just outside the study area radii would also be included in the study area.

Study Time Frame

The study should include, at a minimum, an analysis of the expected traffic conditions for the time period when the development is expected to open. The opening day conditions should include all of the proposed development traffic as if the development was fully completed and occupied.

The study horizon year is the future year that should be studied with the development. The existing background traffic shall be adjusted to provide a reasonable estimation of the traffic without the site in the horizon year. The horizon years are determined by the project type and size in accordance with the criteria in Table 1. For projects falling under LTA category III, the horizon year volumes should be developed using forecast from the Tulare County Association of Governments (TCAG) model.

The study for phased construction developments should include an analysis for each year that planned new phase construction is to be started. In addition, it should include the required 5-, 10-, or 20-year analysis after the start of the last phase of the development as stated above for the specific categories.

Analysis Time Periods

The study should include an analysis of the operational issues caused by development traffic for typical adjacent street peak hour conditions on a typical weekday and an analysis of the operational issues caused by development daily weekday traffic generation on the adjacent street system and site driveways. Typical periods for analysis are the morning and evening peak hours of the adjacent street system. (Contact the City Engineer for the peak hour times to be analyzed.) If the proposed project is expected to generate no trips or a very low number of trips during either the morning or evening peak periods, the requirement to analyze one or both of these periods may be waived by the City Engineer or designee.

In addition, if requested by the City for situations where the peak hour is not during the typical peak periods, additional time periods and or weekend analyses may be required in the study. If the development has unusual peaking characteristics or if the adjacent non-site traffic conditions warrant an analysis of other peak traffic time periods, these peak hours must also be analyzed.

Data Collection

All data are to be collected in accordance with the latest edition of the ITE *Manual of Transportation Engineering Studies* or as directed by the City Engineer or designee if not specifically covered in the ITE *Manual*. The LTA should include information on the following existing and proposed conditions within the study area as determined within the analysis category:

- ***Traffic Volumes***
  - Existing and proposed traffic volumes for the adjacent existing and proposed intersections and driveways to include daily weekday, a.m. peak hour, and p.m. peak hour (and other time periods as noted in the previous section). Daily traffic volumes should be provided as a 24-hour directional roadway section count and peak hour volumes should be provided by specific intersection or driveway turning movement directions.
  - Available counts may be extrapolated a maximum of two years with concurrence of the City Engineer. Where daily count data are not available, mechanical counts may be required at the City Engineer's discretion.
  - Projected traffic volumes should be based on available traffic projections from the TCAG model, other appropriate documented traffic projection sources, or historical traffic volume trends as approved by the City Engineer. Projected traffic volumes shall include adjustments, as necessary, to reflect other adjacent future development.
- ***Land Use***
  - Existing and proposed land use in the study area that has been approved should be discussed and included in the study as it affects the proposed development street system or driveways.

- ***Roadway Conditions***
  - Existing and proposed roadway conditions shall be identified including pavement type, width, number of traffic lanes and configuration, medians, curb and gutter, speed limits, horizontal and vertical curvature, and traffic control devices.
- ***Crash Experience***
  - Crash experience shall be documented for the past 36-month time period for the adjacent roadway system included within the study area. These data are to be used to help determine traffic control and identify potential corrections to the roadway system.

Trip Generation

The trip generation for the proposed development shall be estimated using the latest edition of *Trip Generation Manual* published by ITE. Exceptions to the use of this document must be approved by the City and may include actual traffic generation counts from a similar existing facility having the same size and surrounding area characteristics or from other recognized sources that provide trip generation data not included in the ITE *Manual*. Truck intensive uses should convert the project truck trips into Passenger-Car Equivalent (PCE) trips using a factor of 2.0 (As per the latest edition of *Highway Capacity Manual* (HCM)).

If proposed within the LTA, adjustments to the site traffic generation should be documented to reflect site traffic interaction, pass-by traffic, use of other modes of transportation, and carpooling or other means of trip reduction. Trip reduction methods should be discussed with the City prior to use within the report.

Trip Distribution and Assignment

Site traffic shall be assigned to the proposed site driveways and street intersections included within the study area based on an analysis of the market area for the proposed development. The market area will vary based on the type and location of the development. However, at a minimum, the following guidelines should be used:

- Residential Trip Distribution: Residential developments that generate fewer than 200 peak hour trips are not required to perform a study; therefore, LTA Category I does not apply. For LTA Category II, the project trip distribution should be developed either by using select zone model runs from the TCAG Model or using the LTA Category I

methodology. For LTA Category III studies, the project trip distribution should be developed using select zone model runs from the TCAG Model.

- Non-Residential/Mixed-Use Trip Distribution: Commercial, industrial, and office trip distribution should be based on the surrounding population densities and the available street system. For LTA Category I studies, project trip distribution should be based on the surrounding population densities and the available street system. For LTA Category II studies, the project trip distribution should be developed either by using select zone model runs from the TCAG Model or using the LTA Category I methodology. For LTA Category III studies, the project trip distribution should be developed using select zone model runs from the TCAG Model.
- Projects requiring detailed VMT Analysis (as outlined in the CEQA Transportation Analysis - VMT Analysis Chapter) using the TCAG Model should use the model select zone distribution for project trip distribution pattern.

The area to be considered in the development of the site trip distribution should normally be within a 10-mile radius of the study site. However, other conditions of the proposed development, the adjacent street system, and the location of site traffic attractors and generators may indicate the need to expand or reduce the area of influence.

Traffic Analysis

The study should include an analysis of 1) the existing traffic conditions, 2) the future no-build traffic conditions, and 3) traffic conditions with the addition of site traffic. Additional analysis years may be required if the project is phased. The following minimum items shall be included:

- ***Capacity Analysis***
  a. LOS shall be computed for signalized and unsignalized intersections as identified in the study area in Table 1, in accordance with the latest edition of the HCM.

  b. For signalized intersections, operational analyses shall be performed for time horizons up to 5 years. Operational analyses shall also be performed for street sizing to ensure the appropriate classification width is correct given the demand. The planning method will be acceptable for time horizons beyond 5 years and is also acceptable for LTAs prepared at the Development Master Plan level, unless used for street sizing.

c. For urban roadways, and rural highways where signalized intersections are at or less than 1 mile apart, the capacity of the roadway is generally dominated by the capacity of the adjacent signalized intersections. Roadway LOS need not be computed for these facilities.
d. For rural highways where the signalized intersections are more than 1 mile apart, the LOS on the highway shall be estimated in accordance with the latest edition of HCM.

- ***Traffic Control Devices***

  The study should include intersection and driveway traffic control device requirements using the Federal Highway Administration (FHWA) *Manual on Uniform Traffic Control Devices for Streets and Highways* (edition adopted by the California Department of Transportation).

- ***Traffic Signal Needs***

  A traffic signal needs study shall be conducted for all arterial/arterial, arterial/collector, and collector/collector intersections within the study area for the opening year. If the warrants are not met for the opening year, they should be evaluated for a 5-year horizon for Categories II & III. The date at which the traffic signal is projected to be needed shall be provided in the analysis. When performing warrant analysis, the 8-hour warrant shall be considered as the minimum warrant required for a signal. All supporting documentation shall be included in the study. Coordination with the City of Visalia before submittal is recommended.

- ***Intersection and Driveway Geometrics***

  The study should use recognized accepted formulas with documentation provided in the report. All roadway improvements need to comply with the City of Visalia General Plan and associated documents.

  1. Analyze adequacy or need for additional through traffic lanes or auxiliary right-turn or left-turn lanes and include storage requirements.
  2. Analyze potential conflicts of proposed driveway locations with existing and/or proposed adjacent driveways or intersection traffic lane configurations for the future total traffic conditions.

- ***Deceleration Lane Criteria***

  A deceleration lane is required to be considered when either criteria 1 or 2 are met, and required when criteria 3 and/or 4 are met. The City Engineer will evaluate each site on a case by case basis.

  1. At least 5,000 vehicles per day are using or are expected in the near future (five years after the development is built out) to be using the adjacent street.
  2. The posted speed limit is 35 mph or the 85th percentile speed limit is greater than 35 mph.
  3. At least 1,000 vehicles per day are using or are expected to use the driveway(s) for the development or adjacent developments(s) (existing or future).
  4. At least 40 vehicles are expected to make right turns into the driveway(s) for a one-hour period for the development or adjacent developments (existing or future).

- ***Queuing Analysis***

  A queuing analysis shall be conducted for all turn lanes for both signalized and unsignalized intersections within the study area. Examples for estimating queue lengths for signalized and unsignalized intersections are given below. In addition to these calculations, the TIA can use software that provides analysis; however, supporting documentation is required in such cases. In the event that the roadway leg is an arterial, the City requires a minimum turn pocket storage length of 300 feet.

  For signal-controlled intersections, find the number of vehicles arriving at the intersection:

  Vehicles/cycle (for random arrivals) = (vehicles per hour (vph)) ÷ (cycles/hour)

  Storage length = 2 × (vehicles/cycle) × (25 feet)

  Example: Find the storage length required for 300 vph turning left if the signal cycle is 90 seconds:

  Vehicles/cycle = (300 vph) ÷ ((1 cycle/90 sec) × (3,600 sec/hr)) = 7.5 veh/cycle

  Storage length = 2 × (7.5 veh/cycle) × (25 feet) = 375 feet **<u>USE 375 feet</u>**

For unsignalized intersections, find the number of vehicles per average 2-minute period (*American Association of State Highway and Transportation Officials [AASHTO] Green Book*).

Vehicles/2 min period = vph ÷ (30 periods/hour)

Storage length = (vehicles/2 min period) × 25 feet

Example: Find the storage length required for 150 vehicles turning left at an unsignalized intersection.

Vehicles/2 min period = (150 vph) ÷ (30 periods/hr) = 5 vehicles

Storage length = 5 veh × 25 feet = 125 feet **USE 125 feet**

- ***Crash Summary***

  Include crash summary and identification of trends and/or potential safety hazards.

- ***Speed Considerations***

  Vehicle speed is used to estimate safe stopping and cross-corner sight distances. Sight distance shall conform to the AASHTO standards. The design speed used shall be 10 mph above the posted speed limit.

- ***Other Analyses***

  Other analyses as requested by the City or as may be required due to the type and location of the proposed development:

  1. Weaving Analyses.
  2. Parking Analyses.
  3. On-site circulation including queuing analyses at major on-site turning movement locations.
  4. Site access quantity, location, and traffic lane configuration.

Improvement Analysis

The roadways and intersections within the study area shall be analyzed with and without the proposed development to identify any projected operational deficiency in regard to LOS and safety.

a. Where an intersection will operate at an LOS below D, alternatives to improve this deficiency shall be evaluated and included as potential recommendations within the study.

b. Where a roadway will operate at an LOS below D, alternatives to improve this deficiency shall be evaluated and included as potential recommendations within the study.

LTA REPORT FORMAT

An LTA Category I will only require an LTA for LOS analysis purposes. The LTA will be a lesser report and shall include at a minimum the following: The existing condition analysis, including any existing driveways or intersections in the vicinity, a sight distance evaluation, the proposed traffic generation, the access number and spacing, an access queuing evaluation, and an on-site circulation evaluation.

LTA Categories II, III, IV, and V will require a detailed LOS analysis. Such LTAs shall include the following items and report sections:

Introduction and Summary

a) Title Page

b) Table of Contents and List of Figures and Tables

c) Introduction and Executive Summary

- Site Location and Study Area
- Development Description
- Principal Findings
- Conclusions/Recommendations

Proposed Development (Site and Nearby)

a) Site location

b) Land use and intensity

c) Site plan (copy must be legible)

- Access geometrics

d) Development phasing and timing

Study Area Conditions

a) Study area

- Area of significant traffic impact (including road segments, intersections and driveways)
- Market area

b) Land use

- Existing land use
- Anticipated future development

c) Site accessibility

- Existing and future area roadway system
- Site circulation

Analysis of Existing Conditions

a) Physical characteristics

- Roadway characteristics (number of lanes, classification, etc.)
- Traffic control devices
- Transit service
- Pedestrian/bicycle facilities
- Nearby driveways

b) Traffic volumes

- Daily, morning, and afternoon peak hours and others as required

c) Level of service

- Morning peak hour, afternoon peak hour, and others as required

d) Safety-related deficiencies, crash experience

e) Data sources

Projected Traffic

a) Site traffic forecasting (each horizon year)

- Trip generation
- Mode split (if applicable)
- Pass-by traffic (if applicable)
- Trip distribution
- Trip assignment

b) Non-site traffic forecasting (each horizon year)

- Projections of non-site traffic by TCAG may be used. For larger developments and study areas, a transportation planning model run may be required.
- Total traffic (each horizon year)

Traffic and Improvements Analysis

a) Site access

b) LOS analysis

- Without project (including programmed improvements for each horizon year)
- With project (including programmed improvements for each horizon year)

c) Roadway improvements

- Improvements by the City of Visalia or others to accommodate non-site traffic
- Additional improvements necessary to accommodate site traffic

d) Traffic safety

- Sight distance
- Acceleration/deceleration lanes, left-turn lanes
- Adequacy of location and design of driveway access

e) Pedestrian considerations

f) Speed considerations

g) Traffic control needs

h) Traffic signal needs (base plus 5-year horizon)

i) Effect on Signal Progression (if applicable)

Internal Project Site Circulation (If Applicable)

a) Conflict points

- Vehicle/vehicle
- Vehicle/pedestrian
- Sight distances
- Building access delivery points
- Drive-through lanes

b) Design features

- Widths of internal circulation roadways
- Parking dimensions
- Sight distance per AASHTO Standards

c) Other features

- Fire lanes
- Delivery truck circulation/truck docks
- Access to waste containers

Conclusions/Recommendations

a) Traffic Operations Analysis and Roadway improvements

- Phasing

b) Site access

c) Internal site circulation

d) Transportation demand management actions (if appropriate)

e) Other

Appendices

a) Traffic counts

b) Capacity analyses worksheets

c) Traffic signal needs studies

d) All supporting documentation for any warrants, studies, etc.

Exhibits

The following information shall be provided on clear and legible figures:

a) Site location

b) Site plan

c) Existing transportation system(s) (number of lanes, traffic control, etc.)

d) Existing and future area development

e) Existing daily traffic volumes

f) Existing peak hour turning volumes

g) Future transportation system

h) Estimated site traffic (daily and peak hours)

i) Directional distribution of site traffic (daily and peak periods)

j) Total future traffic (peak periods)

k) Queuing distance at study intersections, per lane (total traffic in peak periods)

l) Protected levels of service including existing, horizon year non-site and horizon year total (with site development) conditions

m) Recommended traffic operational improvements

Report Submittals

The report shall be submitted at a minimum as one hard copy, a Word document, and PDF to the City for review. Additional copies of the report may be required for review by other adjacent public agencies. Communication with the City of Visalia before submittal of the study is recommended.

DESIGN STANDARD REFERENCE

- Design in accordance with the current City of Visalia Standards, current edition of the *Highway Design Manual* and other current Caltrans policies, procedures and standards.
- Capacity analyses in accordance with the latest edition of HCM.
- Traffic Signal needs studies in accordance with the latest edition of the FHWA *Manual on Uniform Traffic Control Devices for Streets and Highways* (edition adopted by Caltrans).
- Data collection in accordance with the latest edition of the ITE *Manual of Transportation Engineering Studies.*
- Trip generation in accordance with the latest edition of the ITE publication *Trip Generation Manual*.

COORDINATION WITH OTHER PUBLIC AGENCIES

If applicable, the requirements for an LTA as noted in this document may need to be coordinated with the requirements of other local agencies such as adjacent cities or towns, the County of Tulare, or Caltrans. Any deviation from the requirements of this document due to the requirements of other agencies should be presented in written form to the City for review and approval or denial.

2. CEQA TRANSPORTATION ANALYSIS: VMT ANALYSIS

INTRODUCTION

This chapter establishes the framework for completing a CEQA-level VMT transportation analysis for proposed land development projects and transportation projects in the City. The major steps involved in the CEQA VMT Analysis are as follows:

a) Screening criteria under which projects are not required to submit a detailed VMT analysis.
b) VMT analysis methodologies.
c) Significant thresholds.
d) Mitigation measures for significant and unavoidable impacts.

SCREENING CRITERIA: LAND DEVELOPMENT PROJECTS

Certain conditions may exist that would presume that a proposed land development project has a less than significant VMT impact. Land development projects that have one or more of the following attributes may be presumed to have a less than significant VMT impact:

- The project is located within 0.5 mile of a Transit Priority Area or a High Quality Transit Corridor unless the project is inconsistent with the Regional Transportation Plan (RTP)/Sustainable Transportation Communities (SCS) plan, has a floor-to-area ratio (FAR) less than 0.75, provides parking in excess of the City's Municipal Code requirements, or reduces the number of affordable residential units. The City of Visalia VMT Screening Tool[1] can also be used to determine whether a project is located within such locations.
- Residential, non-residential, and mixed-use projects located in areas with low VMT and incorporate similar features (e.g., density, mix of uses, transit accessibility). The City of Visalia VMT Screening Tool can be used to determine whether a land use development project may be screened from a detailed VMT analysis. Proposed residential, non-residential, and mixed-use projects located within the green-colored VMT zones identified in the screening tool and do not require a General Plan Amendment or Change of Zone (COZ) would be deemed to have less than significant impact.
- Local-serving retail projects of less than 50,000 square feet.
- The project is 100 percent deed-restricted affordable housing.

[1] City of Visalia VMT Screening Tool Link: https://gis1.lsa.net/visaliaVMT/ /

- The project generates fewer than 1,000 daily trips, utilizing the latest edition of the ITE *Trip Generation Manual* and is consistent with the General Plan or current zoning. For projects not consistent with the City's General Plan or zoning, a screening threshold of 500 daily trips will be applied. Trip credits can be considered for existing uses generating traffic on the site, but this needs to be verified with City staff.
- Institutional/Government and public service uses such as police stations, fire stations, community centers, refuse centers, etc. are screened from a CEQA VMT analysis.
- Local parks, daycare centers, student housing projects on or adjacent to a college campus, local-serving gas stations, banks, and K–12 public schools are screened from a CEQA VMT analysis.
- Redevelopment projects that result in an equal or net reduction in VMT can be considered to have less than significant VMT impact. A net reduction in VMT would occur if the land use proposed by the project would generate less VMT than the existing land use.

SCREENING CRITERIA: TRANSPORTATION PROJECTS

The primary attribute to consider for transportation projects is the potential to increase vehicle travel. Following is a series of transportation projects that would not likely lead to a substantial or measurable increase in vehicle travel and, therefore, would not require a detailed VMT 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 increase motor vehicle capacity.
- Roadside safety devices or hardware such as median barriers or guardrails.
- 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 travel lanes.
- Addition of an auxiliary lane of less than 1 mile in length designed to improve roadway safety.
- Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left-turn, right-turn, 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 the 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., high-occupancy vehicles [HOVs], high-occupancy toll [HOT] lane traffic, or trucks) from general vehicles.
- Installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority 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 a new transit service.
- Conversion of streets from one-way to two-way operation with no net increase in the 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, multiuse 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.

Additionally, transit and active transportation projects generally reduce VMT and, therefore, are presumed to cause a less than significant impact on transportation. This criterion will apply to all passenger rail, bus, and bus rapid-transit projects, as well as bicycle and pedestrian infrastructure projects.

VMT ANALYSIS METHODOLOGY: LAND DEVELOPMENT PROJECTS

For all projects that do not meet the project screening criteria, a more detailed VMT impact analysis will be required. The metrics to be used are VMT per capita for residential projects, VMT per employee for office projects, and total VMT for retail projects. For hotels, hospitals, medical offices, and related non-retail lodging or medical facilities which includes both visitors/patients and employees, Origin-Destination (O-D) VMT per service population (population/users + employment) should be used. Similarly, for industrial land uses, including High-Cube warehouse, warehouse, light industrial, manufacturing, and similar truck intensive uses, O-D VMT per service population needs to be used, accounting for both passenger vehicle and truck VMT. For other non-retail and non-residential land uses, VMT per employee shall be used.

For mixed-use projects, the VMT should be evaluated separately for each of the land use component of project or by using the most appropriate metric (VMT per capita, VMT per employee, or total VMT) for the predominant land use type in the project. The method of VMT analysis should be determined based on discussion with City staff. Credits for internal trip capture should be made.

VMT ANALYSIS METHODOLOGY: TRANSPORTATION PROJECTS

The City shall be required to consider the effects of transportation projects on vehicle travel. Additional vehicle travel generated by transportation projects is referred to as “induced vehicle travel.” Projects would be required to analyze the growth impacts under CEQA. However, if a proposed transportation project meets the screening criteria previously outlined, then a detailed VMT analysis will not be required. More details on VMT analysis for transportation projects is outlined in the VMT Analysis Guide.

Induced VMT or VMT attributable to the project needs to be calculated by evaluating no-build and build conditions under the horizon year scenario using the TCAG Model. A graphical

representation of the VMT attributable to a transportation project is provided in Figure 11 of the VMT Analysis Guide.

VMT ANALYSIS METHODOLOGY: LAND USE PLAN

Existing VMT per service population for the region and expected horizon year VMT per service population for the land use plan must be determined using the TCAG Model. For land use plans with a specific land use, existing VMT per capita or VMT per employee, as appropriate, for the region and expected horizon year VMT per capita or VMT per employee should be determined using the TCAG Model.

VMT THRESHOLDS: LAND DEVELOPMENT PROJECT

The defined City VMT Thresholds are as follows:

- A proposed residential project exceeding a level of 84 percent of the existing County average VMT per capita would indicate a significant VMT impact.
- A proposed office project exceeding 84 percent of the existing County average VMT per employee would indicate a significant VMT impact.
- For retail projects, any net increase in total VMT for the County would indicate a significant impact.
- For lodging, and medical land uses, including hotels, hospitals, medical office projects, exceeding 84 percent of the existing County average VMT per service population would indicate a significant VMT impact.
- For industrial projects, exceeding 84 percent of the existing County average VMT per service population would indicate a significant VMT impact.
- For mixed use projects, for each individual land uses, exceeding 84 percent of the corresponding County average (VMT per capita, VMT per employee, or VMT per service population) would indicate a significant VMT impact. If the project's dominant land use is used for VMT analysis, the corresponding metric should be used.
- For other land uses, a project exceeding a level of 84 percent of existing County average VMT per employee would indicate a significant transportation impact.

As obtained from the TCAG Model, the existing average VMT per capita for Tulare County is 13.2, the existing average VMT per employee is 8.8, and the existing average VMT per service

population is 31.0. Based on the goal of 84 percent of existing County average, the City's thresholds would be:

- Residential: 11.1 VMT per capita.
- Office: 7.4 VMT per employee.
- Retail: No net change in total VMT of the County.
- Lodging or Medical Uses: 26.4 VMT per service population.
- Industrial: 26.4 VMT per service population.
- Mixed-Use :[2] As indicated above for each component.
- Other Land Uses: 7.4 VMT per employee would indicate a significant transportation impact.

VMT THRESHOLDS: TRANSPORTATION PROJECT

Net increase in induced VMT will result in a significant impact for a proposed transportation project. The increase in VMT needs to be calculated by comparing the horizon year no-build VMT with the horizon year build VMT. Model adjustment may be necessary to account for induced growth and potential increases in future land use as a result of the capacity-enhancing transportation project.

VMT THRESHOLDS: LAND USE PLANS

If the project VMT per service population/capita/employee for individual component of the plan in the horizon year exceeds the corresponding existing regional average, then the project will have a significant impact.

DETAILED VMT FORECASTING METHODOLOGY

For non-screened projects, TCAG Model should be used for VMT calculations. Land-use projects consistent with City's General Plan should use the model base scenario for the VMT analysis. For transportation projects and Land Use Plans, model horizon year scenario must be used to calculate project VMT.

[2] For mixed-use projects, if the dominant land use is selected for VMT analysis, the VMT for that component of the project should be compared with the corresponding significance threshold to determine VMT impacts.

For all analyses purposes, the following steps summarize the recommended VMT forecasting methodology:

- A separate traffic analysis zone (TAZ) must be created within the model to isolate project land uses and corresponding socioeconomic data. In the case of the horizon year scenario, socioeconomic data equivalent to the current General Plan land use should be subtracted from the parent zone. A separate TAZ must be created to add the project socioeconomic data.
- Once the model runs are completed, VMT should be calculated using either the Production-Attraction (PA) or Origin-Destination (OD) trip matrices. For residential, office, and other projects where VMT per capita or VMT per employee are the suitable metrics, VMT should be calculated using PA trip matrices. For lodging, medical service, industrial and related projects, where VMT per service population is the suitable metric, OD trip matrices should be used for VMT calculation. For retail projects, absolute VMT within the County from the “no project” model run should be compared with “with project” model run.
- The following steps provide guidance on the calculations:
    - Use of PA matrices
        - Keep the trip purposes and modes separate (drive alone and shared ride).
        - Use distance matrix/core from peak skim matrices by mode (drive alone and shared ride).
        - Convert person trips to vehicle trips using the documented auto occupancy factors.
        - Multiply the vehicle trip (by purpose) cores with distance cores from skim matrices by mode.
        - Calculate vehicle VMT by TAZ using the matrix marginals: Row Sum for all homebased trip purposes for VMT per capita and Column sum for homebased work trip purpose for VMT per employee.
    - Use of OD matrices
        - Combine AM and PM peak OD matrices into peak and MD and NT OD matrices into off-peak vehicle matrices.
        - Use distance matrix/core from peak and off-peak skim matrices by mode.
        - Multiply the vehicle OD matrices by model with distance cores from skim matrices by mode for both peak and off-peak periods.
        - Calculate OD VMT by TAZ using the matrix marginals: Add both Row and Column sums for TAZs to calculate OD VMT per service population.

LAND DEVELOPMENT PROJECT REVIEW PROCESS

A flow chart outlining the potential land development entitlement process related to VMT and transportation impacts is illustrated in Figure 10 of the VMT Analysis Guide. The different steps involved are as follows:

- During the TIQ process, the applicant shall submit a complete description of the project, including the density, proposed parking supply, number of affordable housing units (for residential projects), and any other project features that may affect trip generation, VMT generation, project access, and alternate modes of travel.
- Once the development application has been filed, project screening will be conducted as the initial step. Project screening will be completed by City staff and reviewed by the City Traffic Engineer. If the project meets any one of the screening criteria previously outlined, the project will be presumed to create a less than significant impact. No further VMT analysis will be required. The CEQA document shall enumerate the screening criteria and how the project meets or does not meet the criteria.
- If the project does not meet the screening criteria, a detailed VMT analysis is required using the TCAG Model.
- The project VMT per capita, VMT per employee, VMT per service population, or total VMT shall be compared to the City thresholds previously outlined. If the calculated VMT metrics exceed the respective City thresholds, the project will have a significant impact and mitigation measures will be required. If the project VMT metrics are less than the City thresholds, the project will have a less than significant impact.

VMT ANALYSIS MITIGATION MEASURES

When the VMT analysis determines that a project has a significant impact, the applicant is required to identify feasible mitigation measures to avoid or substantially reduce the impact created by the project. The mitigation measures can be either strategies outlined in the VMT Analysis Guide, or others selected by the applicant. For all mitigation measures applied to the project, the analysis needs to provide substantial evidence while identifying project-specific VMT reduction. All mitigation measures and reduction percentages will be finalized based on discussions with City staff.

If the mitigation measures fully mitigate the project impact, the project is presumed to have an impact mitigated to a less than significant level. No further analysis is required. If the project's

VMT impact cannot be fully mitigated, the City may (1) request the project be redesigned, relocated, or realigned to reduce the VMT impact, or (2) prepare a Statement of Overriding Considerations (SOC) for the transportation impacts associated with the project. All feasible mitigation measures must be assigned to and carried out by the project even if an SOC is prepared.

REPORT FORMAT

A detailed report will be required that will document the following:

a) Project Description

b) VMT Screening (as applicable)

c) Project VMT analysis methodology

d) Project VMT Thresholds

e) Identification of VMT impacts (if any)

f) Mitigation measures (if required)