

PLANNING COMMISSION AGENDA

CHAIRPERSON:

Chris Gomez



VICE CHAIRPERSON:

Marvin Hansen

COMMISSIONERS: Mary Beatie, Chris Gomez, Marvin Hansen, Sarrah Peariso, Adam Peck

MONDAY, FEBRUARY 8, 2021

VISALIA CONVENTION CENTER

LOCATED AT 303 E. ACEQUIA AVE. VISALIA, CA

MEETING TIME: 7:00 PM

Citizens may appear at the Planning Commission meeting in person and will be asked to maintain appropriate, physical distancing from others and wear a mask or face shield pursuant to the Governor's Executive Orders and public health guidance during the COVID-19 situation.

1. CALL TO ORDER –

2. THE PLEDGE OF ALLEGIANCE –

3. CITIZEN'S COMMENTS – This is the time for citizens to comment on subject matters that are not on the agenda but are within the jurisdiction of the Visalia Planning Commission. You may provide comments to the Planning Commission at this time, but the Planning Commission may only legally discuss those items already on tonight's agenda.

The Commission requests that a five (5) minute time limit be observed for Citizen Comments. You will be notified when your five minutes have expired.

4. CHANGES OR COMMENTS TO THE AGENDA –

5. CONSENT CALENDAR - All items under the consent calendar are to be considered routine and will be enacted by one motion. For any discussion of an item on the consent calendar, it will be removed at the request of the Commission and made a part of the regular agenda.

a. Finding of Consistency No. 2020-02: A request by Self-Help Enterprises and Mogavero Architects to modify the approved building plans and street frontage improvements associated with a residential mixed-use development originally approved through Conditional Use Permit No. 2019-40, located at 300 E. Oak Avenue (APN: 094-283-001).

6. PUBLIC HEARING – Brandon Smith, Senior Planner

Recommendation on the adoption of Vehicle Miles Traveled (VMT) thresholds and implementation guidelines prepared pursuant to Senate Bill 743 and the requirements of California Environmental Quality Act (CEQA) Guidelines, California Public Resources Code Section 21099 and CEQA Guidelines Sections 15064.3(b) and 15064.7.

7. CITY PLANNER/ PLANNING COMMISSION DISCUSSION –

- a. Next Planning Commission Meeting is Monday, February 22, 2021.
- b. Joint City Council and Planning Commission tentatively set for March 17, 2020.
- c. Presentation to City Council on Committee/Commission reviews.

The Planning Commission meeting may end no later than 11:00 P.M. Any unfinished business may be continued to a future date and time to be determined by the Commission at this meeting. The Planning Commission routinely visits the project sites listed on the agenda.

For Hearing Impaired – Call (559) 713-4900 (TTY) 48-hours in advance of the scheduled meeting time to request signing services.

Any written materials relating to an item on this agenda submitted to the Planning Commission after distribution of the agenda packet are available for public inspection in the City Office, 315 E. Acequia Visalia, CA 93291, during normal business hours.

APPEAL PROCEDURE

THE LAST DAY TO FILE AN APPEAL IS THURSDAY, FEBRUARY 18, 2021 BEFORE 5 PM

According to the City of Visalia Zoning Ordinance Section 17.02.145 and Subdivision Ordinance Section 16.04.040, an appeal to the City Council may be submitted within ten days following the date of a decision by the Planning Commission. An appeal form with applicable fees shall be filed with the City Clerk at 220 N. Santa Fe, Visalia, CA 93291. The appeal shall specify errors or abuses of discretion by the Planning Commission, or decisions not supported by the evidence in the record. The appeal form can be found on the city's website www.visalia.city or from the City Clerk.

THE NEXT REGULAR MEETING WILL BE HELD ON MONDAY, FEBRUARY 22, 2021



REPORT TO CITY OF VISALIA PLANNING COMMISSION

HEARING DATE: February 8, 2021

PROJECT PLANNER: Brandon Smith, Senior Planner
Phone: (559) 713-4636
E-Mail: brandon.smith@visalia.com

SUBJECT: Recommendation on the adoption of Vehicle Miles Traveled (VMT) thresholds and implementation guidelines prepared pursuant to Senate Bill 743 and the requirements of California Environmental Quality Act (CEQA) Guidelines, California Public Resources Code Section 21099 and CEQA Guidelines Sections 15064.3(b) and 15064.7.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission hold a public hearing and make a recommendation that the City Council approve thresholds of significance, screening criteria, and guidelines as contained in the Draft City of Visalia Vehicle Miles Travelled Thresholds and Implementation Guidelines document, for purposes of analyzing transportation impacts under Senate Bill 743 and the California Environmental Quality Act (CEQA).

RECOMMENDED MOTION

I move to recommend that the City Council approve the thresholds of significance, screening criteria, and guidelines as contained in the Draft City of Visalia Vehicle Mile Travelled Thresholds and Implementation Guidelines document.

EXECUTIVE SUMMARY

Senate Bill 743 (Steinberg, 2013), passed by the Legislature and signed into law, established a plan for the California Environmental Quality Act (CEQA) guidelines to begin addressing transportation impacts through methods other than using automobile delay and Level Of Service (LOS) metric, for environmental review documents prepared July 1, 2020 and later.

The Senate Bill directed the Office of Planning and Research (OPR) to develop criteria for determining significant transportation impacts to align with statewide greenhouse gas (GHG) emission reduction goals, and cited Vehicle Miles Travelled (VMT) as the most appropriate metric for use in evaluating such impacts. The fundamental difference between VMT and LOS is looking at a project's impact based on the project's total associated vehicle miles (trip distances multiplied by associated daily trips), rather than looking at how the project will contribute to roadway congestion and intersection delays.

Consistent with Senate Bill 743, City staff has been working closely with a hired consultant, LSA Associates Inc., to develop local guidelines and thresholds of significance that comply with CEQA requirements and closely follow recommendations from the OPR. These guidelines are contained in the document entitled Draft City of Visalia Vehicle Miles Travelled Thresholds and Implementation Guidelines ("Draft Guidelines" or "Guidelines"; see Exhibit "A"), made available to the public on January 21, 2021. The Draft Guidelines contain the proposed thresholds for the City of Visalia as well as analysis for the use of VMT for land use development projects and transportation projects, screening criteria, and mitigation strategies. Land use projects that are not exempted by CEQA or screened out in the Guidelines will be required to prepare a detailed

VMT study and incorporate mitigation measures to reduce VMT impacts to a less than significant level.

This matter is coming before the Planning Commission and City Council because CEQA Guidelines Section 15064.7(b) requires that thresholds of significance be adopted as part of a lead agency's environmental review process, developed through a public review process, and supported by substantial evidence.

POLICY DISCUSSION

In 2013, Senate Bill 743 (see Exhibit "B") resulted in amendments and additions to the California Public Resources Code, including the addition of Section 21099. This section directed that OPR develop criteria for determining the significance of transportation impacts of projects to align with statewide emission reduction goals. In developing the criteria, OPR proposed, and the California Natural Resources Agency certified and adopted, changes to the CEQA Guidelines that identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts.

In December 2018, OPR released a technical advisory ("TA"; see Exhibit "C") that contains technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. The TA serves as a reference document and does not have the weight of law. However, when an agency deviates from the TA, it should be undertaken with substantial evidence to support the agency's action.

The TA found that a per capita or per employee VMT that is 15% below that of existing development may be considered a reasonable threshold supported by evidence that connects this level of reduction to the State's emission goals. This level of threshold could be applied toward certain project types (i.e., residential, office). The TA further stated that agencies could screen out VMT impacts using maps created with VMT data from a traffic demand model.

While the City of Visalia did not have established thresholds of significance starting on July 1, 2020, the City acknowledged that it would use an interim approach for establishing significance and an approach for screening out projects. This interim approach relied on using the OPR thresholds together with maps and data derived from Tulare County Association of Governments' (TCAG's) traffic demand model that report the average VMT per capita and VMT per trip. This approach has allowed staff to review which projects would and would not be subject to further VMT analysis.

GUIDELINES FORMULATION & PUBLIC OUTEREACH

The City of Visalia elected to proceed with formally establishing its own thresholds of significance, since cities and counties have wide discretion to formulate their own significance criteria and screening thresholds. In August 2020, the City hired LSA Associates, Inc. to assist with developing a process for determining and addressing significant impacts with regards to VMT. Staff and the consultant began working with TCAG to obtain VMT data, following the practice of many jurisdictions around the state that have collaborated with consultants and/or their metropolitan planning organization (MPO) to develop models for calculating VMTs.

City staff held two public meetings in an online format to explain VMT analysis and its key concepts, to preview the City's own established thresholds and screening criteria, and to answer any questions. The public meetings were conducted on December 2, 2020 and January 27, 2021, and were well attended by a mix of consultants, developers, and interested citizens.

The Draft Guidelines Document was made available to the public on January 22, 2021, via the City's website, social media announcements, and to a stakeholder list, many of which attended one or both public meetings. Comments on the document will be formally accepted until February 8, 2021.

VMT GUIDELINES ANALYSIS

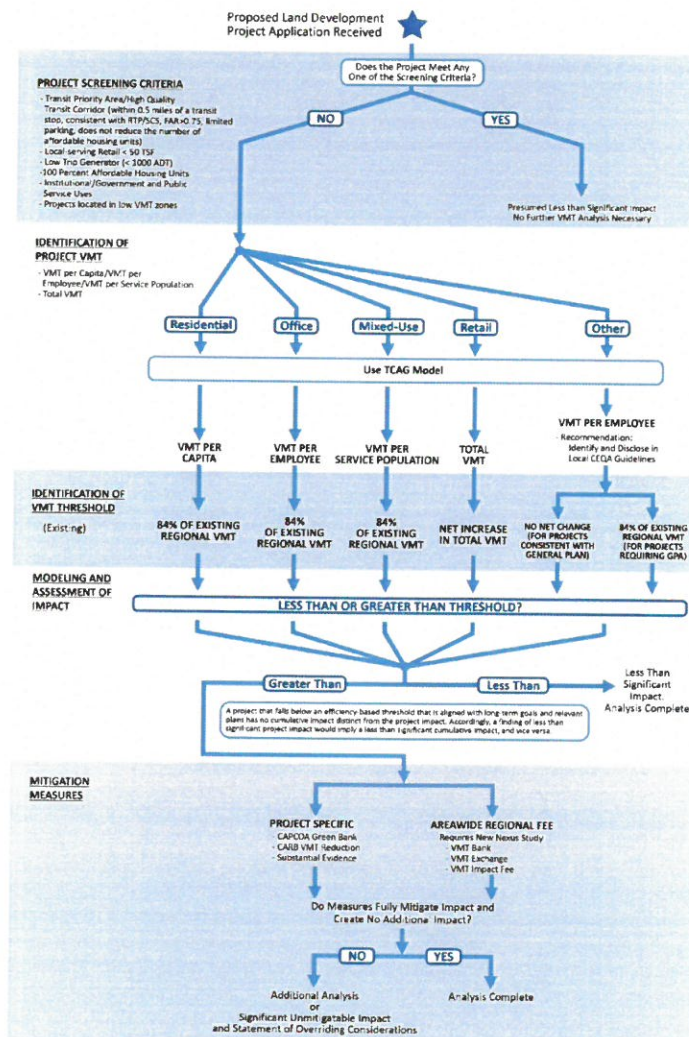
The Draft Guidelines have been developed to comply with the state's environmental recommendations, to provide a methodology for evaluating individual projects, and to balance OPR's recommendations with the City of Visalia's values. The Draft Guidelines contain background on the use of vehicle miles traveled to evaluate transportation impacts, thresholds of significance, screening criteria, methodologies for evaluating individual projects, and guidance on mitigation.

Important elements of the guidelines are discussed in the sections below, with emphasis on analysis as it pertains to *land use development projects* such as subdivisions, master-planned developments, etc. (OPR has recommended separate thresholds for land use development projects, transportation projects, and land use plans). The analysis process, outlined in the figure shown here and in full detail as Figure 10 of the Guidelines, demonstrates the potential development entitlement process.

Screening Criteria

The City of Visalia has used the OPR recommendations and criteria as a model for its own proposed screening criteria. Based on acknowledgement that certain activities or projects may result in a reduction in VMT and GHG, and therefore have a less than significant impact to transportation, the following list are types of projects that may be screened out of having to prepare a detailed VMT study. Definitions for all project types are contained in Chapter 3 of the Guidelines.

- Projects that are within 0.5 mile of a High-Quality Transit Area, generally defined by bus routes with a frequency of service of 15 minutes or less. In the City of Visalia, this currently pertains to transit Route 1, as shown in Figure 4 of the Guidelines. [*]
- Residential, office, or mixed-use projects that are consistent with the City's General Plan and located within green-colored VMT zones, as shown in Figures 6, 7, and 8 of the Guidelines (also see discussion below on VMT Screening Maps). [*]
- A project that involves local-serving retail space of less than 50,000 square feet.
- A project that is 100 percent deed-restricted affordable (to low-income level) housing units.



- Projects that generate fewer than 1,000 average daily trips (ADT) if found consistent with the City's General Plan, and projects that generate fewer than 500 ADT if found not consistent with the General Plan. [The Guidelines contain substantial evidence starting on page 7 to back this up since the TA only recommends screening projects generating 110 ADT or less.]
- The development of institutional/government and public service uses that support community health, safety and welfare.

[*] An online interactive map (i.e., City of Visalia VMT Screening Tool, <https://gis.lsa-assoc.com/VisaliaVMT/>) can be also used to determine if this type of project can be screened out based on its location.

Thresholds of Significance & Identification of Project VMT

For development projects that are not screened out, a project would need to undergo a detailed study that first determines the amount of VMT and compares it to the regional VMT average. If the project impacts exceed the established thresholds of significance, then the transportation impacts of the project are deemed significant and the project must incorporate one or more mitigation measures.

OPR established a statewide per capita or per employee VMT reduction target of 15% below that of existing development, based on the statewide goal for a 15% reduction in GHG emissions established as part of the Senate Bill 375 (2008) and SB 743. Moreover, in 2018, the California Air Resources Board established regional GHG reduction targets for all the State's Metropolitan Planning Organizations, including long range 16% reduction target for TCAG (see Figure 9 in the Guidelines).

Visalia's reduction target has therefore been set consistent with TCAG's reduction target of 16% rather than the Statewide reduction target of 15%. The following thresholds below would apply to land use development and transportation projects. Projects meeting these targets are deemed not to have a significant environmental impact to transportation.

Project Type	VMT Metric	VMT Threshold
Residential	VMT/capita	84% of existing VMT/capita
Office	VMT/employee	84% of existing VMT/employee
Retail	Total VMT	Net reduction in total VMT
Mixed Use/Land Use Plans	VMT/service population	84% of existing VMT/service pop.
Other	VMT/employee	No net change if consistent with City GP; 84% of existing regional VMT/emp. otherwise
Transportation	VMT attributable to project	VMT attributable to project > 0

Project applicants will be required to follow guidance provided in the Guidelines document for preparation of a VMT analysis to achieve CEQA compliance. The delay-based LOS metric will still be used together with VMT for design, traffic operations, and safety purposes.

Thresholds and induced VMT analysis for *transportation projects* and for *land use plans* are found and described in Chapters 5 and 6 of the Guidelines document.

Mitigation Measures

If a project is determined to have a significant transportation impact, the project will need to apply mitigation measures or project alternatives to assist with lowering the associated VMT to a level below the significance threshold. Typically, vehicle miles traveled are reduced by

implementing strategies that reduce the number of automobile trips or the distance that people drive. Measures that reduce single occupant automobile trips are called transportation demand management strategies and may include such measures as ride sharing programs, transit passes and telecommuting. This is a different approach than LOS mitigation, which aims to alleviate congestion and prescribes capacity-increasing mitigation measures such as roadway widening and additional lanes, and only increases vehicle capacity to encourage more single occupant vehicle use in the long term.

The Appendices of the Guidelines document contains extensive lists of VMT mitigation measures and project alternatives adapted from sources and research conducted in association with the State and regional and/or local jurisdictions, such as the California Air Pollution Control Officers Association (CAPCOA). Builders have the flexibility to select from a variety of measures to reduce vehicle miles traveled in a way that best fits their projects.

The measures provided in the lists may either be more applicable in urban areas or more suitable for suburban or rural areas on a programmatic level. The City has worked with the consultant to retain measures that could feasibly be applied within its geography. Some of the mitigations offered may not be effective unless applied at a larger scale, which could require a programmatic approach funded through a mitigation bank, exchange, or fee program. The City could evaluate in the future whether to pursue one or more of these large-scale programs and whether to coordinate with other agencies if the program applies region wide.

Most measures in the lists are presented in wide ranges of potential VMT reduction measures. These lists are not intended to be an exhaustive list of measures available to offset CEQA impacts. Other measures can also be accepted by the City based on the provision of substantial evidence. Please note projects and the associated studies may at times experience challenges to identify the quantitative measurement of relief provided by the measure, apply the mitigation at the individual project level, and ensure that the mitigation lasts in perpetuity.

VMT Screening Maps

CEQA guidelines allow a city or county to use models to estimate a project's vehicle miles traveled. Staff and the consultant developed screening maps to help an applicant quickly determine whether a proposed project will result in a significant impact from vehicle miles traveled in a particular area of the city. In developing these maps, staff obtained data from regional travel demand computer models, which are managed and operated by Tulare County Association of Governments (TCAG).

The screening maps are included as Figures 6, 7, and 8 of the Guidelines Document (Exhibit "A"). Separate maps are prepared for utilization with residential projects (measured by VMT per capita), office or employee-based projects (measured by VMT per employee), and mixed-use projects (VMT per service population). Zones depicted in green indicate areas where VMT is least 16% below the regional average and are therefore eligible to be screened out. Zones depicted in yellow indicate ranges where the VMT is less than 16%, and zones in red indicate where VMT is greater than the regional average. Areas without color do not have enough existing population to determine VMT and are therefore subject to a full study.

These maps are available for the public to use and can be found in the Guidelines document or in an online interactive map that will be posted on the City of Visalia's website.

Traffic Impact Analysis Requirements

In tandem with the establishment of the VMT Thresholds and Implementation Guidelines, the City's Procedures for Traffic Impact Analysis ("TIA Guidelines") document has been updated to provide more detailed set of analysis procedures for determining and evaluating a development project's VMT for CEQA impact purposes, and LOS for impact to peak hour traffic volumes and

intersection delay. Development projects will continue to be subject to LOS standards to show their compliance with the General Plan.

The TIA Guidelines are managed by the City's Public Works Department and establish a range of traffic impact study categories based on the size and characteristics of the development while also outlining the analysis approach and methods.

General Plan Consistency

The City's General Plan (which was comprehensively updated and adopted in 2014) includes several objectives and policies that address practices resulting in a long-term reduction of vehicle miles travelled and greenhouse gases. These objectives and policies are not specifically VMT-based but still reflect the ideals that will result in a reduction of VMT and GHG. A comprehensive list of the applicable objectives and policies are included in Chapter 8 of the Guidelines document.

Environmental Review and Public Participation

California Environmental Quality Act Guidelines Section 15064.7(b) requires "thresholds of significance to be adopted for general use as part of the lead agency's environmental review process by ordinance, resolution, rule or regulation, and developed through a public review process and supported by substantial evidence." The courts have clarified that Section 15064.7(b) does not additionally require environmental review as a prerequisite for adopting thresholds of significance. Requiring the preparation of a CEQA document would be redundant with the public review process and substantial evidence standard already set forth in Section 15064.7.

The City of Visalia is meeting the requirement for public review by providing notice of the public hearing through a legal advertisement publication in the newspaper. The city provided an additional opportunity for public review and input through two virtual public workshop meetings held on December 2, 2020 and on January 27, 2021. Approximately 50 persons participated in each meeting, wherein the attendees consisted of developers, traffic consultants, building industry representatives, Environmental Committee representatives, public sector officials including Caltrans staff, and persons of interest. A copy of the Draft Guidelines was posted on the city's website for a 15-day review and comment period prior to the Planning Commission hearing, and notification. An extensive list of stakeholders was emailed for notification of the public workshops and availability of the Draft Guidelines, and many of those stakeholders attended one or both workshops. No public comments have been received to date.

The city's thresholds of significance and screening criteria are supported by substantial evidence as described in this report and moreover in the City of Visalia VMT Thresholds and Implementation Guidelines document. Therefore, the city planner has determined that adoption of the thresholds and screening criteria is not a project under Guidelines Section 15378(b)(5) because the city is complying with the requirements of CEQA Guidelines Section 15064.7(b), and therefore no CEQA review is required.

Next Steps

Action by the Planning Commission will be a recommendation to the City Council. Staff will present any comments the recommendation made by the Commission to the City Council at their meeting on March 1, 2021. Additionally, any comments received on the Draft Guidelines through February 8, 2021 will be noted and presented to the City Council meeting.

If the City Council approves, these vehicle miles traveled thresholds of significance and screening criteria will become effective at the time of adoption.

Attachments

- Exhibit "A" – Draft City of Visalia VMT Thresholds and Implementation Guidelines
 - Includes: VMT Transit Map – Figure 4 of Exhibit "A"
 - VMT Per Capita Map – Figure 6 of Exhibit "A"
 - VMT Per Employee Map – Figure 7 of Exhibit "A"
 - VMT Per Service Population Map – Figure 8 of Exhibit "A"
 - List of Applicable VMT Mitigation Measures – Appendices A, B, C of Exhibit "A"
- Exhibit "B" – Senate Bill 743
- Exhibit "C" – Office of Planning & Research Technical Advisory on Evaluating Transportation Impact in CEQA

DRAFT

CITY OF VISALIA VMT THRESHOLDS AND IMPLEMENTATION GUIDELINES



LSA

Adopted February XX, 2021

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CITY OF VISALIA VMT THRESHOLDS AND IMPLEMENTATION GUIDELINES



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Project No. VSL2001

LSA

Exhibit "A"

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EXECUTIVE SUMMARY

Senate Bill (SB) 743, signed in 2013, changes the way transportation studies are conducted in California Environmental Quality Act (CEQA) documents. Vehicle miles traveled (VMT) replaces motorist delay and level of service (LOS) as the metric for impact determination. As a result of the final rulemaking surrounding SB 743 and the implementation deadline of July 1, 2020, the City of Visalia is adopting the new VMT thresholds and guidelines to address the shift from delay-based LOS CEQA traffic analyses to VMT CEQA traffic analyses.

This document discusses in further detail the following:

- **Definition of Region for VMT Analysis:** Tulare County has been recommended as the region for VMT analyses purposes.
- **Standardized Screening Methods for Project VMT analysis:** Residential and office projects within a Transit Priority Area, locally serving retail projects up to 50,000 square feet, residential, office, or mixed-use projects within low-VMT generating areas, 100 percent affordable housing projects and projects that are consistent with the City's General Plan and generating fewer than 1,000 daily trips are considered to have no significant VMT impacts. Therefore, such projects have been recommended to be screened out from further analysis.
- **Recommendations for Appropriate VMT Significance Thresholds for Development Projects, Transportation Projects, and Plans:** For residential, office, and mixed-use development projects, 84 percent of the existing County average, and no net increase in VMT for retail projects have been recommended as the VMT significance threshold. For other non-residential projects consistent with the General Plan, no net change in VMT per employee has been recommended as the VMT significance threshold. For transportation projects, net increase in induced VMT has been recommended as the significant threshold. For land use plans, the existing County average VMT per service population has been recommended as the significant threshold.
- **Feasible Mitigation Strategies:** VMT mitigation measures applicable for development projects, transportation projects, and plans in the context of the City have been recommended. Additionally, use of a VMT Bank, VMT Exchange, and/or VMT Impact Fee have been discussed as potential future funding mechanisms.

For purposes of this analysis, the Tulare County Association of Governments (TCAG) Travel Demand Model (TCAG Model) was used to develop screening maps. The appropriate use of the TCAG Model for VMT calculations has been further elaborated in subsequent chapters of this document.

This document will serve as a detailed guideline for preparing VMT analysis consistent with SB 743 requirements for development projects, transportation projects, and plans. Project applicants will be required to follow the guidance provided in this document for preparation of CEQA VMT analysis.



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TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
TABLE OF CONTENTS	iii
FIGURES AND TABLES	v
LIST OF ABBREVIATIONS AND ACRONYMS	vii
1.0 INTRODUCTION	1
2.0 DEFINITION OF REGION: VEHICLE MILES TRAVELED CONTEXT	5
3.0 PROJECT SCREENING	7
3.1 LAND USE DEVELOPMENT PROJECTS	7
3.2 TRANSPORTATION PROJECTS	19
4.0 THRESHOLD AND VMT ANALYSIS FOR LAND USE DEVELOPMENT PROJECTS	23
4.1 THRESHOLDS FOR LAND USE PROJECTS	23
4.2 LAND USE PROJECT VMT ANALYSIS/MITIGATION PROCEDURE	25
4.2.1 Agency Communication	25
4.2.2 Project Screening	27
4.2.3 Development Project VMT Analysis	27
4.2.4 Large Project VMT Analysis	27
4.3 MITIGATION MEASURES	27
5.0 THRESHOLDS AND INDUCED VMT ANALYSIS FOR TRANSPORTATION PROJECTS	29
6.0 SIGNIFICANCE THRESHOLDS FOR LAND USE PLANS	33
7.0 MITIGATION STRATEGIES	35
7.1 DEFINITION OF MITIGATION	35
7.2 MITIGATION MEASURES AND PROJECT ALTERNATIVES	37
7.2.1 Land Development Projects and Community/General Plans	37
7.2.2 Transportation Projects	38
7.3 FUNDING MECHANISMS	39
8.0 VISALIA GENERAL PLAN CONSISTENCY ANALYSIS	43
8.1 OBJECTIVES AND POLICIES: LAND USE	43
8.1.1 Objectives	43
8.1.2 Policies	43
8.2 OBJECTIVES AND POLICIES: CIRCULATION	46
8.2.1 Objectives	46
8.2.2 Policies	47
8.3 OBJECTIVES AND POLICIES: AIR QUALITY AND GREENHOUSE GASES	50
8.3.1 Objectives	50
8.3.2 Policies	50



APPENDICES

- A: VEHICLE MILES TRAVELED MITIGATION MEASURES FOR DEVELOPMENT PROJECTS (CAPCOA)
- B: VEHICLE MILES TRAVELED MITIGATION MEASURES FOR DEVELOPMENT PROJECTS (CARB PAPERS)
- C: VEHICLE MILES TRAVELED MITIGATION MEASURES FOR COMMUNITY PLANS AND GENERAL PLANS



FIGURES AND TABLES

FIGURES

Figure 1: VMT per Capita Compared to Population in California	2
Figure 2: 2017 GHG Emissions in California by Scoping Plan Sector and Sub-Sector Category	3
Figure 3: Percentage of Total Trips Having Origins/Destinations within the City of Visalia and Terminating within the City of Visalia, within Tulare County, or outside the County	6
Figure 4: High-Quality Transit Area within City of Visalia	9
Figure 5: Average VMT per Capita (Population), VMT per Employee, and VMT per Service Population for City of Visalia and Tulare County	12
Figure 6: City of Visalia Existing VMT per Capita	13
Figure 7: City of Visalia Existing VMT per Employee	15
Figure 8: City of Visalia Existing VMT per Service Population	17
Figure 9: SB 375 Regional Plan Climate Targets for the 18 California MPOs	24
Figure 10: VMT Analysis Process for Development Projects.....	26
Figure 11: Induced Travel – VMT Attributable to Project	30
Figure 12: Caltrans Induced Travel Calculator.....	31
Figure 13: Procedural Flow Chart – VMT Bank.....	40
Figure 14: Procedural Flow Chart – VMT Exchange	41
Figure 15: Procedural Flow Chart – VMT Impact Fee.....	42

TABLE

Table A: Representative VMT and GHG Emissions from CalEEMod.....	11
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LIST OF ABBREVIATIONS AND ACRONYMS

ADT	Average Daily Trips
AHO	Affordable Housing Overlay
BMP	Best Management Practice
BRT	Bus Rapid Transit
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
City	City of Visalia
CO ₂ e	Carbon Dioxide Equivalent
County	County of Tulare
COZ	Change of Zone
EIR	Environmental Impact Report
EO	Executive Order
FAR	Floor-to-Area Ratio
GHG	Greenhouse Gas
GPA	General Plan Amendment
GWP	Global Warming Potential
HOT	High-Occupancy Toll
HOV	High-Occupancy Vehicle
ITE	Institute of Transportation Engineers



LOS	Level of Service
MND	Mitigated Negative Declaration
MPO	Metropolitan Planning Organizations
MT	Metric Ton
ND	Negative Declaration
OPR	Governor's Office of Planning and Research
PRC	Public Resources Code
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
SB	Senate Bill
SCS	Sustainable Communities Strategy
sf	Square foot/Feet
SOC	Statement of Overriding Considerations
TA	Technical Advisory
TCAG	Tulare County Association of Governments
TDM	Transportation Demand Management
TSM	Transportation System Management
UDB	Urban Development Boundary
UGB	Urban Growth Boundary
VMT	Vehicle Miles Traveled



1.0 INTRODUCTION

Senate Bill (SB) 743, signed in 2013, changes the way transportation studies are conducted in California Environmental Quality Act (CEQA) documents. Vehicle miles traveled (VMT) replaces motorist delay and level of service (LOS) as the metric for impact determination. For development projects, VMT is simply the product of the daily trips generated by a new development and the distance those trips travel to their destinations. For capital projects, impacts are identified as the new VMT attributable to the added capital project, both from the installation of the facility and the induced growth—a new term in the CEQA lexicon—**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*. *State CEQA Guidelines* Section 15064.3 subdivision (b) states:

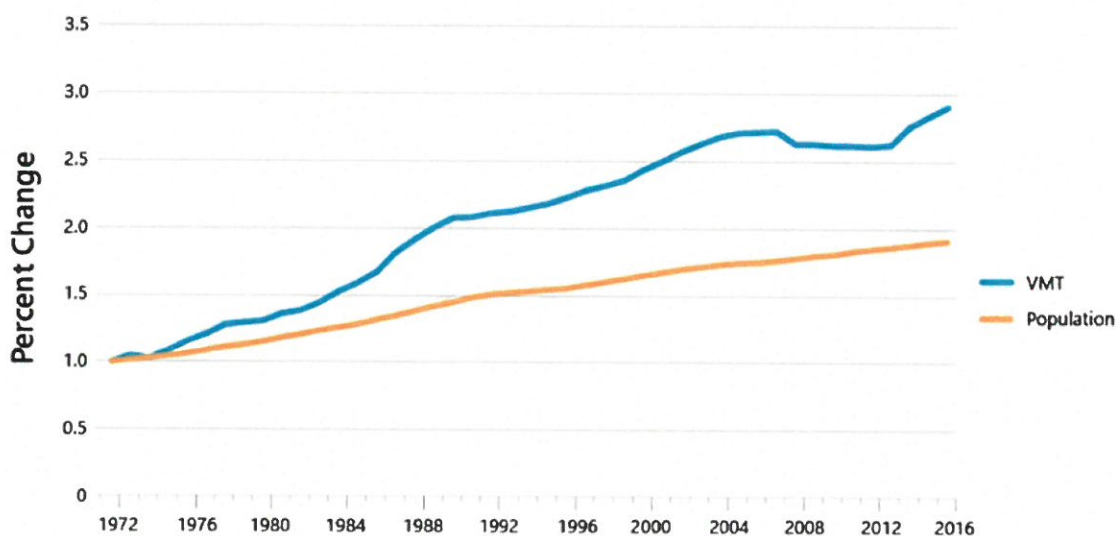
1. **Land Use Projects.** VMT exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.
2. **Transportation Projects.** Transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.
3. **Qualitative Analysis.** If existing models or methods are not available to estimate the VMT for the particular project being considered, a lead agency may analyze the project's VMT qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
4. **Methodology.** A lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household, or in any other measure. A lead agency may use models to estimate a project's VMT and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate VMT and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

The OPR provides a Technical Advisory (TA) as a guidance document to establish thresholds for this new VMT metric. The laws and rules governing the CEQA process are contained in the CEQA statute (PRC Section 21000 and following), the *State CEQA Guidelines* (California Code of Regulations, Title 14, Section 15000 and following), published court decisions interpreting CEQA, and locally adopted CEQA procedures. The TA is intended as a reference document; it does not have the weight of law.



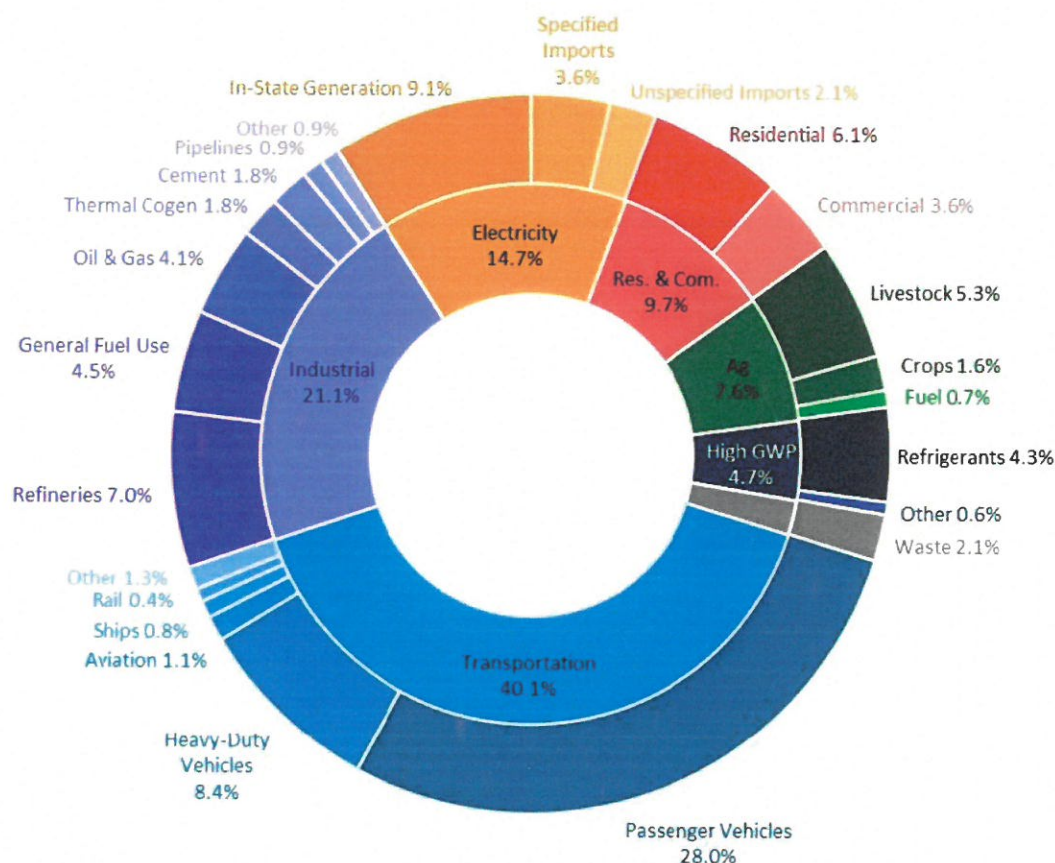
Yet, deviating from the TA is best undertaken with substantial evidence to support the agency action.

The State of California is committed to reducing greenhouse gas (GHG) emissions and achieving long-term climate change goals. To achieve these climate change goals, California needs to reduce VMT. As illustrated in Figure 1, over the last 40 years, with increase in statewide population, the overall VMT has also increased. As illustrated in Figure 2, transportation is the single largest sector contributing to the State's GHG emissions. More than 40 percent of the GHG emissions come from the transportation sector, primarily passenger cars and light-duty trucks. Reducing the number of vehicle trips and reducing the length of trips are expected to result in reduced VMT and reduced GHG emissions. The new *State CEQA Guidelines* and the establishment of VMT thresholds for CEQA analyses is linked to GHG reduction strategies and overall statewide climate change goals.



Source: <https://ca50million.ca.gov/transportation/>

Figure 1: VMT per Capita Compared to Population in California



Source: California Greenhouse Gas Emissions for 2000 to 2017 Trends of Emissions and Other Indicators (California Air Resources Board Report)

Figure 2: 2017 GHG Emissions in California by Scoping Plan Sector and Sub-Sector Category

This document establishes the City of Visalia's (City) threshold of significance for CEQA transportation studies and provides substantial evidence as appropriate. It is divided into chapters, including:

- **Chapter 2 – Definition of Region:** The document describes what the comparative is for analysis purposes. Each project will be compared to an existing regional average. The geographical area that defines the region is defined and described.
- **Chapter 3 – Project Screening:** OPR acknowledges that certain projects are either low VMT generators, or, by virtue of their location, would have a less than significant impact. The City should use these screening criteria and should offer substantial evidence for other circumstances that would lead to a less than significant impact.
- **Chapter 4 – Significance Threshold and VMT Analysis for Land Use Development Projects:** In this chapter, the threshold that would define a significant CEQA impact is identified. This threshold is linked to a specific land development project that is being analyzed under CEQA.



The actual VMT metric (either an efficiency rate or total VMT) is described. The process of VMT analysis is also described in this chapter.

- **Chapter 5 –Thresholds and Induced VMT Analysis for Transportation Projects:** This chapter describes the method to evaluate significant CEQA impacts associated with transportation projects. Many non-vehicular capital projects are presumed to have a less than significant impact. Capacity-enhancing projects may have significant impacts and may be subject to a detailed analysis that will include measuring induced travel.
- **Chapter 6 – Significance Thresholds for Land Use Plans:** This chapter provides guidance and substantial evidence to support the City's treatment of land use plans and their CEQA transportation analyses.
- **Chapter 7 – Mitigation Strategies:** Potential mitigation strategies are indicated in this chapter. It is noted that this discussion is not intended as a full list of measures the City sanctions as feasible. As in previous CEQA practice, it is generally the practitioner who identifies mitigation measures to offset the specific project-related impacts identified in individual environmental document. The discussion here is intended as a reference and guide for possible strategy for applicants who may wish to investigate to offset their specific project-related significant impacts.
- **Chapter 8 – Visalia General Plan Consistency Analysis:** This chapter summarizes the objectives and policies from the City's General Plan Land Use Element, Circulation Element, and Air Quality and Greenhouse Gas Element that could be better achieved with implementation of VMT metrics and analysis procedures.

2.0 DEFINITION OF REGION: VEHICLE MILES TRAVELED CONTEXT

The question of context is the definition of the scope of the VMT analysis. The common term for this in previous delay-based LOS analyses is **project study area**. In the delay-based LOS analyses, a project study area is generally determined based on the incremental increase in traffic from the project and its potential to create a significant LOS impact. This generally includes intersections and roadway segments where the project would add a prescribed number of peak-hour trips. Many times, lead agencies stop study area boundaries at their jurisdictional borders.

Unlike delay-based LOS analyses, VMT is a regional effect not defined by roadway, intersection, or pathway. The OPR acknowledges this in its TA (page 6), which states,

Lead agencies should not truncate any VMT analysis because of jurisdictional or other boundaries. ...

Furthermore, the recommendations for thresholds for the primary land use types (residential and office) are based on a comparison to a **regional average**. Region is not defined further in the TA. Instead, the OPR offers the following suggestions:

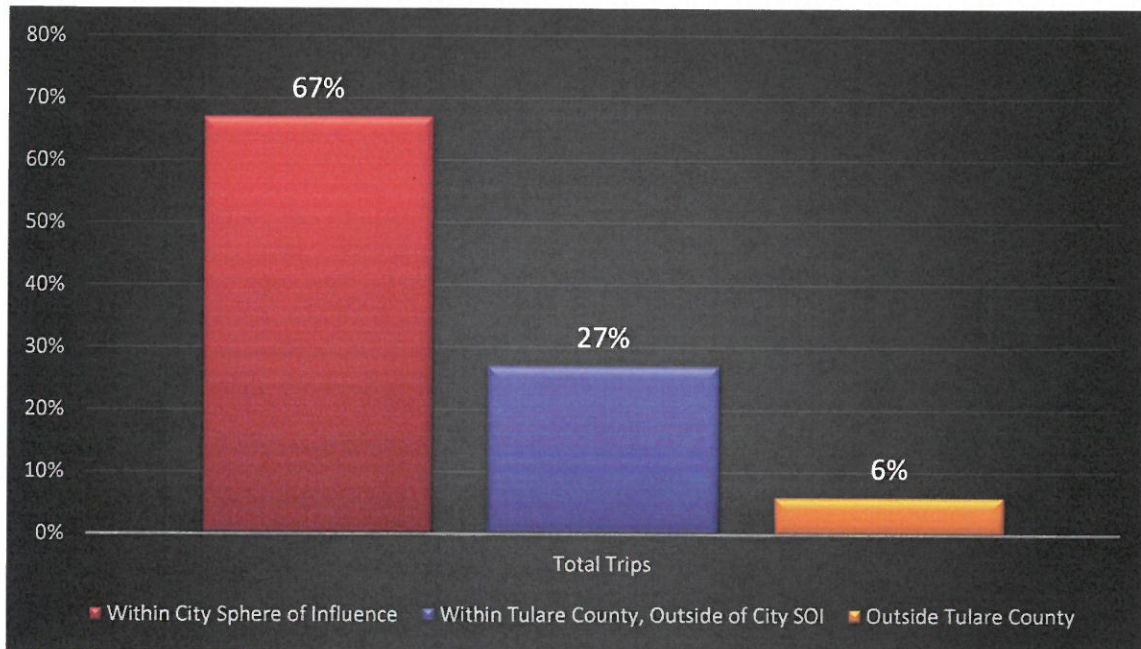
1. *In cases where the region is substantially larger than the geography over which most workers would be expected to live, it might be appropriate to refer to a smaller geography, such as **county**, that includes the area over which nearly all workers would be expected to live (page 16).*
2. *For residential projects in unincorporated county areas, the local agency can compare a residential project's VMT to (1) the **region's** VMT per capita, or (2) the aggregate population weighted VMT per capita of all cities in the region (page 15).*

LSA surveyed other large urbanized areas around the state to identify what region has been established for VMT thresholds. In most cases, the county boundary has been identified as the region selected for VMT analysis. Mobility can be studied using a trip-based approach or a tour-based approach. The OPR TA states that "where available, tour-based assessment is ideal because it captures travel behavior more comprehensively. But where tour-based tools or data are not available for all components of an analysis, a trip-based assessment of VMT serves as a reasonable proxy."

Since the Tulare County Association of Governments (TCAG) Model is a trip-based model, a trip-based approach has been followed. LSA used the TCAG Model to examine the trips into and out of Visalia. As such, consistent with the OPR TA, only trips having origins or destinations or both within the City were considered. External pass-through trips were not considered. As illustrated in Figure 3, out of the total trips, about 67 percent trips are contained within the City and its sphere of influence. Another 27 percent of trips originate or are destined within other jurisdictions in Tulare County (County). The remaining 6 percent trips either originate or are destined outside Tulare County. Because the majority of the trips (94 percent) are contained within Tulare County, the County will be used to define the region.



The OPR guidance recommends consistency in approach; once a region is established, that region should be used for all subsequent traffic analyses.



Source: TCAG Model

Figure 3: Percentage of Total Trips Having Origins/Destinations within the City of Visalia and Terminating within the City of Visalia, within Tulare County, or outside the County

It should be recognized the use of the County as the region defines the comparative, or the denominator, in the identification of project-related impact. The numerator is the project's VMT contribution. This project-related VMT profile may go beyond the County boundary and not be truncated by a jurisdictional boundary. For example, if a large employment generating development is proposed near the City's western boundary, it may generate VMT from as far away as Fresno or other communities in the San Joaquin Valley. In that case, it would be the responsibility of the applicant and traffic study preparer to include the project VMT regardless of geographical limit to the satisfaction of City staff. This project-related VMT profile would be compared against the Tulare County regional average.

3.0 PROJECT SCREENING

The TA acknowledges that certain activities and projects may result in a reduction in VMT and GHG emissions and, therefore, a less than significant impact to transportation and circulation. A variety of projects may be screened out of a complicated VMT analysis due to the presumption described in the TA regarding the occurrence of less than significant impacts.

3.1 LAND USE DEVELOPMENT PROJECTS

The TA acknowledges that conditions may exist that would presume that a development project has a less than significant impact. These may be size, location, proximity to transit, or trip-making potential. For example, development projects that have one or more of the following attributes may be presumed to create a less than significant impact:

- The project is within 0.5 mile of a Transit Priority Area or a High-Quality Transit Area unless the project is inconsistent with the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), has a floor area ratio (FAR) less than 0.75, provides an excessive amount of parking, or reduces the number of affordable residential units. In accordance with SB 743, "Transit priority areas" are defined as "an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program. A Major Transit Stop means: "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 of 15 minutes or less during the morning and afternoon peak commute periods." A High-Quality Transit Area or Corridor is a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

Figure 4 depicts transit priority areas within Visalia including high-quality transit areas (within 0.5 mile of a major transit stop) served by the Visalia Transit with service intervals of 15 minutes or less. Projects proposed in these areas may be presumed to have a less than significant transportation impact unless the project is inconsistent with the RTP/SCS, has an FAR less than 0.75, provides an excessive amount of parking, or reduces the number of affordable residential units.

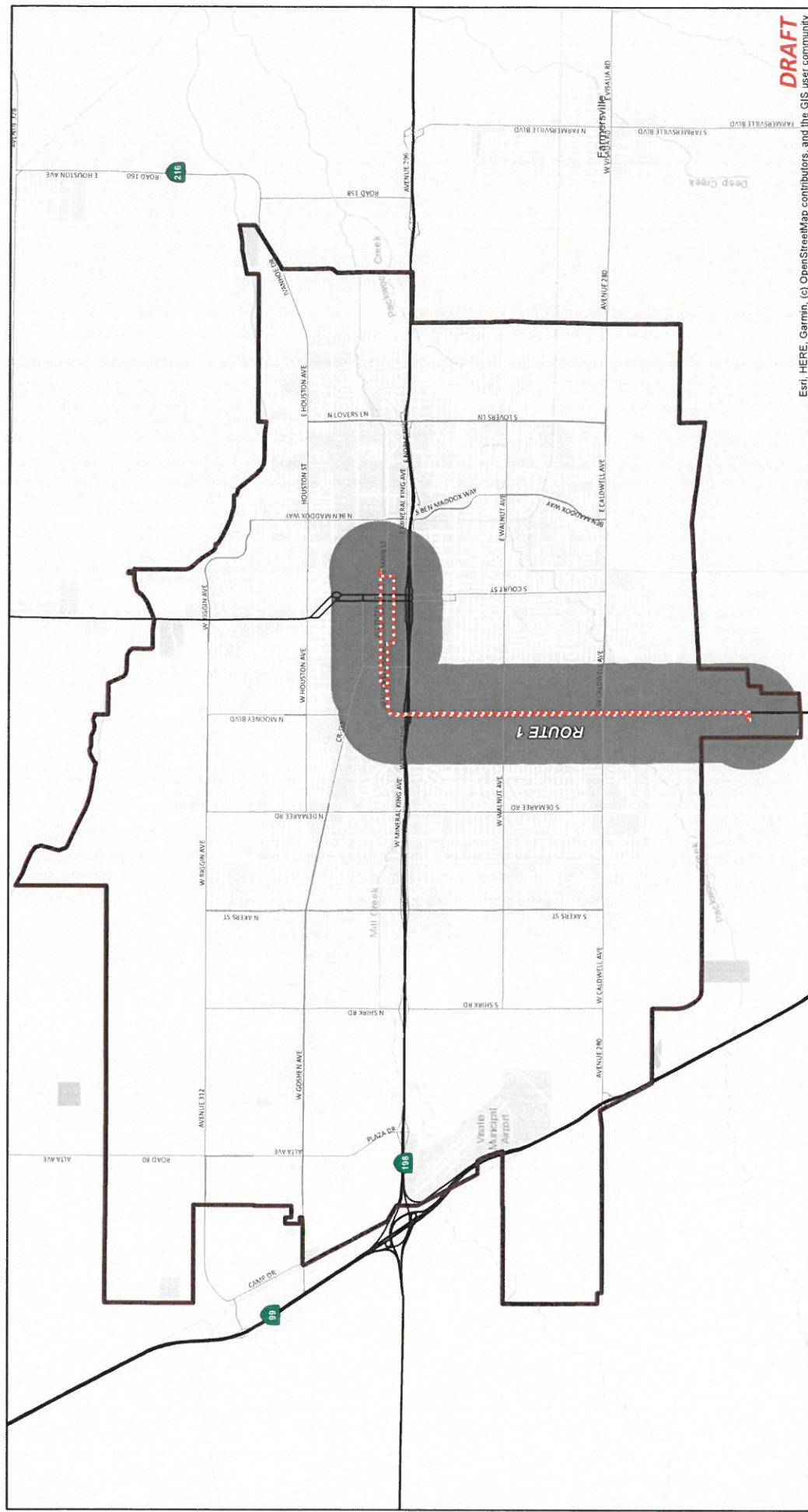
- The project involves local-serving retail space of less than 50,000 square feet (sf).
- The project is 100 percent deed-restricted affordable housing units.
- For the City of Visalia, projects consistent with the City's General Plan can be screened if the project would generate fewer than 1,000 average daily trips (ADT), and projects not consistent with the City's General Plan can be screened if the project would generate fewer than 500 ADT.

The TA recommends a volume of 110 ADT. This recommendation is not based on any analysis of GHG reduction but, rather, on a CEQA categorical exemption. This exemption criterion states that for existing facilities, including additions to existing structures of up to 10,000 sf, the project is exempted from CEQA as long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not located in an environmentally sensitive area (*State CEQA Guidelines* Section 15301, subdivision (e)(2)).



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Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

FIGURE 4



City of Visalia VMT Thresholds and Implementation Guidelines



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As stated in the OPR TA, for projects that have a linear increase in trip generation with respect to the building footprint, the daily trip generation is anticipated to be between 110 and 124 trips per 10,000 sf. Therefore, based on this assumption, the OPR recommends 110 ADT as the screening threshold. However, the California Emissions Estimator Model (CalEEMod) was used to characterize the effect of changes in project-related ADT to the resulting GHG emissions. This model was selected because it is provided by the California Air Resources Board (CARB) to be used statewide for developing project-level GHG emissions. CalEEMod was used with the built-in default trip lengths and types to show the vehicular GHG emissions from incremental amounts of ADT. Table A shows the resulting annual VMT and GHG emissions from the incremental ADT.

Table A: Representative VMT and GHG Emissions from CalEEMod

Average Daily Trips (ADT)	Annual Vehicle Miles Traveled (VMT)	GHG Emissions (Metric Tons CO ₂ e per year)
200	683,430	258
300	1,021,812	386
400	1,386,416	514
500	1,703,020	643
600	2,043,623	771
750	2,562,862	967
1,000	3,417,150	1,290
1,500	5,125,725	1,935

Source: CalEEMod version 2016.3.2.

CalEEMod = California Emissions Estimator Model

GHG = Greenhouse Gas

CO₂e = carbon dioxide equivalent

A common GHG emissions threshold is 3,000 metric tons (MT) of carbon dioxide equivalent¹ (CO₂e) per year.² The vehicle emissions are typically more than 50 percent of the total project GHG emissions. Thus, a project with 1,000 ADT would generally have total project emissions that could be less than 2,600 MT CO₂e/year (i.e., 50 percent or 1,290 MT CO₂e/year coming from vehicle emissions and the other 50 percent coming from other project activities). As this level of GHG emissions would be less than 3,000 MT CO₂e/year, the emissions of GHG from a project up to 1,000 ADT would typically be less than significant. The City of Visalia Implementation Guidelines document recommends that a more conservative daily trip threshold be applied to projects that are not consistent with the City's General Plan. This is because a project that is not consistent with the General Plan also conflicts with the RTP/SCS. Therefore, for projects that are consistent with the City's General Plan, the City will allow screening of these projects if they would generate fewer than 1,000 ADT. For projects that are not consistent with the City's General Plan, a screening threshold of 500 ADT will be applied.

- The development of institutional/government and public service uses that support community health, safety and welfare may also be screened from subsequent CEQA VMT analysis. These facilities (e.g., police stations, fire stations, community centers, and refuse stations) are already part of the community and, as a public service, the VMT is accounted for in the existing regional

¹ Carbon dioxide equivalent (CO₂e) is a concept developed to provide one metric that includes the effects of numerous GHGs. The global warming potential (GWP) of each GHG characterizes the ability of each GHG to trap heat in the atmosphere relative to another GHG. The GWPs of all GHGs are combined to derive the CO₂e.

² Source: <http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds>.

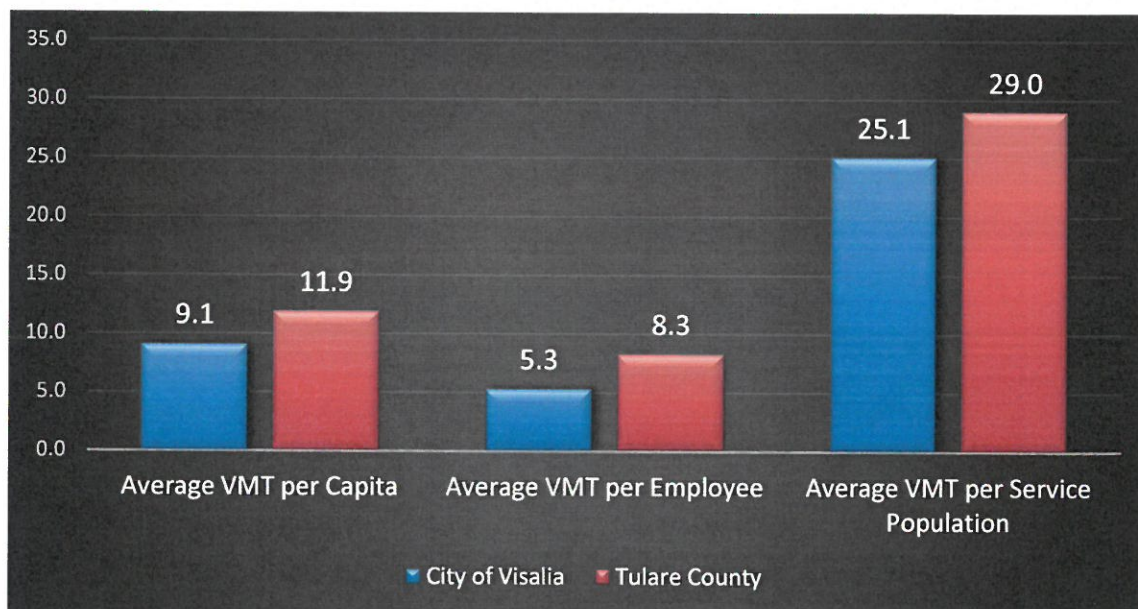


average. Many of these facilities generate fewer than 1,000 ADT and/or use vehicles other than passenger-cars or light duty trucks. These other vehicle fleets are subject to regulation outside of CEQA, such as the CARB and the San Joaquin Valley Air Pollution Control District.

- Residential, office, or mixed-use projects that are consistent with the City's General Plan and located within green-colored VMT zones, as shown in Figures 6, 7, and 8, respectively, are presumed to have similar low VMT profiles and could be screened out from further VMT analysis.

The TA states "Residential and office projects that are located in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Maps created with VMT data, for example from a travel survey or a travel demand model, can illustrate areas that are currently below threshold VMT. Because new development in such locations would likely result in a similar level of VMT, such maps may be used to screen out residential and office projects from needing to prepare a detailed VMT analysis."

LSA calculated VMT per capita, VMT per employee, and VMT per service population for the City of Visalia, as well as for the entire Tulare County. Figure 5 illustrates the comparison of these VMTs. LSA also created screening maps that residential and non-residential projects within the City can use to screen projects, provided they are consistent with the City's General Plan. As described earlier, the City will use Tulare County as the region. Therefore, the screening maps have been created using the County as the region. Figure 6 illustrates City of Visalia's VMT per capita screening map. Figure 7 illustrates the City's VMT per employee screening map, and Figure 8 illustrates the City's VMT per service population screening map.



Source: TCAG Model

Figure 5: Average VMT per Capita (Population), VMT per Employee, and VMT per Service Population for City of Visalia and Tulare County

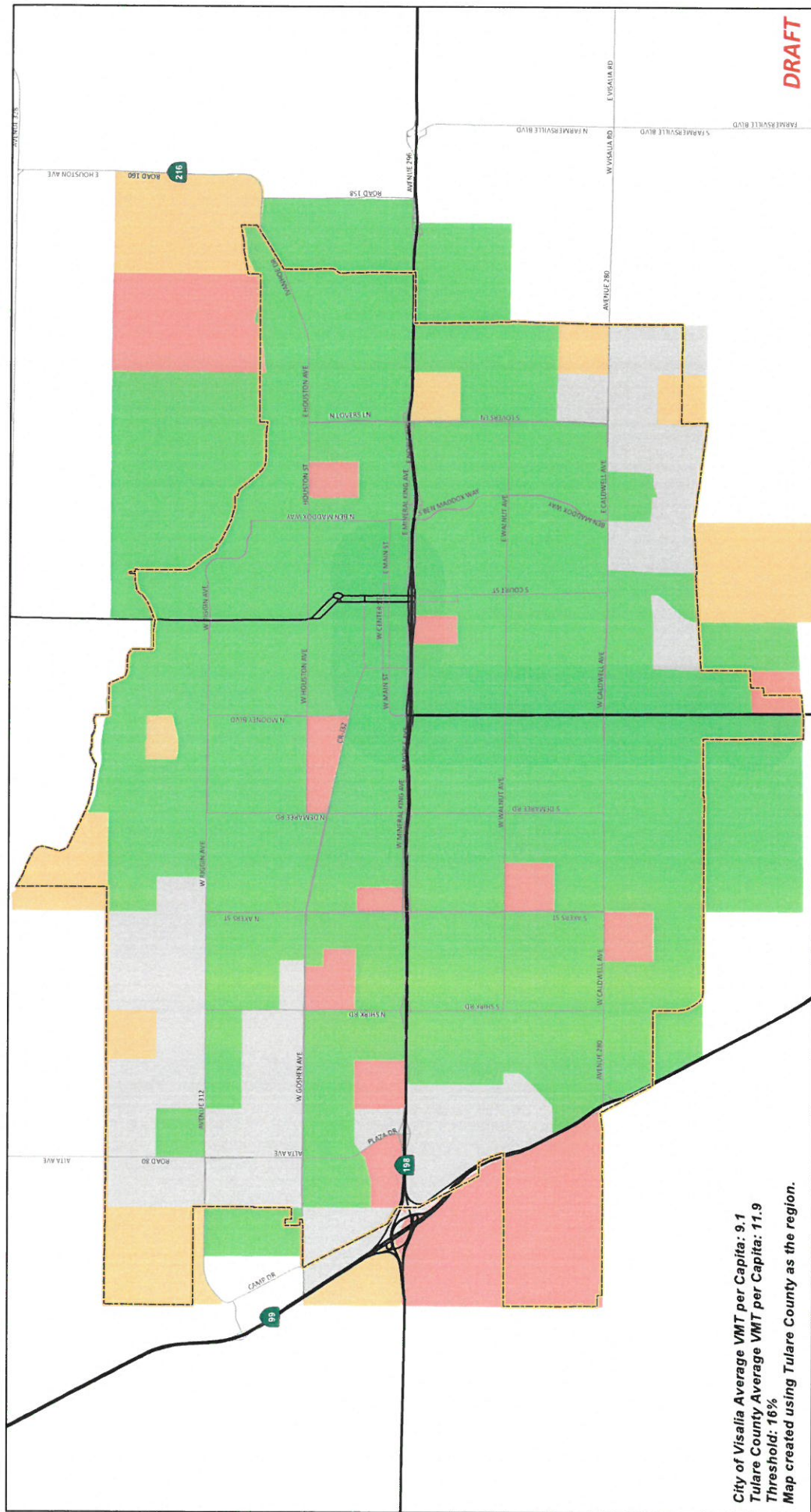


FIGURE 6



City of Visalia
VMT Thresholds and Implementation Guidelines



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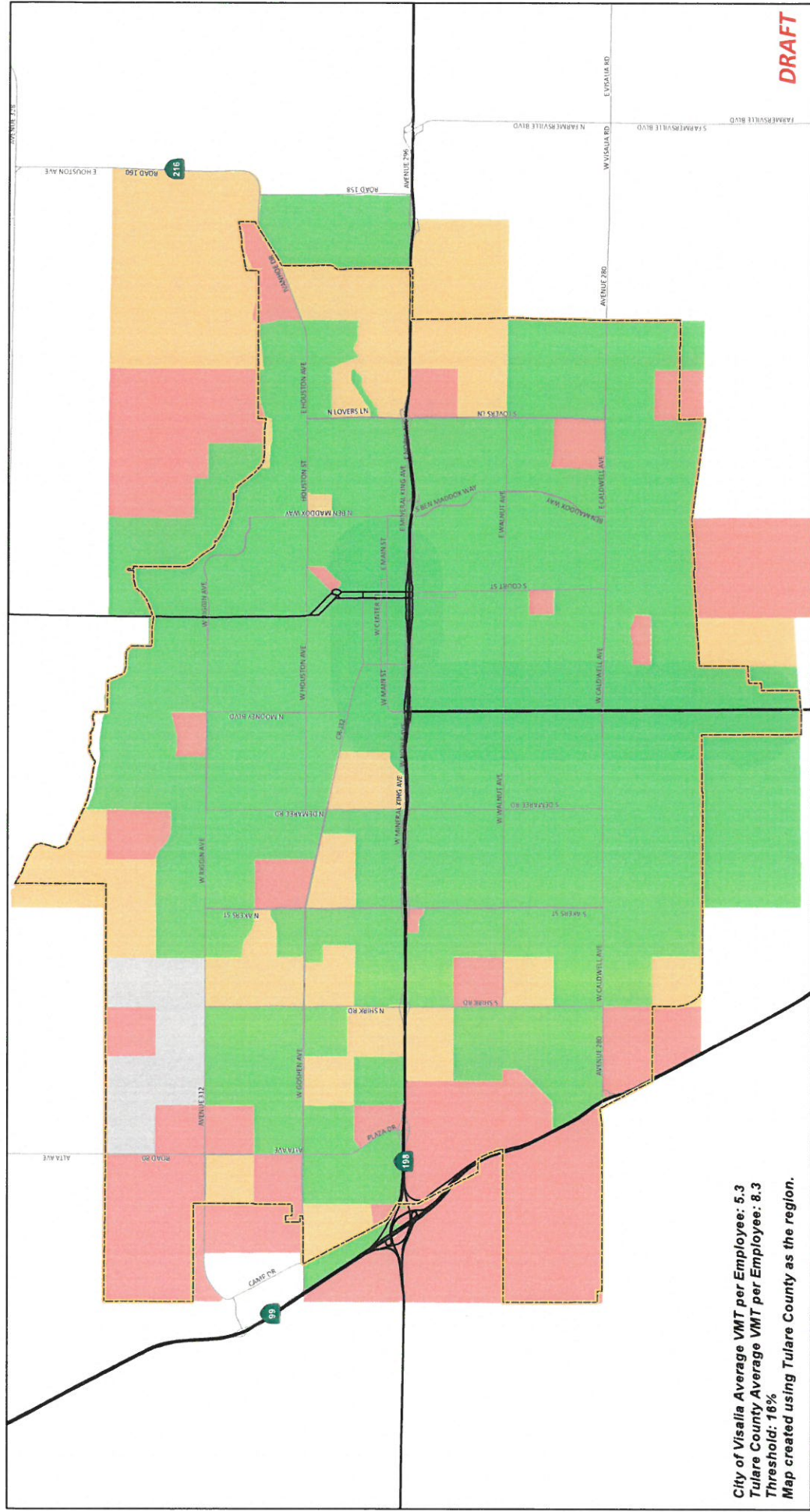


FIGURE 7

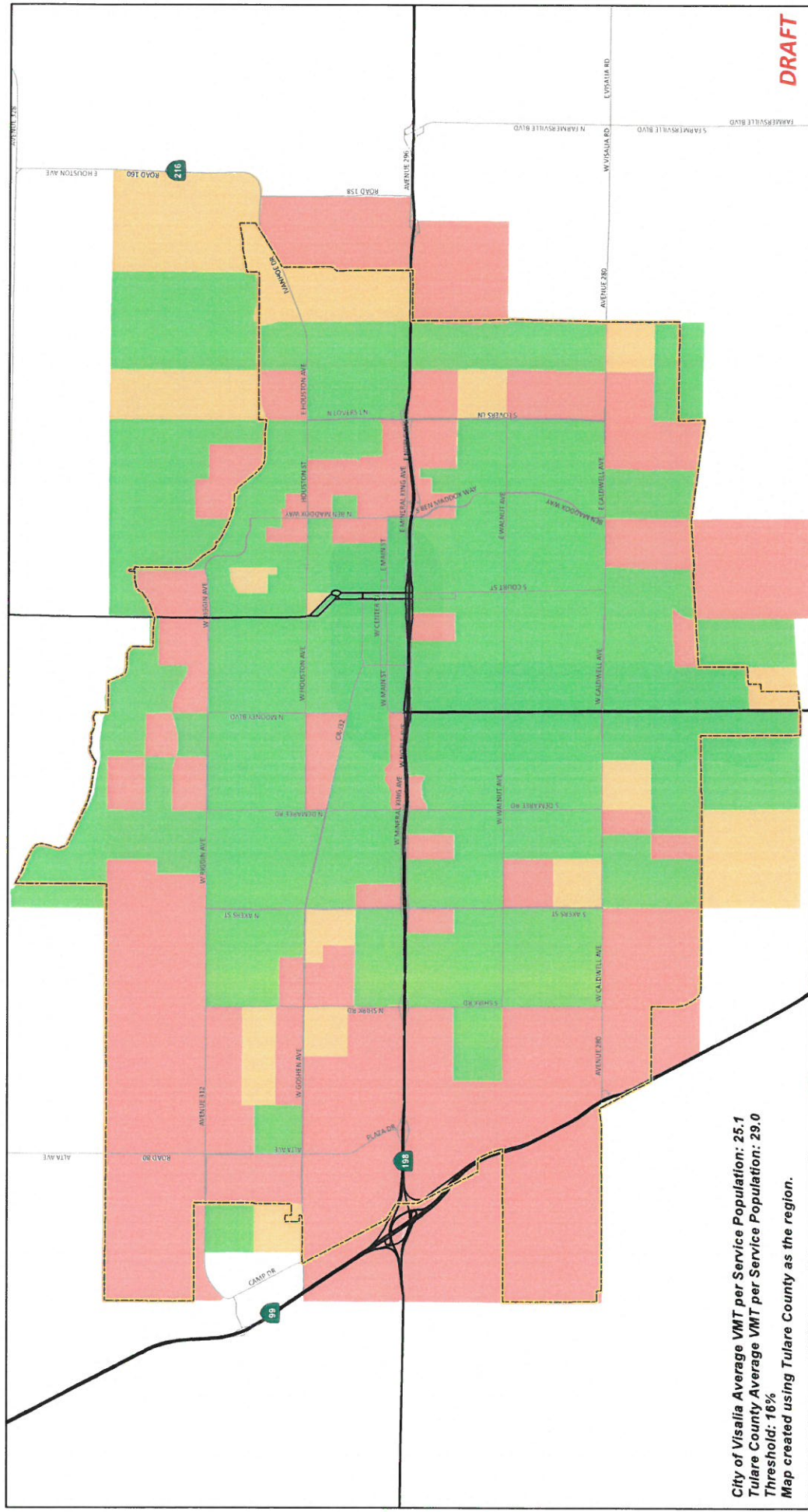
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City of Visalia VMT Thresholds and Implementation Guidelines



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City of Visalia Average VMT per Service Population: 25.1
Tulare County Average VMT per Service Population: 29.0
Threshold: 16%
Map created using Tulare County as the region.

LSA **LEGEND** **City of Visalia Sphere of Influence** **VMT per Service Population**
 24.4 or Less
 More than 24.4, up to 29.0
 Greater than 29.0



City of Visalia VMT Thresholds and Implementation Guidelines



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The City of Visalia VMT Screening Tool³ can be used to determine whether a land use development project may be screened from a detailed VMT analysis. It should be noted that if a project constitutes a General Plan Amendment (GPA) or a Change of Zone (COZ), the City will evaluate such projects on a case-by-case basis to determine whether a VMT analysis would be required and the above-listed screening criteria could be applied.

Additionally, the 2020 State CEQA Guidelines Section 15007 (c) states that “if a document meets the content requirements in effect when the document is sent out for public review, the document shall not need to be revised to conform to any new content requirements in Guideline amendments taking effect before the document is finally approved.” Therefore, if a land use development/transportation project is already cleared by a certified Environmental Impact Report (EIR) or an adopted Negative Declaration (ND)/Mitigated Negative Declaration (MND), then subsequent projects that are consistent with the approved project will not require a new VMT analysis.

Projects that show a less than significant impact upon detailed analysis, as described in Chapter 4, will not require any additional VMT analysis under CEQA.

3.2 TRANSPORTATION PROJECTS

The primary attribute to consider with transportation projects is the potential to increase vehicle travel, sometimes referred to as “induced travel.” Based on the OPR TA, while the City has discretion to continue to use a delay-based LOS analysis for CEQA disclosure of transportation projects, changes in vehicle travel must also be quantified. The City of Visalia will solely use VMT analysis for CEQA disclosure of transportation projects, but will also require a LOS analysis for design, traffic operations, and safety purposes. The TA lists a series of projects that would not likely lead to a substantial or measurable increase in vehicle travel and which would, therefore, not require an induced travel analysis. These include the following:

- 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 median barriers and 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 vehicle 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.

³ City of Visalia Online Screening Tool: Link forthcoming.



- 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 [HOV], 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, 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.



Additionally, transit and active transportation projects generally reduce VMT and, therefore, may be presumed to cause a less than significant impact on transportation. This presumption may apply to all passenger rail projects, bus and bus rapid-transit projects, and bicycle and pedestrian infrastructure projects. The City may use this CEQA presumption of less than significant impact to aid in the prioritization of capital projects, as the CEQA process for any of these project types would be more streamlined than other capacity-enhancing capital projects.



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4.0 THRESHOLD AND VMT ANALYSIS FOR LAND USE DEVELOPMENT PROJECTS

4.1 THRESHOLDS FOR LAND USE PROJECTS

The TA states that SB 743 and all CEQA VMT transportation analyses refer to automobiles. Here, the term automobile refers to on-road passenger vehicles, specifically cars and light duty trucks (page. 4). Heavy-duty trucks can be addressed in other CEQA sections (air quality, greenhouse gas, noise, and health risk assessment analysis) and are subject to regulation in a separate collection of rules under CARB jurisdiction. This approach was amplified by Chris Ganson, Senior Advisor for Transportation at OPR, in a presentation to the Fresno Council of Governments (October 23, 2019) and by Ellen Greenberg, the California Department of Transportation (Caltrans) Deputy Director for Sustainability, at the San Joaquin Valley Regional Planning Agencies' Directors' Committee meeting (January 9, 2020).

The OPR has identified the subject of the thresholds as the primary trips in the home-based typology: specifically, home-based work trips. This includes residential uses, office uses, and retail uses. The home-based work trip type is the primary trip type during the peak hours of commuter traffic in the morning and evening periods.

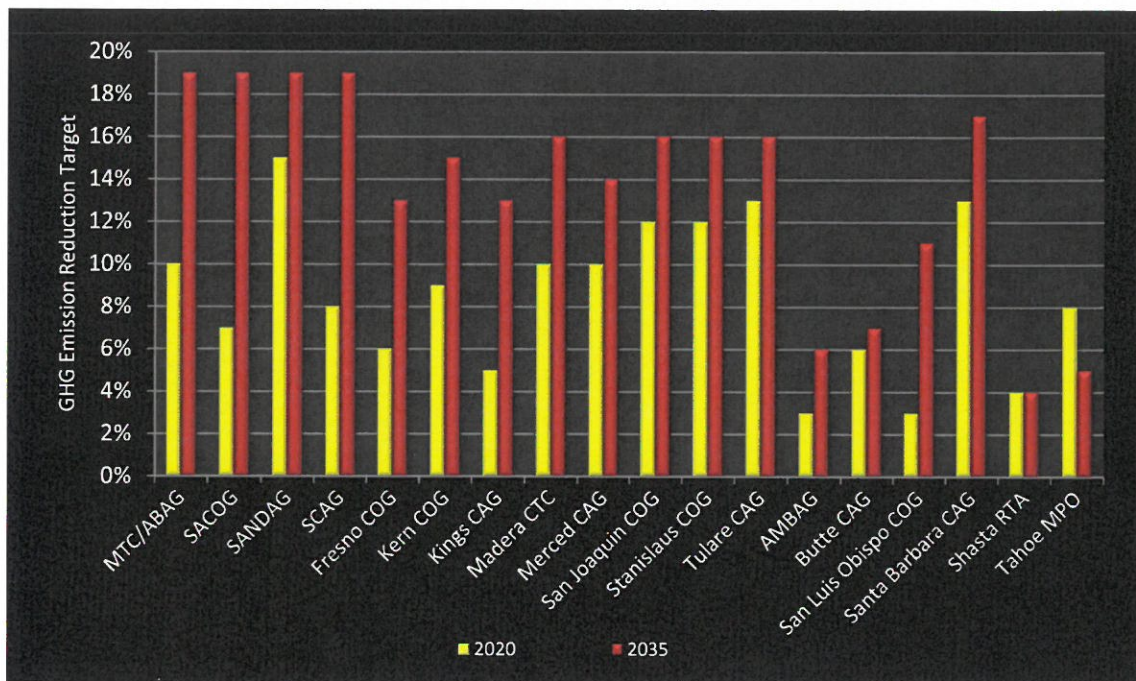
The impact of transportation has shifted from congestion to climate change, and the purpose of the CEQA analysis is to disclose and ultimately reduce GHG emissions by reducing the number and length of automobile trips. As part of the SB 375 land use/transportation integration process and the GHG goal setting, the State and Regional Transportation Planning Agencies (RTPA) have agreed to reduce GHG through integrated land use and transportation planning by a statewide average of approximately 15 percent by 2035. Figure 9 illustrates the SB 375 regional GHG emission reduction targets for all 18 Metropolitan Planning Organizations (MPOs) in California that were established by the CARB in 2018. Furthermore, in its 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals, the CARB recommends total VMT per capita rates approximately 15 percent below existing conditions.

The TA therefore recommends:

A proposed (residential) project exceeding a level of 15 percent below existing regional average VMT per capita may indicate a significant transportation impact.

A similar threshold would apply to office projects (15 percent below existing regional average VMT per employee).

VMT generated by retail projects would indicate a significant impact for any net increase in total VMT.



Source: <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets>

Figure 9: SB 375 Regional Plan Climate Targets for the 18 California MPOs

CARB establishes GHG targets for each of the 18 MPOs in the State, reviews the SCSs, and makes a determination of whether the SCSs would achieve GHG reduction targets if implemented. In the spring of 2018, CARB adopted new GHG targets for all the 18 MPOs in the State based on the 2017 Scoping Plan and other new data as illustrated in Figure 9. CARB established a 16 percent GHG reduction target for 2035 for the Tulare region. The State recognizes that Tulare County's contribution to the aggregate 15 percent statewide GHG emission reduction is 16 percent. Other regions may achieve lower reductions to achieve the aggregate statewide goal.⁴ As such, reduction in GHG directly corresponds to reduction in VMT. In order to reach the statewide GHG reduction goal of 15 percent, the Tulare region must reduce GHG by 16 percent. The method of reducing GHG by 16 percent is to reduce VMT by 16 percent as well.

Therefore, the City has established a threshold for land use developments, specifically residential and office, of exceeding 16 percent below the existing regional VMT per capita as indicative of a significant environmental impact.

No other discrete land use types are identified for threshold development. Mixed-use projects should be evaluated in their entirety or the City may use the predominant land use type for the analysis. The City will make a determination of the predominant land use type on a case-by-case basis based on the project description. Credit for internal trip capture should be made. Internal trip

⁴ The latest GHG targets by region can be found at <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets>.



capture may be calculated using the latest edition of the Institute of Transportation Engineers (ITE) *Trip Generation Handbook* (for smaller projects), the TCAG Model (for larger projects), or other applicable sources approved by the agency. If the mixed-use project is evaluated in its entirety, then VMT per service population (population + employment) needs to be used as the metric. The significance threshold for such projects will be the same as residential and office projects (84% of the existing regional VMT per service population).

The TA suggests that lead agency may, but is not required to, develop thresholds for any other use. As such, for land use types other than residential, office, and retail, one approach is to review the agency General Plan and/or the TCAG RTP/SCS and identify whether the implementation of the plan would result in a reduction of VMT and GHGs. If it does, the City may conclude the implementation of the plan, including all the other land use types will achieve the regional climate change goals. Therefore, consistency with the plan and no net change in VMT per employee for the other land use types is a rational threshold. However, for projects seeking a GPA, a project exceeding a level of 84 percent of the existing County average VMT per employee would indicate a significant transportation impact.

This approach would require disclosure of substantial evidence, including the General Plan findings, and other traffic and air quality forecasting support. Additionally, if the City wishes to establish some other threshold less stringent than the 84 percent recommended for residential and office projects, a body of substantial evidence would be necessary.

4.2 LAND USE PROJECT VMT ANALYSIS/MITIGATION PROCEDURE

Figure 10 demonstrates the potential development entitlement process to comply with the *State CEQA Guidelines* related to VMT and transportation impacts. It provides the path from application filing through determination of impacts. It is presented as the standard process; each development application is considered unique and may create alternative or modified steps through the process. Each step that diverges from this standard process should be accompanied with substantial evidence demonstrating compliance with other climate change and GHG emission reduction laws and regulations.

4.2.1 Agency Communication

After the Site Plan Review process, the applicant should seek a meeting with City staff to discuss the project description, potential resident/employee numbers, and the analysis methodology. Key elements to address include a description of the project in sufficient detail to generate trips and identify the potential catchment area (i.e., trip lengths if no modeling is undertaken), estimate project VMT, discuss project design features that may reduce the VMT from the project development, and discuss the project location and associated existing regional VMT percentages. As a result of the meeting, the applicant or their consultant shall prepare a transportation analysis scope of work for review and approval by the City.

Projects that will influence Caltrans facilities may be subject to the Caltrans Local Development-Intergovernmental Review program. As part of the program, Caltrans may review the VMT analysis methodology, findings, and mitigation measures, with an eye toward statewide consistency.



City of Visalia VMT Thresholds and Implementation Guidelines

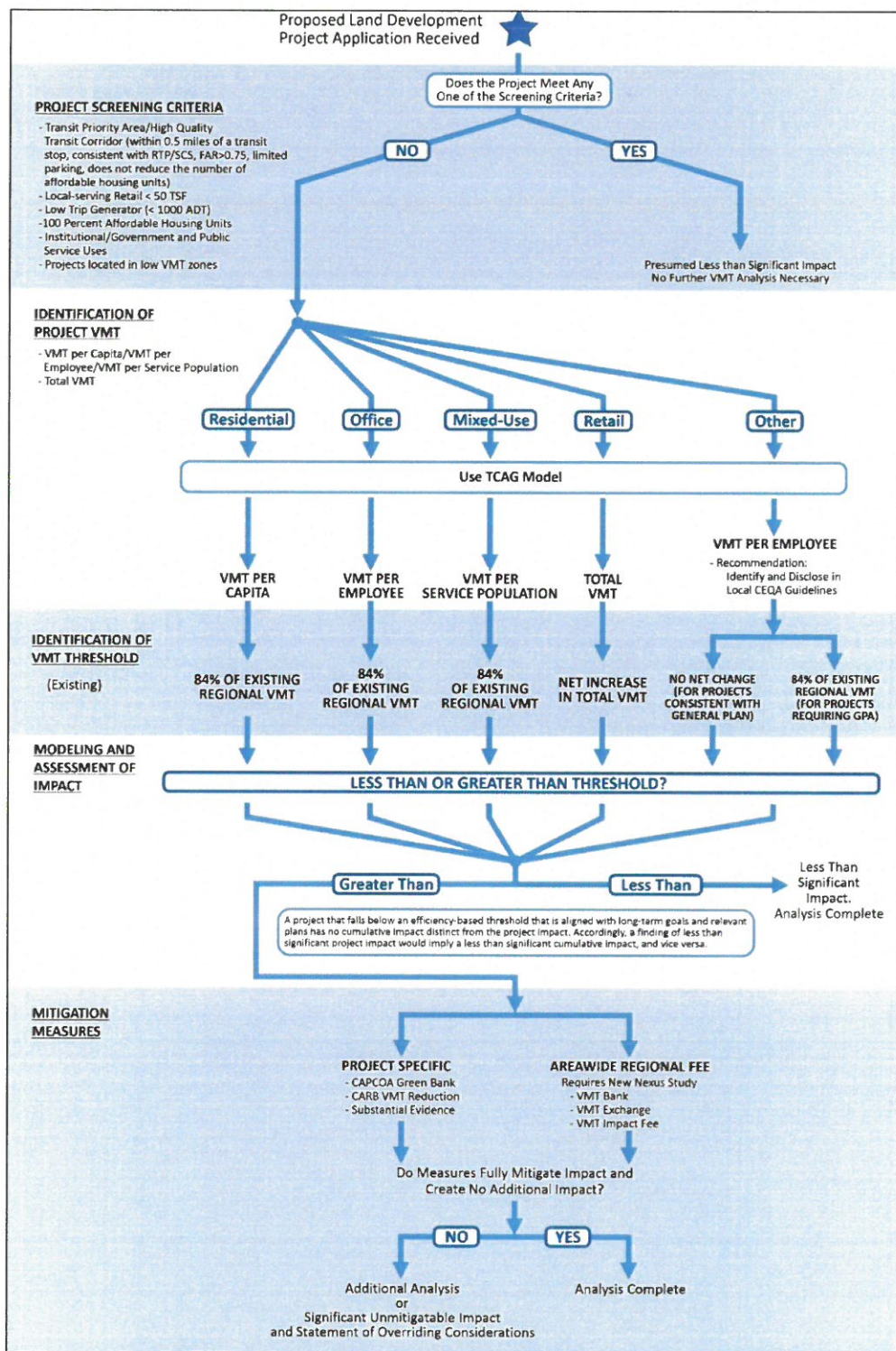


Figure 10: VMT Analysis Process for Development Projects



4.2.2 Project Screening

Once a development application is filed and the meeting is held, project screening is conducted as the initial step. If the project meets any one of the screening criteria, the project may be presumed to create a less than significant impact. No further VMT analysis is necessary. The CEQA document should enumerate the screening criteria and how the project meets or exceeds that threshold. If project screening does not apply, a VMT analysis may be required. The extent of this analysis may be a simple algebraic demonstration or a more sophisticated traffic modeling exercise. This distinction is addressed later.

4.2.3 Development Project VMT Analysis

The first step is to identify the project land use type and the appropriate metric to use, i.e., VMT per capita, VMT per employee, VMT per service population, or total VMT. The metric should be VMT per capita for residential projects, VMT per employee for office projects, VMT per service population for mixed-use projects, and total VMT for retail projects. For mixed-use projects, the City may allow use of the predominant land use and corresponding metric in a case-by-case basis. For all other uses, the metric used should be VMT per employee.

4.2.4 Large Project VMT Analysis

For large or multi-use projects, use of the TCAG Model is required. For purposes of City review, all projects should use the TCAG Model. At this level of trip generation, the probability of trip fulfillment expands to an area greater than the immediate project location and may include a greater regional attraction. The TCAG Model can more accurately define the select links used and the total VMT generated by the project.

Next, the project-generated VMT (per capita, per employee, per service population, or total) is compared to the appropriate significance threshold as described in Section 4.1. If the project VMT metric is less than the significance threshold, the project is presumed to create a less than significant impact. No further VMT analysis is required. If the project is greater than the significance threshold, mitigation measures are required.

4.3 MITIGATION MEASURES

The applicant is required, per CEQA, to identify feasible offsets to completely mitigate the impact created by the project. These can come from the mitigation strategies provided by the City (Appendices A and B), or selected based on the applicant and their CEQA team experience. The City must approve and accept the ultimate mitigation ascribed to the project and the related VMT percentage reduction. A detailed discussion about project specific mitigations is included in Section 7.2.1.

If the mitigation measures mitigate the project impact to less than the jurisdictional threshold, the project is presumed to have an impact mitigated to a less than significant level. No further VMT analysis is required. If the project's VMT impact cannot be mitigated, the City may 1) request the project be redesigned, relocated, or realigned to reduce the VMT impact, or 2) require the preparation of an EIR with 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 EIR/SOC is prepared.



5.0 THRESHOLDS AND INDUCED VMT ANALYSIS FOR TRANSPORTATION PROJECTS

The 2020 CEQA Guidelines include Section 15064.3.b.(2) to address transportation projects. It reads:

For roadway capacity projects, agencies have the discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements.

The City may continue to use delay and LOS for transportation projects for design and traffic operation purposes as long as impacts related to “other applicable requirements” are disclosed. This has generally been interpreted as VMT impacts and other State climate change objectives. These other applicable requirements may be found in other parts of an environmental document (i.e., air quality, GHG), or may be provided in greater detail in the transportation section.

For projects on the State highway system, Caltrans will use and will require sponsoring agencies to use VMT as the CEQA metric, and Caltrans will evaluate the VMT “attributable to the project” (January 9, 2020, conference). Caltrans’ Intergovernmental Review will review environmental documents for capacity-enhancing projects for their analysis of VMT change.

The assessment of a transportation project’s VMT should disclose the VMT without the project and the difference in VMT with the project. Any growth in VMT attributable to the transportation project would result in a significant impact. A significant transportation project impact is presumed when the VMT increases over the No Project condition.

Capacity improvement projects have the potential of producing significant transportation impacts because they are likely to induce travel. According to the OPR TA, induced travel is the additional vehicle travel that is caused by the new capacity on the roadway. The induced travel could include route switching, time-of-day change, mode shift, longer trips, new trips to existing destinations, and additional travel due to new development. Current traffic models have limited abilities to forecast new trips and new developments associated with the capacity improvements, as their land use or socioeconomic databases are fixed to a horizon date. OPR refers to a limited set of reports that would indicate elasticities.

The most recent major study (Duranton & Turner 2011, p. 24), estimates an elasticity of 1.0, meaning that every 1 percent change in lane miles results in a 1 percent increase in VMT.

The TA presents one method to identify the induced growth, as follows.

To estimate VMT impacts from roadway expansion projects:

1. *Determine the total lane-miles over an area that fully captures travel behavior changes resulting from the project (generally the region, but for projects affecting interregional travel look at all affected regions).*
2. *Determine the percentage change in total lane miles that will result from the project.*
3. *Determine the total existing VMT over that same area.*

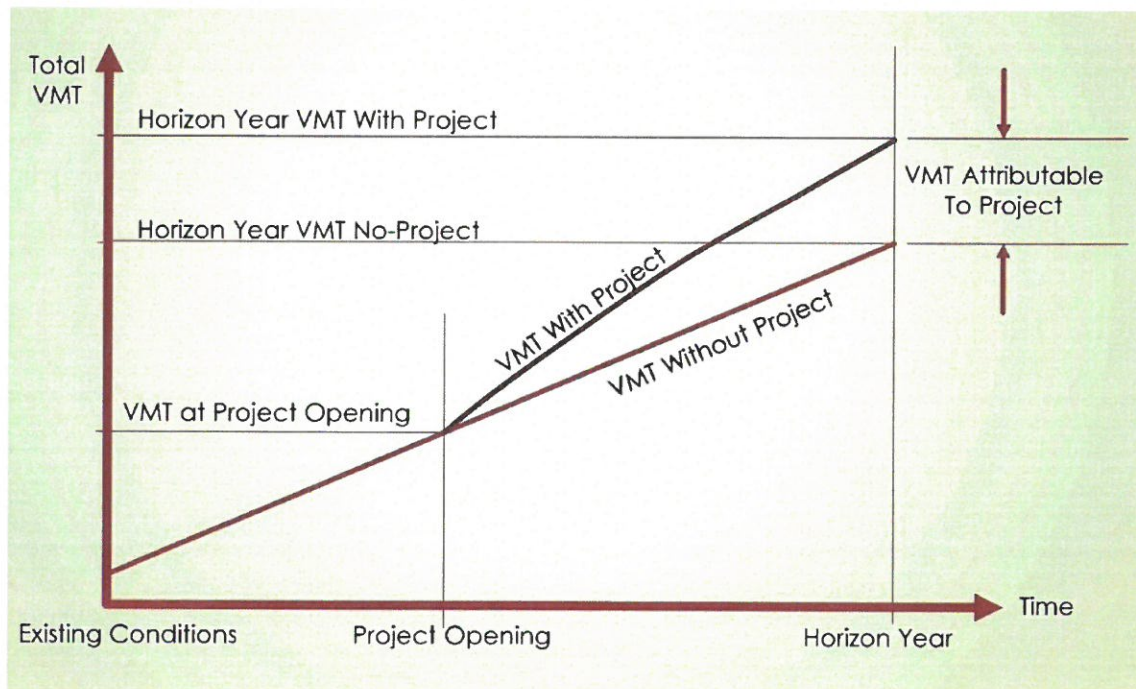


4. Multiply the percentage increase in lane miles by the existing VMT, and then multiply that by the elasticity from the induced travel literature:

$$[\% \text{ increase in lane miles}] \times [\text{existing VMT}] \times [\text{elasticity}] = [\text{VMT resulting from the project}]$$

OPR assigns this induced growth to induced land use; that is, land use not included in any approved general or area plan and not accounted for in any traffic-forecasting tool.

Figure 11 provides a representative illustration of induced VMT attributable to a project.



Source: Presentation: Caltrans Transportation Analysis under CEQA or TAC: Significance Determinations for Induced Travel Analysis (SHCC Pre-Release Session 2 Jeremy Ketchum, Division of Environmental Analysis, Caltrans; March 2, 2020)

Figure 11: Induced Travel – VMT Attributable to Project

Caltrans has identified a computerized tool that estimates VMT generation from transportation projects. It was developed at University of California, Davis and is based on elasticities and the relationship of lane mile additions and growth in VMT. It uses Federal Highway Administration definitions of facility type and ascribes VMT increases to each facility. Output includes increases in million miles of VMT per year. Caltrans is investigating its use for all its VMT analyses of capital projects on the State Highway System. Figure 12 provides an illustration of that tool.

Overview

This calculator allows users to estimate the VMT induced annually as a result of adding general-purpose or high-occupancy-vehicle (HOV) lane miles to roadways managed by the California Department of Transportation (Caltrans) in one of California's urbanized counties (counties within a metropolitan statistical area (MSA)). The calculator applies only to Caltrans-managed facilities with Federal Highway Administration (FHWA) functional classifications of 1, 2 or 3. That corresponds to interstate highways (class 1), other freeways and expressways (class 2), and other principal arterials (class 3).

How to Use

To obtain an induced VMT estimate for a roadway capacity expansion project, enter the project length (in lane miles added) and geography (MSA for additions to interstates; county for additions to other Caltrans-managed class 2 or 3 facilities).

[More about this calculator](#)

Calculator

1. Select facility type

- ☐ Interstate highway (class 1 facility)
☒ Class 2 or 3 facility

2. Select county

Tulare

3. Input total lane miles added

1

miles

Calculate Induced Travel

Results

2.1 million additional VMT/year

(Vehicle Miles Travelled)

Tulare County currently has **712 lane miles** of Caltrans-managed class 2 and 3 facilities on which **1962 million** vehicle miles are travelled per year.

A project adding **1 lane miles** would induce an additional **2.1 million** vehicle miles travelled per year.

This calculation is using an elasticity of **0.75**.

[Read more about this calculator](#)

Source: <https://blinktag.com/induced-travel-calculator/index.html>

Figure 12: Caltrans Induced Travel Calculator



The TA provides other options to identify induced growth- and project-related VMT. These include:

1. Employ an expert panel. *An expert panel could assess changes to land use development that would likely result from the project. This assessment could then be analyzed by the travel demand model to assess effects on vehicle travel. Induced vehicle travel assessed via this approach should be verified using elasticities found in the academic literature.*
2. Adjust model results to align with the empirical research. *If the travel demand model analysis is performed without incorporating projected land use changes resulting from the project, the assessed vehicle travel should be adjusted upward to account for those land use changes. The assessed VMT after adjustment should fall within the range found in the academic literature.*
3. Employ a land use model, running it iteratively with a travel demand model. *A land use model can be used to estimate the land use effects of a roadway capacity increase, and the traffic patterns that result from the land use change can then be fed back into the travel demand model. The land use model and travel demand model can be iterated to produce an accurate result.*

The TA provides a final warning:

Whenever employing a travel demand model to assess induced vehicle travel, any limitation or known lack of sensitivity in the analysis that might cause substantial errors in the VMT estimate (for example, model insensitivity to one of the components of induced VMT described above) should be disclosed and characterized, and a description should be provided on how it could influence the analysis results. A discussion of the potential error or bias should be carried into analyses that rely on the VMT analysis, such as greenhouse gas emissions, air quality, energy, and noise.



6.0 SIGNIFICANCE THRESHOLDS FOR LAND USE PLANS

The OPR guidance has provided guidance on the treatment of CEQA traffic analyses for land use plans in the TA. The TA reiterates previous direction regarding individual land use assessments:

- Analyze the VMT outcomes over the full area over which the plan may substantively affect travel patterns (the definition of region).
- VMT should be counted in full rather than split between origins and destinations (the full impact of the project VMT).

The TA provides a single sentence as consideration for land use plans. It states, “A general plan, area plan, or community plan may have a significant impact on transportation if proposed new residential, office or retail land uses would in aggregate exceed the respective thresholds recommended above.” This recommendation refers to a threshold of 84 percent or lower than the existing regional average for residential and office uses and no net gain for retail land uses.

To assess a land use plan, use of a traffic-forecasting tool is recommended. The total VMT for the plan should be identified for all trips and all potential VMT contributors within the plan area. Model runs should be conducted for the existing base year and the horizon year (the future year scenario analyzed in the Circulation Element of the City’s General Plan) with project (plan). To capture the effect of all project-related VMT generated from a land use plan, it is recommended to calculate the project’s VMT per service population (population and employees) and compare that to the existing base year regional VMT per service population to determine project impact.

The SB 375 process establishes ambitious and achievable GHG reduction targets for the 18 MPOs in the State. The achievements of the targets are provided through the integration of land use planning and transportation planning; not solely through the imposition of regulation on passenger cars and light-duty trucks. The CARB reviews the SCS and the strategies and programs that the regional agencies put in place in the SCS to achieve the GHG reduction. The CARB approved the new GHG reduction targets for all the 18 MPOs in the State in the spring of 2018. The 2018 targets are applicable to the third SCSs for the MPOs.

Other legislative mandates and State policies speak to GHG reduction targets. A sample of these include:

- Assembly Bill 32 (2006) requires statewide GHG emissions reductions to 1990 levels by 2020 and continued reductions beyond 2020.
- SB 32 (2016) requires at least a 40 percent reduction in GHG emissions from 1990 levels by 2030.
- Executive Order (EO) B-30-15 (2015) sets a GHG emissions reduction target of 40 percent below 1990 levels by 2030.
- EO S-3-05 (2005) sets a GHG emissions reduction target of 80 percent below 1990 levels by 2050.



- EO B-16-12 (2012) specifies a GHG emissions reduction target of 80 percent below 1990 levels by 2050 specifically for transportation.

California PRC Section 15064.3(b)(4) states (in part) the following:

A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household, or in any other measure.

Therefore, the City of Visalia Implementation Guidelines recommended methodology for conducting VMT assessments for land use plans is to compare the existing VMT per service population for the region with the expected horizon year VMT per service population for the land use plan (project). The recommended target is to achieve a lower VMT per service population in the horizon year with the proposed land plan compared to the existing condition. For land use plans with a specific land use, VMT per capita or VMT per employee may be used as the metric as appropriate.



7.0 MITIGATION STRATEGIES

When a lead agency identifies a significant CEQA impact according to the thresholds described above, the agency must identify feasible mitigation measures in order to avoid or substantially reduce that impact. Although previous LOS impacts could be mitigated with location-specific LOS improvements, VMT impacts will require mitigation of regional impacts through other means, including, but not limited to, behavioral changes. Enforcement of mitigation measures will still be subject to the mitigation monitoring requirements of CEQA, as well as the regular police powers of the agency. These measures can also be incorporated as a part of plans, policies, regulations, or project designs.

7.1 DEFINITION OF MITIGATION

Section 15370 of the 2020 State CEQA Guidelines defines mitigations as follows:

“Mitigation” includes:

- a. Avoiding the impact altogether by not taking a certain action or parts of an action.*
- b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation.*
- c. Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.*
- d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.*
- e. Compensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements.*

Section 15097 of the CEQA Guidelines states that “the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program.” “Reporting” includes writing a compliance review to be presented to the decision making body or an authorized person. It is suitable for projects where the mitigation measures are readily measured or quantified, or which already involve regular review. On the other hand, “monitoring” is a periodic or ongoing process of project oversight and is suited for projects with complex mitigation measures, which may exceed the expertise of the local agency to oversee and are expected to be implemented over a period of time, or require careful implementation to assure compliance.

VMT mitigations may not be physical improvements. Such improvements are complex in nature and will significantly depend on changes in human behavior. Therefore, it will be important that lead



agencies develop a proper monitoring program to ensure the implementation of these mitigation measures throughout the life of a project, in compliance with CEQA. The City must also coordinate with other responsible agencies as part of this monitoring program to determine the feasibility of the mitigations and whether they will last in perpetuity.

Historically, mitigation measures for LOS-based transportation impacts have addressed either trip generation reductions or traffic-flow-capacity enhancements. LOS mitigation measures include adding capacity to intersections, roadways, ramps, and freeways. However, transportation demand management (TDM) actions, active transportation amenities, and other measures to reduce the number of trips creating an impact are also possible mitigation strategies.

LOS-based mitigations are mostly physical improvements whose benefits are observable, measurable, and virtually perpetual. The addition of a left-turn lane at an intersection will behave similarly regardless of location and will continue to perform as intended until the lane is removed or modified. A lane mile of roadway will carry a similar volume of traffic if designed consistently across most jurisdictions in California, and it will continue to do so as long as the lane exists.

The definition of VMT mitigation measures is somewhat different. Most VMT mitigations may seem feasible from a theoretical perspective, but practical implementation of these strategies as formal CEQA mitigation measures in perpetuity is yet to be tested. Several of these mitigations are contextual and behavioral in nature. Their success will depend on the size and location of the project as well as expected changes in human behavior. For example, a project providing a bike share program does not necessarily guarantee a behavioral change within the project's population; the level of improvement may be uncertain and subject to the whim of the population affected.

LOS mitigations (such as addition of turn lanes) focus more on rectifying a physical CEQA impact (strategy "c" of *State CEQA Guidelines* Section 15370). On the contrary, the majority of VMT mitigations (such as commute trip-reduction programs) will aim at reducing or eliminating an impact over time through preservation and monitoring over the life of the project (strategy "d" of *State CEQA Guidelines* Section 15370). Additionally, some VMT mitigations (such as those focused on land use/location-based policies) will aim at minimizing impacts by reducing the number of trips generated by the projects (strategy "b" of *State CEQA Guidelines* Section 15370).

Furthermore, it may be that identified VMT impacts cannot be mitigated at the project-specific level. Most VMT impacts are in the context of the region of analysis. The incremental change in VMT associated with a project in the particular setting in which it may be located would suggest a greater VMT deficit than individual strategies can offset. Only a regional solution (e.g., completion of a transit system, purchase of more transit buses, or gap closure of an entire bicycle master plan system) may offer the incremental change necessary to reduce the VMT impact to a level of insignificance. Also, VMT, as a proxy for GHG emissions, may not require locational specificity. A project does not necessarily need to diminish the VMT at the project site to gain benefit in VMT and GHG reduction in the State. Offsets in an area where the benefit would be greater will have a more effective reduction in VMT and GHG and contribute to the State's ultimate climate goals. This is the basis for the cap-and-trade strategies.



These issues of regional scale, partial participation, and geographic ambiguity confound the certainty of the City's identification of VMT mitigation measures. Section 15126.4 of the *State CEQA Guidelines* states, "Where several measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. **Formulation of mitigation measures shall not be deferred until some future time** [emphasis added]." Certainty does not yet exist that partial participation in VMT mitigation measures is permissible. Regional VMT mitigation is considered the most effective method for large-scale VMT reduction, yet the cost and implementation barriers are greater in most cases than one project can undertake. The only exception may be where VMT mitigation strategies are provided at a regional level in the form of mitigation banks, fees, and exchanges and the projects are subject to contribute to these fee programs consistent with applicable provision to ensure compliance and consistency with CEQA and other legal requirements.

Section 21099 (b) (4) of the PRC states, "This subdivision [requiring a new transportation metric under CEQA] does not preclude the application of local general plan policies, zoning codes, conditions of approval, thresholds, or any other planning requirements pursuant to the police power or any other authority." Hence, despite the fact that automobile delay will no longer be considered a significant impact under CEQA, the City can still require projects to meet the LOS standards designated in its zoning code or general plan. Therefore, in that case, the project might still be required to propose LOS improvements for congestion relief in addition to VMT strategies as CEQA mitigation measures.

7.2 MITIGATION MEASURES AND PROJECT ALTERNATIVES

7.2.1 Land Development Projects and Community/General Plans

Mitigations and project alternatives for VMT impacts have been suggested by the OPR and are included in the TA. VMT mitigations can be extremely diverse and can be classified under several categories such as land use/location, road pricing, transit improvements, commute trip reduction strategies, and parking pricing/policy. However, the issue with VMT mitigations is the quantitative measurement of the relief provided by the strategies. How much VMT reduction does a TDM program, a bike share program, a transit route, or 1 mile of sidewalk provide? Improvements related to VMT reduction strategies have been quantified in sources such as the California Air Pollution Control Officers Association (CAPCOA) report *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA Green Book) and CARB sources, and are generally presented in wide ranges of potential VMT reduction percentages.



Transit System in the City of Visalia

Source: <https://thesungazette.com/article/visalia/2016/08/17/visalia-transit-makes-changes-to-routes-fares/>

Appendix A is a summary of the different VMT mitigation measures and project alternatives stated in the CAPCOA Green Book (only those strategies directly attributed to transportation) and the OPR TA for development projects. It also refers to mitigation measures listed in other sources such as the VMT Measurement Calculator for the City of Los Angeles, the transportation analysis guidelines for



the City of San Jose and the San Diego Region, and the Memorandum Analysis of VMT Mitigation Measures Pursuant to SB 743, prepared by Iteris, Inc., for the Los Angeles County Metropolitan Transportation Authority.

Appendix B provides a list of mitigations for development projects based on the research work performed by Deborah Salon, Marlon G. Boarnet, Susan Handy, Steven Spears, and Gil Tal with the support of the CARB. For one mitigation measure (Vanpools), LSA and the City conducted additional research as applicable to Visalia using locally available empirical data. Based on that analysis, specific VMT reduction percentage has been developed for this mitigation measure. For all other mitigation measures, the project applicant will be required to provide substantial evidence while identifying a project-specific value. In case that information is not available, the project should apply the low point of provided ranges for VMT reduction. Where a mitigation strategy does not have an identified VMT reduction range, the project applicant would be required to provide a reduction estimate supported by evidence.



Bike Trail in the City of Visalia

Source: <http://papertrailpod.com/visalia-completes-nearly-40-mil-in-projects-in-2017/>

As for land use plans, the potential mitigation measures for community/general plans would be similar to those for development projects, with certain modifications. The OPR TA does not specifically state any VMT mitigations for land use plans. However, these measures have been summarized in Appendix C along with corresponding VMT reduction percentages obtained from CAPCOA.

It must be noted that Appendices A through C provide only summaries of the mitigations stated in the sources mentioned above. The reader should refer to the original source for further details and for subsequent updates to the mitigation measures. Also, Appendices A through C do not provide an exhaustive list of mitigation measures to offset the CEQA impacts. Other measures can also be accepted by the City based on provision of substantial evidence.

As additional mitigation measures are developed to offset VMT impacts in the future for the *State CEQA Guidelines* process, linkages between the strategy and the incremental effect and quantified offset must be made. This can be based on other sources' observations and measurements or the City's experience in these practices. The key to mitigation is to base its efficacy on real and substantial evidence.

7.2.2 Transportation Projects

Although OPR provides detailed guidance on how to assess induced-growth impacts associated with transportation projects, it leaves the subject of mitigation measures vague. Only four strategies are suggested as mitigation measures:

- Tolling new lanes to encourage carpools and fund transit improvements;



- Converting existing general-purpose lanes to HOV or HOT lanes;
- Implementing or funding off-site travel demand management; and
- Implementing Intelligent Transportation Systems strategies to improve passenger throughput on existing lanes.

No quantified reduction percentage is allocated to these strategies and LSA could find no substantial evidence that would provide guidance to levels of significance after implementation of these strategies. Review of the four recommended strategies suggests that OPR is directing strategies away from general-purpose mixed-flow lanes on expressways, freeways, and arterial highways. It should be noted, that the first two mitigation strategies will not be applicable to the City. Additionally, in as much as these are the project descriptions and Purpose and Need, the project intent and the project mitigation may be at odds. The City would be subject to an SOC for the capital project VMT impact.

7.3 FUNDING MECHANISMS

The change in the metric for transportation impacts from LOS to VMT will lead to a shift in impacts and mitigation measures from being local and project-specific to being more regional in nature. OPR acknowledges the regional nature of VMT impacts and states that regional VMT reduction programs and fee programs (in-lieu fees and development impact fees) may be appropriate forms of mitigation. Fee programs are particularly useful to address cumulative impacts. It is very important for the City to coordinate with TCAG to develop such mitigation programs that would fund transit, develop active transportation plans, etc. These programs are regional in nature and best suited for administration by the regional agency. Regional agencies may also wish to coordinate with appropriate stakeholders, including participating local jurisdictions, developers, and other interests while conducting nexus studies and checking for rough proportionality and compliance with CEQA.

Most of the VMT mitigations included in Appendix A are applicable in urban areas. They are less effective in suburban and rural contexts, where TDM strategies may become diluted or are not applicable. Thus, site-specific strategies are more suitable in urban areas, whereas program-level strategies are more suitable for projects in suburban/rural areas. In the latter approach, cumulative contributions for development mitigations can pay for VMT reduction strategies that would not be feasible for the individual projects to implement themselves. Apart from fee programs, program-based mitigation approaches may include mitigation exchanges and mitigation banks. The mitigation exchange concept requires a developer to implement a predetermined project that would reduce VMT in order to propose a new one. On the other hand, the concept of mitigation banks seeks to establish monetary values for VMT reductions so that developers can purchase VMT reduction credits.

As previously stated, VMT impacts are more regional in nature. Hence, there might be requirements for mitigations outside the control of the City, and without consent from the agency controlling the mitigations, the impacts might remain significant and unavoidable. Additionally, identification of regional improvements where projects can contribute their fair share to mitigate impacts might prove to be difficult. Therefore, the City may work collaboratively within its regions to ultimately establish fee programs, mitigation banks, and exchanges as the most efficient way to establish a regional mitigation pathway where the projects can contribute. Procedural flow charts for VMT banks, exchanges, and impact fees are illustrated in Figures 13, 14, and 15, respectively.

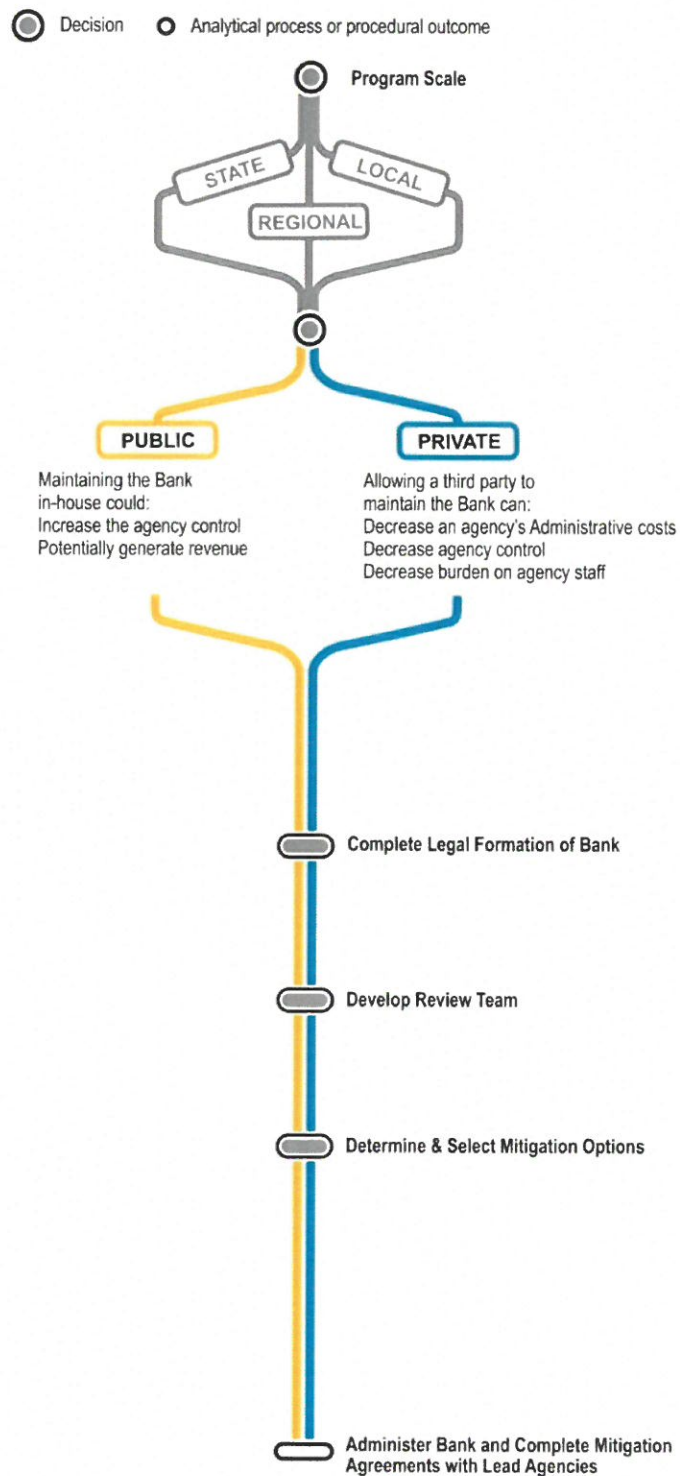


Figure 13: Procedural Flow Chart – VMT Bank

Source: VMT Mitigation Through Banks and Exchanges: Understanding New Mitigation Approaches. A White Paper by Fehr & Peers (January 2020).

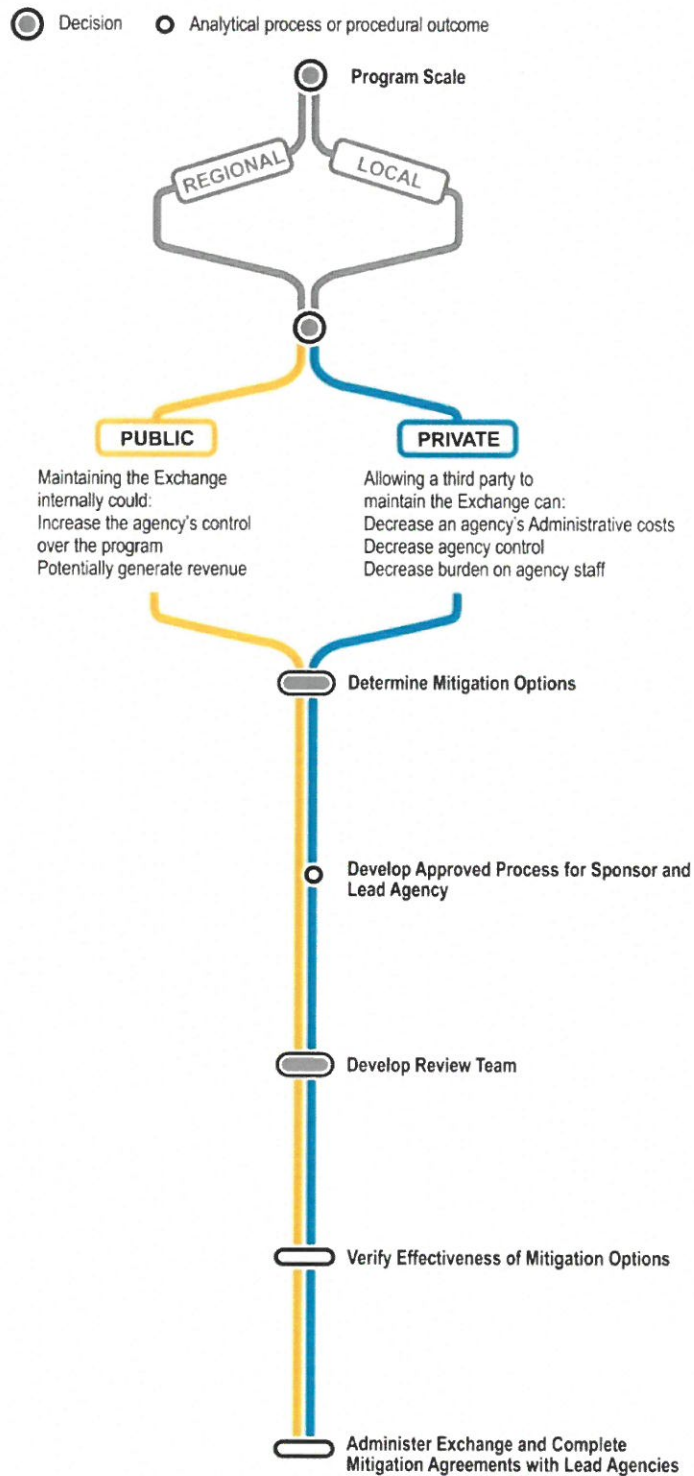


Figure 14: Procedural Flow Chart – VMT Exchange

Source: VMT Mitigation Through Banks and Exchanges: Understanding New Mitigation Approaches. A White Paper by Fehr & Peers (January 2020).



City of Visalia VMT Thresholds and Implementation Guidelines

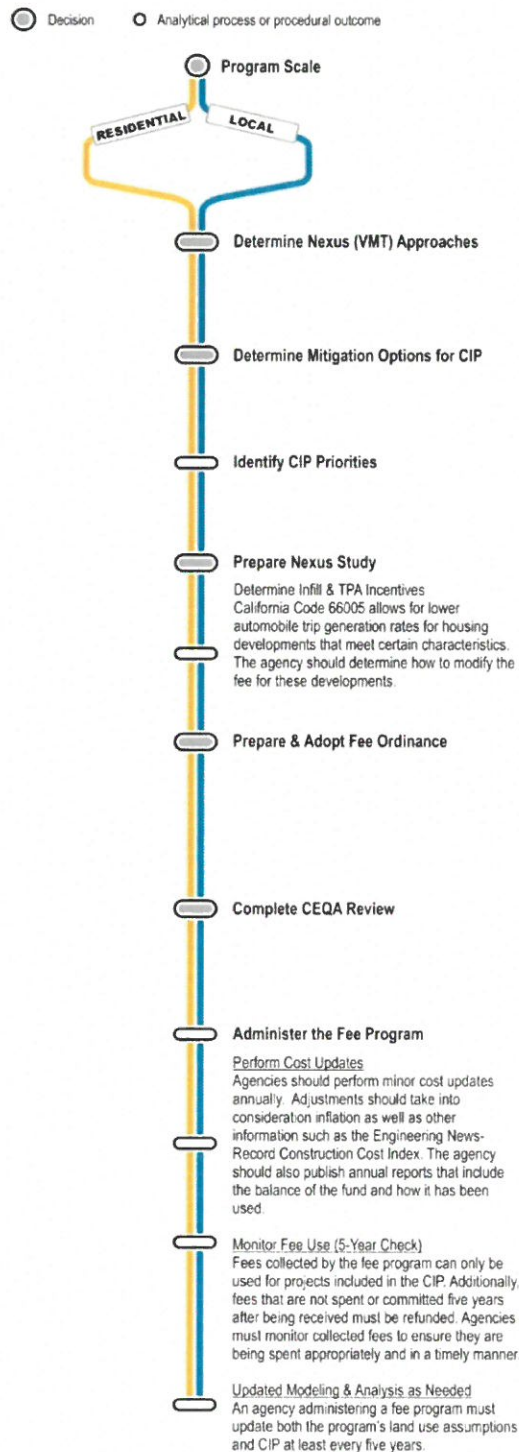


Figure 15: Procedural Flow Chart – VMT Impact Fee

Source: Understanding New Mitigation Approaches. A White Paper by Fehr & Peers (January 2020).



8.0 VISALIA GENERAL PLAN CONSISTENCY ANALYSIS

While the City has yet to incorporate specific VMT-based objectives and policies into its General Plan, several objectives and policies approved in the current General Plan Update (adopted October 14, 2014) address VMT and GHG reduction pertaining to SB 743 requirements. These objectives and policies are mostly included in three chapters of the General Plan, Chapter 2 (Land Use), Chapter 4 (Circulation) and Chapter 7 (Air Quality and Greenhouse Gases).

8.1 OBJECTIVES AND POLICIES: LAND USE

8.1.1 Objectives

Following is a list of objectives included in the Land Use chapter of the City's current General Plan:

- **LU-O-9:** Implement and periodically update a growth management system that will guide the timing, type, and location of growth; preserve resource lands, natural features, and open space; and promote infill and redevelopment.
- **LU-O-13:** Minimize urban sprawl and leap-frog development by encouraging compact, concentric, and contiguous growth.
- **LU-O-14:** Create an overall urban form centered on a vital downtown and a higher-density core, surrounded by viable residential neighborhoods with walkable, mixed-use neighborhood centers.
- **LU-O-16:** Create a safe, walkable, and attractive urban environment for current and future generations of residents.
- **LU-O-18:** Implement and periodically update an infill development incentive program to achieve the objectives of compact development established by this General Plan.
- **LU-O-22:** Create inclusive, compact neighborhoods with well-integrated single-family and multifamily residential development and activity nodes featuring schools, neighborhood parks, and neighborhood commercial areas.
- **LU-O-24:** Enable multifamily developments that are accessible to major transportation and transit routes.
- **LU-O-28:** Promote pedestrian-oriented retail and mixed-use development along transit corridors, in neighborhood nodes, and in Downtown and East Downtown.
- **LU-O-35:** Plan for the integration of public facilities with surrounding districts, so that hospitals, schools, and libraries act as hubs for mixed-use activity centers and are easily accessible to the majority of residents in Visalia.

8.1.2 Policies

Following is a list of policies included in the Land Use chapter of the City's current General Plan:



- **LU-P-13:** Provide incentives for new and existing business and industry to adopt local-hire policies, and give preferential credit to contractors on public projects that employ Visalia residents.
- **LU-P-19:** Ensure that growth occurs in a compact and concentric fashion by implementing the General Plan's phased growth strategy.
 - *The General Plan Land Use Diagram establishes three growth rings to accommodate estimated City population for the years 2020 and 2030. The Urban Development Boundary I (UDB I) shares its boundaries with the 2012 City limits. The Urban Development Boundary II (UDB II) defines the urbanizable area within which a full range of urban services will need to be extended in the first phase of anticipated growth with a target buildout population of 178,000. The Urban Growth Boundary (UGB) defines full buildout of the General Plan with a target buildout population of 210,000. Each growth ring enables the City to expand in all four quadrants, reinforcing a concentric growth pattern.*
- **LU-P-45:** Promote development of vacant, underdeveloped, and/or redevelopable land within the City limits where urban services are available and adopt a bonus/incentive program to promote and facilitate infill development in order to reduce the need for annexation and conversion of prime agricultural land and achieve the objectives of compact development established in this General Plan.
 - *Techniques to be used include designation of infill opportunity zones as part of the implementation process and provision of incentives, such as reduced parking and streamlined review, residential density bonuses, and floor area bonuses for mixed-use and/or higher-density development, subject to design criteria and findings of community benefit.*
- **LU-P-46:** Adopt and implement an incentive program for residential infill development of existing vacant lots and underutilized sites within the City limits as a strategy to help to meet the future growth needs of the community.
 - *Infill will be supported by increasing allowable density or decreasing minimum lot size under zoning to the maximum limits set by the General Plan, by reducing off-street parking requirements, by creating an Infill Incentive Zone where reduced fees and other incentives may apply because infrastructure is in place, and by providing incentives that respond to different challenges (for example in Downtown or in historically underutilized areas). Infill development also is supported by growth management policies; see Policy LU-P-21 for details.*
- **LU-P-47:** Ensure that new neighborhoods meet land use mix standards established in Table 2-7 of the General Plan. The ranges indicated—the minimum and maximum levels of development for each type of land use—are intended to allow for flexibility in master planning in response to market conditions, infrastructure costs, and site planning policies.
- **LU-P-48:** Establish criteria and standards for pedestrian, bicycle, and vehicle circulation networks within new subdivisions and nonresidential development.
 - *These will be in the updated zoning ordinance and the updated subdivision ordinance.*

- **LU-P-53:** Integrate multifamily development with commercial, office, and public uses in neighborhood nodes, Downtown, and with Commercial Mixed Use areas in East Downtown, along the Mooney corridor and elsewhere.
 - *Multifamily housing should be accessible on foot to public parks and gathering places, commercial areas, and transit.*
- **LU-P-58:** Establish an Affordable Housing Overlay Zoning District (AHO) to promote the development of affordable housing on infill land within the existing City limits in areas designated by the General Plan for multifamily residential development. Participation by affordable housing developers in the AHO program would be voluntary, with the incentives offered intended to make development of affordable housing feasible.
 - *The City will continue to work with affordable housing developers to provide housing development opportunities that are geographically accessible to services, retail clusters, transportation corridors, and key nodes. The AHO Zoning District would be an alternative to the State-mandated Residential Density Bonus Program and could be applied for qualifying projects as a “floating zone” and not require a General Plan Amendment. It should be noted that in some cases rezoning would be required to be consistent with the General Plan Land Use designation. Such rezoning would be done concurrently with adoption of the AHO Zoning District for the site. Application requirements would be the same as those for the State-Mandated Residential Density Bonus Program, modified, as appropriate for the purposes of this district.*

The City will initiate a work program to analyze the various options for an AHO Zoning District including the consideration of, at a minimum, the following development incentives:

 - *Residential density increase beyond those provided by State Density Bonus Law;*
 - *Flexible zoning standards, including reduced development and parking standards, coupled with Form-Based Code standards for infill sites to ensure land use compatibility;*
 - *Priority permit processing, including any applicable CEQA exemptions;*
 - *Design Review requirements; and*
 - *Deferral or reduction of City permit and development impact fees based on the Priority Zone designation for the site, as defined by the Infill Development Incentive Program.*
- **LU-P-75:** Provide incentives for infill development of opportunity sites and adaptive reuse and restoration of existing buildings in Downtown and East Downtown.
 - *New development in Downtown and East Downtown will realize the inherent potential for higher intensity use of this district, and should include offices, mixed-use and live-work buildings, storefront commercial buildings, apartments, condominiums and townhouses, and small-lot single-family houses. See also policies in Section 2.8.*
- **LU-P-84:** Plan for new neighborhoods in East Downtown to provide high-quality living environments in a variety of settings, as follows:
 - *Santa Fe is to become a mixed-use address providing an opportunity to expand downtown’s commercial activities, with residential use complementing offices in mixed-use projects.*



- East Main has a large number of existing buildings that can be adaptively reused for commercial and residential uses. On the south side of the proposed Civic Center Park are sites that can take advantage of overlooking Mill Creek and the Civic Center. On blocks contiguous to East Main Street are sites that can accommodate a mix of commercial and residential uses. South of Acequia are larger sites that can become a townhouse neighborhood.
- The Central Park Neighborhood would face the proposed new Central Park and the Jennings Ditch water feature, and would include townhouses, stacked flats, and apartments with ground floor commercial or live-work uses.
- The Civic Center creates a place that is central to the region as part of a transit hub, integrated into a vibrant urban center, and a catalyst for commercial and cultural investment.
- **LU-P-101:** As part of industrial developments, allow secondary uses such as restaurants, cafes, small convenience stores and daycare facilities, to serve area employees.

8.2 OBJECTIVES AND POLICIES: CIRCULATION

8.2.1 Objectives

Following is a list of objectives included in the Circulation chapter of the City's current General Plan:

- **T-O-3:** Promote ways to reduce the number of peak hour trips and vehicle-miles traveled in the Planning Area.
- **T-O-5:** Plan and develop a transportation system for Visalia that contributes to community livability, recognizes and respects community characteristics, and minimizes negative impacts on adjacent land uses.
- **T-O-6:** Work with other agencies and jurisdictions that provide regional public transportation to provide connectivity between Visalia and adjacent jurisdictions.
- **T-O-7:** Develop and maintain a coordinated mass transportation system that will encourage increased transit use through convenient, safe, efficient, and cost-effective services.
- **T-O-8:** Encourage walking and bicycling in Visalia for commuting and recreational purposes, and for improvement of public and environmental health.
- **T-O-9:** Promote non-motorized accessibility through development of a connected, convenient pedestrian and bikeway network.
- **T-O-10:** Create a safe and feasible pedestrian, trail and bikeway system (on- and off-street) for commuting, recreation and other trips, serving pedestrians and cyclists of all levels.
- **T-O-12:** Provide adequate parking to accommodate demand while avoiding excessive amounts of surface parking that disrupts the urban fabric of the City.
- **T-O-15:** Develop and maintain a coordinated mass transportation system that will encourage increased transit and rail use through convenient, safe, efficient, and cost-effective services.



8.2.2 Policies

Following is a list of policies included in the Circulation chapter of the City's current General Plan:

- **T-P-1:** Provide transportation facilities based on a “Complete Streets” concept that facilitate the balanced use of all travel modes (pedestrians, bicyclists, motorists, and transit users), meeting the transportation needs of all ages and abilities and providing mobility for a variety of trip purposes.
- **T-P-11:** Update the City of Visalia Engineering and Street Design Standards to ensure that roadway and streetscape design specifications are in accordance with the “Complete Streets” concept and other policies in this General Plan.
 - *Updated design standards must allow flexibility to accommodate retrofitting streets with limited right-of-way. In order to accommodate all travel modes, adjustments may be made to median, travel lane, and bike lane widths; alternate bikeway routes on parallel facilities may also be considered.*
- **T-P-19:** Pursue Transportation System Management (TSM) for the mitigation of traffic and parking congestion.
 - *Public transit, traffic management, ride sharing, and parking management can be used to implement TSM strategies.*
- **T-P-20:** **Work** with major employers and the Tulare County Association of Governments (TCAG) to reduce total vehicle miles traveled and the total number of daily and peak hour vehicle trips and provide better utilization of the transportation system through development and implementation of Transportation Demand Management (TDM) strategies that are tailored to the needs of geographic areas within the City and the time period of traffic congestion.
 - *These may include the implementation staggered work hours, utilization of telecommuting, increased use of ridesharing in the public and private sectors, and provision for bicyclists.*
- **T-P-21:** Coordinate with the College of the Sequoias to develop a transportation plan that ensures that the College provides adequate parking areas for students and faculty; improves circulation issues on and adjacent to campus; integrates transit; and incorporates Transportation Demand Management (TDM) strategies such as incentives for ridesharing and facilities for bicyclists.
 - *The plan should minimize negative impacts on surrounding residential areas and on the transportation system.*
- **T-P-30:** Give high priority to public transportation systems that are responsive to the needs of commuters, the elderly, persons with disabilities, the youth, and low-income citizens. Continue to work with transit providers to expand services to these populations and to underserved areas of the City.
- **T-P-31:** Seek cooperation with Tulare County Association of Governments and Visalia City Coach to attain a balance of public transportation opportunities. Additional details are provided in the City's General Plan.



- **T-P-32:** Work with transit operators to ensure that adequate transit service facilities are provided, including bus turnouts along arterials when needed, and bus stop amenities including, but not limited to, lighted shelters, benches, and route information signs.
- **T-P-33:** Work with transit operators to establish transit stops adjacent to community and regional parks, senior housing facilities, areas with a high concentration of medical facilities, major employment centers, and major retail and commercial centers.
- **T-P-34:** Develop design and development standards to improve transit service in the community. Additional details are provided in the City's General Plan.
- **T-P-35:** Schedule public transportation improvement projects in the Capital Improvements Program.
- **T-P-36:** Participate in the planning process for a potential Cross Valley Rail Line, which could provide east-west light rail service from Visalia to Huron and potentially connect to a future High Speed Rail system.
- **T-P-37:** Evaluate the feasibility of a future local light rail system or bus rapid transit (BRT) system in Visalia, which could connect to Tulare to the south and points east and west.
 - *The City should preserve right-of-way to support the preliminary light rail corridor or BRT system along Goshen Avenue, K Street, Santa Fe Avenue, and other roadways, if either system is judged financially feasible.*
- **T-P-38:** Support regional high-speed inter-city rail development and service. Should California High Speed Rail develop a station in Hanford (or elsewhere in Kings or Tulare Counties), work with the California High Speed Rail Authority to develop local connections coordinated with the train schedule.
- **T-P-39:** Develop bikeways consistent with the Visalia Bikeway Plan and the General Plan's Circulation Element.
- **T-P-40:** Develop a communitywide trail system along selected planning area waterways, consistent with the Waterways and Trails Master Plan and General Plan diagrams. Additional details are provided in the City's General Plan.
- **T-P-41:** Integrate the bicycle transportation system into new development and infill redevelopment. Development shall provide short-term bicycle parking and long-term bicycle storage facilities, such as bicycle racks, stocks, and rental bicycle lockers. Development also shall provide safe and convenient bicycle and pedestrian access to high activity land uses such as schools, parks, shopping, employment, and entertainment centers.
- **T-P-42:** Periodically update the City of Visalia Bikeway Plan, as needed.
- **T-P-43:** Develop and maintain an educational program to promote bicycle use and safety.
- **T-P-44:** Increase the safety of those traveling by bicycle. Additional details are provided in the City's General Plan.
- **T-P-45:** Require that collector streets that are identified to function as links for the bicycle transportation system be provided with Class II bikeways (bike lanes) or signed as Class III bike route facilities.



- *In such cases, the City may accommodate cyclists on these identified streets by widening the street or eliminating on-street parking if this will not significantly affect parking opportunities for local shoppers or by clearly indicating that bicycles may share travel lanes with automobiles.*
- **T-P-46:** Cooperate with other agencies to provide connection and continuation of bicycle corridors between Visalia and surrounding areas.
- **T-P-47:** Seek funding at the private, local, State, and federal levels for the expansion of the bicycle transportation system.
- **T-P-48:** Require construction of minimum sidewalk widths and pedestrian “clear zones” consistent with the Complete Streets cross-sections in this General Plan and with the City’s Engineering and Street Design Standards for each designated street type.
- **T-P-51:** Locate sidewalks, pedestrian paths, and appropriate crosswalks to facilitate access to all schools and other areas with significant pedestrian traffic. Whenever feasible, pedestrian paths shall be developed to allow for unobstructed pedestrian flow from within a neighborhood.
- **T-P-53:** Develop flexible parking requirements in the zoning ordinance for development proposals based on “best practices” and the proven potential to reduce parking demand.
 - *These could include projects that integrate transit facilities, incorporate a mix of uses with differing peak parking demand periods (e.g., residential and office), incorporate shared parking or common area parking, or incorporate other TDM strategies for residents or tenants (car-sharing, requiring paid parking, etc.).*
- **T-P-54:** Discourage non-residential parking on residential streets by enforcing parking regulations and ensuring that businesses near residential areas are providing adequate on-site parking for their employees and customers.
- **T-P-57:** Amend the Zoning Ordinance to include updated off-street parking and loading area design standards that have multiple benefits and reduce environmental impacts. Additional details are provided in the City’s General Plan.
- **T-P-67:** Participate in the planning process for a potential Cross Valley Rail Line, which could provide east-west light rail service from Visalia to Huron and potentially connect to a future High Speed Rail system.
- **T-P-68:** Evaluate the feasibility of a future local light rail system or bus rapid transit (BRT) system in Visalia, which could connect to Tulare to the south and points east and west.
 - *The City should preserve right-of-way to support the preliminary light rail corridor or BRT system along Goshen Avenue, K Street, Santa Fe Street, and other roadways, as depicted on the Land Use diagram if either light rail or BRT is judged financially feasible.*
- **T-P-69:** Support regional high-speed inter-city rail development and service. Should California High Speed Rail develop a station in Hanford (or elsewhere in Kings or Tulare County), work with the California High Speed Rail Authority to develop local connections coordinated with the train schedule.



- **T-P-71:** Continue to participate in and advocate for collaborative efforts to improve railroad transportation facilities and reduce conflicts with the street system.
- **T-P-77:** Work with TCAG to ensure that the Regional Transportation Plan (RTP) and Sustainable Communities Strategy are consistent with Visalia's Land Use and Transportation policies.
- **T-P-78:** Work with the San Joaquin Valley Air Pollution Control District and TCAG to implement Transportation Control Measures identified in the RTP and air quality implementation plans.

8.3 OBJECTIVES AND POLICIES: AIR QUALITY AND GREENHOUSE GASES

8.3.1 Objectives

Following is a list of objectives included in the Air Quality and Greenhouse Gases chapter of the City's current General Plan:

- **AQ-O-1:** Coordinate air quality planning efforts with other local, regional and State agencies.
- **AQ-O-2:** Strive to improve air quality by implementing emissions reduction efforts targeting mobile sources, stationary sources and construction-related sources.
- **AQ-O-3:** Reduce emissions of greenhouse gases that contribute to global climate change in accord with federal and State law.

8.3.2 Policies

Following is a list of policies included in the Air Quality and Greenhouse Gases chapter of the City's current General Plan:

- **AQ-P-8:** Update the Zoning Ordinance to strictly limit the development of drive-through facilities, only allowing them in auto-oriented areas and prohibiting them in Downtown and East Downtown.
 - *Drive-through businesses result in the idling of car engines and the concentrated emission of carbon monoxide and other tailpipe air pollutants.*
- **AQ-P-9:** Continue to mitigate short-term construction impacts and long-term stationary source impacts on air quality on a case-by-case basis and continue to assess air quality impacts through environmental review. Require developers to implement Best Management Practices (BMPs) to reduce air pollutant emissions associated with the construction and operation of development projects. BMPs include transportation demand management strategies for large development projects. Additional details are provided in the City's General Plan.
- **AQ-P-11:** Continue to work in conjunction with the San Joaquin Valley Air Pollution Control District and others to put in place additional Transportation Control Measures that will reduce vehicle travel and improve air quality and to implement Air Quality Plans.
- **AQ-P-13:** Where feasible, replace City vehicles with those that employ low-emission technology.
- **AQ-P-14:** Promote and expand the trip-reduction program for City employees to reduce air pollution and emissions of greenhouse gas.



- *The program may include carpooling and ridesharing; reimbursement of transit costs; encouragement of flexible work schedules, telecommuting, and teleconferencing.*
- **AQ-P-16:** Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings, in compliance with AB 32.
 - *By proposing compact development, mixed use centers, walkable neighborhoods, green building technology, and jobs-housing balance, the City will be helping to implement many of the strategies and programs in the San Joaquin Valley 2007 Ozone Plan.*



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APPENDIX A

VEHICLE MILES TRAVELED MITIGATION MEASURES FOR DEVELOPMENT PROJECTS (CAPCOA)

Table A - Vehicle Miles Traveled Mitigation Measures for Land Development Projects

#	Mitigation Measure	VMT Reduction ¹	CAPCOA ²	OPR TA ³	Los Angeles Metro ⁴	City of San Jose ⁵	City of Los Angeles ⁶	San Diego Region	Notes
1	Improve or increase access to transit	CAPCOA TST-2: Not quantified alone, grouped strategy with TST-3 'Expand transit network' and TST-4 'Increase transit service frequency/speed'; CAPCOA LUT-5: 0.50% - 24.65%	Y	Y	Y	Y	Y	Y	Notes: CAPCOA TST-2: Implement Transit Access Improvements (applicable in urban and suburban context, and appropriate for residential, retail, office, mixed use, and industrial projects); CAPCOA LUT-5: Increase Transit Accessibility (May be grouped with CAPCOA measures LUT-3 (mixed use development), SDT-2 (traffic calmed streets with good connectivity), and PPT-1 through PPT-7 (parking management strategies); measures are applicable in urban and suburban contexts; appropriate in rural context if development site is adjacent to a commuter rail station with convenient rail service to a major employment center; appropriate for residential, retail, office, industrial, and mixed use projects); City of San Jose (Increase transit accessibility to improve last-mile transit connections; improve network connectivity/design to make destinations and low-carbon travel modes accessible; both applicable for both residential and employment uses); City of LA (Existing transit mode share (as a percent of total daily trips) (%). Lines within project site improved (<50%, >=50%))
2	Increase access to common goods and services, such as groceries, schools, and daycare	Similar to CAPCOA LUT-3 (Increase Diversity of Urban and Suburban Developments (Mixed Use)); 9.00% - 30.00% VMT reduction and CAPCOA LUT-4 (Increase Destination Accessibility); 6.70% - 20.00% VMT reduction	Y	Y	Y	Y	N	Y	Notes: Similar to CAPCOA LUT-3 (Increase Diversity of Urban and Suburban Developments (Mixed Use)) - Applicable in urban and suburban context; negligible in rural context (unless the project is a master-planned community, appropriate for mixed-use projects) and CAPCOA LUT-4 (Applicable in urban and suburban context, negligible in rural context, appropriate for residential, retail, office, industrial, and mixed-use projects); City of San Jose (Access to Neighborhood Schools: Applicable for residential uses only); City of San Jose (Very similar to measure 'Increase diversity of uses' - Applicable for residential and employment uses)
3	Incorporate affordable housing into the project	0.04% - 1.20%	Y	Y	Y	Y	N	Y	Notes: Similar measure is CAPCOA LUT-6 (Integrate Affordable and Below Market Rate Housing) - [Applicable in urban and suburban contexts; negligible impact in a rural context unless transit availability and proximity to jobs/services are existing characteristics; appropriate for residential and mixed-use projects]; City of San Jose (Similar to measure 'Integrate affordable and market rate housing' - Measure is applicable for residential uses only)
4	Orient project towards transit, bicycle, and pedestrian facilities	1) 0.25% - 0.5% (0.25% reduction is attributed for a project oriented towards a planned corridor and 0.5% reduction is attributed for a project oriented towards an existing corridor) (as per the Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions), 2) 0.5% reduction in VMT per 1% increase in transit frequency and per 10% increase in transit ridership (as per the Center for Clean Air Policy (CCAP) Transportation Emission Guidebook)	Y	Y	Y	N	N	Y	Notes: CAPCOA LUT-7 (Orient project toward non-auto corridor); Grouped strategy with LUT-3 (Increase Diversity of Urban and Suburban Developments (Mixed Use)); there is no sufficient evidence that the measures results in non-negotiable trip reduction unless combined with other measures, including neighborhood design, density and diversity of development, transit accessibility and pedestrian and bicycle network improvements; the measure is applicable for urban or suburban context (may be applicable in a master-planned rural community) and is appropriate for residential, retail, office, industrial, and mixed use projects
5	Provide pedestrian network improvements	0.00% - 2.00%	Y	Y	Y	Y	Y	Y	Notes: CAPCOA SDT-1 (Applicable in urban, suburban, and rural context; appropriate for residential, retail, office, industrial, and mixed-use projects; reduction benefit only occurs if the project has both pedestrian network improvements on site and connections to the larger off-site network). This can be considered under Technical Advisory Measure 'Improve pedestrian or bicycle networks, or transit service'; City of San Jose (Provide pedestrian network improvements for active transportation; applicable for both residential and employment uses); City of LA (Included within project and connecting off-site/within project only))
6	Incorporate bike lane/street design (on-site)	1% increase in share of workers commuting by bicycle (for each additional mile of bike lanes per square mile) (Bicycle Commuting and Facilities in Major U.S. Cities: If You Build Them, Commuters Will Use Them - Another Look by Dill and Carr (2003)): 25.8% - 830% increase in bicycle community (Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions by Cambridge Systematics); 0.075% increase in bicycle commuting with each mile of bikeway per 100,000 residents (If You Build Them, Commuters Will Use Them: Cross-Sectional Analysis of Commuters and Bicycle Facilities by Nelson and Allen (1997))	Y	Y	Y	Y	Y	Y	Notes: CAPCOA SDT-5 (Grouped strategy, benefits of Bike Lane Street Design are small and should be grouped with the LUT-9 (Improve Design of Development) strategy to strengthen street network characteristics and enhance multi-modal environments), the measure is applicable in urban and suburban contexts and is appropriate for residential, retail, office, industrial, and mixed use projects. This can be considered under Technical Advisory Measure 'Improve pedestrian or bicycle networks, or transit service'; City of San Jose (Expand the reach of bike access with investment in infrastructure; applicable for both residential and employment uses); City of LA (Provide bicycle facility along site (Yes/No))

Table A - Vehicle Miles Traveled Mitigation Measures for Land Development Projects

#	Mitigation Measure	VMT Reduction ⁿ	CAPCOA ^a	OPR TA	Los Angeles Metro ^b	City of San Jose ^c	City of Los Angeles ^d	San Diego Region ^e	Notes
7	Expand transit network	0.10% – 8.20%	Y	Y	Y	Y	Y	Y	Notes: CAPCOA TST-3: Measure applicable in urban and suburban context, maybe applicable in rural context but no literature documentation available, appropriate for specific or general plans. This can be considered under Technical Advisory Measure 'Improve pedestrian or bicycle networks, or transit service'. City of San Jose [Increase transit accessibility to improve last-mile transit connections; improve network connectivity/design to make destinations and low-carbon travel modes accessible; both applicable for both residential and employment uses]; City of LA [Existing transit mode share (as a percent of total daily trips) (%). Lines within project site improved (<50%, >=50%)]
8	Increase transit service frequency/speed	0.02% – 2.50%	Y	Y	Y	Y	Y	Y	Notes: CAPCOA TST-4: applicable in urban and suburban context, maybe applicable in rural context but no literature documentation available, appropriate for specific or general plans. This can be considered under Technical Advisory Measure 'Improve pedestrian or bicycle networks, or transit service'. City of San Jose [Similar to measure 'Subsidize public transit service upgrades']; City of LA [Reduction in headways (increase in frequency) (%)]
9	Required project contributions to transportation infrastructure improvement projects	Not Quantified: Grouped strategy (with RPT-2 and TST-1 through 7)	Y	Y	Y	Y	Y	Y	Notes: CAPCOA RPT-3 [Applicable in urban, suburban and rural context; appropriate for residential, retail, office, mixed use, and industrial projects]; measure similar to some of the measures discussed above. This can be considered under Technical Advisory Measure 'Improve pedestrian or bicycle networks, or transit service.'
10	Increase destination accessibility	6.70% – 20.00%	Y	Y	Y	Y	Y	Y	Notes: CAPCOA LUT-4 [Destination accessibility measured in terms of the number of jobs or other attractions reachable within a given travel time, which tends to be the highest at central locations and lowest at peripheral ones; the location of the project also increases the potential for pedestrians to walk and bike to these destinations and therefore reduces VMT; applicable for urban and suburban contexts, negligible impact in a rural context; appropriate for residential, retail, office, industrial, and mixed-use projects]. This can be considered under Technical Advisory Measure 'Improve pedestrian or bicycle networks, or transit service'; City of San Jose [Increase transit availability to improve last-mile transit connections; improve network connectivity/design to make destinations and low-carbon travel modes accessible; both applicable for both residential and employment uses]; City of LA [Lines within project site improved (<50%, >=50%)]
11	Provide traffic calming measures	0.25% – 1.00%	Y	Y	Y	Y	Y	Y	Notes: CAPCOA SDT-2 [Applicable in urban, suburban, and rural contexts; appropriate for residential, retail, office, industrial, and mixed-use projects]; City of San Jose [Applicable for both residential and employment uses]; City of LA [Streets with traffic calming improvements (%), intersections with traffic calming improvements (%)]
12	Provide bike parking in non-residential projects	0.625% (as per the Center for Clean Air Policy (CCAP) Transportation Emission Guidebook)	Y	Y	Y	Y	Y	Y	Notes: CAPCOA SDT-6 [Bike Parking in Non-Residential projects has minimal impacts as a standalone strategy and should be grouped with the LUT-9 (Improve Design of Development) strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities]; the measure is applicable in urban, suburban, and rural contexts; appropriate for retail, office, industrial, and mixed-use projects; City of San Jose [Provide bike parking and end-of-trip facilities such as bike parking, bicycle lockers, showers, and personal lockers (Applicable for both residential and employment uses)]; City of LA [Include bike parking/lockers, showers, & repair station (Y/N)]
13	Provide bike parking with multi-unit residential projects	Not Quantified	Y	Y	Y	Y	Y	Y	Notes: CAPCOA SDT-7 [Grouped Strategy; the benefits of Bike Parking with Multi-Unit Residential Projects have no quantified impacts and should be grouped with the LUT-9 (Improve Design of Development) strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities. The measure is applicable in urban, suburban, or rural contexts. It is appropriate for residential projects.]; City of San Jose [Provide bike parking and end-of-trip facilities such as bike parking, bicycle lockers, showers, and personal lockers (Applicable for both residential and employment uses)]; City of LA [Include bike parking/lockers, showers, & repair station (Y/N)]

Table A - Vehicle Miles Traveled Mitigation Measures for Land Development Projects

Mitigation Measure	VT Reduction ^a	CAPCOA ^b	OPRTA ^c	Los Angeles Metro ^d	City of San Jose ^e	City of Los Angeles ^f	San Diego Region ^g	Notes
14 Limit or eliminate parking supply	5.00% – 12.50%	Y	Y	Y	Y	Y	Y	Notes: CAPCOA PDT-1 (Applicable in urban and suburban context, negligible in rural context, appropriate for residential, retail, office, industrial, and mixed-use projects); reduction can be counted only if spillover parking is controlled (via residential permits and on-street market parking); follow multi-faceted strategy including 1) elimination/reduction of minimum parking requirements, 2) creation of maximum parking requirements, and 3) provision of shared parking. City of San Jose (Decrease project parking supply at the project site to rates lower than the standard parking minimums where allowable in the San Jose Municipal Code (Applicable for employment uses)); City of LA (City code parking provision (spaces), actual parking provision (spaces))
15 Unbundle parking costs from property costs	2.60% – 13.00%	Y	Y	Y	Y	Y	Y	Notes: CAPCOA PDT-2 (Applicable in urban and suburban context, negligible in rural context, appropriate for residential, retail, office, industrial and mixed-use projects, complementary strategies include work place parking pricing); City of San Jose (Unbundle On-Site Parking Costs: Application for Residential Uses Only); City of LA (Monthly cost for parking (\$))
16 Provide parking cash out programs	0.60% – 7.70% commute VMT	Y	Y	Y	Y	Y	Y	Notes: CAPCOA TRT-15 (Implement employee parking "cash-out"; the term "cash-out" is used to describe the employer providing employees with a choice of foregoing their current subsidized/free parking for a cash payment equivalent to the cost of the parking space to the employer. The measure is applicable in urban and suburban context; it is not applicable in rural context; it is appropriate for retail, office, industrial, and mixed-use projects. Restrictions are applied only if complementary strategies are in place: a) Residential parking permits and market rate public on-street parking to prevent spill over parking b) Unbundled parking – is not required but provides a market signal to employers to forego paying for parking spaces and "cash-out" the employee instead. In addition, unbundling parking provides a price with which employers can utilize as a means of establishing "cash-out" prices; City of San Jose (Parking cash-out: Employment uses only); City of LA (Parking cash-out: Employees eligible (%))
17 Implement or provide access to a commute reduction program - Voluntary	1.00% – 6.20% commute VMT	Y	Y	Y	Y	Y	Y	Notes: CAPCOA TRT-1: Commute Trip Reduction Program – Voluntary, is a multi-strategy program that encompasses a combination of individual measures described CAPCOA measures TRT-3 through TRT-9. It is presented as a means of preventing double-counting of reductions for individual measures that are included in this strategy. It does so by setting a maximum level of reductions that should be permitted for a combined set of strategies within a voluntary program. The main difference between a voluntary and a required program is: A) Monitoring and reporting is not required B) No established performance standards (i.e. no trip reduction requirements). The measure is applicable in urban and suburban contexts, negligible in a rural context, unless large employers exist and suite of strategies implemented are relevant in rural settings. The measure is appropriate for retail, office, industrial, and mixed-use projects; City of San Jose (Applicable for employment uses only); City of LA (Employees and residents participating (%))
18 Implement or provide access to Commute Trip Reduction Program – Required implementation/monitoring	4.2% – 21.0% commute VMT	Y	Y	Y	Y	Y	Y	Notes: CAPCOA TRT-2 (Commute Trip Reduction Program is a multi-strategy program that encompasses a combination of individual measures from TRT-3 through TRT-9. It is presented as a means of preventing double-counting of reductions for individual measures that are included in this strategy. It does so by setting a maximum level of reduction that should be permitted for a combined set of strategies within a program that is contractually required of the development sponsors and managers and accompanied by a regular performance monitoring and reporting program. Check examples of Tucson, Arizona and South San Francisco, CA from CAPCOA. The measure is applicable in urban and suburban contexts; it is negligible in rural context, unless large employers exist, and suite of strategies implemented are relevant in rural settings, jurisdiction level only); City of San Jose (Employment uses only); City of LA (Employees participating (%))

Table A - Vehicle Miles Traveled Mitigation Measures for Land Development Projects

# Mitigation Measure	VTMT Reduction ¹	CAPCOA ²	OPR TA ³	Los Angeles Metro ⁴	City of San Jose ⁵	City of Los Angeles ⁶	San Diego Region ⁷	Notes
19 Provide ride-sharing program	1.00% - 15.00% commute VMT	Y	Y	Y	Y	Y	Y	Notes: CAPCOA TMT-3 (Provide Ride-Sharing Programs: applicable in urban and suburban context; negligible impact in many rural contexts, but can be effective when a large employer in a rural area draws from a workforce in an urban or suburban area, such as when a major employer moves from an urban location to a rural location; appropriate for residential, retail, office, industrial, and mixed-use projects); City of San Jose (Ride share for employment uses only); City of LA (Measured in terms of employees eligible (%))
20 Implement bike-sharing program	Taking evidence from the literature, a 13%-300% increase in bicycling (of which roughly 7% are shifting from vehicle travel) results in a negligible impact (around 0.03% VMT reduction)	Y	Y	N	Y	Y	Y	Notes: CAPCOA TMT-12 (This measure has minimal impacts when implemented alone. The strategy's effectiveness is heavily dependent on the location and context. Bike-sharing programs have worked well in densely populated areas (examples in Barcelona, London, Lyon, and Paris) with existing infrastructure for bicycling. Bike sharing programs should be combined with Bike Lane Street Design (SDT-5) and Improve Design of Development (LDT-9). The measure is applicable in urban and suburban center context only; it is negligible in a rural context; appropriate for residential, retail, office, industrial, and mixed-use projects. City of San Jose (Bike share for employment and residential uses); City of LA (Bike share - within 600 feet of existing bike share station - OR - implementing new bike share station (7/N))
21 Provide transit passes	Similar to CAPCOA TMT-4 (Implement Subsidized or Discounted Transit Program); for TMT-4, commute VMT reduction is 0.30% - 20.00%	Y	Y	Y	Y	Y	Y	Notes: Similar to CAPCOA TMT-4 (Implement Subsidized or Discounted Transit Program); City of San Jose (Implement Subsidized or Discounted Transit Program); City of LA (Employees and residents eligible (%), amount of transit subsidy per daily passenger (daily equivalent (\$))
22 Shifting single occupancy vehicle trips to carpooling or vanpooling, for example providing ride-matching or shuttle services	0.30% - 13.40% commute VMT reduction (for CAPCOA TMT-11: Provide Employer-Sponsored Vanpool/Shuttle); 7.20% - 15.80% school VMT reduction (for CAPCOA TMT-10: Implement a School Pool Program)	Y	Y	Y	Y	Y	Y	Notes: Similar to CAPCOA TMT-11 (Provide employer-sponsored vanpool/shuttle) - The measure is applicable for urban, suburban, and rural context, and is appropriate for office, industrial, and mixed-use projects; Similar measure is CAPCOA TMT-10 (Implement a School Pool Program: Applicable for urban, suburban, and rural context and appropriate for residential and mixed-use projects); City of San Jose (School carpool program - residential uses only); City of LA (School carpool program - level of implementation (low, medium, high); Employer sponsored vanpool or shuttle (Degree of implementation (low, medium, high); employees eligible (%), employer size (small, medium, large))
23 Implement a school pool program	7.20% - 15.80% school VMT reduction	Y	Y	N	Y	Y	Y	Notes: CAPCOA TMT-10 (This project will create a ridesharing program for school children. Most school districts provide bus services to public schools only. School Pool helps match parents to transport students to private schools, or to schools where students cannot walk or bike but do not meet the requirements for bussing. The measure is applicable in urban, suburban, and rural context and is appropriate for residential and mixed-use projects); City of San Jose (School carpool program - residential uses only); This measure can be considered under the Technical Advisory Measure "Shifting single occupancy vehicle trips to carpooling or vanpooling, for example providing ride matching services"; City of LA (School carpool program level of implementation (low, medium, high)
24 Operate free direct shuttle service	CAPCOA TMT-6 (Provide Local Shuttles): Not Quantified; 0.30% - 13.40% commute VMT reduction (for CAPCOA TMT-11: Provide Employer-Sponsored Vanpool/Shuttle)	Y	Y	N	Y	Y	Y	Notes: CAPCOA TMT-6 (Provide Local Shuttles - grouped strategy with TMT-5 "Provide Bike Parking Near Transit" and TMT-4 "Increase Transit Service Frequency/Speed") - Applicable in urban/suburban context; appropriate for large residential, retail, office, mixed use, and industrial projects; solves the "first mile/last mile" problem; CAPCOA TMT-11 (Provide employer-sponsored vanpool/shuttle) - the measure is applicable for urban, suburban, and rural context, and is appropriate for office, industrial, and mixed-use projects. This measure can be considered under the Technical Advisory Measure "Shifting single occupancy vehicle trips to carpooling or vanpooling, for example providing ride matching services"; City of San Jose (Employment uses only); City of LA (Employer sponsored vanpool or shuttle (Degree of implementation (low, medium, high); employees eligible (%), employer size (small, medium, large))
25 Provide teleworking options	0.07% - 5.50% commute VMT	Y	Y	Y	Y	Y	Y	Notes: CAPCOA TMT-6 (Applicable in urban, rural, and suburban contexts; appropriate for retail, office, industrial, and mixed-use projects); City of San Jose (Alternative work schedules and telecommute (employment land uses only)); City of LA (Alternative work schedules and telecommute (employment land uses only); type of program)
26 Subsidize public transit service upgrades	Not Quantified	Y	Y	N	Y	N	Y	Notes: Similar to CAPCOA TMT-2 through TMT-4; City of San Jose (Subsidize transit service through contributions to the transit provider to improve transit service to the project (e.g., frequency and number of routes); applicable for both residential and employment uses). The measure is included under the Technical Advisory Measure "Provide incentives or subsidies that increase the use of modes other than single-occupancy vehicle."

Table A - Vehicle Miles Traveled Mitigation Measures for Land Development Projects

Mitigation Measure	VT Reduction ¹	CAPCOA ²	OPR TA ³	Los Angeles Metro ⁴	City of San Jose ⁵	City of Los Angeles ⁶	San Diego Region ⁷	Notes
27 Implement subsidized or discounted transit program	0.30% - 20.00% commute VMT	Y	Y	Y	Y	Y	Y	Notes: CAPCOA TRT-4 [Implement subsidized or discounted transit program (the measure is applicable in urban and suburban context, negligible in a rural context, appropriate for residential, retail, office, industrial, and mixed-use projects); The project will provide subsidized/discounted daily or monthly public transit passes. The project may also provide free transfers between all shuttles and transit to participants. These passes can be partially or wholly subsidized by the employer, school, or development. Many entities use revenue from parking to offset the cost of such a project. The measure is included under the Technical Advisory Measure "Provide incentives or subsidies that increase the use of modes other than single-occupancy vehicle."; City of San Jose [Implement Subsidized or Discounted Transit Program]; City of LA [Transit subsidies measured by employees and residents eligible (%), and amount of transit subsidy per passenger (daily equivalent) (\$)]
28 Subsidize vanpool	0.30% - 13.40% commute VMT	Y	Y	N	Y	N	Y	Notes: Similar to CAPCOA TRT-11 [Provide Employer-Sponsored Vanpool/Shuttle; applicable in urban, suburban, and rural context; appropriate for office, industrial, and mixed-use projects]; The measure is included under the Technical Advisory Measure "Provide incentives or subsidies that increase the use of modes other than single-occupancy vehicle."; City of San Jose [Applicable for employment uses only]
29 Providing on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms	22% increase in bicycle mode share (UK National Travel Survey)/2%-5% reduction in commute vehicle trips (Transportation Demand Management Encyclopedia)/0.625% reduction in VMT (Center for Clean Air Policy (CCAP) Emission Guidebook)	Y	Y	Y	Y	Y	Y	Notes: CAPCOA TRT-5 [Provide End of Trip Facilities]; End-of-trip facilities have minimal impacts when implemented alone. This strategy's effectiveness in reducing vehicle miles traveled (VMT) depends heavily on the suite of other transit, pedestrian/bicycle, and demand management measures offered. End-of trip facilities should be grouped with Commute Trip Reduction (CTR) Programs (TRT-1; Implement Commute Trip Reduction Program - Voluntary through TRT-2; Implement Commute Trip Reduction Program - Required Implementation/Monitoring) and TRT-3 [Provide Ride-Sharing Programs]; City of San Jose [Similar measures include "Provide bike parking/end of trip bike facilities", "Implement car sharing programs"]; City of LA [Include bike parking/showers, & repair station (Y/N)]
30 Provide employee transportation coordinators at employment sites	Not Quantified	Y	Y	Y	N	N	Y	Included as part of CAPCOA TRT-1 [Implement Commute Trip Reduction Program - Voluntary]
31 Provide a guaranteed ride home service to users of non-auto modes	Not Quantified	N	Y	Y	N	N	Y	Notes: CAPCOA LUT-2 [Applicable in urban and suburban contexts; negligible in rural contexts; appropriate for residential, retail, office, industrial, and mixed-use projects]
32 Locate project in an area of the region that already exhibits low VMT	10.00% - 65.00%	Y	Y	Y	N	N	Y	Notes: CAPCOA LUT-5 [May be grouped with CAPCOA measures LUT-3 (mixed use development), SOT-2 (traffic calmed streets with good connectivity), and PPT-1 through PPT-7 (parking management strategies); measures are applicable in urban and suburban contexts; appropriate in rural context if development site is adjacent to a commuter rail station with convenient rail service to a major employment center; appropriate for residential, retail, office, industrial, and mixed-use projects]
33 Locate project near transit	0.50% - 24.60%	Y	Y	Y	N	N	Y	Notes: CAPCOA LUT-1 [Applicable in urban and suburban contexts only; negligible in rural context; appropriate for residential, retail, office, industrial, and mixed-use projects]; City of San Jose [Applicable for both residential and employment uses]
34 Increase project/development density	1.50% - 30.00%	Y	Y	Y	Y	N	Y	Notes: CAPCOA LUT-3: Increase Diversity of Urban and Suburban Developments (Mixed Use) [Applicable in urban and suburban context, negligible in rural context, and appropriate for mixed-use projects]; City of San Jose [Applicable for both residential and employment uses]
35 Increase the mix of uses within the project or within the project's surroundings	9.00% - 30.00%	Y	Y	Y	Y	N	Y	Notes: Similar measure to CAPCOA LUT-9 [Improve Design of Development]; City of San Jose [Build new street connections and/or connect cul-de-sacs to provide pedestrian and bicycle access; applicable for both residential and employment uses]
36 Improve network connectivity and/or increase intersection density on the project site	Similar measure is CAPCOA LUT-9 [Improve Design of Development]; 3.0% - 21.3% reduction in VMT	Y	Y	Y	Y	N	Y	Notes: CAPCOA TRT-14 [Urban and suburban context; Negligible impact in a rural context; Appropriate for retail, office, industrial, and mixed-use projects; Reductions applied only if complementary strategies are in place.
37 Price workplace parking	0.10% - 15.70% commute VMT	Y	N	N	Y	Y	N	Notes: CAPCOA TRT-14 [Urban and suburban context; Negligible impact in a rural context; Appropriate for retail, office, industrial, and mixed-use projects; Reductions applied only if complementary strategies are in place.

Table A - Vehicle Miles Traveled Mitigation Measures for Land Development Projects

#	Mitigation Measure	VMT Reduction ¹	CAPCOA ²	OPRTA ³	Los Angeles Metro ⁵	City of San Jose ⁶	City of Los Angeles ⁸	San Diego Region ⁹	Notes
38	Locate project near bike path/bike lane	0.625%	Y	N	Y	N	N	N	Notes: CAPCOA LUT-8 (Grouped strategy with 'Increase Destination Accessibility'; the measure is most effective when applied in combination of multiple design elements that encourage this use; strategy should be grouped with 'Increase Destination Accessibility' strategy to increase the opportunities for multi-modal travel; measure is applicable in urban or suburban context; may be applicable in a rural master planned community; appropriate for residential, retail, office, industrial, and mixed-use projects)
39	Implement Commute Trip Reduction Marketing	0.80% - 4.00% commute VMT	Y	N	Y	Y	N	N	Notes: CAPCOA TRI-7 (Applicable in urban and suburban context; negligible in rural context; appropriate for residential, retail, office, industrial, and mixed-use projects); City of San Jose (Employment uses only)
40	Education and encouragement - Voluntary travel behavior change program	1.00% - 6.20% commute VMT	Y	N	N	Y	Y	N	Notes: Similar to CAPCOA TRI-1 (Implement Commute Reduction Program - Voluntary); City of San Jose (For both residential and employment uses); City of LA (Employees and residents participating %)
41	Education and encouragement - Promotions and marketing	0.80% - 4.00% commute VMT	Y	N	N	Y	Y	N	Notes: Similar to CAPCOA TRI-7 (Implement Commute Reduction Marketing); City of San Jose (Similar measure might be 'Implement commute trip reduction marketing/educational campaign' (applicable for employment uses)); City of LA (Employees and residents participating %)
42	Implement market price public parking (On-street)	2.80% - 5.50%	Y	N	Y	N	N	N	CAPCOA PDT-3 (Applicable in urban and suburban context; negligible in rural context; appropriate for retail, office, and mixed use projects; applicable in a specific or general plan context only; reduction can be counted only if spillover parking is controlled (via residential permits); studies conducted in downtown areas, and thus should be applied carefully if project is not in a central business/activity center)
43	Create urban non-motorized zones	0.01% - 0.20% annual VMT reduction	Y	N	Y	N	N	N	Notes: CAPCOA SDT-4 (The project, if located in a CBD or major activity center, will convert a percentage of its roadway miles to transit malls, linear parks, or other nonmotorized zones. These features encourage non-motorized travel and thus a reduction in VMT. This measure is most effective when applied with multiple design elements that encourage this use. The benefits of Urban Non-Motorized zones alone have not been shown to be significant. (considered grouped strategy with SDT-1 (provide pedestrian network improvements); this is applicable in urban context only and appropriate for residential, retail, office, industrial, and mixed-use projects)
44	Install park-and-ride lots	Two sources: 0.1% - 0.5% VMT reduction (as per 2005 Federal Highway Administration (FHWA) study) and 0.50% VMT reduction per day (as per Washington State Department of Transportation (WSDOT))	Y	N	N	N	N	N	Notes: CAPCOA RPT-4 (Applicable in suburban and rural context; appropriate for residential, retail, office, mixed use, and industrial projects); Grouped strategy with RPT-1, TRI-11, TRI-3, and TRI-1 through 6
45	Electricity loading docks and/or require idling-reduction systems	25% - 71% reduction in Truck refrigeration units (TRU) idling GHG emissions	Y	N	N	N	N	N	Notes: CAPCOA VT-1 (Measure applicability: Truck refrigeration units (TRU))
46	Utilize alternative fueled vehicles	Reduction in GHG emissions varies depending on vehicle type, year, and associated fuel economy	Y	N	N	N	N	N	Notes: CAPCOA VT-2 (Measure applicability: vehicles)
47	Utilize electric or hybrid vehicles	0.40% - 20-30% reduction in GHG emissions	Y	N	N	N	N	N	Notes: CAPCOA VT-3 (Measure applicability: vehicles)
48	Provide bike parking near transit	Not Quantified	Y	N	N	N	N	N	Notes: CAPCOA TST-5 (should be implemented with other two measures as mentioned to encourage multi-modal use in the area and provide ease of access to nearby transit for bicyclists (measure applicable in urban and suburban context; appropriate for residential, retail, office, mixed use, and industrial projects); Grouped strategy (with measures TST-3 'Expand transit network' and TST-4 'Increase transit service frequency/speed')
49	Improve design of development	3.00% - 21.30%	Y	N	N	N	N	N	Notes: CAPCOA LUT-9 (Include design elements to enhance walkability and connectivity; improved street network characteristics within a neighborhood such as street accessibility; design also measured in terms of sidewalk coverage, building setbacks, street widths, pedestrian crossings, presence of street trees, and a host of other physical variables that differentiate pedestrian-oriented environments from auto-oriented environments); measure is applicable in the urban and suburban contexts, negligible impact in rural context; appropriate for residential, retail, office, industrial, and mixed-use projects

Table A - Vehicle Miles Traveled Mitigation Measures for Land Development Projects

#	Mitigation Measure	VTMT Reduction ¹	CAPCOA ²	OPRTA ³	Los Angeles Metro ⁴	City of San Jose ⁵	City of Los Angeles ⁶	San Diego Region ⁷	Notes
50	Provide electric vehicle parking	Not Quantified	Y	N	N	N	N	N	Notes: CAPCOA SDT-8 [This is a grouped strategy and the benefits of electric vehicle parking may be quantified when grouped with the use of electric vehicles and or SDT-3 Implement a Neighborhood Electric Vehicle (NEV) Network]. This measure is applicable in urban or suburban contexts and is appropriate for residential, retail, office, mixed use, and industrial projects.]
51	Dedicated land for bike trails	Not Quantified	Y	N	N	N	N	N	Notes: CAPCOA SDT-9 [Larger projects may be required to provide for, contribute to, or dedicate land for the provision of off-site bicycle trails linking the project to designated bicycle commuting routes in accordance with an adopted citywide or countywide bikeway plan. The benefits of Land Dedication for Bike Trails have not been quantified and should be grouped with the LUT-9 (Improve Design and Development) strategy to strengthen street network characteristics and improve connectivity to off-site bicycle networks. The measure is applicable in urban, suburban, or rural contexts and is appropriate for larger residential, retail, office, mixed use, and industrial projects.]
52	Implement school bus program	38.00% - 63.00% school VMT reduction	Y	N	N	N	N	N	Notes: CAPCOA TRT-13 [Applicable in urban, suburban, and rural context; appropriate for residential and mixed-use projects]
53	Implement preferential parking permit program	Not Quantified	Y	N	N	N	N	N	Notes: CAPCOA TRT-8 [The project will provide preferential parking in convenient locations (such as near public transportation or building front doors) in terms of free or reduced parking fees, priority parking, or reserved parking for commuters who carpool, vanpool, ride-share or use alternatively fueled vehicles. The project will provide wide parking spaces to accommodate vanpool vehicles. The impact of preferential parking permit programs has not been quantified by the literature and is likely to have negligible impacts when implemented alone. This strategy should be grouped with Commute Trip Reduction (CTR) Programs (TRT-1 and TRT-2) and TRT-3 (Provide Ride-Sharing Programs) as a complementary strategy for encouraging non-single occupant vehicle travel. This measure is applicable in urban and suburban contexts and is appropriate for residential, retail, office, mixed use, and industrial projects.]

Notes:

- VTMT = Vehicle Miles Traveled; CAPCOA = California Air Pollution Control Officers Association; OPR = Office of Planning and Research; TA = Technical Advisory; HOV = High Occupancy Vehicle; HOT = High Occupancy Toll; ITS = Intelligent Transportation System
- CAPCOA Transportation Mitigation Categories LU = Land Use/Location; SD = Neighborhood/Site Enhancements; PD = Parking Policy/Planning; TR = Commute Trip Reduction Programs; TS = Transit System Improvements; RP = Road Pricing/Management; V = Vehicles
- ¹ VMT reduction numbers obtained from Quantifying Greenhouse Gas Mitigation Measures published by the California Air Pollution Control Officers Association in August 2010.
- ² Quantifying Greenhouse Gas Mitigation Measures published by the California Air Pollution Control Officers Association in August 2010.
- ³ Technical Advisory on Evaluating Transportation Impacts in CEQA published by the Governor's Office of Planning and Research in December 2018.
- ⁴ Analysis of VMT Mitigation Measures Pursuant to SB 753 prepared by Itern, Inc. in February 2018.
- ⁵ City of San Jose Transportation Analysis Handbook (dated April 2018).
- ⁶ City of Los Angeles VMT Calculator Version 1.2
- ⁷ Guidelines for Transportation Impact Studies in the San Diego Region developed by San Diego Section of the Institute of Transportation Engineers (ITE) and the San Diego Traffic Engineers Council (SANTES) in January 2019.



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APPENDIX B

VEHICLE MILES TRAVELED MITIGATION MEASURES FOR DEVELOPMENT PROJECTS (CARB PAPERS)



Table B - Vehicle Miles Traveled Mitigation Measures¹

#	Mitigation Measure	VTMT Reduction ²	Notes
1	Improve or increase access to transit	1.3% - 5.8%	Variable: Various factors associated with proximity to transit stop (please refer to <i>How do Local Actions Affect CMT?</i> A Critical Review of the Empirical Evidence (Salon, D., Boarnet, M.G., Handy, S., Spears, S., and Tal, G.))
2	Land Use Mix	Elasticity: 0.02 - 0.10	Variable: Entropy - variety and balance of land-use types within a neighborhood
3	Regional Accessibility	Elasticity: 0.05 - 0.25	Variable: Various factors associated with job accessibility and distance to CBD (please refer to <i>How do Local Actions Affect CMT?</i> A Critical Review of the Empirical Evidence (Salon, D., Boarnet, M.G., Handy, S., Spears, S., and Tal, G.))
4	Job-Housing Balance	Elasticity: 0.06 - 0.31 for commute VMT	Variable: Various factors associated with job accessibility (please refer to <i>How do Local Actions Affect CMT?</i> A Critical Review of the Empirical Evidence (Salon, D., Boarnet, M.G., Handy, S., Spears, S., and Tal, G.))
5	Provide Pedestrian Network Improvements	Elasticity: 0.00 - 0.02 for sidewalk length, 0.19 for Pedestrian Environment Factor	
6	Provide Bicycling Network Improvements	No effect on VMT	
7	Implement Transit Improvements	No effect on VMT	
8	Voluntary Travel Behavior Change (VTBC) Program	5% - 12%	
9	Implement Employer-Based Trip Reduction (EBTR) Program	1.33% - 6% of commute VMT	
10	Provide telecommuting options	Home-based telecommuting: 48.1% for household VMT, 66.5% - 76.6% for all personal VMT, and 90.3% for commute VMT only; Center-based telecommuting: 53.7% - 64.8% for all personal VMT and 62.0% - 77.2% for commute VMT only	
11	Increase Project/Development Density	Elasticity: <=0.07 - 0.19	Variable: residential density
12	Improve network connectivity and/or increase intersection density on the project site	Elasticity: -0.46 - 0.59	Variable: Various factors associated with intersection or street density (please refer to <i>How do Local Actions Affect CMT?</i> A Critical Review of the Empirical Evidence (Salon, D., Boarnet, M.G., Handy, S., Spears, S., and Tal, G.))
13	Implement Road Pricing	10% - 14.6%	Variable: Different road prices in various parts of the US (please refer to <i>How do Local Actions Affect CMT?</i> A Critical Review of the Empirical Evidence (Salon, D., Boarnet, M.G., Handy, S., Spears, S., and Tal, G.))
14	Implement Parking Cash-out Programs or Workplace Parking Pricing	12% of commute VMT (parking cash out); 2.3% - 2.9% for \$3 per day workplace parking price; 2.8% for price increase equivalent to 60% hourly value of commuter travel time cost	

Notes:

VTMT = Vehicle Miles Traveled

¹ All mitigation measures have been obtained from *How do Local Actions Affect CMT?* A Critical Review of the Empirical Evidence (Salon, D., Boarnet, M.G., Handy, S., Spears, S., and Tal, G.).² All VTMT reduction numbers have been obtained from *How do Local Actions Affect CMT?* A Critical Review of the Empirical Evidence (Salon, D., Boarnet, M.G., Handy, S., Spears, S., and Tal, G.).



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APPENDIX C

VEHICLE MILES TRAVELED MITIGATION MEASURES FOR COMMUNITY PLANS AND GENERAL PLANS



Table C - Vehicle Miles Traveled Mitigation Measures for Community Plans and General Plans¹

# Mitigation Measure	VMT Reduction
1 Modify land use plan to increase development in areas with low VMT/capita characteristics and/or decrease development in areas with high VMT/capita characteristics	Not quantified in CAPCOA
2 Provide enhanced bicycle and/or pedestrian facilities	0.00% - 2.00% (for pedestrian network improvements); Multiple measures for bike facilities, refer to Table A for VMT reduction percentages
3 Add roadways to the street network if those roadways would provide shorter travel paths for existing and/or future trips	Not quantified in CAPCOA
4 Improve or increase access to transit	CAPCOA TST-2 (Implement transit access improvements); Not quantified alone, grouped strategy with TST-3 (Expand transit network) and TST-4 (Increase transit service frequency/speed); CAPCOA LUT-5 (Increase transit accessibility): 0.50% - 24.60%
5 Increase access to common goods and services, such as groceries, schools, and daycare	Similar to CAPCOA LUT-3 (Increase Diversity of Urban and Suburban Developments (Mixed Use)): 9.00% - 30.00% VMT reduction and CAPCOA LUT-4 (Increase Destination Accessibility): 6.70% - 20.00% VMT reduction
6 Incorporate a neighborhood electric vehicle network	0.50% - 12.70%
7 Provide traffic calming	0.25% - 1.00%
8 Limit or eliminate parking supply	5.00% - 12.50%
9 Unbundle parking costs	2.60% - 13.00%
10 Provide parking or roadway pricing or cash-out programs	0.10% - 19.70% commute VMT (for pricing workplace parking); 7.90% - 22.00% (for CAPCOA RPT-1 (Road Pricing/Management: Implement Area or Cordon Pricing)); 0.60% - 7.70% commute VMT (for cash-out programs)
11 Implement or provide access to a commute reduction program	1.0% - 6.2% commute VMT % (for voluntary programs); 4.2% - 21.0% commute VMT reduction (for programs with required implementation/monitoring)
12 Provide car-sharing, bike sharing, and ride-sharing programs	0.40% - 0.70% VMT reduction (for car sharing); 1.00% - 15.00% commute VMT reduction (for ride-sharing); a 135% - 300% increase in biking (of which roughly 7% are shifting from vehicle travel) results in a negligible impact (around 0.03% VMT reduction)
13 Provide partially or fully subsidized transit passes	Similar to CAPCOA TRT-4 (Implement Subsidized or Discounted Transit Program); for TRT-4, commute VMT reduction is 0.30% - 20.00%
14 Shift single occupancy vehicle trips to carpooling or vanpooling by providing ride-matching services or shuttle services	0.30% - 13.40% commute VMT reduction (for CAPCOA TRT-11: (Provide Employer-Sponsored Vanpool/Shuttle)); Grouped strategy (for CAPCOA TST-6 (Provide Local Shuttles))
15 Provide telework options	0.07% - 5.50% commute VMT
16 Provide incentives or subsidies that increase the use of modes other than a single-occupancy vehicle	0.30% - 13.40% commute VMT reduction (for CAPCOA TRT-11: (Provide Employer-Sponsored Vanpool/Shuttle)); Grouped strategy (for CAPCOA TST-6 (Provide Local Shuttles)); 0.30% - 20.00% commute VMT reduction (for CAPCOA TRT-4 (Implement Subsidized or Discounted Transit Program))
17 Provide employee transportation coordinators at employment sites	Not quantified in CAPCOA
18 Provide a guaranteed ride home service to users of non-auto modes	Not quantified in CAPCOA

Notes:

VMT = Vehicle Miles Traveled; CAPCOA = California Air Pollution Control Officers Association

CAPCOA Transportation Mitigation Categories (LU = Land Use/Location, SD = Neighborhood/Site Enhancements, PD = Parking Policy/Pricing, TR = Commute Trip Reduction Programs, TS = Transit System Improvements, RP = Road Pricing/Management; V = Vehicles)

¹ All mitigation measures have been obtained from the *Guidelines for Transportation Impact Studies in the San Diego Region* developed by San Diego Section of the Institute of Transportation Engineers (ITE) and the San Diego Traffic Engineers Council (SANTEC) in January 2019.

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SB-743 Environmental quality: transit oriented infill projects, judicial review streamlining for environmental leadership development projects, and entertainment and sports center in the City of Sacramento. (2013-2014)

Current Version: 09/27/13 - Chaptered Compared to Version: 09/27/13 - Chaptered

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Senate Bill No. 743

CHAPTER 386

An act to amend Sections 65088.1 and 65088.4 of the Government Code, and to amend Sections 21181, 21183, 21186, 21187, 21189.1, and 21189.3 of, to add Section 21155.4 to, to add Chapter 2.7 (commencing with Section 21099) to Division 13 of, to add and repeal Section 21168.6.6 of, and to repeal and add Section 21185 of, the Public Resources Code, relating to environmental quality.

[Approved by Governor September 27, 2013. Filed with Secretary of State September 27, 2013.]

LEGISLATIVE COUNSEL'S DIGEST

SB 743, Steinberg. Environmental quality: transit oriented infill projects, judicial review streamlining for environmental leadership development projects, and entertainment and sports center in the City of Sacramento.

(1) The Jobs and Economic Improvement Through Environmental Leadership Act of 2011 requires a party bringing an action or proceeding alleging that a lead agency's approval of a project certified by the Governor as an environmental leadership development project is in violation of the California Environmental Quality Act to file the action or proceeding with the Court of Appeal with geographic jurisdiction over the project and requires the Court of Appeal to issue its decision within 175 days of the filing of the petition. The Jobs and Economic Improvement Through Environmental Leadership Act of 2011 requires the lead agency to concurrently prepare the record of proceeding for the leadership project with the review and consideration of the project. The Jobs and Economic Improvement Through Environmental Leadership Act of 2011 provides that the above provision does not apply to a project for which a lead agency fails to certify an environmental impact report on or before June 1, 2014. The Jobs and Economic Improvement Through Environmental Leadership Act of 2011 is repealed by its own terms on January 1, 2015.

This bill would instead require the Judicial Council, on or before July 1, 2014, to adopt a rule of court to establish procedures applicable to actions or proceedings seeking judicial review of a public agency's action in certifying the environmental impact report and in granting project approval that requires the actions or proceedings, including any appeals therefrom, be resolved, within 270 days of the certification of the record of proceedings. The bill would extend the operation of the judicial review procedures unless the lead agency fails to certify an environmental impact report for an environmental leadership project on or before January 1, 2016. The bill would provide that the above provisions do not apply to a project if the Governor does not certify the project as an environmental leadership development project prior to January 1, 2016. Because this bill would extend the time period for which a lead agency would be required to concurrently prepare the record of proceeding with the review and consideration of the environmental leadership development projects, this bill would impose a state-

mandated local program. The bill would require the lead agency, within 10 days of the Governor's certification, to issue, at the applicant's expense, a specified public notice, thereby imposing a state-mandated local program. The bill would repeal the Jobs and Economic Improvement Through Environmental Leadership Act of 2011 on January 1, 2017.

(2) The California Environmental Quality Act, commonly known as CEQA, requires a lead agency, as defined, to prepare, or cause to be prepared, and certify the completion of, an environmental impact report on a project that it proposes to carry out or approve that may have a significant effect on the environment or to adopt a negative declaration if it finds that the project will not have that effect. CEQA also requires a lead agency to prepare a mitigated negative declaration for a project that may have a significant effect on the environment if revisions in the project would avoid or mitigate that effect and there is no substantial evidence that the project, as revised, would have a significant effect on the environment. CEQA establishes a procedure by which a person may seek judicial review of the decision of the lead agency made pursuant to CEQA.

This bill would provide that aesthetic and parking impacts of a residential, mixed-use residential, or employment center project, as defined, on an infill site, as defined, within a transit priority area, as defined, shall not be considered significant impacts on the environment. The bill would require the Office of Planning and Research to prepare and submit to the Secretary of the Natural Resources Agency, and the secretary to certify and adopt, revisions to the guidelines for the implementation of CEQA establishing criteria for determining the significance of transportation impacts of projects within transit priority areas.

This bill would, except for specified circumstances, exempt from CEQA residential, employment center, and mixed-use development projects meeting specified criteria. Because a lead agency would be required to determine the applicability of this exemption, this bill would impose a state-mandated local program.

This bill would require the public agency, in certifying the environmental impact report and in granting approvals for a specified entertainment and sports center project located in the City of Sacramento, including the concurrent preparation of the record of proceedings and the certification of the record of proceeding within 5 days of the filing of a specified notice, to comply with specified procedures. Because a public agency would be required to comply with those new procedures, this bill would impose a state-mandated local program. The bill would require the Judicial Council, on or before July 1, 2014, to adopt a rule of court to establish procedures applicable to actions or proceedings seeking judicial review of a public agency's action in certifying the environmental impact report and in granting project approval that requires the actions or proceedings, including any appeals therefrom, be resolved, to the extent feasible, within 270 days of the certification of the record of proceedings. The bill would provide that the above provisions are inoperative and repealed on January 1 of the following year if the applicant fails to notify the lead agency before the release of the draft environmental impact report for public comment that the applicant is electing to proceed pursuant to the above provisions.

(3) Existing law requires the development, adoption, and updating of a congestion management program for each county that includes an urbanized area, as defined. The plan is required to contain specified elements and to be submitted to regional agencies, as defined, for determination of whether the program is consistent with regional transportation plans. The regional agency is then directed to monitor the implementation of all elements of each congestion management program. The required elements include traffic level of service standards for a system of designated highways and roadways. Existing law defines "infill opportunity zone" for purposes of the above-described provisions and exempts streets and highways in an infill opportunity zone from the level of service standards specified in the above-described provisions and instead requires alternate level of service standards to be applied. Existing law prohibits a city or county from designating an infill opportunity zone after December 31, 2009.

This bill would revise the definition of "infill opportunity zone," as specified. The bill would authorize the designation of an infill opportunity zone that is a transit priority area within a sustainable communities strategy or alternative planning strategy adopted by an applicable metropolitan planning organization.

(4) Existing law terminates the designation of an infill opportunity zone if no development project is completed within that zone within 4 years from the date of the designation.

This bill would repeal this provision.

This bill would make findings and declarations as to the necessity of a special statute for the City of Sacramento.

(5) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority Appropriation: no Fiscal Committee: yes Local Program: yes

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. (a) The Legislature finds and declares the following:

(1) With the adoption of Chapter 728 of the Statutes of 2008, popularly known as the Sustainable Communities and Climate Protection Act of 2008, the Legislature signaled its commitment to encouraging land use and transportation planning decisions and investments that reduce vehicle miles traveled and contribute to the reductions in greenhouse gas emissions required in the California Global Warming Solutions Act of 2006 (Division 25.5 (commencing with Section 38500) of the Health and Safety Code). Similarly, the California Complete Streets Act of 2008 (Chapter 657 of the Statutes of 2008) requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel.

(2) Transportation analyses under the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) typically study changes in automobile delay. New methodologies under the California Environmental Quality Act are needed for evaluating transportation impacts that are better able to promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations.

(b) It is the intent of the Legislature to do both of the following:

(1) Ensure that the environmental impacts of traffic, such as noise, air pollution, and safety concerns, continue to be properly addressed and mitigated through the California Environmental Quality Act.

(2) More appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.

SEC. 2. The Legislature further finds and declares all of the following:

(a) The Federal Reserve has stated that "[m]ost policymakers estimate the longer-run normal rate of unemployment is between 5.2 and 6 percent." At 7.6 percent, the current United States unemployment rate remains markedly higher than the normal rate and both the unemployment rates in Sacramento County and California are higher than the current national unemployment rate.

(b) The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) requires that the environmental impacts of development projects be identified and mitigated. The act also guarantees the public an opportunity to review and comment on the environmental impacts of a project and to participate meaningfully in the development of mitigation measures for potentially significant environmental impacts.

(c) The existing home of the City of Sacramento's National Basketball Association (NBA) team, the Sleep Train Arena, is an old and outmoded facility located outside of the City of Sacramento's downtown area and is not serviced by the region's existing heavy and light rail transportation networks. It was constructed 25 years ago and a new, more efficient entertainment and sports center located in downtown Sacramento is needed to meet the city's and region's needs.

(d) The City of Sacramento and the region would greatly benefit from the addition of a multipurpose event center capable of hosting a wide range of events including exhibitions, conventions, sporting events, as well as musical, artistic, and cultural events in downtown Sacramento.

(e) The proposed entertainment and sports center project is a public-private partnership between the City of Sacramento and the applicant that will result in the construction of a new state-of-the-art multipurpose event center, and surrounding infill development in downtown Sacramento as described in the notice of preparation released by the City of Sacramento on April 12, 2013.

(f) The project will generate over 4,000 full-time jobs including employees hired both during construction and operation of the entertainment and sports center project. This employment estimate does not include the

substantial job generation that will occur with the surrounding development uses, which will generate additional hospitality, office, restaurant, and retail jobs in Sacramento's downtown area.

(g) The project also presents an unprecedented opportunity to implement innovative measures that will significantly reduce traffic and air quality impacts and mitigate the greenhouse gas emissions resulting from the project. The project site is located in downtown Sacramento near heavy and light rail transit facilities, situated to maximize opportunities to encourage nonautomobile modes of travel to the entertainment and sports center project, and is consistent with the policies and regional vision included in the Sustainable Communities Strategy adopted pursuant to Chapter 728 of the Statutes of 2008 by the Sacramento Area Council of Governments in April of 2012. The project is also located within close proximity to three major infill development areas including projects (The Bridge District, Railyards, and Township Nine) that received infill infrastructure grants from the state pursuant to Proposition 1C.

(h) It is in the interest of the state to expedite judicial review of the entertainment and sports center project, as appropriate, while protecting the environment and the right of the public to review, comment on, and, if necessary, seek judicial review of, the adequacy of the environmental impact report for the project.

SEC. 3. Section 65088.1 of the Government Code is amended to read:

65088.1. As used in this chapter the following terms have the following meanings:

(a) Unless the context requires otherwise, "agency" means the agency responsible for the preparation and adoption of the congestion management program.

(b) "Bus rapid transit corridor" means a bus service that includes at least four of the following attributes:

- (1) Coordination with land use planning.
- (2) Exclusive right-of-way.
- (3) Improved passenger boarding facilities.
- (4) Limited stops.
- (5) Passenger boarding at the same height as the bus.
- (6) Prepaid fares.
- (7) Real-time passenger information.
- (8) Traffic priority at intersections.
- (9) Signal priority.
- (10) Unique vehicles.

(c) "Commission" means the California Transportation Commission.

(d) "Department" means the Department of Transportation.

(e) "Infill opportunity zone" means a specific area designated by a city or county, pursuant to subdivision (c) of Section 65088.4, that is within one-half mile of a major transit stop or high-quality transit corridor included in a regional transportation plan. A major transit stop is as defined in Section 21064.3 of the Public Resources Code, except that, for purposes of this section, it also includes major transit stops that are included in the applicable regional transportation plan. For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

(f) "Interregional travel" means any trips that originate outside the boundary of the agency. A "trip" means a one-direction vehicle movement. The origin of any trip is the starting point of that trip. A roundtrip consists of two individual trips.

(g) "Level of service standard" is a threshold that defines a deficiency on the congestion management program highway and roadway system which requires the preparation of a deficiency plan. It is the intent of the Legislature that the agency shall use all elements of the program to implement strategies and actions that avoid the creation of deficiencies and to improve multimodal mobility.

(h) "Local jurisdiction" means a city, a county, or a city and county.

(i) "Multimodal" means the utilization of all available modes of travel that enhance the movement of people and goods, including, but not limited to, highway, transit, nonmotorized, and demand management strategies including, but not limited to, telecommuting. The availability and practicality of specific multimodal systems, projects, and strategies may vary by county and region in accordance with the size and complexity of different urbanized areas.

(j) (1) "Parking cash-out program" means an employer-funded program under which an employer offers to provide a cash allowance to an employee equivalent to the parking subsidy that the employer would otherwise pay to provide the employee with a parking space. "Parking subsidy" means the difference between the out-of-pocket amount paid by an employer on a regular basis in order to secure the availability of an employee parking space not owned by the employer and the price, if any, charged to an employee for use of that space.

(2) A parking cash-out program may include a requirement that employee participants certify that they will comply with guidelines established by the employer designed to avoid neighborhood parking problems, with a provision that employees not complying with the guidelines will no longer be eligible for the parking cash-out program.

(k) "Performance measure" is an analytical planning tool that is used to quantitatively evaluate transportation improvements and to assist in determining effective implementation actions, considering all modes and strategies. Use of a performance measure as part of the program does not trigger the requirement for the preparation of deficiency plans.

(l) "Urbanized area" has the same meaning as is defined in the 1990 federal census for urbanized areas of more than 50,000 population.

(m) Unless the context requires otherwise, "regional agency" means the agency responsible for preparation of the regional transportation improvement program.

SEC. 4. Section 65088.4 of the Government Code is amended to read:

65088.4. (a) It is the intent of the Legislature to balance the need for level of service standards for traffic with the need to build infill housing and mixed use commercial developments within walking distance of mass transit facilities, downtowns, and town centers and to provide greater flexibility to local governments to balance these sometimes competing needs.

(b) Notwithstanding any other provision of law, level of service standards described in Section 65089 shall not apply to the streets and highways within an infill opportunity zone.

(c) The city or county may designate an infill opportunity zone by adopting a resolution after determining that the infill opportunity zone is consistent with the general plan and any applicable specific plan, and is a transit priority area within a sustainable communities strategy or alternative planning strategy adopted by the applicable metropolitan planning organization.

SEC. 5. Chapter 2.7 (commencing with Section 21099) is added to Division 13 of the Public Resources Code, to read:

CHAPTER 2.7. Modernization of Transportation Analysis for Transit-Oriented Infill Projects

21099. (a) For purposes of this section, the following terms mean the following:

(1) "Employment center project" means a project located on property zoned for commercial uses with a floor area ratio of no less than 0.75 and that is located within a transit priority area.

(2) "Floor area ratio" means the ratio of gross building area of the development, excluding structured parking areas, proposed for the project divided by the net lot area.

(3) "Gross building area" means the sum of all finished areas of all floors of a building included within the outside faces of its exterior walls.

(4) "Infill site" means a lot located within an urban area that has been previously developed, or on a vacant site where at least 75 percent of the perimeter of the site adjoins, or is separated only by an improved public right-of-way from, parcels that are developed with qualified urban uses.

(5) "Lot" means all parcels utilized by the project.

(6) "Net lot area" means the area of a lot, excluding publicly dedicated land and private streets that meet local standards, and other public use areas as determined by the local land use authority.

(7) "Transit priority area" means an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or 450.322 of Title 23 of the Code of Federal Regulations.

(b) (1) The Office of Planning and Research shall prepare, develop, and transmit to the Secretary of the Natural Resources Agency for certification and adoption proposed revisions to the guidelines adopted pursuant to Section 21083 establishing criteria for determining the significance of transportation impacts of projects within transit priority areas. Those criteria shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. In developing the criteria, the office shall recommend potential metrics to measure transportation impacts that may include, but are not limited to, vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated. The office may also establish criteria for models used to analyze transportation impacts to ensure the models are accurate, reliable, and consistent with the intent of this section.

(2) Upon certification of the guidelines by the Secretary of the Natural Resources Agency pursuant to this section, automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any.

(3) This subdivision does not relieve a public agency of the requirement to analyze a project's potentially significant transportation impacts related to air quality, noise, safety, or any other impact associated with transportation. The methodology established by these guidelines shall not create a presumption that a project will not result in significant impacts related to air quality, noise, safety, or any other impact associated with transportation. Notwithstanding the foregoing, the adequacy of parking for a project shall not support a finding of significance pursuant to this section.

(4) This subdivision does not preclude the application of local general plan policies, zoning codes, conditions of approval, thresholds, or any other planning requirements pursuant to the police power or any other authority.

(5) On or before July 1, 2014, the Office of Planning and Research shall circulate a draft revision prepared pursuant to paragraph (1).

(c) (1) The Office of Planning and Research may adopt guidelines pursuant to Section 21083 establishing alternative metrics to the metrics used for traffic levels of service for transportation impacts outside transit priority areas. The alternative metrics may include the retention of traffic levels of service, where appropriate and as determined by the office.

(2) This subdivision shall not affect the standard of review that would apply to the new guidelines adopted pursuant to this section.

(d) (1) Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment.

(2) (A) This subdivision does not affect, change, or modify the authority of a lead agency to consider aesthetic impacts pursuant to local design review ordinances or other discretionary powers provided by other laws or policies.

(B) For the purposes of this subdivision, aesthetic impacts do not include impacts on historical or cultural resources.

(e) This section does not affect the authority of a public agency to establish or adopt thresholds of significance that are more protective of the environment.

SEC. 6. Section 21155.4 is added to the Public Resources Code, to read:

21155.4. (a) Except as provided in subdivision (b), a residential, employment center, as defined in paragraph (1) of subdivision (a) of Section 21099, or mixed-use development project, including any subdivision, or any zoning, change that meets all of the following criteria is exempt from the requirements of this division:

- (1) The project is proposed within a transit priority area, as defined in subdivision (a) of Section 21099.
 - (2) The project is undertaken to implement and is consistent with a specific plan for which an environmental impact report has been certified.
 - (3) The project is consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy for which the State Air Resources Board, pursuant to subparagraph (H) of paragraph (2) of subdivision (b) of Section 65080 of the Government Code, has accepted a metropolitan planning organization's determination that the sustainable communities strategy or the alternative planning strategy would, if implemented, achieve the greenhouse gas emissions reduction targets.
- (b) Further environmental review shall be conducted only if any of the events specified in Section 21166 have occurred.

SEC. 7. Section 21168.6.6 is added to the Public Resources Code, to read:

21168.6.6. (a) For the purposes of this section, the following definitions shall have the following meanings:

- (1) "Applicant" means a private entity or its affiliates that proposes the project and its successors, heirs, and assignees.
- (2) "City" means the City of Sacramento.
- (3) "Downtown arena" means the following components of the entertainment and sports center project from demolition and site preparation through operation:
 - (A) An arena facility that will become the new home to the City of Sacramento's National Basketball Association (NBA) team that does both of the following:
 - (i) Receives Leadership in Energy and Environmental Design (LEED) gold certification for new construction within one year of completion of the first NBA season.
 - (ii) Minimizes operational traffic congestion and air quality impacts through either or both project design and the implementation of feasible mitigation measures that will do all of the following:
 - (I) Achieve and maintain carbon neutrality or better by reducing to at least zero the net emissions of greenhouse gases, as defined in subdivision (g) of Section 38505 of the Health and Safety Code, from private automobile trips to the downtown arena as compared to the baseline as verified by the Sacramento Metropolitan Air Quality Management District.
 - (II) Achieve a per attendee reduction in greenhouse gas emissions from automobiles and light trucks compared to per attendee greenhouse gas emissions associated with the existing arena during the 2012–13 NBA season that will exceed the carbon reduction targets for 2020 and 2035 achieved in the sustainable communities strategy prepared by the Sacramento Area Council of Governments for the Sacramento region pursuant to Chapter 728 of the Statutes of 2008.
 - (III) Achieve and maintain vehicle-miles-traveled per attendee for NBA events at the downtown arena that is no more than 85 percent of the baseline.
 - (B) Associated public spaces.
 - (C) Facilities and infrastructure for ingress, egress, and use of the arena facility.
 - (4) "Entertainment and sports center project" or "project" means a project that substantially conforms to the project description for the entertainment and sports center project set forth in the notice of preparation released by the City of Sacramento on April 12, 2013.

(b) (1) The city may prosecute an eminent domain action for 545 and 600 K Street, Sacramento, California, and surrounding publicly accessible areas and rights-of-way within 200 feet of 600 K Street, Sacramento, California, through order of possession pursuant to the Eminent Domain Law (Title 7 (commencing with Section 1230.010) of Part 3 of the Code of Civil Procedure) prior to completing the environmental review under this division.

(2) Paragraph (1) shall not apply to any other eminent domain actions prosecuted by the City of Sacramento or to eminent domain actions based on a finding of blight.

(c) Notwithstanding any other law, the procedures established pursuant to subdivision (d) shall apply to an action or proceeding brought to attack, review, set aside, void, or annul the certification of the environmental impact report for the project or the granting of any project approvals.

(d) On or before July 1, 2014, the Judicial Council shall adopt a rule of court to establish procedures applicable to actions or proceedings brought to attack, review, set aside, void, or annul the certification of the environmental impact report for the project or the granting of any project approvals that require the actions or proceedings, including any potential appeals therefrom, be resolved, to the extent feasible, within 270 days of certification of the record of proceedings pursuant to subdivision (f).

(e) (1) The draft and final environmental impact report shall include a notice in not less than 12-point type stating the following:

THIS EIR IS SUBJECT TO SECTION 21168.6.6 OF THE PUBLIC RESOURCES CODE, WHICH PROVIDES, AMONG OTHER THINGS, THAT THE LEAD AGENCY NEED NOT CONSIDER CERTAIN COMMENTS FILED AFTER THE CLOSE OF THE PUBLIC COMMENT PERIOD FOR THE DRAFT EIR. ANY JUDICIAL ACTION CHALLENGING THE CERTIFICATION OF THE EIR OR THE APPROVAL OF THE PROJECT DESCRIBED IN THE EIR IS SUBJECT TO THE PROCEDURES SET FORTH IN SECTION 21168.6.6 OF THE PUBLIC RESOURCES CODE. A COPY OF SECTION 21168.6.6 OF THE PUBLIC RESOURCES CODE IS INCLUDED IN THE APPENDIX TO THIS EIR.

(2) The draft environmental impact report and final environmental impact report shall contain, as an appendix, the full text of this section.

(3) Within 10 days after the release of the draft environmental impact report, the lead agency shall conduct an informational workshop to inform the public of the key analyses and conclusions of that report.

(4) Within 10 days before the close of the public comment period, the lead agency shall hold a public hearing to receive testimony on the draft environmental impact report. A transcript of the hearing shall be included as an appendix to the final environmental impact report.

(5) (A) Within five days following the close of the public comment period, a commenter on the draft environmental impact report may submit to the lead agency a written request for nonbinding mediation. The lead agency and applicant shall participate in nonbinding mediation with all commenters who submitted timely comments on the draft environmental impact report and who requested the mediation. Mediation conducted pursuant to this paragraph shall end no later than 35 days after the close of the public comment period.

(B) A request for mediation shall identify all areas of dispute raised in the comment submitted by the commenter that are to be mediated.

(C) The lead agency shall select one or more mediators who shall be retired judges or recognized experts with at least five years experience in land use and environmental law or science, or mediation. The applicant shall bear the costs of mediation.

(D) A mediation session shall be conducted on each area of dispute with the parties requesting mediation on that area of dispute.

(E) The lead agency shall adopt, as a condition of approval, any measures agreed upon by the lead agency, the applicant, and any commenter who requested mediation. A commenter who agrees to a measure pursuant to this subparagraph shall not raise the issue addressed by that measure as a basis for an action or proceeding challenging the lead agency's decision to certify the environmental impact report or to grant one or more initial project approvals.

(6) The lead agency need not consider written comments submitted after the close of the public comment period, unless those comments address any of the following:

(A) New issues raised in the response to comments by the lead agency.

(B) New information released by the public agency subsequent to the release of the draft environmental impact report, such as new information set forth or embodied in a staff report, proposed permit, proposed resolution, ordinance, or similar documents.

(C) Changes made to the project after the close of the public comment period.

- (D) Proposed conditions for approval, mitigation measures, or proposed findings required by Section 21081 or a proposed reporting and monitoring program required by paragraph (1) of subdivision (a) of Section 21081.6, where the lead agency releases those documents subsequent to the release of the draft environmental impact report.
- (E) New information that was not reasonably known and could not have been reasonably known during the public comment period.
- (7) The lead agency shall file the notice required by subdivision (a) of Section 21152 within five days after the last initial project approval.
- (f) (1) The lead agency shall prepare and certify the record of the proceedings in accordance with this subdivision and in accordance with Rule 3.1365 of the California Rules of Court. The applicant shall pay the lead agency for all costs of preparing and certifying the record of proceedings.
- (2) No later than three business days following the date of the release of the draft environmental impact report, the lead agency shall make available to the public in a readily accessible electronic format the draft environmental impact report and all other documents submitted to or relied on by the lead agency in the preparation of the draft environmental impact report. A document prepared by the lead agency or submitted by the applicant after the date of the release of the draft environmental impact report that is a part of the record of the proceedings shall be made available to the public in a readily accessible electronic format within five business days after the document is prepared or received by the lead agency.
- (3) Notwithstanding paragraph (2), documents submitted to or relied on by the lead agency that were not prepared specifically for the project and are copyright protected are not required to be made readily accessible in an electronic format. For those copyright protected documents, the lead agency shall make an index of these documents available in an electronic format no later than the date of the release of the draft environmental impact report, or within five business days if the document is received or relied on by the lead agency after the release of the draft environmental impact report. The index must specify the libraries or lead agency offices in which hardcopies of the copyrighted materials are available for public review.
- (4) The lead agency shall encourage written comments on the project to be submitted in a readily accessible electronic format, and shall make any such comment available to the public in a readily accessible electronic format within five days of its receipt.
- (5) Within seven business days after the receipt of any comment that is not in an electronic format, the lead agency shall convert that comment into a readily accessible electronic format and make it available to the public in that format.
- (6) The lead agency shall indicate in the record of the proceedings comments received that were not considered by the lead agency pursuant to paragraph (6) of subdivision (e) and need not include the content of the comments as a part of the record.
- (7) Within five days after the filing of the notice required by subdivision (a) of Section 21152, the lead agency shall certify the record of the proceedings for the approval or determination and shall provide an electronic copy of the record to a party that has submitted a written request for a copy. The lead agency may charge and collect a reasonable fee from a party requesting a copy of the record for the electronic copy, which shall not exceed the reasonable cost of reproducing that copy.
- (8) Within 10 days after being served with a complaint or a petition for a writ of mandate, the lead agency shall lodge a copy of the certified record of proceedings with the superior court.
- (9) Any dispute over the content of the record of the proceedings shall be resolved by the superior court. Unless the superior court directs otherwise, a party disputing the content of the record shall file a motion to augment the record at the time it files its initial brief.
- (10) The contents of the record of proceedings shall be as set forth in subdivision (e) of Section 21167.6.
- (g) (1) As a condition of approval of the project subject to this section, the lead agency shall require the applicant, with respect to any measures specific to the operation of the downtown arena, to implement those measures that will meet the requirements of this division by the end of the first NBA regular season or June of the first NBA regular season, whichever is later, during which an NBA team has played at the downtown arena.

(2) To maximize public health, environmental, and employment benefits, the lead agency shall place the highest priority on feasible measures that will reduce greenhouse gas emissions on the downtown arena site and in the neighboring communities of the downtown arena. Mitigation measures that shall be considered and implemented, if feasible and necessary, to achieve the standards set forth in subclauses (I) to (III), inclusive, of clause (ii) of subparagraph (A) of paragraph (3) of subdivision (a), including, but not limited to:

(A) Temporarily expanding the capacity of a public transit line, as needed, to serve downtown arena events.

(B) Providing private charter buses or other similar services, as needed, to serve downtown arena events.

(C) Paying its fair share of the cost of measures that expand the capacity of a public fixed or light rail station that is used by spectators attending downtown arena events.

(3) Offset credits shall be employed by the applicant only after feasible local emission reduction measures have been implemented. The applicant shall, to the extent feasible, place the highest priority on the purchase of offset credits that produce emission reductions within the city or the boundaries of the Sacramento Metropolitan Air Quality Management District.

(h) (1) (A) In granting relief in an action or proceeding brought pursuant to this section, the court shall not stay or enjoin the construction or operation of the downtown arena unless the court finds either of the following:

(i) The continued construction or operation of the downtown arena presents an imminent threat to the public health and safety.

(ii) The downtown arena site contains unforeseen important Native American artifacts or unforeseen important historical, archaeological, or ecological values that would be materially, permanently, and adversely affected by the continued construction or operation of the downtown arena unless the court stays or enjoins the construction or operation of the downtown arena.

(B) If the court finds that clause (i) or (ii) is satisfied, the court shall only enjoin those specific activities associated with the downtown arena that present an imminent threat to public health and safety or that materially, permanently, and adversely affect unforeseen important Native American artifacts or unforeseen important historical, archaeological, or ecological values.

(2) An action or proceeding to attack, set aside, void, or annul a determination, finding, or decision of the lead agency granting a subsequent project approval shall be subject to the requirements of Chapter 6 (commencing with Section 21165).

(3) Where an action or proceeding brought pursuant to this section challenges aspects of the project other than the downtown arena and those portions or specific project activities are severable from the downtown arena, the court may enter an order as to aspects of the project other than the downtown arena that includes one or more of the remedies set forth in Section 21168.9.

(i) The provisions of this section are severable. If any provision of this section or its application is held invalid, that invalidity shall not affect other provisions or applications that can be given effect without the invalid provision or application.

(j) (1) This section does not apply to the project and shall become inoperative on the date of the release of the draft environmental impact report and is repealed on January 1 of the following year, if the applicant fails to notify the lead agency prior to the release of the draft environmental impact report for public comment that the applicant is electing to proceed pursuant to this section.

(2) The lead agency shall notify the Secretary of State if the applicant fails to notify the lead agency of its election to proceed pursuant to this section.

SEC. 8. Section 21181 of the Public Resources Code is amended to read:

21181. This chapter does not apply to a project if the Governor does not certify a project as an environmental leadership development project eligible for streamlining provided pursuant to this chapter prior to January 1, 2016.

SEC. 9. Section 21183 of the Public Resources Code is amended to read:

21183. The Governor may certify a leadership project for streamlining pursuant to this chapter if all the following conditions are met:

(a) The project will result in a minimum investment of one hundred million dollars (\$100,000,000) in California upon completion of construction.

(b) The project creates high-wage, highly skilled jobs that pay prevailing wages and living wages and provide construction jobs and permanent jobs for Californians, and helps reduce unemployment. For purposes of this subdivision, "jobs that pay prevailing wages" means that all construction workers employed in the execution of the project will receive at least the general prevailing rate of per diem wages for the type of work and geographic area, as determined by the Director of Industrial Relations pursuant to Sections 1773 and 1773.9 of the Labor Code. If the project is certified for streamlining, the project applicant shall include this requirement in all contracts for the performance of the work.

(c) The project does not result in any net additional emission of greenhouse gases, including greenhouse gas emissions from employee transportation, as determined by the State Air Resources Board pursuant to Division 25.5 (commencing with Section 38500) of the Health and Safety Code.

(d) The project applicant has entered into a binding and enforceable agreement that all mitigation measures required pursuant to this division to certify the project under this chapter shall be conditions of approval of the project, and those conditions will be fully enforceable by the lead agency or another agency designated by the lead agency. In the case of environmental mitigation measures, the applicant agrees, as an ongoing obligation, that those measures will be monitored and enforced by the lead agency for the life of the obligation.

(e) The project applicant agrees to pay the costs of the Court of Appeal in hearing and deciding any case, including payment of the costs for the appointment of a special master if deemed appropriate by the court, in a form and manner specified by the Judicial Council, as provided in the Rules of Court adopted by the Judicial Council pursuant to subdivision (f) of Section 21185.

(f) The project applicant agrees to pay the costs of preparing the administrative record for the project concurrent with review and consideration of the project pursuant to this division, in a form and manner specified by the lead agency for the project.

SEC. 10. Section 21185 of the Public Resources Code is repealed.

SEC. 11. Section 21185 is added to the Public Resources Code, to read:

21185. On or before July 1, 2014, the Judicial Council shall adopt a rule of court to establish procedures applicable to actions or proceedings brought to attack, review, set aside, void, or annul the certification of the environmental impact report for an environmental leadership development project certified by the Governor pursuant to this chapter or the granting of any project approvals that require the actions or proceedings, including any potential appeals therefrom, be resolved, within 270 days of certification of the record of proceedings pursuant to Section 21186.

SEC. 12. Section 21186 of the Public Resources Code is amended to read:

21186. Notwithstanding any other law, the preparation and certification of the administrative record for a leadership project certified by the Governor shall be performed in the following manner:

(a) The lead agency for the project shall prepare the administrative record pursuant to this division concurrently with the administrative process.

(b) All documents and other materials placed in the administrative record shall be posted on, and be downloadable from, an Internet Web site maintained by the lead agency commencing with the date of the release of the draft environmental impact report.

(c) The lead agency shall make available to the public in a readily accessible electronic format the draft environmental impact report and all other documents submitted to, or relied on by, the lead agency in the preparation of the draft environmental impact report.

(d) A document prepared by the lead agency or submitted by the applicant after the date of the release of the draft environmental impact report that is a part of the record of the proceedings shall be made available to the

public in a readily accessible electronic format within five business days after the document is released or received by the lead agency.

(e) The lead agency shall encourage written comments on the project to be submitted in a readily accessible electronic format, and shall make any comment available to the public in a readily accessible electronic format within five days of its receipt.

(f) Within seven business days after the receipt of any comment that is not in an electronic format, the lead agency shall convert that comment into a readily accessible electronic format and make it available to the public in that format.

(g) Notwithstanding paragraphs (b) to (f), inclusive, documents submitted to or relied on by the lead agency that were not prepared specifically for the project and are copyright protected are not required to be made readily accessible in an electronic format. For those copyright-protected documents, the lead agency shall make an index of these documents available in an electronic format no later than the date of the release of the draft environmental impact report, or within five business days if the document is received or relied on by the lead agency after the release of the draft environmental impact report. The index must specify the libraries or lead agency offices in which hardcopies of the copyrighted materials are available for public review.

(h) The lead agency shall certify the final administrative record within five days of its approval of the project.

(i) Any dispute arising from the administrative record shall be resolved by the superior court. Unless the superior court directs otherwise, a party disputing the content of the record shall file a motion to augment the record at the time it files its initial brief.

(j) The contents of the record of proceedings shall be as set forth in subdivision (e) of Section 21167.6.

SEC. 13. Section 21187 of the Public Resources Code is amended to read:

21187. Within 10 days of the Governor certifying an environmental leadership development project pursuant to this section, the lead agency shall, at the applicant's expense, issue a public notice in no less than 12-point type stating the following:

"THE APPLICANT HAS ELECTED TO PROCEED UNDER CHAPTER 6.5 (COMMENCING WITH SECTION 21178) OF THE PUBLIC RESOURCES CODE, WHICH PROVIDES, AMONG OTHER THINGS, THAT ANY JUDICIAL ACTION CHALLENGING THE CERTIFICATION OF THE EIR OR THE APPROVAL OF THE PROJECT DESCRIBED IN THE EIR IS SUBJECT TO THE PROCEDURES SET FORTH IN SECTIONS 21185 TO 21186, INCLUSIVE, OF THE PUBLIC RESOURCES CODE. A COPY OF CHAPTER 6.5 (COMMENCING WITH SECTION 21178) OF THE PUBLIC RESOURCES CODE IS INCLUDED BELOW."

The public notice shall be distributed by the lead agency as required for public notices issued pursuant to paragraph (3) of subdivision (b) of Section 21092.

SEC. 14. Section 21189.1 of the Public Resources Code is amended to read:

21189.1. If, prior to January 1, 2016, a lead agency fails to approve a project certified by the Governor pursuant to this chapter, then the certification expires and is no longer valid.

SEC. 15. Section 21189.3 of the Public Resources Code is amended to read:

21189.3. This chapter shall remain in effect until January 1, 2017, and as of that date is repealed unless a later enacted statute extends or repeals that date.

SEC. 16. With respect to certain provisions of this measure, the Legislature finds and declares that a special law is necessary and that a general law cannot be made applicable within the meaning of Section 16 of Article IV of the California Constitution because of the unique need for the development of an entertainment and sports center project in the City of Sacramento in an expeditious manner.

SEC. 17. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because a local agency or school district has the authority to levy service charges, fees, or

assessments sufficient to pay for the program or level of service mandated by this act, within the meaning of Section 17556 of the Government Code.

TECHNICAL ADVISORY

ON EVALUATING TRANSPORTATION IMPACTS IN CEQA



December 2018

Exhibit "C"

Contents

A. Introduction	1
B. Background	2
C. Technical Considerations in Assessing Vehicle Miles Traveled.....	4
1. Recommendations Regarding Methodology	4
D. General Principles to Guide Consideration of VMT	7
E. Recommendations Regarding Significance Thresholds	8
1. Screening Thresholds for Land Use Projects.....	12
2. Recommended Numeric Thresholds for Residential, Office, and Retail Projects.....	15
3. Recommendations Regarding Land Use Plans.....	18
4. Other Considerations	19
F. Considering the Effects of Transportation Projects on Vehicle Travel	19
1. Recommended Significance Threshold for Transportation Projects	22
2. Estimating VMT Impacts from Transportation Projects	23
G. Analyzing Other Impacts Related to Transportation	25
H. VMT Mitigation and Alternatives.....	26
 Appendix 1. Considerations About Which VMT to Count	 29
Appendix 2. Induced Travel: Mechanisms, Research, and Additional Assessment Approaches	32

A. Introduction

This technical advisory is one in a series of advisories provided by the Governor's Office of Planning and Research (OPR) as a service to professional planners, land use officials, and CEQA practitioners. OPR issues technical assistance on issues that broadly affect the practice of land use planning and the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). (Gov. Code, § 65040, subds. (g), (l), (m).) The purpose of this document is to provide advice and recommendations, which agencies and other entities may use at their discretion. This document does not alter lead agency discretion in preparing environmental documents subject to CEQA. This document should not be construed as legal advice.

[Senate Bill 743](#) (Steinberg, 2013), which was codified in Public Resources Code section 21099, required changes to the guidelines implementing CEQA (CEQA Guidelines) (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 15000 et seq.) regarding the analysis of transportation impacts. As one appellate court recently explained: "During the last 10 years, the Legislature has charted a course of long-term sustainability based on denser infill development, reduced reliance on individual vehicles and improved mass transit, all with the goal of reducing greenhouse gas emissions. Section 21099 is part of that strategy" (*Covina Residents for Responsible Development v. City of Covina* (2018) 21 Cal.App.5th 712, 729.) Pursuant to Section 21099, the criteria for determining the significance of transportation impacts must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." (*Id.*, subd. (b)(1); see generally, adopted CEQA Guidelines, § 15064.3, subd. (b) [Criteria for Analyzing Transportation Impacts].) To that end, in developing the criteria, OPR has proposed, and the California Natural Resources Agency (Agency) has certified and adopted, changes to the CEQA Guidelines that identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts. With the California Natural Resources Agency's certification and adoption of the changes to the CEQA Guidelines, automobile delay, as measured by "level of service" and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA. (Pub. Resources Code, § 21099, subd. (b)(3).)

This advisory contains technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. Again, OPR provides this Technical Advisory as a resource for the public to use at their discretion. OPR is not enforcing or attempting to enforce any part of the recommendations contained herein. (Gov. Code, § 65035 ["It is not the intent of the Legislature to vest in the Office of Planning and Research any direct operating or regulatory powers over land use, public works, or other state, regional, or local projects or programs."].)

This December 2018 technical advisory is an update to the advisory it published in April 2018. OPR will continue to monitor implementation of these new provisions and may update or supplement this advisory in response to new information and advancements in modeling and methods.

B. Background

VMT and Greenhouse Gas Emissions Reduction. Senate Bill 32 (Pavley, 2016) requires California to reduce greenhouse gas (GHG) emissions 40 percent below 1990 levels by 2030, and Executive Order B-16-12 provides a target of 80 percent below 1990 emissions levels for the transportation sector by 2050. The transportation sector has three major means of reducing GHG emissions: increasing vehicle efficiency, reducing fuel carbon content, and reducing the amount of vehicle travel. The California Air Resources Board (CARB) has provided a path forward for achieving these emissions reductions from the transportation sector in its 2016 Mobile Source Strategy. CARB determined that it will not be possible to achieve the State's 2030 and post-2030 emissions goals without reducing VMT growth. Further, in its 2018 Progress Report on California's Sustainable Communities and Climate Protection Act, CARB found that despite the State meeting its 2020 climate goals, "emissions from statewide passenger vehicle travel per capita [have been] increasing and going in the wrong direction," and "California cannot meet its [long-term] climate goals without curbing growth in single-occupancy vehicle activity."¹ CARB also found that "[w]ith emissions from the transportation sector continuing to rise despite increases in fuel efficiency and decreases in the carbon content of fuel, California will not achieve the necessary greenhouse gas emissions reductions to meet mandates for 2030 and beyond without significant changes to how communities and transportation systems are planned, funded, and built."²

Thus, to achieve the State's long-term climate goals, California needs to reduce per capita VMT. This can occur under CEQA through VMT mitigation. Half of California's GHG emissions come from the transportation sector³, therefore, reducing VMT is an effective climate strategy, which can also result in co-benefits.⁴ Furthermore, without early VMT mitigation, the state may follow a path that meets GHG targets in the early years, but finds itself poorly positioned to meet more stringent targets later. For example, in absence of VMT analysis and mitigation in CEQA, lead agencies might rely upon verifiable offsets for GHG mitigation, ignoring the longer-term climate change impacts resulting from land use development and infrastructure investment decisions. As stated in CARB's 2017 Scoping Plan:

"California's future climate strategy will require increased focus on integrated land use planning to support livable, transit-connected communities, and conservation of agricultural and other lands. Accommodating population and economic growth through travel- and energy-efficient land use provides GHG-efficient growth, reducing GHGs from both transportation and building energy use. GHGs can be further reduced at the project level through implementing energy-efficient construction and travel demand management approaches."⁵ (*Id.* at p. 102.)

¹ California Air Resources Board (Nov. 2018) *2018 Progress Report on California's Sustainable Communities and Climate Protection Act*, pp. 4, 5, available at https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf.

² *Id.*, p. 28.

³ See <https://ca50million.ca.gov/transportation/>

⁴ Fang et al. (2017) *Cutting Greenhouse Gas Emissions Is Only the Beginning: A Literature Review of the Co-Benefits of Reducing Vehicle Miles Traveled*.

⁵ California Air Resources Board (Nov. 2017) *California's 2017 Climate Change Scoping Plan*, p. 102, available at https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

In light of this, the 2017 Scoping Plan describes and quantifies VMT reductions needed to achieve our long-term GHG emissions reduction goals, and specifically points to the need for statewide deployment of the VMT metric in CEQA:

“Employing VMT as the metric of transportation impact statewide will help to ensure GHG reductions planned under SB 375 will be achieved through on-the-ground development, and will also play an important role in creating the additional GHG reductions needed beyond SB 375 across the State. Implementation of this change will rely, in part, on local land use decisions to reduce GHG emissions associated with the transportation sector, both at the project level, and in long-term plans (including general plans, climate action plans, specific plans, and transportation plans) and supporting sustainable community strategies developed under SB 375.”⁶

VMT and Other Impacts to Health and Environment. VMT mitigation also creates substantial benefits (sometimes characterized as “co-benefits” to GHG reduction) in both in the near-term and the long-term. Beyond GHG emissions, increases in VMT also impact human health and the natural environment. Human health is impacted as increases in vehicle travel lead to more vehicle crashes, poorer air quality, increases in chronic diseases associated with reduced physical activity, and worse mental health. Increases in vehicle travel also negatively affect other road users, including pedestrians, cyclists, other motorists, and many transit users. The natural environment is impacted as higher VMT leads to more collisions with wildlife and fragments habitat. Additionally, development that leads to more vehicle travel also tends to consume more energy, water, and open space (including farmland and sensitive habitat). This increase in impermeable surfaces raises the flood risk and pollutant transport into waterways.⁷

VMT and Economic Growth. While it was previously believed that VMT growth was a necessary component of economic growth, data from the past two decades shows that economic growth is possible without a concomitant increase in VMT. (Figure 1.) Recent research shows that requiring development projects to mitigate LOS may actually reduce accessibility to destinations and impede economic growth.^{8,9}

⁶ *Id.* at p. 76.

⁷ Fang et al. (2017) *Cutting Greenhouse Gas Emissions Is Only the Beginning: A Literature Review of the Co-Benefits of Reducing Vehicle Miles Traveled*, available at https://ncst.ucdavis.edu/wp-content/uploads/2017/03/NCST-VMT-Co-Benefits-White-Paper_Fang_March-2017.pdf.

⁸ Haynes et al. (Sept. 2015) *Congested Development: A Study of Traffic Delays, Access, and Economic Activity in Metropolitan Los Angeles*, available at http://www.its.ucla.edu/wp-content/uploads/sites/6/2015/11/Haynes_Congested-Development_1-Oct-2015_final.pdf.

⁹ Osman et al. (Mar. 2016) *Not So Fast: A Study of Traffic Delays, Access, and Economic Activity in the San Francisco Bay Area*, available at http://www.its.ucla.edu/wp-content/uploads/sites/6/2016/08/Taylor-Not-so-Fast-04-01-2016_final.pdf.

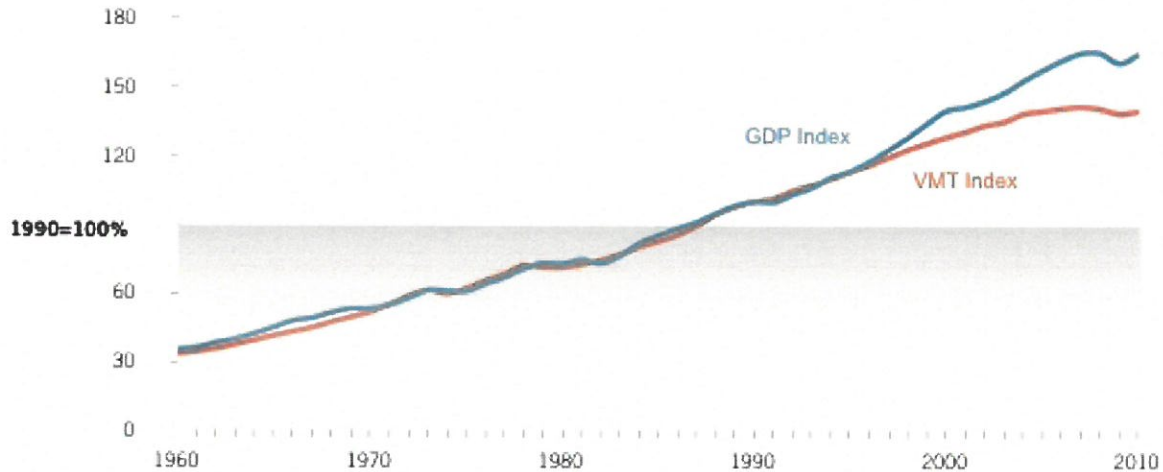


Figure 1. Kooshian and Winkelman (2011) *VMT and Gross Domestic Product (GDP), 1960-2010*.

C. Technical Considerations in Assessing Vehicle Miles Traveled

Many practitioners are familiar with accounting for VMT in connection with long-range planning, or as part of the CEQA analysis of a project's greenhouse gas emissions or energy impacts. This document provides technical information on how to assess VMT as part of a transportation impacts analysis under CEQA. Appendix 1 provides a description of which VMT to count and options on how to count it. Appendix 2 provides information on induced travel resulting from roadway capacity projects, including the mechanisms giving rise to induced travel, the research quantifying it, and information on additional approaches for assessing it.

1. Recommendations Regarding Methodology

Proposed Section 15064.3 explains that a "lead agency may use models to estimate a project's vehicle miles traveled . . ." CEQA generally defers to lead agencies on the choice of methodology to analyze impacts. (*Santa Monica Baykeeper v. City of Malibu* (2011) 193 Cal.App.4th 1538, 1546; see *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 409 ["the issue is not whether the studies are irrefutable or whether they could have been better" ... rather, the "relevant issue is only whether the studies are sufficiently credible to be considered" as part of the lead agency's overall evaluation].) This section provides suggestions to lead agencies regarding methodologies to analyze VMT associated with a project.

Vehicle Types. Proposed Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." Here, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. Heavy-duty truck VMT could be included for modeling convenience and ease of calculation (for example, where models or data provide combined auto and heavy truck VMT). For an apples-to-apples

comparison, vehicle types considered should be consistent across project assessment, significance thresholds, and mitigation.

Residential and Office Projects. Tour- and trip-based approaches¹⁰ offer the best methods for assessing VMT from residential/office projects and for comparing those assessments to VMT thresholds. These approaches also offer the most straightforward methods for assessing VMT reductions from mitigation measures for residential/office projects. When available, tour-based assessment is ideal because it captures travel behavior more comprehensively. But where tour-based tools or data are not available for all components of an analysis, a trip-based assessment of VMT serves as a reasonable proxy.

Models and methodologies used to calculate thresholds, estimate project VMT, and estimate VMT reduction due to mitigation should be comparable. For example:

- A tour-based assessment of project VMT should be compared to a tour-based threshold, or a trip-based assessment to a trip-based VMT threshold.
- Where a travel demand model is used to determine thresholds, the same model should also be used to provide trip lengths as part of assessing project VMT.
- Where only trip-based estimates of VMT reduction from mitigation are available, a trip-based threshold should be used, and project VMT should be assessed in a trip-based manner.

When a trip-based method is used to analyze a residential project, the focus can be on home-based trips. Similarly, when a trip-based method is used to analyze an office project, the focus can be on home-based work trips.

When tour-based models are used to analyze an office project, either employee work tour VMT or VMT from all employee tours may be attributed to the project. This is because workplace location influences overall travel. For consistency, the significance threshold should be based on the same metric: either employee work tour VMT or VMT from all employee tours.

For office projects that feature a customer component, such as a government office that serves the public, a lead agency can analyze the customer VMT component of the project using the methodology for retail development (see below).

Retail Projects. Generally, lead agencies should analyze the effects of a retail project by assessing the change in total VMT¹¹ because retail projects typically re-route travel from other retail destinations. A retail project might lead to increases or decreases in VMT, depending on previously existing retail travel patterns.

¹⁰ See Appendix 1, *Considerations About Which VMT to Count*, for a description of these approaches.

¹¹ See Appendix 1, *Considerations About Which VMT to Count*, “Assessing Change in Total VMT” section, for a description of this approach.

Considerations for All Projects. Lead agencies should not truncate any VMT analysis because of jurisdictional or other boundaries, for example, by failing to count the portion of a trip that falls outside the jurisdiction or by discounting the VMT from a trip that crosses a jurisdictional boundary. CEQA requires environmental analyses to reflect a “good faith effort at full disclosure.” (CEQA Guidelines, § 15151.) Thus, where methodologies exist that can estimate the full extent of vehicle travel from a project, the lead agency should apply them to do so. Where those VMT effects will grow over time, analyses should consider both a project’s short-term and long-term effects on VMT.

Combining land uses for VMT analysis is not recommended. Different land uses generate different amounts of VMT, so the outcome of such an analysis could depend more on the mix of uses than on their travel efficiency. As a result, it could be difficult or impossible for a lead agency to connect a significance threshold with an environmental policy objective (such as a target set by law), inhibiting the CEQA imperative of identifying a project’s significant impacts and providing mitigation where feasible. Combining land uses for a VMT analysis could streamline certain mixes of uses in a manner disconnected from policy objectives or environmental outcomes. Instead, OPR recommends analyzing each use separately, or simply focusing analysis on the dominant use, and comparing each result to the appropriate threshold. Recommendations for methods of analysis and thresholds are provided below. In the analysis of each use, a mixed-use project should take credit for internal capture.

Any project that includes in its geographic bounds a portion of an existing or planned Transit Priority Area (i.e., the project is within a ½ mile of an existing or planned major transit stop or an existing stop along a high quality transit corridor) may employ VMT as its primary metric of transportation impact for the entire project. (See Pub. Resources Code, § 21099, subds. (a)(7), (b)(1).)

Cumulative Impacts. A project’s cumulative impacts are based on an assessment of whether the “incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” (Pub. Resources Code, § 21083, subd. (b)(2); see CEQA Guidelines, § 15064, subd. (h)(1).) When using an absolute VMT metric, i.e., total VMT (as recommended below for retail and transportation projects), analyzing the combined impacts for a cumulative impacts analysis may be appropriate. However, metrics such as VMT per capita or VMT per employee, i.e., metrics framed in terms of efficiency (as recommended below for use on residential and office projects), cannot be summed because they employ a denominator. A project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Accordingly, a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa. This is similar to the analysis typically conducted for greenhouse gas emissions, air quality impacts, and impacts that utilize plan compliance as a threshold of significance. (See *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 219, 223; CEQA Guidelines, § 15064, subd. (h)(3).)

D. General Principles to Guide Consideration of VMT

SB 743 directs OPR to establish specific “criteria for determining the significance of transportation impacts of projects[.]” (Pub. Resources Code, § 21099, subd. (b)(1).) In establishing this criterion, OPR was guided by the general principles contained within CEQA, the CEQA Guidelines, and applicable case law.

To assist in the determination of significance, many lead agencies rely on “thresholds of significance.” The CEQA Guidelines define a “threshold of significance” to mean “an identifiable **quantitative, qualitative¹² or performance level** of a particular environmental effect, non-compliance with which means the effect will **normally** be determined to be significant by the agency and compliance with which means the effect **normally** will be determined to be less than significant.” (CEQA Guidelines, § 15064.7, subd. (a) (emphasis added).) Lead agencies have discretion to develop and adopt their own, or rely on thresholds recommended by other agencies, “provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.” (*Id.* at subd. (c); *Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068.) Substantial evidence means “enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached.” (*Id.* at § 15384 (emphasis added); *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1108-1109.)

Additionally, the analysis leading to the determination of significance need not be perfect. The CEQA Guidelines describe the standard for adequacy of environmental analyses:

An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to **make a decision which intelligently takes account of environmental consequences**. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is **reasonably feasible**. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The **courts have looked not for perfection but for adequacy, completeness, and a good faith effort** at full disclosure.

(CEQA Guidelines, § 15151 (emphasis added).)

These general principles guide OPR’s recommendations regarding thresholds of significance for VMT set forth below.

¹² Generally, qualitative analyses should only be conducted when methods do not exist for undertaking a quantitative analysis.

E. Recommendations Regarding Significance Thresholds

As noted above, lead agencies have the discretion to set or apply their own thresholds of significance. (*Center for Biological Diversity v. California Dept. of Fish & Wildlife* (2015) 62 Cal.4th 204, 218-223 [lead agency had discretion to use compliance with AB 32's emissions goals as a significance threshold]; *Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th at p. 1068.) However, Section 21099 of the Public Resources Code states that the criteria for determining the significance of transportation impacts must promote: (1) reduction of greenhouse gas emissions; (2) development of multimodal transportation networks; and (3) a diversity of land uses. It further directed OPR to prepare and develop criteria for determining significance. (Pub. Resources Code, § 21099, subd. (b)(1).) This section provides OPR's suggested thresholds, as well as considerations for lead agencies that choose to adopt their own

The VMT metric can support the three statutory goals: "the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." (Pub. Resources Code, § 21099, subd. (b)(1), emphasis added.) However, in order for it to promote and support all three, lead agencies should select a significance threshold that aligns with state law on all three. State law concerning the development of multimodal transportation networks and diversity of land uses requires planning for and prioritizing increases in complete streets and infill development, but does not mandate a particular depth of implementation that could translate into a particular threshold of significance. Meanwhile, the State has clear quantitative targets for GHG emissions reduction set forth in law and based on scientific consensus, and the depth of VMT reduction needed to achieve those targets has been quantified. Tying VMT thresholds to GHG reduction also supports the two other statutory goals. Therefore, to ensure adequate analysis of transportation impacts, OPR recommends using quantitative VMT thresholds linked to GHG reduction targets when methods exist to do so.

Various legislative mandates and state policies establish quantitative greenhouse gas emissions reduction targets. For example:

- Assembly Bill 32 (2006) requires statewide GHG emissions reductions to 1990 levels by 2020 and continued reductions beyond 2020.
- Senate Bill 32 (2016) requires at least a 40 percent reduction in GHG emissions from 1990 levels by 2030.
- Pursuant to Senate Bill 375 (2008), the California Air Resources Board GHG emissions reduction targets for metropolitan planning organizations (MPOs) to achieve based on land use patterns and transportation systems specified in Regional Transportation Plans and Sustainable Community Strategies (RTP/SCS). Current targets for the State's largest MPOs call for a 19 percent reduction in GHG emissions from cars and light trucks from 2005 emissions levels by 2035.
- Executive Order B-30-15 (2015) sets a GHG emissions reduction target of 40 percent below 1990 levels by 2030.

- Executive Order S-3-05 (2005) sets a GHG emissions reduction target of 80 percent below 1990 levels by 2050.
- Executive Order B-16-12 (2012) specifies a GHG emissions reduction target of 80 percent below 1990 levels by 2050 specifically for transportation.
- Executive Order B-55-18 (2018) established an additional statewide goal of achieving carbon neutrality as soon as possible, but no later than 2045, and maintaining net negative emissions thereafter. It states, “The California Air Resources Board shall work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal.”
- Senate Bill 391 requires the California Transportation Plan to support 80 percent reduction in GHGs below 1990 levels by 2050.
- The California Air Resources Board Mobile Source Strategy (2016) describes California’s strategy for containing air pollutant emissions from vehicles, and quantifies VMT growth compatible with achieving state targets.
- The California Air Resources Board’s 2017 Climate Change Scoping Plan Update: The Strategy for Achieving California’s 2030 Greenhouse Gas Target describes California’s strategy for containing GHG emissions from vehicles, and quantifies VMT growth compatible with achieving state targets.

Considering these various targets, the California Supreme Court observed:

Meeting our statewide reduction goals does not preclude all new development. Rather, the Scoping Plan ... assumes continued growth and depends on increased efficiency and conservation in land use and transportation from all Californians.

(*Center for Biological Diversity v. California Dept. of Fish & Wildlife*, *supra*, 62 Cal.4th at p. 220.) Indeed, the Court noted that when a lead agency uses consistency with climate goals as a way to determine significance, particularly for long-term projects, the lead agency must consider the project’s effect on meeting long-term reduction goals. (*Ibid.*) And more recently, the Supreme Court stated that “CEQA requires public agencies . . . to ensure that such analysis stay in step with evolving scientific knowledge and state regulatory schemes.” (*Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 504.)

Meeting the targets described above will require substantial reductions in existing VMT per capita to curb GHG emissions and other pollutants. But targets for overall GHG emissions reduction do not translate directly into VMT thresholds for individual projects for many reasons, including:

- Some, but not all, of the emissions reductions needed to achieve those targets could be accomplished by other measures, including increased vehicle efficiency and decreased fuel carbon content. The CARB’s *First Update to the Climate Change Scoping Plan* explains:

“Achieving California’s long-term criteria pollutant and GHG emissions goals will require four strategies to be employed: (1) improve vehicle efficiency and develop zero emission technologies, (2) reduce the carbon content of fuels and provide market support to get these lower-carbon fuels into the marketplace, (3) **plan and build communities to reduce vehicular GHG emissions and provide more transportation options, and (4) improve the efficiency and throughput of existing transportation systems.**”¹³ CARB’s *2018 Progress Report on California’s Sustainable Communities and Climate Protection Act* states on page 28 that “California cannot meet its climate goals without curbing growth in single-occupancy vehicle activity.” In other words, vehicle efficiency and better fuels are necessary, but insufficient, to address the GHG emissions from the transportation system. Land use patterns and transportation options also will need to change to support reductions in vehicle travel/VMT.

- New land use projects alone will not sufficiently reduce per-capita VMT to achieve those targets, nor are they expected to be the sole source of VMT reduction.
- Interactions between land use projects, and also between land use and transportation projects, existing and future, together affect VMT.
- Because location within the region is the most important determinant of VMT, in some cases, streamlining CEQA review of projects in travel efficient locations may be the most effective means of reducing VMT.
- When assessing climate impacts of some types of land use projects, use of an efficiency metric (e.g., per capita, per employee) may provide a better measure of impact than an absolute numeric threshold. (*Center for Biological Diversity, supra.*)

Public Resources Code section 21099 directs OPR to propose criteria for determining the significance of transportation impacts. In this Technical Advisory, OPR provides its recommendations to assist lead agencies in selecting a significance threshold that may be appropriate for their particular projects. While OPR’s Technical Advisory is not binding on public agencies, CEQA allows lead agencies to “consider thresholds of significance . . . recommended by other public agencies, provided the decision to adopt those thresholds is supported by substantial evidence.” (CEQA Guidelines, § 15064.7, subd. (c).) Based on OPR’s extensive review of the applicable research, and in light of an assessment by the California Air Resources Board quantifying the need for VMT reduction in order to meet the State’s long-term climate goals, **OPR recommends that a per capita or per employee VMT that is fifteen percent below that of existing development may be a reasonable threshold.**

Fifteen percent reductions in VMT are achievable at the project level in a variety of place types.¹⁴

Moreover, a fifteen percent reduction is consistent with SB 743’s direction to OPR to select a threshold that will help the State achieve its climate goals. As described above, section 21099 states that the

¹³ California Air Resources Board (May 2014) *First Update to the Climate Change Scoping Plan*, p. 46 (emphasis added).

¹⁴ CAPCOA (2010) *Quantifying Greenhouse Gas Mitigation Measures*, p. 55, available at <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>.

criteria for determining significance must “promote the reduction in greenhouse gas emissions.” In its document *California Air Resources Board 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals*¹⁵, CARB assesses VMT reduction per capita consistent with its evidence-based modeling scenario that would achieve State climate goals of 40 percent GHG emissions reduction from 1990 levels by 2030 and 80 percent GHG emissions reduction levels from 1990 by 2050. Applying California Department of Finance population forecasts, CARB finds per-capita light-duty vehicle travel would need to be approximately 16.8 percent lower than existing, and overall per-capita vehicle travel would need to be approximately 14.3 percent lower than existing levels under that scenario. Below these levels, a project could be considered low VMT and would, on that metric, be consistent with 2017 Scoping Plan Update assumptions that achieve climate state climate goals.

CARB finds per capita vehicle travel would need to be kept below what today’s policies and plans would achieve.

CARB’s assessment is based on data in the 2017 Scoping Plan Update and 2016 Mobile Source Strategy. In those documents, CARB previously examined the relationship between VMT and the state’s GHG emissions reduction targets. The Scoping Plan finds:

“While the State can do more to accelerate and incentivize these local decisions, local actions that reduce VMT are also necessary to meet transportation sector-specific goals and achieve the 2030 target under SB 32. Through developing the Scoping Plan, CARB staff is more convinced than ever that, in addition to achieving GHG reductions from cleaner fuels and vehicles, California must also reduce VMT. Stronger SB 375 GHG reduction targets will enable the State to make significant progress toward needed reductions, but alone will not provide the VMT growth reductions needed; there is a gap between what SB 375 can provide and what is needed to meet the State’s 2030 and 2050 goals.”¹⁶

Note that, at present, consistency with RTP/SCSs does not necessarily lead to a less-than-significant VMT impact.¹⁷ As the Final 2017 Scoping Plan Update states,

VMT reductions are necessary to achieve the 2030 target and must be part of any strategy evaluated in this Plan. Stronger SB 375 GHG reduction targets will enable the State to make significant progress toward this goal, but alone will not provide all of the VMT growth reductions that will be needed. There is a gap between what SB 375 can provide and what is needed to meet the State’s 2030 and 2050 goals.”¹⁸

¹⁵ California Air Resources Board (Jan. 2019) *California Air Resources Board 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals*, available at <https://ww2.arb.ca.gov/resources/documents/carb-2017-scoping-plan-identified-vmt-reductions-and-relationship-state-climate>.

¹⁶ California Air Resources Board (Nov. 2017) *California’s 2017 Climate Change Scoping Plan*, p. 101.

¹⁷ California Air Resources Board (Feb. 2018) *Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets*, Figure 3, p. 35, available at https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf.

¹⁸ California Air Resources Board (Nov. 2017) *California’s 2017 Climate Change Scoping Plan*, p. 75.

Also, in order to capture the full effects of induced travel resulting from roadway capacity projects, an RTP/SCS would need to include an assessment of land use effects of those projects, and the effects of those land uses on VMT. (See section titled “*Estimating VMT Impacts from Transportation Projects*” below.) RTP/SCSs typically model VMT using a collaboratively-developed land use “vision” for the region’s land use, rather than studying the effects on land use of the proposed transportation investments.

In summary, achieving 15 percent lower per capita (residential) or per employee (office) VMT than existing development is both generally achievable and is supported by evidence that connects this level of reduction to the State’s emissions goals.

1. Screening Thresholds for Land Use Projects

Many agencies use “screening thresholds” to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. (See e.g., CEQA Guidelines, §§ 15063(c)(3)(C), 15128, and Appendix G.) As explained below, this technical advisory suggests that lead agencies may screen out VMT impacts using project size, maps, transit availability, and provision of affordable housing.

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 day¹⁹ generally may be assumed to cause a less-than-significant transportation impact.

Map-Based Screening for Residential and Office Projects

Residential and office projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Maps created with VMT data, for example from a travel survey or a travel demand model, can illustrate areas that are

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.

currently below threshold VMT (see recommendations below). Because new development in such locations would likely result in a similar level of VMT, such maps can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis.

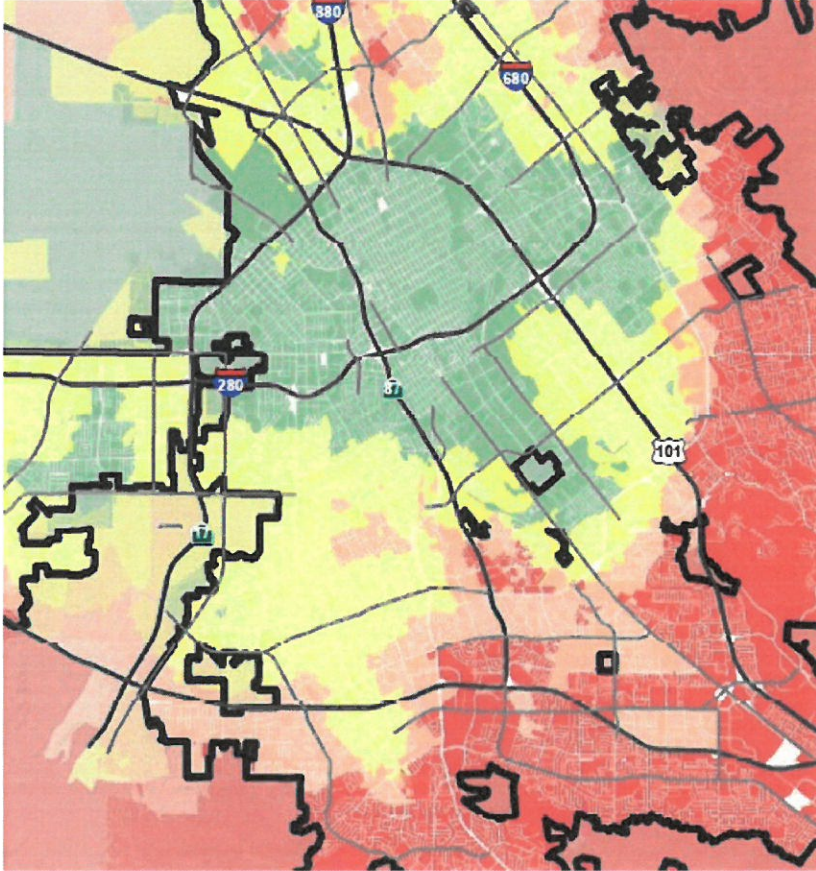


Figure 2. Example map of household VMT that could be used to delineate areas eligible to receive streamlining for VMT analysis. (Source: City of San José, Department of Transportation, draft output of City Transportation Model.)

Presumption of Less Than Significant Impact Near Transit Stations

Proposed CEQA Guideline Section 15064.3, subdivision (b)(1), states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within ½ mile of an existing major transit stop²⁰ or an existing stop

²⁰ Pub. Resources Code, § 21064.3 (“‘Major transit stop’ means 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.”).

along a high quality transit corridor²¹ will have a less-than-significant impact on VMT. This presumption would not apply, however, if project-specific or location-specific information indicates that the project will still generate significant levels of VMT. For example, the presumption might not be appropriate if the project:

- Has a Floor Area Ratio (FAR) of less than 0.75
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking)
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization)
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units

A project or plan near transit which replaces affordable residential units²² with a smaller number of moderate- or high-income residential units may increase overall VMT because the increase in VMT of displaced residents could overwhelm the improvements in travel efficiency enjoyed by new residents.²³

If any of these exceptions to the presumption might apply, the lead agency should conduct a detailed VMT analysis to determine whether the project would exceed VMT thresholds (see below).

Presumption of Less Than Significant Impact for Affordable Residential Development

Adding affordable housing to infill locations generally improves jobs-housing match, in turn shortening commutes and reducing VMT.^{24,25} Further, "... low-wage workers in particular would be more likely to choose a residential location close to their workplace, if one is available."²⁶ In areas where existing jobs-housing match is closer to optimal, low income housing nevertheless generates less VMT than market-

²¹ Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

²² Including naturally-occurring affordable residential units.

²³ Chapple et al. (2017) *Developing a New Methodology for Analyzing Potential Displacement*, Chapter 4, pp. 159-160, available at <https://www.arb.ca.gov/research/apr/past/13-310.pdf>.

²⁴ Karner and Benner (2016) *The convergence of social equity and environmental sustainability: Jobs-housing fit and commute distance* ("[P]olicies that advance a more equitable distribution of jobs and housing by linking the affordability of locally available housing with local wage levels are likely to be associated with reduced commuting distances").

²⁵ Karner and Benner (2015) *Low-wage jobs-housing fit: identifying locations of affordable housing shortages*.

²⁶ Karner and Benner (2015) *Low-wage jobs-housing fit: identifying locations of affordable housing shortages*.

rate housing.^{27,28} Therefore, a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less-than-significant impact on VMT. Evidence supports a presumption of less than significant impact for a 100 percent affordable residential development (or the residential component of a mixed-use development) in infill locations. Lead agencies may develop their own presumption of less than significant impact for residential projects (or residential portions of mixed use projects) containing a particular amount of affordable housing, based on local circumstances and evidence. Furthermore, a project which includes any affordable residential units may factor the effect of the affordability on VMT into the assessment of VMT generated by those units.

2. Recommended Numeric Thresholds for Residential, Office, and Retail Projects

Recommended threshold for residential projects: A proposed project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita. Proposed development referencing a threshold based on city VMT per capita (rather than regional VMT per capita) should not cumulatively exceed the number of units specified in the SCS for that city, and should be consistent with the SCS.

Residential development that would generate vehicle travel that is 15 or more percent below the existing residential VMT per capita, measured against the region or city, may indicate a less-than-significant transportation impact. In MPO areas, development measured against city VMT per capita (rather than regional VMT per capita) should not cumulatively exceed the population or number of units specified in the SCS for that city because greater-than-planned amounts of development in areas above the region-based threshold would undermine the VMT containment needed to achieve regional targets under SB 375.

For residential projects in unincorporated county areas, the local agency can compare a residential project's VMT to (1) the region's VMT per capita, or (2) the aggregate population-weighted VMT per capita of all cities in the region. In MPO areas, development in unincorporated areas measured against aggregate city VMT per capita (rather than regional VMT per capita) should not cumulatively exceed the population or number of units specified in the SCS for that city because greater-than-planned amounts of development in areas above the regional threshold would undermine achievement of regional targets under SB 375.

²⁷ Chapple et al. (2017) *Developing a New Methodology for Analyzing Potential Displacement*, available at <https://www.arb.ca.gov/research/apr/past/13-310.pdf>.

²⁸ CAPCOA (2010) *Quantifying Greenhouse Gas Mitigation Measures*, pp. 176-178, available at <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>.

These thresholds can be applied to either household (i.e., tour-based) VMT or home-based (i.e., trip-based) VMT assessments.²⁹ It is critical, however, that the agency be consistent in its VMT measurement approach throughout the analysis to maintain an “apples-to-apples” comparison. For example, if the agency uses a home-based VMT for the threshold, it should also be use home-based VMT for calculating project VMT and VMT reduction due to mitigation measures.

Recommended threshold for office projects: A proposed project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact.

Office projects that would generate vehicle travel exceeding 15 percent below existing VMT per employee for the region may indicate a significant transportation impact. In cases where the region is substantially larger than the geography over which most workers would be expected to live, it might be appropriate to refer to a smaller geography, such as the county, that includes the area over which nearly all workers would be expected to live.

Office VMT screening maps can be developed using tour-based data, considering either total employee VMT or employee work tour VMT. Similarly, tour-based analysis of office project VMT could consider either total employee VMT or employee work tour VMT. Where tour-based information is unavailable for threshold determination, project assessment, or assessment of mitigation, home-based work trip VMT should be used throughout all steps of the analysis to maintain an “apples-to-apples” comparison.

Recommended threshold for retail projects: A net increase in total VMT may indicate a significant transportation impact.

Because new retail development typically redistributes shopping trips rather than creating new trips,³⁰ estimating the total change in VMT (i.e., the difference in total VMT in the area affected with and without the project) is the best way to analyze a retail project’s transportation impacts.

By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact. Regional-serving retail development, on the other hand, which can lead to substitution of longer trips for shorter ones, may tend to have a significant impact. Where such development decreases VMT, lead agencies should consider the impact to be less-than-significant.

Many cities and counties define local-serving and regional-serving retail in their zoning codes. Lead agencies may refer to those local definitions when available, but should also consider any project-

²⁹ See Appendix 1 for a description of these approaches.

³⁰ Lovejoy, et al. (2013) *Measuring the impacts of local land-use policies on vehicle miles of travel: The case of the first big-box store in Davis, California*, *The Journal of Transport and Land Use*.

specific information, such as market studies or economic impacts analyses that might bear on customers' travel behavior. Because lead agencies will best understand their own communities and the likely travel behaviors of future project users, they are likely in the best position to decide when a project will likely be local-serving. Generally, however, retail development including stores larger than 50,000 square feet might be considered regional-serving, and so lead agencies should undertake an analysis to determine whether the project might increase or decrease VMT.

Mixed-Use Projects

Lead agencies can evaluate each component of a mixed-use project independently and apply the significance threshold for each project type included (e.g., residential and retail). Alternatively, a lead agency may consider only the project's dominant use. In the analysis of each use, a project should take credit for internal capture. Combining different land uses and applying one threshold to those land uses may result in an inaccurate impact assessment.

Other Project Types

Of land use projects, residential, office, and retail projects tend to have the greatest influence on VMT. For that reason, OPR recommends the quantified thresholds described above for purposes of analysis and mitigation. Lead agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types. In developing thresholds for other project types, or thresholds different from those recommended here, lead agencies should consider the purposes described in section 21099 of the Public Resources Code and regulations in the CEQA Guidelines on the development of thresholds of significance (e.g., CEQA Guidelines, § 15064.7).

Strategies and projects that decrease local VMT but increase total VMT should be avoided. Agencies should consider whether their actions encourage development in a less travel-efficient location by limiting development in travel-efficient locations.

Redevelopment Projects

Where a project replaces existing VMT-generating land uses, if the replacement leads to a net overall decrease in VMT, the project would lead to a less-than-significant transportation impact. If the project leads to a net overall increase in VMT, then the thresholds described above should apply.

As described above, a project or plan near transit which replaces affordable³¹ residential units with a smaller number of moderate- or high-income residential units may increase overall VMT, because

³¹ Including naturally-occurring affordable residential units.

displaced residents' VMT may increase.³² A lead agency should analyze VMT for such a project even if it otherwise would have been presumed less than significant. The assessment should incorporate an estimate of the aggregate VMT increase experienced by displaced residents. That additional VMT should be included in the numerator of the VMT per capita assessed for the project.

If a residential or office project leads to a net increase in VMT, then the project's VMT per capita (residential) or per employee (office) should be compared to thresholds recommended above. Per capita and per employee VMT are efficiency metrics, and, as such, apply only to the existing project without regard to the VMT generated by the previously existing land use.

If the project leads to a net increase in provision of locally-serving retail, transportation impacts from the retail portion of the development should be presumed to be less than significant. If the project consists of regionally-serving retail, and increases overall VMT compared to with existing uses, then the project would lead to a significant transportation impact.

RTP/SCS Consistency (All Land Use Projects)

Section 15125, subdivision (d), of the CEQA Guidelines provides that lead agencies should analyze impacts resulting from inconsistencies with regional plans, including regional transportation plans. For this reason, if a project is inconsistent with the Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), the lead agency should evaluate whether that inconsistency indicates a significant impact on transportation. For example, a development may be inconsistent with an RTP/SCS if the development is outside the footprint of development or within an area specified as open space as shown in the SCS.

3. Recommendations Regarding Land Use Plans

As with projects, agencies should analyze VMT outcomes of land use plans across the full area over which the plan may substantively affect travel patterns, including beyond the boundary of the plan or jurisdiction's geography. And as with projects, VMT should be counted in full rather than split between origin and destination. (Emissions inventories have sometimes split cross-boundary trips in order to sum to a regional total, but CEQA requires accounting for the full impact without truncation or discounting). Analysis of specific plans may employ the same thresholds described above for projects. A general plan, area plan, or community plan may have a significant impact on transportation if proposed new residential, office, or retail land uses would in aggregate exceed the respective thresholds recommended above. Where the lead agency tiers from a general plan EIR pursuant to CEQA Guidelines sections 15152 and 15166, the lead agency generally focuses on the environmental impacts that are specific to the later project and were not analyzed as significant impacts in the prior EIR. (Pub. Resources Code, § 21068.5; Guidelines, § 15152, subd. (a).) Thus, in analyzing the later project, the lead agency

³² Chapple et al. (2017) *Developing a New Methodology for Analyzing Potential Displacement*, Chapter 4, pp. 159-160, available at <https://www.arb.ca.gov/research/apr/past/13-310.pdf>.

would focus on the VMT impacts that were not adequately addressed in the prior EIR. In the tiered document, the lead agency should continue to apply the thresholds recommended above.

Thresholds for plans in non-MPO areas may be determined on a case-by-case basis.

4. Other Considerations

Rural Projects Outside of MPOs

In rural areas of non-MPO counties (i.e., areas not near established or incorporated cities or towns), fewer options may be available for reducing VMT, and significance thresholds may be best determined on a case-by-case basis. Note, however, that clustered small towns and small town main streets may have substantial VMT benefits compared to isolated rural development, similar to the transit oriented development described above.

Impacts to Transit

Because criteria for determining the significance of transportation impacts must promote “the development of multimodal transportation networks” pursuant to Public Resources Code section 21099, subd. (b)(1), lead agencies should consider project impacts to transit systems and bicycle and pedestrian networks. For example, a project that blocks access to a transit stop or blocks a transit route itself may interfere with transit functions. Lead agencies should consult with transit agencies as early as possible in the development process, particularly for projects that are located within one half mile of transit stops.

When evaluating impacts to multimodal transportation networks, lead agencies generally should not treat the addition of new transit users as an adverse impact. An infill development may add riders to transit systems and the additional boarding and alighting may slow transit vehicles, but it also adds destinations, improving proximity and accessibility. Such development also improves regional vehicle flow by adding less vehicle travel onto the regional network.

Increased demand throughout a region may, however, cause a cumulative impact by requiring new or additional transit infrastructure. Such impacts may be adequately addressed through a fee program that fairly allocates the cost of improvements not just to projects that happen to locate near transit, but rather across a region to all projects that impose burdens on the entire transportation system, since transit can broadly improve the function of the transportation system.

F. Considering the Effects of Transportation Projects on Vehicle Travel

Many transportation projects change travel patterns. A transportation project which leads to additional vehicle travel on the roadway network, commonly referred to as “induced vehicle travel,” would need to quantify the amount of additional vehicle travel in order to assess air quality impacts, greenhouse gas emissions impacts, energy impacts, and noise impacts. Transportation projects also are required to

examine induced growth impacts under CEQA. (See generally, Pub. Resources Code, §§ 21065 [defining “project” under CEQA as an activity as causing either a direct or reasonably foreseeable indirect physical change], 21065.3 [defining “project-specific effect” to mean all direct or indirect environmental effects], 21100, subd. (b) [required contents of an EIR].) For any project that increases vehicle travel, explicit assessment and quantitative reporting of the amount of additional vehicle travel should not be omitted from the document; such information may be useful and necessary for a full understanding of a project’s environmental impacts. (See Pub. Resources Code, §§ 21000, 21001, 21001.1, 21002, 21002.1 [discussing the policies of CEQA].) A lead agency that uses the VMT metric to assess the transportation impacts of a transportation project may simply report that change in VMT as the impact. When the lead agency uses another metric to analyze the transportation impacts of a roadway project, changes in amount of vehicle travel added to the roadway network should still be analyzed and reported.³³

While CEQA does not require perfection, it is important to make a reasonably accurate estimate of transportation projects’ effects on vehicle travel in order to make reasonably accurate estimates of GHG emissions, air quality emissions, energy impacts, and noise impacts. (See, e.g., *California Clean Energy Com. v. City of Woodland* (2014) 225 Cal.App.4th 173, 210 [EIR failed to consider project’s transportation energy impacts]; *Ukiah Citizens for Safety First v. City of Ukiah* (2016) 248 Cal.App.4th 256, 266.) Appendix 2 describes in detail the causes of induced vehicle travel, the robust empirical evidence of induced vehicle travel, and how models and research can be used in conjunction to quantitatively assess induced vehicle travel with reasonable accuracy.

If a project would likely lead to a measurable and substantial increase in vehicle travel, the lead agency should conduct an analysis assessing the amount of vehicle travel the project will induce. 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 lanes through grade-separated interchanges

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, include:

- 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 guardrails

³³ See, e.g., California Department of Transportation (2006) *Guidance for Preparers of Growth-related, Indirect Impact Analyses*, available at [http://www.dot.ca.gov/ser/Growth-related IndirectImpactAnalysis/GRI_guidance06May_files/gri_guidance.pdf](http://www.dot.ca.gov/ser/Growth-related%20IndirectImpactAnalysis/GRI_guidance06May_files/gri_guidance.pdf).

- 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

1. Recommended Significance Threshold for Transportation Projects

As noted in Section 15064.3 of the CEQA Guidelines, lead agencies for roadway capacity projects have discretion, consistent with CEQA and planning requirements, to choose which metric to use to evaluate transportation impacts. This section recommends considerations for evaluating impacts using vehicle miles traveled. Lead agencies have discretion to choose a threshold of significance for transportation projects as they do for other types of projects. As explained above, Public Resources Code section 21099, subdivision (b)(1), provides that criteria for determining the significance of transportation impacts must promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. (*Id.*; see generally, adopted CEQA Guidelines, § 15064.3, subd. (b) [Criteria for Analyzing Transportation Impacts].) With those goals in mind, OPR prepared and the Agency adopted an appropriate transportation metric.

Whether adopting a threshold of significance, or evaluating transportation impacts on a case-by-case basis, a lead agency should ensure that the analysis addresses:

- Direct, indirect and cumulative effects of the transportation project (CEQA Guidelines, § 15064, subds. (d), (h))
- Near-term and long-term effects of the transportation project (CEQA Guidelines, §§ 15063, subd. (a)(1), 15126.2, subd. (a))
- The transportation project's consistency with state greenhouse gas reduction goals (Pub. Resources Code, § 21099)³⁴
- The impact of the transportation project on the development of multimodal transportation networks (Pub. Resources Code, § 21099)
- The impact of the transportation project on the development of a diversity of land uses (Pub. Resources Code, § 21099)

The CARB Scoping Plan and the CARB Mobile Source Strategy delineate VMT levels required to achieve legally mandated GHG emissions reduction targets. A lead agency should develop a project-level threshold based on those VMT levels, and may apply the following approach:

1. Propose a fair-share allocation of those budgets to their jurisdiction (e.g., by population);

³⁴ The California Air Resources Board has ascertained the limits of VMT growth compatible with California containing greenhouse gas emissions to levels research shows would allow for climate stabilization. (See [The 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target](#) (p. 78, p. 101); [Mobile Source Strategy](#) (p. 37).) CARB's [Updated Final Staff Report on Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets](#) illustrates that the current Regional Transportation Plans and Sustainable Communities Strategies will fall short of achieving the necessary on-road transportation-related GHG emissions reductions called for in the 2017 Scoping Plan (Figure 3, p. 35). Accordingly, OPR recommends not basing GHG emissions or transportation impact analysis for a transportation project solely on consistency with an RTP/SCS.

2. Determine the amount of VMT growth likely to result from background population growth, and subtract that from their “budget”;
3. Allocate their jurisdiction’s share between their various VMT-increasing transportation projects, using whatever criteria the lead agency prefers.

2. Estimating VMT Impacts from Transportation Projects

CEQA requires analysis of a project’s potential growth-inducing impacts. (Pub. Resources Code, § 21100, subd. (b)(5); CEQA Guidelines, § 15126.2, subd. (d).) Many agencies are familiar with the analysis of growth inducing impacts associated with water, sewer, and other infrastructure. This technical advisory addresses growth that may be expected from roadway expansion projects.

Because a roadway expansion project can induce substantial VMT, incorporating quantitative estimates of induced VMT is critical to calculating both transportation and other impacts of these projects. Induced travel also has the potential to reduce or eliminate congestion relief benefits. An accurate estimate of induced travel is needed to accurately weigh costs and benefits of a highway capacity expansion project.

The effect of a transportation project on vehicle travel should be estimated using the “change in total VMT” method described in *Appendix 1*. This means that an assessment of total VMT without the project and an assessment with the project should be made; the difference between the two is the amount of VMT attributable to the project. The assessment should cover the full area in which driving patterns are expected to change. As with other types of projects, the VMT estimation should not be truncated at a modeling or jurisdictional boundary for convenience of analysis when travel behavior is substantially affected beyond that boundary.

Transit and Active Transportation Projects

Transit and active transportation projects generally reduce VMT and therefore are presumed to cause a less-than-significant impact on transportation. This presumption may apply to all passenger rail projects, bus and bus rapid transit projects, and bicycle and pedestrian infrastructure projects. Streamlining transit and active transportation projects aligns with each of the three statutory goals contained in SB 743 by reducing GHG emissions, increasing multimodal transportation networks, and facilitating mixed use development.

Roadway Projects

Reducing roadway capacity (for example, by removing or repurposing motor vehicle travel lanes) will generally reduce VMT and therefore is presumed to cause a less-than-significant impact on transportation. Generally, no transportation analysis is needed for such projects.

Building new roadways, adding roadway capacity in congested areas, or adding roadway capacity to areas where congestion is expected in the future, typically induces additional vehicle travel. For the types of projects previously indicated as likely to lead to additional vehicle travel, an estimate should be made of the change in vehicle travel resulting from the project.

For projects that increase roadway capacity, lead agencies can evaluate induced travel quantitatively by applying the results of existing studies that examine the magnitude of the increase of VMT resulting from a given increase in lane miles. These studies estimate the percent change in VMT for every percent change in miles to the roadway system (i.e., “elasticity”).³⁵ Given that lead agencies have discretion in choosing their methodology, and the studies on induced travel reveal a range of elasticities, lead agencies may appropriately apply professional judgment in studying the transportation effects of a particular project. The most recent major study, estimates an elasticity of 1.0, meaning that every percent change in lane miles results in a one percent increase in VMT.³⁶

To estimate VMT impacts from roadway expansion projects:

1. Determine the total lane-miles over an area that fully captures travel behavior changes resulting from the project (generally the region, but for projects affecting interregional travel look at all affected regions).
2. Determine the percent change in total lane miles that will result from the project.
3. Determine the total existing VMT over that same area.
4. Multiply the percent increase in lane miles by the existing VMT, and then multiply that by the elasticity from the induced travel literature:

$$[\% \text{ increase in lane miles}] \times [\text{existing VMT}] \times [\text{elasticity}] = [\text{VMT resulting from the project}]$$

A National Center for Sustainable Transportation tool can be used to apply this method:

<https://ncst.ucdavis.edu/research/tools>

This method would not be suitable for rural (non-MPO) locations in the state which are neither congested nor projected to become congested. It also may not be suitable for a new road that provides new connectivity across a barrier (e.g., a bridge across a river) if it would be expected to substantially

³⁵ See U.C. Davis, Institute for Transportation Studies (Oct. 2015) *Increasing Highway Capacity Unlikely to Relieve Traffic Congestion*; Boarnet and Handy (Sept. 2014) *Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions*, California Air Resources Board Policy Brief, available at https://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf.

³⁶ See Duranton and Turner (2011) *The Fundamental Law of Road Congestion: Evidence from US cities*, available at <http://www.nber.org/papers/w15376>.

shorten existing trips. If it is likely to be substantial, the trips-shortening effect should be examined explicitly.

The effects of roadway capacity on vehicle travel can also be applied at a programmatic level. For example, in a regional planning process the lead agency can use that program-level analysis to streamline later project-level analysis. (See CEQA Guidelines, § 15168.) A program-level analysis of VMT should include effects of the program on land use patterns, and the VMT that results from those land use effects. In order for a program-level document to adequately analyze potential induced demand from a project or program of roadway capacity expansion, lead agencies cannot assume a fixed land use pattern (i.e., a land use pattern that does not vary in response to the provision of roadway capacity). A proper analysis should account for land use investment and development pattern changes that react in a reasonable manner to changes in accessibility created by transportation infrastructure investments (whether at the project or program level).

Mitigation and Alternatives

Induced VMT has the potential to reduce or eliminate congestion relief benefits, increase VMT, and increase other environmental impacts that result from vehicle travel.³⁷ If those effects are significant, the lead agency will need to consider mitigation or alternatives. In the context of increased travel that is induced by capacity increases, appropriate mitigation and alternatives that a lead agency might consider include the following:

- Tolling new lanes to encourage carpools and fund transit improvements
- Converting existing general purpose lanes to HOV or HOT lanes
- Implementing or funding off-site travel demand management
- Implementing Intelligent Transportation Systems (ITS) strategies to improve passenger throughput on existing lanes

Tolling and other management strategies can have the additional benefit of preventing congestion and maintaining free-flow conditions, conferring substantial benefits to road users as discussed above.

G. Analyzing Other Impacts Related to Transportation

While requiring a change in the methodology of assessing transportation impacts, Public Resources Code section 21099 notes that this change “does not relieve a public agency of the requirement to analyze a project’s potentially significant transportation impacts related to air quality, noise, safety, or any other impact associated with transportation.” OPR expects that lead agencies will continue to

³⁷ See National Center for Sustainable Transportation (Oct. 2015) *Increasing Highway Capacity Unlikely to Relieve Traffic Congestion*, available at http://www.dot.ca.gov/newtech/researchreports/reports/2015/10-12-2015-NCST_Brief_InducedTravel_CS6_v3.pdf; see Duranton and Turner (2011) *The Fundamental Law of Road Congestion: Evidence from US cities*, available at <http://www.nber.org/papers/w15376>.

address mobile source emissions in the air quality and noise sections of an environmental document and the corresponding studies that support the analysis in those sections. Lead agencies should continue to address environmental impacts of a proposed project pursuant to CEQA's requirements, using a format that is appropriate for their particular project.

Because safety concerns result from many different factors, they are best addressed at a programmatic level (i.e., in a general plan or regional transportation plan) in cooperation with local governments, metropolitan planning organizations, and, where the state highway system is involved, the California Department of Transportation. In most cases, such an analysis would not be appropriate on a project-by-project basis. Increases in traffic volumes at a particular location resulting from a project typically cannot be estimated with sufficient accuracy or precision to provide useful information for an analysis of safety concerns. Moreover, an array of factors affect travel demand (e.g., strength of the local economy, price of gasoline), causing substantial additional uncertainty. Appendix B of OPR's [General Plan Guidelines](#) summarizes research which could be used to guide a programmatic analysis under CEQA. Lead agencies should note that automobile congestion or delay does not constitute a significant environmental impact (Pub. Resources Code, §21099(b)(2)), and safety should not be used as a proxy for road capacity.

H. VMT Mitigation and Alternatives

When a lead agency identifies a significant impact, it must identify feasible mitigation measures that could avoid or substantially reduce that impact. (Pub. Resources Code, § 21002.1, subd. (a).) Additionally, CEQA requires that an environmental impact report identify feasible alternatives that could avoid or substantially reduce a project's significant environmental impacts.

Indeed, the California Court of Appeal recently held that a long-term regional transportation plan was deficient for failing to discuss an alternative which could significantly reduce total vehicle miles traveled. In *Cleveland National Forest Foundation v. San Diego Association of Governments, et al.* (2017) 17 Cal.App.5th 413, the court found that omission "inexplicable" given the lead agency's "acknowledgment in its Climate Action Strategy that the state's efforts to reduce greenhouse gas emissions from on-road transportation will not succeed if the amount of driving, or vehicle miles traveled, is not significantly reduced." (*Cleveland National Forest Foundation, supra*, 17 Cal.App.5th at p. 436.) Additionally, the court noted that the project alternatives focused primarily on congestion relief even though "the [regional] transportation plan is a long-term and congestion relief is not necessarily an effective long-term strategy." (*Id.* at p. 437.) The court concluded its discussion of the alternatives analysis by stating: "Given the acknowledged long-term drawbacks of congestion relief alternatives, there is not substantial evidence to support the EIR's exclusion of an alternative focused primarily on significantly reducing vehicle trips." (*Ibid.*)

Several examples of potential mitigation measures and alternatives to reduce VMT are described below. However, the selection of particular mitigation measures and alternatives are left to the discretion of

the lead agency, and mitigation measures may vary, depending on the proposed project and significant impacts, if any. Further, OPR expects that agencies will continue to innovate and find new ways to reduce vehicular travel.

Potential measures to reduce vehicle miles traveled include, but are not limited to:

- Improve or increase access to transit.
- Increase access to common goods and services, such as groceries, schools, and daycare.
- Incorporate affordable housing into the project.
- Incorporate neighborhood electric vehicle network.
- Orient the project toward transit, bicycle and pedestrian facilities.
- Improve pedestrian or bicycle networks, or transit service.
- Provide traffic calming.
- Provide bicycle parking.
- Limit or eliminate parking supply.
- Unbundle parking costs.
- Provide parking cash-out programs.
- Implement roadway pricing.
- Implement or provide access to a commute reduction program.
- Provide car-sharing, bike sharing, and ride-sharing programs.
- Provide transit passes.
- Shifting single occupancy vehicle trips to carpooling or vanpooling, for example providing ride-matching services.
- Providing telework options.
- Providing incentives or subsidies that increase the use of modes other than single-occupancy vehicle.
- Providing on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms.
- Providing employee transportation coordinators at employment sites.
- Providing a guaranteed ride home service to users of non-auto modes.

Notably, because VMT is largely a regional impact, regional VMT-reduction programs may be an appropriate form of mitigation. In lieu fees have been found to be valid mitigation where there is both a commitment to pay fees and evidence that mitigation will actually occur. (*Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 140-141; *Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 727-728.) Fee programs are particularly useful to address cumulative impacts. (CEQA Guidelines, § 15130, subd. (a)(3) [a “project’s incremental contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact”].) The mitigation program must undergo CEQA evaluation, either on the program as a whole, or the in-lieu fees or other mitigation must be evaluated

on a project-specific basis. (*California Native Plant Society v. County of El Dorado* (2009) 170 Cal.App.4th 1026.) That CEQA evaluation could be part of a larger program, such as a regional transportation plan, analyzed in a Program EIR. (CEQA Guidelines, § 15168.)

Examples of project alternatives that may reduce vehicle miles traveled include, but are not limited to:

- Locate the project in an area of the region that already exhibits low VMT.
- Locate the project near transit.
- Increase project density.
- Increase the mix of uses within the project or within the project's surroundings.
- Increase connectivity and/or intersection density on the project site.
- Deploy management strategies (e.g., pricing, vehicle occupancy requirements) on roadways or roadway lanes.

Appendix 1. Considerations About Which VMT to Count

Consistent with the obligation to make a good faith effort to disclose the environmental consequences of a project, lead agencies have discretion to choose the most appropriate methodology to evaluate project impacts.³⁸ A lead agency can evaluate a project's effect on VMT in numerous ways. The purpose of this document is to provide technical considerations in determining which methodology may be most useful for various project types.

Background on Estimating Vehicle Miles Traveled

Before discussing specific methodological recommendations, this section provides a brief overview of modeling and counting VMT, including some key terminology.

Here is an illustrative example of some methods of estimating vehicle miles traveled. Consider the following hypothetical travel day (all by automobile):

1. Residence to Coffee Shop
2. Coffee Shop to Work
3. Work to Sandwich Shop
4. Sandwich Shop to Work
5. Work to Residence
6. Residence to Store
7. Store to Residence

Trip-based assessment of a project's effect on travel behavior counts VMT from individual trips to and from the project. It is the most basic, and traditionally the most common, method of counting VMT. A trip-based VMT assessment of the residence in the above example would consider segments 1, 5, 6 and 7. For residential projects, the sum of home-based trips is called *home-based* VMT.

A *tour-based* assessment counts the entire home-back-to-home tour that includes the project. A tour-based VMT assessment of the residence in the above example would consider segments 1, 2, 3, 4, and 5 in one tour, and 6 and 7 in a second tour. A tour-based assessment of the workplace would include segments 1, 2, 3, 4, and 5. Together, all tours comprise *household* VMT.

³⁸ The California Supreme Court has explained that when an agency has prepared an environmental impact report:

[T]he issue is not whether the [lead agency's] studies are irrefutable or whether they could have been better. The relevant issue is only whether the studies are sufficiently credible to be considered as part of the total evidence that supports the [lead agency's] finding[.]

(*Laurel Heights Improvement Assn. v. Regents of the University of California* (1988) 47 Cal.3d 376, 409; see also *Eureka Citizens for Responsible Gov't v. City of Eureka* (2007) 147 Cal.App.4th 357, 372.)

Both trip- and tour-based assessments can be used as measures of transportation efficiency, using denominators such as per capita, per employee, or per person-trip.

Trip- and Tour-based Assessment of VMT

As illustrated above, a tour-based assessment of VMT is a more complete characterization of a project's effect on VMT. In many cases, a project affects travel behavior beyond the first destination. The location and characteristics of the home and workplace will often be the main drivers of VMT. For example, a residential or office development located near high quality transit will likely lead to some commute trips utilizing transit, affecting mode choice on the rest of the tour.

Characteristics of an office project can also affect an employee's VMT beyond the work tour. For example, a workplace located at the urban periphery, far from transit, can require an employee to own a car, which in turn affects the entirety of an employee's travel behavior and VMT. For this reason, when estimating the effect of an office development on VMT, it may be appropriate to consider total employee VMT if data and tools, such as tour-based models, are available. This is consistent with CEQA's requirement to evaluate both direct and *indirect* effects of a project. (See CEQA Guidelines, § 15064, subd. (d)(2).)

Assessing Change in Total VMT

A third method, estimating the *change in total VMT* with and without the project, can evaluate whether a project is likely to divert existing trips, and what the effect of those diversions will be on total VMT. This method answers the question, "What is the net effect of the project on area VMT?" As an illustration, assessing the total change in VMT for a grocery store built in a food desert that diverts trips from more distant stores could reveal a net VMT reduction. The analysis should address the full area over which the project affects travel behavior, even if the effect on travel behavior crosses political boundaries.

Using Models to Estimate VMT

Travel demand models, sketch models, spreadsheet models, research, and data can all be used to calculate and estimate VMT (see Appendix F of the [preliminary discussion draft](#)). To the extent possible, lead agencies should choose models that have sensitivity to features of the project that affect VMT. Those tools and resources can also assist in establishing thresholds of significance and estimating VMT reduction attributable to mitigation measures and project alternatives. When using models and tools for those various purposes, agencies should use comparable data and methods, in order to set up an "apples-to-apples" comparison between thresholds, VMT estimates, and VMT mitigation estimates.

Models can work together. For example, agencies can use travel demand models or survey data to estimate existing trip lengths and input those into sketch models such as CalEEMod to achieve more

accurate results. Whenever possible, agencies should input localized trip lengths into a sketch model to tailor the analysis to the project location. However, in doing so, agencies should be careful to avoid double counting if the sketch model includes other inputs or toggles that are proxies for trip length (e.g., distance to city center). Generally, if an agency changes any sketch model defaults, it should record and report those changes for transparency of analysis. Again, trip length data should come from the same source as data used to calculate thresholds to be sure of an “apples-to-apples” comparison.

Additional background information regarding travel demand models is available in the California Transportation Commission’s [“2010 Regional Transportation Plan Guidelines,”](#) beginning at page 35.

Appendix 2. Induced Travel: Mechanisms, Research, and Additional Assessment Approaches

Induced travel occurs where roadway capacity is expanded in an area of present or projected future congestion. The effect typically manifests over several years. Lower travel times make the modified facility more attractive to travelers, resulting in the following trip-making changes:

- **Longer trips.** The ability to travel a long distance in a shorter time increases the attractiveness of destinations that are farther away, increasing trip length and vehicle travel.
- **Changes in mode choice.** When transportation investments are devoted to reducing automobile travel time, travelers tend to shift toward automobile use from other modes, which increases vehicle travel.
- **Route changes.** Faster travel times on a route attract more drivers to that route from other routes, which can increase or decrease vehicle travel depending on whether it shortens or lengthens trips.
- **Newly generated trips.** Increasing travel speeds can induce additional trips, which increases vehicle travel. For example, an individual who previously telecommuted or purchased goods on the internet might choose to accomplish those tasks via automobile trips as a result of increased speeds.
- **Land Use Changes.** Faster travel times along a corridor lead to land development farther along that corridor; that new development generates and attracts longer trips, which increases vehicle travel. Over several years, this induced growth component of induced vehicle travel can be substantial, making it critical to include in analyses.

Each of these effects has implications for the total amount of vehicle travel. These effects operate over different time scales. For example, changes in mode choice might occur immediately, while land use changes typically take a few years or longer. CEQA requires lead agencies to analyze both short-term and long-term effects.

Evidence of Induced Vehicle Travel. A large number of peer reviewed studies³⁹ have demonstrated a causal link between highway capacity increases and VMT increases. Many provide quantitative estimates of the magnitude of the induced VMT phenomenon. Collectively, they provide high quality evidence of the existence and magnitude of the induced travel effect.

³⁹ See, e.g., Boarnet and Handy (Sept. 2014) Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions, California Air Resources Board Policy Brief, available at https://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf; National Center for Sustainable Transportation (Oct. 2015) *Increasing Highway Capacity Unlikely to Relieve Traffic Congestion*, available at http://www.dot.ca.gov/research/researchreports/reports/2015/10-12-2015-NCST_Brief_InducedTravel_CS6_v3.pdf.

Most of these studies express the amount of induced vehicle travel as an “elasticity,” which is a multiplier that describes the additional vehicle travel resulting from an additional lane mile of roadway capacity added. For example, an elasticity of 0.6 would signify an 0.6 percent increase in vehicle travel for every 1.0 percent increase in lane miles. Many of these studies distinguish “short run elasticity” (increase in vehicle travel in the first few years) from “long run elasticity” (increase in vehicle travel beyond the first few years). Long run elasticity is larger than short run elasticity, because as time passes, more of the components of induced vehicle travel materialize. Generally, short run elasticity can be thought of as excluding the effects of land use change, while long run elasticity includes them. Most studies find a long run elasticity between 0.6 and just over 1.0,⁴⁰ meaning that every increase in lanes miles of one percent leads to an increase in vehicle travel of 0.6 to 1.0 percent. The most recent major study finds the elasticity of vehicle travel by lanes miles added to be 1.03; in other words, each percent increase in lane miles results in a 1.03 percent increase in vehicle travel.⁴¹ (An elasticity greater than 1.0 can occur because new lanes induce vehicle travel that spills beyond the project location.) In CEQA analysis, the long-run elasticity should be used, as it captures the full effect of the project rather than just the early-stage effect.

Quantifying Induced Vehicle Travel Using Models. Lead agencies can generally achieve the most accurate assessment of induced vehicle travel resulting from roadway capacity increasing projects by applying elasticities from the academic literature, because those estimates include vehicle travel resulting from induced land use. If a lead agency chooses to use a travel demand model, additional analysis would be needed to account for induced land use. This section describes some approaches to undertaking that additional analysis.

Proper use of a travel demand model can capture the following components of induced VMT:

- Trip length (generally increases VMT)
- Mode shift (generally shifts from other modes toward automobile use, increasing VMT)
- Route changes (can act to increase or decrease VMT)
- Newly generated trips (generally increases VMT)
 - Note that not all travel demand models have sensitivity to this factor, so an off-model estimate may be necessary if this effect could be substantial.

However, estimating long-run induced VMT also requires an estimate of the project’s effects on land use. This component of the analysis is important because it has the potential to be a large component of

⁴⁰ See Boarnet and Handy (Sept. 2014) *Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions*, California Air Resources Board Policy Brief, p. 2, available at https://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf.

⁴¹ Duranton and Turner (2011) *The Fundamental Law of Road Congestion: Evidence from US cities*, available at <http://www.nber.org/papers/w15376>.

the overall induced travel effect. Options for estimating and incorporating the VMT effects that are caused by the subsequent land use changes include:

1. *Employ an expert panel.* An expert panel could assess changes to land use development that would likely result from the project. This assessment could then be analyzed by the travel demand model to assess effects on vehicle travel. Induced vehicle travel assessed via this approach should be verified using elasticities found in the academic literature.
2. *Adjust model results to align with the empirical research.* If the travel demand model analysis is performed without incorporating projected land use changes resulting from the project, the assessed vehicle travel should be adjusted upward to account for those land use changes. The assessed VMT after adjustment should fall within the range found in the academic literature.
3. *Employ a land use model, running it iteratively with a travel demand model.* A land use model can be used to estimate the land use effects of a roadway capacity increase, and the traffic patterns that result from the land use change can then be fed back into the travel demand model. The land use model and travel demand model can be iterated to produce an accurate result.

A project which provides new connectivity across a barrier, such as a new bridge across a river, may provide a shortened path between existing origins and destinations, thereby shortening existing trips. In rare cases, this trip-shortening effect might be substantial enough to reduce the amount of vehicle travel resulting from the project below the range found in the elasticities in the academic literature, or even lead a net reduction in vehicle travel overall. In such cases, the trip-shortening effect could be examined explicitly.

Whenever employing a travel demand model to assess induced vehicle travel, any limitation or known lack of sensitivity in the analysis that might cause substantial errors in the VMT estimate (for example, model insensitivity to one of the components of induced VMT described above) should be disclosed and characterized, and a description should be provided on how it could influence the analysis results. A discussion of the potential error or bias should be carried into analyses that rely on the VMT analysis, such as greenhouse gas emissions, air quality, energy, and noise.