

**INSTITUTE OF TRANSPORTATION ENGINEERS
GUIDE TO SB 743**

**THE TRANSITION FROM LEVEL OF SERVICE
TO VEHICLE MILES TRAVELED
FOR CEQA TRANSPORTATION ANALYSES**

APRIL 2021

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ITE GUIDE TO SB 743

1.0 PURPOSE OF THIS GUIDE

This guide is intended to provide a summary of the implications of Senate Bill 743 (SB 743) for ITE members and others interested in an overview of this legislation and its effect for the practice of transportation engineering and planning in California. For a quick overview, see Appendix A. The remainder of this guide provides a more detailed summary.

SB 743 was passed by the legislature and signed into law by the Governor in the fall of 2013. For details, see https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743. This legislation led to a change in the way that transportation impacts are measured under the California Environmental Quality Act (CEQA) for land development projects, land use plans, and transportation projects. Effective December 28, 2018, the CEQA Guidelines containing new SB 743 provisions were certified. This certification act triggered Section 21099 of the SB 743 statute, which states:

“...upon certification of the guidelines by the Secretary of the Natural Resources Agency pursuant to this section, automobile delay, as described solely be level of service [LOS] or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division...”

When adopting SB 743 into CEQA, the intent of the Natural Resources Agency was to require implementation of SB 743 by July 1, 2020, but to allow lead agencies the option to start using SB 743 before this date. Many lead agencies consider July 1, 2020 to be the official implementation date, although a recent court ruling (*Citizens for Positive Growth & Preservation v. City of Sacramento*) has called into question whether required implementation occurred on December 28, 2018. See Chapter 2.0, CEQA Adoption, for additional information on this court ruling.

Prior to SB 743, delay and LOS, although never required by state legislation, had become the most frequently used way to measure traffic impacts under CEQA. In replacement of LOS, an alternative metric that supports the goals of the SB 743 legislation was required. With the implementation of SB 743, the use of vehicle miles traveled (VMT) has been recommended by the Governor’s Office of Planning and Research (OPR) and is the performance measure specified in the revised CEQA Guidelines provided by the Natural Resources Agency. This requirement does not modify the discretion lead agencies have to develop their own methodologies or guidelines, or to analyze impacts to other components of the transportation system, such as walking, bicycling, transit, and safety. SB 743 also applies to transportation infrastructure projects, although agencies were given flexibility in the determination of the performance measure for these types of projects as long as their determination is consistent with the CEQA Guidelines Section 15064.7 and supported by substantial evidence.

This guide is provided for informational purposes only. Although it was prepared by ITE members with knowledge of the technical details of SB 743 and CEQA, there are many details to be considered in conducting a CEQA technical analysis. Readers should consider this guide as an introduction to SB 743. Prior to attempting to conduct a VMT analysis under SB 743, readers should review additional guidance

provided at the statewide, regional, or local level and/or consult with environmental planners and CEQA attorneys who have knowledge of additional CEQA rules and regulations.

Note that SB 743 does not prohibit use of delay or LOS measures for applications *other than* CEQA, or even for non-transportation impacts in CEQA. LOS and delay still remain useful measures when considering issues such as intersection lane assignments, signal/traffic control warrants, signal timing, operational analysis, and in some cases are needed for assessing air quality, noise, safety, and energy impacts of a project. See Public Resources Code Section 21099. This is reiterated in OPR's "Technical Advisory on Evaluating Transportation Impacts in CEQA," December 2018, p.25.

2.0 BACKGROUND ON SB 743

This chapter of the guide provides information on the process for the incorporation of SB 743 into transportation engineering and planning practice, from the initial legislation to incorporation by individual agencies. As stated in the SB 743 statute, “New methodologies under CEQA 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.” This declaration is followed in the statute by the specific legislative intent to more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions. .

SB 743 LEGISLATION

Following is a summary of key features of the SB 743 legislation:

- ◆ The legislation specified that upon its incorporation into CEQA, level of service and delay were no longer to be used for the determination of significant transportation impacts in the geographic areas of California where SB 743 was determined to be applicable. The legislation specified that, at a minimum, SB 743 was to apply in transit priority areas (within a half-mile of rail stations and other areas with high levels of transit service) but that it could possibly apply to the entire state. OPR was designated with the authority to determine the geographic areas for application and was required to write detailed guidelines for the implementation of SB 743. (Note: OPR has since decided that SB 743 is to be applied throughout California).
- ◆ The SB 743 legislation did not select a specific performance measure to be used in place of level of service and delay, but did specify that performance measures and other criteria related to the implementation of SB 743 promote “the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses”.

OPR TECHNICAL ADVISORY

OPR was required by the law to develop a draft of the CEQA Guidelines implementing the change from LOS to a metrics that accomplished three statutory goals; OPR also chose to also offer a technical advisory. CEQA Guidelines Section 15064.3 states that generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts and that VMT refers to automobile travel. This section applies statewide to land development projects and no exceptions were granted by OPR to allow the continued use of LOS anywhere in the state. Under CEQA, lead agencies have the discretion to choose the most appropriate methodology to evaluate VMT and have discretion to choose their own significance thresholds. Per Revised CEQA Section 15064.3, projects located within a 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 impact. (See Chapter 3, Projects Presumed to Have Less Than Significant VMT Impacts for definitions of major transit stops and high-quality transit corridors.) Projects that decrease VMT in the project area should also be presumed to have a less than significant impact.

OPR provided a Technical Advisory containing guidelines related to VMT analysis methodology, thresholds, and mitigation. See http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Several drafts of the technical advisory were prepared and circulated for public review prior to preparation of the

version that was used in the SB 743 CEQA adoption process in December 2018. This version of the technical advisory was still current at the time of preparation of this guide, but OPR has stated its intent to prepare updates as conditions change.

Key features of the OPR technical advisory include the following:

- ◆ In Metropolitan Planning Organization (MPO) counties, OPR recommends that the significance threshold for residential and office projects be based on comparisons of VMT/capita and VMT/employee generated by the project to regional and city-wide average values for VMT/capita and VMT/employee. Note that VMT/capita and VMT/employee can be calculated using various methodologies. OPR recommends applying a methodology and significance threshold that connects the VMT significance determination to state climate commitments and offers a methodology in its Technical Advisory that can be used to do so. The specific threshold recommendation is aligned with state greenhouse gas reduction goals, but meeting the threshold is not a safe harbor for making a less than significant finding. The following two reports contain evidence that VMT per capita trends are moving in the wrong direction and that transportation related GHG emissions continue to increase in the state.

2018 Progress Report, California's Sustainable Communities and Climate Protection Act, California Air Resources Board, November 2018 (referred to as the Progress Report in the remainder of this document). See: https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf

California Air Resources Board Improved Program Measurement Would Help California Work More Strategically to Meet Its Climate Change Goals, Auditor of the State of California, February 2021 (referred to as the Audit Report in the remainder of this document). See: <https://www.auditor.ca.gov/pdfs/reports/2020-114.pdf>

Since the OPR thresholds were developed in anticipation of declining VMT per capita trends, this recent information raises new questions regarding the methodology for determining VMT thresholds. Adding to the uncertainty are the changes in travel behavior caused by the COVID-19 pandemic that started in March 2020.

- ◆ OPR recommends that local-serving retail projects can be presumed to have less than significant impacts since they tend to reduce VMT by shortening trip lengths.
- ◆ In rural areas outside Metropolitan Planning Organization (MPO) boundaries, OPR recommends that significance thresholds be determined on a case-by-case basis.
- ◆ As with land use projects, OPR recommends using a significance threshold for transportation projects based on California's climate commitments. The California Air Resources Board (CARB) has determined the amount of VMT increase that would be compatible with those targets (see CARB Scoping Plan, <https://ww2.arb.ca.gov/resources/documents/carb-2017-scoping-plan-identified-vmt-reductions-and-relationship-state-climate>) and has determined VMT increases for individual projects that would be in alignment with meeting those targets. OPR also recommends that induced vehicle travel (i.e. demand created by roadway network modifications such as adding lanes to reduce travel times that would encourage new land development projects) be included in the VMT analysis of transportation projects.

Although many lead agencies in urban and suburban areas are closely following OPR's recommendations, the guidance provided in OPR's technical advisory are considered to be recommendations, rather than requirements. It is also important to note that the technical advisory does not have the authority of law. Further, it includes recommendations for VMT impact screening where projects can be quickly assessed to determine if sufficient evidence exists to support a presumption that the project would not have a significant VMT impact. For land development projects, this screening relies on 'partial VMT' metrics tied to specific land use types, vehicle types, and trip purposes. For example, residential projects are screened based on metrics such as home-based automobile VMT generated per resident. This is different than current analysis of VMT for air quality, greenhouse gases, and energy impacts where total VMT inclusive of all vehicle types and trip purposes is used. Under CEQA, lead agencies have the authority to determine their own significance thresholds and methodologies for technical analysis presuming their choices are supported by substantial evidence. Lead agencies choosing to use methodology, metrics, or thresholds from the Technical Advisory should carefully review the OPR provided substantial evidence, which includes information beyond the Advisory itself such as documentation available at the following websites.

- ◆ OPR SB 743 Website: <http://opr.ca.gov/ceqa/updates/sb-743/>
- ◆ General Plan Guidelines, Appendix B: http://opr.ca.gov/docs/OPR_Appendix_B_final.pdf
- ◆ CARB 2017 Scoping Plan – Identified VMT Reductions and Relationship to State Climate Goals: https://ww2.arb.ca.gov/sites/default/files/2019-01/2017_sp_vmt_reductions_jan19.pdf

CEQA ADOPTION

SB 743 requirements were formally adopted into the CEQA Guidelines upon their certification on December 28, 2018. OPR also released their Technical Advisory for VMT impact analysis at this same time. Section 15064.3 of the updated CEQA Guidelines identifies automobile VMT as the most appropriate metric for transportation impact analysis for land use projects and allows lead agencies to start using VMT impact analysis immediately but mandatory use is not required until July 1, 2020. For roadway capacity projects, lead agencies have discretion to select their own metrics, which may continue to include LOS, if substantial evidence is available to support this choice in compliance with CEQA expectations, especially those contained in CEQA Guidelines Sections 15064.3 and 15064.7. Although Section 15064.3 states that mandatory use of VMT does not begin until July 1, 2020, the court ruling referenced in Chapter 1.0 concluded that LOS is no longer to be used as the sole basis for environmental impacts in CEQA for land use projects and land use plans after December 28, 2018. This was the conclusion of the 3rd District Court of Appeals in the published decision, *Citizens for Positive Growth vs. City of Sacramento*. Lead agencies have varied in their interpretations of this ruling and many continued to use LOS as a CEQA performance measure through July 1, 2020.

INCORPORATION OF SB 743 FOR INDIVIDUAL AGENCIES

The statewide guidance provided by OPR and the Natural Resources Agency does not provide all the detail required to prepare a CEQA transportation analysis using VMT as the performance measure, particularly in the case of unusual project types and projects located in rural areas. As noted above, the technical guidance to date largely focuses on VMT impact screening and details about how to perform a complete VMT analysis for projects that do not pass screening are not provided. Technical guidance also does not cover compatibility expectations between SB 743 VMT analysis and the VMT inputs used for air quality and energy impact analysis. Expectations for SB 743 and GHG impact analysis compatibility are addressed by the Office of Planning and Research in *Discussion Draft, CEQA and Climate Change Advisory*, California Governor's Office of Planning and Research, December 2018. (<https://opr.ca.gov/docs/20181228->

[Discussion_Draft_Climate_Change_Adivsory.pdf](#)). At a minimum, lead agencies in California will all have to make decisions about their preferred VMT analysis methodology, thresholds, and feasible mitigation. The technical advisories provide the perspective of the State of California as interpreted by OPR but do not elevate to mandatory legal requirements. In many cases, local or regional agency perspectives may differ from those of the state. In addition, it may be appropriate to deviate from OPR's recommendations where substantial evidence would support alternative approaches especially when legal risk is a concern.

Lead agencies are encouraged in Section 15064.7 of the CEQA Guidelines to adopt significance thresholds through a formal adoption process but may also apply thresholds on a case by case basis. Adopting thresholds through a public process is recommended for transparency and to give stakeholders an opportunity to engage in the threshold discussion.

3.0 VMT ANALYSIS FOR LAND DEVELOPMENT PROJECTS

This chapter provides a description of the VMT analysis methodologies recommended by OPR as well as variations that are being used by individual lead agencies. References are made to certain CEQA sections that agencies may wish to keep in mind when determining methodologies and setting thresholds.

Within metropolitan planning organization (MPO) areas, the Technical Advisory includes two different approaches depending on the type of land use. For residential and office projects, OPR recommends comparing a project's estimated VMT/capita or VMT/employee to average values on a regional or citywide basis. For retail projects, total VMT within the area affected by the project is measured. The OPR recommended thresholds for each land use are listed below.

- ◆ Residential: A proposed project exceeding a level of 15 percent below existing VMT per capita for the city or region may indicate a significant transportation impact.
- ◆ Office: A proposed project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact.
- ◆ Retail: A net increase in total VMT may indicate a significant transportation impact.

The approach for residential and office projects sets the expectation that they need to provide low VMT generation rates while retail projects are expected to reduce VMT. Supporting evidence for the recommendations listed above is provided in various OPR and CARB documents referenced in this guide. In general, a project that generates more VMT than would align with state climate commitments would be considered to have a significant impact on the environment. Lead agencies could consider carefully reviewing available guidance and substantial evidence with development, environmental, and community interests before starting VMT impact analysis. When setting thresholds lead agencies could 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).

For thresholds that compare project VMT to regional average VMT, OPR indicates that the regional boundary would typically be the Metropolitan Planning Organization (MPO) boundary. However, OPR mentions the possibility of using subregional averages for large MPO's.

In rural areas outside MPO boundaries, OPR recommends that significance thresholds for land development projects be considered on a case-by-case basis.

SB 743 does not apply to goods movement (i.e. trucks) and therefore the VMT associated with the movement of goods does not need to be analyzed or mitigated in the determination of transportation impacts. Most projects that have a substantial goods movement component also have automobile trips and the automobile portion of project trips would be subject to VMT analysis and mitigation. Section 15064.3 of the CEQA Guidelines states that VMT for transportation impacts refers to. "... the amount and distance of automobile travel..." The Technical Advisory recognizes that use of total VMT inclusive of commercial vehicle trips may also be considered and it should be noted that many models that report VMT statistics report a combination of VMT generated by goods movement and automobile travel. Lead agencies will also need to consider that VMT used for air quality, GHG, and energy impact analysis is based on total VMT inclusive of vehicle types.

Examples of some of the variations from OPR guidance used by lead agencies throughout the state include the following:

- ◆ Although OPR recommends the use of VMT/capita and VMT/employee as performance measures for VMT analysis, some lead agencies have set VMT/service population as their local performance measure. Use of VMT/service population as a performance measure would use efficiency metrics based on the total of residents plus employees located within a given project or geographic area.
- ◆ Rather than using regional averages for VMT/capita and VMT/employee as the basis for comparison to project VMT/capita and VMT/employee, some agencies are using subregional averages. Some agencies are using community averages rather than city-wide averages as the basis for comparison. Rather than basing VMT/employee comparisons only on regional averages (as recommended by OPR), some agencies are basing VMT/employee comparisons on either regional or city-wide/community averages. The basis for using smaller geographic areas for comparison is to compare 'like to like' when it comes to individual land uses and for new land use development projects to perform at least 15 percent better than existing land uses in the same area.
- ◆ Some agencies are using thresholds other than 15% below average. Examples include setting the significance threshold as simply below average or determining the percent below average based on local conditions.

The remainder of this section of the guide is divided into individual components that describe different aspects of VMT analysis for land development projects.

PROJECTS PRESUMED TO HAVE LESS THAN SIGNIFICANT VMT IMPACTS

According to OPR's recommendations, certain projects would be presumed to have a less than significant effect on VMT due to project size, project location, or project type. These presumptions are largely based on the state's goals related to infill development, active transportation, public health, air quality, and GHG reduction. Therefore, the following presumptions may not be appropriate for lead agencies that have different goals. Following is a description of ways to identify these types of projects per the CEQA Guidelines Section 15064.3 and the Technical Advisory. Use of any of these presumptions should be supported by substantial evidence associated with specific project sites.

- ◆ **Minimum Project Size:** OPR recommends that projects that generate less than 110 trips per day may be considered to have less than significant VMT impacts. Lead agencies should note that this threshold is not based on VMT but rather the CEQA categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet.
- ◆ **Projects Within Transit Priority Areas:** OPR provides the following guidance regarding projects in transit priority areas: 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 stop or an existing stop along a high quality transit corridor 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. An existing major transit stop is defined as "a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the

intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.”

- ◆ Local-Serving Retail: OPR recommends that local-serving retail projects may be considered to have less than significant VMT impacts.
- ◆ Redevelopment Projects Resulting in a Net Reduction in VMT: Per CEQA, OPR recommends that redevelopment projects that result in a net reduction in VMT may be considered to have less than significant VMT impacts. A net reduction in VMT would occur if the land use proposed by the project would generate less VMT than the existing land use.
- ◆ Affordable Housing: OPR’s technical advisory includes special considerations for affordable housing. Projects that include 100% affordable housing in infill locations can be presumed to have a less than significant VMT impact. Infill locations will typically have better than average access to transit and/or greater opportunities for walking and bicycling trips. The exact definition of infill locations will need to be determined based on local conditions.

Some lead agencies have deviated from OPR’s recommended minimum project size of 110 daily trips. The other OPR recommendations are generally being followed although some agencies have extended the recommendation on local-serving retail to local-serving public facilities and other local serving land uses.

ESTIMATING VMT

Estimation of VMT generation for individual projects has been part of CEQA technical studies for over a decade since this became a common practice in air quality/greenhouse gas analysis. The situation changed with the implementation of SB 743 since VMT estimation is now conducted to determine the transportation impacts of projects. This is a relatively recent change and methodologies for estimating VMT related to transportation impacts are currently under development. This guide provides a brief overview of the state of the practice. Individual sections are provided below that provide discussion of various aspects of VMT analysis.

Travel Demand Model Applications

Many agencies, from Metropolitan Planning Organization (MPO’s) to local jurisdictions, maintain travel demand forecasting models of some kind. These tools range in complexity and sophistication from regional, activity-based models to traditional trip-based three or four-step models covering a single municipality. While in theory, every land use project could be analyzed by running the available travel demand model with and without the project land use as inputs, this could be cumbersome and expensive in practice. Instead, many agencies are using travel demand models to support the development of screening maps and sketch planning tools that can simplify and standardize evaluation of land use projects for VMT impacts (see following section).

One factor to consider is that even the most sophisticated travel demand models have limitations. For example, most travel demand models have a small number of trip purposes available. This is important because trip purpose is often closely related to trip length, and thus to VMT.

Also, when using models, lead agencies should consider CEQA expectations related to technical methodology. The CEQA Guidelines contain clear expectations for environmental analysis as noted below.

CEQA Guidelines – Expectations for Environmental Impact Analysis

§ 15003 (F) = fullest possible protection of the environment...

§ 15003 (I) = adequacy, completeness, and good-faith effort at full disclosure...

§ 15125 (C) = EIR must demonstrate that the significant environmental impacts of the proposed project were adequately investigated...

§ 15144 = an agency must use its best efforts to find out and disclose...

§ 15151 = sufficient analysis to allow a decision which intelligently takes account of environmental consequences...

All of these suggest accuracy is important and have largely been recognized by the courts as the context for judging an adequate analysis. So, then what is the basis for determining adequacy, completeness, and a good faith effort when it comes to use of a model for VMT impact analysis? A review of relevant court cases suggests the following conclusions.

- ◆ CEQA does not require the use of any specific methodology. Agencies must have substantial evidence to support their significance conclusions. (*Association of Irrigated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383.)
- ◆ CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. (CEQA Guidelines, § 15204, subd. (a))
- ◆ CEQA does not require perfection in an EIR but rather adequacy, completeness and a good faith effort at full disclosure while including sufficient detail to enable those who did not participate in the EIR preparation to understand and consider meaningfully the issues raised by the project. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692)
- ◆ Lead agencies should not use scientifically outdated information in assessing the significance of impacts. (*Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm.* (2001) 91 Cal.App.4th 1344.)
- ◆ Impact analysis should improve as more and better data becomes available and as scientific knowledge evolves. (*Cleveland National Forest Foundation v. San Diego Association of Governments*, Cal. Supreme Ct. S223603, 2017).

These conclusions tend to reinforce the basic tenet of CEQA that requires having substantial evidence to support all aspects of the impact analysis and related decisions. Further, analysis should produce accurate and meaningful results. This expectation is grounded in the basic purpose behind environmental regulations like CEQA that attempt to accurately identify and disclose potential impacts and to develop effective mitigation. Having accurate and reliable travel forecasts is essential for meeting these expectations so travel forecasting models should be current, regularly updated, and comply with professional standards for transparency, calibration, validation, and reasonableness. Applicable professional resources containing these standards are listed below: *NCHRP Report 765, Analytical Travel Forecasting Approaches for Project-Level Planning and Design*, Transportation Research Board, 2014

- ◆ *2017 Regional Transportation Plan Guidelines for Metropolitan Transportation Planning Organizations, CTC, 2017*

- ◆ *Travel Model Validation and Reasonableness Checking Manual, Second Edition, TMIP, FHWA, 2010*

The determination of when to run a travel demand model to analyze VMT versus more simplified tools varies by agency. Some agencies have readily available travel demand models and have determined that even relatively small projects should be analyzed using a model. Other agencies do not have easy access to a travel demand model and will be determining the need for a model run based on project characteristics. For example, in cases where land use projects are so large that they will significantly change population, employment, and travel patterns, direct analysis with the local or regional travel demand model may be more appropriate. Examples of such projects would include master planned new communities or extensive redevelopment projects.

Whether models are directly applied or used to support development of other tools, it will be important to maintain transparency and consistency about the methods applied. For example, are residential projects “responsible” for all VMT throughout the day that might be generated by their occupants or only those trips that begin or end at the home location?¹ In trip-based models, what specific calculations are made to arrive at a VMT/capita or VMT/employee measurement for a transportation analysis zone? Some travel models take inputs in the form of land use (dwelling units or square feet of nonresidential uses). What conversion factors, if any, are applied to convert to a VMT/capita or VMT/employee basis?

Each agency will need to determine which VMT components will be analyzed for CEQA purposes, how VMT is calculated, and ensure that all projects are analyzed on the same basis. Ideally, these methods are specified in guidelines for transportation impact analysis published by each agency.

Tour-Based Versus Trip-Based Analysis

Travel demand models generally take one of two approaches to modeling the demand for travel. Trip-based models estimate the aggregate demand for travel from trip producing land uses to attracting land uses at a zonal level. For example, a home-based work trip is produced in a zone with residential land use and attracted to a zone with employment land use. This production-attraction is assumed to result in a symmetrical travel pattern over the day with a trip from the home to the employment site and back again over the course of a day. There is no explicit connection to “non-home based” trips such as travel to and from the employment site for meals or errands. Nor is there any provision for modeling “trip chaining”, such as a trip from the home to a childcare center and then to the work site.

In contrast, activity-based models simulate a region’s population and model the daily activity patterns of each simulated individual along with resulting travel demand. A simulated travel tour might consist of, for example, travel from the home to childcare to work to shopping center to home. Individual segments or trips of each simulated individual are then summed later in the modeling process for analysis at a zonal level. The key advantage of using a tour-based approach is that VMT can be more comprehensively associated with the “responsible” land use. For example, a person living in an auto-dependent suburb is likely to stay in the automobile for work, shopping, social, and recreational travel throughout the day and much of that VMT may occur at some distance from the home location. Trip-based models do not have a mechanism for associating such remote VMT with the characteristics and siting of the residential land use.

Because of this more comprehensive capability, the OPR guidelines recommend using a tour-based approach whenever possible. However, the guidelines also acknowledge that where tour-based tools are

¹ The OPR guidelines suggest that it may be appropriate to focus on only home based work trips in estimating VMT impacts associated with office projects and all home-based trips when analyzing impacts associated with residential development when using a trip-based model.

not available, a trip-based analysis can serve as a reasonable proxy. In most cases, the choice of whether to use a trip-based or activity-based modeling tool to assess VMT will be driven by model availability. The important point is to use a consistent approach throughout analysis of VMT impacts, setting of thresholds, and assessing mitigations.

The video located at the following link may be helpful in understanding the difference between trip-based and tour-based analyses:

<https://www.youtube.com/watch?v=0wpPdRzROUI&list=PL0Mk6UeoMDOOLLpwZjqOq9Uzqmm8CJLJe&index=3&t=88s>

Internal-External Travel

The OPR guidelines specify that VMT analyses account for total project VMT and not just that which occurs within a jurisdiction's boundaries. This can become an issue since historically, most regional travel models truncate trips at the regional boundary and do not provide any information on the length of trips that occur beyond the boundary. Some regional travel demand models are being modified to provide additional information on trips made outside the region. For example, the travel demand models for the Western Riverside Council of Governments (WRCOG) and Sacramento Area Council of Governments (SACOG) were being refined to account for this issue at the time of preparation of this report. In other cases, jurisdictions have developed manual calculations to account for the VMT made by trips outside the region or have determined that the VMT due to trips outside the region would not have a substantial effect on estimates of VMT/capita and VMT/employee. Potential sources of information on interregional travel include the statewide travel demand model maintained by Caltrans, models in adjacent jurisdictions, the California household travel survey, MPO household travel surveys, and mobile device data/big data.

The video located at the following link may be helpful in understanding the differences between trip-based and tour-based analyses:

<https://www.youtube.com/watch?v=UHwLDU15T4U&list=PL0Mk6UeoMDOOLLpwZjqOq9Uzqmm8CJLJe&index=4&t=3s>

Regional and Local VMT Analysis Tools

A number of agencies are using travel demand models to develop VMT analysis tools for small to medium sized projects. These tools may include the following components:

- ◆ Packaged analyses of travel demand model outputs to provide a standardized means of estimating the VMT impacts of a project based on its location
- ◆ Spreadsheet models to estimate the effectiveness of various mitigation strategies based on published research
- ◆ Maps of VMT/capita and VMT/employee to allow for screening of projects located in areas generating VMT below the threshold of significance. These maps may be presented at a census tract, transportation analysis zone, or parcel level of geographic detail.

VMT analysis tools and procedures are being developed by all types of jurisdictions including cities, county level agencies, councils of government, and MPOs.

Efforts are underway to develop such tools at a number of agencies throughout the state. Some examples of VMT analysis tools that have been implemented to date include:

- ◆ City of San Jose: <https://www.sanjoseca.gov/your-government/departments-offices/transportation/planning-policies/vehicle-miles-traveled-metric>
- ◆ City of Los Angeles: <https://ladot.lacity.org/businesses/development-review#transportation-assessment>
- ◆ Western Riverside Council of Governments: <https://www.fehrandpeers.com/wrcog-sb743/>
- ◆ San Diego Association of Governments: <https://sandag.maps.arcgis.com/apps/webappviewer/index.html?id=5b4af92bc0dd4b7babbce21a7423402a>
- ◆ Sacramento Area Council of Governments: <http://sb743-sacog.opendata.arcgis.com/>
- ◆ Fresno Area Council of Governments: <http://gis.lsa-assoc.com/FCOGVMT/>
- ◆ Santa Clara Countywide Vehicle Miles Traveled Evaluation Tool: <https://vmttool.vta.org/>

When determining the most appropriate VMT analysis methodology for a particular situation, it is important to consider the limitations of the methodology. For example, travel demand models incorporate a project's effect on VMT as trips patterns from existing developments are redistributed to account for the presence of the project, while "static" tools such as VMT/capita and VMT/employee maps do not incorporate this effect. In addition, comparing VMT generation or mitigation values based on differing methodologies may lead to bias in the results. While CEQA does not require perfection in technical studies, a reasonable level of detail and use of the most accurate tool available are important considerations.

Statewide Model

The statewide travel demand model maintained by Caltrans (California Statewide Travel Demand Model or CSTDM) can be used to estimate VMT impacts of residential and employment land development projects for those areas without better data or more detailed travel forecasting models. It can also be useful when projects are located near the boundaries of regional travel models or are expected to serve significant interregional interactions. Caltrans publishes tables of population, employment, and VMT/capita and VMT/employee by transportation analysis zone (TAZ) of home and work location. At the time of preparation of this guide, information provided by the Caltrans statewide model was available at the Northern California ITE website: (<http://www.norcalite.org/sb-743-resources/>)

Mixed-Use Projects

The OPR guidelines recommend against combining land uses for VMT analysis. Instead, OPR recommends analyzing each use separately, or simply focusing analysis on the dominant use, and comparing each result to the appropriate threshold.

While OPR's guidance provides general direction on how mixed-use projects should be analyzed, lead agencies have varied in their interpretations of this guidance and they have developed various methodologies in providing more detailed guidance for mixed-use projects.

One important consideration in the evaluation mixed-use projects is the extent to which trips between land uses within a site are made internally rather than to external locations. Internal trips would generate either no VMT or smaller levels of VMT as compared to trips to external locations. Although there is no standardized source for assessing mixed use projects' internal trip capture, this free source includes several widely used options: <https://www.ite.org/technical-resources/topics/trip-and-parking-generation/other-resources/>

Redevelopment Projects

Redevelopment projects are typically handled by analyzing the proposed project, without any consideration of the land use that is being replaced. This is because the thresholds recommended by OPR (VMT/capita and VMT/employee) are efficiency metrics. The relevant question is whether new land development is occurring in a VMT-efficient manner. An exception occurs if the construction of the proposed project and the elimination of the underlying land use results in no net impact to VMT. In this case, the VMT impacts of the project would be presumed to be less than significant.

Projects That Include Both a Land Development and Transportation Component

Some projects include both a land development and a transportation component. For example, a specific plan development may include construction of a new roadway extension that would be used by project traffic as well as other travelers. OPR does not provide detailed guidance on this situation. Following are two suggestions on analyzing this situation:

- ◆ If it can be demonstrated that the combination of the land development and the transportation project would result in a net reduction of VMT, a less than significant impact could be presumed. This is based on the CEQA premise that no significant impact occurs when the project results in a new decrease in the performance measure used to determine significance.
- ◆ In order to provide a conservative conclusion, the land development and transportation components could be analyzed separately and if either component generated a significant impact, a significant impact could be declared for the entire project. Using this concept in consideration of mitigation, the VMT impacts of both components of the project would need to be fully mitigated in order to avoid a significant impact.

Other approaches to this situation could be developed on a case by case basis.

VMT SIGNIFICANCE THRESHOLDS FOR LAND DEVELOPMENT PROJECTS

In CEQA, significance thresholds are used to determine whether a project has a significant impact on the environment. If a significant impact is declared, the lead agency must consider mitigation measures that would reduce the impact to below significant levels. If mitigation measures are infeasible, the agency can declare the impact to be significant and unavoidable and issue a statement of overriding considerations so that the project can proceed to implementation.

A summary of OPR's recommended significance thresholds is provided at the beginning of this chapter. Lead agencies have the discretion to choose different significant thresholds than those recommended by OPR, but they are required to provide substantial evidence for their decisions.

VTM MITIGATION FOR LAND DEVELOPMENT PROJECTS

Mitigation of VMT generated by land development projects is a relatively new concept in the transportation impact section of CEQA documents. The related concept of transportation demand management (TDM) strategies aimed at reducing VMT and related air quality and GHG emissions has been under consideration for the past few decades. Including VMT in the transportation section changes the focus away from strategies that lead to lower emissions and emphasizes strategies that reduce the number of vehicle trips and the length of those trips.,.

The current VMT mitigation approach being implemented or considered by most agencies is to list potential VMT mitigation measures and then provide one or more reference documents that are recommended to be used in estimating the effectiveness of proposed mitigation strategies. A few agencies have provided customized tools that can estimate the effectiveness of VMT mitigation strategies that are specific to their own jurisdictions. These include the City of San Jose, the City of Los Angeles, and the San Diego Association of Governments (SANDAG). In general, it is unlikely that these tools can be transferable to agencies in other parts of California, but the SANDAG process includes a research document that may be helpful.

VMT mitigation fees, mitigation banks, and mitigation exchange programs are potential future methods for handling mitigation, but a considerable amount of effort is needed to set up these types of programs. To date, only the City of Los Angeles has established an impact fee program based on VMT reduction as the nexus. See: <https://planning.lacity.org/eir/CoastalTrans/deir/pdfs/tiafeestudy.pdf>.

Potential mitigation strategies for VMT generated by land development projects can be described in the following general categories:

- ◆ Provision of improvements to the transportation system in the vicinity of the project site that would encourage trips to be made by transit, bicycling, or walking.
- ◆ Project Site specific TDM strategies or built environment changes that would reduce the level of trips generated by the project.
- ◆ Payment of VMT mitigation fees to mitigation fees programs, mitigation banks, or mitigation exchanges. These types of programs would contribute to development of community-scale pedestrian, bicycle/scooter, and transit projects and possibly TDM actions aimed at changing travel behavior. This type of mitigation is only available if applicable programs have been set up in advance. Additional information on these types of programs is available in the following reports:
 - <https://www.law.berkeley.edu/wp-content/uploads/2018/09/Implementing-SB-743-October-2018.pdf>
 - https://www.fehrandpeers.com/wp-content/uploads/2020/04/VMT-Fees_Exchanges_Banks-White-Paper_Apr2020.pdf

The most commonly recommended source for estimating the effect of VMT reduction strategies is the California Air Pollution Control Officers Association's *Quantifying Greenhouse Gas Mitigation Measures, A Resource for Local Government to Assess Emission Reductions from Green Gas Mitigation Measures* (CAPCOA, August 2010), also known as the CAPCOA Report. This report provides a methodology to

quantify the reductions in vehicle miles traveled for many of the mitigation measures listed above. It is available at the following website: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

Three recent updates to the CAPCOA report may be helpful in determining VMT mitigation for land development projects:

- ◆ The Sacramento Association of Governments (SACOG) has provided a TDM strategies assessment as part of its SB 743 Implementation Tools project. See: https://www.sacog.org/sites/main/files/file-attachments/sacog_sb_743_implementation_tools_final_report_june_2020.pdf?1595895391
- ◆ The San Diego Association of Governments (SANDAG) has provided a Mobility Management Guidebook as part of its Mobility Management Toolbox project. See: <https://www.icommutesd.com/planners/tdm-local-governments>
- ◆ WRCOG SB 743 Implementation Pathway documentation provides a TDM strategies assessment. See: <https://www.fehrandpeers.com/wp-content/uploads/2019/12/WRCOG-SB743-Document-Package.pdf>

In addition to the documents listed above that are currently available, the Sacramento Metropolitan Air Quality Management District has undertaken a study to update the CAPCOA report. Results of the study are expected to be available in the next couple of years.

For mitigation strategies based on reductions in travel demand, analysts should be aware that it is unclear how mitigation monitoring would be applied for these mitigation strategies.

4.0 VMT ANALYSIS FOR COMMUNITY PLANS, GENERAL PLANS, AND TRANSPORTATION PLANS

The Technical Advisory recommends that 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 for land use projects. For example, a general plan's residential generated VMT under cumulative conditions would be compared to 15% below the baseline citywide or region-wide average to determine impact significance. Transportation plans are not specifically covered in the Technical Advisory, but a reasonable expansion of the transportation project threshold would be to treat any increase in VMT from induced travel as a significant impact.

Another option being considered by local and regional agencies is to determine the total VMT/capita (or service population) for the area under consideration for baseline conditions and compare it to the total VMT/capita with the proposed plan in the horizon year. If the VMT/capita is lower in the horizon year with the plan than the VMT/capita under existing conditions, the plan may have a less than significant impact on VMT. Consideration may need to be given to determining the definition of total VMT. For example, a City with a major freeway may wish to exclude through trips on the freeway in determining its total VMT.

5.0 VMT ANALYSIS FOR TRANSPORTATION PROJECTS

STATEWIDE GUIDANCE

Statewide guidance for the analysis of transportation projects after the implementation of SB 743 is based on the following:

- ◆ Revisions to CEQA Guidelines adopted in December 2018
- ◆ OPR's Technical Advisory dated December 2018.
- ◆ Caltrans guidance documents that are currently under development as of the time of preparation on this guide

This guidance provided in the CEQA Guidelines and the OPR Technical Advisory may be summarized as follows:

- ◆ The revised CEQA guidelines allow lead agencies the discretion to choose a performance measure and significance thresholds for the determination of the significant impacts of transportation projects, including the continued use of delay and LOS as a performance measure presuming doing so is supported by substantial evidence and is consistent with CEQA.
- ◆ OPR's Technical Advisory recommends the use of VMT as the appropriate performance measure for transportation projects. It also states that transit, bicycle, and pedestrian projects can generally be presumed to have less than significant VMT impacts.
- ◆ OPR's Technical Advisory states, "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." Whether this change is significant is a more complex issue. OPR suggests that agencies could establish a threshold based on CARB targets for GHG emissions and determining allowable VMT increases for individual projects.
- ◆ Even if VMT is not selected as the preferred transportation impact metric, the Technical Advisory notes that induced vehicle travel analysis of VMT effects is still required for air quality, GHG, energy, and noise impact analysis.

At the time of preparation of this guide, Caltrans had chosen VMT as the CEQA transportation metric for projects on the state highway system and was in the process of developing guidance for VMT analysis. This guidance is expected to provide the following information:

- ◆ Clarification of the type of projects requiring detailed VMT analysis.
- ◆ Guidance on how CEQA analyses will be conducted for transportation projects along the state highway system, including VMT analysis, significance thresholds, and mitigation.
- ◆ Guidance on how estimate the VMT effects of transportation projects, including consideration of induced demand.

Although Caltrans is using VMT as the performance measure for transportation impacts based on the implementation of SB 743, traffic operational analysis will still need to be conducted to provide input to decisions related to the design of projects. In addition, projects processed under federal environmental rules have traditionally included a traffic operational analysis to meet the requirements of the National Environmental Protection Act (NEPA). NEPA review is generally required if a project uses federal funding or involves federal lands. Additional safety evaluations may need to be conducted outside the CEQA process since some desirable safety improvements will not be related to CEQA significant safety impacts.

VMT ANALYSIS FOR TRANSPORTATION PROJECTS

OPR Guidance

OPR's Technical Advisory lists a number of transportation project types for which a VMT analysis is recommended and projects that may be presumed to have less than significant VMT impacts.

Project types for which a VMT analysis is recommended to determine significant VMT impacts include the following:

- ◆ 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

Project types that may be presumed to have less than significant VMT impacts 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 as 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 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

The information provided above reflects the guidance provided in the December 2018 Technical Advisory. More recent guidance is provided in Caltrans's Transportation Analysis Framework for the analysis of transportation projects (<https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-taf-fnl-a11y.pdf>). This guidance is considered to supersede the OPR Technical Advisory since OPR has stated that it intends to update its guidance to match the Caltrans guidance.

Additional Considerations

For projects that require a VMT analysis, the following methodologies are available:

- ◆ Apply a travel demand model that has been tested and verified as appropriately sensitive to induced vehicle travel effects. Run the model with and without the project to determine the net change in VMT caused by the project. For the model run with the project, revise the land use inputs if the project is expected to improve accessibility or benefit economic development.
- ◆ Use an elasticity-based analysis. For example, OPR's Technical Advisory includes a suggestion that the additional VMT caused by a roadway widening project can be estimated by multiplying the existing VMT of the roadway by the percentage increase in lane miles provided by the project. OPR's website points to a VMT calculator provided by the National Center for Sustainable Transportation that is available at the following website: <https://blinktag.com/induced-travel-calculator/>

For important limitations and appropriate application of elasticities, analysts can consult "Closing the Induced Vehicle Travel Gap Between Research and Practice", Transportation Research Record: Journal of the Transportation Research Board, Issue Number: 2653. 2017.

- ◆ Sketch planning tools developed on a case-by-case basis for individual projects.

While there are many research reports available on induced travel demand, one research report is recommended for consideration because it addresses the question of what level of travel time savings would need to occur in order to influence changes in behavior, *Effects of Increased Highway Capacity: Results of Household Travel Behavior Survey*, Richard G. Dowling and Steven B. Colman, Transportation Research Record 1493, Transportation Research Board, 1995, which can be found at the following link: <http://onlinepubs.trb.org/Onlinepubs/trr/1995/1493/1493-017.pdf>

It should be noted that not all roadway projects will increase VMT. Some projects may reduce VMT if they provide a more direct route for trips that are currently traveling long distances to get to their destinations.

VMT SIGNIFICANCE THRESHOLDS FOR TRANSPORTATION PROJECTS

OPR does not provide a recommendation for a significance threshold for transportation projects and leaves that determination to individual agencies. Following are a few potential thresholds for consideration.

- ◆ OPR suggests that agencies could establish a threshold based on regional CARB targets for GHG emissions and determining allowable VMT increases for individual projects that would allow for meeting CARB targets. The information to make this calculation for an individual jurisdiction is not currently available and would have to be developed by the lead agency. Further, the allowable

VMT will change over time as background conditions change so the lead agency will have to monitor VMT conditions and make adjustments to the threshold accordingly.

- ◆ Some agencies are setting a threshold that any net increase in VMT due to a transportation project represents a significant impact.
- ◆ Some agencies are setting a threshold based on a comparison to the General Plan. Using this threshold, transportation projects that would implement a project already included in the General Plan would have a less than significant impact. Projects that replace a project included in the General Plan and would generate less VMT than the replaced project would also have a less than significant impact. Projects that replace a project included in the General Plan and would generate more VMT than the replaced project would have significant impact. Projects not included in the General Plan would have a significant impact if they cause a net increase in VMT.

VMT MITIGATION FOR TRANSPORTATION PROJECTS

OPR's Technical Advisory suggests the following potential mitigation measures for transportation projects with significant VMT impacts:

- ◆ 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 (ITS) strategies to improve passenger throughput on existing lanes. In order for ITS to be used as a mitigation strategy, it would need to be demonstrated that passenger throughput could be increased without causing a corresponding increase in vehicle travel.

6.0 LOS-BASED TRAFFIC ANALYSES AFTER IMPLEMENTATION OF SB 743

Although SB 743 places an emphasis on VMT for CEQA transportation studies conducted after SB 743, transportation analyses based on LOS and delay may still be conducted for purposes other than CEQA. Typical non-CEQA applications of LOS-based transportation studies include the following:

- ◆ Analysis of the effects of proposed land development and transportation projects on the existing or proposed transportation system to determine recommended roadway improvements that should be built reduce the effect of traffic increases caused by the project. It is important to note that traffic increases caused by a project will no longer be significant impacts under CEQA.
- ◆ Analysis of roadway improvement projects to determine the appropriate facilities to be provided to meet future transportation demand.
- ◆ Analysis of the level of roadway improvements that should be provided in General Plan and Community Plan updates.
- ◆ Delay and LOS analyses needed for environmental studies conducted under the National Environmental Protection Act (NEPA).

In response to the implementation of SB 743, many agencies are updating their transportation impact study guidelines, either to remove references to CEQA impacts and mitigation or to make other changes consistent with the change to VMT as a CEQA performance measure.

7.0 CALTRANS ROLE IN IMPLEMENTING SB 743

Caltrans' primary roles in the implementation of SB 743 include the following:

- ◆ For transportation improvements on the state highway system, Caltrans will determine the methodologies and thresholds for conducting VMT analyses and methodologies. The documents that will provide this guidance were under development at the time of preparation of this guide. They are known as the Transportation Analysis Framework or TAF (<https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-taf-fnl-a11y.pdf>) and the Transportation Analysis under CEQA or TAC (<https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf>).
- ◆ For land development projects conducted by local agencies that are considered to have a substantial VMT effect on the state highway system, Caltrans will review and provide comments on the VMT analyses to ensure consistency with OPR's Technical Advisory. Guidance on this process can be found in the VMT-Focused Transportation Impact Study Guide (TISG) available on the Caltrans SB 743 website available through the following link: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-12-22-updated-interim-ldigr-safety-review-guidance-a11y.pdf>
- ◆ For land development projects conducted by local agencies that are considered to have traffic operational and safety effects on the state highway system, Caltrans will conduct a safety review. At the time of this report, current guidance on this process was available in the December 2020 [Updated Interim LD-IGR Safety Review Guidance](https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-12-22-updated-interim-ldigr-safety-review-guidance-a11y.pdf) available on the Caltrans SB 743 website available through the following link: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-12-22-updated-interim-ldigr-safety-review-guidance-a11y.pdf>. This guidance is relatively new and could easily be subject to change as the process moves forward.

In addition, Caltrans has provided guidance on the schedule for projects to switch to the new VMT metric to implement SB 743. This guidance can be found at on the Caltrans SB 743 website available through the following link: <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-04-13-implementation-timing-memo-fnl-a11y.pdf>

Future updates on all of the above can be found at the Caltrans SB 743 website: <https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/sb-743>

8.0 IMPLEMENTING SB 743 IN SUBURBAN AND RURAL AREAS

Many analysts who have conducted VMT analyses in suburban and rural areas have experienced challenges that are different from conducting VMT analyses in urban areas. This chapter provides a brief overview of the challenges seen in suburban and rural areas as well as information on how these challenges can be overcome.

On an overall basis, one source of information regarding VMT analysis in suburban and rural areas is VMT analysis guidelines that have been prepared for regions or agencies whose areas include suburban or rural areas. This guide does not include a list of available guidelines and any attempt to produce such a list would soon become out of date.

Some challenges include the following:

- ◆ Lack of available regional travel demand models or other tools that can be used for VMT analysis
- ◆ VMT-related impacts that cannot be mitigated through feasible mitigation measures
- ◆ Lack of guidance regarding how to assign and monitor mitigation measures

Some of the strategies that have been used to overcome these challenges include the following:

- ◆ Use of the California Statewide Travel Demand Model (CSTDm) for VMT analysis. VMT averages for VMT/capita and VMT/employee have been provided by traffic analysis zone for the entire state. Information on the CSTDm VMT data can be found in the SB 743 area of the Northern California ITE website (<http://www.norcalite.org/sb-743-resources/>).
- ◆ Use of methodologies and significance thresholds that are different from those recommended in the OPR Technical advisory that may be more suited to suburban and rural areas. Some of these are noted below. As with any decisions made regarding VMT analysis for CEQA documents, analysts should be prepared to provide substantial evidence for their decisions regarding the use of methodologies and significance thresholds.
- ◆ Use of a different minimum project size for VMT analysis. Although the OPR Technical Advisory recommends 100 ADT as the minimum project size for VMT analysis, some agencies have used higher values, particularly in suburban and rural areas.
- ◆ Use of a different threshold for significance for land development projects than is recommended in the OPR Technical Advisory. For example, some agencies have used average regional or citywide VMT/capita or VMT/employee rather than 15% below average as the significance threshold.
- ◆ Programmatic analysis of VMT. For example, some cities have conducted city-wide analyses of the VMT considering all land development and transportation projects expected to be built in the General Plan and then have provided mitigation measures as necessary to mitigate VMT impacts to a less than significant level. If done correctly, this may lead to a situation where individual projects that are consistent with the programmatic VMT analysis may be processed without conducting an individual VMT analysis on a project-by-project basis.

- ◆ Qualitative VMT analysis. Use of qualitative VMT analysis for projects is supported by Section 15064.3 of the CEQA Guidelines (Association of Environmental Professionals, 2021) when quantitative methods are not available. The guidance includes the following statement: “If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project’s vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc.”
- ◆ Mitigation of VMT impacts through the use of improvement projects that support travel by transit, bicycling, and walking rather than travel demand management strategies. This avoids the need for mitigation monitoring programs that may be difficult to manage for agencies in suburban and rural areas.

9.0 IMPLEMENTATION STEPS FOR LEAD AGENCIES

In preparing for the implementation of SB 743, there are a number of steps that lead agencies may want to consider. These include the following:

- ◆ Assembly of an implementation team, including staff members of key departments who will be responsible for implementation including making necessary decisions related to SB 743 (typically, these include departments of public works, transportation, planning or community development);
- ◆ Discuss SB 743 implementation with attorneys and decision-makers to agree on legal and political considerations for adoption;
- ◆ Determine which agency policies need to be updated and make updates;
- ◆ Identify process for community engagement and outreach;
- ◆ Establish screening criteria thresholds; and
- ◆ Develop guidelines.

In addition to the general guidance provided above, the Metropolitan Transportation Commission (MTC) in the San Francisco Bay Area has provided the following guidance on implementation steps:
https://mtc.ca.gov/sites/default/files/SB%20743%20Key%20Implementation%20Steps_0.pdf

An additional source of guidance has been prepared by the Santa Clara Valley Transportation Authority:
https://www.vta.org/sites/default/files/2019-08/LOS-to-VMT%20Local%20Agencies%20Fact%20Sheet_v3_8-16-2019.pdf

10.0 RESOURCES AND WEBSITES

This chapter provides a brief summary of information from agencies that have been active in SB 743 implementation as of the time of preparation of this guide.

STATEWIDE GUIDANCE

Following are statewide websites that provide statewide guidance on SB 743:

- ◆ OPR: <http://opr.ca.gov/ceqa/updates/sb-743/>
- ◆ Caltrans: <https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/sb-743>
- ◆ Guidance on AB 32 (Global Warming Solutions Act of 2006), from CARB: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB32

EARLY ADOPTERS OF SB 743

Following is a list of agencies that are early adopters of SB 743 along with their SB 743 websites:

- ◆ City of Pasadena: <https://www.cityofpasadena.net/transportation/complete-streets/transportation-impact-review/>
- ◆ City of San Francisco: <https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update>
- ◆ City of Oakland: <https://www.oaklandca.gov/resources/background-reports-for-modernizing-transportation-impact-review>
- ◆ City of San Jose: <https://www.sanjoseca.gov/your-government/departments-offices/transportation/planning-policies/vehicle-miles-traveled-metric>
- ◆ City of Elk Grove: <http://www.elkgrovecity.org/cms/one.aspx?pageId=2307482>
- ◆ City of Los Angeles: <https://ladot.lacity.org/businesses/development-review#transportation-assessment>

REGIONAL SB 743 GUIDELINES

Following are links to two regions that have developed regional SB 743 guidelines:

- ◆ Western Riverside Council of Governments: <https://www.fehrandpeers.com/wrcog-sb743/>
- ◆ San Diego Region (Institute of Transportation Engineers): <https://sandiegoite.org/tcm-task-force>
- ◆ Fresno Council of Governments: <https://www.fresnocog.org/project/sb743-regional-guidelines-development/>

Although there are currently no regional guidelines prepared for the San Francisco Bay Area, the Metropolitan Transportation Commission has an SB 743 website that provides regional information: <https://mtc.ca.gov/our-work/plans-projects/climate-change-programs/sb-743-shift-vmt>

APPENDIX A

SB 743 FACT SHEET

SB 743: THE TRANSITION FROM LEVEL OF SERVICE TO VEHICLE MILES TRAVELED FOR CEQA TRANSPORTATION STUDIES

SB 743 was passed by the legislature and signed into law by the Governor in the fall of 2013. It will take effect throughout California on July 1, 2020. This legislation led to a change in the way that transportation impacts are measured under the California Environmental Quality Act (CEQA). Prior to SB 743, CEQA transportation studies were based on roadway and intersection operations expressed in terms of level of service (LOS) and delay. After SB 743, CEQA transportation studies will be based on vehicle miles traveled (VMT). This change was made to bring CEQA transportation studies into better alignment with statewide initiatives to reduce greenhouse gases, reduce suburban sprawl, encourage infill developments, and promote the implementation of multimodal transportation networks.

The implications of SB 743 for land development projects include the following:

- ◆ Projects near city centers and with opportunities for travel by walking, bicycling, and transit will typically generate lower levels of VMT and will generally not result in significant impacts.
- ◆ Projects in suburban and rural areas away from city centers will generate higher levels of VMT that could result in significant impacts.
- ◆ Rather than using roadway improvements to mitigate impacts, mitigation is likely to occur due to implementation of pedestrian, bicycle, and transit improvements as well as trip reduction measures (for example ridesharing and telecommuting).

SB 743 also applies to transportation projects. For pedestrian, bicycle, and transit projects, SB 743 will generally lead to fewer CEQA impacts. Roadway projects will tend to have an increased level of impacts as they tend to increase VMT.

Lead agencies will continue to be able to analyze LOS and delay after implementation of SB 743 and local jurisdictions will continue to be able to require land development projects to provide roadway improvements. However, any LOS issues will not be CEQA impacts and roadway improvements provided to resolve LOS issues will not be mitigation.