

TRAFFIC STUDY CRITERIA

For Presentation before the Planning Commission

March 8, 2017

Background and Purpose

The Public Works Department and Planning Division prepared the document, Traffic Study Criteria for the Review of Proposed Development Projects within the City of Culver City. It was approved by the Planning Commission in 2009. The purpose of the criteria is to provide the public, developers, private consultants and the City staff with a uniform set of guidelines to prepare traffic studies that serve best serve Culver City's residents, visitors and businesses. By assessing projects' impact on traffic and requiring developers to mitigate any impacts their projects may have on the transportation system, the quality of life on the City's transportation system can be protected.

Traffic Study Requirements

A traffic study shall be required by the City if a project is estimated to add 500 or more daily trips or 50 or more trips during the AM or PM peak periods. If these thresholds are not met the project would not have a significant impact at any signalized intersections. However, the City may also require a traffic study even if these thresholds are not met to address other traffic and/or related factors. Such factors may include: a project generates a significant amount of traffic or parking on a residential street; a project could create a traffic adverse conditions for pedestrians and bicyclists; and a project could create operational problems that interfere with the flow of traffic on nearby arterial highways and residential streets.

Scoping Process

For the scoping process, the applicant or his traffic engineer shall submit a memorandum of understanding (MOU), which sets the stage for the traffic study. It describes the existing and proposed land uses, the build-out year of the project, the amount trips the project will generate, any reductions or credits in traffic allowed in the criteria, the directional distribution of project traffic, an up-to-date list of other projects in the vicinity, and the intersections and residential streets to be analyzed. After the City's Traffic Engineer approves the MOU, and the traffic study review fees are paid, the applicant's traffic engineer can begin the traffic study.

Contents of the Traffic Study

The traffic study has an executive summary that includes the project description, the amount of traffic the project generates, any impacts created by the project on traffic, and any required transportation improvements required to mitigate the project's impact on traffic. Mitigation measures can include monetary contributions to projects that promote the other modes of transportation, bicycling, pedestrian travel and transit. The executive summary also includes an assessment of parking requirements.

Study Scope

The traffic study goes into detail on the intersections that will be studied, which number from a few intersections for small projects to 40 or more intersections for major developments. New traffic counts are taken at all the intersections and residential streets to be analyzed. The traffic counts are typically taken

during the AM and PM peak traffic hours, Tuesdays through Thursdays, and on school days without roadway construction of any other factors that would inhibit the flow of traffic. The study intersections are analyzed for existing conditions, and for the future build-out year of the project, with the increases in traffic caused by ambient growth, and the traffic generated by nearby, or related projects, and traffic generated by the project. The ambient growth, which is assumed at one percent per year, is considered conservative for an urbanized area. The Intersection Capacity Utilization (ICU) method or Critical Movement Analysis (CMA) method is used to analyze the intersections to determine the intersections' level of congestion or level of service (LOS). The various levels of service are defined in the following chart:

LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS)	Volume/Capacity Ratio	Definitions
A	0.000 – 0.600	EXCELLENT – No vehicle waits longer than one red light and no approach phase is fully used.
B	0.601 – 0.700	VERY GOOD – An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 – 0.800	GOOD – Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D*	0.801 – 0.900	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.
E	0.901 – 1.000	POOR – Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	1.001 or greater	FAILURE – Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Significant delays with continuously increasing queue lengths.

*LOS D is considered acceptable for urban areas

The LOS for signalized and unsignalized intersections is also a function of the average vehicle delay as show in the following chart.

Level of Service (LOS)	Signalized Intersections	Unsignalized Intersections
A	≤10 sec	≤10 sec
B	10–20 sec	10–15 sec
C	20–35 sec	15–25 sec
D*	35–55 sec	25–35 sec
E	55–80 sec	35–50 sec
F	>80 sec	>50 sec

*LOS D is considered acceptable for urban areas

Project Trip Generation

The project’s trip generation is based on the Institute of Transportation Engineers (ITE) publication Trip Generation Handbook. The ITE rates are considered conservative because the data obtained for uses throughout the country are for less urbanized areas that do not have transit facilities available. The project’s traffic generation can be reduced by several factors:

- **Existing Uses:** The traffic generated by existing uses on the site are subtracted.
- **Pass-By Trips:** Pass-by trips are trips made as an intermediate stop, such as a motorist stopping at the Starbucks en route to another destination. Culver City allows up to 25% trip reduction for pass-by trips. In comparison, the City of Los Angeles allows up to 50%.
- **Internal Trip Capture:** Internal trip capture, is the portion of trips generated by a mixed-use development that both begin and end within the development, without using the external road system. Culver City allows a maximum of 10% reduction for internal trip capture.
- **Transit Oriented Development:** A maximum of 25% trip credit is allowed for a Transit Oriented Development (TOD) for developments within a quarter of a mile of a rail station or transit center.
- **Transportation Demand Management:** A maximum of 10% trip credit may be taken for Transportation Demand Management (TDM) programs that are recorded via covenant.

Traffic from the proposed development is distributed onto the road system, to compare the LOS for existing conditions to that of future conditions with and without the project, and to determine if the project has a significant impact on traffic. The following tables show the thresholds of significant impact for intersections and for residential streets:

SIGNIFICANT IMPACT THRESHOLDS AT SIGNALIZED /STOP CONTROLLED INTERSECTIONS

LOS	V/C Ratio	Project Related Increase in V/C Ratio
A	0.600 or less	No Significant Impact
B	0.601 – 0.700	No Significant Impact
C	0.701 – 0.800	Equal or greater than 0.05
D	0.801 – 0.900	Equal or greater than 0.04
E	0.901 – 1.000	Equal or greater than 0.02
F	1.001 or more	Equal or greater than 0.02

Level of Service = LOS; Volume to Capacity Ratio = V/C

SIGNIFICANT IMPACT THRESHOLDS AT RESIDENTIAL STREETS

Projected Average Daily Traffic (ADT) With Project	Project-Related Increase in Average Daily Traffic (ADT) Volume
999 or Less	120 or More
1,000 to 1,999	12 percent or more of final ADT
2,000 to 2,999	10 percent or more of final ADT
3,000 or More	8 percent or more of final ADT

The following shows a depiction of steps to evaluate a project’s traffic:

Existing + Ambient Growth + Related Projects + Project traffic = Total V/C
Existing + Ambient Growth + Related Projects = Total V/C
Existing + Ambient Growth = Total V/C
Existing V/C

Potential Mitigation Measures

Mitigation measures are required to eliminate or reduce the impact of the project to a level of insignificance. The following are some potential mitigation measures:

- Contributions to transportation projects that encourage the use of alternate modes of transportation such as bicycle, transit and pedestrian modes of travel. Contributions to bicycle facilities may include, protected bicycle lanes, cycle tracks, and bicycle stations.
- Establish an enhanced Transportation Demand Management (TDM) program, which encourages non-automobile travel, carpooling, preferential parking for carpools, vanpooling, bicycle facilities, flexible work hours, telecommuting and incentives for employees to use transit, such as transit vouchers.
- Street improvements, such as minor widening to accommodate bicycle lanes, and restriping the roadway.
- Traffic signal installations and traffic signal modifications.

Coordination between the developer's traffic consultant and the City's traffic engineer

The City's traffic engineer reviews all stages of the traffic study. Typically, there are several iterations of the draft traffic study that are required until the City's traffic engineer approves the final traffic study.

Changes in Traffic Study Criteria under SB743

Pursuant to SB 743 local jurisdictions in California must change their traffic study criteria. Under this new law, vehicle miles travelled (VMT) and greenhouse gasses, rather than LOS will determine if a project has significant impact under CEQA. VMT for any use is the amount of vehicle miles travelled caused by the development. For example, if a 100,000sf office building generates 11 trips per 1000sf per day and the trips are an average of 10 miles, the VMT for the development would be $100 \times 11 \times 10 = 11,000$ vehicle miles traveled. Culver City plans to hire a consultant to develop a work program to adapt to SB 743 by 2019. Part of the scope will be to develop a citywide traffic model that would allow for estimates of VMT profiles for different communities in the City, quantifying the benefits of different TDM measures, and developing new impact thresholds based on VMT. The consultant will also conduct a travel demand forecast model and a transportation impact fee nexus study to determine the fair-share fees that developers will pay for improvements to the City's transportation system in proportion to the amount of traffic their projects add to the City's transportation system. We expect the City's traffic study criteria will still require information on levels of service indicating the changes in levels of congestion caused by a project. Although, changes in LOS will not constitute a significant impact under CEQA, it will be useful information for the public and decision makers.