Transportation Analysis Updates in Calabasas

Draft

Prepared for:
City of Calabasas

September 2020

LA19-3159

FEHR PEERS

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Chapter 1 – Introduction

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law and started a process intended to fundamentally change transportation impact analysis as part of compliance with the California Environmental Quality Act (CEQA). In summary, SB 743 eliminates level of service (LOS) as a basis for determining significant transportation impacts under CEQA and provides a new performance metric – vehicle miles of travel (VMT). With this change, the State is shifting the focus from measuring a project's impact to drivers (LOS) to measuring the impact of driving (VMT) to achieve their goals of reducing greenhouse gas (GHG) emissions, encouraging infill development, and improving public health through active transportation.

In response to SB 743, the City of Calabasas is adopting new transportation impact thresholds to adhere to CEQA requirements and providing guidance on conducting transportation studies in the City. The City began the process of implementing SB 743 in 2019. The process began with collecting baseline VMT data, which were used to determine the preferred VMT methodology, thresholds, and potential mitigation strategies.

The remaining chapters of this report describe the City's implementation of SB 743 and the corresponding updates to transportation analysis requirements as follows:

- **Chapter 2: Transportation Analysis Implications for SB 743** – This chapter provides an overview of SB 743 and what it means for transportation impact analysis in the City of Calabasas. This chapter is structured as a series of frequently asked questions about the implications of this change for the City.
- **Chapter 3: Baseline VMT** – This chapter describes the process for determining the City's Baseline VMT and describes the analysis methodology and VMT metrics.
- **Chapter 4: CEQA VMT Screening** – This chapter discusses screening criteria that exempt certain projects from a full VMT analysis. There are screening criteria for land use projects based on projects size and location. Transportation projects can be screened from analysis based on the type of infrastructure being proposed.
- **Chapter 5: CEQA Methodology, Thresholds, and Mitigation** – This chapter outlines the methodology for calculating VMT for projects and plans in the City of Calabasas, provides the threshold of significance, and discusses mitigation options for projects that are found to have a VMT impact.

Chapter 2 – Transportation Analysis Implications for SB 743

What is SB 743?

In 2013, Governor Brown signed SB 743 into law. The primary purpose of SB 743 is to eliminate measures of roadway vehicular capacity and traffic congestion, most commonly LOS, as the basis for determining significant transportation impacts under CEQA. The law directed the Governor's Office of Planning and Research (OPR) to update the CEQA Guidelines to include new performance criteria for determining the significance of transportation impacts.

> ***CEQA*** *refers to the California Environmental Quality Act. This statute requires identification of any significant environmental impacts of state or local action including approval of new development or infrastructure projects. The process of identifying these impacts is typically referred to as the environmental review process.*

In response to SB 743, OPR recommended VMT as the new transportation impact metric. OPR then submitted updates to the CEQA Guidelines, and these updates were certified by the Natural Resources Agency in December 2018. Lead agencies have been granted a grace period until July 1, 2020 to opt-in to implementing a VMT analysis as part of their environmental review process.

To help aid lead agencies with SB 743 implementation, OPR produced a *Technical Advisory*[1]. *The Technical Advisory* helps lead agencies think about the variety of implementation questions they face with respect to shifting to a VMT metric. However, lead agencies must still make their own specific decisions about VMT methodology, impact thresholds, and mitigation approaches. These decisions should be consistent with the City's goals as expressed in their General Plan.

Why did the State adopt SB 743?

The intent of SB 743 is to better support the following State goals:

- Reducing greenhouse gas (GHG) emissions
- Encouraging infill development
- Improving public health through active transportation

While changes to driving conditions that increase travel times are an important consideration for traffic operations and management, these changes do not fully describe environmental effects associated with fuel consumption, emissions, and public health. VMT based impact criteria will help to incorporate these environmental effects and move toward achieving the State goals listed above.

[1] *Technical Advisory on Evaluating Transportation Impacts in CEQA,* OPR, December 2018 http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

Reducing VMT is not the only way that the transportation sector can reduce GHG emissions, as increasing vehicle efficiency and reducing fuel carbon content are also important parts of moving toward the State's GHG emissions targets. However, as reported in OPR's *Technical Advisory*, the California Air Resources Board (CARB) projects that changes to vehicle efficiency and fuel will not be enough to reach the State's GHG emissions reduction targets.[2] Therefore, reductions in VMT are an important part of the path to reducing GHG emissions.

How does SB 743 align with the City of Calabasas General Plan?

The City of Calabasas General Plan[3] includes goals related to vehicle trip reduction and promoting alternative modes of travel. The General Plan identifies policies which align with the anticipated outcomes of SB 743. The comprehensive list of policies below shows that the overall goals of implementing SB 743 – reducing GHG emissions, promoting infill development, and improving active transportation, through limiting VMT growth – are well aligned with the City's General Plan.

Housing Element

- **Policy V-9**: Provide opportunities for multi-family housing and mixed-use development consistent with the City's regional housing needs requirement (RHNA), as mandated by the State.
- **Policy V-10**: Provide for the development of second units in existing single-family neighborhoods to provide additional opportunities for rental housing which conforms to the development standards within the underlying zone.

Circulation Element

- **Policy VI-6**: Limit roadway and intersection capacity enhancement construction to that which will allow maintenance of the integrity of Calabasas' bicycle and pedestrian circulation systems. Prohibit roadway and intersection capacity enhancements that would create gaps in the area's bicycle and pedestrian circulation systems.
- **Policy VI-13**: Reduce the need for vehicular travel by:
    - Establishing and maintaining a comprehensive system of bicycle routes and providing appropriate facilities for bicycle riders
    - Supporting the maintenance and responsible expansion of public transit services within Calabasas, including connections between major destinations within the community and the metropolitan area

[2] *2018 Progress Report on California's Sustainable Communities and Climate Protection Act* (pp. 4, 5), California Air Resources Board, November 2018, https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf

[3] *City of Calabasas General Plan*, City of Calabasas, October 2015, https://www.cityofcalabasas.com/home/showdocument?id=2689

  - Promoting transportation demand management actions that make the use of commute alternatives more attractive through continued implementation of the City's transportation demand management ordinance
  - Allowing mixed use development in certain areas of the City to encourage living and working in the same area, thereby reducing the number and length of vehicle trips
- **Policy VI-14**: Encourage bicycling by preserving existing bicycle paths, lanes, and routes, and developing new and expanded bicycle facilities that offer direct connections between residential and non-residential areas, in accordance with the Calabasas Bicycle Master Plan.
- **Policy VI-15**: Ensure that parking for bicycles is available at major destinations to promote bicycle riding for commuting and recreation.
- **Policy VI-16**: Make the safety and convenience of bicycle riders the primary concern with regard to determining locations for bicycle facilities.
- **Policy VI-17**: Implement a safe routes to school program to help ensure that students can safely walk or bicycle to and from school.
- **Policy VI-18**: Promote pedestrian system improvements that create and sustain vibrant and active streets in major places of activity as well as providing direct connections between residential and non-residential areas.
- **Policy VI-19**: Provide neighborhood streets that are walkable and that contribute to the physical safety and comfort of pedestrians.
- **Policy VI-20**: Develop an inventory of and plan for implementing needed pedestrian system improvements and possible pedestrian system enhancements.
- **Policy VI-21**: Require new development in Calabasas to incorporate pedestrian-oriented circulation features, as described in the Community Design Element. Such features should include amenities that make walking not only available, but desirable.
- **Policy VI-22**: As commercial and mixed use districts redevelop over time, consider redesigning roadways in these areas to improve pedestrian circulation (possible re-design options include, but are not limited to, roadway narrowing, crosswalk enhancements, streetscape treatments that buffer pedestrians from traffic, and widened sidewalks). Roadways should be re-designed only if the re-design would not create unacceptable levels of service or unsafe conditions for vehicular traffic.
- **Policy VI-23**: Continue to provide and improve access to environmentally friendly and convenient transit options for Calabasas residents and businesses.
- **Policy VI-24**: Continue to encourage the use of transit through enhanced service, education, development of park-and-ride facilities, and increased public awareness about available transit options.
- **Policy VI-25**: Require new developments to provide and/or fund transit facilities (such as bus shelters and park-and-ride facilities) that ensure access to transit.
- **Policy VI-26**: Coordinate transit services and programs with all City departments.
- **Policy VI-27**: Provide transit services to support community events that have special mobility needs and have the potential for adverse traffic and parking effects in neighborhoods adjacent to special event venues.

Community Design Element

- **Policy IX-17**: Provide a mix of uses that creates a destination area where people can come and stay – live, shop, relax, play.
- **Policy IX-19**: Facilitate the development of a mixed-use commercial core along Agoura Road that is supported by office and residential uses.
- **Policy IX-24**: Create gathering spaces in new development to enhance pedestrian activity, provide community focal points, and strengthen linkages between uses.
- **Policy IX-25**: Facilitate the establishment of a "downtown" district for Calabasas Road east of Parkway Calabasas emphasizing a pedestrian-oriented mix of retail, office and residential uses as well as pedestrian connections to adjacent residential areas.
- **Policy IX-33**: Improve connectivity between neighborhoods through pedestrian and bicycle improvements and unifying design elements such as parkway landscaping and trees.
- **Policy IX-34**: Improve facilities along streets for walking and bicycling.

How does LOS compare to VMT?

Conventional approaches to transportation impact analysis tend to focus on vehicle LOS related to driver delay and roadway congestion. SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers (LOS) to measuring the impact of driving (VMT).

***LOS** refers to "Level of Service," a metric that assigns a letter grade to network performance based on the amount of congestion experienced by drivers, ranging from LOS A to LOS F. LOS is typically reported for individual intersections during the most congested time of day.*

***VMT** refers to "Vehicle Miles Traveled," a metric that accounts for the number of vehicle trips generated plus the length or distance of those trips. For transportation impact analysis, VMT is generally expressed as VMT per capita for a typical weekday.*

While LOS measures a driver's experience traveling through a specific point on the roadway system (e.g., through an intersection), VMT captures both the number of trips and the length of those trips on the roadway network. For example, a proposed retail development intended to serve nearby residents can result in an LOS impact because it adds vehicle trips to an already congested intersection, but it may not result in a VMT impact because it adds a shopping option closer to where people live and allows them to drive shorter distances. In comparison, a proposed office building in a suburban area may not result in any LOS impacts because it is surrounded by multi-lane roadways with plenty of vehicle capacity, but it may result in a VMT impact because it attracts trips from many miles away and results in a larger burden on the transportation network and the environment.

Can Calabasas still consider LOS?

SB 743 does not prevent a city from continuing to analyze LOS as part of development review, area plans, or ongoing network monitoring, but LOS will no longer constitute the basis for CEQA impacts. Cities can still use vehicle LOS outside of the CEQA process if they determine it is an important part of their transportation analysis process. The City of Calabasas will continue to analyze intersection and roadway operations using the LOS metric as part of the development review process.

Which projects are affected by SB 743?

Two types of projects, land use development projects and transportation infrastructure projects, are affected by SB 743.

- **Land Use** – Development projects and area plans (e.g., General Plan or Housing Element) will continue to require a transportation impact analysis. However, transportation impact studies conducted as part of the CEQA process will now be required to base project impacts on VMT.
- **Transportation Infrastructure** – Prior to SB 743, transportation projects that had the potential to worsen vehicle delay, such as narrowing a roadway to provide bicycle lanes, may have resulted in an environmental impact under CEQA. With SB 743 in place, transportation projects that promote travel by non-auto modes are no longer considered to result in an environmental impact. Conversely, roadway widening projects need to consider potential impacts from inducing more travel and therefore increasing VMT.

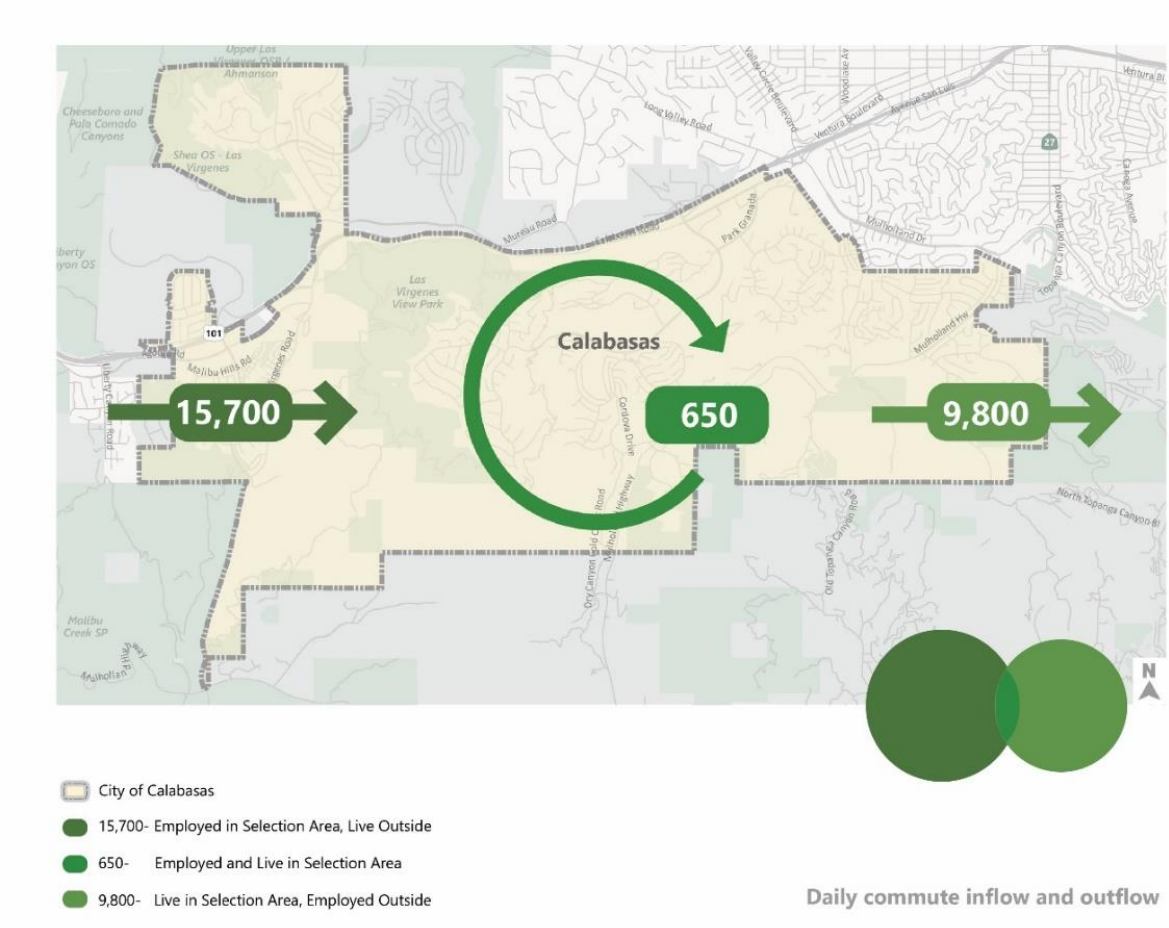
Chapter 3 – Baseline VMT

This chapter summarizes local transportation characteristics, Baseline VMT, and the VMT methodology for the City of Calabasas. The purpose of this chapter is to provide context for understanding the City's VMT trends and describe the process of establishing the City's Baseline VMT. This Baseline VMT data is used to inform the City's VMT screening and threshold options as part of the SB 743 implementation process, presented in Chapters 4 and 5.

Local Transportation Characteristics

Commute trends for those living or working in Calabasas were reviewed based on data collected by the U.S. Census Bureau. As shown in Figure 1, approximately 94% of Calabasas residents work outside the City, and approximately 96% of people who work in Calabasas live outside the City. Approximately 6% of Calabasas residents both live and work in the City.

Figure 1 - Daily Commute Inflow and Outflow



Source: 2017 US Census Center for Economic Studies Longitudinal Employer-Household Dynamics, onthemap.ces.gov

These commute characteristics have implications for the City's VMT metrics because they affect the distance that commuters travel to reach their jobs, which is a component of a City's VMT. As shown in the tables below, people who work in Calabasas typically have a longer commute than people who live in Calabasas. Table 1 summarizes commute distance for people who live in Calabasas, whether they work in the City or elsewhere, and Table 2 summarizes commute distance for people who work in Calabasas, whether they live in the City or elsewhere. Approximately two-thirds of people who work in Calabasas commute less than 25 miles, whereas more than 75% of people who live in Calabasas commute less than 25 miles. Nearly 20% of people who work in Calabasas commute more than 50 miles, and approximately 12% of City residents commute over 50 miles.

Table 1 – Commute Distance for People Who Live in Calabasas

Commute Distance	Count	Share
Less than 10 miles	2,994	28.6%
10 to 24 miles	5,162	49.4%
25 to 50 miles	1,034	9.9%
Greater than 50 miles	1,263	12.1%
Total Primary Jobs	*10,453*	*100.0%*

Source: 2017 US Census Center for Economic Studies Longitudinal Employer-Household Dynamics, onthemap.ces.census.gov

Table 2 – Commute Distance for People Who Work in Calabasas

Commute Distance	Count	Share
Less than 10 miles	5,110	31.3%
10 to 24 miles	5,757	35.3%
25 to 50 miles	2,281	14.0%
Greater than 50 miles	3,158	19.4%
Total Primary Jobs	*16,306*	*100.0%*

Source: 2017 US Census Center for Economic Studies Longitudinal Employer-Household Dynamics, onthemap.ces.census.gov

As presented in Table 3, 82% of workers who live in Calabasas typically drive alone to work, while nearly 11% work at home, 4% carpool, and 3% commute using another mode. While transit services are available through the City of Calabasas Transportation Division, Los Angeles County Metro, and the LADOT Commuter Express, few workers in Calabasas utilize these services for their commute.

Table 3 – Means of Transportation to Work for People Who Live in Calabasas

Means of Transportation to Work	Share
Drive Alone	82.1%
Carpool	4.1%
Public Transportation	0.7%
Walk	1.0%
Other	1.5%
Worked at home	10.6%

Source: 2018 American Community Survey 5-Year Estimates, https://data.census.gov/cedsci/profile?g=1600000US0609598

Calabasas residents commute an average of 30.2 minutes, which is longer than the average U.S. worker's commute of 25.1 minutes. Approximately 5% of Calabasas residents have a 'super commute,' which is a commute longer than 90 minutes. Similar to national trends, the majority of households in Calabasas have 2 cars[4].

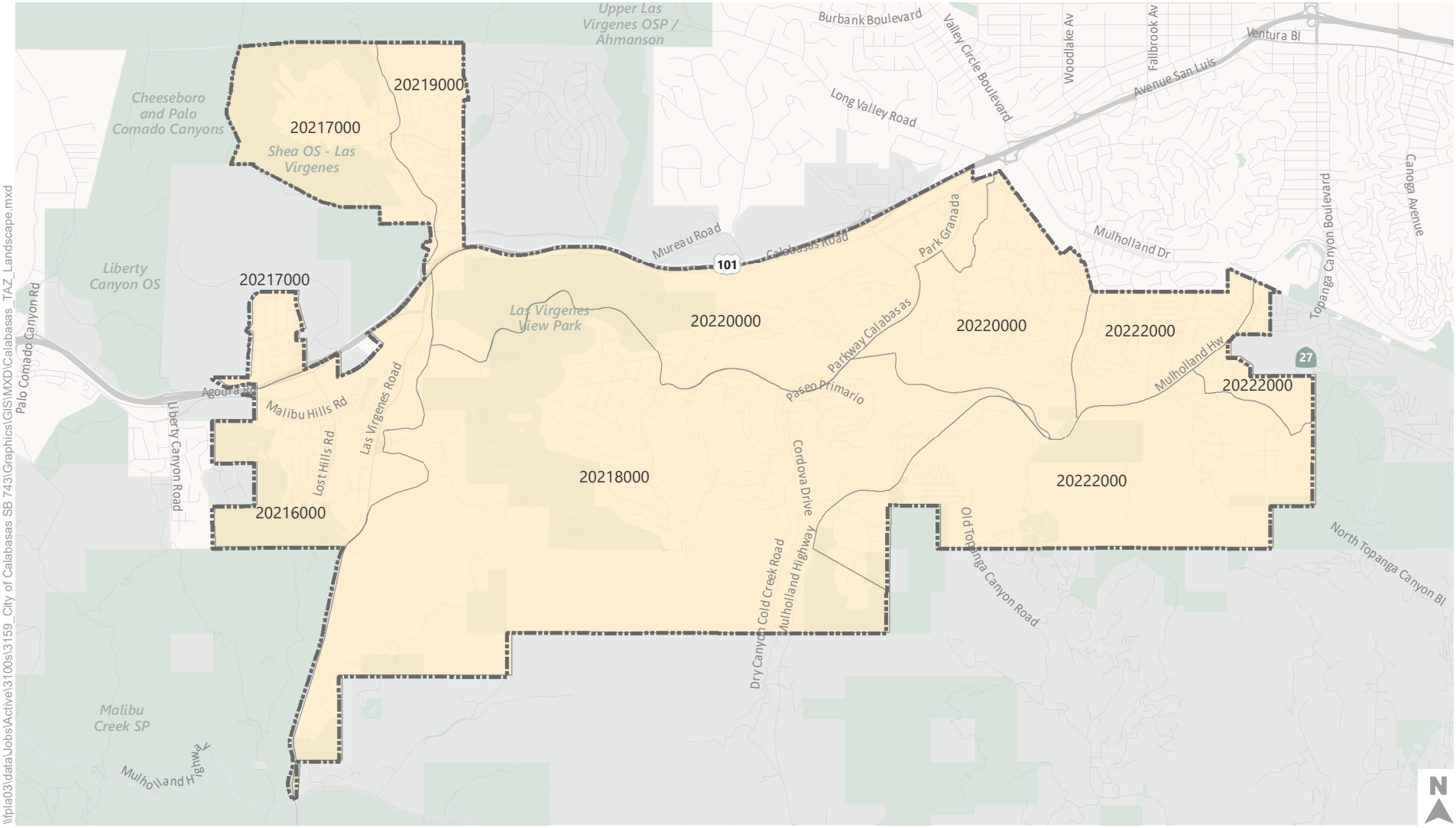
SCAG Travel Model Overview

The Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) trip-based model is a travel demand model with socioeconomic and transportation network inputs, such as population, employment and the regional and local roadway network. The model outputs several travel behavior metrics, such as vehicle trips and trip lengths, that can be used to calculate VMT. The SCAG model is currently the best available tool to estimate VMT in the City of Calabasas and the surrounding region. Because the model covers the entire SCAG region, it captures a complete assessment of trip length and VMT. In addition, comparing the VMT trends in the City to the broader region is helpful in establishing the appropriate Baseline VMT metrics. Using the SCAG model also allows the City to follow established methods for calculating the particular types of VMT used for SB 743 analysis. Therefore, the SCAG model was selected as the most appropriate tool for the SB 743 implementation process to ensure that the VMT generated by Calabasas that occurs outside the City limits is captured and to allow for comparison between the City's VMT data and regional VMT data.

The current 2016 SCAG Model has a base year of 2012 and future year of 2040 and was developed for the *2016 Regional Transportation Plan / Sustainable Communities Strategy*. Figure 2 displays the SCAG Transportation Analysis Zones (TAZs)[5], used as the unit of analysis in the SCAG model, for the City of Calabasas.

[4] Source: 2017 US Census 5-Year Estimates, https://datausa.io

[5] TAZs are geographic polygons similar to Census block groups used to represent areas of homogenous travel behavior in the SCAG Model.



Calabasas

Tier 2 TAZ

Figure 2

Calabasas SB 743 Implementation: SCAG Model TAZs

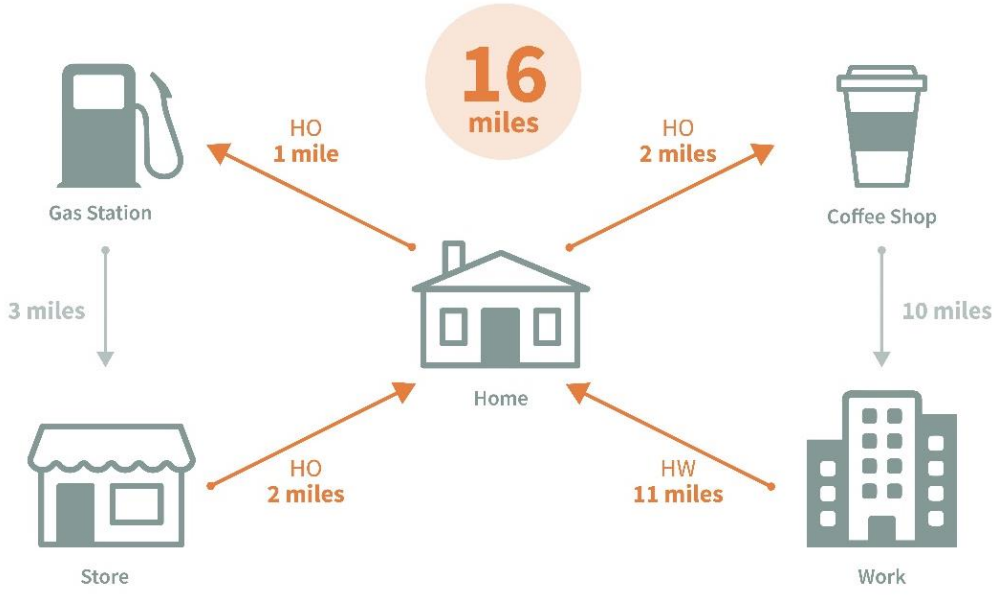
VMT Methodology for Land Use Projects and Plans

An origin-destination (OD) VMT methodology was determined to be the appropriate methodology for estimating the VMT of land use projects and plans as guided by SB 743 legislation. The OD VMT method estimates the VMT generated by land uses in a specific geographic area, such as the City or a larger geographic area such as Los Angeles County. All vehicles traveling to/from the defined geographic area are tracked within the SCAG model and the number of trips and length of trips are used to calculate the OD VMT.

For the City of Calabasas, the VMT methodology includes all trips within the SCAG model for each of the following variable formats:

- **Total VMT per Service Population:** The total VMT to and from all zones in the geographic area are divided by the total service population, which includes population and employment of the geographic area, to get the efficiency metric of VMT per service population.
- **Home-Based VMT per Capita**: Home-based vehicle trips are traced back to the residence of the trip-maker (non-home-based trips are excluded) and then divided by the residential population within the geographic area. This metric is used to estimate VMT for residential land uses. Figure 3 illustrates the home-based trips that are included in this VMT metric.

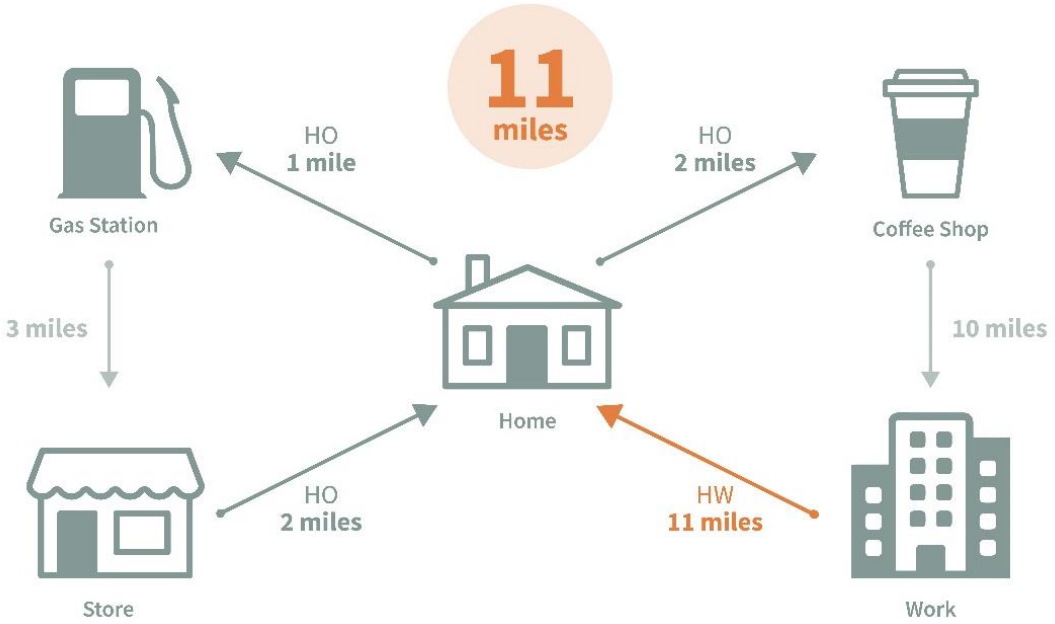
Figure 3 - Home-Based VMT



This figure shows a representative day for one person. Of all the daily trips, Home-Based VMT includes trips with an origin or destination at their home. These trips are categorized as home-based work (HW), or home-based other (HO), trips between their home and any location other than their workplace. While the person produces 29 miles of VMT, 16 of those miles are considered Home-Based VMT.

- **Home-Based Work VMT per Employee**: Vehicle trips between home and work are counted, and then divided by the number of employees within the geographic area. This metric is used to estimate VMT for office, industrial, and other commercial land uses. Figure 4 illustrates the home-based work trip that is included in this VMT metric.

Figure 4 - Home-Based Work VMT



This figure shows the same representative day as the previous figure. Of all the daily trips, Home-Based Work VMT includes only trips the individual makes between their home and their workplace. While the person produces 29 miles of VMT, 11 of those miles are considered Home-Based VMT.

VMT Methodology for Transportation Projects and Plans

CEQA Guidelines Section 15064.3(b) contains separate criteria for analyzing transportation impacts for transportation projects as compared to land use projects. The VMT impacts of transportation projects can be assessed by analyzing the net change in total VMT. Changes in VMT can be calculated using the boundary method, which considers all travel on roadways in the study area, including vehicles that are traveling on the roadways but don't have an origin or destination in the area (i.e., pass-through or external trips). The SCAG model can be used to estimate the Baseline VMT within the City and then forecast the change in VMT with the proposed project in operation. The VMT metric for transportation projects is calculated as defined below.

- **Total Roadway VMT**: The total daily VMT can be measured using the SCAG model by multiplying the daily volume on every roadway segment by the length of every roadway segment in Calabasas.

In addition to VMT changes forecasted by the SCAG model, induced travel demand resulting from increasing the number of lane-miles should be considered.

Baseline VMT

To understand the VMT trends for the City of Calabasas, the SCAG model was used to estimate the Baseline VMT metrics. The VMT data is based on the TAZs in the City during the Base Year 2012, the Future Year 2040 conditions, and interpolated conditions to estimate the 2020 Baseline. Table 4 presents VMT estimates for Calabasas, the Las Virgenes-Malibu Council of Governments (LVMCOG), and the SCAG region. The LVMCOG includes the cities of Agoura Hills, Calabasas, Hidden Hills, Malibu, and Westlake Village and was included to understand how the city's VMT compares to the surrounding area, which has similar development characteristics. As shown in Table 4, the City's average VMT is higher than the SCAG regional average and generally lower than the LVMCOG average.

Table 4 – VMT Metrics in Calabasas

VMT Metrics		Average VMT		
		2012 Base Year Model	2020 Baseline	2040 Future Year Model
Total VMT per Service Population	SCAG Region	32.3	31.1	28.6
	LVMCOG	45.1	42.8	37.1
	Calabasas	**41.8**	**39.7**	**34.5**
Home-Based VMT per Capita	SCAG Region	15.0	14.4	13.0
	LVMCOG	21.9	20.9	18.8
	Calabasas	**20.9**	**20.1**	**18.4**
Home-Based Work VMT per Employee	SCAG Region	19.0	17.2	13.9
	LVMCOG	25.7	23.5	18.8
	Calabasas	**25.8**	**23.6**	**18.4**

OPR recommends that projects are compared to a Baseline VMT to determine if a project would perform better or worse than current VMT levels. Lead agencies have the jurisdiction to select how they define their Baseline VMT, which can range from the broader regional average to a smaller defined area. The City of Calabasas is defining their Baseline VMT as the average VMT for the City. This ensures that projects are considered in relation to the current built environment, transportation network, and travel options in Calabasas.

Chapter 4 – VMT Screening

The first step in reviewing potential transportation impacts as part of the CEQA evaluation process is to determine when a VMT analysis is required. This chapter provides an overview of the VMT screening criteria used to determine if a detailed VMT analysis is required for land use and transportation projects. OPR's *Technical Advisory* suggests three screening criteria that agencies may use to quickly identify if a proposed project is expected to cause a less-than-significant impact without conducting a detailed study: project size, project location in a low VMT area, and project accessibility to transit[6]. In addition, transportation projects that do not add new travel lanes may be screened from further VMT analysis.

VMT Screening Criteria – Land Use Projects

VMT is heavily dependent on land use and location. For example, a development site located in an urban area will have lower VMT because people have more options to walk, bike and take transit or drive short distances to nearby destinations in comparison to a suburban development where most people drive longer distances for their everyday work and household needs. Therefore, OPR has provided guidance related to several opportunities for screening projects from requiring a detailed VMT analysis.

Screening opportunities in the City of Calabasas are described below. A project only needs to satisfy one of the screening criteria to be exempt from requiring further VMT analysis. If a project is mixed-use and satisfies one of the screening criteria that applies to a specific land use, only that component of the project is exempt from requiring further VMT analysis and the remaining land uses should complete a VMT analysis

Screening Criteria 1: Project Size

Land use projects that generate less than 110 daily trips and local-serving retail projects, defined as commercial projects with local-serving retail uses less than 50 thousand square feet (ksf) (i.e. not larger regional-serving uses, such as Costco and Walmart), are presumed to have less than significant VMT impacts absent substantial evidence to the contrary. Therefore, these projects are screened out from completing a VMT analysis based on project size.

[6] Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, 2018, 12-14.

OPR Recommendation
Screen the following project types from VMT analysis: - Projects that generate less than 110 daily trips - Local serving retail uses (<50 ksf)

What this means for Calabasas
The City is following OPR guidance which means that projects that generate less than 110 daily trips and local serving retail uses less than 50 ksf would not need to complete a VMT analysis.

Screening Criteria 2: Low VMT Area Screening

OPR guidance states that residential and office projects located within a low VMT generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. A low VMT area generally has higher density, a mix of land uses, and provides opportunities for people to walk to nearby uses instead of always driving. Low VMT areas are defined as areas that are currently generating VMT below the City's VMT threshold[7]. Land use development projects qualify for this screening if the project can reasonably be expected to generate VMT that is similar to the existing land uses in the low VMT area.

OPR Screening Option

OPR recommends that lead agencies select a low VMT area screening threshold that aligns with all three statutory goals listed in Section 21099 of the Public Resources Code: (1) reduction of greenhouse gas emissions, (2) development of multimodal transportation networks, and (3) a diversity of land uses. The State has clear quantitative targets for GHG emissions reduction set forth in law and based on scientific consensus, and the depth of VMT reduction needed to achieve those targets has been quantified. Tying VMT thresholds to GHG reduction also supports the two other statutory goals of promoting land use diversity and providing multimodal travel options. Therefore, to ensure adequate analysis of transportation impacts, OPR recommends using quantitative VMT thresholds linked to GHG reduction targets.

Based on OPR's review of the applicable research, OPR recommends that a per capita or per employee VMT that is 15% below that of existing development (i.e., 15% below the Baseline VMT) may be a reasonable threshold.

[7] Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, 2018, 12.

Air Resources Board Screening Option

The California Air Resources Board (CARB) is responsible for developing a plan[8] to detail how the State will achieve its GHG emissions reduction targets mandated by law (SB 375, SB32 and Executive Order S-3-05). In the transportation sector, GHG emissions-reducing measures include low carbon fuels, cleaner vehicles, and strategies to promote sustainable transportation choices that result in reduced VMT.

CARB developed a scenario-based modeling system (called *Vision*) that was used to identify foreseeable emission reductions associated with existing mobile-source regulations and to explore different combinations of further advancements in technologies, fuels, and transportation system efficiencies. The results of CARB's modeling show that a 16.8% reduction from existing levels in VMT per capita for light-duty vehicles is needed in order to achieve the state required target of 80% reduction in GHGs by 2050. Additionally, a 14.3% reduction in total VMT per capita, which includes truck VMT, is recommended. CARB's recommendations are slightly higher than OPR's recommendations because the research is based on meeting slightly different goals. The County of Los Angeles is defining a low VMT area in accordance with CARB's recommendation of 16.8% below the County's Baseline VMT.

The VMT metrics for the City of Calabasas and the two low VMT screening options are shown in Table 5.

Table 5 – City of Calabasas Residential VMT (Home-Based VMT) per Capita

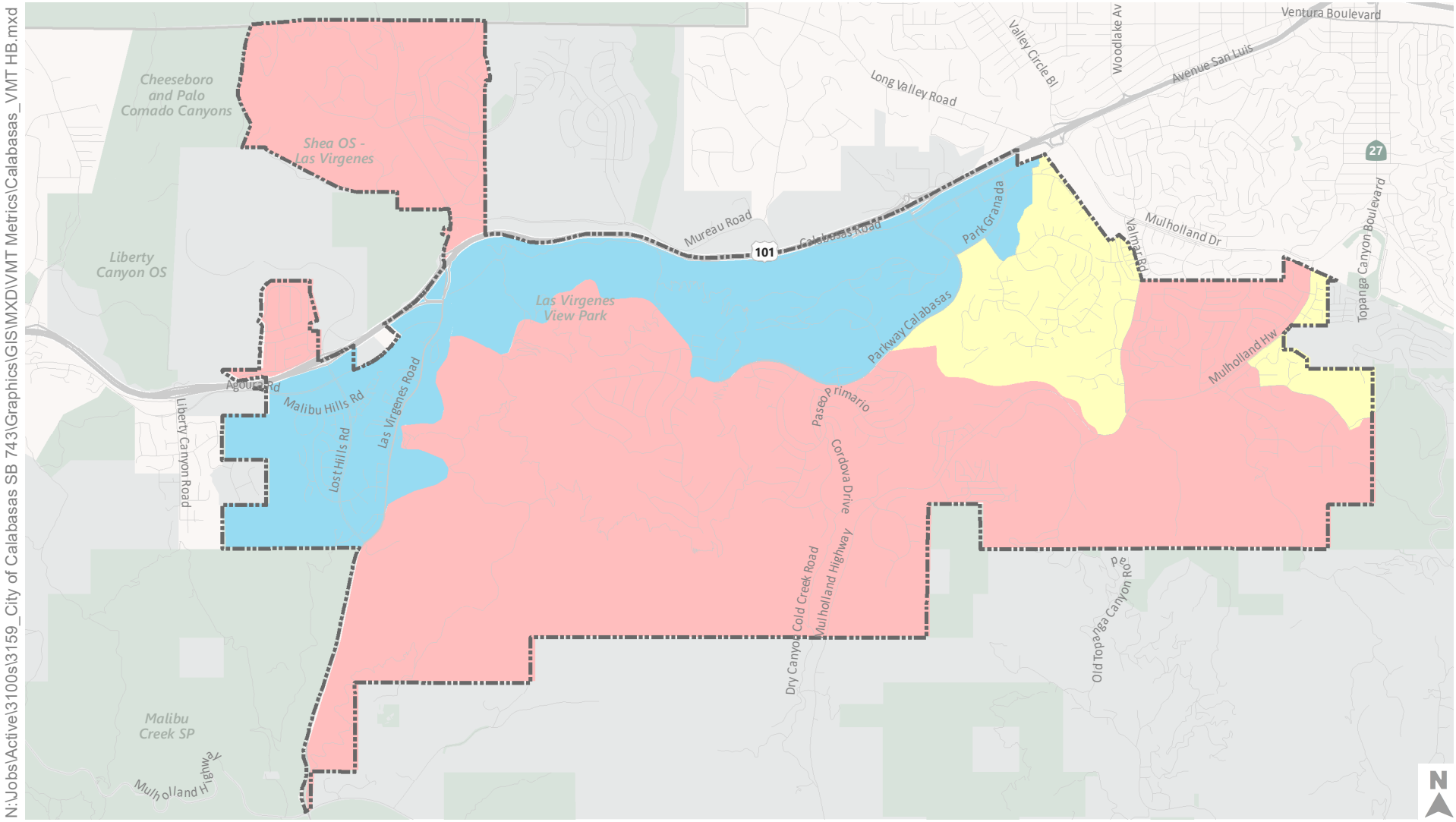
VMT Metrics	Calabasas Baseline VMT		
	2012 Base Year Model	2020 Estimate	2040 Future Year Model
City Home-Based VMT per Capita	20.9	20.1	18.4
15% Below	17.8	17.1	15.6
16.8% Below	17.4	16.7	15.3

The City of Calabasas recommends defining a low VMT area as a TAZ that is 15% lower than the Baseline VMT to follow OPR guidance, support State climate goals, have more flexibility, and align with most agencies in the region and State.

Figure 5 illustrates the Home-Based VMT per capita in the City of Calabasas by TAZ in comparison to the citywide average. TAZs with Home-Based VMT per capita at least 15% lower than the Baseline VMT are generally concentrated along the US-101 corridor where there is higher population density.

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

The VMT metrics illustrated in Figure can be used to screen residential projects in low VMT areas. Specifically, if a residential project is proposed in a TAZ with similar land uses that has VMT at least 15% lower than the citywide average, the project would also be expected to generate VMT at least 15% lower than the citywide average.



Home-Based VMT per Capita Comparison

- 15% or more below City average
- 0 to 15% below City average
- Higher than City average

Calabasas

Figure 5

Low VMT Area Screening: Residential

Low VMT areas for office projects are defined as TAZs that generate VMT on a per employee basis that is at least 15% lower than the citywide average. The VMT metrics for the City of Calabasas and the 15% below threshold are presented in Table 6.

Table 6 – City of Calabasas Employment VMT (Home-Based Work VMT) per Employee

VMT Metrics	Calabasas Baseline VMT		
	2012 Base Year Model	2020 Estimate	2040 Future Year Model
City Home-Based Work VMT per Employee	25.8	23.6	18.4
15% Below	22.0	20.1	15.6

Figure 6 shows Home-Based Work VMT per Employee for TAZs in the City of Calabasas in comparison to the City Baseline VMT. The majority of the City's employment opportunities are concentrated along the US-101 corridor and the western part of the city, west of Las Virgenes Road and are not areas that generate VMT that are 15% below the City Baseline.

OPR's guidance for residential and office project screening and the implications of this guidance for the City of Calabasas are presented below.

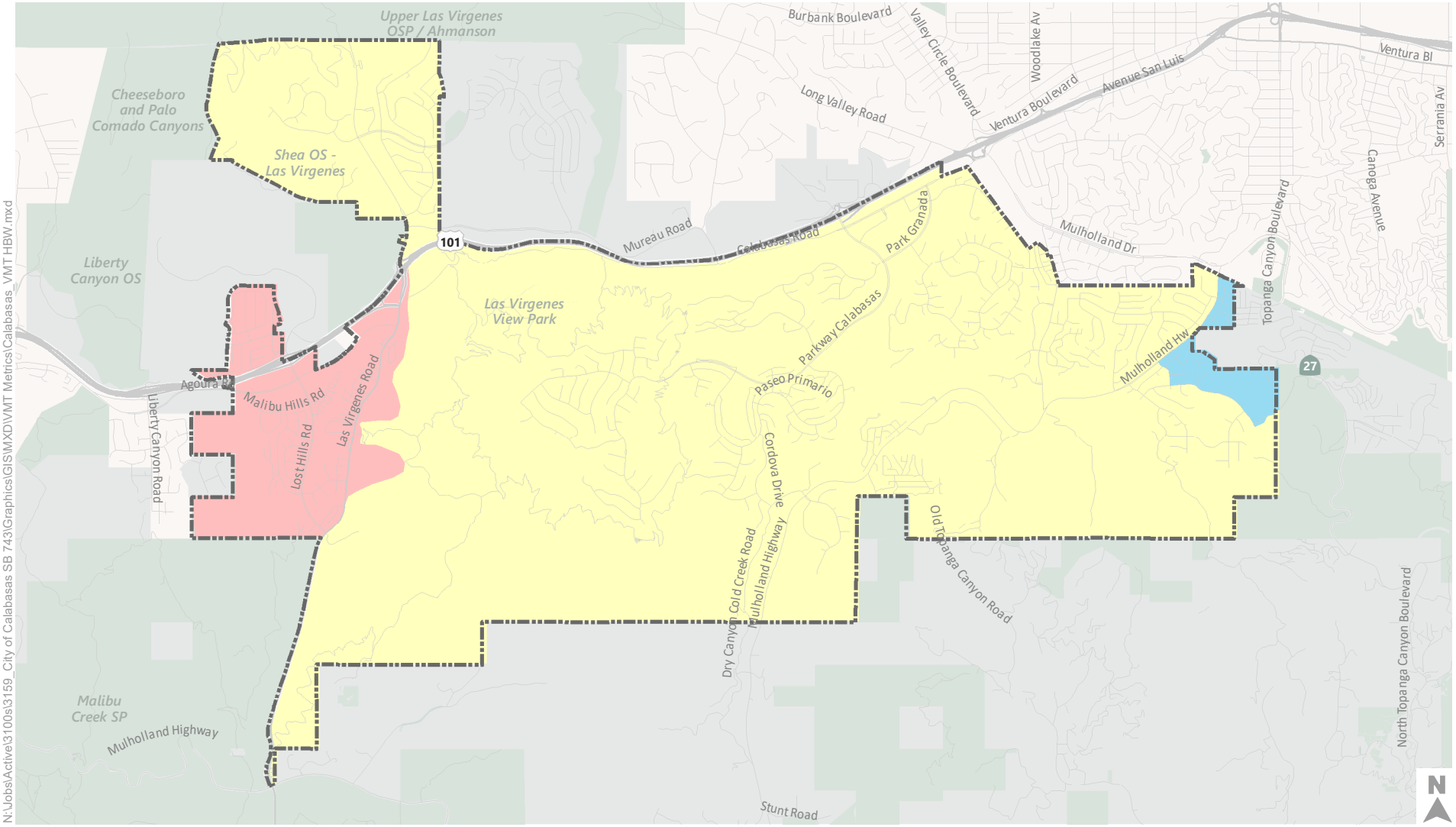
OPR Recommendation

Screen the following project type from VMT analysis:

- Residential and Office projects located in low VMT generating TAZs, defined as VMT per capita or VMT per employee that is at least 15% lower than the Baseline VMT**.**

What this means for Calabasas

The City is following OPR guidance which means that residential and office projects located in low VMT areas, defined as 15% below the Baseline VMT for the City, would not need to complete a VMT analysis.



Home-Based Work VMT per Employee Comparison

- 15% or more below City average
- 0 to 15% below City average
- Higher than City average

Calabasas

Figure 6

Low VMT Screening: Office

Screening Criteria 3: Transit Priority Area (TPA) Screening

Projects located in a Transit Priority Area (TPA) or along a High-Quality Transit Corridor (HQTC) may also be screened out from conducting a VMT analysis because they are presumed to have a less than significant impact absent substantial evidence to the contrary. TPAs are defined in the OPR *Technical Advisory* as a ½ mile radius around an existing or planned major transit stop or an existing stop along a HQTC. A HQTC is defined as a corridor with fixed route bus service frequency of 15 minutes (or less) during peak commute hours.

Figure 7 shows the existing transit routes serving the City of Calabasas. As of 2020, the City does not have any areas that quality as TPAs. However, transit service may change over time and TPA screening may be available in the future. As project applicants seek to use this screening criteria, they are responsible for reviewing the current transit service and demonstrating how their project qualifies for this screening criteria.

Based on OPR guidance, projects located within a TPA may be presumed to have a less than significant impact absent substantial evidence to the contrary. However, this presumption may not be appropriate if the project:

- Has a Floor Area Ratio (FAR) of less than 0.75
- Includes more parking for use by residents, customers, or employees than required by the City
- Is inconsistent with the regional Sustainable Communities Strategy (as determined by the City)
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units

OPR's guidance for TPA project screening and the implications of this guidance for the City of Calabasas are presented below.

OPR Recommendation

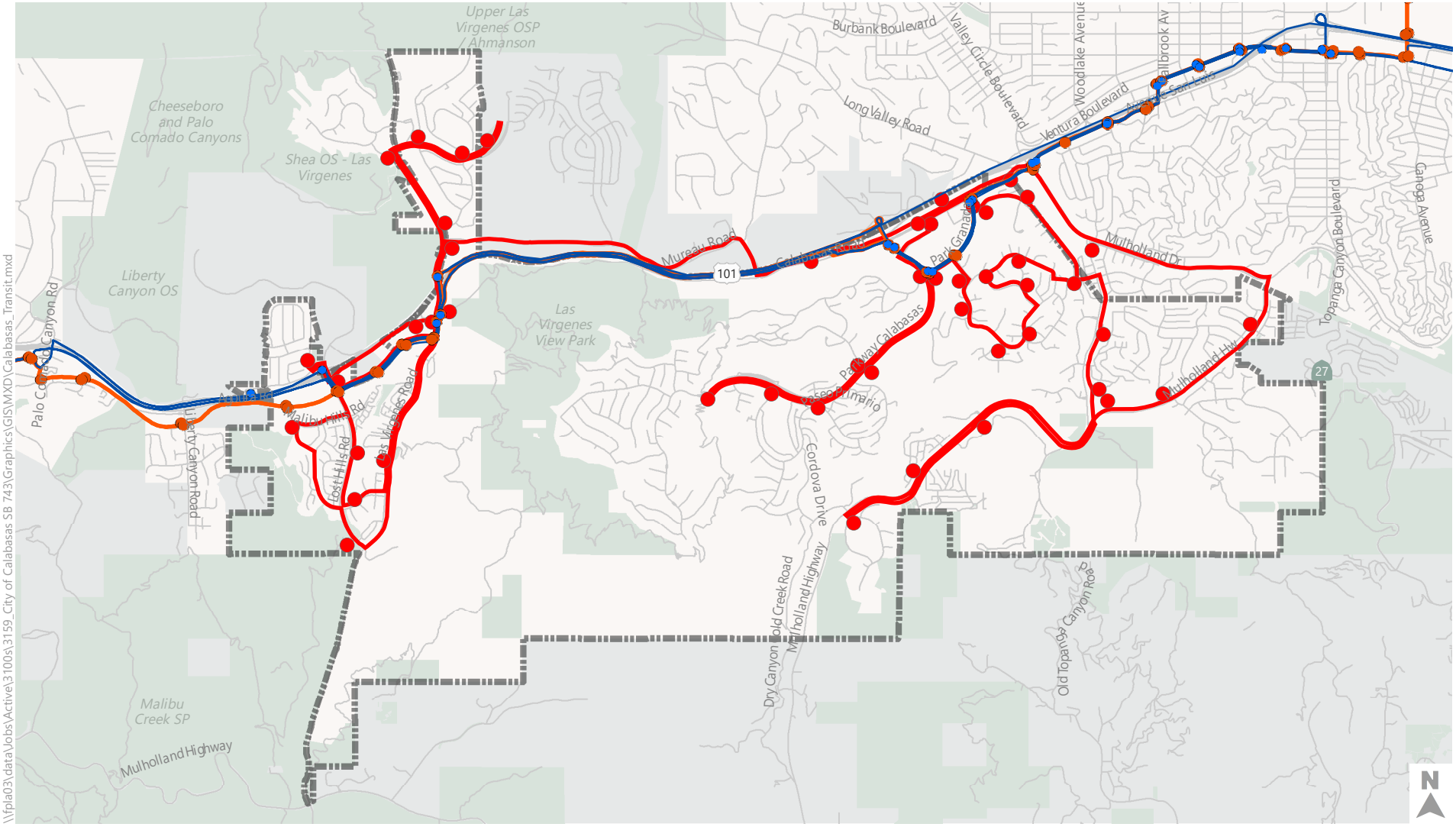
Screen the following project types from VMT analysis:

- Project is located in TPA and does NOT have the following characteristics:
  - Floor Area Ratio (FAR) < 0.75
  - More parking than required by City
  - Inconsistent with the applicable RTP/SCS (as determined by the City)
  - Replaces affordable residential units with a smaller number of moderate- or high-income residential units

What this means for Calabasas

The City is following OPR guidance which means that projects located within a ½ mile from an existing or planned major transit stop or an existing stop along a HQTC would not need to complete a VMT analysis. The project should also not have the following characteristics:

- Floor Area Ratio (FAR) < 0.75
- More parking than required by City
- Inconsistent with the applicable RTP/SCS (as determined by the City)
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units



Calabasas

LADOT Commuter Express Route 423

LADOT Commuter Express Route 423 Stops

LA Metro Route 161

LA Metro Route 161 Stops

Calabasas Public Transportation Shuttle Service

Calabasas Public Transportation Shuttle Service Stops

Figure 7

Calabasas SB 743 Implementation: Existing Transit Services

VMT Screening Criteria – Transportation Projects

Transportation projects that promote active transportation, such as transit, bicycle and pedestrian facilities, are presumed to generally reduce VMT and can be screened from further analysis. In addition, projects that improve safety or improve traffic operations at current bottlenecks, such as intersection traffic control (e.g., traffic signals or roundabouts), or widening at intersections to provide new turn lanes are not expected to increase VMT. The following types of transportation projects can be screened from further VMT analysis.

- Rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation facilities and do not add additional motor vehicle capacity
- Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, or two-way left turn lanes
- Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit
- Reduction in number of travel lanes
- Installation, removal, or reconfiguration of traffic control devices
- Timing of signals to optimize vehicle, bicycle, or pedestrian flow
- Installation of roundabouts or traffic circles
- Installation or reconfiguration of traffic calming devices

VMT Screening Summary

Table 7 provides a summary of VMT screening criteria for projects in the City of Calabasas based on the screening options described above. A project only needs to satisfy one of the screening criteria to be exempt from requiring further VMT analysis. For mixed-use projects where only one land use component meets the screening criteria (e.g., locally serving retail or affordable housing), only those components of the project are screened from VMT analysis and the other components of the project must be analyzed. For land use projects, screening criteria numbers one and four (Project Size and Transit Proximity) in Table 7 apply to the entire project, whereas numbers two and three (Locally Serving Retail and Low VMT Areas) apply only to the relevant land use component.

Table 7 – VMT Screening Criteria

Screening Categories	Project Requirements to Meet Screening Criteria
1. Project Size	A project that generates 110 or fewer daily trips.
2. Locally Serving Retail	A project that has locally serving retail uses that are 50,000 square feet or less, including specialty retail, shopping center, grocery store, pharmacy, financial services/banks, fitness center or health club, restaurant, and café. If the project contains other land uses, those uses need to be considered under other applicable screening criteria.
3. Project Located in a Low VMT Area	A residential or office project that is located in an area that is already 15% below the Baseline VMT.
4. Transit Proximity	A project that is located within a ½ mile of an existing or planned major transit stop or an existing stop along a HQTC. In addition, the project should have the following characteristics: - A floor Area Ratio (FAR) of 0.75 or greater - Is consistent with the applicable SCAG SCS (as determined by the City) - Does not provide more parking than required by the City - Does not replacing affordable housing units
5. Transportation Facilities	Transportation projects that promote non-auto travel, improve safety, or improve traffic operations at current bottlenecks, such as transit, bicycle and pedestrian facilities, intersection traffic control (e.g., traffic signals or roundabouts), or widening at intersections to provide new turn lanes.

Chapter 5 – VMT Thresholds and Mitigation

This chapter presents the thresholds of significance and discusses mitigation options for projects that are found to have a VMT impact.

Overview

The implementation of new CEQA guidance in the City of Calabasas includes the following:

1. **VMT Analysis Methodology**: If the project is not screened from conducting a VMT analysis, the City can use the SCAG regional travel demand model to estimate a project's VMT as described in Chapter 3. OPR recommends that VMT be reported as Home-Based VMT per capita for residential projects and Home-Based Work VMT per employee for office projects. Total VMT or VMT per Service Population can be reported for area plans, large-scale retail projects, or other project types, such as special event venues.

2. **VMT Impact Thresholds**: The City has discretion to develop and adopt their own impact thresholds, or rely on thresholds recommended by other agencies, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence. OPR recommends that projects exceeding a level of 15% below existing VMT per capita or per employee when compared to the citywide average may indicate an impact.

3. **VMT Mitigation**: The types of mitigation that effect VMT are those that reduce the number of single-occupant vehicle trips generated by the site and their trip lengths. This can be accomplished by changing the land uses being proposed or by implementing transportation demand management (TDM) measures.

Each of these topics are discussed in further detail below.

VMT Analysis Methodology

Projects that do not meet any of the screening criteria detailed in Chapter 4 are required to conduct a VMT analysis. The VMT analysis would rely on the best available data to inform trip generation and trip length estimate for the project uses. The VMT analysis should also be done using the same tools used to set the thresholds, for an appropriate comparison. For land use plans (e.g., Specific Plan or General Plan) and projects consisting of residential, office, retail, and commercial land uses, the VMT analysis can be conducted using the SCAG model. For other project types, such as a performing arts center or special event venue, the VMT analysis should be customized to determine the unique trip generation and trip length characteristics of the proposed uses.

As required under current practice, the VMT analysis should consider the potential impacts of the project under both existing and future/cumulative conditions as follows:

- **Existing/Baseline Conditions**: Project-generated VMT should be estimated for the proposed land uses under existing/baseline conditions. VMT can be estimated using the SCAG regional travel demand model and should be reported as VMT per capita (residential projects), VMT per employee (office or employment-generating projects), or VMT per service population (all other land uses). For land use plans and regional retail projects, VMT per service population or Total VMT can be used to determine potential impacts.

- **Cumulative Conditions**: CEQA requires lead agencies to consider a project's individual and cumulative impacts. Specifically, CEQA Guidelines Section 15064(h)(1) states, "the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable. For cumulative conditions, OPR guidelines state that a project that is below the VMT impact thresholds and therefore does not have a VMT impact under baseline conditions would also not have a cumulative impact as long as it is aligned with long-term State environmental goals, such as reducing GHG emissions, and relevant plans, such as the SCAG RTP/SCS.

In some cases, a project's effects on VMT should be estimated under cumulative conditions to determine if VMT in the study area would be higher/lower in the future with the project in place. This analysis would be applicable to large planning efforts that may result in changes to regional travel patterns. To evaluate a project's effect on VMT, the future year travel demand model would be updated to reflect the project and determine whether the Citywide VMT increases with the project. The user may elect to complete a redistribution of land use to ensure that the "no project" assessment and the "with project" assessment contain the same land use control totals for the City, especially if the project is large enough that it would affect land use absorption elsewhere.

VMT Impact Thresholds

VMT Thresholds for Land Use Projects and Plans

CEQA Guidelines Section 15064.7, *Thresholds of Significance*, encourages lead agencies to develop and publish thresholds of significance. Pursuant to Section 15064.7(b), the City can adopt thresholds of significance for VMT by ordinance, resolution, rule or regulation through a public review process supported by substantial evidence. As described above, OPR recommended 15% below the Baseline VMT as the threshold for identifying a significant VMT impact for land use projects and plans. This threshold is based on research conducted to determine the VMT reduction needed in order to help the State achieve its climate goals, including those set forth in Assembly Bill 32 (2006), Senate Bill 375 (2008), and Senate Bill 32 (2016).

VMT Thresholds for Transportation Projects

The OPR *Technical Advisory* states that transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less than significant transportation impact. In a similar vein, transportation projects that promote travel by non-automobile modes would not result in an environmental impact.

For roadway widening and other transportation projects, the change in VMT is determined by comparing the pre-project VMT (i.e., existing, or baseline) to post-project VMT (i.e., future) within a study area. A project that increases total VMT in the study area would have a significant environmental impact.

The VMT thresholds for projects and plans in the City of Calabasas are summarized below in Table 8.

Table 8 – VMT Thresholds of Significance

Project Type	Threshold for Determination of Significant VMT Impact
Residential Project	Project exceeds 15% below citywide Baseline VMT for Home-Based VMT per Capita
Employment (Commercial or Industrial) Project	Project exceeds 15% below citywide Baseline VMT for Home-Based Work VMT per Employee
Regional Retail Project	Project results in a net increase in total VMT in comparison to the citywide Baseline VMT
Mixed-Use Projects	Evaluate each project land use component separately using the criteria above
Land Use Plans	Plan exceeds 15% below citywide Baseline VMT for Total VMT per service population
Other land use types	Project exceeds 15% below citywide Baseline VMT. For land use types not listed above, the City can determine the appropriate VMT metric depending on the project characteristics. For projects that are generally producing job-related travel, the employment generating VMT (Home-Based Work VMT per Employee) can be compared to the Baseline. For other projects, the total VMT per service population can be compared to the citywide Baseline, or the net change in Total VMT can be estimated.
Transportation Projects	Project results in an increase in VMT in the study area in comparison to Baseline conditions

VMT Mitigations

For projects with VMT impacts, it is important to have mitigation options available for implementation to try to remove or lower the impact. The types of mitigation that affect VMT are those that reduce the number of single-occupant vehicles generated by the site. This can be accomplished by changing the land uses being proposed or by implementing transportation demand management (TDM) strategies. TDM strategies are reductions to a project's trip generation based on certain types of project site modifications, programming, and operational changes.

Research documented in the 2010 California Air Pollution Control Officers Association (CAPCOA) publication, *Quantifying Greenhouse Gas Mitigation Measures* offers TDM methodologies based on

preferred literature, along with methodology based on alternative literature, to estimate the effectiveness of each strategy.

Specific mitigation strategies need to be tailored to the project characteristics and their effectiveness needs to be analyzed and documented as part of the environmental review process to determine if impacts could be mitigated or if they would remain significant and unavoidable. Given that research on the effectiveness of TDM strategies is continuing to evolve, feasible mitigation measures should be considered based on the best data available at the time a project is being considered by the City.

The strategies described below are a sample of the mitigation options most effective in areas like Calabasas. Additional mitigation options and details on the mitigation options presented below are included in **Appendix A.**

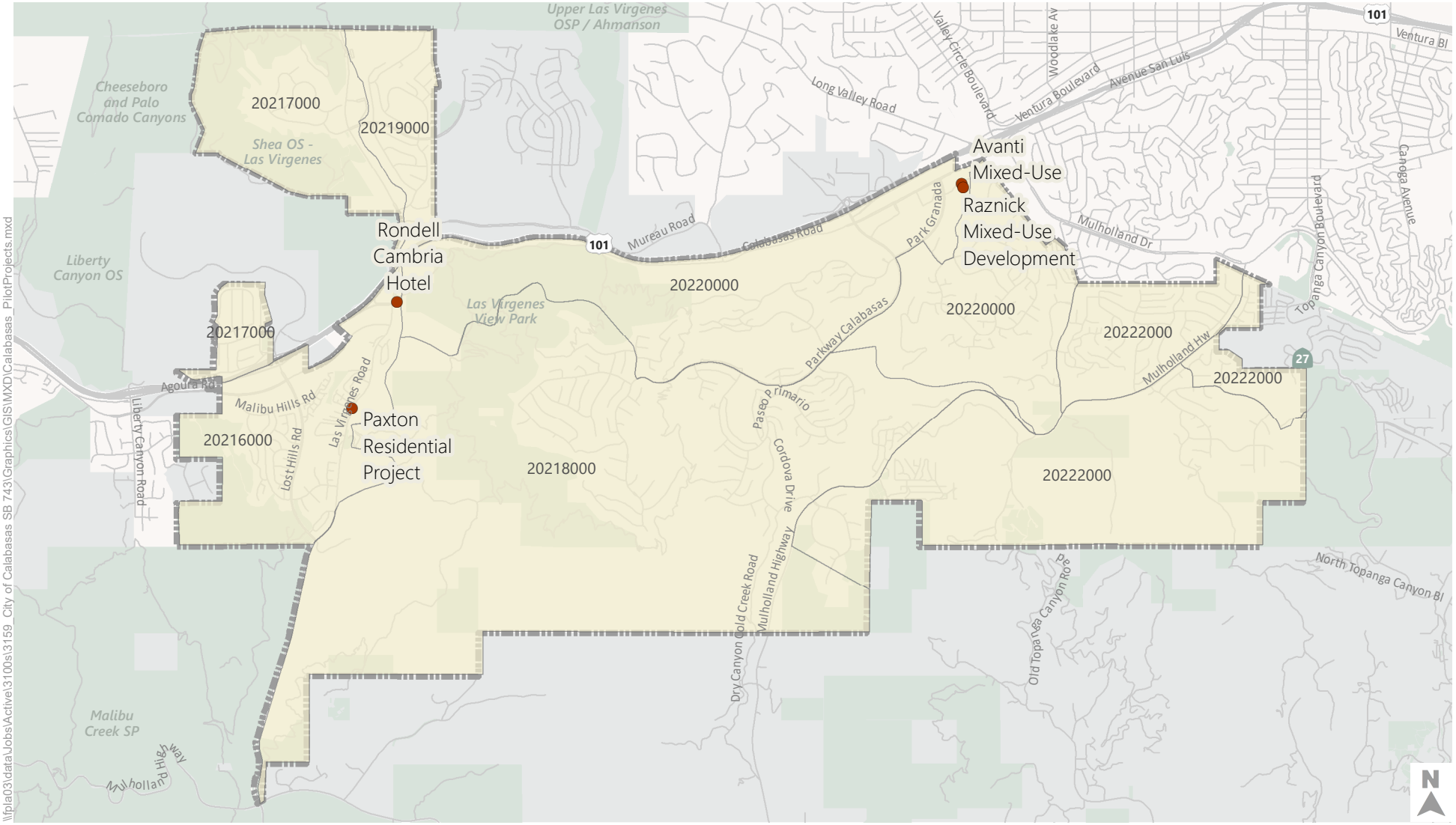
Strategy	Description	VMT Benefit
Increase Diversity of Developments (Mixed Use)	Includes mixed uses within Projects or in consideration of surrounding area.	Minimizes number and length of vehicle trips.
Provide Pedestrian Network Improvements	Creates pedestrian network within projects and connects to nearby destinations. Could also occur through impact fee program for active transportation improvements.	Encourages people to walk within and to project.
Provide Traffic Calming Measures and Low-Stress Bicycle Network Improvements	Creates networks with low vehicle speeds and volumes that support walking and bicycling. Could also occur through impact fee program for active transportation improvements.	Encourages people to bicycle, especially for shorter trips.
Implement Car-Sharing and Ride-Sharing Programs	Shared fleet of vehicles accessible on-site for residents or employees. Can serve as a first/last-mile solution to connect with transit.	Reduce the need to own a vehicle or the number of household vehicles.
Encourage telecommuting and Alternative Work Schedules	Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered start times, flexible schedules, or compressed work weeks.	Reduces the number of days employees need to work and/or shifts commute time outside of peak periods to avoid adding congestion.

Strategy	Description	VMT Benefit
Commute Trip Reduction Programs	Projects can implement a voluntary Commute Trip Reduction program with employers to discourage single-occupancy vehicle trips and encourage alternative modes of transportation. Alternatively, a jurisdiction can implement a Commute Trip Reduction Ordinance with the intent of reducing drive-alone travel mode share.	Encourages alternatives to commuting in single-occupancy vehicles.
VMT Fee Program (VMT Mitigation Bank)	Pools fees from development projects across multiple jurisdictions to spend on larger scale mitigation projects.	Regional program has potential for more significant reduction in VMT.
Limit Parking Supply	Projects can change parking requirements and types of supply within the Project site to encourage "smart growth" development and alternative transportation choices by project residents and employees.	Encourages alternatives to the use of single-occupancy vehicles.
Unbundle Parking Costs from Property Cost	Unbundling separates parking from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost from the property cost.	Encourages alternatives to the use of single-occupancy vehicles.
Implement Market-Price Public Parking	Price all central business district/employment center/retail center on-street parking to encourage "park once" behavior. This deters parking spillover from project-supplied parking to other public parking nearby to avoid undermining the VMT benefits of pricing project-supplied parking.	Encourages people to park once and walk between destinations instead of driving.

Pilot Project Testing

Four projects in the City of Calabasas were identified as "pilot projects" to outline the anticipated VMT analysis process. The following pilot projects represent a mix of development types that could occur in the City and are shown in Figure 8:

- **Avanti Mixed-Use Development at 23500 Park Sorrento**: 80 condominium units & 10,700 square feet of neighborhood-serving commercial uses
- **Raznick Mixed-Use Development at 23480 Park Sorrento**: 42 residential units & 1,591 square feet of commercial retail uses
- **Rondell Cambria Hotel at 26300 Rondell Street**: 127 room hotel (up to 67,000 square feet of building area)
- **Paxton Residential Project at 4240 Las Virgenes Road**: 78 townhomes



Pilot Projects

Tier 2 TAZ

Calabasas

Figure 8

Calabasas SB 743 Implementation: Pilot Projects

The following section provides a step-by-step guide of the analysis process.

Project Size Screening

The City recommendation screens projects from further VMT analysis if they generate fewer than 110 daily trips and/or have less than 50 ksf of retail uses. None of the pilot projects would generate fewer than 110 daily trips. Considering this, all four projects would need to explore the additional screening options available.

Locally Serving Retail Screening

The amount of retail proposed in the Avanti Mixed-Use project and Raznick Mixed-Use project is less than 50 ksf. Because of this, the retail components of these projects can be screened from further VMT analysis.

Low VMT Screening

The City recommendation screens residential projects from further VMT analysis if they are located in a low VMT generating TAZ, defined as VMT that is at least 15% lower than the City's Baseline VMT. The Paxton Residential project, the Avanti Mixed-Use project, and Raznick Mixed-Use project are in low VMT areas of the City and would be screened from further VMT analysis.

Transit Priority Area Screening

The City recommendation screens projects from further VMT analysis if they are located within a TPA. As of 2020, there are no TPAs in the City, and as such, this screening criterion is not currently applicable.

VMT Analysis

Based on the City's recommended screening criteria, the Paxton Residential project, the Avanti Mixed-Use project, and Raznick Mixed-Use project would not need to conduct a VMT analysis. However, for the purposes of showing the results of the VMT analysis (if required), all four land use pilot projects were analyzed to determine if they had the potential to result in VMT impacts according to OPR guidance and the City's recommended significance thresholds.

For residential projects, VMT is measured using the metric of Home-Based trips per capita, which reflects all trips that begin or end at a residential unit. The three projects that include a residential component (Paxton Residential, Avanti Mixed-Use, and Raznick Mixed-Use) were analyzed for potential VMT impacts by comparing their 2020 Home-Based VMT per capita to the City Baseline. The VMT metrics for each project were estimated from the baseline (2020) VMT trends for the project TAZ from the SCAG model. When comparing Home-Based VMT per capita to the City average, all three projects are below the 15% threshold and would not be considered to have VMT impacts.

Cumulative Impacts

Lastly, the pilot projects were evaluated for potential cumulative impacts. This was done by looking at average project-level TAZ VMT (per capita or per employee) and determining whether VMT is anticipated to grow in the future. All four of the pilot projects were tested for cumulative impacts and none were expected to grow in VMT at the project-level TAZ. In addition, the types of proposed developments are consistent with the SCAG RTP/SCS.

Pilot Project Summary

Each pilot projects' VMT analysis process is described below based on the recommended City screening criteria and impact thresholds.

Avanti Mixed-Use Development at 23500 Park Sorrento: 80 condominium units & 10,700 square feet of neighborhood-serving commercial uses

- Not screened from further VMT analysis due to project size (> 110 daily trips)
- Screened from further VMT analysis based on retail criteria (< 50 KSF)
- Screened from further VMT analysis based on low VMT area for residential projects
- Project Home-Based VMT per capita estimate is 13.8, 31% less the Citywide Home-Based VMT per capita (20.1)
- No Home-Based VMT per capita impact (if 15% below City average is threshold)
- No cumulative impact, future VMT is lower than baseline and consistent with SCAG RTP/SCS

Raznick Mixed-Use Development at 23480 Park Sorrento: 42 residential units & 1,591 square feet of commercial retail uses

- Not screened from further VMT analysis due to project size (> 110 daily trips)
- Screened from further VMT analysis based on retail criteria (< 50 KSF)
- Screened from further VMT analysis based on low VMT area for residential projects
- Project Home-Based VMT per capita estimate is 13.8, 31% lower the Citywide Home-Based VMT per capita (20.1)
- No Home-Based VMT per capita impact (if 15% below City average is threshold)
- No cumulative impact, future VMT is lower than baseline and consistent with SCAG RTP/SCS

Rondell Cambria Hotel at 26300 Rondell Street: 127 room hotel (up to 67,000 square feet of building area)

- Not screened from further VMT analysis due to project size (> 110 daily trips)
- Not screened from further VMT analysis based on low VMT area for commercial/ employment projects
- Project Home-Based Work VMT per capita estimate is 23.2, 2% lower than Citywide Home-Based Work VMT per capita (23.6)
- Potential Home-Based Work VMT impact (if 15% below City average is threshold)
- No cumulative impact, future VMT is lower than baseline and consistent with SCAG RTP/SCS

Paxton Residential Project at 4240 Las Virgenes Road: 78 townhomes

- Not screened from further VMT analysis due to project size (> 110 daily trips)
- Screened from further VMT analysis based on low VMT area for residential projects
- Project Home-Based VMT per capita is 15.3, 24% lower than Citywide Home-Based VMT per capita (20.1)
- No Home-Based VMT per capita impact (if 15% below City average is threshold)
- No cumulative impact, future VMT is lower than baseline and consistent with SCAG RTP/SCS

Appendix A: VMT Mitigation Options Matrix

Appendix A: VMT Mitigation Options Detail

CAPCOA Transportation Demand Management Strategy Source: Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association, 2010					Land Use Applicability				Implementation Body			
CAPCOA ID	Name	Description	Category (Applicable Trip Type)	VMT Reduction Estimate	Retail	Mixed-Use	Residential	Office	Property Manager/HOA	Commercial Tenant	Developer	City or Other Public Agency
Active Transportation Strategies												
3.2.1	Pedestrian Network Improvements	Pedestrian network improvements around and within the project site encourage people to walk to and within the project site. VMT reductions are due to the provision of complete pedestrian networks and only apply if located in an area that has a less robust sidewalk network. Generally, the developer can make the project site more accessible, connected, and welcoming with pedestrian network improvements, such as removing physical barriers, adding pedestrian crossing infrastructure, creating network links, and widening sidewalks.	Neighborhood/ Site Enhancement	0% - 2%	✓	✓	✓	✓			✓	✓
3.2.2	Bicycle Network Improvements	This strategy only applies to bicycle facilities that provide a dedicated lane for bicyclists or a completely separated right-of-way for bicycles and pedestrians. VMT reductions are primarily due to expansion of bike networks in urban areas. For individual projects, the citywide (or similar scale) bicycle network is enhanced such that a building entrance or bicycle parking is within 200 yards walking or bicycling distance from a bicycle network that connects to at least one of the following: - at least 10 diverse uses; - a school or employment center, if the project total floor area is 50% or more residential; - or a bus rapid transit stop, light or heavy rail station, commuter rail station, or ferry terminal. All destinations must be 3-mile bicycling distance from project site. Include educational campaigns to encourage bicycling.	Neighborhood/ Site Enhancement	0.25% - 1%	✓	✓	✓	✓			✓	✓
3.2.9	Dedicate Land for Bike Trails	Larger projects may be required to provide for, contribute to, or dedicate land for off-site bicycle trails linking the project to designated bicycle commuting routes. This measure should be grouped with improving the connectivity of a development to the surrounding street network.	Neighborhood/ Site Enhancement	Grouped strategy with Improve Design of Development (3.1.9)	✓	✓	✓	✓			✓	✓

CAPCOA Transportation Demand Management Strategy Source: Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association, 2010					Land Use Applicability				Implementation Body			
CAPCOA ID	Name	Description	Category (Applicable Trip Type)	VMT Reduction Estimate	Retail	Mixed-Use	Residential	Office	Property Manager/HOA	Commercial Tenant	Developer	City or Other Public Agency
3.4.5	Provide End of Trip Facilities	Non-residential projects can provide commuters facilities to support bicycling, such as showers, secure bicycle lockers, and changing spaces. These facilities can provide the amenities needed to transition to/from the work day and to securely store bikes.	Commute Trip Reduction	Grouped Strategy with Implement Commute Trip Reduction Program (3.4.1 & 3.4.2) and Provide Ride-Sharing Program (3.4.3)	✓	✓		✓	✓	✓	✓	
3.2.6 3.2.7	Bike Parking	Secure short-term and long-term bicycle parking can be provided for residents, employees, and visitors. Secure bicycle parking consists of the developer providing lockers, a secure bicycle room, or a bicycle station on-site. Secure bicycle parking should have coverage from the elements and should restrict access to only those parking in the facility.	Neighborhood/ Site Enhancement	Grouped strategy with Improve Design of Development (3.1.9)	✓	✓	✓	✓	✓		✓	
3.4.12	Bikeshare Program	A bikeshare system consists of bicycles available to individuals for short, one-way trips. Bikeshare can be implemented on a small scale, consisting of just a few bikes paid for and managed by property management or an HOA, or can be part of a citywide or regional program. A bikeshare program alone provides negligible reductions in VMT rates and is normally implemented in a bundle with other bicycle infrastructure strategies, such as the buildout of a bikeway network.	Commute Trip Reduction	Grouped strategy with Bike Lane Street Design (3.2.5) and Improve Design of Development (3.1.9)	✓	✓	✓	✓	✓	✓	✓	✓
Parking Strategies												
3.3.1	Reduce Parking Supply	Parking supply refers to the total number of parking spaces provided at a residential site. The baseline parking level should reflect typical conditions at the project site rather than code requirements. The City can also reduce on-site parking supply in conjunction with an on-street residential parking permit program; this approach would require on-street parking management and monitoring. Parking supply reductions work best in the urban context, but the degree of effectiveness varies depending on the levels of alternative transit modes and the density of the project and surrounding areas.	Parking Policy/ Pricing	5% - 12.5%		✓	✓				✓	✓

CAPCOA Transportation Demand Management Strategy Source: Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association, 2010					Land Use Applicability				Implementation Body			
CAPCOA ID	Name	Description	Category (Applicable Trip Type)	VMT Reduction Estimate	Retail	Mixed-Use	Residential	Office	Property Manager/HOA	Commercial Tenant	Developer	City or Other Public Agency
3.3.2	Unbundle Parking	Unbundling parking separates the price of parking from the price of the property so that buyers/renters must purchase/rent parking in addition to the property. Thus, the cost of parking is paid for by those who use it, rather than the community in general. This strategy applies to residential land uses. For employment uses, see Price Workplace Parking (3.4.14) and Employee Parking Cash-Out (3.4.15).	Parking Policy/ Pricing	2.6% - 13%		✓	✓		✓		✓	
3.3.3	Market Price Public Parking	Implementing market-price public parking is applicable for on-street parking near a central business district and employment or retail centers. This strategy is only effective if spillover parking (i.e. people parking in free/residential areas) is managed, such as through residential area permits. Market-price public parking can encourage people to park once and walk between destinations and may encourage enough mode-shift to justify increased transit service to the district. The VMT reduction applies to VMT from visitor/customer trips only.	Parking Policy/ Pricing	2.8% - 5.5%	✓	✓		✓				✓
3.3.4	Residential Area Parking Permits	Residential area parking permits require residents to purchase permits for long-term use of on-street parking in order to reduce spillover from surrounding sites, such as commercial areas or transit stations.	Parking Policy/ Pricing	Group strategy with Limit Parking Supply (3.3.1: 5%-12.5%), Unbundle Parking (3.3.2: 2.6%-13%), or Market Rate On-Street Parking Pricing (3.3.3: 2.8%-5.5%)	✓	✓	✓	✓				✓
3.4.14	Price Workplace Parking	Pricing workplace parking may include charging for parking, implementing above market rate pricing, validating parking only for invited guests, not providing employee parking and transportation allowances, and educating employees about available alternatives. Though similar to the Employee Parking "Cash-Out" strategy, this strategy focuses on implementing market rate and above market rate pricing to provide a price signal for employees to consider alternative modes for their work commute. The effectiveness of this strategy depends on the availability of alternative modes.	Commute Trip Reduction	0.1% - 19.7%	✓	✓		✓	✓	✓		✓

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3.4.15	Employee Parking Cash-Out	Employee Parking Cash-Out programs require that employees who choose not to drive to work be paid the cash equivalent of a parking space that their employer would otherwise have to purchase. This incentivizes employees to take transit, bike, walk, or carpool to work, thereby reducing commute VMT. This strategy only applies at workplace locations where office tenants must rent parking spaces separately from their office space.	Commute Trip Reduction	0.6%-7.7%		✓		✓	✓	✓		
Transit & Shared Ride Strategies												
3.4.3	Rideshare Program	A rideshare program includes TDM strategies designed to increase average vehicle occupancy by encouraging carpooling and vanpooling. Carpooling and vanpooling can be encouraged through programmatic features, such as a platform or database that matches potential riders (e.g. Zimride), and through incentives, such as payments to individuals who participate in each mode.	Commute Trip Reduction	1% - 15%	✓	✓	✓	✓	✓	✓	✓	✓
3.4.4	Transit Subsidies	Transit subsidies are direct payments to individuals for use of public transit. Using this measure requires a rough estimate of how much transit would cost the typical individual at the location and what percentage of that cost would be covered through subsidies. This measure may be best suited for affordable housing projects where subsidies can be provided in combination with other benefits, such as those for low-income residents; these programs may be grant funded. The effect of transit subsidies depends on the dollar amount of the subsidy, the density of the community that the subsidy is implemented within, and the proportion of individuals that are eligible for the program. Three updated VMT reduction ranges are provided, based on the form that the subsidies take: 1) Reduction in vehicle trips in response to reduced cost of transit use, assuming that 10-50% of new bus trips replace vehicle trips; 2) Reduction in commute trip VMT due to employee benefits that include transit 3) Reduction in all vehicle trips due to reduced transit fares system-wide, assuming 25% of new transit trips would have been vehicle trips.	Commute Trip Reduction	0.3% - 20%	✓	✓	✓	✓	✓	✓	✓	✓

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3.4.10	School Carpool Program	School carpool programs function similarly to ridesharing programs. School carpool programs can fill in service gaps for public schools (e.g. students cannot walk or bike but do not meet requirements for the school bus) and provide options for students attending private schools. The VMT reduction applies to school dropoff/pickup VMT only, which is typically no more than 15% of average daily household VMT; the share of household VMT that is school trips can be found in a regional travel model or MPO report.	Commute Trip Reduction	7.2% - 15.8%		✓	✓		✓			✓
3.4.11	Neighborhood or Private Shuttles	Private neighborhood or project shuttle implementation consists of new service that is provided only for residents, employees, or visitors affiliated with the project. Shuttles alone provide negligible reductions in VMT rates, and shuttles are normally implemented in a bundle with other transit infrastructure improvements. Private shuttles can consist of either point-to-point shuttles or last-mile shuttles connecting with major transit hubs. VMT reductions vary depending on how strategy is implemented: 1) Reduction in commute vehicle trips due to implementing employer-sponsored vanpool and shuttle programs; 2) Reduction in commute vehicle trips due to vanpool incentive programs; 3) Reduction in commute vehicle trips due to employer shuttle programs	Commute Trip Reduction	0.3% - 13.4%	✓	✓	✓	✓	✓	✓	✓	✓
3.4.13	Implement School Bus Program	A project developer or manager would work with the school district to restore or expand school bus services in the project area and local community. As more families participate in the school bus program, more VMT would be reduced. VMT reduction applies to school trip VMT only.	Commute Trip Reduction	38% - 63%		✓	✓		✓		✓	✓

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3.6.4	Park-and-Ride Lots	Park-and-Ride lots are placed near transit stops/hubs and High Occupancy Vehicle lanes so that people can drive to the lot, park, and complete the remainder of their trip in a carpool/vanpool or on public transit.	Road Pricing Management	Grouped Strategy with Area/Cordon Pricing (3.6.1), Employer-Sponsored Vanpool (3.4.11), Ride-Sharing Programs (3.4.3), Transit System Improvements (3.5.1-3.5.6)	✓	✓	✓	✓				✓
Other Commute Trip Reduction Strategies												
3.4.6	Encourage Telecommuting and Alternative Work Schedules	Telecommuting and alternative work schedules reduce the time spent commuting and/or the number of commute trips per week. Telecommuting is when employees work remotely, typically at home. Alternative work schedules take the form of compressed work weeks (e.g. 9/80) that allow workers to reduce the number of commute trips they make.	Commute Trip Reduction	0.07% - 5.5%		✓	✓	✓	✓	✓		
3.4.7	Promotions & Marketing	Commute trip reduction marketing programs are part of a traditional TDM program and often focus on advertising non-driving options to individuals. This may include direct outreach, help with trip planning, and development of promotional materials. This strategy can include the deployment of products, such as TransitScreen, that provide real-time transit and other transportation information in common spaces of a development. This strategy's efficacy is affected by the level of investment in the program, the staff involved, and the other measures implemented. Updated VMT reductions from this strategy vary depending on how it is implemented: 1) Vehicle trips reduction due to CTR marketing; 2) Reduction in VMT from institutional trips (e.g. university or large employer) due to targeted behavioral intervention programs	Commute Trip Reduction	0.8% - 4%	✓	✓	✓	✓	✓	✓	✓	✓

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3.4.9	Carshare Program	A carshare program provides ad hoc short-term car rental services, such as services provided by ZipCar, Car2Go, and Gig. Vehicles are parked in parking spaces on or near the site and available for members to use on an hourly or per-mile basis. A carshare program should be paired with designated carshare parking spots for maximum effectiveness. A carshare program serves different purposes based on the land use. Transit station-based programs focus on providing the "last-mile" solution and link transit with commuters' final destinations. Residential-based programs work to substitute entire household based trips. Employer-based programs provide a means for business/ day trips for alternative mode commuters and provide a guaranteed ride home option. VMT reductions assume 1%-5% penetration rate of carsharing use among the target population.	Commute Trip Reduction	0.4% - 0.7%	✓	✓	✓	✓	✓	✓	✓	✓
Development Strategies												
3.1.1	Increase Density	Density is typically measured in terms of jobs, persons, or dwelling units per unit area. Increasing density can decrease the distance people travel and the transportation mode they use to get to a destination (e.g. people can replace a vehicle trip with a walking, biking, or transit trip). Increasing residential density is associated with lower VMT per capita. Increased residential density in areas with high jobs access may have a greater VMT change than increases in regions with lower jobs access. The range of VMT reductions assumes that residential density is increased between 10% and 50% over existing conditions.	Land Use/ Location	0.8% - 30%	✓	✓	✓	✓			✓	✓
3.1.3	Increase Diversity of Urban/ Suburban Developments	Increasing the diversity of urban and suburban developments includes placing different land uses near each other and in the same building (i.e. mixed-use). Increasing diversity of land use minimizes the number and length of vehicle trips as people can reach multiple destinations in one trip or walk/bike for shorter trips. In the urban context, a single building should combine multiple uses and should encourage non-auto modes of transport. Increased diversity of urban developments can lead to between a 0% to a 12% decrease in VMT. In the suburban context, a mix of different uses, like residential, retail, office, or open space, should exist on site or within ¼ of a mile of the site. Increased diversity of suburban developments can lead to between a 0.3% to a 4% decrease in VMT.	Land Use/ Location	9%-30%	✓	✓	✓	✓			✓	✓

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3.1.5	Increase Transit Accessibility	Increasing transit accessibility encourages transit use to replace vehicle trips. This measure is primarily relevant for urban and suburban contexts but can be applicable for rural contexts if a development is adjacent to a commuter rail station with convenient rail service to a major employment center. Increasing transit accessibility can take two forms: 1) Locate near transit: Locate developments within a 5-10 minute walk (approximately 0.25 mile) from a high-frequency transit stop. 2) Create Transit-Oriented Development: Transit accessibility is enhanced by nearby mixed-use developments, streets with traffic-calming design, and parking management. To qualify for this reduction, the project must include a mix of land uses, manage access to parking, and be designed to encourage walking and cycling. Most of the development's residents and workers must be within a 5-10 minute walk (or roughly 0.25 mile from stop to edge of development) of fast, frequent, and reliable transit service connecting to a high percentage of regional destinations.	Land Use/ Location	0.5% - 24.6%	✓	✓	✓	✓			✓	✓
3.1.9	Improve Design of Development	Improving development design to improve walkability and connectivity will encourage people to walk to and within a development. Walkability and connectivity can be assessed by measuring average block size, number of intersections per square mile, sidewalk coverage, building setbacks, street widths, pedestrian crossings, and presence of street trees. This applies only to large developments with significant internal street structure.	Land Use/ Location	3% - 21.3%	✓	✓	✓	✓			✓	✓
3.6.3	Required Contributions to Transportation Infrastructure Improvement Projects	Requiring projects to contribute a proportionate amount (i.e. "fair share") to transportation infrastructure improvements projects would fund traffic-flow improvements or multi-modal improvement projects, such as improving walking and biking facilities. Contributions could be right-of-way dedications, capital improvements, and easements.	Road Pricing Management	Grouped Strategy with Improve Traffic Flow (3.6.2) and Transit System Improvements (3.5.1-3.5.6)	✓	✓	✓	✓				✓