

City of Lompoc  
Community Development Department - Planning

**Traffic Study  
Guidelines**

***When Is A Traffic Study Needed?***

A traffic study may be required for any project at the sole discretion of the City. Minimum requirements for traffic studies are described in Attachment A, but may be modified at the discretion of the City. Attachment B provides a series of traffic study guidelines designed to answer the questions most commonly asked of City staff regarding traffic studies for projects in Lompoc.

A traffic study will be required when there is the potential for the project to create a significant number of traffic conflicts under future conditions. The potential for traffic conflicts will depend upon the trip generation of the project as well as the congestion in the area surrounding the project site. Typically a project which generates fewer than 25 peak hour trips will not be expected to significantly contribute to traffic congestion, whereas a project which generates more than 50 peak hour trips will generally be considered a potentially significant trip generator. The land use quantities required to generate 25 and 50 peak hour trips are shown in Table A for a few select land use categories.

The potential for significant impacts is highly dependent upon the circulation system in the project vicinity. If the project access is through a congested intersection, a relatively small trip generator could significantly increase the potential for traffic conflicts. If a project is located in a congestion free area with many alternative routes available to disperse project traffic, a relatively large trip generator may have no significant impact. The trip generation of the project and the sensitivity of the project vicinity to additional traffic are both critical in determining the need for a traffic study.

Table A  
 Land Use Quantities Required to Generate  
 25 and 50 Peak Hour Trips<sup>a</sup>

Land Use Category	Land Use Quantity to Generate	
	25 Peak Hour Trips <sup>b</sup>	50 Peak Hour Trips <sup>c</sup>
Single Family Residential	20 DU	43 DU
Multi-Family Residential	32 DU	75 DU
General Offices	8.5 TSF	17 TSF
Medical Offices	6.5 TSF	13 TSF
Retail Commercial	2 TSF	5 TSF
Quality Restaurant	3 TSF	6.5 TSF

Notes: a. Based upon ITE *Trip Generation* 5th Edition regression equations.

b. DU = Dwelling Units; TSF = Thousand Square Feet.

c. Fast food restaurants and banks typically generate more than 50 peak hour trips

### ***Graduated Significance Thresholds***

Many jurisdictions have established significance thresholds which depend upon the level of service of the impacted intersections. For example, if a proposed project utilizes almost all of the capacity of an underutilized intersection, such that the intersection will still operate within the design capacity, the project can be required to contribute to the improvement of that intersection. The improvements would provide additional capacity at that intersection for future development.

Significance thresholds may be used to establish a minimum number of trips through an intersection necessary to generate an impact that is considered significant. In this manner, a small project that adds only a few trips to an intersection currently operating beyond its design capacity, would not generate an impact that is considered significant. This would allow very small projects or projects located far from congested intersections to not be held responsible for mitigation.

Although graduated significance thresholds are advisable in some jurisdictions, they do not appear to be particularly appropriate for future development in Lompoc. Based upon the regional modeling, only one intersection ("H" Street C Central Avenue) appears to be difficult to mitigate under General Plan buildout conditions. Therefore, only large projects would exceed the graduated significance thresholds at existing intersections, and few projects of this magnitude are anticipated in Lompoc.

Attachment A  
Minimum Requirements For Traffic Studies'  
City of Lompoc

TRAFFIC STUDY OUTLINE

**1. Executive Summary**

- a. Existing traffic conditions
- b. Future traffic conditions with and without project
- c. Circulation mitigation measures for all anticipated transportation modes

**2. Project Location and Description**

- a. Describe the project location in terms *of its* regional and local setting.
- b. Describe the proposed project, including the timing of development.

**3. Existing Conditions**

- a. Describe the surrounding street system.
- b. Provide peak *hour and* daily traffic volumes.
- c. Describe City standards for level of service.
- d. Evaluate peak hour and daily levels of service.
- e. Address relevant circulation plans.
- f. Address traffic signal warrants.

**4. Circulation Impact Analysis**

- a. Provide trip generation associated with the project and cumulative projects.
- b. Adjust for trip overlap or pass-by trips, as appropriate.
- c. Distribute trips based upon existing traffic counts, future land uses, and knowledge of local circulation patterns.
- d. Evaluate ambient+cumulative traffic conditions (without project) for project build-out year (or phases, as appropriate).
- e. Evaluate ambient+project+cumulative traffic conditions for project build-out year (or phases, as appropriate).

**(If the project is a Zone Change or General Plan Amendment)**

- f. evaluate General Plan buildout without project traffic conditions
- g. evaluate General Plan buildout-plus-project traffic conditions

**5. Mitigation Measures**

Identify all circulation mitigation measures which are necessary to adequately mitigate project-related impacts for all anticipated transportation modes and describe implementation of TSMf/DM measures.

**Appendix**

1. At the discretion of the City, the final report shall be stamped by a California Registered Traffic Engineer or a California Registered Civil Engineer with adequate experience in transportation engineering.

Attachment B  
CITY OF LOMPOC  
TRAFFIC STUDY GUIDELINES

***I. Initial Consultation***

The following items need to be confirmed *through* consultation with the City prior to the submittal of any traffic study. The consultant will make recommendations for the following items based upon engineering judgement and will submit a letter to City staff detailing their assumptions and recommendations for approval prior to submittal of any traffic study. Allow up to one week for the City's response.

**Study Area and Key Intersections** - Designate a study area which includes the area of potential traffic impact, and identify those intersections that need to be addressed.

**Traffic Count Data** - Specify where intersection and 24-hour counts are needed, and the time periods during which traffic constraints may occur (AM, Noon, PM, daily, weekday, weekend).

**Phases** - To identify when mitigation may be required, the traffic study may need to address intermediate development phases. Without a phased analysis, traffic mitigation measures will generally be required upon initial development of the project.

**Cumulative Projects** - To evaluate the ambient conditions upon project build-out, future traffic conditions will need to be addressed by including known cumulative projects and/or a traffic growth rate approved by the City.

**Trip Generation** - Must be based upon the latest edition of the ITE "Trip Generation" manual. If the proposed land uses are not clearly defined by ITE "Trip Generation", a consensus of appropriate trip generation rates is required with City staff.

**Traffic Assignment** - Must be based upon existing traffic counts, future land uses, and knowledge of local travel patterns.

**Alternatives** - If key circulation issues are not fully determined, the City may require the traffic study to address circulation alternatives.

***II Details for the Traffic Study Guidelines***

**Section Ia** - Summarize the existing key traffic issues in the project vicinity. Identify any traffic constraints or facilities which currently need to be improved. Characterize the operation of traffic in the project vicinity in terms of levels of service.

**Section Ib** - Summarize the future key traffic issues in the project vicinity. Identify any traffic constraints or facilities which will need to be improved to insure acceptable conditions with or without the project. Characterize the operation of traffic in the project vicinity in terms of levels of service.

**Required Table** - (1) an intersection summary table which addresses the operation of the key intersections for existing conditions and each of the future scenarios.

**Section 1c** - List all of the measures necessary to mitigate project-related impacts to a level of insignificance, or explain why this is infeasible.

**Section 2a** - Provide a description of the location of the proposed project in terms of its regional and local setting.

Required Figures - (1) a regional location map which shows the project site in its regional context; (2) a vicinity map which shows the project site and the relevant study area including all key intersections to be analyzed.

**Section 2b** - Provide a description of the proposed project and project alternatives. Identify the existing and future zoning and General Plan land use designations. Discuss the phasing and build-out date. Discuss the proposed project access.

Required Table - (1) a quantitative summary of the proposed project (land use quantities) for each phase and alternative.

Required Figure - (1) a detailed map showing the proposed project land uses (e.g. site plan).

**Section 3a** - Provide a description of the streets within the study area. Provide the road classification and include the number of lanes, whether each roadway is divided or undivided, travel speed, improvements, and other relevant information.

Required Figure - (1) a detailed map of the study area showing the number of lanes, divided or undivided, traffic control devices, and project site.

**Section 3b** - Provide details of the traffic count data including data from Caltrans, City counts, and any supplemental counts required for the traffic study. Generally, peak period counts should be broken down in 15-minute intervals *over a 2-hour count* period to bracket the peak hour, and included in the Appendix.

Required Figures - (1) a map showing the daily traffic count data; (2) a map showing the peak hour turning movement count data at the key intersections (may be combined with the daily counts for a small study area).

**Section 3c** - Provide a description of *the* relationship of level of service to traffic flow. Present the City standards for the level of service of intersections and roadway links.

Required Table - (1) a summary of the daily and peak hour level of service standards.

**Section 3d** - Evaluate the significance of the peak hour and *daily* volumes by utilizing the appropriate methodology and comparing them to City standards. For projects which impact the CMP network the traffic analysis must comply with the requirements of the Santa Barbara County Congestion Management Program. Signalized intersection and unsignalized intersection analyses should be based upon the methodology from the 1994 Highway Capacity Manual, subject to the discretion of the City. Daily link volumes should be addressed utilizing a volume-to-capacity analysis based upon the daily capacities provided in the Circulation Element.

Required Tables - (1) a summary of the daily volume-to-capacity ratios for roadways in the study area.; (2) the number of lanes for each turning movement assumed in the analysis (can be shown in a figure); (3) a summary of peak hour intersection utilization and level of service (can be shown in a figure);

**Section 3e** - Describe the relevant circulation plans and policies that affect the project site. Describe the classification of the roadways in the study area. Identify any roadway improvements that are proposed in the study area, the funding mechanism and scheduled completions date. Identify any bikeways that are proposed adjacent to or through the site. Discuss the availability of public transit for the project site. Evaluate existing and anticipated pedestrian and bicycle activity within the study area. Identify any safety-related impacts involving conflicts between motor vehicles, bicyclists, and pedestrians and provide suitable project-related mitigation measures.

Required Figures - (1) a map showing the relevant circulation plans for the area (e.g. master planned circulation system or bikeways); (2) a graphic showing typical cross-sections for master planned roadways.

Section 3f - Evaluate the intersections in the study area as to their potential need for signalization based upon available count information utilizing planning level daily signal warrants from Caltrans.

**Section 4a** - Evaluate the trip generation for the proposed project and cumulative projects utilizing factors from the latest edition of IIE *Trip Generation* or any factors developed through coordination with City staff.

Required Tables - (1) a quantitative summary of the trip generation for the proposed project for each phase and alternative; (2) a quantitative summary of the trip generation for cumulative projects.

**Section 4b** - Provide a discussion of the proposed use of trip overlap or pass-by trips adjustment factors. Any use of trip overlap or pass-by trips must be approved by City staff prior to use. Pass-by trips may not be applied to the morning peak hour. Pass-by trips may not exceed 10% of the volume on the adjacent streets without approval from City staff.

Required Table - (1) a quantitative summary which explicitly shows the adjustments to the trip generation made to reflect trip overlap and pass-by trips.

**Section 4c** - Distribute project-related trips based upon existing counts at similar uses, knowledge of future land uses, and knowledge of local circulation patterns. City review of the project distribution is required prior to completion of the traffic study. Different project distributions may be required for different scenarios.

Required Figures - (1) a detailed map showing the percentage of project-related traffic and project-related daily traffic volumes along roadways in the study area; (2) a detailed map showing peak hour project-related turning movements through the key intersections in the study area. (Additional figures may be required to show the project traffic assignment for different scenarios.)

**Section 4d** - Develop ambient+cumulative peak hour and daily traffic volumes for the project build-out year (and intermediate phases if applicable). The ambient volumes can be determined by utilizing a growth rate for each key intersection determined by comparing existing and General Plan build-out traffic volumes (assume General Plan build-out will occur by 2015). Any specific cumulative developments identified by City staff may need to be added to the ambient volumes. Evaluate the significance of the ambient traffic volumes by utilizing the appropriate methodology and comparing the results to City standards.

Required Table - (1) a summary of the operation and levels of service of the key intersections and roadway links in the study area with ambient traffic volumes in the project build-out *year* (and intermediate phases, if applicable).

Required Figure - (1) a detailed map showing ambient+cumulative peak hour and daily traffic volumes along roadways in the study area upon project build-out (and intermediate phases, if applicable).

**Section 4e** - Develop ambient+cumulative+project peak hour and daily traffic volumes for the project build-out *year* (and intermediate phases if applicable) by adding project-related traffic to the ambient+cumulative traffic volumes. Evaluate the significance of the ambient+project traffic volumes by utilizing the appropriate methodology and comparing the results to City standards.

Required Table - (1) a summary of the operation and levels of service of the key intersections and roadway links in the study area with ambient+cumulative+project traffic volumes upon project build-out (and intermediate phases, if applicable).

Required Figure - (1) a detailed map showing ambient+cumulative+project peak hour and daily traffic volumes along roadways in the study area upon project build-out (and intermediate phases, if applicable).

**Section 4f** - If the proposed project is a zone change or General Plan Amendment that has a greater trip generation than planned for this location, the traffic study needs to evaluate peak hour and daily traffic volumes upon General Plan buildout without project-related traffic. General Plan buildout peak hour volumes have been determined for twenty key intersections and included in the technical background study for the Circulation Element of the General Plan. For other intersections, General Plan buildout peak hour volumes can be determined by factoring up existing counts by existing daily volumes and modeled General Plan buildout daily volumes. Through coordination with City staff, the trip generation allocated for the project site must be subtracted from the General Plan buildout volumes to determine the General Plan buildout without project volumes.

Required Table - (1) a summary of the operation and levels of service of the key intersections and roadway links in the study area with General Plan buildout without project traffic volumes.

**Section 4g** - After the approved General Plan buildout peak hour and daily volumes have been determined, the impact of the project under General Plan buildout conditions can be determined by assigning the difference between the proposed project trip generation and the trip generation master planned for the site to the circulation system within the study area.

Required Table - (1) a summary of the operation and levels of service of the key intersections and roadway links in the study area with General Plan buildout with project traffic volumes.

Required Figure - (I) a detailed map showing General Plan buildout+project peak hour and daily traffic volumes along roadways and at key intersections within the study area.

**Section 5** - Summarize the circulation mitigation measures necessary to mitigate project-related impacts. The mitigation measures should address all travel modes. Coordinate with City staff, if necessary, to determine the feasibility of the proposed mitigation measure. Identify how the project utilizes Transportation System Management (TSM) and Transportation Demand Management (TDM) to meet Goal 3 and Policies 3.1 through 3.7 of the Circulation Element.

Required Figure - (1) a detailed map showing the proposed mitigation measures necessary to meet appropriate standards.

**Appendix** - Include all assumptions and calculations utilized in the analysis.