TRANSPORTATION ASSESSMENT GUIDELINES

CITY OF AGOURA HILLS

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PURPOSE & NEED

This document establishes protocol for a transportation assessment and report for the City of Agoura Hills based on the current state-of-the-practice in transportation planning and engineering and includes guidance for local traffic impact analysis (using roadway and intersection performance) and the California Environmental Quality Act (CEQA) analysis (using Vehicle Miles Traveled).

The City determines the need for a transportation assessment in conformance with CEQA guidelines, and City policies, Resolution No. 20-1942. For development projects ("projects"), a Transportation Assessment typically includes two types of analysis: (1) CEQA Vehicle Miles Traveled (VMT) analysis and (2) Local Traffic Impact Analysis (TIA). A development project can be a new project or redevelopment of an existing project. Not all projects require both CEQA VMT analysis and local TIA; projects could be exempt from one or both analyses based on project screening criteria. Screening criteria for VMT analysis and local TIA analysis is in Section 1.2 and 2.1, respectively. The flow chart on the following page will help identify which analyses are required for a development project.

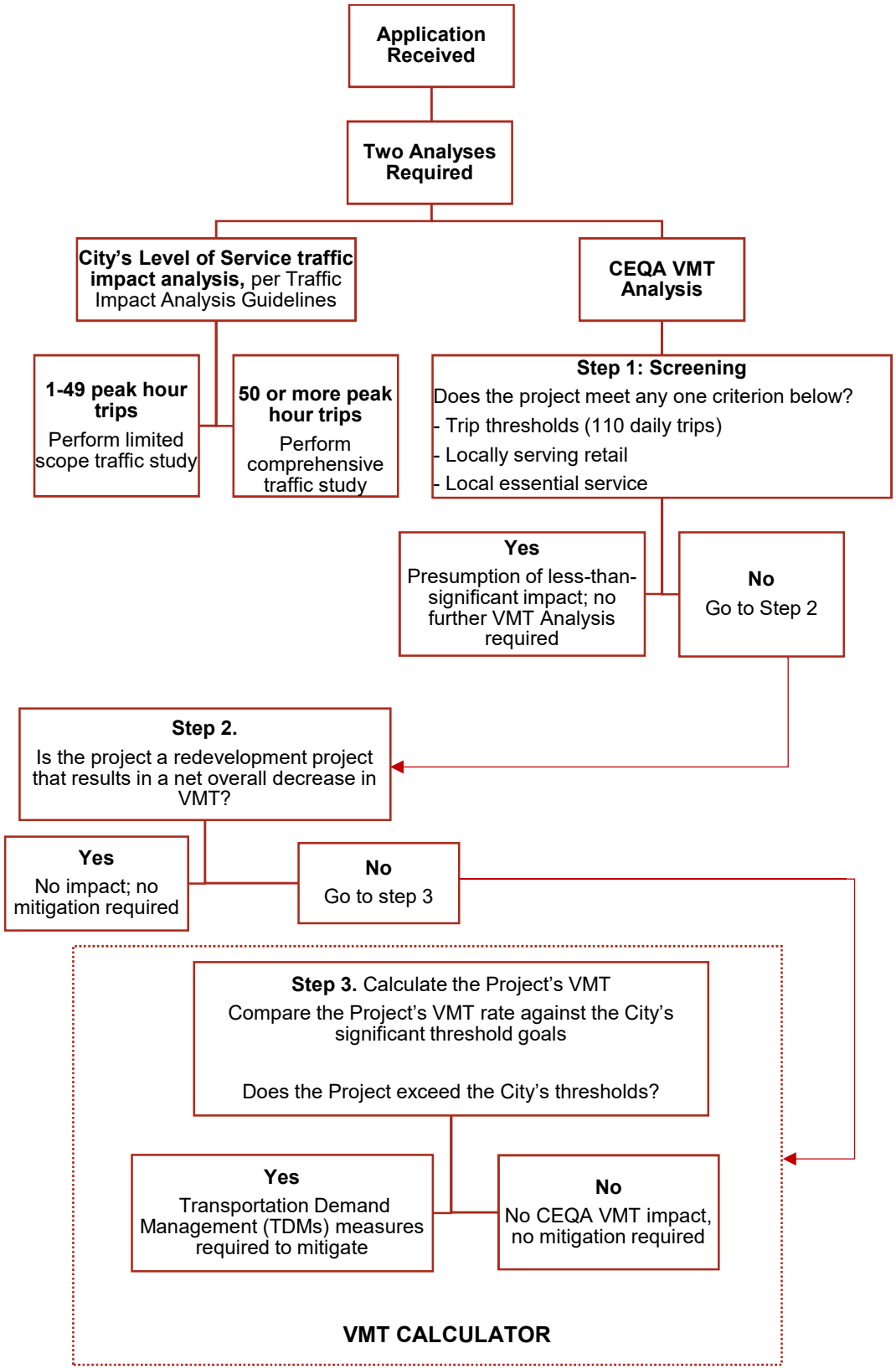


FIGURE 1. REQUIRED ANALYSES FOR LAND USE PROJECTS

1.0 CEQA VMT Analysis

CEQA VMT analysis requires an evaluation of a project's potential impacts related to VMT and other significance criteria. VMT measures the per capita or per employee number of car trips generated by a project and distances cars will travel to and from a project, rather than congestion levels at intersections (level of service or "LOS," graded on a scale of A – F).

This section provides the significance criteria, screening criteria, thresholds of significance, and methodologies of the analysis to be used in a VMT analysis for projects. The City has developed a tool to streamline the VMT analysis for residential and office projects. **Figure 1** provides a graphical representation of the VMT analysis process:

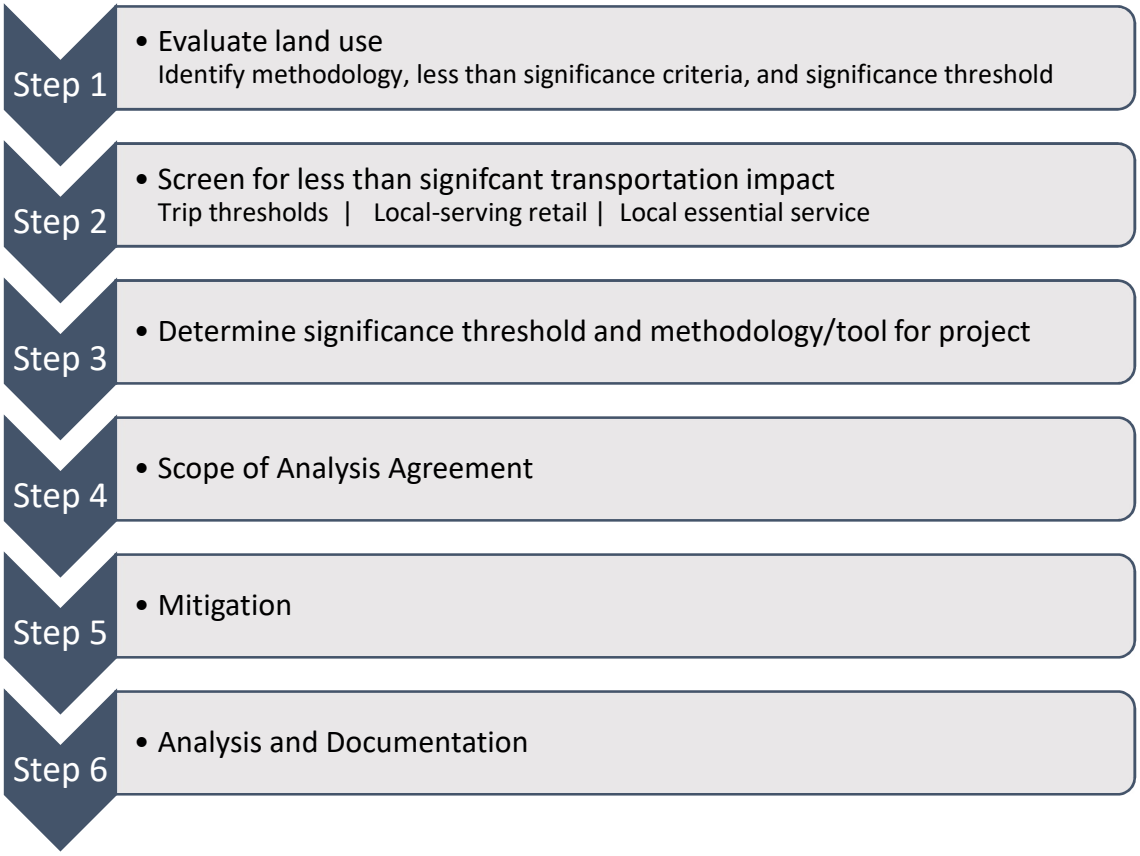


FIGURE 2. PROCESS FOR CEQA ANALYSIS FOR LAND USE PROJECTS

1.1 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 ITE land use codes are useful for maintaining consistency across analyses, determining trip generation for other planning level tools (i.e. level of service analysis), 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 VMT Calculator described in Section 1.5.1.
- ***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.
- ***Redevelopment projects.*** A redevelopment project is any project that modifies an existing project's land-use, size, density or a new tenant with different goods and services. As described under the Less Than Significant Screening Criteria section, redevelopment projects which have lower VMT than the existing on-site use can be determined to have a less than significant impact. The VMT Calculator can calculate the Daily VMT for existing and proposed land-uses to determine if the redevelopment project can be considered to have a less than significant impact.

1.2 Screening Criteria

The purpose of this step is to determine if a presumption of a less than significant transportation impact can be made on the facts of the project. A VMT analysis will not be required for a project that meets any of the screening criteria shown in **Table 1**. If a project is mixed use in nature, only those elements of the project that do not comply with the elements in **Table 1** would require further evaluation to determine transportation significance for CEQA purposes. Projects that conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities would also require an environmental assessment.

TABLE 1. SCREENING CRITERIA FOR VMT ANALYSIS

Screening Criteria	OPR Guidance
SMALL PROJECTS[1]	**Expected to cause a less-than-significant impact:** ▪ Project generation is less than 110 trips per day **CEQA VMT analysis required if:** ▪ It is inconsistent with the SCAG Regional Transportation Plan/Sustainable Communities Strategy in terms of development location, density, and intensity.
LOCAL-SERVING RETAIL[1]	**Expected to cause a less-than-significant impact:** ▪ No single store on-site exceeds 50,000 square feet of gross floor area **CEQA VMT analysis required if:** A single store exceeds 50,000 square feet of gross floor area.
LOCAL ESSENTIAL SERVICE[2]	**Expected to cause a less-than-significant impact:** Day care center ▪ Public K-12 School ▪ Police or Fire stations ▪ Medical/Dental office building ▪ Government offices (in-person services such as post office, library, and utilities) **CEQA VMT analysis required if:** The nature of the service is regionally focused as determined by the City.
REDEVELOPMENT PROJECTS[3]	**Expected to cause a less-than-significant impact:** ▪ Project replaces an existing VMT-generating land use and does not result in a net overall increase in VMT. **CEQA VMT analysis required if:** Project replaces an existing VMT-generating land use and results in a net overall increase in VMT.

1.3 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

[1] Office of Planning and Research. (2018). *Technical Advisory on Evaluating Transportation Impacts in CEQA.*

[2] 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.

[3] *2018 OPR Guidance*, Page 18

change metrics. Efficiency metrics include VMT/Capita and Work VMT/employee[4]. As described in **Table 2**, "Net Change" refers to the increase in total VMT for the SCAG region. "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 2**.

TABLE 2. SIGNIFICANCE THRESHOLD AND METHODOLOGY/TOOL

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

(number of employees) x (estimated VMT/employee – threshold VMT/employee)

The threshold of significance will still be Net Change as described in **Table 2**, 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.

1.4 Thresholds of Significance

When a project does not meet the screening criteria described in Section 1.2, a CEQA VMT analysis will be required. This analysis is used to evaluate a project's VMT generation against the appropriate thresholds of significance. **Table 3** presents the thresholds of significance for development projects.

[4] Work VMT specifically applies to commute trips as represented by the attractions in the Southern California Association of Government 2016 Regional Travel Demand Model.

TABLE 3. THRESHOLDS OF SIGNIFICANCE FOR DEVELOPMENT PROJECTS (JULY 2020)

Land Use	Basis	Current Level	VMT Threshold
Residential Uses	**Project VMT per capita exceeds a level of 15% below existing Citywide average VMT per capita.**	**19.43 VMT/capita (Citywide Average)**	**16.51 VMT/capita[5]**
Office	**Project VMT per employee exceeds a level of 15% below existing SCAG regional average VMT per employee**	**21.92 Work VMT/Employee (SCAG Regional Average)**	**18.63 Work VMT/Employee[6]**
Retail	**Net increase in existing regional total VMT**	**SCAG Regional Total VMT**	**Net Increase**

These thresholds of significance may change over time as local and regional VMT and greenhouse gas emissions goals shift in response to changes in population, air quality, and transportation patterns. Therefore, the City will revisit the current VMT levels as needed, including at the time of the General Plan update, when SCAG updates its travel demand model, and/or when major changes to the City's land uses and transportation network occur. The thresholds of significance may be updated as needed.

1.5 Project Impact Analysis

Most projects that require a CEQA VMT analysis will use one of the two methods for assessing a project's VMT generation (project VMT), if applicable: (1) City of Agoura Hills' VMT Calculator and (2) SCAG Travel Demand Model. For most residential and office projects, the sketch tool is the approved method to calculate Project VMT. For non-residential or non-office projects, very large projects, or projects that can potentially shift travel patterns, the sketch tool would not be appropriate or adequate for the CEQA VMT analysis. In such cases, the Southern California Association of Governments (SCAG) Regional Travel Demand Model may be required.

1.5.1 City of Agoura Hills' VMT Calculator

The City has developed the VMT Calculator ("sketch tool") to assess a project's potential VMT based on the project's description, location, and attributes. For most residential and office projects, the sketch tool is the approved method to calculate Project VMT. The City will provide the sketch tool for use by transportation consultants, developers, and others in assessing VMT for development projects and evaluating TDM plans. The sketch tool will be periodically updated by the Community Development Department Public Works Division as new research on VMT reduction measures becomes available from the Office of Planning and Research (OPR) and the California Air Pollution Control Officers Association (CAPCOA).

The user will input the project's address, analysis year, and land use information. In most cases, the existing year represents the worst-case-scenario and therefore it is recommended to use the existing year

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

[6] Work VMT specifically applies to commute trips as represented by the attractions in the SCAG Travel Demand Model.

as the analysis year. The sketch tool calculates Project VMT and determines if the project is expected to have a significant impact by comparing the Project VMT to the significance threshold. Projects with VMT above the significance threshold are required to include a set of transportation demand management (TDM) strategies that would reduce Project VMT to below the significance threshold.

The sketch tool evaluates a list of user-selected TDM strategies that can be applied to a project to reduce Project VMT. There are seven parent strategies whose effects on VMT can be calculated in the sketch tool: (1) Parking, (2) Transit, (3) Communication & Information, (4) Commuting, (5) Shared Mobility, (6) Bicycle Infrastructure, and (7) Neighborhood Enhancement. **Table 4** shows the list of VMT reducing TDM measures and their general descriptions along with the California Air Pollution Control Officers Association (CAPCOA) for each TDM strategy. **Table 4** provides the City of Agoura Hill's recommended maximum VMT reduction for each TDM strategy which is built into the VMT Calculator and the appropriate land-uses to apply the TDM.

TDM measures will be enforced through annual trip monitoring to be computed by the owner/operator of the project to assess the project's status in meeting the VMT reduction goals.

Project VMT with mitigation is calculated by applying the percent reduction to the Project VMT.

Strategies that include on-site and off-site improvements shall be shown on the plans prior to Planning permit approval.

TABLE 4. TRANSPORTATION DEMAND MANAGEMENT STRATEGIES AND MAXIMUM VMT REDUCTION

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
PARKING STRATEGIES	**Unbundle Parking** Unbundles parking costs from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost.	2.6 – 13% VMT reduction[7]	5% maximum VMT reduction Appropriate for Residential projects Complimentary strategy is residential area parking permits
	Parking Cash-Out 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.	0.6 – 7.7% VMT reduction[8]	5% maximum VMT reduction Appropriate for Office projects with paid parking
	Residential Area Parking Permits Implementation of residential permit parking zones for long-term use of on-street parking in residential areas.	Group with unbundle parking strategy[9] 0.09-0.36% VMT reduction[10]	0.36% maximum VMT reduction Appropriate for Residential projects Complimentary strategy is unbundled parking
TRANSIT STRATEGIES	**Reduce Transit Headways** Makes transit service more appealing by reducing headways[11] and reducing overall transit trip time	0.02 – 2.5% VMT reduction[12]	2.5% maximum VMT reduction Appropriate for specific or general plans

[7] *2010 CAPCOA Guidance PDT-2,* Page 210

[8] *2010 CAPCOA Guidance TRT-15*, Page 266

[9] *2010 CAPCOA Guidance PDT-4*, Page 217

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

[11] Amount of time between transit vehicle arrivals at a stop.

[12] *2010 CAPCOA Guidance TST-4*, Page 280

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
TRANSIT STRATEGIES	**Transit Rerouting** Coordinate with local transit agency to provide or reroute existing transit services near the site	0.1 – 8.2% VMT reduction[13]	3% maximum VMT reduction Appropriate for specific or general plans
	Transit Stops Coordinate with local transit agency to provide bus stop near the site	0.1 – 8.2% VMT reduction[14]	3% maximum VMT reduction Appropriate for specific or general plans
	Safe and Well-Lit Access to Transit Enhance the route for people walking or bicycling to nearby transit (typically off-site).	Group with reduce transit headways, transit rerouting, transit stops[15]	0.1% maximum VMT reduction Appropriate for residential, retail/restaurant, office, and industrial projects or a mixed-use project with any combination of the aforementioned land-uses. Complimentary strategies include reduce transit headways, transit rerouting, transit stops

[13] *2010 CAPCOA Guidance TST-3*, Page 276

[14] *2010 CAPCOA Guidance TST-3*, Page 276

[15] *2010 CAPCOA Guidance TST-2,* Page 275

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
TRANSIT STRATEGIES	**Implement Neighborhood Shuttle** Implement project-operated or project-sponsored neighborhood shuttle serving residents, employees, and visitors of the project site	0.3 – 13.4% VMT reduction[16]	3% maximum VMT reduction Appropriate for large residential, retail/restaurant, office, industrial projects or a mixed-use project with any combination of the aforementioned land-uses. Complimentary strategies include reduce transit headways, transit rerouting, transit stops
	Transit Subsidies 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.	0.3 – 20.0% VMT reduction[17]	5% maximum VMT reduction Appropriate for residential, retail/restaurant, office, and industrial projects or a mixed-use project with any combination of the aforementioned land-uses.
COMMUNICATION & INFORMATION STRATEGIES	**Promotions & Marketing** 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.	0.8 – 4% VMT reduction[18]	4% maximum VMT reduction Appropriate for residential, retail/restaurant, office, and industrial projects or a mixed-use project with any combination of the aforementioned land-uses.

[16] *2010 CAPCOA Guidance TST-6,* Page 286

[17] *2010 CAPCOA Guidance TRT-4,* Page 230

[18] *2010 CAPCOA Guidance TRT-7,* Page 240

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
COMMUTING STRATEGIES	**Required Commute Trip Reduction Program** 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.	4.2 – 21% VMT reduction[19]	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 Appropriate for office and industrial projects or a mixed-use project with a combination of the aforementioned land-uses.
	Employer Sponsored Vanpool or Shuttle Implementation of employer-sponsored employee vanpool or shuttle providing new opportunities for access to connect employees to the project site.	0.3 – 13.4% VMT reduction[20]	10% maximum VMT reduction Appropriate for office and industrial projects or a mixed-use project with a combination of the aforementioned land-uses.
	Emergency Ride Home Program 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.	1.0-6.2% VMT reduction[21]	2% maximum VMT reduction Appropriate for office and industrial projects or a mixed-use project with a combination of the aforementioned land-uses.

[19] *2010 CAPCOA Guidance TRT-2,* Page 223

[20] *2010 CAPCOA Guidance TRT-11,* Page 253

[21] *2010 CAPCOA Guidance TRT-1,* Page 218

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
COMMUTING STRATEGIES	**Alternative Work Schedule** Flextime, Compressed Work Week, and staggered shifts	0.07-5.50% VMT reduction[22]	5% maximum VMT reduction Appropriate for office, retail, and industrial projects or a mixed-use project with any combination of the aforementioned land-uses.
	Telework (Telecommuting, Distance-Learning, etc.) Use of telecommunications as a substitute for physical travel.	0.07-5.50% VMT reduction[23]	5% maximum VMT reduction Appropriate for office, retail, and industrial projects or a mixed-use project with any combination of the aforementioned land-uses.
	On-site Childcare Provides on-site childcare to remove the need to drive a child to daycare at a separate location.	2% VMT reduction[24]	2% maximum VMT reduction Appropriate for office and industrial projects or a mixed-use project with any combination of the aforementioned land-uses.

[22] *2010 CAPCOA Guidance TRT-6,* Page 236

[23] *2010 CAPCOA Guidance TRT-6,* Page 236

[24] *APA The Importance of Ensuring Adequate Child Care in Planning Practice, 2011*

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
SHARED MOBILITY SRATEGIES	**Ride-Share Program** 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	1 – 15% VMT reduction[25]	15% maximum VMT reduction Appropriate for residential, retail, office, and industrial projects or a mixed-use project with any combination of the aforementioned land-uses.
	Car Share 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.	0.4 – 0.7% VMT reduction[26]	0.7% maximum VMT reduction Appropriate for residential, retail, office and industrial projects or a mixed-use project with any combination of the aforementioned land-uses.
	Scooters Share Program Implement scooter share to allow people to have on-demand access to a scooter, as-needed.		0.1% maximum VMT reduction Appropriate for residential, retail/restaurant, office, and industrial projects or a mixed-use project with any combination of the aforementioned land-uses.

[25] *2010 CAPCOA Guidance TRT-3,* Page 227

[26] *2010 CAPCOA Guidance TRT-9,* Page 245

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
SHARED MOBILITY STRATEGIES	**School Carpool Program** Implements a school carpool program to encourage ride-sharing for students.	7.2 –15.8% VMT reduction[27]	15% maximum VMT reduction Appropriate for residential projects
BICYCLE INFRASTRUCTURE STRATEGIES	**Bike Share** Implement bike share to allow people to have on-demand access to a bicycle, as-needed.	Group with implement/ improve on-street bicycle facility and bicycle end of trip facilities[28] (such as Secure Bike Parking, Showers, and Repair Station)	0.25% maximum VMT reduction Appropriate for residential, retail/restaurant, office, industrial projects or a mixed-use project with any combination of the aforementioned land-uses. Complimentary strategies include implement/ improve on-street bicycle facility and bicycle end of trip facilities
	Implement/Improve On-street Bicycle Facility 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.	Group with bike share and bicycle end of trip facilities[29] (such as Secure Bike Parking, Showers, and Repair Station)	5% maximum VMT reduction Appropriate for residential, retail/restaurant, office, industrial projects or a mixed-use project with any combination of the aforementioned land-uses.

[27] *2010 CAPCOA Guidance TRT-10,* Page 250

[28] *2010 CAPCOA Guidance TRT-12,* Page 256

[29] *2010 CAPCOA Guidance TRT-12,* Page 256

	TDM Strategy	CAPCOA & Industry Guidance	City of Agoura Hills
BICYCLE INFRASTRUCTURE STRATEGIES	**Include Secure Bike Parking, Showers, and Repair Station** 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.	0.625% VMT reduction[30]	0.625% maximum VMT reduction Appropriate for residential, retail/restaurant, office, industrial projects or a mixed-use project with any combination of the aforementioned land-uses.
NEIGHBORHOOD ENHANCEMENT STRATEGIES	**Traffic Calming Improvements** 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. Traffic calming features may include marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, median islands, tight corner radii, traffic-calming circles, planter strips, chicanes, and others.	0.25 –1.0% VMT reduction[31]	1% maximum VMT reduction Appropriate for residential, retail/restaurant, office, industrial projects or a mixed-use project with any combination of the aforementioned land-uses.

[30] *2010 CAPCOA Guidance TRT-5,* Page 234

[31] *2010 CAPCOA Guidance SDT-2,* Page 190

1.5.2 SCAG Travel Demand Model

For non-residential or non-office projects, very large projects, or projects that can potentially shift travel patterns (i.e. regional serving retail, tourism destinations, entertainment venues) the sketch tool would not be appropriate or adequate for the CEQA VMT analysis. In such cases, the Southern California Association of Governments (SCAG) Regional Travel Demand Model may be required. The transportation consultant shall coordinate with SCAG to obtain modeling information.

1.6 VMT Reduction and TDM Strategies

Projects must propose measures to reduce Project VMT and mitigate a CEQA transportation impact. Projects may select a combination of measures from the seven reduction parent strategies. When the selected measures are included during the planning and design stage as part of the project description and project plans, as applicable, the measures are reflected in the assessment of Project VMT.

When Project VMT exceeds the threshold(s) of significance, the project will need to mitigate its CEQA transportation impact. Measures from the seven VMT reduction parent strategies can be used as mitigation measures. A project may propose mitigation measures that are not included in the list of approved VMT reduction measures as described in **Table 4**. In order to be considered as mitigation measures, the transportation consultant must submit substantial evidence of their effect on reducing Project VMT or mitigating a CEQA transportation impact for review and approval by the Director of Public Works.

1.7 Trip Cap

A trip cap is the maximum number of personal motorized vehicle-trips (i.e. passenger cars, trucks, and motorcycles) within specified timeframes that can be generated by a project. The daily trip cap is calculated using ITE Daily Trip Generation minus trip reductions from TDM strategies. The daily trip cap is calculated within the VMT Calculator.

If a project proposes to include any TDM measures in the project description, the project must demonstrate that its VMT are below the relevant thresholds after the opening day. To apply a trip cap to a development, a TDM plan for monitoring, reporting, compliance, and funding is required and will become part of the conditions of project approval.

The trip cap will be included in the project's planning permit and/or the CEQA Mitigation Monitoring and Reporting Program (MMRP). Annual trip monitoring reports will be submitted to the Department of Public Works for approval. The first monitoring report will occur after the project is 75% occupied and operational.

If a project's annual trip monitoring report finds that the project exceeds the established trip cap(s), the project will be required to submit a follow-up report that demonstrates compliance with the trip cap requirements within a grace period, which will not exceed six months from the submittal of trip monitoring report. Penalties will be assessed if a project does not meet the trip cap requirements by the end of the grace period. Penalties for non-compliance will be assessed by the City.

1.8 Cumulative Impact Analysis

Per the Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA*, 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 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 for the City and State and 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.

2.0 LOCAL TRAFFIC IMPACT ANALYSIS (TIA)

A local TIA evaluates the effect of a project on transportation, access, circulation, and related safety elements in the proximate area of the project. A local TIA assess a project's consistency with the General Plan policies and goals.

Many factors including projecting description, location, adjacent land uses, and the adjacent transportation system are considered when determining what types of analyses are included in the local TIA. The City determines the scope of the local TIA for a project prior to a development application being submitted to the Planning Division.

2.1 Screening Criteria

A local TIA may be required for any proposed development project for which at least one of the following criteria is satisfied:

1. The project will generate 50 or more new AM or PM peak-hour vehicle trip-ends[32]; or
2. The project will generate 500 or more new daily trip-ends[32]; or
3. The project will substantially affect an intersection, or a roadway system already identified as operating at an unacceptable level of service; or
4. The project is inconsistent with the *General Plan* or *Specific Plan* land use, zoning designations, or could potentially generate substantially greater levels of traffic than contemplated by the *General Plan* or *Specific Plan*; or
5. The project may create a hazard to public safety; or
6. The project will substantially change the off-site transportation system or connections to it.

The AM peak-hour is defined as the peak consecutive hour during the 7-9 AM peak period, and the PM peak -hour is defined as the peak consecutive hour during the 4-6 PM peak period. Both are on a weekday (Tuesday-Thursday). Analysis of special time periods may be required depending on the land use.

The following describes the general process for determining if any of the above criteria are satisfied:

1. Compute the AM and PM peak-hour trip generation in a manner consistent with current *Trip Generation* (published by the Institute of Transportation Engineers) methodologies.
2. Compute the daily trip generation in a manner consistent with current *Trip Generation* (published by the Institute of Transportation Engineers) methodologies.
3. Prepare the anticipated distribution pattern for the proposed project trips and quantify the number of trips that would be added to the surrounding intersections and roadway segments.
4. Consult the City's Community Development Department Planning Division for *General Plan* or *Specific Plan* documentation and assumptions, and Zone Code provisions.
5. Consult with the City's Community Development Department Planning Division and Public Works Division to determine if there are any existing known or anticipated public safety hazards.

[32] A vehicle trip-end is defined as either an origin or destination of a trip.

If none of these cases apply, a local TIA may not be necessary unless the City deems that special circumstances require analysis. In certain cases, the City may require a less extensive analysis, which might include obtaining traffic counts, preparing signal warrants, performing a focused TIA, etc.

2.2 Required Scope of Local TIA

2.2.1 Bicycle and Pedestrian

The local TIA should identify any existing or planned facilities that will be modified by the project or are within a quarter mile of the project. A project will be evaluated for its ability to support bicycling and walking. This evaluation should include the effects and benefits of site development and associated roadway modifications on: (1) bicycle and pedestrian infrastructure and (2) bicycle and pedestrian access. The assessment should include the following elements:

Bicycle and Pedestrian Infrastructure:

- An effect on the existing bicycle and pedestrian facilities;
- The actual and effective widths of sidewalks immediately adjacent to the project.
- The availability of Americans with Disabilities Act (ADA) ramps at intersections and driveways.
- The availability and adequacy of bike parking and bike share facilities;
- The location of fire hydrants, light poles, traffic control devices, and other significant physical items between the curb and the property line;
- The effect of any proposed addition, relocation, or reconstruction of bikeways, sidewalks, curb ramps, and lighting.

Bicycle and Pedestrian Access:

- Pedestrian and bicycle access to and from the project, including an inventory of facilities and deficiencies for access within the site (i.e. from building on site to the public sidewalk) and off-site (i.e. presence/absence of continuous sidewalks, safe crossings).
- Proposed actions to improve pedestrians and bicycle access, or to mitigate adverse effects on pedestrian and bicycle access that result from the project.

2.2.2 Transit

A project will be evaluated based on its ability to support transit ridership. The assessment should include the following elements:

- Existing transit services that have or will have a station or stop within a quarter mile of the project;
- Any permanent or temporary reduction of transit availability or interference with existing transit users because of associated roadway or other modifications;
- If existing or planned transit stop is located along the project frontage, transit stop improvements may be required as part of the project frontage improvements; and
- Bicycle and pedestrian access, including ADA ramps, from the project to transit services that have or will have a station or stop within a quarter mile of the project.

2.2.3 Site Circulation and Access On-Site

The evaluation of the site circulation and access should consider the following issues:

- Proposed pedestrian access and on-site circulation with recommendations to encourage pedestrian trips to and from and within the site. Sidewalk, walkway, trail, and path of travel on foot to building entrances should be evaluated. Pedestrian access between the site and nearest transit stops should be assessed. Any adverse circulations issues should be addressed;
- Proposed bicycle access and on-site circulation with recommendations to encourage bicycle trips to and from and within the site. Bike lanes and path of travel by bicycle to the bicycle parking facilities and/or building entrances should be assessed. Any adverse circulation issues should be addressed;
- Trips entering and existing the site at each driveway. Distribution of trips to access points should consider street configuration, storage lanes, acceleration and deceleration lanes, and sight distance.
- Emergency vehicles and service vehicles such as delivery and garbage trucks. Turnarounds for vehicles should be assessed.

The goal of this evaluation is to establish safe and efficient site access and circulation to and from the project by identifying potential conflicts and propose solutions to those conflicts.

2.2.4 CMP and Caltrans Facilities

The local TIA methodologies described in the County of Los Angeles Congestion Management Plan (CMP) guidelines shall be used when analyzing CMP facilities. In addition, and with prior approval from the City, Caltrans facilities shall be analyzed based upon methodologies included in the Caltrans' *Guide for the Preparation of Traffic Impact Studies.*

2.2.5 Traffic Analysis Methodology

A project is required to conduct an intersection operations analysis for any intersection, regardless of jurisdictional boundaries, to which at least 20 peak-hour project trips or 100 daily trips would be added. Projects only satisfying the minimum trip threshold (50 peak-hour and/or 500 daily trips) but with fewer than 20 peak-hour or 100 daily project trips to any single offsite facility, will normally only require analysis of the intersection(s) or roadway segment(s) adjacent to the project site. In addition, the TIA should evaluate the intersections/driveways proposed to provide access to the project site. The City may decide to include additional and/or alternate facilities on a case-by-case basis.

An intersection operations analysis will require assumptions related to project trip generation, trip distribution, and trip assignment. These assumptions should be submitted by the project applicant with the proposed memorandum of understanding (MOU) for review and approval by the City.

Trip Generation

The latest edition of the ITE *Trip Generation* shall be used for trip generation forecasts. In some cases, the ITE data are based on a limited amount of studies or do not adequately represent the proposed land uses(s). In these cases, and with approval from the City, trip generation rates could be obtained from the current *San Diego Traffic Generators* (San Diego Association of Governments) or should be verified through local field observation of similar uses. Published ITE

trip generation rates represent an average for several observed projects. A particular project, however, may include specific characteristics that call for adjustments to the rate to reflect its trip generation characteristics adequately.

Project Trip Adjustments

The VMT reduction strategies discussed in Section 1.6 would not only reduce VMT for a project but also reduce vehicle-trips and increase alternative transportation mode share for the project. A project that implements part or all of the TDM strategies may apply the associated vehicle-trip reduction, which can be estimated using the sketch tool. This project trip adjustment is applied so that the project vehicle trip generation estimate aligns with its VMT estimate.

Upon acceptance by the City, trip generation adjustments may be justified to account for pass-by trip reductions for retail uses or trip rate reductions for multi-use commercial centers, where the mix of uses could reasonably be expected to attract multi-purpose trips.

For redevelopment projects, vehicle-trip credits associated with existing use at the project site may be acceptable. Applying vehicle-trip credits provides an estimation of net new traffic to be added to the existing roadway network.

All trips, including pass-by trips, must be included in the analysis of the Project's driveways. The analyst must document the basis for proposed trip rate adjustments and receive approval from the City.

Trip Distribution

Trip distribution forecasts the travel direction of vehicle generated by a project. Trip distribution percentages should be included in the local TIA on a figure showing an area map with the transportation network and the project. The distribution patterns for a project can use existing traffic counts, the regional transportation model, or local knowledge. The trip distribution figure must be submitted with the MOU for review and approval by the City prior to use.

Trip Assignment

Trip assignment consists of assigning vehicle-trips to certain routes based on the trip distribution percentages. Trip assignment figures should contain the project's traffic turning movement volumes at each study intersection. The figures must be submitted with the MOU for review and approved by the City prior to use.

Analysis Scenarios

The local TIA should incorporate the following analysis scenarios, unless otherwise directed by the City:

1. Existing Conditions
2. Existing plus Project Conditions
3. Near Term (Project Opening Year) Conditions
4. Near Term (Project Opening Year) plus Project Conditions
5. Long Term (Cumulative) Conditions

6. Long Term (Cumulative) plus Project Conditions

Additional scenarios may be required if the project is large and is to be developed in phases. If there are other approved or pending developments in the vicinity, they must be identified and included in the appropriate scenario(s). Near term conditions include any developments that are approved, construction, or pending approval that would be operational by the opening year of the project. Near term roadway improvements may include those that are consistent with the *General Plan Mobility Element* and are funded and are expected to occur by the opening year of the project.

Cumulative conditions include Near Term conditions, ambient growth, and any additional developments that either have an accepted application on file at the City or developments that are anticipated in the near future. Cumulative roadway improvements may include those that are consistent with the *General Plan Mobility Element* and are expected to occur by the cumulative year. All programmed/funded capital improvements that will affect traffic capacity of the study intersections and roadway segments shall be considered in the appropriate analysis scenario.

Current development data obtained from the City's Community Development Department Planning Division (*Development Summary)* should be used in projecting future traffic levels. The land use assumptions in the vicinity of the project should be verified at the Traffic Analysis Zone (TAZ) level by comparing with other sources (*General Plan, Specific Plan, etc.)*.

The determination of study time periods for each project shall be made in consultation with the City and be based upon the peaking characteristics of the project traffic and the surrounding street system. Although most studies will include weekday AM and/or PM peak-hour analyses, special circumstances may require mid-day, weekend, or summer analyses. Projects that are adjacent to Kanan Road are required to perform a summer weekend peak hour analysis.

Data Collection

Weekday traffic counts shall be conducted on Tuesday, Wednesday, or Thursdays (typical excluding weeks with a holiday or during the year-end holiday season). City approval is required prior to collecting traffic counts during weeks with holidays or during the year-end holiday season. Vehicle, pedestrian, and bicycle counts must be collected. Peak hour counts shall be conducted for the two hours between 7 and 9 AM, for the AM peak, and between 4 and 6 PM, for the PM peak. Mid-day, weekend, summer, or other counts may be considered on a project-specific basis and should be conducted only after consultation with the City. If a summer weekend peak hour analysis is required and summer data cannot be collected, the City will provide a seasonal factor based on count data on-file at the City.

The transportation consultant should obtain current signal timing information from the City and the California Department of Transportation and use these data in the analysis of signalized intersection.

The transportation consultant should request collision data information from the City for signal warrant analysis, if needed.

Signalized Intersection

The local TIA must include any intersection, regardless of jurisdictional boundaries, to which at least 20 peak-hour project trips or 100 daily trips would be added. Projects only satisfying the minimum trip threshold (50 peak-hour and/or 500 daily trips) but with fewer than 20 peak-hour or 100 daily project trips to any single offsite facility, will normally only require analysis of the intersection(s) adjacent to the project site. In addition, the TIA should evaluate the intersections/driveways proposed to provide access to the project site. The City may decide to include additional and/or alternate facilities on a case-by-case basis.

Intersection operations analysis should be completed for all study intersections using the *Highway Capacity Manual* (HCM) methodologies. Level of service (LOS) ratings are based on the average control delay expressed in seconds per vehicle. The HCM methodology accounts for vehicle volumes, lane geometries, signal phasing, signal timings, bicycle and pedestrian volumes, upstream bottlenecks impacting traffic flow, and the distribution of traffic flow throughout the peak hour (peak hour factor). The analysis should include all study periods specified in the scope of work. **Table 5** documents the relationship between the vehicle delay and the LOS for signalized intersections.

TABLE 5. LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS

LOS	Description	Average Control Delay Per Vehicle
A	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.	≤10.0
B	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within group of vehicles.	>10.0 – 20.0
C	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.	>20.0 – 35.0
D	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.	>35.0 – 55.0
E	POOR. Represents the most vehicles intersections approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.	>55.0 – 80.0
F	FAILURE. Backups from nearby locations or on cross stress may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.	>80.0

Source: Highway Capacity Manual, Transportation Research Board, 6th Edition

The City of Agoura Hills has established the intersection LOS threshold as LOS C or better for signalized intersections.

Unsignalized Intersection

The most recent *Highway Capacity Manual (HCM)* methodology should be applied. To determine LOS, average intersection control delay shall be used at all-way stop controlled (AWSC) intersections, and the worst stop-controlled approach lane group control delay shall be used at two-way stop controlled (TWSC) intersections. A signal warrant analysis shall be prepared for all intersections and scenarios where the LOS of an intersection movement exceeds the City's acceptable limits. A PHF or 1.0 and PCE of 1.0 should be used, unless special circumstances justify otherwise.

The City of Agoura Hills has established the intersection LOS threshold as LOS C or better for unsignalized intersections.

Roadway Segments

The local TIA must include any roadway segment, regardless of jurisdictional boundaries, to which at least 20 peak-hour project trips or 100 daily trips would be added. Projects only satisfying the minimum trip threshold (50 peak-hour and/or 500 daily trips) but with fewer than 20 peak-hour or 100 daily project trips to any single offsite facility, will normally only require analysis of the roadway segment(s) adjacent to the project site. The City may decide to include additional and/or alternate facilities on a case-by-case basis.

Roadway segment analysis shall be performed by comparing the peak hour segment volume on a segment with the Street Segment LOS Definitions and Descriptions outlined in the City of Agoura's General Plan and General Plan 2035 Final EIR and shown below in **Table 6**.

TABLE 6. STREET SEGMENT LEVEL OF SERVICE DEFINITIONS AND DESCRIPTIONS

Roadway Class	Number of Lanes	Median Type	Service Volume Thresholds for Level of Service (vehicles per hour)[b]			
			C or better	D	E	F
Collector	2	Undivided	≤ 450	≤ 950	≤ 1,200	> 1,200
Arterial	2	Undivided	≤ 870	≤ 1,390	≤ 1,480	> 1,480
	2.5[a]	Undivided	≤ 1,087	≤ 1,737	≤ 1,942	≤ 1,942
	4	Undivided	≤ 1,929	≤ 2,803	≤ 2,964	> 2,964
	4	Divided	≤ 2,030	≤2,950	≤ 3,120	> 3,120
	5	Divided	≤ 2,600	≤3,700	≤ 3,905	> 3,905
	6	Divided	≤ 3,170	≤4,450	≤ 4,690	> 4,690

a. Denotes three lane cross section with one through lane in each direction and a continuous two-way left-turn lane.
b. Service volume thresholds for each level of service were derived and adapted from the Highway Capacity Manual (Transportation Research Board, 2000, and Florida Department of Transportation Research, 2002.)

Source: City of Agoura Hills General Plan 2035 EIR, Table 4.13-1

Recommended Analysis Tools

Traffic operations analysis for local roadways and intersection shall be conducted using tools and methods approved by the City. **Table 7** identifies recommended analysis tools. Other tools or methods may be used upon receiving approval from the Public Works Director.

TABLE 7. ANALYSIS PARAMETER RECOMMENDATIONS

Software/Method	Analysis
HCS	Operations and Planning analysis of Unsignalized Intersections and Roadway Segments
Synchro/SimTraffic	Operations and Planning analysis of Signalized Intersections
SIDRA	Operations and Planning analysis of Roundabouts
Microsimulation	Analyzing operations of congested conditions, unique geometrics, and multi-modal facilities

Traffic Operation Analysis Parameter Recommendations

Analysis parameters (i.e. signal phasing, conflicting pedestrian volumes, etc.) for Existing and Existing Plus Project conditions shall be based on field measurements taken during traffic count collection or field observation.

For new study intersections and under Cumulative conditions, **Table 8** provides guidance on state-of-the-practice procedures. Consult with the City regarding other analysis parameters not listed in **Table 8**.

TABLE 8. ANALYSIS PARAMETER RECOMMENDATIONS

Parameter	Recommendation
Peak hour factor (PHF)	Use existing count data for existing analyses. For cumulative scenarios use 0.92.
Saturation Flow Rate	A field measurement of the saturation flow rate is recommended in accordance with procedure in the HCM. For cumulative conditions, use the value recommended in the most recent HCM unless physical conditions and traffic controls warrant a change. The HCM recommends 1,900 vehicles per hour per lane.
Yellow Change Interval	Use field measurement or information signal timing information provided by the City. For cumulative conditions or new intersections, base yellow change interval on posted speed limit using the California Manual Uniform Traffic Control Devices (CAMUTCD) table in Part 4 of Chapter 4D.
Red Clearance Interval	Use field measurement or information signal timing information provided by the City. For cumulative conditions or new intersections, assume 1 second per phase.
Conflicting pedestrians for signalized intersections and roundabouts	Based on existing pedestrian counts or observations.
Traffic Signal Cycle Lengths	Replicate existing coordination plans, cycle length, and phasing. For new signalized locations, limit the cycle length to less than 120 seconds and ensure that minimum pedestrian times are satisfied.
Heavy Truck Percentage	Based on the existing heavy-truck percentage and adjusted to account for future planned developed. In general, heavy-truck percentages should be greater on truck routes and main thoroughfares than on local streets. Minimum recommended value is 2%.
Lane Utilization Factor	Based on field observations.

2.3 Impact and Mitigation

At locations where the intersection or roadway segment LOS falls below, or is anticipated to fall below, the acceptable threshold of LOS C, feasible measures shall be identified to mitigate the impacts. Per the General Plan, development projects shall be mitigated to appropriate levels, but at least to the extent where the post-development level of service shall not be less than the LOS existing prior to development. The following sections identify impact criteria for signalized intersections, unsignalized intersections, and roadway segments.

2.3.1 Signalized Intersections

When comparing existing, near-term, long-term baseline conditions to "with project" conditions, delay changes for signalized intersections that exceed the criteria shown in **Table 9** should be identified.

TABLE 9. CITY OF AGOURA HILLS CRITERIA FOR SIGNALIZED INTERSECTIONS

LOS without Project	Average Total Delay (Seconds per Vehicle)	Project-Related Increase in Seconds of Average Total Delay
C	> 20.0 – 35.0	Degrades intersection to LOS D
D	> 35.0 – 55.0	Equal to or greater than 10.0 seconds
E of F	> 55.0	Equal to or greater than 4.0 seconds

2.3.2 Unsignalized intersections

A proposed project is considered to result in a significant impact if:

- Degrades the LOS at an unsignalized intersection to an unacceptable level of LOS D or worse; or
- Increases delay at an unsignalized intersection operating at an unacceptable level by five of more seconds; or
- Results in satisfying the most recent *California Manual on Uniform Traffic Control Devices* (CAMUTCD) peak-hour volume warrant or other warrants for traffic signal installation at the intersection.

2.3.3 Roadway Segments

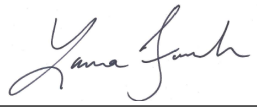
A proposed project is considered to result in a significant impact if:

- Degrades the LOS at a roadway segment to an unacceptable level of LOS D or worse;
- Increases the volume-to-capacity (v/c) ratio on a roadway segment operating at an unacceptable level (LOS D, E, or F) by 0.05 or more.

3.0 Documentation

A memorandum of understanding (MOU) summarizing key aspects of the TIA shall be submitted prior to analysis. These critical items include facilities to be studied, approved/pending projects, analysis methodologies, etc. The TIA shall be submitted as part of an application for approval for a development project or permit.

Prepared by the City of Agoura Hills Public Works Division, July 2020.



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