



**PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT
Traffic, Advance Planning & Permits Division**

MEMORANDUM

DATE: February 10, 2009

TO: Butch Britt, Director – Transportation Department

FROM: Nazir Lalani, Deputy Director

SUBJECT: **TRAFFIC IMPACT STUDY SCOPE OF WORK PROCEDURE**

The purpose of this memorandum is to ensure consistent scoping of the work to be performed in the preparation of Traffic Impact Studies (TIS) by consultants and Transportation Department Advance Planning Staff reviewing the studies.

DEFINITIONS

Average Daily Trip (ADT) The total bi-directional volume of traffic passing through a given point during a given time period, divided by the number of days in that time period.

Level of Service (LOS) Roadway LOS is the perception by the users of a traffic facility of the quality of service provided by that roadway. LOS is a stratified system, represented by the letters “A” through “F” with “A” representing the most favorable driving conditions and “F” representing the least favorable.

Peak-Hour Trip (PHT) A single or one-direction vehicle movement with either the origin or destination (exiting or entering) being a project site or study area during the peak hour or peak period associated with that project or study area.

Peak-Hour Turning Movements (PHTM) The highest hourly number of vehicles turning left, going straight, or turning right on each approach of an intersection during an average weekday.

Service Flow Rate The service flow rate is the maximum hourly rate at which persons or vehicles reasonably can be expected to traverse a point or uniform segment of a lane or roadway during a given period under prevailing roadway, traffic, and control conditions while maintaining a designated LOS. Service flow rates are discrete values, whereas LOS represents a range of conditions. Because service flow rates are the maximums for each LOS, they effectively define the flow boundaries between LOS.

Thoroughfare (TF) Any road that is part of the regional road network.

Trip Generation Rate (TGR) The number of vehicle trips per unit of land use using a site’s driveways. Rates may be for the entire day, peak hour of the generator, or of the adjacent street.

Traffic Impact Study (TIS) An engineering study which describes how a new development or redevelopment would affect the area's local and regional transportation system and identifies measures to mitigate impacts from the project.

Traffic Impact Mitigation Fee (TIMF) Fees assessed on all applicants for development approval for the construction of off-site transportation infrastructure improvements necessitated by new development and development expansion or intensification. TIMF's are generally intended to mitigate cumulative traffic impacts.

Volume/Capacity Ratio (V/C) The ratio between the existing or projected volume of traffic using a transportation facility and the capacity of that facility. The capacity is defined as the maximum hourly rate at which a person or vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions.

POLICY

All TIS Scopes of Work (SOW) shall be prepared in accordance with these procedures. Any deviations from these procedures shall first be approved by the Advance Planning Section of the Transportation Department. The TIS and SOW shall be prepared by a licensed Traffic Engineer.

PROCEDURE

The SOW should be prepared in conformance with these procedures and submitted to the Transportation Department for review and approval before any work is initiated on the TIS.

The SOW for the TIS may be submitted at the time of application submittal to the Planning Department of the Resource Management Agency or at the Development Review Committee. A copy of the final approved SOW shall be submitted to the Planning Department's case planner.

The following procedures provide guidance on the completion of the SOW form and the subsequent preparation of the TIS based on the approved SOW.

Contact Information

This section of the proposed SOW should provide the following information:

1. Project Name including Planning Case Number (if available)
2. Applicant's Name
3. Applicant's Permit Processing Contact Name
4. Applicant's Permit Processing Contact Telephone Number
5. Project Location
6. Name of Consulting Firm Preparing the TIS
7. Name of Engineer Preparing the TIS
8. Telephone number of the Engineer Preparing the TIS
9. Date Scoping Form was Submitted
10. County Department: Transportation
11. Name and Telephone Number of County Contact

Study Area Boundaries

The limits of the study area boundaries should be provided in this section of the SOW. A map shall be attached to provide a clear description of the study area boundaries.

Type of Application

This section of the SOW should identify the type of application for which the TIS is being prepared from the following:

- Building Permit
- Coastal Development Permit
- Conditional Use Permit
- General Plan Amendment/Zone Change
- Parcel Map
- Permit Modification
- Planned Development Permit
- Subdivision
- Other

Items to be Addressed in the Traffic Impact Studies

Project Description

A detailed description of the existing and proposed land uses should be provided in this section of the SOW. The description may require an attachment. The description must be consistent with the information provided on the Resource Management Agency permit application. A typical description is provided here:

“The main elements of the project would include:

- Six housing clusters that include 100 dwelling units.
- An outdoor recreation area of 10,000 square feet
- A warehouse and support facility of 5,000 square feet
- Other maintenance facility buildings of 12,000 square feet
- An 11± acre surface parking lot

The site covers approximately 130± acres. Prior to constructing the various buildings on the site, the project would also develop a construction staging area on the project site. It is anticipated that the site would be operated on a 24-hour a day, 7-day a week schedule. Approximately 1,700 staff persons maximum would be required for the facility. Based on staffing schedules at other facilities, approximately 900 staff persons would work at the site on a daily basis. There would also be a limited number of deliveries and visitors traveling to the site on a daily basis. The staff shift would be as follows:

Shift 1: 6 a.m. to 2 p.m.
Shift 2: 2 p.m. to 10 p.m.
Shift 3: 10 p.m. to 6 a.m.

Given the scale of this project, construction is anticipated to last at least two years.”

Project Trip Generation

The first step in analyzing Existing Plus Project traffic conditions is to estimate the number of new

trips expected to be generated by the proposed project similar. The SOW form should specify one of the following sources:

- Latest Edition of Institute of Transportation Engineers (ITE) Trip Generation Informational Report.
- Latest Edition of San Diego Association of Governments Trip Generation Summary Tables.
- Driveway count data obtained for similar projects. (The list of similar projects must be approved by the Transportation Department.)

The trip generation may be adjusted to show net project trips if there are existing legal land uses that will be removed when the proposed project is constructed. Illegal uses in existence prior to 1985 will be considered the same as existing legal uses. Illegal uses in existence after 1985 will be considered as new uses.

Reduction factors may be applied to the traffic that is added to the streets adjacent to the project to account for non diverted pass-by traffic. The reduction factors can be obtained from the ITE Trip Generation Informational Report Users Handbook.

Intersections and Links (Road Segments) to be Studied

A table or list of proposed link or segment analysis locations should be provided similar to Table 1. The acceptable sources of average daily volumes include:

- Existing ADT counts (may be obtained from the Transportation Department, Caltrans District 7, or data collected by the applicant's engineer).
- Existing Plus Project ADT counts (will be calculated using the existing ADT counts to which the projects traffic is added).
- Cumulative ADT projected counts (may be obtained from the Ventura County Traffic Model Projections or based on the trips generated by an approved list of cumulative projects provided by the Planning Department of the Resource Management Agency).

TABLE 1: LINK ANALYSIS

Link #	Segment	Between	Existing ADT	Plus Project	Cumulative
1	SR-118 (Los Angeles Ave)	SR-232 (Vineyard Ave) & SR-118 (Los Angeles Ave)			
2	Central Ave	SR-232 (Vineyard Ave) & Santa Clara Ave			
3	SR-118 (Los Angeles Ave)	SR-118 (Los Angeles Ave)/Santa Clara Ave intersection			

A table or list of proposed intersection locations should be provided similar to Table 2. This may require providing a separate attachment to the SOW form. The acceptable sources of average daily volumes include:

- Existing peak period counts (may be obtained from the Transportation Department, Caltrans District 7, or data collected by the applicant's engineer).
- Existing Plus Project peak period counts (will be calculated using the existing ADT counts to which the projects traffic is added).
- Cumulative peak period projected counts (may be based on the Ventura County Traffic Model Projections or based on the trips generated by an approved list of cumulative projects provided by the Planning Department of the Resource Management Agency). Growth factors of 2% per year may be also be used. However, the County may specify higher growth factors for some sections of the regional road network.

The analysis periods will typically be either the AM or PM peak periods, the noon peak period for

specific land uses, or some other peak period that may be associated with particular types of land uses. The preparer of the TIS should consult County about the exact hours of the peak periods because they vary throughout County, especially for facilities such as State Route (SR) 33 and SR 118. The type of intersection control should also be provided.

TABLE 2: INTERSECTION ANALYSIS

Intersection	AM Period (Hours)	PM Period (Hours)	Noon (Hours)	Other (Hours)	Type of Control
#1 SR-232 (Vineyard) / SR-118					Signal
#2 SR-232 (Vineyard) / Central Ave					Signal
#3 SR-118 - Santa Clara Ave / SR-118					Signal
#4 Santa Clara Ave / Wright Rd					Stop
#5 Santa Clara Ave / Central Ave					Signal

Trip Distribution and Assignment

A typical trip distribution for a proposed project is illustrated in Figure 1. The source of the data used to determine the percentage distribution should be identified in the SOW, and approved by the Transportation Department. Using Census and zip code data to develop trip distribution percentages should be identified in the SOW and approved by the Transportation Department. (Note: The Census method may be used if other sources of count data, such as Caltrans and VCTC traffic model, are not available.)

The assignment of the trips to the road network shall be based on existing peak-hour link and turning movement volumes. ADT volumes may be used if peak-hour data are not available.

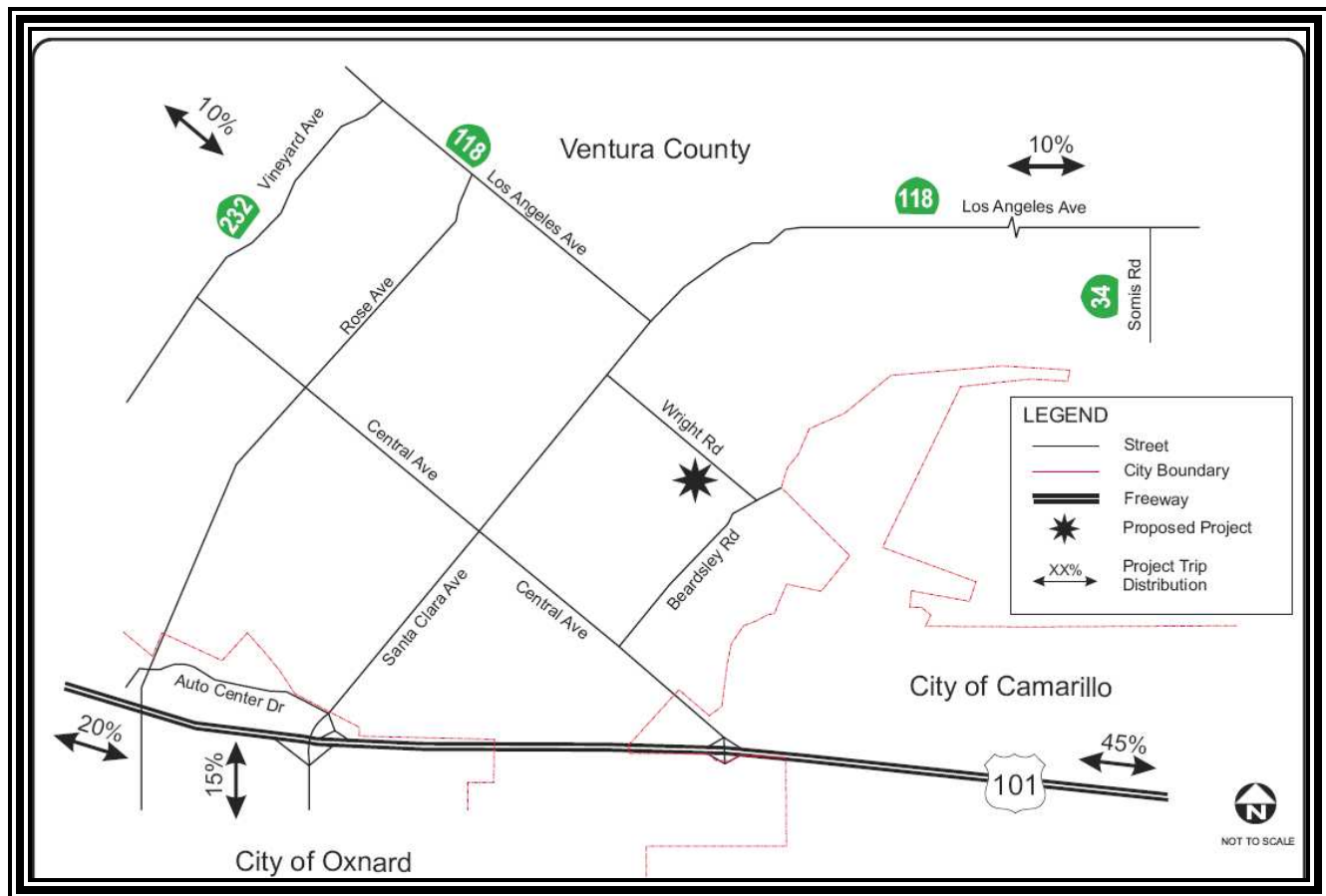


FIGURE 1 PROJECT TRIP DISTRIBUTION

Transportation Demand Management

Source data for justifying the use of PHT reduction techniques such as ridesharing, flexible work hours, transit subsidies, and other such measures should be identified in the SOW.

Capacity Analysis

The methodology for preparing TIS should follow the most recently adopted Initial Study Guidelines for Public Roads and Highways – LOS. These guidelines specify that intersection capacity analysis shall be prepared using the Intersection Capacity Utilization method (ICU). The SOW should specify ICU as the methodology to be used. If trucks are to be included in the capacity analysis, the passenger car equivalency of the trucks should be identified in the SOW.

Parking Analysis

If the project is proposing to provide less parking than is required by the Zone Ordinance or is proposing shared parking amongst several proposed land uses, the SOW for the TIS should provide a parking analysis that provides justification for the proposed parking plan.

Safety Analysis

If the proposed project specific will potentially impact any intersections or road segments that have been identified as high crash location by studies performed by the County, the SOW for the TIS should include a safety analysis that will address how these impacts will be mitigated.

Traffic Signal Warrant Analysis

If the proposed project specific will potentially impact any intersections that have been identified as a potential location where a traffic control signal may be warranted at project opening or within five years of project opening, the SOW for the TIS should include a traffic signal warrant analysis that will address how these impacts will be mitigated.

On Site Circulation Analysis

For larger commercial and office projects where there will be complex on-site circulation configurations, the SOW for the TIS should include an evaluation of on-site circulation.

Access Analysis

For larger commercial and office projects where there will be driveways providing access to the project that may require the provision of speed change or auxiliary lanes, the SOW for the TIS should include an evaluation of site access from the adjacent street(s).

Construction Traffic Analysis

If a proposed project creates a temporary, but prolonged impact due to lane closure, creates a need for temporary signals, obstructs emergency vehicle access, results in traffic hazards to bicycles and/or pedestrians, adds truck traffic on roadways not designated as truck routes, or results in other similar impediments to circulation, the SOW for the TIS should address impacts resulting from construction traffic associated with the project.