

REPORT TO CITY COUNCIL

DATE: JUNE 24, 2020

TO: HONORABLE MAYOR AND MEMBERS OF THE CITY COUNCIL

FROM: GREG RAMIREZ, CITY MANAGER

BY: JESSICA FORTE, PUBLIC WORKS DIRECTOR/CITY ENGINEER

SUBJECT: CONDUCT A CONTINUED OPEN PUBLIC HEARING, FOR THE CALIFORNIA ENVIRONMENTAL QUALITY ACT TRANSPORTATION SECTION UPDATE IMPLEMENTING SENATE BILL 743

On June 10, 2020, the City Council opened the public hearing for this item and continued to June 24, 2020.

This report recommends City Council adoption of Resolution No. 20-1942, which would revise the transportation evaluation methods used to determine compliance with the California Environmental Quality Act (CEQA) by implementing new transportation impact thresholds.

These revised criteria were mandated by the State of California (State) pursuant to Senate Bill 743 (SB 743) which requires all California cities to update their transportation impact analysis metrics, from Level of Service (LOS) to Vehicle Miles Traveled (VMT), before July 1, 2020.

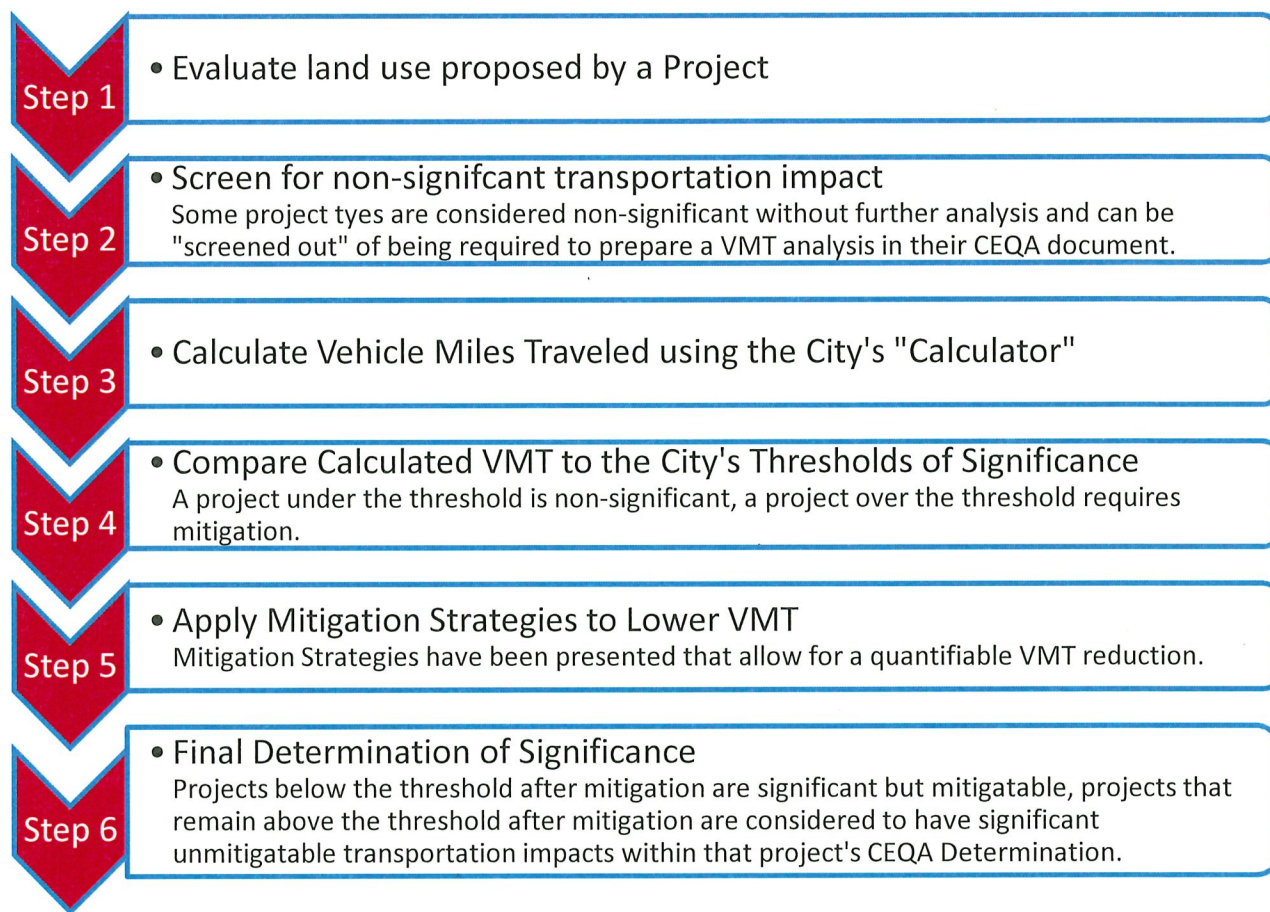
SB 743 was signed into law on September 27, 2013. In November 2017, the Governor's Office of Planning and Research (OPR) published guidelines with VMT as the primary transportation impact metric, including threshold recommendations that are aligned with the State's greenhouse gas emissions reduction goals.

In 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update. The updated CEQA Guidelines were published in November 2018 and required all cities in California to update their transportation impact analysis metrics to VMT before July 1, 2020.

At its March 27, 2019, Goal Setting Workshop, the City Council directed staff to update the City's General Plan to meet the intent of SB 743 while helping to advance the City's long-term environmental goals.

Following the Council's directive, the project team collected local travel data, established VMT baselines, developed the tools needed to estimate VMT, established transportation impact thresholds and screening criteria, developed VMT mitigation measures, and methodology of analysis that meet the intent of SB 743.

The process for determination of a “Significant Transportation Impact” under these new CEQA guidelines includes six (6) steps and are described in the following graphic.



Further detail including criteria for screening, a comprehensive list of mitigation measures, the process by which the VMT Calculator was developed, and information on the appropriate thresholds for the City is included in the attached Implementation Report.

One item, worthy of mention, is that the use of affordable housing as a screening criteria has been omitted, until such time that the City adopts an updated housing element to the General Plan, in order to the screening criteria used is consistent with the Housing Element. Staff will return to the City Council for consideration of affordable housing as a screening criteria at that time.

Thresholds recommended for adoption this evening are as follows:

Land Use	Threshold	Basis
Residential	16.6 VMT/capita ¹	15% below existing Citywide average VMT/Capita

¹ Residential VMT specifically applies to all Home-Based trips residential trips as represented by production in the SCAG Travel Demand Model.

Office	18.5 Work VMT/Employee ²	15% below existing SCAG's regional average VMT/Employee
Retail	Net regional change	As measured within the (SCAG) Region

These recommended thresholds are currently in line with OPRs guidance, but may be subject to change as VMT unrolls statewide.

Where a project is not able to achieve a VMT value which is less than the significance threshold, even after applying mitigation measures, it will be determined to have a significant transportation impact under CEQA and will require a Statement of Overriding Considerations (SOC) be prepared by the developer of the project, and approved by both the City's Planning Commission and the City Council in order to proceed.

The second part of SB 743 implementation addresses projects that are exempt from or otherwise analyzed outside of the CEQA process. Using OPR's guidance, local agencies can apply traditional operational analysis requirements to inform land use and transportation-related decisions. Development projects will continue to be reviewed for site access, circulation, and operational plan, to determine if any safety and access enhancements, intersection improvements, traffic signal upgrades, or other improvements are needed.

The City's TIA Guidelines will be revised to include guidance for evaluating projects under both CEQA and non-CEQA analysis. Non-CEQA analysis, such as circulation assessment guidelines, still uses LOS for analysis of signalized intersections.

The action of adopting VMT, in place of LOS, as the new transportation impact metric has been determined to be exempt from CEQA, pursuant to Section 15061(b)(3) of the CEQA Guidelines. This exemption refers to projects where there is no possibility that the activity may have a significant effect on the environment.

On May 21, 2020, staff presented an informational item on implementing SB 743 to the Planning Commission. As the City Council is the decision-making body, the Planning Commission was not asked to take an action on this item, however the implementation plan was met with majority support by the Commissioners. Staff further presented to the City's Land Use and Economic Development Committee (LUEDC), comprised of Councilmembers Northrup and Anstead, on June 1, 2020. The LUEDC also supported the recommended methodology for SB-743 Implementation.

Adoption of the proposed Resolution No. 20-1942 will implement revised transportation impact thresholds, using VMT in place of LOS, for CEQA transportation evaluation method and clearances, as mandated by the State pursuant to SB 743. Upon adoption of the resolution, VMT will be the new metric used to determine whether projects reviewed under CEQA may have a negative transportation related environmental impact.

² Work VMT specifically applies to commute trips, as represented by the attractions in the SCAG Travel Demand Model.

RECOMMENDATION

Staff respectfully recommends the City Council conduct a continued open public hearing and consider the adoption of proposed Resolution No. 20-1942, implementing new transportation impact thresholds using Vehicle Miles Traveled for California Environmental Quality Act transportation evaluation method and clearances, pursuant to Senate Bill 743.

Attachments: Resolution No. 20-1942
Senate Bill 743 Implementation Report

RESOLUTION NO. 20-1942

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AGOURA HILLS, CALIFORNIA, TO UPDATE THE TRANSPORTATION THRESHOLDS OF SIGNIFICANCE FOR PURPOSES OF ANALYZING TRANSPORTATION IMPACTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

THE CITY COUNCIL OF THE CITY OF AGOURA HILLS HEREBY FINDS, RESOLVES, AND ORDERS, AS FOLLOWS:

WHEREAS, the California Environmental Quality Act (CEQA) was enacted in 1970 to ensure the long-term protection of the environment and requires public agencies to analyze and disclose the effect of their actions on the environment; and

WHEREAS, the Governor's Office of Planning and Research (OPR), together with the California Natural Resources Agency, develops the CEQA Guidelines interpreting the CEQA statute and published court decisions, which includes guidance for lead agencies when performing environmental review; and

WHEREAS, CEQA Guidelines Section 15064.7(b) encourages public agencies to develop and publish generally applicable "thresholds of significance" to be used in determining the significance of a project's environmental effects; and

WHEREAS, CEQA Guidelines Section 15064.7(a) defines a threshold of significance as "an identifiable quantitative, qualitative or performance level of a particular environmental effect, noncompliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant"; and

WHEREAS, CEQA Guidelines Section 15064.7(b) requires that thresholds of significance must be adopted by ordinance, resolution, rule, or regulation, developed through a public review process, and be supported by substantial evidence; and

WHEREAS, pursuant to CEQA Guidelines Section 15064.7(c), when adopting thresholds of significance, a public agency may consider the thresholds of significance adopted or recommended by other public agencies provided that the decision of the agency is supported by substantial evidence; and

WHEREAS, Senate Bill 743, enacted in 2013 and codified in Public Resources Code Section 21099, directed OPR to revise the CEQA Guidelines regarding the criteria for determining the significance of transportation impacts using alternative metrics that would replace automobile Level of Service (LOS) and promote a reduction in greenhouse gases (GHG), the development of multimodal transportation, and a diversity of integrated land uses; and

WHEREAS, in 2018, OPR proposed, and the California Natural Resources Agency certified and adopted, new CEQA Guidelines Section 15064.3 that identifies vehicle miles traveled (VMT) - meaning the amount and distance of automobile travel attributable to a project - as the most appropriate metric to evaluate a project's transportation impacts; and

WHEREAS, as a result, automobile delay, as measured by LOS and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA; and

WHEREAS, in March 2019, the City set goals to update CEQA transportation thresholds of significance pursuant to SB 743 and CEQA Guidelines Section 15064.3; and

WHEREAS, CEQA Guidelines Section 15064.3 goes into effect on July 1, 2020, though public agencies may elect to be governed by this section immediately; and

WHEREAS, the City has prepared the proposed updated transportation thresholds of significance pursuant to SB 743 and CEQA Guidelines Section 15064.3 for the City Council's consideration and adoption; and

WHEREAS, the proposed Transportation thresholds of significance are justified by substantial evidence and consistent with OPR's recommendation, in order to account for the size and varying travel characteristics of the City of Agoura Hills; and

WHEREAS, revisions to transportation thresholds of significance may need to be considered on an as-needed basis in order to meet the goals of SB 743 and City long-term environmental goals; and

WHEREAS, the City Council of the City of Agoura Hills is the decision-making body for this Resolution and has considered the environmental clearance described above prior to taking any action on this Resolution; and

WHEREAS, after adoption of this Resolution, VMT will be the new metric used to determine whether projects reviewed under CEQA may have a significant transportation-related environmental impact.

Section 1. Environmental Findings. The City Council hereby makes the following environmental findings and determinations in connection with the adoption of this resolution:

In accordance with the California Environmental Quality Act (“CEQA”), the City Council has been determined that the adoption of the VMT Thresholds, which is an action consistent with Senate Bill (“SB”) 743, will not result in a direct or reasonably foreseeable indirect physical change in the environment, and thus the thresholds are not subject to CEQA (14 CCR § 15378(a)). In addition, the thresholds is not a “project” within the meaning of CEQA pursuant to 14 CCR § 15378(b)(5) and constitute an action involving procedures for the protection of the environment, which is exempt from CEQA pursuant to 14 CCR § 15308. Finally, if the thresholds is determined to be subject to CEQA, they are exempt therefrom because it can be seen with certainty that there is no possibility that these amendments will have a significant effect on the environment. (14 CCR § 15061(b)(3).)

Section 2. Further Findings. The City Council of the City of Agoura Hills hereby finds the VMT thresholds of significance have been developed through a public review process and are supported by substantial evidence, as required by CEQA Guidelines section 15064.7.

Section 3. Approval of VMT Thresholds of Significance. The City Council of the City of Agoura Hills hereby adopts the CEQA VMT Thresholds of Significance attached hereto as **Exhibit “A”** (VMT Thresholds of Significance for City of Agoura Hills) thereby establishing the VMT thresholds of significance for transportation impact analysis pursuant to the California Environmental Quality Act.

PASSED, APPROVED, AND ADOPTED this 24th day of June 2020, by the following vote to wit:

AYES: (0)
NOES: (0)
ABSENT: (0)
ABSTAIN: (0)

Illece Buckley Weber, Mayor

ATTEST:

Kimberly, M. Rodrigues, City Clerk

Exhibit A – VMT Thresholds of Significance for City of Agoura Hills

Land Use	Threshold	Basis
Residential	16.6 VMT/capita ¹	15% below existing Citywide average VMT/Capita
Office	18.5 Work VMT/Employee ²	15% below existing SCAG's regional average VMT/Employee
Retail	Net regional change	As measured within the (SCAG) Region

¹ Residential VMT specifically applies to all Home-Based trips residential trips, as represented by production in the SCAG Travel Demand Model.

² Work VMT specifically applies to commute trips, as represented by the attractions in the SCAG Travel Demand Model.



Senate Bill 743 Implementation City of Agoura Hills

EVALUATING TRANSPORTATION IMPACTS IN CEQA

JUNE 2020 | DRAFT

Prepared By:

Kimley»»Horn

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PURPOSE

The purpose of this document is as follows:

1. Provide the background and history of Senate Bill (SB) 743 and how the City of Agoura Hills is affected
2. Provide the steps involved in implementing SB 743 in the City of Agoura Hills
3. Provide a framework for the updated process for evaluating transportation impacts under California Environmental Quality Act (CEQA) for land-use and transportation projects

BACKGROUND

In 2013, SB 743 was signed into law by the former California Governor Jerry Brown with a goal of reducing Greenhouse Gas (GHG) emissions, promoting the development of infill land use projects and multimodal transportation networks, and to promote a diversity of land uses within developments. One significant outcome resulting from this statute is the removal of automobile delay and congestion, commonly known as level of service (LOS), as a basis for determining significant transportation impacts under CEQA.

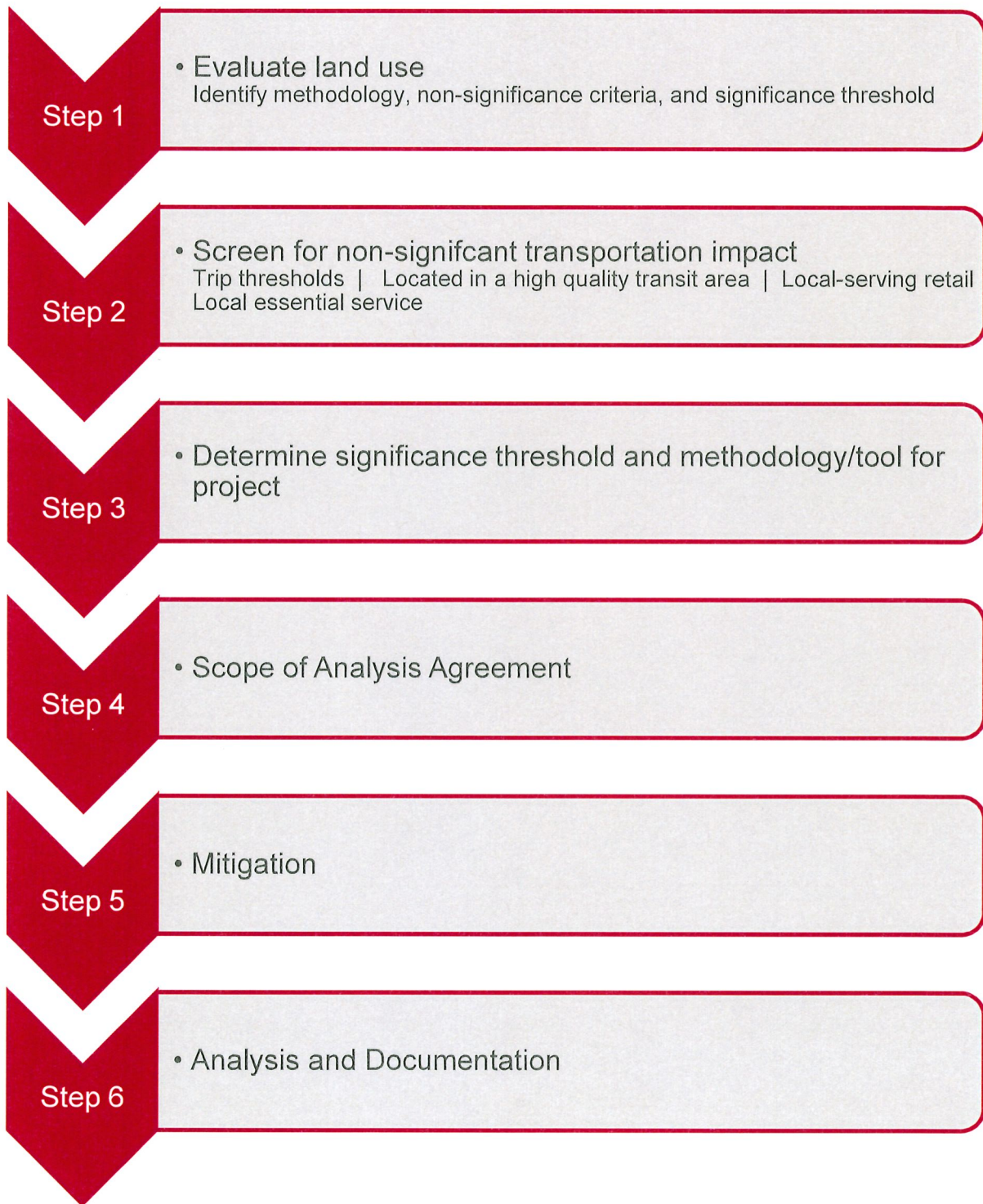
The Governor's Office of Planning and Research (OPR) selected Vehicle Miles Traveled (VMT) as a replacement measure to LOS for determining significant transportation impacts. VMT is a measure of total vehicular travel that accounts for the number of vehicle trips and the length of those trips. OPR selected VMT because jurisdictions were already familiar with this metric. VMT is already used in CEQA to study other potential impacts such as GHG, air quality, and energy impacts and is used in planning for regional Sustainable Communities Strategies (SCS).

VMT also allows for an analysis of a project's impact throughout the jurisdiction rather than in the vicinity of the proposed project allowing for a better understanding of the full extent of a project's transportation-related impact. It should be noted that SB 743 does not interfere with a local agency's control of its planning process as local agencies can continue using LOS for planning or other purposes. The City of Agoura Hills will continue to use LOS for determining transportation impacts for a project at adjacent intersections and roadway segments.

LAND USE PROJECTS

The City has developed an approach to identify transportation impacts under CEQA for land-use that closely align with guidance provided within the OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* (2018). While the OPR guidance related to SB 743 has been a helpful introduction to using VMT to evaluate projects, it does not provide a complete solution. There are a multitude of complex practical issues that are not addressed by the OPR guidance. OPR Guidance does not specifically address land uses beyond residential, office, and retail and it provides significant latitude on some elements of implementation. In response to this, the City has prepared a specific series of analysis steps for SB 743 project evaluation to clarify requirements and reduce potential confusion. **Exhibit 1** provides a graphical representation of the analysis process:

Exhibit 1 – Process for CEQA Analysis for Land Use Projects



STEP 1: EVALUATE LAND USE TYPE

During the initial step the land use projects will need to be evaluated for the following considerations:

- **Land use type.** For the purposes of analysis, the Institute of Transportation Engineers (ITE) land use codes serve as the basis of land use definitions. Although, ITE has multiple distinct codes under many larger classification types, it is recognized that VMT evaluation tools and methodologies are typically not fully sensitive to some of the minor distinctions. However, the use of ITE land use codes is useful for maintaining consistency across analyses, determining trip generation for other planning level tools, and maintaining a common understanding of trip making characteristics amongst transportation professionals. The ITE land use code is also used as an input into the City's sketch planning tool.
- **Mixed Use.** If there are multiple distinct land uses within the project (residential, office, retail, etc.), they will be required to be analyzed separately unless they are determined to be insignificant to the total VMT by the City. Mixed use projects are permitted to account for internal capture which depending on the methodology may require a distinct approach not covered in this documentation.
- **Redevelopment projects.** As described under the Non-Significant Screening Criteria section, redevelopment projects which have lower VMT than the existing on-site use can be determined to have a non-significant impact.

STEP 2: SCREEN FOR NON-SIGNIFICANT TRANSPORTATION IMPACT

The purpose of this step is to determine if a presumption of a non-significant transportation impact can be made on the facts of the project. The guidance in this section is primarily intended to avoid unnecessary analysis and findings that would be inconsistent with the intent of SB 743. A detailed CEQA transportation analysis will not be required for land use elements of a project that meet the screening criteria shown in **Exhibit 2**. If a project is mixed use in nature, only those elements of the project that do not comply with the elements in **Exhibit 2** would require further evaluation to determine transportation significance for CEQA purposes.

Exhibit 2 – Screening Criteria

Screening Criteria	OPR Guidance	City of Agoura Hills
<p>SMALL PROJECTS¹</p>	<p>Expected to cause a less-than-significant impact:</p> <ul style="list-style-type: none"> ▪ Project generation is less than 110 trips per day <p>CEQA transportation analysis required if:</p> <ul style="list-style-type: none"> ▪ It is inconsistent with the Sustainable Communities Strategy as determined by the City 	<p>See OPR Guidance</p>
<p>PROJECTS NEAR HIGH QUALITY TRANSIT²</p>	<p>Expected to cause a less-than-significant impact:</p> <ul style="list-style-type: none"> ▪ Within a ½ mile of an existing major transit stop. ▪ Maintains a service interval frequency of 15 minutes or less during the morning and afternoon peak commute periods. <p>CEQA transportation analysis required if:</p> <ul style="list-style-type: none"> ▪ Has a Floor Area Ratio (FAR) of less than 0.75 ▪ Includes more parking for use by residents, customers, or employees of the project than required by the City ▪ It is inconsistent with the Sustainable Communities Strategy as determined by the City ▪ Replaces affordable residential units with a smaller number of moderate- or high-income residential units 	<p>See OPR Guidance</p> <p>NOTE THAT THERE ARE NO EXISTING CIRCUMSTANCES WHERE THIS SCREENING CRITERIA APPLIES WITHIN THE CITY</p>

¹ 2018 OPR Guidance, page 12

² 2018 OPR Guidance, page 13

Exhibit 2 – Screening Criteria

Screening Criteria	OPR Guidance	City of Agoura Hills
<p>LOCAL-SERVING RETAIL³</p>	<p>Expected to cause a less-than-significant impact:</p> <ul style="list-style-type: none"> ▪ No single store on-site exceeds 50,000 square feet ▪ Project is local-serving as determined by the City <p>CEQA transportation analysis required if:</p> <p>If the nature of the service is regionally focused as determined by the City.</p>	<p>See OPR Guidance</p>
<p>AFFORDABLE HOUSING⁴</p>	<p>Expected to cause a less-than-significant impact:</p> <ul style="list-style-type: none"> ▪ A high percentage of affordable housing is provided as determined by the City. <p>CEQA transportation analysis required if:</p> <ul style="list-style-type: none"> ▪ The percentage of affordable housing is determined by the City to not be high in relation to the residential element of a project. 	<p>THE CITY DOES NOT CURRENTLY PLAN TO USE AFFORDABLE HOUSING AS A SCREENING CRITERION; HOWEVER, IT MAY ADOPT THIS APPROACH IN THE FUTURE</p>

³ 2018 OPR Guidance, page 16

⁴ 2018 OPR Guidance, page 14. As described, “Evidence supports a presumption of less than significant impact for a 100 percent affordable residential development (or the residential component of a mixed-use development) in infill locations. Lead agencies may develop their own presumption of less than significant impact for residential projects (or residential portions of mixed-use projects) containing a particular amount of affordable housing, based on local circumstances and evidence.”

Exhibit 2 – Screening Criteria

Screening Criteria	OPR Guidance	City of Agoura Hills
<p>LOCAL ESSENTIAL SERVICE⁵</p>		<p>Expected to cause a less-than-significant impact:</p> <ul style="list-style-type: none"> ▪ Day care center ▪ Public K-12 School ▪ Police or Fire facility ▪ Medical/Dental office building ▪ Government offices (in-person services such as post office, library, and utilities) <p>CEQA transportation analysis required if:</p> <p>If the nature of the service is regionally focused as determined by the City.</p>
<p>MAP-BASED SCREENING⁶</p>	<p>Expected to cause a less-than-significant impact:</p> <ul style="list-style-type: none"> ▪ Area of development is under threshold as shown on screening map as allowed by City <p>CEQA transportation analysis required if:</p> <ul style="list-style-type: none"> ▪ Represent significant growth as to substantially change regional travel patterns as determined by the City 	<p>THE CITY DOES NOT CURRENTLY PLAN TO USE MAP-BASED SCREENING; HOWEVER, IT MAY ADOPT THIS APPROACH IN THE FUTURE</p>

⁵ Based on assumption that, like local-serving retail, the addition of necessary local in-person services will reduce VMT given that trips to these locations will be made irrespective of distance given their non-discretionary nature.

⁶ 2018 OPR Guidance, page 12

Exhibit 2 – Screening Criteria

Screening Criteria	OPR Guidance	City of Agoura Hills
REDEVELOPMENT PROJECTS⁷	<p>Expected to cause a less-than-significant impact:</p> <ul style="list-style-type: none"> ▪ Project replaces an existing VMT-generating land use and does not result in a net overall increase in VMT. <p>CEQA transportation analysis required if:</p> <ul style="list-style-type: none"> ▪ Project replaces an existing VMT-generating land use and results in a net overall increase in VMT. 	See OPR Guidance

⁷ 2018 OPR Guidance, Page 18

STEP 3: SIGNIFICANCE THRESHOLD AND METHODOLOGY

The purpose of this step is to determine the efficiency metrics to define thresholds of significance for land use projects. Significance thresholds are based on land use type, broadly categorized as efficiency and net change metrics. Efficiency metrics include VMT/Capita and Work VMT/employee⁸. As described in **Table 1**, “Net Change” refers to the net change in regional VMT. “Net Change” is used for elements that include a significant customer base, such as commercial uses although it can extend to a variety of uses that have similar characteristics as shown in **Table 1**.

Table 1. Significance threshold and methodology/tool

Threshold Basis	Efficiency	Net Change
Example Land Use	Residential, Office	Retail
Example VMT Thresholds	Per capita, per employee	Region VMT change
Customer Component	No	Yes
Allowable Methods	Non-Significant Screening Criteria, City Sketch Tool, Travel Demand Model	Non-Significant Screening Criteria, Travel Demand Model

For projects with a significant customer basis it may be appropriate to separate employee trip characteristics from the customer base unless the customer base is minimal in nature. Under these circumstances, it is most appropriate to evaluate the total of the delta in regional VMT resultant from the customer base plus the delta of VMT resultant from employees based on the following formula:

$$(\text{number of employees}) \times (\text{estimated VMT/employee} - \text{threshold VMT/employee})$$

The threshold of significance will still be Net Change as described in **Table 1**, however the resultant VMT will be more easily evaluated for mitigation strategies as appropriate. Under these circumstances, it is most appropriate to determine a total VMT for the purpose of evaluating the impact of mitigation although each element of the project should be tallied separately.

⁸ Work VMT specifically applies to commute trips as represented by the attractions in the SCAG Travel Demand Model. Refer to Appendix A for additional information

VMT THRESHOLDS OF SIGNIFICANCE

OPR suggests a 15 percent VMT reduction relative to existing local or regional average VMT levels. The thresholds of significance recommended by OPR are summarized in **Table 2**.

Table 2. OPR suggested VMT Thresholds of significance

Land Use	OPR Guidance⁹
Residential	15% below existing citywide average VMT per capita, or 15% below existing regional average VMT per capita
Office	15% below existing regional average VMT per employee
Retail	Net increase in total VMT

OPR defines region as the Metropolitan Planning Organization (MPO) area that the City is located in. Agoura Hills is in the Southern California Association of Governments (SCAG) MPO area which represents six counties, 191 cities, and more than 19 million residents. For office projects, where the region is substantially larger than the geography over which most workers are expected to live, OPR allows for using a smaller geographic region, such as a county, that includes the area over which nearly all workers would be expected to live.

In addition to the City of Agoura Hills and the SCAG region, the existing baseline average VMT was analyzed for Los Angeles County and the Las Virgenes-Malibu Council of Governments (LVMCOG) area. The LVMCOG is a Joint Powers Authority of the cities of Agoura Hills, Calabasas, Hidden Hills, Malibu, and Westlake Village who work together to address regional priorities. The boundaries for the SCAG region, LVMCOG region, LA County, and City of Agoura Hills are shown in **Figure 1**.

⁹ 2018 OPR Guidance, Pages 15-16

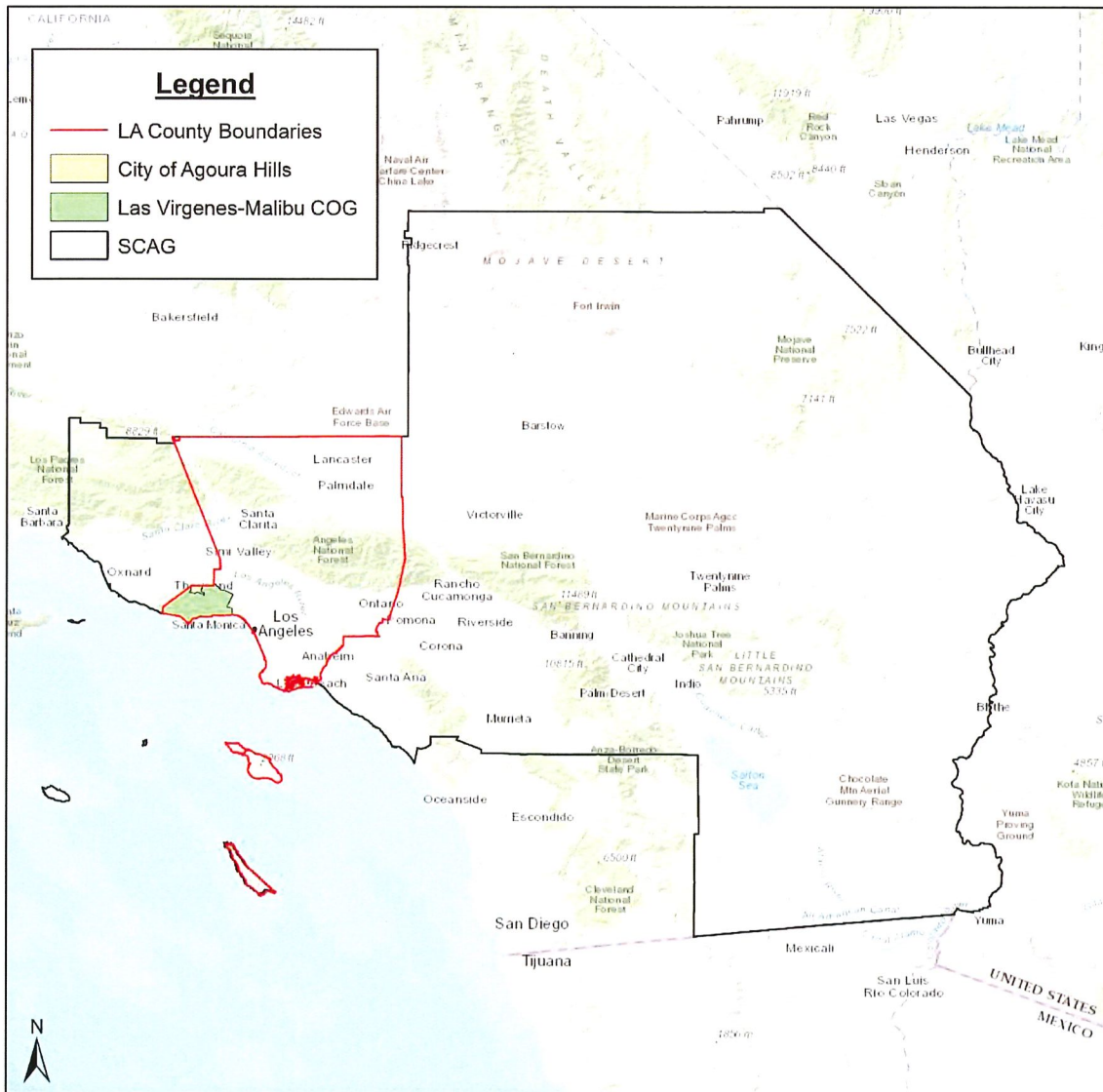


Figure 1. Boundaries of SCAG region, LVMCOG area, LA County, and City of Agoura Hills

The existing baseline averages were established using the SCAG Regional Travel Demand Model as described in Appendix A. The average VMT values that correspond to these geographies in addition to the 15 percent reduction from these averages are summarized in **Table 3** for comparison.

Table 3. Existing City and Regional Average VMT Comparison

	City of Agoura Hills		Los Angeles County		SCAG Region		LVMCOG	
	2016 Average (miles)	15% reduction below average (miles)	2016 Average (miles)	15% reduction below average (miles)	2016 Average (miles)	15% reduction below average (miles)	2016 Average (miles)	15% reduction below average (miles)
Residential Daily VMT per Capita (miles)	19.5	16.6	15.8	13.4	17.5	14.9	22.2	18.9
Office Daily Work VMT per Employee (miles)	25.6	22.0	20.8	17.7	21.8	18.5	27.0	23.0

Table 3 indicates that LVMCOG’s average residential VMT per capita (22.2) and average office VMT per employee (27.0) is higher than the City, County and SCAG region.

The City considered using the LVMCOG area as the basis for the residential and office VMT thresholds of significance. Using the data from the 2016 SCAG regional model and Teralytics, origin-destination analyses were performed for residential and office trips to determine if most trips began and ended in the LVMCOG area. The origin-destination analysis of residential trips found most trips beginning in Agoura Hills do not end within the City’s boundaries. The origin-destination analysis of office trips found most employees who work in Agoura Hills do not live in the LVMCOG area

The City is in active discussions with OPR and exploring alternative regions for the basis of the residential and office VMT thresholds of significance. For example, an alternative region could be an envelope area surrounding Agoura Hills including portions of LA County and Ventura County. In the interim, the City selected the Citywide VMT average as the basis for the residential VMT per capita threshold of significance and the SCAG region VMT average as the basis for the office VMT per employee thresholds of significance.

The proposed City of Agoura Hills VMT thresholds of significant are summarized in **Table 4**.

Table 4. VMT Thresholds of Significance for City of Agoura Hills

Land Use	VMT Threshold	Basis
Residential	16.6 VMT/capita ¹⁰	15% below existing Citywide average VMT per capita.
Office	18.5 Work VMT/Employee ¹¹	15% below existing SCAG regional average VMT per employee
Retail	Net regional change	As measured within the SCAG Region

Note that based on improvements to methods and data as well as other modeling modifications there may be periodic updates to the threshold values. The values in the current sketch planning tool, discussed in the next section, will supersede the information provided in the table above. Additional thresholds for various employment types is also provide in the Sketch Planning Tool.

CITY OF AGOURA HILLS SKETCH PLANNING TOOL

The City has developed a sketch planning tool for use in SB 743 land use project analysis. The purpose of the tool is to calculate VMT for a land use project. As with any sketch planning tool, there are distinct limitations in terms of its application including limits on the type and size of development that can be applied to. Note that it is anticipated that the tool will continue to evolve in response to data or methodological changes and as such it is important that the most current version of the tool be utilized. Broadly, the sketch planning tool provides the following information

- Institute of Transportation Engineers (ITE) Trip Generation
- VMT Threshold Analysis
- Greenhouse Gas (GHG) Estimation
- Transportation Demand Management (TDM) Evaluation

The VMT Analysis methodology is summarized in **Appendix A**.

STEP 4: SCOPE OF ANALYSIS AGREEMENT

Prior to undertaking VMT analysis, a scope compliant with the City’s requirements should be prepared and submitted for approval. Given the potential complexities of some uses, particularly those not identified as residential, retail, or office, an agreement regarding the threshold and methodology is important to avoid analysis that is not compliant with the City’s requirements.

¹⁰ Residential VMT specifically applies to all Home-Based trips residential trips as represented by production in the SCAG Travel Demand Model. Refer to Appendix A for additional information.

¹¹ Work VMT specifically applies to commute trips as represented by the attractions in the SCAG Travel Demand Model. Refer to Appendix A for additional information

STEP 5: MITIGATION

When a significant transportation impact is identified, feasible mitigation measures to avoid or reduce the impact must be identified. CEQA requires that the mitigation measures are included in the project's environmental impact report. The OPR provides a list of potential measures to reduce VMT but gives the lead agency full discretion in the selection of mitigation measures.

The type and size of the project will determine the most appropriate mitigation strategies for VMT impacts. For large projects such as general plans or specific plans, VMT mitigations should concentrate on the project's density and land use mix, site design, regional policies, and availability of transit, bicycle, and pedestrian facilities. For smaller projects such as an individual development project, VMT mitigations involve a transportation demand management (TDM) program. A TDM program is a combination of strategies to reduce VMT. The program is created by an applicant for their land use project based on a list of strategies recommended by the City.

The City has developed a list of potential TDM strategies appropriate for their jurisdiction and the magnitude of VMT reduction that could be achieved. The selection process was guided by the California Air Pollution Control Officers Association (CAPCOA) recommendations found in the 2010 publication *Quantifying Greenhouse Gas Mitigation Measures*. The suburban setting of the City also influenced the type of TDM strategies that were selected. CAPCOA strategies with the largest VMT reduction in rural areas include vanpools, telecommute or alternative work schedules, and master planned communities with design and land-use diversity to encourage intra-community travel. Based on empirical evidence, CAPCOA found the cross-category maximum for all transportation-related mitigation measures is 15% for suburban settings.

Exhibit 3 summarizes available TDM strategies along with the maximum VMT reduction, applicable land use application, and complementary strategies. The City's sketch planning tool includes the TDMs summarized in **Exhibit 3**.

Exhibit 3 – Transportation Demand Management Strategies

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
PARKING STRATEGIES	<p>Unbundle Parking</p> <p>Unbundles parking costs from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost.</p>	2.6 – 13% VMT reduction ¹²	<p>5% maximum VMT reduction</p> <p>Appropriate for Residential projects</p> <p>Complimentary strategy is residential area parking permits</p>
	<p>Parking Cash-Out</p> <p>Provide employees a choice of forgoing current parking for a cash payment to be determined by the employer. The higher the cash payment, the higher the reduction.</p>	0.6 – 7.7% VMT reduction ¹³	<p>5% maximum VMT reduction</p> <p>Appropriate for Office projects with paid parking</p>
	<p>Residential Area Parking Permits</p> <p>Implementation of residential permit parking zones for long-term use of on-street parking in residential areas.</p>	<p>Group with unbundle parking strategy¹⁴</p> <p>0.09-0.36% VMT reduction¹⁵</p>	<p>0.36% maximum VMT reduction</p> <p>Appropriate for Residential projects</p> <p>Complimentary strategy is unbundled parking</p>
TRANSIT STRATEGIES	<p>Reduce Transit Headways</p> <p>Makes transit service more appealing by reducing headways, reducing overall transit trip time, and encouraging riders to switch from auto to transit use.</p>	0.02 – 2.5% VMT reduction ¹⁶	<p>2.5% maximum VMT reduction</p> <p>Appropriate for specific or general plans</p>

¹² 2010 CAPCOA Guidance PDT-2, Page 210

¹³ 2010 CAPCOA Guidance TRT-15, Page 266

¹⁴ 2010 CAPCOA Guidance PDT-4, Page 217

¹⁵ Cambridge Systematics *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions* Technical Appendices

¹⁶ 2010 CAPCOA Guidance TST-4, Page 280

Exhibit 3 – Transportation Demand Management Strategies

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
TRANSIT STRATEGIES	<p>Transit Rerouting</p> <p>Coordinate with local transit agency to provide or reroute existing transit services near the site</p>	0.1 – 8.2% VMT reduction ¹⁷	<p>3% maximum VMT reduction</p> <p>Appropriate for specific or general plans</p>
	<p>Transit Stops</p> <p>Coordinate with local transit agency to provide bus stop near the site</p>	0.1 – 8.2% VMT reduction ¹⁸	<p>3% maximum VMT reduction</p> <p>Appropriate for specific or general plans</p>
	<p>Safe and Well-Lit Access to Transit</p> <p>Enhance the route for people walking or bicycling to nearby transit (typically off-site).</p>	Group with reduce transit headways, transit rerouting, transit stops ¹⁹	<p>0.1% maximum VMT reduction</p> <p>Appropriate for residential, retail, office, mixed-use, and industrial projects</p> <p>Complimentary strategies include reduce transit headways, transit rerouting, transit stops</p>
	<p>Implement Neighborhood Shuttle</p> <p>Implement project-operated or project-sponsored neighborhood shuttle serving residents, employees, and visitors of the project site</p>	0.3 – 13.4% VMT reduction ²⁰	<p>3% maximum VMT reduction</p> <p>Appropriate for large residential, retail, office, mixed use, and industrial projects</p> <p>Complimentary strategies include reduce transit headways, transit rerouting, transit stops</p>

¹⁷ 2010 CAPCOA Guidance TST-3, Page 276

¹⁸ 2010 CAPCOA Guidance TST-3, Page 276

¹⁹ 2010 CAPCOA Guidance TST-2, Page 275

²⁰ 2010 CAPCOA Guidance TST-6, Page 286

Exhibit 3 – Transportation Demand Management Strategies

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
TRANSIT STRATEGIES	<p>Transit Subsidies</p> <p>Involves the subsidization of transit fare for residents and employees of the project site. This strategy assumes transit service is already present in the project area.</p>	0.3 – 20.0% VMT reduction ²¹	<p>5% maximum VMT reduction</p> <p>Appropriate for residential, retail, office, mixed use, and industrial projects</p>
COMMUNICATION & INFORMATION STRATEGIES	<p>Promotions & Marketing</p> <p>Involves the use of marketing and promotional tools to educate and inform travelers about site-specific transportation options and the effects of their travel choices with passive educational and promotional materials.</p>	0.8 – 4% VMT reduction ²²	<p>4% maximum VMT reduction</p> <p>Appropriate for residential, retail, office, mixed use, and industrial projects</p>
COMMUTING STRATEGIES	<p>Required Commute Trip Reduction Program</p> <p>Employee-focused travel behavior change program that targets individuals' attitudes, goals, and travel behaviors, educating participants on the impacts of their travel choices and the opportunities to alter their habits.</p>	4.2 – 21% VMT reduction ²³	<p>15% maximum VMT reduction for a combined set of the following strategies: employer vanpool, emergency ride home, alternative work schedule, promotions & marketing, transit subsidies, end of trip bicycle facilities, and parking cash-out</p> <p>Appropriate for office, mixed use, and industrial projects</p>

²¹ 2010 CAPCOA Guidance TRT-4, Page 230

²² 2010 CAPCOA Guidance TRT-7, Page 240

²³ 2010 CAPCOA Guidance TRT-2, Page 223

Exhibit 3 – Transportation Demand Management Strategies

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
COMMUTING STRATEGIES	<p>Employer Sponsored Vanpool or Shuttle</p> <p>Implementation of employer-sponsored employee vanpool or shuttle providing new opportunities for access to connect employees to the project site.</p>	0.3 – 13.4% VMT reduction ²⁴	<p>10% maximum VMT reduction</p> <p>Appropriate for office, mixed use, and industrial projects</p>
	<p>Emergency Ride Home Program</p> <p>Provides an occasional subsidized ride to commuters who use alternative modes. Guaranteed ride home for people if they need to go home in the middle of the day due to an emergency or stay late and need a ride at a time when transit service is not available.</p>	1.0-6.2% VMT reduction ²⁵	<p>2% maximum VMT reduction</p> <p>Appropriate for office, mixed use, and industrial projects</p>
	<p>Alternative Work Schedule</p> <p>Flextime, Compressed Work Week, and staggered shifts</p>	0.07-5.50% VMT reduction ²⁶	<p>5% maximum VMT reduction</p> <p>Appropriate for office, retail, mixed use, and industrial projects</p>
	<p>Telework (Telecommuting, Distance-Learning, etc.)</p> <p>Use of telecommunications as a substitute for physical travel.</p>	0.07-5.50% VMT reduction ²⁷	<p>5% maximum VMT reduction</p> <p>Appropriate for office, retail, mixed use, and industrial projects</p>

²⁴ 2010 CAPCOA Guidance TRT-11, Page 253

²⁵ 2010 CAPCOA Guidance TRT-1, Page 218

²⁶ 2010 CAPCOA Guidance TRT-6, Page 236

²⁷ 2010 CAPCOA Guidance TRT-6, Page 236

Exhibit 3 – Transportation Demand Management Strategies

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
COMMUTING STRATEGIES	<p>On-site Childcare</p> <p>Provides on-site childcare to remove the need to drive a child to daycare at a separate location.</p>	2% VMT reduction ²⁸	<p>2% maximum VMT reduction</p> <p>Appropriate for office, mixed use, and industrial projects</p>
SHARED MOBILITY STRATEGIES	<p>Ride-Share Program</p> <p>Increases vehicle occupancy by providing ride-share matching services, designating preferred parking for ride-share participants, designing adequate passenger loading/unloading and waiting areas for ride-share vehicles, and providing a website or message board to connect riders and coordinate rides</p>	1 – 15% VMT reduction ²⁹	<p>15% maximum VMT reduction</p> <p>Appropriate for residential, retail, office, mixed use, and industrial projects</p>
	<p>Car Share</p> <p>Implement car sharing to allow people to have on-demand access to a vehicle, as-needed. This may include providing membership to an existing program located within 1/4 mile, contracting with a third-party vendor to extend membership-based service to an area, or implementing a project-specific fleet that supports the residents and employees on -site.</p>	0.4 – 0.7% VMT reduction ³⁰	<p>0.7% maximum VMT reduction</p> <p>Appropriate for residential, retail, office, mixed use, and industrial projects</p>

²⁸ APA *The Importance of Ensuring Adequate Child Care in Planning Practice, 2011*

²⁹ 2010 CAPCOA Guidance TRT-3, Page 227

³⁰ 2010 CAPCOA Guidance TRT-9, Page 245

Exhibit 3 – Transportation Demand Management Strategies

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
SHARED MOBILITY STRATEGIES	<p>Scooters Share Program</p> <p>Implement scooter share to allow people to have on-demand access to a scooter, as-needed.</p>		<p>0.1% maximum VMT reduction</p> <p>Appropriate for residential, retail, office, mixed use, and industrial projects</p>
	<p>School Carpool Program</p> <p>Implements a school carpool program to encourage ride-sharing for students.</p>	<p>7.2 –15.8% VMT reduction³¹</p>	<p>15% maximum VMT reduction</p> <p>Appropriate for residential projects</p>
BICYCLE INFRASTRUCTURE STRATEGIES	<p>Bike Share</p> <p>Implement bike share to allow people to have on-demand access to a bicycle, as-needed.</p>	<p>Group with implement/improve on-street bicycle facility and bicycle end of trip facilities³² (such as Secure Bike Parking, Showers, and Repair Station)</p>	<p>0.25% maximum VMT reduction</p> <p>Appropriate for residential, retail, office, mixed use, and industrial projects</p> <p>Complimentary strategies include implement/improve on-street bicycle facility and bicycle end of trip facilities</p>
	<p>Implement/Improve On-street Bicycle Facility</p> <p>Implements or provides funding for improvements to corridors and crossings for bike networks identified within a one-half mile buffer area of the project boundary, to support safe and comfortable bicycle travel.</p>	<p>Group with bike share and bicycle end of trip facilities³³ (such as Secure Bike Parking, Showers, and Repair Station)</p>	<p>5% maximum VMT reduction</p> <p>Appropriate for residential, retail, office, mixed use, and industrial projects</p>

³¹ 2010 CAPCOA Guidance TRT-10, Page 250

³² 2010 CAPCOA Guidance TRT-12, Page 256

³³ 2010 CAPCOA Guidance TRT-12, Page 256

Exhibit 3 – Transportation Demand Management Strategies

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
BICYCLE INFRASTRUCTURE STRATEGIES	<p>Include Secure Bike Parking, Showers, and Repair Station</p> <p>Implements additional end-of-trip bicycle facilities to support safe and comfortable bicycle travel. On-site bicycle repair tools and space to use them supports on-going use of bicycles for transportation.</p>	0.625% VMT reduction ³⁴	<p>0.625% maximum VMT reduction</p> <p>Appropriate for residential, retail, office, mixed use, and industrial projects</p>
NEIGHBORHOOD ENHANCEMENT STRATEGIES	<p>Traffic Calming Improvements</p> <p>Implements traffic calming measures throughout and around the perimeter of the project site that encourage people to walk, bike, or take transit within the development and to the development from other locations.</p>	0.25 –1.0% VMT reduction ³⁵	<p>1% maximum VMT reduction</p> <p>Appropriate for residential, retail, office, mixed use, and industrial projects</p>

³⁴ 2010 CAPCOA Guidance TRT-5, Page 234

³⁵ 2010 CAPCOA Guidance SDT-2, Page 190

STEP 6: ANALYSIS AND DOCUMENTATION

Relevant documentation providing enough detail that assumptions are clearly understandable, and methods that can be replicated should be provided at the conclusion of the VMT analysis for the proposed project.

CUMULATIVE IMPACTS

Per the OPR guidance, a project's cumulative impacts are based on an assessment of whether the "incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." When using an absolute VMT metric, i.e., total VMT (as recommended for retail and transportation projects), analyzing the combined impacts for a cumulative impacts analysis may be appropriate. However, metrics such as VMT per capita or VMT per employee, i.e., metrics framed in terms of efficiency (as recommended for use on residential and office projects), cannot be summed because they employ a denominator. A project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Accordingly, a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa.

TRANSPORTATION PROJECTS

Depending on the specific nature of a transportation project, it can alter trip patterns, trip lengths, and even trip generation. Research has determined that capacity-enhancing projects can and often do increase VMT. This phenomenon is commonly referred to as “induced vehicle travel”. While methods are generally less developed for the analysis of induced travel demand compared to other areas of transportation analysis, there is still the need to quantify and understand its impact to the transportation system considering the requirements of SB 743.

Similar to land use projects, the City has developed its approach to transportation project analysis to closely align with the 2018 OPR Guidance. The first step in this analysis is to determine whether the transportation project has been prescreened and determined to have a non-significant impact as described in the following section.

SCREEN FOR NON-SIGNIFICANT TRANSPORTATION IMPACT

The following non-significant impact examples are provided directly from the 2018 OPR Guidance³⁶:

- Rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation assets (e.g., highways; roadways; bridges; culverts;
- Transportation Management System field elements such as cameras, message signs, detection, or signals; tunnels; transit systems; and assets that serve bicycle and pedestrian facilities) and that do not add additional motor vehicle capacity
- Roadside safety devices or hardware installation such as median barriers and guardrails
- Roadway shoulder enhancements to provide “breakdown space,” dedicated space for use only by transit vehicles, to provide bicycle access, or to otherwise improve safety, but which will not be used as automobile vehicle travel lanes
- Addition of an auxiliary lane of less than one mile in length designed to improve roadway safety
- Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, two-way left turn lanes, or emergency breakdown lanes that are not utilized as through lanes
- Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit
- Conversion of existing general-purpose lanes (including ramps) to managed lanes or transit lanes, or changing lane management in a manner that would not substantially increase vehicle travel
- Addition of a new lane that is permanently restricted to use only by transit vehicles
- Reduction in number of through lanes
- Grade separation to separate vehicles from rail, transit, pedestrians or bicycles, or to replace a lane in order to separate preferential vehicles (e.g., HOV, HOT, or trucks) from general vehicles
- Installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority (TSP) features

³⁶ 2018 OPR Guidance, Page 20

- Installation of traffic metering systems, detection systems, cameras, changeable message signs and other electronics designed to optimize vehicle, bicycle, or pedestrian flow
- Timing of signals to optimize vehicle, bicycle, or pedestrian flow
- Installation of roundabouts or traffic circles
- Installation or reconfiguration of traffic calming devices
- Adoption of or increase in tolls
- Addition of tolled lanes, where tolls are sufficient to mitigate VMT increase
- Initiation of new transit service
- Conversion of streets from one-way to two-way operation with no net increase in number of traffic lanes
- Removal or relocation of off-street or on-street parking spaces
- Adoption or modification of on-street parking or loading restrictions (including meters, time limits, accessible spaces, and preferential/reserved parking permit programs)
- Addition of traffic wayfinding signage
- Rehabilitation and maintenance projects that do not add motor vehicle capacity
- Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way
- Addition of Class I bike paths, trails, multi-use paths, or other off-road facilities that serve nonmotorized travel
- Installation of publicly available alternative fuel/charging infrastructure
- Addition of passing lanes, truck climbing lanes, or truck brake-check lanes in rural areas that do not increase overall vehicle capacity along the corridor

SIGNIFICANCE THRESHOLD AND METHODOLOGY

For projects that increase roadway capacity and are not identified under the Non-Significant Screening Criteria in the prior section, induced travel should be determined on a per lane mile basis. As provided for in the 2018 OPR Guidance, the basis of the determination should be:

$$[\% \text{ increase in lane miles}] \times [\text{existing VMT}] \times [\text{elasticity}] = [\text{VMT resulting from the project}]^{37}$$

The elasticity value should be based on appropriate literature acceptable to the City. The significance criteria for transportation projects should be change in regional VMT. A finding of a significant impact would be determined if a transportation project results in a net increase in regional VMT.

³⁷ 2018 OPR Guidance, Page 24

APPENDIX A

VMT ANALYSIS METHODOLOGY

Travel Demand Models (TDMs) are broadly considered to be amongst the most accurate of available tools to assess regional and sub-area VMT. Southern California Association of Governments (SCAG) maintains the regional travel demand model as part of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which consists of six counties (Los Angeles, Ventura, Orange, San Bernardino, Riverside, Imperial) in the southern California region. The latest available SCAG travel demand model developed as part of the 2016 RTP/SCS was determined to be the best fit for developing the VMT thresholds considering the geographic location of the City and the detailed roadway and transit networks in the model.

The 2016 Base Year model scenario was used for the baseline conditions and 2040 Plan model scenario was used for the cumulative conditions in the City. The six counties included in the model are major contributors of the trips to and from the City during a typical weekday. Trips outside of the SCAG region were estimated from the external stations surrounding the model region and were determined to be excluded from the VMT analysis as those were less 1% of the Citywide trip generation.

Before beginning the Citywide VMT analysis the zonal structure and various components of the SCAG model were thoroughly reviewed to make the best use of model results to determine the VMT thresholds.

MODEL ZONE STRUCTURE

VMTs were computed at Traffic Analysis Zone (TAZ) level to determine the thresholds as well as to compare City's performance against the County and entire SCAG region. The SCAG model uses a two-tiered zone structure that allows for micro and macro-scale analysis and reporting. The first tier contains 4,109 internal zones, while the second tier contains 11,267 internal zones. All Tier 2 zones nest within Tier 1 zones. The model generates outputs for different components that vary by the two tiers. The results that are used to compute VMT are mainly focused at Tier 1 level, therefore the VMT analysis was conducted at the Tier 1 TAZ level.

SOCIO-ECONOMIC DATA

Socioeconomic data (SED) and other model inputs are contained in each TAZ. Out of several different variables in the model SED, the VMT analysis mainly focused on population, number of households and types of employment that are used in the trip generation component. VMT computation was focused on the fact that the model uses employment variables by 3 income levels to determine commute trips and employment variables by 13 industries to determine rest of the trips. Employment variables used in the model are listed below.

Employment by Income Level:

1. Low Income Employment (less than \$34,999)
2. Medium Income Employment (\$35,000 to \$74,999)

3. High Income Employment (\$75,000 or more)

Employment by Industry type:

1. Agriculture and mining
2. Construction
3. Manufacturing
4. Wholesale trade
5. Retail trade
6. Transportation, warehousing, and utility
7. Information
8. Financial activities
9. Professional and business services
10. Education and health services
11. Leisure and hospitality services
12. Other services
13. Public administration

The model SED was compiled and the ratio of each of the 3-income level employment to total employment was determined for each TAZ in the model. The ratio of 13-type of employment to the 3-income level employment was also computed for each TAZ. These ratios were later used in the analysis to determine commute VMT by different land uses.

TRIP GENERATION

The model runs a series of complex steps to estimate daily trip productions and attractions by various trip purposes and market sectors for each TAZ. The trip purposes are listed below.

Model Trip Purpose:

1. Home-Based Work Direct (HBWD)
2. Home-Based Work Strategic (HBWS)
3. Home-Based School (HBSC)
4. Home-Based College and University (HBCU)
5. Home-Based Shopping (HBSH)
6. Home-Based Social-Recreational (HBSR)
7. Home-Based Serving-Passenger (HBSP)
8. Home-Based Other (HBO)
9. Work-Based Other (WBO)
10. Other-Based Other (OBO)

The production model uses several variables such as number of workers, household income, age, household size and car availability depending on the trip purpose. Trip productions for every TAZ in the model were compiled separately by each trip purpose. The attraction model uses income categories of employment for the HBW trip purpose, whereas it uses 13 categories of employment for all non-HBW trip purposes. The attraction model estimates trip attractions to each TAZ by regression coefficients that vary by employment type. Trip attractions for every TAZ were compiled by each purpose and by each employment type based on these regression coefficients.

PERSON TRIPS, VEHICLE OCCUPANCY, TRIP DISTANCE

Trip productions and attractions were compiled after the model choice step, and only auto trips were used for the analysis. Since these auto trips are person trips, vehicle occupancy factors were applied for carpool 2 and carpool 3+ auto person trips. The model uses separate factors for carpool 3+ for each trip purpose. After the vehicle trip productions and attractions were computed for each trip purpose, trip lengths were applied for each zone pair from the skim matrices in the model to compute the production and attraction VMT by purpose.

VMT BY LAND USE TYPE

The residential VMT was computed by combining the production VMT for all the Home-Based trip purposes. VMT for non-residential land uses was computed from the attraction VMT by appropriate trip purposes and regression coefficients used in the attraction model.

Residential and non-residential VMT by each TAZ were computed and average VMT were determined by City, County, and Region levels to determine City's thresholds.