



City of Meniffee Traffic Impact Analysis Guidelines for Vehicle Miles Traveled

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FEHR  PEERS

For the:

City of Meniffee

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Introduction

Background

Senate Bill 743 (SB 743), signed by the Governor in 2013, is changing the way transportation impacts are identified. Specifically, the legislation has directed the Office of Planning and Research (OPR) to look at different metrics for identifying transportation as a California Environmental Quality Act (CEQA) impact. The Final OPR guidelines were released in December 2018 and identified vehicle miles of travel (VMT) as the preferred metric moving forward. The Natural Resources Agency completed the rule making process to modify the CEQA guidelines in December of 2018.

In anticipation of the change to VMT, the Western Riverside Council of Governments (WRCOG) completed a SB 743 Implementation Pathway Study in 2019 to assist their member organizations with answering important implementation questions about the methodology, thresholds, and mitigation approaches for VMT impact analysis. The City of Menifee is one of several WRCOG member organizations. The WRCOG study can be accessed on-line (<http://www.fehrandpeers.com/wrcog-sb743/>) and includes the following main components.

- Thresholds Evaluation Memorandum – Potential thresholds WRCOG agencies could consider when establishing thresholds of significance for VMT assessment
- Methodologies and Calculations Memorandum – Types of VMT that could be considered for impact assessment
- Tools Evaluation Memorandum – Types of tools that could be used to estimate VMT and the pros/cons associated with each tool
- Mitigation Memorandum – Types of mitigation that can be considered for VMT mitigation
- VMT Screening Tool – An on-line GIS tool that can be used for VMT screening

All WRCOG agencies can utilize the information produced through the Implementation Pathway Study to adopt their own methodology and significance thresholds for use in CEQA compliance. CEQA Guidelines Section 15064.7(b) encourages local agencies to adopt their own significance thresholds, which is key part of the SB 743 implementation process.

The City of Menifee built on the work WRCOG started in order to determine appropriate thresholds of significance, analysis methodologies, and mitigation strategies. The City of Menifee's SB 743 Implementation Study applied the latest information available in the context specific for the City of Menifee. The study included the following components:

- Thresholds Assessment Memorandum – Updated documentation of available thresholds of significance for VMT assessment;
- VMT Impact Analysis Methodologies Memorandum – Updated documentation on potential project screening and analysis methodology for land use projects, land use plans, and transportation projects;
- VMT Impact Analysis Case Studies Memorandum – Applications of available thresholds and methodologies on real Menifee projects to provide context to decision makers; and

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- Mitigation and TDM Strategy Assessment Memorandum – Updated discussion of available mitigation and TDM strategies specific to the City of Meniffee, including potential VMT exchanges and banks

CEQA Changes

A key element of SB 743 is the elimination of auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts. The intent of this change is to assist in balancing 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.

Is Level of Service (LOS) Still Important?

The City of Meniffee has adopted vehicle Level Of Service (LOS) policies that set standards for which City infrastructure will strive to maintain. These policies are contained in the City's General Plan and therefore apply to discretionary approvals of new land use and transportation projects. For LOS traffic study requirements, refer to the City's latest adopted LOS Traffic Study Guidelines.

Note to TIA Preparers

Changes to requirements for traffic analysis under CEQA are anticipated as CEQA law changes, the State CEQA Guidelines are updated and/or legal opinions on traffic analysis under CEQA are published. As such, The City of Meniffee will periodically review these Guidelines for applicability. Consultants should contact the City to ensure that they are applying the most recent guidelines for project impact assessment.

The purpose of these TIA Guidelines is to provide general instructions for analyzing the potential transportation impacts of proposed development projects and land use changes (e.g., general plan amendments and changes of zone). These Guidelines present the recommended format and methodology that should generally be utilized in the preparation of TIAs. These Guidelines utilize latest practices and comply with CEQA requirements prompted by Senate Bill 743 (SB 743). These recommendations are general guidelines and the City of Meniffee has the discretion to modify the TIA requirements based on the unique characteristics of a particular project.

To avoid unnecessary delays or revisions and to streamline the TIA preparation and review process, the City requires a Project Scoping Form to be submitted for approval prior to the preparation and submittal of a draft TIA. The Project Scoping Form (Attachment A of these Guidelines) includes the process for VMT assessment.

These TIA Guidelines for assessing VMT under CEQA comply with OPR's CEQA Guidelines and build on WRCOG's Implementation Pathway Study and the City of Meniffee's SB 743 Implementation Study.

Need for Transportation Impact Analysis

The need for a TIA related to VMT will stem from CEQA compliance. Discretionary actions of public agencies all trigger CEQA review, but whether a TIA is required depends on the findings of the City of Meniffee initial study and the potential for the project to cause a significant impact.

Need to Complete VMT as part of the TIA Analysis

The following activities generally will not require a TIA that includes VMT. This presumption is based on the substantial evidence provided in the OPR Technical Advisory supporting SB 743 implementation or is related to projects that are local-serving which, by definition, would decrease the number of trips or the distance those trips travel to access the development (and are VMT-reducing projects). Applicants should consult with the City's Traffic Engineering Department if a project does not fall within the land uses listed but is anticipated to decrease VMT.

- Projects located in a Transit Priority Areas (TPA) (as defined later in this guidance)
- Projects located in a low-VMT generating area (as defined later in this guidance)
- K-12 schools
- Local parks
- Day care centers
- Local-serving retail uses less than 50,000 square feet, including:
 - Gas stations
 - Banks
 - Restaurants
 - Shopping Center
- Local-serving hotels (e.g. non-destination hotels)
- Student housing projects on or adjacent to college campuses
- Local-serving assembly uses (places of worship, community organizations)
- Community institutions (Public libraries, fire stations, local government)
- Local-serving community colleges that are consistent with the assumptions noted in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)
- Affordable or supportive housing
- Assisted living facilities
- Senior housing (as defined by the U.S. Department of Housing and Urban Development (HUD))
- Projects generating less than 110 daily vehicle trips

Coordination with the City of Meniffee

Prior to conducting technical studies, the applicant shall coordinate with the City for compliance with the City's latest CEQA guidelines. A TIA "Project Scoping Form", attached, shall be prepared by the city's consultant prior to the preparation of a draft TIA. The Project Scoping Form provides for agreement of the following key points before initiating the TIA.

- Project trip generation
- Presentation of screening criteria used to screen the project from VMT assessment or proposed methodology/metrics that will be applied to estimate VMT
- Use of other approved projects for background traffic, traffic growth assumptions, or integration with the Riverside County Model (RIVCOM)¹
- Coordination with adjacent agencies
- For projects within one mile of a state highway, or any project that may add traffic on the state highway, the Engineer shall also coordinate with Caltrans

¹ RIVCOM was released in Summer of 2021 and should be utilized for all forecasting activity. Please coordinate with WRCOG to ensure that the prepare utilizes the most recent travel demand forecasting model.

CEQA Assessment - VMT Analysis

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A key element of SB 743, signed in 2013, is the elimination of automobile delay and LOS as the sole basis of determining CEQA impacts. The most recent CEQA guidelines, released in December 2018, recommend VMT as the most appropriate measure of project transportation impacts. However, SB 743 does not prevent a city or county from continuing to analyze delay or LOS as part of other plans (i.e., the general plan), studies, or ongoing network monitoring.

The following recommendations assist in determining VMT impact thresholds and mitigation requirements for various land use projects' TIAs.

Analysis Methodology

For purposes of SB 743 compliance, a VMT analysis should be conducted for land use projects as deemed necessary by the Traffic Division and would apply to projects that have the potential to increase the average VMT per service population (e.g. population plus employment) compared to the WRCOG region or the lead agency threshold. Normalizing VMT per service population provides a transportation efficiency metric for the analysis. Using this efficiency metric allows the user to compare the project to the remainder of an established geographic area (city, county, or region) for purposes of identifying transportation impacts.

Project Screening

Below, are three options for screening projects from project-level assessment:

Step 1: Transit Priority Area (TPA) Screening

Projects located within a TPA² may be presumed to have a less than significant impact absent substantial evidence to the contrary. This presumption may **NOT** be appropriate if the project:

1. Has a Floor Area Ratio (FAR) of less than 0.75;
2. 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);
3. Is inconsistent with the applicable Sustainable Communities Strategy (as determined by

² A TPA is defined as a half mile area around an existing major transit stop or an existing stop along a high quality transit corridor per the definitions below. As of January 1, 2022, no Transit Priority Areas exist in the City of Menifee.

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.

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.

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- the City of Meniffee, with input from the Metropolitan Planning Organization); or
4. Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Step 2: Low VMT Area Screening

Residential and office projects located within a low VMT-generating area are presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use land use projects may qualify for the use of screening if there is a reasonable expectation that the project will generate VMT per service population that is similar to the existing land uses in the low VMT area.

For this screening in the City of Meniffee, the RIVCOM travel forecasting model was used to measure VMT performance for individual jurisdictions and for individual traffic analysis zones (TAZs). TAZs are geographic polygons similar to Census block groups used to represent areas of homogenous travel behavior. Total daily VMT per service population (population plus employment) was estimated for each TAZ. This presumption may not be appropriate if the project land uses would alter the existing built environment in such a way as to increase the rate or length of vehicle trips.

To identify if the project is in a low VMT-generating area, the analyst may review the WRCOG screening tool and apply the appropriate threshold (identified later in this chapter) within the tool. Additionally, as noted above, the analyst must identify if the project is consistent with the existing General Plan land use within that TAZ and use professional judgement that there is nothing unique about the project that would otherwise be misrepresented utilizing the data from the travel demand model.

The analyst shall coordinate with the City or WRCOG to request access to the latest version of the [WRCOG online VMT screening tool](#).

Step 3: Project Type Screening

Local-serving projects, including retail projects less than 50,000 square feet, are presumed to have a less than significant impact absent substantial evidence to the contrary. Local serving retail generally improves the convenience of shopping close to home and has the effect of reducing vehicle travel.

In addition to local serving retail, the following uses can also be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature:

- Local-serving K-12 schools
- Local parks
- Day care centers
- Local-serving retail uses less than 50,000 square feet, including:

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- Gas stations
- Banks
- Restaurants
- Shopping Center
- Local-serving hotels (e.g. non-destination hotels)
- Student housing projects on or adjacent to college campuses
- Local-serving assembly uses (places of worship, community organizations)
- Community institutions (Public libraries, fire stations, local government)
- Local-serving community colleges that are consistent with the assumptions noted in the RTP/SCS
- Affordable or supportive housing
- Assisted living facilities
- Senior housing as defined by the U.S. Department of Housing and Urban Development (HUD)
- Projects generating less than 110 daily vehicle trips³
 - This generally corresponds to the following “typical” development potentials:
 - 11 single family housing units
 - 16 multi-family, condominiums, or townhouse housing units
 - 10,000 sq. ft. of office
 - 15,000 sq. ft. of light industrial⁴
 - 63,000 sq. ft. of warehousing⁴
 - 79,000 sq. ft. of high cube transload and short-term storage warehouse⁴

³ This threshold ties directly to the OPR technical advisory and notes that 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.

⁴ Threshold may be higher depending on the tenant and the use of the site. This number was estimated using rates from ITE’s Trip Generation Manual.

VMT Assessment for Non-Screened Development

Projects not screened through the steps above should complete VMT analysis and forecasting with RIVCOM to determine if they have a significant VMT impact. This analysis should include 'project generated VMT' and 'project effect on VMT' estimates for the project transportation analysis zone (TAZ or TAZs) under the following scenarios:

- Baseline conditions - This data is already available in the web screening map.
- Baseline plus project for the project - The project land use would be added to the project TAZ or a separate TAZ would be created to contain the project land uses. A full base year model run would be performed and VMT changes would be isolated for the project TAZ and across the full model network. The model output must include reasonableness checks of the production and attraction balancing to ensure the project effect is accurately captured. If this scenario results in a less-than-significant impact, then additional cumulative scenario analysis may not be required (more information about this outcome can be found in the Thresholds Evaluation discussion later in this chapter).
- Cumulative no project - This data is available from WRCOG.
- Cumulative plus project - The project land use would either be added to the project TAZ or a separate TAZ would be created to contain the project land uses. The addition of project land uses should be accompanied by a reallocation of a similar amount of land use from other TAZs; especially if the proposed project is significant in size such that it would change other future developments. Land use projects will generally not change the cumulative no project control totals for population and employment growth. Instead, they will influence the land use supply through changes in general plan land use designations and zoning. If project land uses are simply added to the cumulative no project scenario, then the analysis should reflect this limitation in the methodology and acknowledge that the analysis may overestimate the project's effect on VMT.

The model output should include total VMT, which includes all vehicle trips and trip purposes, and VMT per service population (population plus employment). Total VMT (by speed bin) is needed as an input for air quality, greenhouse gas (GHG), and energy impact analysis while total VMT per service population is recommended for transportation impact analysis in City of Meniffee. In some situations, as approved by the City of Meniffee City Engineer, it may be appropriate to isolate VMT by trip purpose; in those cases, home-based VMT per resident or home-based-work VMT per employee should be estimated.

Both "plus project" scenarios noted above will summarize two types of VMT: (1) project generated VMT per service population and comparing it back to the appropriate benchmark noted in the thresholds of significance, and (2) the project effect on VMT, comparing how the project changes VMT on the network looking at Citywide VMT per service population and comparing it to the no project condition.

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Project-generated VMT shall be extracted from RIVCOM using the origin-destination trip matrix and shall multiply that matrix by the final assignment skims. The project-effect on VMT shall be estimated using a City of Menifee boundary and extracting the total link-level VMT for both the no project and with project condition. RIVCOM has a VMT Post-processing Tool that can provide project-generated VMT and project-effect on VMT for user-defined area. A detailed description of this process is attached to these guidelines as Attachment B.

VMT Assessment for Routine Projects

WRCOG provides a VMT Calculator as an alternative function to mimic the results of RIVCOM for VMT analysis on routine projects. Routine projects are simple in nature that are similar to other standard land uses in the City and model. The calculator can estimate the project VMT based on the project type, size, location, and average travel distance to the project site. The results can provide an expectation of the project VMT as compared to the adopted threshold to estimate if significant impact will occur without the need to run RIVCOM.

The VMT Calculator will not replace a full VMT assessment utilizing RIVCOM but may be sufficient to estimate VMT impact for routine projects with similar land use types in the project TAZ. The VMT Calculator can be used to determine if the proposed project is similar in nature to the uses within the project TAZ. If the proposed project land use differs from the assumed land use in a project TAZ, it is not appropriate to assume that a project will result in similar VMT or trip length characteristics, and a full model run would be recommended.

Please note that the VMT calculator uses data from RIVCOM which account for partial trips that may be exiting the model area that have high trip lengths appended to them. As such, when running projects in the VMT Calculator, there is the possibility for higher than expected VMT to be estimated due to these appended trip lengths associated with these partial trips. As such, users should exercise professional judgement and care when using results from the VMT calculator and ensure that the results are reasonable.

The analyst shall coordinate with the City or WRCOG to request the latest version of the [VMT Calculator](#).

CEQA VMT Impact Thresholds

The City of Meniffee selected VMT thresholds of significance based on guidance/substantial evidence prepared in the WRCOG and City of Meniffee Implementation Studies. The thresholds of significance below were adopted June 3, 2020 in Resolution No. 20-920.

VMT Impacts

A project would result in a significant project-generated VMT impact if either of the following conditions are satisfied:

1. The baseline project-generated VMT per service population exceeds the County of Riverside General Plan Buildout VMT per service population, or
2. The cumulative project-generated VMT per service population exceeds the County of Riverside General Plan Buildout VMT per service population

Utilizing the Origin Destination OD/VMT per service population methodology for County General Plan Buildout and utilizing RIVCOM (November 2021), the County VMT/service population threshold is 33.6⁵.

The project's effect on VMT would be considered significant if it resulted in either of the following conditions to be satisfied:

1. The baseline link-level Citywide boundary VMT per service population to increase under the plus project condition compared to the no project condition, or
2. The cumulative link-level Citywide boundary VMT per service population to increase under the plus project condition compared to the no project condition.

Please note that the cumulative no project shall reflect the adopted Regional Transportation Plan/Sustainable Communities Strategy; as such, if a project is consistent with the regional RTP/SCS, then the cumulative impacts shall be considered less than significant subject to consideration of other substantial evidence.

At the discretion of the City, it may be appropriate in some cases to extract the Project-generated VMT using the Production-Attraction trip matrix, which specifies VMT by trip purpose (such as home-based production (residential) VMT or home-based-work attraction (commute) VMT). This may be appropriate when a project is entirely composed of a single use, and there is a need to isolate the home-based or commute VMT. Some example projects are:

- Residential Projects: If a project is proposed to be entirely residential uses, daily home-based production VMT per capita can be estimated to determine the significance of impact.

⁵ The listed numerical threshold was extracted from RIVCOM in fall 2021. As the travel demand model is updated regularly, please verify the latest information with the City and/or WRCOG.

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- Office Projects: If a project is proposed to be entirely office uses, daily home-based-work attraction VMT per employee can be estimated to determine the significance of impact.
- Retail Projects: If a project is proposed to be entirely retail uses, daily home-based-work attraction VMT per employee can be estimated to determine the significance of impact.
- Industrial Projects: For industrial project which will cause long-haul trips that the City does not control, the City can choose to use daily home-based work attraction VMT per employee estimates to determine the significance of impact.
- Unique Land Uses: Some projects will not fit into the above categories. In such cases, a customized approach may be required to estimate daily VMT. The methodology and thresholds to be used should be developed in consultation with and approved by City Planning and Traffic Engineering staff at the outset of the study.

The City should evaluate the appropriate methodology based on the project land use types and context.

VMT Mitigation Measures

To mitigate VMT impacts, the following choices are available to the applicant:

1. Modify the project's built environment characteristics to reduce VMT generated by the project
2. Implement transportation Demand Management (TDM) measures to reduce VMT generated by the project
3. Participate in a VMT fee program and/or VMT mitigation exchange/banking program (if they are available) to reduce VMT from the project or other land uses to achieve acceptable levels

As part of the WRCOG Implementation Pathway Study and Menifee's SB 743 Implementation Project, key TDM measures that are appropriate to the region were identified and can be accessed as Attachment of these Guidelines. Measures appropriate for Menifee are summarized in Attachment B of the City of Menifee SB 743 Implementation Mitigation and TDM Strategy Assessment Memorandum. Evaluation of VMT reductions should be evaluated using state-of-the-practice methodologies recognizing that many of the TDM strategies are dependent on building tenant performance over time. As such, actual VMT reduction cannot be reliably predicted and monitoring may be necessary to gauge performance related to mitigation expectations.

CEQA Assessment - Active Transportation and Public Transit Analysis

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Potential impacts to public transit, pedestrian facilities and travel, and bicycle facilities and travel can be evaluated using the following criteria.

- A significant impact occurs if the project conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decreases the performance or safety of such facilities.

Therefore, the TIA should include analysis of a project to examine if it is inconsistent with adopted policies, plans, or programs regarding active transportation or public transit facilities, or otherwise decreases the performance or safety of such facilities and make a determination as to whether it has the potential to conflict with existing or proposed facilities supporting these travel modes.

Transportation Impact Study Format

Prior to the beginning of any study, the project proponent shall coordinate with City Planning and Traffic Engineering staff. A tentative schedule for reviewing and processing the TIA will be developed by the City. Initial discussions shall also identify any key issues along with the development scope and boundaries of the study area. The proponent will submit a detailed site plan at this meeting. City staff will provide input into the following specific areas of the analysis:

- Defining the general study area boundaries
- Project access
- Approved development in the vicinity of the project for cumulative analysis
- Appropriate Trip Generation rates for the project

The project proponent shall coordinate and discuss the details and technical aspects of the analysis with Traffic Engineering staff prior to a formal submittal. Topics of discussion will include:

- Potential for project level VMT screening
- VMT Analysis assumptions
- Inclusion of a Transportation Demand Management Plan (TDM) to mitigate traffic impacts and promote the use of alternate modes of transportation
- Any specific issues that require special consideration such as pedestrian circulation, access, parking and on-site circulation

The content and level of analysis necessary to evaluate a project will vary and are dependent on the scope of the development proposal and location within the City.

VMT Assessment Requirements

Present the Project VMT per service population (population and employment) for all analysis scenarios and the Project effect on VMT for all analysis scenarios. Data should be presented in tabular format. If the project meets the criteria for screening from project-generated VMT analysis,



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this should be documented. All VMT impacts should be identified in accordance with the VMT Impact Thresholds described above. Proposed VMT mitigation measures should be identified.

Attachments

Attachment A: Project Scoping Form

This scoping form shall be completed and submitted to the City of Meniffee to assist in identifying infrastructure improvements that may be required to support traffic from the proposed project.

Project Identification:

Case Number:	
Related Cases:	
SP No.	
EIR No.	
GPA No.	
CZ No.	
Project Name:	
Project Address:	
Project Opening Year:	
Project Description:	

	Consultant:	Developer:
Name:		
Address:		
Telephone:		
Fax/Email:		

Trip Generation Information:

Trip Generation Data Source: _____

Current General Plan Land Use:

Proposed General Plan Land Use:

Current Zoning:

Proposed Zoning:

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	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips						
PM Trips						

Trip Internalization: Yes No (_____ % Trip Discount)

Pass-By Allowance: Yes No (_____ % Trip Discount)

Potential Screening Checks

Is your project screened from specific analyses (see Page 5 of the guidelines related to LOS assessment).

Is the project screened from VMT assessment? Yes No

VMT screening justification (see Pages 10-12 of the guidelines): _____

VMT Analysis Scoping

For projects that are not screened, identify the following:

- Travel Demand Forecasting Model Used _____
- Attach WRCOG Screening VMT Assessment output or describe why it is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)

Signatures

TIA Preparer: _____ City (Approved by): _____

Attachment B: Detailed VMT Forecasting Information

RIVCOM is a trip-based model with a 2018 base year and 2045 future year and is consistent with the 2020 Southern California Association of Governments (SCAG) Regional Transportation Plan and Sustainable Communities Strategies (RTP/SCS) land use and roadway network. Additional modifications were applied to RIVCOM to make it more sensitive to Riverside County projects and applications, such as VMT estimation. RIVCOM utilizes a unique TAZ boundary shape file (with more detail in Riverside County) which nests within City Boundaries. The model includes most of San Diego County, Orange County, the Valley Region of San Bernardino County, and appends trip length information to all model external stations to not truncate VMT headed to those areas.

RIVCOM generates daily person trip-ends for each TAZ across various trip purposes (Home-Based Work (HBW), Home-Based Other (HBO), and Non-Home Based (NHB) based on population, household, and employment variables. Production and attraction trip-ends are separately calculated for each zone, and, generally, production trip-ends are generated by residential land uses and attraction trip-ends are generated by non-residential land uses. During the final assignment loop of a model run, the total trips between each TAZ are converted to the origin-destination trip matrix, which are used to estimate total VMT. A challenge using this approach to estimate VMT is production and attraction trip-ends are not distinguishable after the PA to OD conversion process and trip purposes are not maintained after the mode choice step.

Origin-Destination VMT Forecasting Instructions

RIVCOM was developed with a VMT Post-processing Tool to estimate TAZ-based VMT for a user-defined area or entire modeling region. The TAZ-based VMT metrics are consistent with CEQA expectations for SB 743 applications. This approach calculates total Origin/Destination (OD) VMT using standard RIVCOM model output files. The OD method for calculating total VMT includes all vehicle trips that start in a specific traffic analysis zone, and all vehicle trips that end in a specific traffic analysis zone. The vehicle trip tables used for calculating OD VMT also includes truck trips and external trips. The major steps of this approach are listed as follows:

- Re-skim final loaded congested networks and adjust the external skim for each mode and time period to account for truncated trips
- Multiply appropriate distance skim matrices by OD trip matrices to estimate VMT by time period
- Sum matrices by time period and mode to calculate daily automobile VMT
- Calculate automobile VMT for individual TAZs

The VMT Post-processing Tool can report VMT for passenger vehicles and trucks respectively.

Link-based VMT Forecasting Instructions

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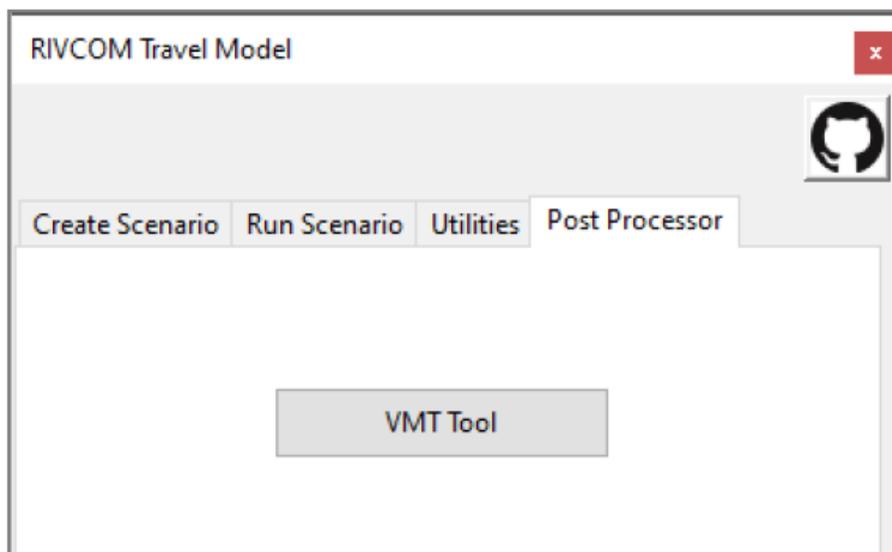
Link-based VMT, also called boundary VMT, is the sum of all weekday VMT on a roadway network within a designated boundary. Link-based VMT includes all trips, including those that do not begin or end in the designated boundary. This is the only VMT method that captures the 'project effect on VMT' including how projects may influence VMT generation of nearby zones as well as cut-through and/or displaced traffic for land use projects. The RIVCOM Post-processing Tool also has the capability to report the link-based VMT for a user defined area or for the entire modeling region by default. The following variables are reported for link-based VMT:

- Vehicle VMT by period and facility type
- Truck VMT by period and facility type
- Total VMT by period and facility type
- Vehicle volume by period and facility type
- Truck volume by period and facility type
- Total volume by period and facility

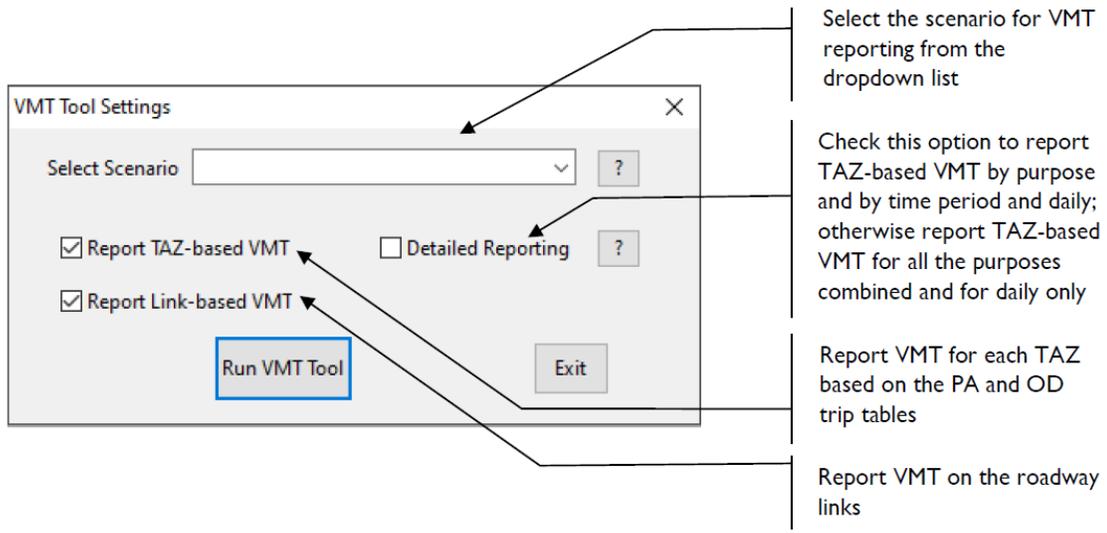
Tool Setup and Process

The detailed steps on how to use the VMT Tool to estimate project-generated OD VMT and citywide link-based VMT in the City of Meniffee are explained below:

Step 1: Open RIVCOM main user interface and click the tab "Post Processor".



Step 2: Click "VMT Tool" button and the VMT Tool setting dialog box will appear. Note that the default setting is that both TAZ-based VMT and link-based VMT will be reported.



Note that the variable "StudyArea" should be added to the node layer of the highway network, if not included already, before running the VMT tool, for TAZ-based VMT reporting purpose. The TAZs required to be reported are defined at corresponding centroids by 'StudyArea>0' on the node layer. If this node variable is not included in the network or its value is not set, VMT for all the TAZs within the Riverside County will be reported. The project TAZ OD VMT per service population will be compared to the County of Riverside General Plan Buildout VMT per service population to determine the VMT impact according to the adopted threshold.

Similarly, the variable "StudyArea", for link-based VMT reporting purpose, should be added to the link layer of the highway network, if not included already, before running the VMT tool. All the roadway links within the City of Meniffee should be defined by 'StudyArea>0' on the link layer. The citywide link-based VMT per service population under the plus project condition will be compared to the no project condition to determine the VMT impact according to the adopted threshold.

In addition, the variable "County_Name" is required for the VMT Tool on both Node and Link layers of the highway network, to identify all the centroids and the roadway links within the Riverside County for VMT reporting purpose.

Step 3: Select the scenario for VMT reporting through the scenario dropdown list, check the VMT outputs and the detailed reporting option that the user would like to generate, then click Run VMT Tool button. The VMT outputs will be saved under outputs\postproc\vmt under the select scenario folder.

Appropriateness Checks

The number of vehicle trips from the total VMT estimation should match as closely as possible with the results from the traditional model process. The estimated results should be checked against the results from a full model run to understand the degree of accuracy. Note that these processes should include IX/XI trips (trips with origins or destinations outside of the model roadway network),



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truck trips, or special generator trips (airport, seaport, stadium, etc.).

When calculating VMT for comparison at the study area, citywide, or regional geography, the same methodology that was used to estimate project-specific VMT should be used. The VMT for these comparisons can be easily calculated by aggregating the row or column totals for all zones that are within the desired geography.



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Attachment C: City of Menifee SB 743 Implementation Mitigation and TDM Strategy Assessment Memorandum

TECHNICAL MEMORANDUM

Date: March 31, 2020

To: Doug Darnell, AICP, City of Menifee
Cheryl Kitzerow, AICP, City of Menifee

From: Jason D. Pack, PE
Paul Herrmann, PE

Subject: Draft City of Menifee SB 743 Implementation Mitigation and TDM Strategy Assessment

OC20-0712

This technical memorandum summarizes our assessment of new research related to transportation demand management (TDM) effectiveness for reducing vehicle miles of travel (VMT). The purpose of this work was to understand what options are available to mitigate VMT, to compile new TDM information that has been published in research papers since release of the *Quantifying Greenhouse Gas Mitigation Measures*, California Air Pollution Control Officers Association (CAPCOA), August 2010 and to identify those strategies suited to the City of Menifee given the varying land use context. The land use and transportation context for Menifee presents a challenge to the effectiveness of common TDM strategies for VMT reduction when applied at individual project sites due to limited access to transit and non-motorized modes. The matrix in Attachment A summarizes the overall evaluation of all the CAPCOA strategies while the matrix in Attachment B identifies the top seven strategies suited for the City of Menifee study area.

Mitigation Programs

The approach to the overall assessment includes two parts. The first part is an evaluation of how VMT reduction strategies or projects could be developed or incorporated into existing funding programs such as Transportation Impact Fee (TIF) program. The purpose of incorporating VMT reduction strategies directly into existing programs is to provide greater certainty and effectiveness for VMT impact mitigation. The second part of the assessment identifies potential new mitigation program concepts that may be worthy of further evaluation.

Existing Programs

The City of Menifee maintains Transportation Impact and Improvement Fees. This program collects a fair-share fee payment from new development to contribute to the cost of a Capital Improvement Program (CIP) consisting of long-term transportation network expansion projects identified to accommodate

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planned population and employment growth. The program focuses on vehicle trips or vehicle LOS as the key metric for determining deficiencies and developing CIP projects.

In its current form, the impact fee would not qualify as VMT impact mitigation program. In fact, if the City's CIP includes roadway capacity expansion that contributes to increases in VMT. Expanding roadway capacity in congested areas induces new vehicle travel that diminishes congestion relief benefits and generates new VMT and emissions. Refer to the following websites for more research information and technical details:

- http://www.dot.ca.gov/newtech/researchreports/reports/2015/10-12-2015-NCST_Brief_InducedTravel_CS6_v3.pdf
- https://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf
- <https://trrjournalonline.trb.org/doi/abs/10.3141/2653-02>

If the City's CIP also includes operational improvements, such as signal coordination projects, they would not contribute to an increase in VMT. The City's CIP also includes some transit, bicycle, and pedestrian projects that could contribute to VMT reduction.

If the transit, bicycle, and pedestrian projects were separated into a stand-alone CIP with a supporting nexus study based on VMT reduction, then a new VMT fee program could be developed that is dedicated to VMT impact mitigation. This could be a new program implemented by Menifee. An example of this type of program has been developed in the City of Los Angeles as part of their Coastal Transportation Corridor Specific Plan and West Los Angeles Transportation Improvement and Mitigation Specific Plan. Details are provided at the following website:

<http://www.westsidemobilityplan.com/ctcspwla-timp-final-eir/>

It may also be possible for a development project applicant to fully fund a transit, bicycle, or pedestrian project from a CIP as an alternative to paying the fee directly. Some fee programs currently allow fee credits for development that expedites and completes CIP-identified projects. Using this option requires inclusion of the mitigation in a development agreement or an EIR.

Managing and reducing demand could accomplish the goal of reducing peak period VMT. The main source of congestion is typically defined as vehicles moving too slowly (i.e., peak period speeds are lower than posted speed limits). This definition of congestion describes a symptom and fails to recognize that peak period travel consists of vehicles with poor seat utilization caused by not managing demand more effectively and mispricing travel demand. The existing roadway network has a limited capacity and this capacity is routinely filled up during peak periods in Riverside County by vehicles with solo drivers (i.e., low seat utilization). Further, limited facilities exist that prioritize travel by high occupancy vehicles. Increasing vehicle

speeds and reducing delays requires substantially greater seat utilization in existing vehicles (i.e., private vehicles and public transit). This change would also reduce VMT. Hence, building a fee program with improvements that support congestion management and VMT reduction could qualify as VMT impact mitigation.

New Mitigation Program Concepts

Beyond the conventional programs described above there are two new concepts that are not currently available in Riverside County¹. For purposes of this study, these programs are defined as follows.

- **VMT Mitigation Exchange** – An exchange program is a concept where VMT generators can select from a pre-approved list of mitigation projects that may be located within the same jurisdiction or possibly from a larger area. The intent is to match the project’s needed VMT reduction with a specific mitigation project of matching size and to provide evidence that the VMT reduction will reasonably occur.
- **VMT Mitigation Bank** – A mitigation bank is intended to serve as an entity or organization that pools fees from development projects across multiple jurisdictions to spend on larger scale mitigation projects. This concept differs from the more conventional impact fee program approach described above in that the fees are directed to a few larger projects that have the potential for a more significant reduction in VMT and the program is regional in nature.

As these new mitigation program concepts are still evolving, the specific descriptions and elements of the programs will likely change. The first resource document to describe and assess these programs was recently published by U.C. Berkeley and is entitled, [“Implementing SB 743, An Analysis of Vehicle Miles Traveled Banking and Exchange Frameworks,”](#) The University of California Institute of Transportation Studies, October 2018. This document is a useful starting place for a dialogue about these programs.

The findings of the report are supportive of these concepts noting the following about the reasoning for their consideration.

Yet while methods for reducing VMT impacts—such as mileage pricing mechanisms, direct investments in new public transit infrastructure, transit access subsidies, and infill development incentives—are well understood, they may be difficult in some cases to implement as mitigation projects directly linked or near to individual developments. As a result, broader and more flexible approaches to mitigation may be necessary. In response, state and local policy makers are considering the creation of mitigation “banks” or “exchanges.” In a mitigation bank, developers would commit

¹ WRCOG is actively investigating how the agency can support, run, or promote programs such as VMT mitigation banks or exchanges to help serve WRCOG Cities and agencies.

funds instead of undertaking specific on-site mitigation projects, and then a local or regional authority could aggregate these funds and deploy them to top-priority mitigation projects throughout the jurisdiction. Similarly, in a mitigation exchange, developers would be permitted to select from a list of pre-approved mitigation projects throughout the jurisdiction (or propose their own), without needing to mitigate their transportation impacts on-site. Both models can be applied at a city, county, regional, and potentially state scale, depending on local development patterns, transportation needs and opportunities, and political will.

This reasoning is important for Menifee because mitigating VMT impacts on a project-by-project basis is challenging, especially in suburban land use contexts where travel choices are limited. That said, the UCB report and research conducted for this study identified the following key challenges with these types of programs:

- Challenges for Mitigation Exchanges
 - Potential mismatch between funds and mitigation projects available
 - Potential for reduced oversight of project selection
 - Difficulty in verifying VMT reductions and their sustainability especially with VMT

- Challenges for Mitigation Banks
 - Increased need to conduct careful CEQA/Mitigation Fee Act analysis
 - Accounting challenge in delay from fee payment to project funding
 - Greater need for program administration budget
 - Political difficulty in distributing mitigation projects and coordinating across jurisdictions

- Challenges for both Mitigation Exchanges and Mitigation Banks
 - Difficulty in verifying VMT reductions and their sustainability especially with VMT generation changing over time due to disruptive transportation trends such as transportation network companies (TNCs) and autonomous vehicles (AVs)
 - Difficulty in demonstrating an essential nexus
 - Potential opposition to mitigation not directly occurring in the project impact area especially if impacts are concentrated in or near disadvantaged communities and the mitigation occurs in more affluent areas

Another important element for either of these concepts is to have an entity that is responsible for establishing, operating, and maintaining the program. This is a potential role for a sub-regional or regional entity especially for programs that would extend mitigation projects beyond individual jurisdictional boundaries. A key part of 'operations' is that the entity will need the capability to provide verification of the VMT reduction performance and to adjust the program projects over time. Whether the entity is regional

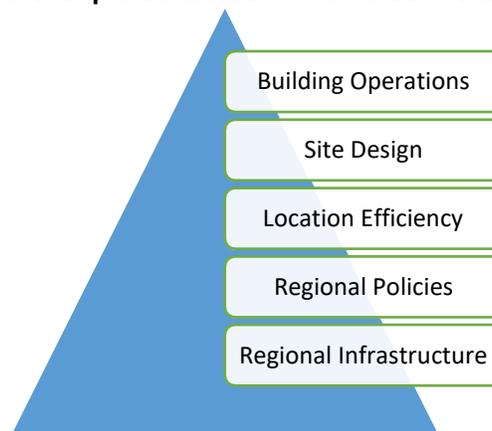
or sub-regional is another important consideration. A sub-regional entity could help minimize potential concerns about mitigation not occurring near the project site or in the same community.

The potential desire for VMT Mitigation Exchanges or Banks may depend on how lead agencies and developers respond to the initial implementation of SB 743 currently scheduled to go into effect July 1, 2020. If many projects are found to have significant VMT impacts and problems occur with finding feasible mitigation measures for individual projects, then interest may grow for more program-based mitigation.

TDM Strategies

This information can be used as part of SB 743 implementation to determine potentially feasible VMT mitigation measures for individual land use projects in the City of Menifee. An important consideration for the mitigation effectiveness is the scale for TDM strategy implementation. The biggest effects of TDM strategies on VMT (and resultant emissions) derive from regional policies related to land use location efficiency and infrastructure investments that support transit, walking, and bicycling. While there are many measures that can influence VMT and emissions that relate to site design and building operations, they have smaller effects that are often dependent on final building tenants. **Figure 1** presents a conceptual illustration of the relative importance of scale.

Figure 1: Transportation-Related GHG Reduction Measures



Of the 50 transportation measures presented in the CAPCOA 2010 report *Quantifying Greenhouse Gas Mitigation Measures*, 41 are applicable at building and site level. The remaining nine are functions of, or depend on, site location and/ or actions by local and regional agencies or funders. **Table 1** summarizes the strategies according to the scope of implementation and the agents who would implement them.

TABLE 1: SUMMARY OF TRANSPORTATION-RELATED CAPCOA MEASURES

Scope	Agents	CAPCOA Strategies (see full CAPCOA list below)
Building Operations	Employer, Manager	26 total from five CAPCOA strategy groups: <ul style="list-style-type: none"> • 3 from 3.2 Site Enhancements group • 3 from 3.3 Parking Pricing Availability group • 15 from 3.4 Commute Trip Reduction group • 2 from 3.5 Transit Access group • 3 from 3.7 Vehicle Operations group
Site Design	Owner, Architect	15 total from three strategy groups: <ul style="list-style-type: none"> • 6 from 3.1 Land Use group • 6 from 3.2 Site Enhancements group • 1 from 3.3 Parking group • 2 from 3.6 Road Access group
Location Efficiency	Developer, Local Agency	3 shared with Regional and Local Policies
Alignment with Regional and Local Policies	Regional and local agencies	3 shared with Location Efficiency
Regional Infrastructure and Services	Regional and local agencies	6 total

Of these strategies, some are likely to be effective in denser areas, while others will be less applicable in a rural or suburban setting. In the City of Menifee, key factors that determine which reduction measures will be effective, such as density and access to transit, vary throughout the City. To help narrow the list, we reviewed how land use context could influence each strategy’s effectiveness and identified seven for more detailed review. These strategies are described in Attachment B and listed below. Please note that disruptive trends, including but not limited to, transportation network companies (TNCs), autonomous vehicles (AVs), internet shopping, and micro-transit may affect the future effectiveness of these strategies.

1. Increase diversity of land uses – This strategy focuses on inclusion of mixed uses within projects and consideration of the surrounding area to minimize vehicle travel in terms of both the number of trips and the length of those trips.
2. Provide pedestrian network improvements – This strategy focuses on creating a pedestrian network within the project and connecting to nearby destinations. Projects in the City of Menifee range in size, so the emphasis of this strategy for smaller projects would likely be the construction of network improvements that connect the project sites directly to nearby destinations. For larger projects, this strategy could focus on the development of a robust pedestrian network within the project itself. Alternatively, implementation could occur through an impact fee program such as

the Riverside County Transportation Uniform Mitigation Fee (TUMF) or benefit/assessment district based on local or regional plans.

3. Provide traffic calming measures and low-stress bicycle network improvements – This strategy combines the CAPCOA research focused on traffic calming with new research on providing a low-stress bicycle network. Traffic calming creates networks with low vehicle speeds and volumes that are more conducive to walking and bicycling. Building a low-stress bicycle network produces a similar outcome. Implementation options are similar to strategy 2 above. One potential change in this strategy over time is that e-bikes (and e-scooters) could extend the effective range of travel on the bicycle network, which could enhance the effectiveness of this strategy.
4. Implement car-sharing program – This strategy reduces the need to own a vehicle or reduces the number of vehicles owned by a household by making it convenient to access a shared vehicle for those trips where vehicle use is essential. Note that implementation of this strategy would require regional or local agency implementation and coordination and would not likely be applicable for individual development projects.
5. Increase transit service frequency and speed – This strategy focuses on improving transit service convenience and travel time competitiveness with driving. While the Menifee has fixed route bus service that could be enhanced, it's also possible that new forms of low-cost demand-responsive transit service could be provided. The demand-responsive service could be provided as subsidized trips by contracting to private TNCs or Taxi companies. Alternatively, a public transit operator could provide the subsidized service but would need to improve on traditional cost effectiveness by relying on TNC ride-hailing technology, using smaller vehicles sized to demand, and flexible driver employment terms where drivers are paid by trip versus by hour. This type of service would reduce wait times for travelers and improve the typical in-vehicle travel time compared to traditional transit. Note that implementation of this strategy would require regional or local agency implementation, substantial changes to current transit practices, and would not likely be applicable for individual development projects.
6. Encourage telecommuting and alternative work schedules – This strategy relies on effective internet access and speeds to individual project sites/buildings to provide the opportunity for telecommuting. The effectiveness of the strategy depends on the ultimate building tenants and this should be a factor in considering the potential VMT reduction.
7. Provide ride-sharing programs – This strategy focuses on encouraging carpooling and vanpooling by project site/building tenants.

Because of the limitations noted above, strategies 1, 2, 3, 4, and 7 are initially considered the highest priorities for individual land use project mitigation subject to review and discussion with the project team.

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March 31, 2020

The VMT reduction strategies can be quantified using CACPOA calculation methodologies and recent ARB research findings. Attachment B provides calculation methodologies for each mitigation provided above, including their range of effectiveness.

Summary

To help understand the full range of VMT impact mitigation and their benefits and challenges, Table 2 provides a high-level summary comparison.

Table 2 – Summary of VMT Impact Mitigation Options

Mitigation Option	Description	Benefits	Challenges
No feasible action	This option recognizes that feasible mitigation is not available due to the land use or transportation context.	<ul style="list-style-type: none"> - Recognizes the limitations of VMT impact mitigation when alternatives to driving are not reasonably available. 	Could result in more significant and unavoidable (SAU) impacts that require an EIR instead of a negative declaration.
Change project	This option would tend to focus on changing built environment characteristics of a project such as its land use density or diversity to reduce vehicle travel.	<ul style="list-style-type: none"> - Mitigation may not require long-term monitoring (see substantial evidence summarized in the <i>SB 743 Implementation TDM Strategy Assessment Technical Memorandum dated 6.11.18</i>). - Mitigation reduces VMT (and other vehicle travel) in immediate vicinity of the project site. 	Project applicants may resist land use or other built environment changes due to financial concerns and market feasibility.
TDM	This option relies on strategies to reduce vehicle travel through incentives and disincentives often tied to the cost and convenience of vehicle travel.	<ul style="list-style-type: none"> - Mitigation reduces VMT (and other vehicle travel) in immediate vicinity of the project site. - Multiple mitigation strategies to choose from such that a project applicant may find co-benefits from the strategies also serving as project amenities. 	<ul style="list-style-type: none"> - Mitigation monitoring required because effectiveness depends on building tenants, which can change over time. As a result, impacts will remain SAU. - Creates potential financial equity issues between existing and new land uses. Existing land use with TDM mitigation will have lower operating costs.

Table 2 – Summary of VMT Impact Mitigation Options

Mitigation Option	Description	Benefits	Challenges
Impact fee program	This option requires developing a new impact fee program with a nexus based on VMT reduction. This type of nexus would allow the fee program capital improvement program (CIP) to include transit, bicycle, pedestrian and other types of projects that can demonstrate VMT reduction effectiveness.	<ul style="list-style-type: none"> - Provides clear expectations for developers about the VMT mitigation costs. - Increases funding for VMT reduction projects such that larger and more effective projects may be implemented. - May result in greater levels of VMT reduction compared to project-by-project mitigation. 	<ul style="list-style-type: none"> - Requires lead agency to develop stakeholder support and funding to create and maintain the fee program. - Mitigation (e.g., CIP projects) may not occur in immediate vicinity of the project site where impacts of vehicle travel will be most directly felt by neighbors.
Mitigation bank/exchange	This option matches VMT generators with VMT reducers within or beyond jurisdictional boundaries through a third party.	<ul style="list-style-type: none"> - Could create mitigation options that may not otherwise be available or feasible. - Not limited to jurisdictional boundaries. - Could create incentive for new innovative mitigation ideas. 	<ul style="list-style-type: none"> - Requires an entity capable of operating and maintaining the program with the ability to verify VMT reductions. - Mitigation may not occur in immediate vicinity of the project site where impacts of vehicle travel will be most directly felt by neighbors.
General plan coverage	This option would address VMT impacts through a general plan update or amendment EIR and rely on CEQA Guidelines Section 15183 for subsequent project streamlining (as summarized in the <i>SB 743 Implementation Thresholds Assessment Technical Memorandum dated 10.31.18</i>).	<ul style="list-style-type: none"> - Addresses VMT reduction expectations in consideration of other jurisdictional objectives. - Offers a wider range of mitigation options than at the project-scale. - For subsequent projects consistent with the general plan, additional VMT impact analysis would not be required. 	<ul style="list-style-type: none"> - General plan updates or amendments require substantial time and funding commitments.