

COUNTY OF SAN DIEGO
REPORT FORMAT & CONTENT REQUIREMENTS
TRANSPORTATION AND TRAFFIC



LAND USE AND ENVIRONMENT GROUP

Department of Planning and Land Use
Department of Public Works

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PURPOSE

These Transportation and Traffic Report Format and Content Requirements provide guidance on conducting traffic impact studies and preparing reports for discretionary projects being processed by the Land Use and Environment Group. These guidelines are designed to:

1. Ensure the quality, accuracy and completeness of traffic impact studies and reports.
2. Aid in staff's efficient and consistent review of maps and documents from different consultants.
3. Provide adequate information to make appropriate planning decisions and to make determinations regarding conformance with applicable regulations.
4. Increase the efficiency of the environmental review process and avoid unnecessary time delays.

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1.0 INTRODUCTION

The purpose of a traffic impact study is to evaluate potential project level and cumulative traffic impacts that may result from a proposed project. Substantial traffic volume increases on roadways or intersections may cause congestion at existing or future roads and intersections. Traffic volume increases may occur from trips generated by the proposed project or a redistribution of traffic that would result from the proposed project. A detailed analysis of the traffic generated or redirected by a proposed project, assessment of potential impacts, and identification of mitigation measures for significant traffic impacts are the main focus of a traffic impact study.

For all discretionary development and public works projects, County staff will evaluate the need for a Traffic Impact Study (TIS). Guidelines for determining when a traffic study is needed and the type of traffic study required are provided in Section 2.1 below (and in Attachment B for road improvement projects). These are intended to serve as a guideline and are not intended to replace sound traffic engineering judgment. The analysis of traffic issues, evaluation of traffic impacts, and development of mitigation measures for traffic impacts are complex tasks. The type and scope of a traffic impact study will vary based upon the size of a project, its location and other factors. Typically, a traffic impact study will include several components as outlined in Section 3.1.

2.0 TRAFFIC IMPACT STUDY GUIDANCE

Existing Conditions

Documentation of the existing traffic volumes, levels of service, and geometrics for roads and intersections that may be potentially impacted by the proposed project must be provided. This assessment is typically based upon traffic counts that are less than two years old, unless it can be demonstrated that traffic volumes have not significantly changed since prior counts were taken. The scope of updated counts may vary depending on the extent of traffic changes. In some cases, only counts for certain segments may need to be updated or it may be adequate to manually update/factor up counts for key intersections or circulation element roads.

Under CEQA, traffic impacts will be evaluated for every discretionary land use project, however not all projects require a TIS. The different types of traffic impact studies and the typical criteria that trigger them are discussed below:

2.1 Criteria for Need to Prepare & Types of Traffic Impact Studies

All discretionary projects and public works projects are required to be evaluated to determine the potential for project-level (direct) or cumulative traffic impacts that may result from implementation of the proposed project. Table 1 below, highlights the typical criteria used (based on ADT) to determine if a TIS is required and what type of TIS is most appropriate. Figure 1 - Significant Project Traffic Impact Assessment Flow Chart is also a useful tool for assessing traffic impacts.

Table 1 - County Criteria for the Need to Prepare a Traffic Impact Study (TIS)

PROJECT GENERATED TRAFFIC*	ISSUE SPECIFIC TIS	FOCUSED TIS	FULL TIS NEEDED	CONGESTION MANAGEMENT ANALYSIS NEEDED
<i>Less than 200 Average Daily Trips OR Less than 20 Peak Hour Trips</i>	No*	No*	No	No
<i>200-500 Average Daily Trips OR 20-50 Peak Hour Trips</i>	Yes	No	No	No
<i>500 Average Daily Trips OR 50 Peak Hour Trips</i>	No	Yes	No	No
<i>1,000 Average Daily Trips OR 100 Peak Hour Trips</i>	No	No	Yes	No
<i>2,400 Average Daily Trips OR 200 Peak Hour Trips</i>	No	No	Yes	Yes

* Other situations could result in a request for an Issue Specific or Focused Traffic Impact Study. These include, but are not limited to, those issues addressed in this report.

NOTE: Analysis of cumulative traffic impacts may require a Traffic Impact Study, even when project generated traffic volumes alone do not. See Attachment C.

2.1.1 Issue Specific Traffic Impact Study

Generally, an issue specific TIS will be required for projects that generate between 200 and 500 average daily trips (ADT) or between 20 and 50 peak hour trips that may potentially impact or alter the design of a nearby intersection or road segment. Typically, the scope of an issue specific traffic study is limited to nearby roads receiving over 200 ADT (100 ADT if adjacent road is operating at LOS F) and intersections receiving 21 or more peak hour trips (or 6 or more peak hour trips on a critical move for an adjacent intersection operating at LOS F). If warranted, county staff may also require an issue specific TIS based upon a field review, public comment, or recommendations of a planning group. For example, an examination of available sight distance, driveway access, access road geometrics, accident rates, capacity, parking capacity, intersection analysis or a signal timing study are issue specific/focused studies that could be required.

When a proposed project generates less than 200 average daily trips (ADT), in most cases (given the distribution of traffic onto County Circulation Element roads and the traffic impact criteria identified in Table 1), the proposed project will not result in direct traffic impacts. If the proposed project distributes over 100 ADT onto a County Circulation Element Road operating at LOS F, however, a direct impact may be

identified. Improvements to mitigate the added delay caused by the project would need to be identified. A traffic assessment to assist in the identification of appropriate mitigation may be required. Refer to attachment C for detailed discussion on the required scope of the cumulative analysis. If the proposed project is located adjacent to another jurisdiction or in close proximity to a freeway ramp, the applicant should coordinate with those jurisdictions or agencies regarding any potential need for traffic studies and/or mitigation.

2.1.2 Focused Traffic Impact Study (TIS)

A Focused TIS shall be prepared for all discretionary projects that generate between 500 and 1,000 total average daily trips (ADT) or between 50 and 100 peak-hour trips. The focused TIS shall assess potential traffic impacts to nearby local roads (streets) and intersections. The scope of the assessment of direct and cumulative traffic impacts should include the assessment of transportation facilities that would receive 25 or more peak hour trips from the proposed project. The 25 peak hour trip threshold should be based on the combined two-way (i.e. both directions, 2-way peak hour total) traffic volume of the roadway segment for either the AM or PM peak period. Other criteria for determining whether a focused traffic analysis is required may include the following:

- The proposed project includes a driveway to be located on a Circulation Element Road within 150 feet of an intersection with another Circulation Element Road.
- The proximity of transportation facilities currently operating at LOS E or F.
- The project includes a driveway that intersects an on-street bicycle lane or crosswalk in an area of high pedestrian activity.
- There are access risks or deficiencies associated with the adjoining street system due to curves, slopes, walls or other barriers to adequate lines of sight.
- The proposed project will result in a road alignment or design, which is inconsistent with the General Plan or community plan for the area or does not align with adjoining or proposed roads.

If the proposed project is located adjacent to another jurisdiction or in close proximity to a freeway ramp, additional cumulative traffic impacts outside the unincorporated area and not identified in the County's TIF program may occur. The applicant should coordinate with those jurisdictions or agencies regarding any potential need for traffic studies or mitigation. Refer to Attachment C for additional direction on determining the required scope of the cumulative analysis.

If the applicant/proposed project proposes to opt out of the County's TIF Program a full, complete and detailed cumulative traffic assessment will be required. Scoping of the detailed cumulative traffic assessment will extend beyond the 25 peak hour trip (2-way peak hour total) limit specified above and should include all roads and intersections that

may be cumulatively impacted by the proposed project. The detailed cumulative traffic analysis must be based upon the list of projects approach. Project applicants choosing to prepare a TIF Opt Out cumulative analysis should coordinate closely with County staff to develop a detailed TIS scope of work.

2.1.3 Full Traffic Impact Study (TIS)

A Full TIS shall be prepared for all discretionary projects that generate 1,000 or more total average daily trips (ADT) or 100 or more peak-hour trips. The scope of the full direct and cumulative traffic assessment shall include those roads and intersections that will receive 25 peak hour trips (2-way peak hour total). The full TIS shall assess potential impacts to regional arterials and state highways in addition to the potential impacts to nearby local roads (streets) and intersections. The study area intersections should include the intersections of Circulation Element roads and intersections where project-related traffic adds traffic to the right and/or left turn movement and exceeds the peak hour thresholds. If traffic operation issues are identified, additional side/minor street intersections may need to be included in the study area intersection analysis even though the proposed project is not expected to add significant traffic to the intersection turn movements. For example, there may be a concern that added project traffic on the major street through movement would make it difficult enter and/or exit the side/minor street.

All full traffic impact studies shall include a cumulative traffic assessment that evaluates the cumulative traffic impacts of the proposed project. The scope of the full direct and cumulative traffic assessment shall include those roads and intersections that will receive 25 peak hour trips (2-way peak hour total). For County roadways, cumulative impacts are typically mitigated via payment of the TIF fee. However, per the County's TIF Ordinance, the County may require a developer to install improvements with supplemental size, length, or capacity in order to ensure efficient and timely construction of the transportation facilities network. Such improvements would be subject to the reimbursement or credit provisions described in the TIF Ordinance. The full cumulative traffic assessment will aide in this determination. The full cumulative traffic assessment will also allow for more detailed discussion of the projects potential traffic impacts during public review and in any environmental documents that are prepared for the proposed project. Refer to Attachment C for additional direction on determining the required scope of the cumulative analysis. If the proposed project is located adjacent to another jurisdiction or in close proximity to a freeway ramp, additional cumulative traffic impacts outside the unincorporated area and not identified in the County's TIF program may occur. The applicant should coordinate with those jurisdictions or agencies regarding any potential need for traffic studies or mitigation.

If an applicant proposes to opt out of the County's TIF Program a full, a complete and detailed cumulative traffic assessment will be required. Scoping of the cumulative traffic assessment will extend beyond the 25 peak hour trip limit specified above and should include all roads and intersections that may be cumulatively impacted by the proposed

project. Project applicants choosing to prepare a TIF Opt Out cumulative analysis should coordinate closely with County staff to develop a detailed TIS scope of work.

2.1.3.1 Congestion Management Program (CMP)

A Congestion Management Program (CMP) analysis is required for all large projects, which are defined as generating 2,400 or more average daily trips or 200 or more peak-hour trips. Computerized long-range forecasts, a with and without project build-out analysis and select zone assignments are required by the CMP for these large projects to aid in the determination of the proposed project's trip distribution. In addition, Caltrans may require a TIS when a proposed project will likely generate or redirect traffic that impacts a State highway or freeway (especially entrance and exit ramps). Please refer to the flow chart (Figure 1) for TIS requirements.

The geographic area examined in the full TIS or CMP analysis should include the following:

- Local roads and intersections as determined through coordination with the local planning group and County staff. Typically, this will include the access roads and the intersection of local roads with a Circulation Element road.
- All regional arterials (including all State surface routes), intersections, and mainline freeway locations where the proposed project will add 50 or more peak-hour trips to the existing roadway traffic.
- Freeway entrance and exit ramps as determined by coordination with Caltrans. These are defined as entrance and exit ramps that are currently experiencing a 15-min delay, which, combined with the proposed project, will add 20 or more peak hour trips to the ramp. (NOTE: Care must be taken to include other ramps and intersections that may receive project traffic diverted as a result of already existing, or projected congestion at freeway entrances and exits.)

2.1.4 Projects Proposing to Amend the County's General Plan

Projects that propose changes to the County's General Plan, Circulation Element or zoning and that will increase the density or intensity of development above that of the adopted General Plan must prepare a buildout analysis pursuant to the County General Plan Public Facility Element, Transportation Policy 1.2. The buildout analysis must evaluate the functioning of the County's General Plan Circulation Element Roads at build-out based on the SANDAG Regional Traffic Forecast. The purpose of the Buildout Analysis is to determine whether the proposed land use and/or roadway network changes are consistent with the County's Circulation Element. If inconsistencies are identified, the project may be required to include an amendment to the County's Circulation Element as part of the project to make any land use plan changes consistent with the overall General Plan. Build out analysis requirements for CMP projects are discussed above in section 2.1.3.

2.1.5 Traffic Impact Study for a Publicly Initiated Road Improvement Project

Publicly initiated road improvement projects do not, in themselves, generate additional trips. They may, however, cause a redistribution of trips on the local or regional road network. Whenever the proposed road improvement project redistributes 500 or more average daily trips or 50 or more peak hour trips, a focused or full TIS shall be prepared per the criteria outlined above. A separate or communal traffic needs assessment may also be performed to help establish the purpose and need of the road improvement project. Additional guidance for the required scope of traffic assessments for road improvement projects can be found in Attachment B.

2.2 Traffic Impact Study Methodology

Each type of analysis within the traffic study must include a discussion of the methodology used to complete the analysis. Below is a discussion of methodologies for various types of traffic analysis.

Evaluations of traffic safety impacts and hazards to pedestrians or bicyclists shall be based upon a field review and the collection of both qualitative and quantitative data. An evaluation of compliance with the County of San Diego Public Road Standards and the San Diego County Standards for Private Streets may be made. If a design modification is requested, the provisions and criteria outlined in the design modification shall apply. When applicable, a summary of existing accident data on a road segment or at an intersection may also be provided.

Levels of Service for arterial road segments may be estimated on an ADT/24-hour traffic volume basis.) Levels of Service identified in the County of San Diego Public Road Standards may be used for roads located within the unincorporated area of San Diego County. Similar LOS Tables from the appropriate local jurisdiction should be used for local roads outside of the unincorporated area. Upon concurrence with County staff, Highway Capacity Manual (HCM) analysis methods may be used for specified arterials.

The County of San Diego Public Road Standards includes a table which establishes levels of service for County Circulation Element roads based upon average daily trips. This table shall be used in determining the level of service for County Circulation Element roads. The Highway Capacity Manual (HCM) includes analysis criteria for the assessment of the level of service for two-lane highways. The Director of Public Works may, based upon a review of the operational characteristics of the roadway, designate that a HCM analysis be used to determine the level of service for a two-lane County arterial in lieu of the level of service table provided in the County of San Diego Public Road Standards.

In determining the level of service for road segments and intersections outside of the County of San Diego's jurisdiction, the level of service standards for the jurisdiction (incorporated city) or agency (Caltrans) shall be used. Early coordination with the

affected jurisdiction (incorporated city) or agency (Caltrans) should be conducted during the preparation of the traffic impact study.

All level of service measurements for intersections and State highways shall be based upon HCM procedures for peak-hour conditions. The following methodologies for TIS analysis should be used (unless early consultation with the lead agency and Caltrans has established other methods), along with some suggested software packages and options:

- Arterials, Multi-lane and Two-lane Highways, and all other Local Streets - current Highway Capacity Manual [HCM]: w/Highway Capacity Software [HCS].
- Signalized Intersections – HCM: w/HCS, TRAFFIX, SigCinema, and SYNCHRO acceptable to Caltrans; and, HCS, TRAFFIX, SIGNAL 94, and NCAP acceptable to local jurisdictions.
- Unsignalized Intersections – HCM.
- Freeway Segments – HCM or Caltrans District 11 freeway LOS definitions (refer to Attachment A of the Guidelines for Determining Significance for Transportation and Traffic).
- Freeway Weaving Areas – Caltrans Highway Design Manual (Chapter 500).
- Freeway Ramps – Caltrans District 11 Ramp Metering Analysis (Attachment A), and Caltrans Ramp Meter Design Guidelines (August 1995), HCS (for ramp design only).
- Freeway Interchanges – HCM: for diamond interchanges where the timing and phasing of the two signals must be coordinated to ensure queue clearances, consider Passer III-90.
- Transit, Pedestrians, and Bicycles – HCM.
- Warrants for Traffic Signals, Stop Signs, School Crossings, Freeway Lighting, etc. – Manual For Uniform Traffic Control Devices (MUTCD) and California Supplement.
- Channelization and Intersection Geometry - Caltrans' Traffic Manual and Guidelines for Reconstruction of Intersections, City of San Diego's Traffic Impact Study Manual -Appendix 4.

Note: Neither the County nor Caltrans officially advocate the use of any special software packages, especially since new ones are being developed all the time. However, consistency with the Highway Capacity Manual (HCM) is advocated in most cases. The above-mentioned software packages have been utilized locally. Because it

is so important to have consistent end results, always consult with all affected jurisdictions, including Caltrans, regarding the analytical techniques and software being considered (especially if they differ from above) for the TIS.

3.0 REPORT FORMAT REQUIREMENTS

A thorough traffic impact study (TIS) will consider the potential effects of all aspects of a project (including all potential on- and off-site transportation impacts and improvements). The study should identify whether impacts are direct or cumulative in nature, determine whether the impacts are significant and proposed mitigation measures for any identified impacts. Direct traffic impacts are those that are caused by and immediately related to the project. Cumulative traffic impacts are traffic impacts that would result from traffic generated or redirected by the proposed project and past, present or future projects.

3.1 Typical Traffic Impact Study Outline

The required sections of a typical TIS are provided in the outline/Table of Contents below:

COVER PAGE

TABLE OF CONTENTS (Including a list of tables, maps & figures)

GLOSSARY OF TERMS AND ACRONYMS

EXECUTIVE SUMMARY

1.0 INTRODUCTION

1.1 Purpose of the Report

1.2 Project Location and Description

(Including map of proposed project location & map of TIS Study Area; discuss construction and/or operational traffic, if applicable)

1.3 Planning Requirements

2.0 EXISTING CONDITIONS

2.1 Existing Transportation Conditions

2.2 Existing Parking, Transit, & On-site Circulation

3.0 PROJECT IMPACT ANALYSIS

3.1 Analysis and Methodology

3.2 Project Trip Generation

3.3 Project Trip Distribution

3.4 Road Segments: (E, E+P, E+P+C)

3.5 Intersections (Signalized & Unsignalized): (E, E+P, E+P+C)

3.6 Two-lane Highways

3.7	<u>Ramps</u> (if applicable)
3.8	<u>Congestion Management Program</u> (if applicable)
3.9	<u>Hazards Due To An Existing Transportation Design Feature</u> (if applicable)
3.10	<u>Hazards To Pedestrians Or Bicyclists</u> (if applicable)
3.11	<u>Public Transportation</u> (if applicable)
3.12	<u>Site Access</u>
3.13	<u>Impact Summary Table</u>
4.0	GENERAL PLAN CONSISTENCY AND BUILDOUT ANALYSIS
5.0	SUMMARY OF RECOMMENDED MITIGATION AND PROJECT DESIGN FEATURES
6.0	REFERENCES
7.0	LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED
	TECHNICAL ATTACHMENTS (order will be determined by reference in report)

3.2 General Content Guidance

Cover Page

The cover page shall include the following information:

- Project common name
- Project numbers (i.e. TM, ZAP, etc.) including the environmental log number (ER)
- Date (original report date plus all revisions) must be revised during each iteration of the draft report)
- Name of County Approved CEQA Consultant preparing document, firm name (if applicable) and address
- Signature of County Approved CEQA Consultant
- Project proponent's name and address
- The following statement: Prepared for The County of San Diego

Table of Contents (Including a list of tables, maps & figures)

The table of contents should follow the recommended order and format outlined in this document. Page numbers should be assigned when possible especially to all the pertinent tables and figures. Titles of each attachment/appendix should be listed in the order in which they are referenced in the document.

Glossary of Terms and Acronyms

Provide a list of terms and acronyms used in the study.

Executive Summary

Provide a brief summary of the project, the potential impacts and proposed mitigation. No new information should be provided in the summary that is not further explained elsewhere in the document. The purpose of the summary is to provide a quick reference for the public and decision-makers. Therefore, the language should be less technical than that used in the remainder of the document.

1.0 Introduction:

- 1.1 Purpose of the Report:** Discuss the purpose of the report including the site location, the type of project, and the major highways, arterials and streets in the area.
- 1.2 Project Location and Description:** Include a map of the proposed project location & a map of the Traffic Impact Study (TIS) Area; discuss construction and/or operational traffic if applicable. Based on the scope and length of construction and operational traffic, a traffic control plan may be required to identify any traffic impacts during construction and identify appropriate interim measures to mitigate such impacts.
- 1.3 Planning Requirements:** Discuss if any planning analysis will be performed under the Congestion Management Program or General Plan (e.g, the project proposes a General Plan Amendment, Specific Plan Amendment, or Rezone pursuant to PFE Transportation Policy 1.2). If a planning analysis is required, describe that requirement here. Any analysis of build out should be discussed in the appropriate analysis sections that follow and should be related to planning requirements, not CEQA requirements. Significance conclusions under CEQA should not be made for build out analyses, rather conclusions should be related to compliance with planning requirements.

2.0 Existing Conditions

- 2.1 Existing Transportation Conditions:** Document existing traffic volumes and peak-hour levels of service in the study area. The existing deficiencies should be identified in addition to identification of any roadways do not currently meet applicable road standards.
- 2.2 Existing Parking, Transit, & On-site Circulation:** Document existing parking conditions, as well as transit routes and on-site circulation.

3.0 Project Impact Analysis

- 3.1 Analysis and Methodology:**
 - ♦ Describe in layperson terms the transportation facilities that will be studied and the scenarios to be studied including existing conditions, existing plus project conditions, and cumulative conditions. Discuss what information is used to determine these conditions. Include the date and conditions under which the existing conditions were

established. Describe how the list of projects was generated for the cumulative analyses. CEQA requires that a list of projects include all “past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency”. Past projects may include projects that have received a discretionary approval within the past 3 years and are not currently operational, current and probable future projects include any project that is currently known to be proposed or has an active application in process with a land use agency.

- ◆ The scope of the assessment of direct impacts should include the assessment of transportation facilities that would receive 25 or more peak hour trips from the proposed project. The 25 peak hour trip threshold should be based on the combined two-way (i.e. both directions, 2-way peak hour total) traffic volume of the roadway segment for either the AM or PM peak period.
- ◆ The scope of assessment of cumulative impacts should include the same study area described above. The additional cumulative traffic should be added to the study area existing roadway network with no assumptions of future improvements (unless programmed and fully funded with an approved EIR) beyond direct project mitigation.
- ◆ See Attachment C to assist in the determination of the required scope of the assessment for cumulative impacts
- ◆ Describe the size of the area to be studied. Include a figure demonstrating the areas studied.
- ◆ If road segments, intersections, or other facilities (e.g. freeway ramps) will be affected by project traffic that are located in another jurisdiction or under the jurisdiction of Caltrans, identify the location and jurisdiction of these facilities and different significance guideline/methodology that will be used. In determining the significance of impacts for road segments and intersections outside of the County of San Diego’s jurisdiction, the level of service standards and significance guidelines used by the applicable jurisdiction or agency shall be used. Early coordination with the affected jurisdiction or agency (Caltrans) should be conducted during the preparation of the traffic impact study.

3.2 Project Trip Generation

Provide an estimate of the number of trips that will be generated by the proposed project. Typically, SANDAG’s Brief Guide of Vehicular Traffic Generation rates for the San Diego Region is used to prepare this estimate. Where a specific project is not defined in the Brief Guide then rates recommended by the Institute of Traffic Engineers or detailed case studies may be used to establish the trip rate assumption. The study should include a table showing the calculated project generated two-way total ADT and two-way peak hour volumes. The most detailed project information should be used to determine a project’s trip generation

estimate. For example, if known at the time of the preparation of the TIS, the project's proposed building square footage should be the basis of the project's trip generation estimate and not the gross acreage of the project site. The TIS should clearly identify and discuss if pass-by, diverted, and Internal Capture Rate trip reduction assumptions are proposed to be applied to the project's trip generation estimate. The applicability of trip reduction factors will be determined by the consultants and County staff on project-by-project basis.

If the project proposes to implement in phases, the project traffic generation for each phase must be provided. This is needed to identify the phasing of mitigation measures, if proposed.

If the project includes a GPA and/or Rezone, the analysis should be based on the highest density or intensity use that would be allowed with the GPA or Rezone. For example, a project may propose a GPA and/or Rezone to allow a 100 unit subdivision, but if the GPA or Rezone would have a greater development potential, the analysis must identify the potential impacts that could occur based on the most intensive use that could occur with the GPA or Rezone regardless of whether the project proposes a lesser density or intensity of use. It may be necessary to evaluate two scenarios considering the greater density/intensity of the GPA or Rezone and the density/intensity of the specific development proposal to identify appropriate mitigation measures for the project.

3.3 Project Trip Distribution

The assignment of estimated trips generated by the project or redistribution of existing traffic onto the existing and (if applicable) future road networks must be provided. For small projects this is typically done manually based upon traffic engineering judgment. All rationale for trip distribution assumptions must be described. For large projects, trips are distributed onto the road network based upon SANDAG's regional forecasting model, by using a select zone assignment. Per the CMP, large projects must distribute project trips based upon a computer model approved by SANDAG. This is typically, the SANDAG Regional model.

The study should include the following:

- Either the Project Trip Distribution using the current Regional Computer Traffic Model (provide a computer plot) or manual assignment if previously approved. If a manual assignment is used, include rationale for assumptions.
- Traffic signal warrant analysis (Caltrans Traffic manual) for appropriate sections.

3.4 Road Segments

The TIS should provide table(s) describing the study area road segments with defined to/from extents; listing existing (E) traffic volumes, existing plus project (E+P), and existing plus project plus cumulative (E+P+C) volumes and the associated impacts with each of those scenarios. If a project area road segment is located within another jurisdiction, then that agency's significance thresholds should be used to determine significant impacts.

3.5 Intersections

Discuss the intersections (signalized and unsignalized) that are evaluated in the report. The TIS should provide table(s) listing the study area intersections and describing the existing (E), existing plus project (E+P) and existing plus project plus cumulative (E+P+C) operation. The study area intersections should include the intersections of Circulation Element roads and intersections where project-related traffic adds traffic to the right and/or left turn movement and exceeds the peak hour thresholds. If traffic operation issues are identified, additional side/minor street intersections may need to be included in the study area intersection analysis even though the proposed project is not expected to add significant traffic to the intersection turn movements. For example, there may be a concern that added project traffic on the major street through movement would make it difficult enter and/or exit the side/minor street.

If an overall intersection will operate at LOS E or F conditions with the project, then a critical movement analysis is required. The analysis must identify how each movement (right, left, through, etc) operates, how it will operate with the project, and whether there is a significant impact at each critical movement.

3.6 Two-lane Highways

Application of the County's Two-Lane Highway criteria should be identified in the TIS. Any application to a County road will require the approval of the Director of Public Works and should be submitted under separate cover for consideration before application of impact identification.

3.7 Ramps

Follow Caltrans District 11 Ramp Metering Analysis and Caltrans Ramp Meter Design Guidelines.

3.8 Congestion Management Program

If a Congestion Management Program analysis is required, describe that analysis here. Coordination with the regional Congestion Management Agency (SANDAG) should occur early in the project process if large enough to meet CMP thresholds (2,400 ADT, 200 Peak Hour Trips).

3.9 Hazards Due to an Existing Transportation Design Feature (if applicable)

Discuss how the significance of the impact was evaluated. Evaluations of traffic safety impacts and hazards to pedestrians or bicyclists shall be based upon a field review and the collection of both qualitative and quantitative data. An evaluation of compliance with the County of San Diego Public Road Standards and the San Diego County Standards for Private Streets may be made. If a design modification is requested, the provisions and criteria outlined in the design modification shall apply. All design modifications must be discussed. When applicable, a summary of existing accident data on a road segment or at an intersection may also be provided.

This analysis may include an inventory and assessment of existing road geometrics for roads and intersections used by project traffic. Assessment of the design features (sharp curves, sight distance at intersections/driveways, and other features) and incompatible uses (farm equipment, oversized loads, etc.) should be provided where the project may significantly increase hazards due to these items. For example, if significant construction traffic could result in blocked traffic, a traffic control plan may be required to address these potential hazards and identify appropriate measures to ensure traffic safety and adequate operations during construction.

3.10 Hazards to Pedestrians or Bicyclists

The traffic impact study should identify all pedestrian and bicycle facilities in the study area. If trails are included as part of the project, this should be discussed here. The TIS should describe the connectivity and completeness of non-motorized networks, i.e. sidewalks, trails and bicycle lanes. Hazards could exist if these networks are below standards or are discontinuous in nature.

3.11 Public Transportation (if applicable)

The traffic impact study should identify adopted policies, plans, and programs supporting public transportation modes such as buses, rail and shuttles. Any conflicts that may result from implementation of the proposed project should be assessed and identified. Project design features such as bus turnouts, bicycle racks, pathways, etc. to help implement the adopted policies, and plans or programs should also be identified. This section should discuss whether the project is consistent with applicable polices related to alternative transportation.

3.12 Site Access

Project site access is analyzed in quantitative or qualitative terms, in conjunction with a review of internal site circulation and access to parking areas. In addition, peak hour LOS may be quantified for primary access

points, using the procedures outlined herein. Conflicts that may be created by driveway configuration, placement of the driveway in areas of poor visibility that are close or adjacent to bicycle or pedestrian facilities or in close proximity to busy or congested intersections should be identified. Conflicts with or restrictions of access to publicly or privately owned land should also be identified.

Assessment of adequate primary and secondary access to the project site will be made in coordination with the local fire protection district and where warranted, other emergency response agencies such as the Sheriff and California Highway Patrol. Documentation and assessment of existing road and intersection geometry may be required to verify whether adequate access may be required. If deficiencies are identified recommendations to correct any deficiencies must be made.

Emergency access should be coordinated with the local fire district, and the Department of Planning and Land Use (DPLU). Although an assessment of the need and adequacy of emergency access is not typically evaluated in a traffic impact study, if it is determined that a secondary access is required, the traffic distribution should include this access if it is open to through traffic. An evaluation of separate access alternatives may be required by DPLU to fully evaluate potential access routes to the proposed project.

3.13 Impact Summary Table

Impact summary table(s) should be prepared for all TIS. This table should identify the type of impacts (direct or cumulative), the recommended mitigation measures, and the status of impacts after mitigation

4.0 General Plan Consistency and Build-out Analysis

Projects that propose changes to the County's General Plan or zoning that will increase the density or intensity of development above that of the adopted General Plan must prepare a buildout analysis pursuant to the County General Plan Public Facility Element, The buildout analysis must evaluate the functioning of the County's General Plan Circulation Element Roads at build-out based on the SANDAG Regional Traffic Forecast. The purpose of the Buildout Analysis is to determine whether the proposed land use changes are consistent with the County's Circulation Element. If inconsistencies are identified, the project may be required to propose a concurrent amendment to the County's Circulation Element to ensure the project would not result in an internally inconsistent General Plan.

The Public Facilities Element, Section 4 Transportation establishes the following policy:

“Policy 1.2: General Plan Amendments and Rezones shall be reviewed to ensure that any proposed increases in density or intensity of use will not prevent the planned Circulation Element road system from operating at its planned Level of Service based on SANDAG’s regional traffic forecast.”

Although a build-out analysis is not needed to evaluate project impacts under CEQA, all projects that involve a General Plan amendment or Rezone must demonstrate in their traffic impact analysis that increase(s) in density or intensity will not adversely affect the County’s Circulation Element road system.

The analysis will need to identify the maximum potential trip generation with the GPA and/or Rezone. For example, a project may propose a GPA and Rezone to allow a 100 unit subdivision, but the analysis must include trip generation estimates based on the most intensive use that could occur with the GPA or Rezone regardless of whether the project proposes a lesser density or intensity of use. Include a trip generation summary table.

This analysis should specify “Horizon Year conditions” and “Horizon Year conditions + Proposed Project” considering each scenario identified below:

- Horizon Year ADT and street classification as shown in the County’s Circulation Element.
- Horizon Year ADT and street classification for two scenarios: with the proposed project and with the land use assumed in the Community Plan.
- Figure or table showing the horizon LOS for intersections during peak hours and roadway sections for two scenarios: with and without the proposed project and with the land use assumed in the Community plan (include analysis sheets in the appendix).

5.0 Summary of Recommended Mitigation and Project Design Features

The TIS must include detailed descriptions of improvements proposed to mitigate for identified impacts. Include all road improvements (including off-site and frontage improvements). Specific improvements to mitigate direct impacts must be identified. Fairshare contributions toward improvements will not mitigate a direct impact.

If a project proposes to construct in phases (stages) or with interim uses before full build out, then the traffic study shall detail the projects traffic impacts and needed mitigation for each phase (stage) as it comes online and provide appropriate mitigation at each stage. Whenever traffic signals are recommended as a mitigation measure, a traffic signal warrant analysis (Caltrans Traffic manual) must be completed to verify that warrants are met.

Traffic Impacts at Joint County/City Facilities

- The TIF does cover cumulative traffic impacts for road segments and/or intersections that are located along county/city boundaries.
- The TIF does not cover cumulative traffic impacts that occur entirely within a neighboring city.

Traffic Impacts Outside of the County's Jurisdiction

For traffic impacts located outside of the County's jurisdiction, applicants will be required to coordinate with the applicable City or agency regarding mitigation of impacts. As the implementation of mitigation measures outside of the County's jurisdiction is not under the control of the County, significant impacts in other jurisdictions will typically be considered *significant and unavoidable*. Mitigation for impacts in another jurisdiction could include payment into a City or non-County agency fee program or an agreement between an applicant and a City or agency to fund the construction of a specific traffic improvement found adequate by the County. The determination that mitigation for impacts outside of the County's jurisdiction would reduce impacts to a *less than significant* level will be at the discretion of the County and will consider various factors including, but not limited to:

- assurances that fair share payments will be used for improvements to impacted facilities and/or improvements to/construction of parallel roadway facilities that would alleviate traffic on impacted facilities.
- assurances that full funding and ultimate construction of roadway facilities needed to mitigate projected traffic impacts identified in cumulative analysis will occur prior to or concurrent with the occurrence of the cumulative impact
- adequacy of the planned improvements to accommodate cumulative traffic conditions

This section of the TIS should include:

- Table identifying all identified impacts and the associated mitigation that would reduce the impact to less than significant. The table shall include the intent of the mitigation measure (i.e. to mitigate for impacts to XX road segment), a description of the measure (i.e. improve to 20 foot graded width from xx to xx), and indicate when the requirement would need to be implemented (i.e. prior to Final Map, or Prior to Occupancy of Phase I, etc.)
- If the project would be developed in phases and mitigation is proposed to be phased accordingly, a phasing plan is required identifying the timing of implementation of mitigation measures in relation to project phases.
- Figure showing all proposed mitigations that include: intersection lane configurations, lane widths, raised medians, median openings, roadway and intersection dimensions, right-of-way, offset, etc.
- If cumulative impacts within the County's jurisdiction will occur, include a discussion of how the TIF mitigates cumulative impacts, as applicable. A discussion of how the TIF mitigates cumulative impacts can be found in section 2.2 of the Guidelines for Determining Significance for Traffic and Transportation. Refer to Attachment C for additional direction on the applicability of the TIF as

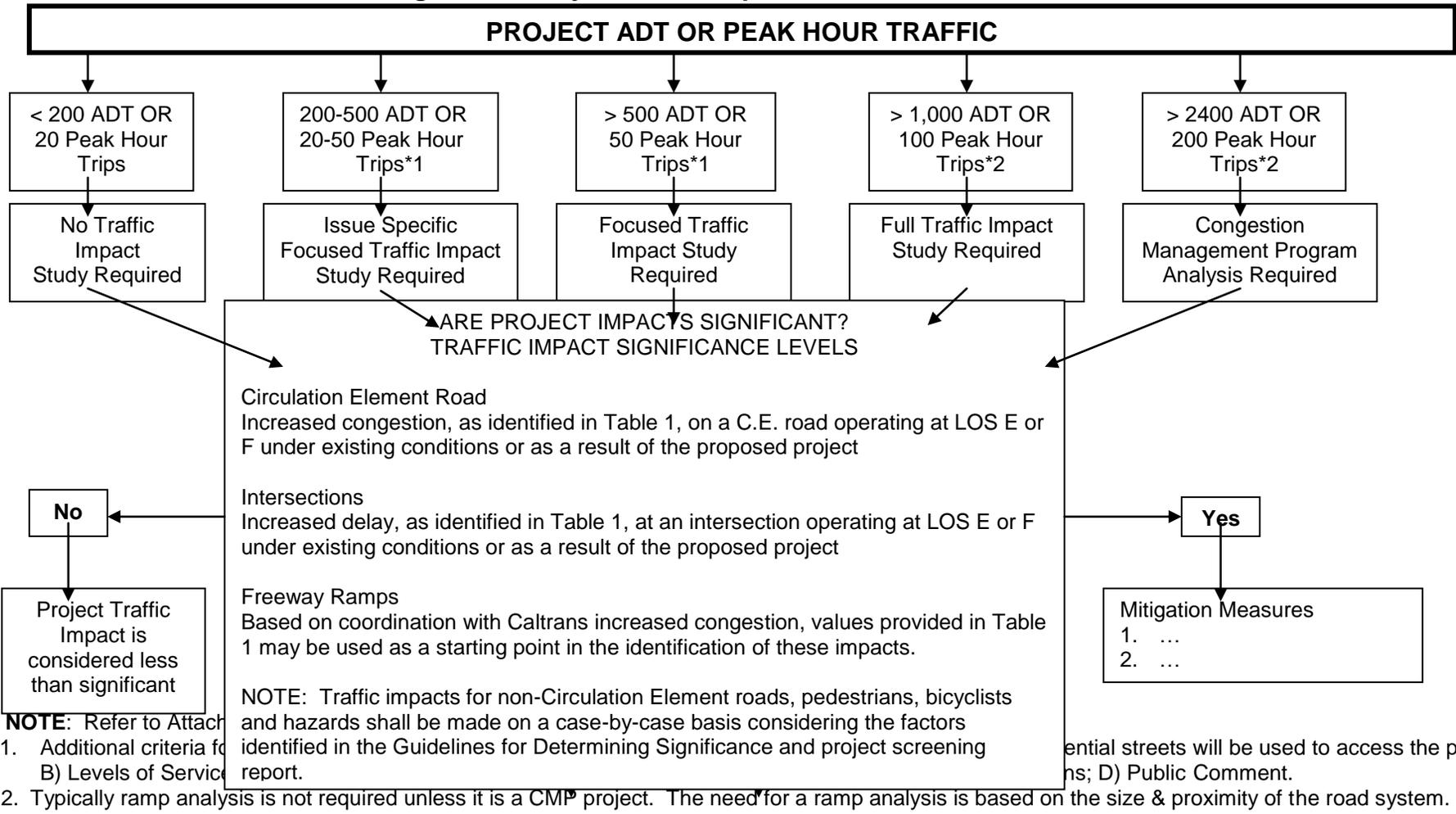
mitigation for cumulative impacts and the required scope of a cumulative impact analysis.

6.0 References

7.0 List of Preparers and Persons and Organizations Contacted

Technical Attachments

**Figure 1
Significant Project Traffic Impact Assessment Flow Chart**



Report Format and Content Requirements
Transportation and Traffic

[ATTACHMENT A]

Ramp Metering Analysis

RAMP METERING ANALYSIS

Ramp metering analysis should be performed for each horizon year scenario in which ramp metering is expected. The following table shows relevant information that should be included in the ramp meter analysis "Summary of Freeway Ramp Metering Impacts."

LOCATION	DEMAND (veh/hr) ¹	METER RATE (veh/hr) ²	EXCESS DEMAND (veh/hr) ³	DELAY (min) ⁴	QUEUE (feet) ⁵

NOTES:

¹ DEMAND is the peak hour demand expected to use the on-ramp.

² METER RATE is the peak hour capacity expected to be processed through the ramp meter. This value should be obtained from Caltrans. Contact Carolyn Rumsey at (619) 467-3029.

³ EXCESS DEMAND = (DEMAND) – (METER RATE) or zero, whichever is greater.

⁴ DELAY = $\frac{\text{EXCESS DEMAND}}{\text{METER RATE}} \times 60 \text{ MINUTES/HOUR}$

⁵ QUEUE = (EXCESS DEMAND) X 29 feet/vehicle

NOTE: Delay will be less at the beginning of metering. However, since peaks will almost always be more than one hour, delay will be greater after the first hour of metering. (See discussion on next page.)

SUMMARY OF FREEWAY RAMP METERING IMPACTS
(Lengthen as necessary to include all impacted meter locations)

LOCATION(S)	PEAK HOUR	PEAK HOUR DEMAND D	FLOW (METER RATE) F	EXCESS DEMAND E	DELAY (MINUTES)	QUEUE Q (feet)
	AM PM					
	AM PM					
	AM PM					

[ATTACHMENT B]

Traffic Impact Analysis Guidance for Road Improvement Projects

Road improvement projects are projects that improve the level of service by increasing road capacity or improving the traffic operations on the County's road network. This section refers to stand alone road improvement projects that are not improvements associated with a proposed development. These projects are typically publicly initiated. Road improvement projects do not generate additional trips but, in some cases, may cause a redistribution of trips on the County's road network. Road improvement projects are typically one or more of the following; road widening, construction of new road, intersection improvements and operational improvements/road maintenance.

Road Widening

Typically, a road widening project will provide an increase in road capacity within a corridor. Travel times along the road corridor are often reduced. Upon completion of the road widening project, overall times for commuters along the corridor and on the parallel road facilities are typically reduced and travel times for all road facilities would typically be no more than prior to the road widening project. Road widening projects, therefore, do not typically result in significant direct or cumulative impacts to traffic congestion and would not require detailed traffic studies. Studies to document project need, traffic volumes for noise studies, address local traffic flow and determine appropriate project termini, however, may be required.

Construction of New Roads

Construction of new a new road would provide an additional route for users. Construction of the new road may result in a substantial redistribution of trips on the County's road network, including within the road network where the proposed road is located. The redistribution of trips may substantially alter traffic volumes on roads and intersections in the vicinity of the new road. Detailed traffic impact studies are often required to fully assess potential traffic impacts that may result from implementation of the proposed project.

Intersection Improvements

Intersection improvement projects are project that improve the level of service by improving the intersection and/or improve traffic flow at the intersection. Upon completion of the intersection improvement, overall delay at the intersection will be reduced. The installation of a new traffic signal at an intersection with a high volume road may redistribute trips to the traffic signal from other unsignalized intersections. Focused traffic impact studies to assess potential impacts from this redistribution may be necessary in order to assess the affects of the proposed project.

Operational Improvements/Road Maintenance

Operational improvements and road maintenance projects improve traffic flow and operations at existing road segments and/or intersections. These projects neither generate additional trips nor redistribute traffic. Traffic control plans, however, may be

required during the proposed improvements. The traffic control plans may alter traffic flow on a road or at an intersection during the construction/implementation of the proposed project. Although detailed traffic impact assessments are often not required, focused traffic impact assessments to assist in preparation of the traffic control plans may be required.

[ATTACHMENT C]

Determining the Required Scope of a Cumulative Analysis

Follow the guidelines below to determine the scope of cumulative analysis:

Projects that generate less than 500 ADT:

A detailed analysis of cumulative traffic impacts will not be required for projects that would generate less than 500 Average Daily Trips (ADT) unless one of the following conditions exists:

1. Study area roads would be affected by a large-scale General Plan Amendment (GPA)
2. The project includes a GPA or other permit type that would allow a land use with increased potential for traffic generation beyond that anticipated in the TIF Report (see discussion below)
3. The project would potentially result in cumulative impacts within another jurisdiction based on that jurisdiction's traffic guidelines (or SANTEC). Refer to Section 5.0 of the Report Format and Content Requirements for additional discussion of traffic impacts outside of the County's jurisdiction.

Absent the above conditions, participation in the County Transportation Impact Fee (TIF) program constitutes adequate analysis and mitigation for cumulative impacts to County roadway facilities.

Projects that generate more than 500 ADT:

A Traffic Impact Study (TIS) must be prepared in accordance with the County's Transportation and Traffic Guidelines for Determining Significance. The TIS is required to identify and disclose the cumulative traffic impacts to transportation facilities that would receive 25 or more Peak Hour Trips (PHTs, 2-way) due to the proposed project.

As discussed in Section 2.2. of the Guidelines for Determining Significance for Traffic and Transportation, payment of the TIF typically will mitigate cumulative traffic impacts to facilities located within the County's jurisdiction to a less than significant level. A few exceptions exist and are listed above (1 – 3 under Projects that generate less than 500 ADT). For all projects that rely on the TIF as mitigation for cumulative impacts, the traffic impact analysis should include a discussion of how the TIF mitigates cumulative impacts for impacts within the County's jurisdiction. Refer to Section 2.2 of the Guidelines for Determining Significance for Traffic and Transportation for a discussion of this rationale.

Projects that involve a GPA or other permit type that would potentially increase traffic generation:

Development projects such as a GPA, Specific Plan Amendment (SPA), Rezone or Major Use Permit that do not conform to the traffic generation assumptions (i.e. anticipated land use) in the adopted TIF report could result in an increase in traffic substantially above that considered in the TIF Report. The analysis upon which the adopted TIF Report is based did not address these potential additional cumulative impacts. This additional cumulative traffic could affect the ability of the County's planned Circulation Element road system from operating at its planned Level of Service (LOS) at buildout. In the case of such projects, the applicant must provide a detailed TIS to disclose the cumulative impacts of the proposed project.

The mitigation measures required for these projects must address cumulative roadway deficiencies not envisioned as part of the TIF program and may be in addition to the TIF payment. Projects resulting in potentially increased traffic volume may be required to update the County's TIF Report in order to reflect the adoption of the proposed changes in land use.