CITY of CALABASAS

Local Transportation Study Guidelines

The City of Calabasas Local Transportation Study Guidelines outline the City's procedures for studying a proposed project's effects on the local transportation system. The guidelines are organized in two parts: Part 1 includes procedures to determine if a proposed project has a significant transportation environmental impact under the California Environmental Quality Act (CEQA), and Part 2 includes procedures to identify potential operational issues when applied against the City's criteria. The City's Transportation Study Guidelines were updated to replace Level of Service (LOS) with Vehicle Miles Traveled (VMT) to determine if a proposed project has transportation environmental impacts under CEQA in compliance with Senate Bill 743.

The following transportation analysis process will be followed for proposed projects in Calabasas:

1. **Transportation environmental impact analysis for CEQA compliance (TIA)**: A proposed project would first be reviewed to determine if there is a potential for significant transportation environmental impacts. If the project does not meet the VMT screening criteria, a VMT analysis would be required to determine if the project exceeds the thresholds adopted by the City. Following the VMT screening process and/or analysis, the City would determine the appropriate environmental documentation needed based on potential environmental impacts. If a Mitigated Negative Declaration (MND) or Environmental Impact Report (EIR) is required, the VMT impact analysis, findings of significance, and mitigation measures, would be included in the Transportation section.

2. **Local transportation operational assessment (LTA)**: The purpose of the operational assessment is to provide the in-depth review of the project regarding traffic flow, site circulation, active transportation, transit facilities, traffic safety, and required frontage improvements similar to what the City has required for decades. The LTA report would be prepared and documented separately from the TIA.

Part 1: Transportation Impact Analysis for CEQA (TIA)

Transportation impact analysis for CEQA includes the following steps:

- VMT Screening: The first step in the transportation impact analysis process is to determine if a full VMT analysis is required. The City of Calabasas has three screening criteria for land use projects based on recommendations from the Governor's Office of Planning and Research (OPR) *Technical Advisory*. The screening criteria used to determine if a proposed project is expected to cause a less-than-significant impact without conducting a detailed study are project size, project location in a low VMT area, and project accessibility to transit. Transportation projects that do not add new travel lanes may be screened from further VMT analysis.

- VMT Analysis: If the project is not screened out from a VMT analysis, the Southern California Association of Governments (SCAG) regional travel demand model shall be used to estimate a project's VMT. OPR recommends that VMT be reported as Home-Based VMT per capita for residential projects and Home-Based Work VMT per employee for office projects. Total VMT or VMT per Service Population can be reported for area plans, large-scale retail projects, or other project types, such as special event venues.

- VMT Impact Thresholds: Projects exceeding a level of 15 percent below the Baseline VMT (reported as VMT per capita, per employee, or per service population) are considered to have a significant VMT impact. The City of Calabasas has defined the citywide average as the Baseline VMT.

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

- Caltrans Compliance: For projects located within one mile of a state highway or that may add traffic to the state highway, the TIA shall include documentation on coordination with Caltrans to comply with their impact requirements. The TIA report shall include the determination from Caltrans on their requirements and the required analysis, if required. The City will need to be provided documentation on the coordination and any compliance confirmation provided by Caltrans.

Each of these steps are described in greater detail below.

VMT Screening Criteria – Land Use Projects

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

Screening Criterion 1: Project Size and Type

Land use projects that generate less than 110 daily trips, local-serving retail projects (defined as commercial projects with local-serving commercial uses less than 50 thousand square feet (ksf)), and neighborhood/local-serving parks and schools are presumed to have less than significant VMT impacts absent substantial evidence to the contrary. Therefore, these projects are screened out from completing a VMT analysis based on project size and type. The following project types could be presumed to have a less than significant impact as their uses are local serving in nature:

- Local-serving commercial establishments (less than 50 ksf each), such as gas stations, banks, restaurants, and medical offices
- Local-serving K-12 schools
- Day care centers
- Local parks
- Local-serving community assembly uses (community organizations, places of worship, etc.)
- Local-serving hotels (e.g. non-destination hotels)
- Student housing projects
- Local serving community colleges that are consistent with the assumptions in the Regional Transportation Plan and Sustainable Community Strategy
- Projects generating less than 110 daily vehicle trips. The City would estimate trip generation for a project that may fall in this area and compare it to the 110 daily trip limit criteria. This generally corresponds to the following "typical" development:
    - 11 single family housing units
    - 16 multi-family, condominiums, or townhouse housing units
    - 10,000 sq. ft. of office
    - 15,000 sq. ft. of light industrial
    - 63,000 sq. ft. of warehousing
    - 79,000 sq. ft. of high cube transload and short-term storage warehouse
- Other locally serving land uses as determined by the Community Development Director

Screening Criterion 2: Low VMT Area

Residential and office projects located within a low VMT generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use land use projects may be screened if the project can reasonably be expected to generate VMT per resident, per worker, or per service population that is similar to the existing land uses in the low VMT area. Low VMT-generating areas are those that have VMT per capita or employee 15% lower than the baseline VMT. See Appendix A for maps that show the location of low VMT areas. Traffic Division or Planning Division staff will need to confirm if a proposed project is consistent with the existing land uses within the project area.

Screening Criterion 3: Transit Priority Area (TPA)

Projects located within a TPA may be presumed to have a less than significant impact. Transit priority areas are defined as ½ mile from an existing High-Quality Transit Corridor (15 min headway or better during peak periods) stop or ½ mile around an existing major transit stop such as a Metrolink station or regional bus service stop. The City of Calabasas currently does not have any TPAs.

VMT Screening Criteria – Transportation Projects

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

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

VMT Analysis Methodology

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

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

- Existing/Baseline Conditions: Project-generated VMT should be estimated for the proposed land uses under existing/baseline conditions. VMT can be estimated using the SCAG regional travel demand model and should be reported as VMT per capita (residential projects), VMT per employee

(office or employment-generating projects), or VMT per service population (all other land uses). For land use plans and regional retail projects, VMT per service population or Total VMT can be used to determine potential impacts.

- Cumulative Conditions: A project that is below the VMT impact thresholds and therefore does not have a VMT impact under baseline conditions would also not have a cumulative impact as long as it is aligned with long-term State environmental goals, such as reducing GHG emissions, and relevant plans, such as the SCAG RTP/SCS.

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

VMT Impact Thresholds

VMT Thresholds for Land Use Projects Plans

The City's threshold for identifying a significant VMT impact for land use projects and plans are as follows:

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

VMT Thresholds for Transportation Projects

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

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

The City of Calabasas has determined the following VMT thresholds for transportation projects in the City:

Project Type	Threshold for Determination of Significant VMT Impact
Transportation Projects	Project results in an increase in VMT in the study area in comparison to Baseline conditions

VMT Mitigation

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

Research documented in the 2010 California Air Pollution Control Officers Association (CAPCOA) publication, *Quantifying Greenhouse Gas Mitigation Measures,* offers TDM methodologies based on preferred literature, along with methodology based on alternative literature, to estimate the effectiveness of each strategy[1].

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

The strategies described below are a sample of the mitigation options most effective in areas like Calabasas.

Strategy	Description	VMT Benefit	Range of CAPCOA VMT Reductions	City of Calabasas Range of VMT Reduction
Increase Diversity of Developments (Mixed Use)	Includes mixed uses within Projects or in consideration of surrounding area.	Minimizes number and length of vehicle trips.	9% - 30%	5% - 20%

[1] California Air Pollution Control Officers Association, Quantifying Greenhouse Gas Mitigation Measures, August 2010 http://www.capcoa.org/wp-content/uploads/downloads/2010/09/CAPCOA-Quantification-Report-9-14-Final.pdf.

Provide Pedestrian Network Improvements	Creates pedestrian network within projects and connects to nearby destinations. Could also occur through impact fee program for active transportation improvements.	Encourages people to walk within and to project.	0% - 2%	2%
Provide Traffic Calming Measures and Low-Stress Bicycle Network Improvements	Creates networks with low vehicle speeds and volumes that support walking and bicycling. Could also occur through impact fee program for active transportation improvements.	Encourages people to bicycle, especially for shorter trips.	0.25% - 1%	1%
Implement Car-Sharing and Ride-Sharing Programs	Shared fleet of vehicles accessible on-site for residents or employees. Can serve as a first/last-mile solution to connect with transit.	Reduce the need to own a vehicle or the number of household vehicles.	Car-Sharing: 0.4% - 0.7% Ride-Sharing: 1% - 15%	Car-Sharing: 0.5% Ride-Sharing: 3% - 12%
Encourage telecommuting and Alternative Work Schedules	Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered start times, flexible schedules, or compressed work weeks.	Reduces the number of days employees need to work and/or shifts commute time outside of peak periods to avoid adding congestion.	0.07% - 5.5%	1% - 5%

Commute Trip Reduction Programs	Projects can implement a voluntary Commute Trip Reduction program with employers to discourage single-occupancy vehicle trips and encourage alternative modes of transportation. Alternatively, a jurisdiction can implement a Commute Trip Reduction Ordinance with the intent of reducing drive-alone travel mode share.	Encourages alternatives to commuting in single-occupancy vehicles.	Varies based on selected programs	Varies based on selected programs
VMT Fee Program (VMT Mitigation Bank)	Pools fees from development projects across multiple jurisdictions to spend on larger scale mitigation projects.	Regional program has potential for more significant reduction in VMT.	Varies based on selected programs	Determined by VMT Program Development
Limit Parking Supply	Projects can change parking requirements and types of supply within the Project site to encourage "smart growth" development and alternative transportation choices by project residents and employees.	Encourages alternatives to the use of single-occupancy vehicles.	5% - 12.5%	5%
Unbundle Parking Costs from Property Cost	Unbundling separates parking from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost from the property cost.	Encourages alternatives to the use of single-occupancy vehicles.	2.6% - 13%	5%

The City will develop a VMT mitigation monitoring program to periodically review the mitigation measures and determine if they are being met. A discussion with Traffic Division staff will be necessary to confirm which mitigation measures are suitable for the proposed project and determine what type of mitigation monitoring would be suitable for the specific project. The monitoring requirements would be set forth in the conditions for approval. Monitoring may consist of the following actions:

- Confirming physical on-site requirements
- Confirming physical off-site requirements
- Reviewing program materials and participation
- Counting number of vehicle trips
- Reviewing subsidy payments

Caltrans Compliance

In July 2020, Caltrans released interim Land Development and Intergovernmental Review (LDIGR) guidance for safety analysis of proposed land use projects and plans affecting the State Highway System[2]. Caltrans released revised interim LDIGR guidance in December 2020, which will be replaced by the Caltrans Safety Analysis Guide in 2022[3]. A proposed land use project or plan may affect the State Highway System by adding new automobile, bicycle, or pedestrian trips to state roadways; modifying access to state roadways; or affecting the safety of connections to or travel on state roadways. Additional effects may be identified in the final guidance. The City of Calabasas will require that projects that are required to meet Caltrans LDIGR safety analysis guidance do so and document the analysis in the TIA.

[2] Caltrans, "Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance," July 2020 https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-07-01-interim-ldigr-safety-guidance-a11y.pdf.

[3] Caltrans, "Interim Local Development Intergovernmental Review Safety Review Practitioners Guidance," December 2020 https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-12-22-updated-interim-ldigr-safety-review-guidance-a11y.pdf.

Part 2: Local Transportation Assessment (LTA)

The following guidelines include the primary components of a Local Transportation Assessment (LTA). Small projects may not be required to complete an LTA, but a comprehensive discussion with Traffic Division staff prior to analysis is necessary for a final determination if an LTA is required and if so, the scope of the proposed project's LTA.

LTA Preparation Thresholds

Projects that generate less than 110 daily vehicle trips do not have to prepare a formal LTA that determines levels of service or other roadway operational impacts. However, the project will still need to be reviewed through the development review process for other on- or off-site circulation and safety impacts as well as addressing access for bicyclists and pedestrians.

Study Area

The study area shall be determined by the City's Traffic Division staff based on the project's vehicle-trip generation. The study area for small and medium-sized projects should focus on roadways providing immediate access to the project site, such as the roadway(s) containing the project's primary driveway or secondary access point, or the intersection(s) immediately adjacent to the project site. An expanded study area should be considered for large projects. Analyzed locations should primarily consist of major signalized intersections that are likely to be affected by the project. Unsignalized intersections should only be studied if future signalization may be desirable by the City.

Study Scenarios

Proposed projects should continue to consider traffic operational effects under both existing and cumulative (project opening year) conditions. The following scenarios should be included:

- Existing Conditions
- Existing Plus Project Conditions
- Cumulative Conditions

Project Trip Generation

Trip generation estimates should be based on the best available data. In some cases, data published by the Institute of Transportation Engineers provides reasonable trip generation estimates for land uses in the City. However, to the extent possible, trip generation should be based on local data.

Signalized Intersection Operations

The most current version of the *Highway Capacity Manual* (HCM) is the preferred methodology to analyze signalized intersections. Level of Service (LOS) ratings for signalized intersections are based on the average control delay expressed in seconds per vehicle. The HCM methodology accounts for vehicular volumes, lane geometries, signal phasing, signal timings, bicycle and pedestrian volumes, upstream bottlenecks impacting

travel flows, and the distribution of travel flows throughout the peak hour (peak hour factor). The following table documents the relationship between the vehicle delay and the LOS for signalized intersections.

LOS Definitions for Signalized Intersections

LOS	Description	Average Control Delay Per Vehicle (Seconds)
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 groups 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 intersection 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 streets 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, 2010.

When comparing existing or future baseline conditions to "plus project" conditions, delay changes for signalized intersections that exceed the criteria below should be identified.

City of Calabasas Criteria for City-Operated Signalized Intersections

LOS without Project	LOS with Project	Average Total Delay (Seconds per Vehicle)	Project-Related Increase in Seconds of Average Total Delay
A, B or C	D, E or F	-	Any increase in delay
D, E or F	D, E or F	> 35.0	Equal to or greater than 5.0 seconds

Source: City of Calabasas

City of Calabasas Criteria for Signalized Intersections at Freeway Interchanges

LOS without Project	LOS with Project	Average Total Delay (Seconds per Vehicle)	Project-Related Increase in Seconds of Average Total Delay
A, B, C or D	E or F	-	Any increase in delay
E or F	E or F	> 55.0	Equal to or greater than 5.0 seconds

Source: City of Calabasas

Unsignalized Intersection Operations

The most current version of the Highway Capacity Manual (HCM) is the preferred methodology to analyze unsignalized intersections. LOS ratings for all-way stop-controlled (AWSC) intersections are based on the average control delay expressed in seconds per vehicle. At two-way or side-street-controlled intersections, the average control delay is calculated for each minor-street stopped movement and the major-street left turns, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The average control delay for unsignalized intersections is correlated to a LOS designation as shown below.

LOS Definitions for Unsignalized Intersections

LOS (v/c ≤ 1.0)	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delay.	≤ 10.0
B	Short traffic delay.	> 10.0 to 15.0
C	Average traffic delays.	> 15.0 to 25.0
D	Long traffic delays.	> 25.0 to 35.0
E	Very long traffic delays.	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded.	> 50.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2010.

When comparing existing or future baseline conditions to "plus project" conditions, delay changes for all-way stop controlled intersections that exceed the criteria below should be identified.

City of Calabasas Criteria for Unsignalized (All-Way Stop Controlled) Intersections

LOS without Project	LOS with Project	Average Total Delay (Seconds per Vehicle)	Project-Related Increase in Seconds of Average Total Delay
A, B or C	D, E or F	-	Any increase in delay
D, E or F	D, E or F	> 25.0	Equal to or greater than 3.0 seconds

Source: City of Calabasas

When comparing existing or future baseline conditions to "plus project" conditions, delay changes for side-street stop intersections that exceed the criteria below should be identified. In addition to the delay thresholds, the peak hour traffic signal warrant should also be met as part of the performance criteria. Adding the peak hour warrant to the criteria will ensure that minor street approaches with low traffic volumes are not identified as potentially needing improvements. Accounting for the delay changes in addition to the overall traffic volumes at the intersection will provide a more holistic approach for identifying the need for any improvements.

City of Calabasas Criteria for Unsignalized (Side-Street Stop Controlled) Intersections

LOS with Project	Average Total Delay for Side-Street Approach (Seconds per Vehicle)	Project-Related Increase in LOS or Seconds of Average Total Delay
D	> 25.0 to 35.0	LOS C or better to LOS D or worse, and meets the peak hour warrant for a traffic signal
E	> 35.0 to 50.0	LOS D or better to LOS E or worse, and meets the peak hour warrant for a traffic signal
F	> 50.0	LOS E to LOS F, or > 10 seconds of delay for worst-case approach if already at LOS F; and meets the peak hour warrant for a traffic signal

Source: City of Calabasas

A traffic signal warrant analysis shall be performed to determine if the location meets the requirements, for project opening year and build-out year conditions. The traffic signal warrant analysis shall be performed using the latest edition of the California *Manual on Uniform Traffic Control Devices* (MUTCD). The traffic signal warrants help determine if the traffic volumes, bicyclist or pedestrian volumes, or safety history warrant the consideration of installing a traffic signal. The analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals and should not serve as the only basis for deciding whether and when to install a signal. The City's Traffic Division staff should make the ultimate determination on the appropriate types of improvements to implement (if any) for unsignalized intersections.

Should an applicant request a traffic signal at a project driveway or adjacent intersection and meets the criteria above, the following is required for consideration and approval by the City:

- A Synchro/SimTraffic analysis to determine if the signal could fit into the existing system/corridor traffic progression (if appropriate). The Synchro/Sim Traffic electronic files used for the analysis shall be submitted to the City with the submittal of the analysis report.
- The project shall be required to pay for the installation of the traffic signal and connection to the City's traffic signal system.

In addition, any existing traffic signal adjacent to the project shall be upgraded as part of any required frontage or intersection improvements.

Site Access Analysis

The following analyses shall also be included to improve the project access circulation and to limit driveways and local street access points:

a) **Intersection and Driveway Sight Distance –** All on-site intersections, project access driveways or streets to public roadways should provide adequate sight distance. Adequate intersection sight distance should be determined using the Caltrans Highway Design Manual or locally developed

standards. Within the sight triangles, landscaping, walls/fences, and signs shall be no greater than 30 inches above the finished surface of the adjacent roadway, at project opening or in the future.

b) **Driveway Length and Gated Entrance –** Primary project driveways should have a throat of sufficient length to allow vehicles to enter the project area without causing subsequent vehicles to back up into the public street system.

c) **Limit Driveway Impacts –** Driveways and local streets access on arterial streets should be limited to minimize the impacts on arterial streets. Driveways should be located to maintain a reasonable distance from an adjacent intersection and/or driveway and align with driveways on the opposite side of the street. Whenever possible, driveways should be consolidated with adjacent properties.

d) **Corner Clearance –** A driveway should be a sufficient distance from a signalized intersection so that right-turn egress movements do not interfere with the right-turn queue at the intersection. In addition, every effort should be made to provide right-turn egress movements with sufficient distance to enter the left-turn pocket at the adjacent intersection.

e) **Right Turn Lanes at Driveways –** If the project right turn peak hour volume is 50 or more vehicles, a right-turn deceleration lane should be reviewed for appropriateness on all driveways accessing major arterial and secondary streets. The length of right turn lane should be sufficient to allow a vehicle traveling at the posted speed to decelerate before entering the driveway as outlined in the Caltrans Highway Design Manual.

f) **Pedestrian Facilities Accessibility –** Provide adequate convenient and direct access to/from the project site.

g) **Bicycle Facilities Accessibility –** Provide adequate accessibility from nearby bike routes to the project site.

h) **Transit Stop Accessibility –** Providing convenient and direct access to/from the project and adjacent transit stops.

On-Site Circulation Analysis

The following analyses shall also be included to improve the project's on-site circulation:

a) **Drive-Thru Queuing and Access** – For proposed land uses with drive-thru windows, including restaurants and banks, provide the storage length of the drive-thru lane based on an average headway of 20' per vehicle. Provide an analysis of the average and maximum queues to demonstrate that the queue storage length would be adequate. If possible, the analysis should be based on empirical data from similar stores in the same company or similar stores from another company, preferably from two or more, but at least from one similar store. Maximum queue shall not extend beyond the back of sidewalk at the project driveway, nor shall it intrude into drive aisles external to the store.

b) **On-Site Large Truck Circulation** – Analyze large truck movements on-site using truck turning template layouts on the site plan, to demonstrate that large trucks can easily maneuver on-site through parking lots and into/out of the loading bays without intruding into parking spaces, etc.

On-Site Safety Analysis

The following analyses shall also be included to improve the project's on-site safety:

a) **On-Site Sight Distance –** Drive aisles should typically be laid out in a straight line to reduce blind corners at their intersections. Examine all on-site intersections of drive aisles and on-site roadways to ensure there is adequate sight distance for all legs. Within the sight triangles, no landscaping, walls, etc. shall be higher than 30 inches above the finished grade of the adjacent road, at project opening or in the future. Avoid off-set intersections whenever possible.

b) **On-Site Pedestrian and Bicycle Access –** To maximize active transportation safety on-site by minimizing exposure to traffic, skewed disabled access paths should be avoided whenever possible and made perpendicular to the roadway. Separated pedestrian paths and on-site bike lanes should be provided when possible to minimize conflicts between vehicles, bicyclists, and pedestrian. In locations where project driveways may cross pedestrian or bicycle facilities, operational and safety considerations should be made to avoid or minimize vehicle/pedestrian and vehicle/bicycle conflicts.

Sustainable Transportation

Projects should consider how people walking, biking, and taking public transit will access the project site by ensuring project access points are connected to the surrounding pedestrian and bicycle network. Projects should also be reviewed for potential conflicts with adopted plans and policies related to active transportation, such as the Bicycle Master Plan, and public transportation. Any planned improvements in the immediate vicinity of the project site should be noted and incorporated into the project site plan as necessary.

Emergency Evacuation Evaluation

Projects may be required to perform an analysis regarding emergency evacuation related to disasters such as wildfires or landslides. The local transportation study analyses are not required to evaluate or determine potential impacts related to emergency evacuation; those efforts are to be performed by other consultants who specialize in that field of practice in coordination with the City. However, the local transportation study analyses may be required to include an analysis of roadway demand and capacity during an evacuation event, using data and analysis methodologies determined in collaboration with those experts and the City to support the evaluation and determination of potential impacts.

Documentation

The methodology and analysis results based on the requirements above should be documented in a Local Transportation Study Report. This report will be reviewed by the City's Traffic Engineering staff and will be used in the environmental and planning approval process.