

March Joint Powers Authority



Final Traffic Impact Study Preparation Guide

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1.0 PURPOSE

The March Joint Powers Authority (JPA) desires to provide an efficient local, regional, and State transportation system within and adjacent to the March JPA Planning Area (see Figure 1). This is done in partnership with other local, regional, and State agencies through procedures established by the California Environmental Quality Act (CEQA) and other land use planning processes. The purpose of this Traffic Impact Study Preparation Guide (Guide) is to provide a consistent basis in which March JPA evaluates traffic impacts.

This Guide serves as a checklist for study preparers to ensure that they have satisfied all standard study items. Furthermore, this Guide provides the required format and methodology that is generally required to be utilized in the preparation of a Traffic Impact Study (TIS).

- **Guidance in determining if and when a TIS is needed;**
- **Consistency and uniformity in the identification of traffic impacts generated by local land use proposals;**
- **Consistency and equity in the identification of measures to mitigate the traffic impacts generated by land use proposals;**
- **Agency officials with the information necessary to make informed decisions regarding the existing and proposed transportation infrastructure (see Appendix D, Minimum Contents of a TIS);**
- **Identify TIS requirements early in the planning phase of a project (e.g., Initial Study, Notice of Preparation (NOP), or earlier) to eliminate potential delays later;**
- **A quality TIS by agreeing to the assumptions, data requirements, study scenarios, and analysis methodologies prior to beginning the TIS; and**
- **Early coordination during the planning phases of a project to reduce the time and cost of preparing a TIS.**

The County of Riverside and the cities of Moreno Valley and Riverside have TIS Guidelines in place to establish the minimum requirements that should be followed during preparations of TIS documents. The City of Perris has a set of guidelines and a checklist that it has applied to ensure that a TIS is prepared appropriately and consistent with standard engineering judgment.

2.0 WHEN A TRAFFIC IMPACT STUDY IS REQUIRED

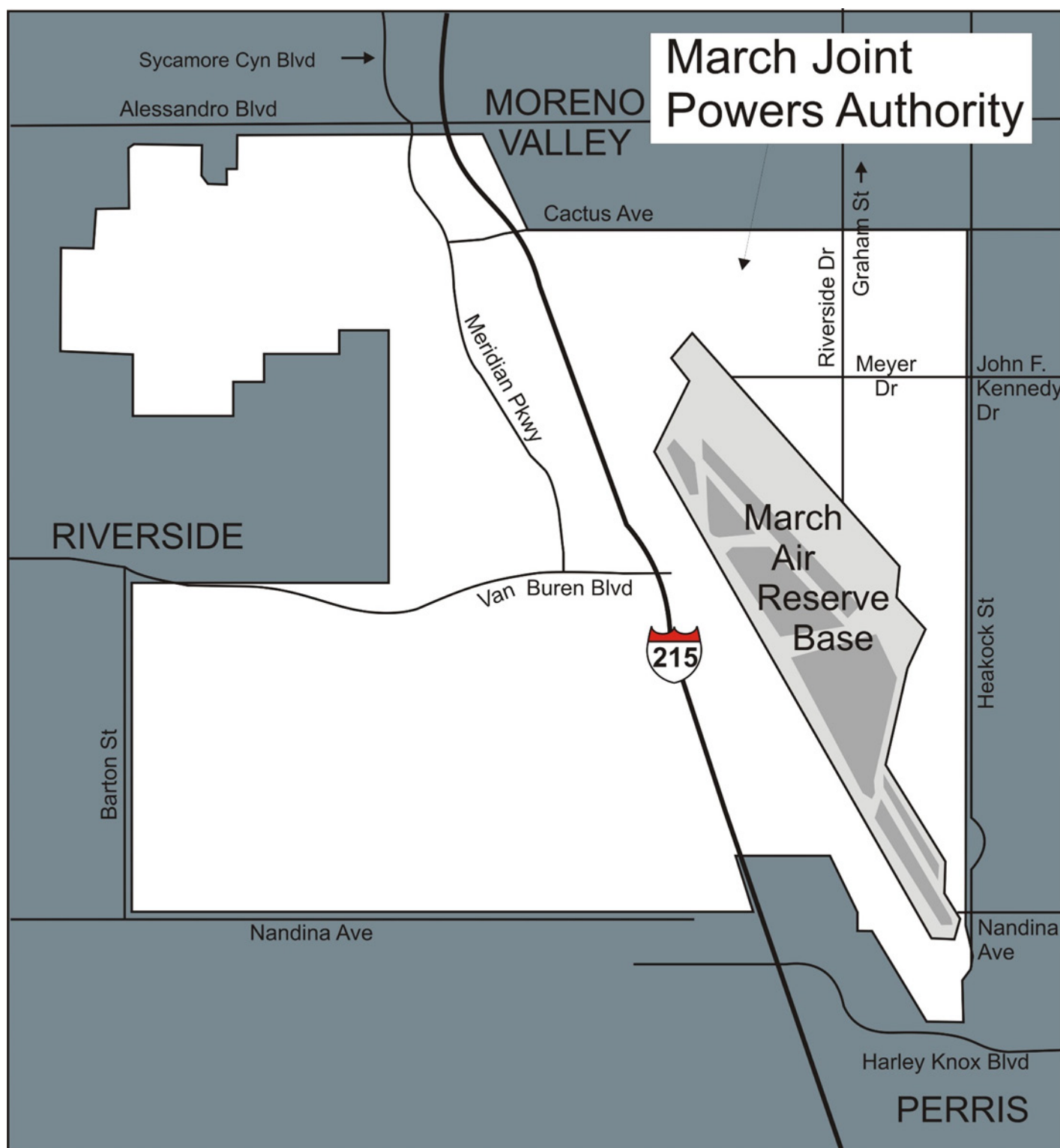
Unless waived by March JPA, a TIS will be required in the following situations:

- **If the proposed project would generate over 100 peak hour trips assigned to a street, road, or highway facility based on the latest version of the Institute Transportation Engineers (ITE) Trip Generation Manual and/or other appropriate trip generation studies, including those referenced in Section 6.0 of this Guide. Appendix A provides a list of uses and associated square footages, units, or other size determinant that would generate 100 peak hour trips;**





Figure 1 - March Joint Powers Authority Planning Area



- When a project includes a General Plan Amendment (GPA) (even if the proposed project generates less than 100 peak hour trips);
- When project traffic will add 25 or more peak hour trips to an intersection or roadway segment already identified as operating at an unacceptable level of service (LOS) (LOS “E” or worse), even if the proposed project generates less than 100 peak hour trips;
- When the project will substantially change the off-site transportation system or connection to it, as determined by March JPA, even if the proposed project generates less than 100 peak hour trips; and
- When the project significantly increases the potential for a traffic incident (e.g., congestion related collisions, non-standard sight distance considerations, increase in traffic conflict points, etc.). There may be site specific conditions that could potentially cause enhanced safety issues when project trips (including developments that generate less than 100 peak hour trips) are added to the street system or that access the street system. An example includes project truck trips entering a site that could potentially increase congestions by slowing down in an adjacent travel lane and then turning into the site. In this case, a truck turning or deceleration lane may be required to address the problem.

2.1 Exceptions

Certain types of projects, because of their size, nature, or location, are exempt from the requirements of preparing a TIS. The types of projects that are generally exempt from preparing a TIS are described in Appendix B.

If a proposed project is within a Specific Plan area for which an Environmental Impact Report (EIR) and TIS has been approved or certified, and the project’s trip generation is consistent with the trips generated within an associated Traffic Analysis Zone (TAZ), then the traffic consultant shall prepare a memorandum to March JPA describing how the proposed project or amendment to the Plan complies with the trip cap for the associated TAZ. Following a review of the memorandum by March JPA, the traffic consultant will be informed of requirements for further information or analysis, if applicable.

If a proposed project is within a Specific Plan area for which an EIR and TIS has been approved and certified, and the project’s trip generation is inconsistent with the trips generated within an associated TAZ, then additional environmental review may be necessary.

2.2 Update to a Previously Prepared TIS

A TIS requires updating when the amount or character of traffic is significantly different from an earlier study. For the purposes of this Guide, “significantly different” shall mean a substantial, or potentially substantial, adverse change from what was previously approved and/or certified. Generally, consideration should be given to updating a TIS when no activity has occurred after two year of the original TIS approval date. However, in some cases, update may not be needed even after two years have passed. A TIS may require routine updating in rapidly developing areas and less updating in slower developing areas. Whenever there is a question regarding whether a TIS should be updated, consultation with March JPA is strongly recommended. March JPA staff may





only require a memorandum explaining the changes or revisions to the current TIS document versus the need to prepare an updated TIS document.

3.0 SCOPE OF THE TRAFFIC IMPACT STUDY

Consultation in the form of a Traffic Study Scoping Meeting between March JPA and those preparing the TIS is required by before commencing work on the study to ensure that the scope is adequate. Other affected agencies shall also be invited to participate in the Traffic Study Scoping Meeting. Following the Traffic Study Scoping Meeting, a TIS “Traffic Study Scoping Agreement”, shall be prepared by the traffic consultant and submitted to March JPA for approval prior to the preparation of the TIS. A sample Traffic Study Scoping Agreement is provided in Appendix C. The Traffic Study Scoping Agreement shall be discussed at the Traffic Study Scoping Meeting. The Traffic Study Scoping Agreement provides for agreement of the following key points before initiating the TIS:

- **A project description;**
- **Proposed access and its relationship to existing properties and their existing/proposed access;**
- **Determination of a project study area, intersections, and roadway links or segments to be analyzed;**
- **Project trip generation, distribution, and assignment;**
- **The peak hours of analysis (AM, PM, weekend, other);**
- **Use of other approved projects within a five-mile radius for background traffic, traffic growth assumptions, or integration with the most appropriate Traffic Model;**
- **For those projects that may have impacts on other jurisdictions adjacent to the March JPA Planning area, the preparation of a TIS will require that the traffic consultant solicit comments on the scope of the traffic study from the affected agency(ies). The Traffic Study Scoping Agreement will specify the affected agencies to be contacted. During the course of preparation of the TIS, the traffic consultant shall submit all comments from other agency staff to March JPA for review and consideration; and include comments in the final Traffic Study Scoping Agreement; and**
- **For projects within one mile of a State highway, or any project that may create a significant impact on the State highway, the traffic consultant, under the direction of March JPA, shall also coordination with the State of California Department of Transportation (Caltrans). This consultation shall also include a determination of Caltrans’ requirements for the study of traffic impacts to its facilities and the mitigation of any such impacts shall be considered when scoping and determining impacts on Caltrans’ controlled facilities. The traffic consultant shall inform March JPA of Caltrans comments and include such comments in the final Traffic Study Scoping Agreement.**





The intersections and roadway segments to be covered by the TIS will be determined on a case-by-case basis and the traffic analysis study area shall be sufficient in size to include existing and planned streets and intersections that may be impacted by the proposed development.

4.0 TRAFFIC ANALYSIS SCENARIOS

March JPA is interested in the effects of plan updates and amendments, as well as the effects of specific project entitlements (e.g., site plans, conditional use permits, sub-divisions, rezoning, etc.) that have the potential to impact street, road and/or highway facilities. Therefore, the following scenarios shall be included in a TIS:

- **Existing Conditions – current year traffic volumes and peak hour LOS analysis (usually timed with the release of the Notice of Preparation – if applicable);**
- **Existing Plus Project Conditions - Project trip generation and trip distribution added to the previous scenario and LOS analysis;**
- **Near Term Analysis (Existing plus Ambient Growth plus Proposed Project Conditions) – trip generation and trip distribution and ambient growth added to the previous scenario and LOS analysis;**
- **Cumulative Horizon Year Conditions – Horizon year conditions (LOS analysis) as per the General Plan (20 years from existing conditions and consistent with the latest and most appropriate Traffic Model);**
- **Cumulative Horizon Year Plus Proposed Project Conditions – project traffic added to the previous scenario and LOS analysis; and**
- **If any phasing it to take place, then such phasing should be studied at its appropriate build-out year in addition to the above scenarios.**

The applied traffic model should reflect the most current land use and planned improvements (e.g., where programming or funding is secured). When a General Plan build-out model is not available, historical growth rates and current trends can be used to project future traffic volumes. The TIS should clearly describe any changes made in the model to accommodate the analysis of a proposed project.

5.0 LEVEL OF SERVICE STANDARDS

LOS standards are used to assess the performance of the street or highway system and the capacity of a roadway including intersections and links or segments. The affected level of service standards applicable to the TIS should be described in the TIS. In addition, applicable street and highway cross-sections should be included in the TIS.

5.1 Minimum Level of Standards

March JPA

All intersections and roadway segments within the March JPA Planning Area shall operate at LOS “D” or better with limiting circumstances of LOS “E” to occur. LOS “E” may also be allowed to the extent that it would support transit-oriented development (TOD) and walkable communities. LOS





“E” is also acceptable during peak hours at interchange ramp intersections where ramp metering occurs. A TIS shall address whether or not the required LOS will be achieved after the proposed project is constructed. LOS calculations shall be included with the TIS for all intersections studied. For intersections or roadway links not meeting the required LOS, the intersection or roadway link’s LOS must be recalculated using the proposed mitigation measures to verify that the required LOS will be achieved.

For intersections and segments located outside the March JPA boundaries, the minimum LOS standards referenced below shall be applied:

County of Riverside

LOS C shall apply to all development proposals in any area of Riverside County not located within the boundaries of an Area Plan, as well as those areas located within the following Area Plans: Riverside Extended Mountain Area Plan (REMAP), Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non-Community Development areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.

LOS D shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Meniffee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.

LOS E may be allowed by the Board of Supervisors within designated areas where transit-oriented development and walkable communities are proposed.

Notwithstanding the forgoing minimum LOS targets, the Board of Supervisors may, on occasion by virtue of their discretionary powers, approve a project that fails to meet these LOS targets in order to balance congestions management considerations in relation to benefits, environmental impacts and costs, provided an Environmental Impact Report, or equivalent, has been completed to fully evaluate the impacts of such approval. Any such approval must incorporate all feasible mitigation measures, make specific findings to support the decision, and adopt a statement of overriding considerations.

City of Moreno Valley

The Minimum LOS for the City of Moreno Valley is LOS “D” for intersections and roadway segments that are adjacent to freeway on/off ramps, and /or adjacent to employment generating land uses. LOS “C” is applicable to all other intersections and roadway segments. Boundary intersections are assumed to be LOS “D”.

City of Perris

The Minimum LOS established by the City of Perris is LOS “D”.

City of Riverside

The City of Riverside General Plan states the City will strive to maintain LOS “D” or better on arterial streets wherever possible. At some key locations, such as City arterial roadways, which are used as a freeway bypass by regional through traffic and at heavily traveled freeway interchanges, LOS “E” may be acceptable as determined on a case-by-case basis. Locations that may warrant the LOS “E”





standard include portions of Arlington Avenue/Alessandro Boulevard, Van Buren Boulevard throughout the City, portions of La Sierra Avenue, and selected freeway interchanges. A higher standard, such as LOS “C” or better, may be adopted for Local and Collector streets in residential areas. The City recognized that along key freeway feeder segments during peak commute hours, LOS “F” may be expected due to regional travel patterns.

Caltrans

According to Caltrans’ Guide for the Preparation of Traffic Impact Studies, the minimum LOS shall be LOS “C” and LOS “D” (see current Caltrans Guidelines Appendix “C-3” or related Appendix) along State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing Measure of Effectiveness (MOE) appropriate for that facility should be maintained.

5.2 Methodologies

Typically, the traffic analysis methodologies for the facility types indicated below are used by March JPA and will be accepted without prior consultation. If a difference of opinion results regarding LOS methodologies, the March JPA Traffic Engineer will have the final authority to decide the appropriate methodology that should be applied during the preparation of the project TIS. When a facility has saturated flows, the use of a micro-simulation model is encouraged for the analysis (please note however, the micro-simulation model must be calibrated and validated for reliable results). Other analysis methods may be accepted, however, consultation between March JPA, other affected local agencies, Caltrans, and those preparing the TIS is recommended to agree on the data necessary for the analysis. Alternative methodologies must be addressed as a part of the Traffic Study Scoping Agreement.

Freeway Segments:	Highway Capacity Manual (HCM)*, operational analysis
Weaving Areas:	HCM*
Ramps and Ramp Junctions:	HCM*
Multi-Lane Highways:	HCM*, operational analysis
Two-Lane Highways:	HCM*, operational analysis
Signalized Intersections:	HCM*, operations analysis, Synchro** (include signal timing method and ALL software inputs, parameters, defaults and other assumptions in the Appendix of the TIS). The TIS should include the use of existing timing plans from the agencies that operate the traffic signals to establish existing timing vs. the use of a software program.
Unsignalized Intersections:	HCM*, operational analysis, California (CA) Manual on Uniform Traffic Control Devices (MUTCD), latest edition for signal warrants if a signal is being considered.
Transit:	Transit-Capacity Manual***
Pedestrians:	HCM*
Bicycles:	HCM*
Warrants:	CA MUTCD (stop signs, traffic signals, freeway lighting, conventional highway lighting, school crossings)
Channelization:	Caltrans guidelines for Reconstruction of Intersections, August 1985

*The most current edition of the HCM, Transportation Research Board, National Research Council, should be used.





****NOTE:** March JPA does not officially advocate the use of special software. However, consistency with the HCM is advocated unless there is a reason to believe that consistency with the HCM would least to inaccurate or misleading information. March JPA representatives utilize the software listed under Section 5.2. If traffic consultants wish to utilize different software or analytical techniques, then it is highly recommended that the traffic consultant preparing the TIS initiate consultation between March JPA, other local agencies, and Caltrans prior to preparing the TIS. Results that are significantly different than those produced with the analytical techniques listed under Section 5.2, will not be accepted by March JPA and will result in the need for further analysis.

*******The most current edition of the Transit-Capacity Manual, Transportation Research Board, National Research Council, should be used.

5.3 Queuing Assessment

The TIS must include a queuing assessment to allow analysis of left turn storage lengths and to adjust the saturation flow parameters during the intersection capacity analysis (reference Section 6). Queuing analysis does not apply to ramp metered ramps, however, if determined to be necessary, discussions between March JPA and Caltrans should be conducted.

5.4 Average Daily Traffic Analysis

March JPA may require that analysis of Average Daily Traffic (ADT) be conducted in certain cases. Examples of cases where an ADT analysis would be required include locations where a roadway segment has reduced capacity in comparison to adjacent segments or when a planning-level analysis is desired.

5.5 Traffic Data

Prior to any fieldwork, consultation with March JPA is required to reach consensus on the data and assumptions necessary for the study as part of the Traffic Study Scoping Agreement.

5.5.1 Traffic Counts

Traffic counts shall be collected and included in the appendix of the Traffic Impact Study. If new counts are not collected, available existing counts can be used if they are less than twelve (12) months old and the counts have not been significantly changed due to more recent development in the vicinity. Note that the use of old traffic counts may not be consistent with the objective of establishing a baseline consistent with the release of a Notice of Preparation (if applicable) and therefore may require new traffic counts. March JPA shall approve all requests to use existing available counts. Requirements for counting vehicular traffic include, but are not limited to, the following:

- Peak hour counts shall be conducted on Tuesdays, Wednesdays, or Thursdays during weeks not containing a holiday and conducted in favorable weather conditions. For proposed developments that generate trips outside normal peak days, counts shall be conducted as agreed to in the Traffic Study Scoping Agreement;
- Counts shall be collected when schools and colleges are in session, but not during the first week of a new session. Counts that are collected when schools are not in sessions shall be approved by March JPA during development of the Traffic Study Scoping



Agreement, including a methodology for adding historical school traffic volumes into the analysis;

- Counts should not be conducted in areas of active roadway construction or where detours may skew the traffic count data;
- Counts shall be collected during the AM (7:00am to 9:00am) and PM (4:00pm to 6:00pm) peak hour periods. For proposed developments that generate trips outside the normal peak periods, counts shall be conducted as agreed to in the Traffic Study Scoping Agreement.
- Counts shall be collected concurrent with the collection vehicle queuing conditions. A queuing assessment is required to adjust saturation flow parameters during the intersection capacity analysis (reference Section5);
- Counts shall include a peak hour factor calculation; and
- ADT counts shall be conducted using the same requirements as peak hours counts and shall include a count of trucks by number of axels;

Prior to commencing field traffic counts, consultation should be initiated by the traffic consultant with March JPA staff, other local affected agencies, Caltrans and those preparing a TIS to determine the level of detail (e.g., location, signal timing, travel speeds, turning movements, etc.) required at each traffic count site. Results of this consultation shall be included in the Traffic Study Scoping Agreement. All intersections and segments within the boundaries of a TIS should be considered. Common rules for counting vehicular traffic include, but are not limited to the following:

- (i) Vehicle counts should be conducted during the appropriate peak hours (see peak hour discussion above); and
- (ii) Seasonal and weekend variations in traffic should also be considered where appropriate.

5.5.2 Trip Generation

The latest edition of the ITE Trip Generation Manual shall be used to estimate trips associated with a proposed development. Local trip generation rates or trip generation estimates developed for a similar project are also acceptable if appropriate validation is provided to support them. Specific requirements to be applied during the development of project trip generation include the following:

- Trip generation rates should be calculated using the average weight or weighted average formula when applicable. When the land use has a limited number of studies to support the trip generation rates or when the Coefficient of Determination (R^2) is below 0.75, consultation with March JPA is required;
- New rates shall be generated using community examples for uses not updated or included in the latest version of the ITE Trip Generation Manual;



- For sites with heavy truck usage the Passenger Car Equivalent (PCE) value should be provided in the Traffic Study Scoping Agreement. Typically, this value will be 2.0 for retail/office development and 3.0 for industrial development;
- For warehouse uses, consideration should be given to whether the proposed warehouse is of the high-cube, ecommerce, or parcel hub type. The appropriate study shall be referenced in the Traffic Study Scoping Agreement. Potential sources of information for truck trip generation data include the Trip Generation for Truck Uses in the City of Fontana report, ITE's High-Cube Warehouse Trip Generation Analysis (October 2016), and the current editions of the ITE Trip Generation Manual;
- Pass-by Trips – Pass-by trips are only considered for retail-oriented development. Reductions greater than 15% require consultation and acceptance by March JPA. The justification for exceeding a 15% reduction shall be discussed in the TIS;
- Capture or Multi-Use Trips – Captured trip reductions greater than 5% requires consultation and acceptance by March JPA. The justification for exceeding a 5% reduction should be discussed in the TIS; and
- Transportation Demand Management (TDM) – Consultation between March JPA, other local agencies, and Caltrans is essential before applying trip reduction for TDM strategies.

Projected daily trips, AM and PM peak hour trips for the approved, pending and proposed project shall be summarized in table form. Trip generation rates, factors, and the source of the data should be provided. Trip generation should be summarized as in Table 1.

Table 1 - Sample Trip Generation Summarization Table

USE	SIZE	DAILY TRIP ENDS ADT		AM PEAK HOUR					PM PEAK HOUR				
		RATE	VOLUME	RATE	IN:OUT SPLIT	VOLUME			RATE	IN:OUT SPLIT	VOLUME		
						IN	OUT	TOTAL			IN	OUT	TOTAL
Office (710)	278,200 sq. ft.	11.01	3,063	1.55	88:12	379	52	431	1.49	17:83	71	344	415
Shopping Center (820)	209,650 sq. ft.	42.94	9,002	1.03	61:39	132	84	216	3.75	48:52	377	409	786
Apartments (220)	24 units	6.72	161	0.51	20:80	2	10	12	0.62	65:35	10	5	15
TOTAL PROJECT TRIPS			12,226			513	146	659			458	758	1,216

5.5.3 Travel Forecasting

The most appropriate traffic model shall reflect the current land use and planned improvements (e.g., where programming or funding is secured). When a General Plan build-out model is not available, the closest forecast model year to build-out shall be use.



If a traffic model is not available, historical growth rates and current trends shall be used to project future traffic volumes. The recommended traffic model or growth rates to be applied for a proposed project shall be included in the Traffic Study Scoping Agreement. A TIS shall clearly describe any changes made in the model to accommodate the analysis of a proposed project of the methodology applied to develop the growth rates. While various traffic forecasting models will be appropriate for different types of projects, all projects should give consideration to the use of transportation and traffic forecasting models currently used by Riverside County and the City of Moreno Valley. As of the date of this Guide, the Riverside County Transportation Analysis Model (RIVTAM) is the current county model. RIVCOM is a new county model expected to be available in early 2020. Consistency guidelines for the appropriate model must be followed.

5.5.4 Trip Distribution

A figure illustrating the percentage of peak hour traffic going to and from various destinations along the transportation network shall be provided. Trip distribution shall be based on existing travel patterns, locations of complimentary land uses, and the most appropriate Traffic Model. The traffic consultant shall use the model projects as the basis for determining turning movement volumes for the required intersection analysis. A manual assignment of the project traffic added to the build-out traffic may typically be used to determine total future traffic, as approved by March JPA.

Certain large-scale Specific Plans and General Plan Amendments have the potential to create traffic impacts that are significantly greater than the traffic projections used in the most appropriate Traffic Model, and which also affect the modeling assumptions. For these projects, March JPA may request that the build-out analysis utilize the most appropriate Traffic Model to develop more detailed focused model runs in order to determine the projected build-out traffic. The following are guidelines of projects considered to be significant and subject to the revised modeling requirements:

1,500 dwelling units or greater;

25 acres of commercial or greater;

150 acres of industrial or greater; and/or

Any project producing 15,000 daily trips or greater.

The TIS should provide enough detail to determine the exact process applied to distribute trips to the study area intersections and links or segments.

5.5.5 Approved and Pending Projects for Near-Term Analysis

The traffic generation numbers for all approved projects within five miles of the study area (e.g., approved plot plans, approved tentative tracts, approved conditional use permits, etc.), shall be included as part of the near-term analysis in a TIS. The 5-mile radius begins at the outer edges of a project's boundaries. Proposed projects in the study area that have been submitted to March JPA for processing, but have not yet been approved, may also be included at the discretion of March JPA. March JPA will also specify an ambient growth





rate to be applied to existing volumes to account for other general traffic growth in and around the study area.

To determine future projected traffic at “Opening Year” of the project, or any subsequent phase, the following formula shall apply:

Traffic counts from other Approved Projects

+ Existing Traffic

+ Ambient Growth Rate

+ Proposed Project

It is the responsibility of the persons preparing the TIS to contact adjacent jurisdictions to request a list of approved and pending projects that may affect the study area. When each jurisdiction is contacted, contact shall be made with the following departments:

Community Development or Planning Department; and

Public Works or Traffic Engineering Division.

March JPA reserves the right to review the resulting list and revise the list appropriately. Such project should correspond to the release date of the NOP in cases where an EIR is required.

6.0 CALIFORNIA ENVIRONMENTAL QUALITY ACT COMPLIANCE AND DOCUMENTATION

The following types of traffic impacts are considered to be “significant” under CEQA:

- **When existing traffic conditions exceed the General Plan target LOS considering significance criteria referenced in Table 2 on page 12 of this guide;**
- **When project traffic, when added to existing traffic (Existing Plus Project Conditions), will deteriorate the LOS to below the target LOS, and impacts cannot be mitigated through project conditions of approval;**
- **When cumulative traffic (Near-Term Conditions) exceeds the target LOS, and impacts cannot be mitigated considering project conditions of approval, or other implementation mechanisms; and**
- **When a project:**
 - Causes an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (e.g., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);



- Exceeds, either individually or cumulatively, the level of service standard (LOS "E") established by the County Congestion Management Agency (Riverside County Transportation Commission [RCTC]) for designated roads or highways;
- Substantially increases hazards due to a design feature (e.g., shar curves or dangerous intersection) or incompatible uses (e.g., farm equipment);
- Results in inadequate emergency access;
- Results in inadequate parking capacity;
- Conflicts with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks);
- Results in inconsistencies with Regional and Local Agency Traffic/Circulation Plans; and
- Results in hindrances to access to public areas (such as parks).

6.1 Direct Impact Definition

Direct impacts are those impacts for which the additional of project only trips result in an identifiable degradation in LOS to unacceptable levels of service on freeway segments, roadway segments, or intersections from the existing condition thereby triggering the need for specific project related improvement strategies.

6.2 Cumulative Impact Definition

As indicated in State CEQA Guidelines (Section 15065), cumulatively considerable impact means "that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." Therefore, cumulative impacts are those impacts for which the addition of project traffic plus past, current, and future project traffic would result in an identifiable degradation in level of service.

In addition to setting a LOS standard, some California jurisdictions have established specific criteria for determining when a project's traffic impacts are so small that they are insignificant. For LOS "E" and "F" conditions, March JPA has determined that a project's traffic impacts are typically considered to be significant if project traffic (during the AM and/or PM peak hours or during the project's peak hour or period) is 2%, or more, of total peak hour traffic on a roadway segment or at an intersection.

The following is a summary of the significance criteria:

A direct traffic impact will be designated as significant if both of the following conditions occur:

- Peak hour project traffic plus existing traffic causes a roadway segment or intersection to operate at LOS "E" or "F"; and
- Peak hour project traffic comprises 2% or more of the total peak hour traffic on the roadway segment or intersection for LOS "E" and 2% or more for LOS "F".



A cumulative traffic impact will be designated as significant if both of the following conditions occur:

- Peak hours project traffic plus existing peak hour traffic and peak hour traffic from other near-term and future projects causes a roadway segment or intersection to operate at LOS “E” or “F”; and
- Peak hour project traffic comprises 2% or more of total peak hour traffic on the roadway segment or intersection for LOS “E” and 2% or more for LOS “F”.

Table 2 shows the Significance Criteria in tabular form.

Table 2 - Significance Criteria, Tabular Format

Significance Criteria		
Level of Service with Project	Allowable Percent Increase Due To Project During the Project Peak Hour	
	Roadway Segments	Intersections
E	2%	2%
F	2%	2%

The General Plan allows March JPA to approve development projects even in instances where the target LOS is exceeded (e.g., if the project has overriding benefits). Examples of overriding benefits include projects that provide jobs in a local area; projects that provide needed transportation improvements that otherwise would not be constructed; projects that provide for habitat conservation; projects that implement non-motorized transportation systems; or projects that provide some unique benefits to the Plan Area, which outweigh the traffic impacts. All feasible mitigation measures for potentially significant traffic impacts shall be imposed, and all such measures shall comport with CEQA’s nexus and rough proportionality principles. Projects that have a new significant traffic impact and require a Finding of Overriding Considerations will be required to prepare and EIR.

6.3 Options to Address Cumulative Impacts in Traffic Impact Studies

March JPA reserves the right to request one or a combination of the following options to address cumulative impacts in Traffic Impact Studies:

- **Address impacts through development of a comprehensive financing strategy:**
 - Identify level of service deficiencies with project and cumulative traffic;
 - Identify required improvements to address deficiencies;
 - Identify costs of required improvements. The TIS should specify the mitigation, costs of the mitigation, and if the mitigation is contained in a financing program such as Transportation Uniform Mitigation Fee (TUMF), Van Buren Fee, or other. The dollar



amount to be allocated to the improvement or mitigation measure must also be identified;

- Identify approved funding programs/plans to off-set improvement costs;
- Identify remaining unfunded cost as a “fair share” responsibility. Identify “fair share” percentage of the development project traffic as a percentage of the total growth in traffic:

$$P = T / (TB - TE)$$

Where:

P = The equitable share for the proposed project’s traffic impact

T = The vehicle trips generated by the project during the peak hour of adjacent roadways in vehicles per hour, vph

TB = The forecasted traffic volume on an impacted facility at the time of the horizon year of the traffic study, vph

TE = The traffic volume existing on the impacted facility, vph;

- Multiply the “fair share” percentage by the unfunded cost of the improvement project;
 - The development project pays the “fair share” cost as mitigation for its cumulative impacts;
 - Identify the responsible agency – such agency would be responsible for implementing the improvements by collecting the “fair share” costs and applying such funding to the required improvement projects (in some cases, a private developer may be the party responsible for the improvements, under the supervision of a responsible agency); and
 - Once the responsible agency is identified and the improvement program is in place, any development projects that contribute their “fair share” toward the identified improvements can consider their traffic impacts to be mitigated.
- **Identify impacts as significant and unavoidable when an implementation program is not available of individual project mitigation:**
 - Identify level of service deficiencies with project and cumulative traffic;
 - Identify required improvements to address deficiencies;
 - Determine “fair share” project responsibility for the improvement;
 - Identify the impacts as significant and unavoidable; and
 - Negotiate with affected local agencies or Caltrans to address full, partial, or other mitigation to address impacts.



7.0 MITIGATION MEASURES

The TIS should provide the nexus [Nollan v. California Coastal Commission, 1987, 483 U.S. 825 (108 S.Ct.314)] between a project and the traffic impacts to street and highway facilities. The TIS should also establish the rough proportionality [Dolan v. City of Tigard, 1994, 512 U.S. 374 (114S. Ct. 2309)] between the mitigation measures and the traffic impacts. Consultation between March JPA, other local agencies, Caltrans, and those preparing the TIS is recommend to research consensus on the application of mitigation measures and who will be responsible for mitigating potential impacts.

Mitigation measures must be included in the TIS. This determines if a project's impacts can be eliminated or reduced to a level of insignificance. Eliminating or reducing impacts to a level of insignificance is the standard pursuant to CEQA and the National Environmental Policy Act (NEPA). March JPA is responsible for administering the CEQA review process and has the principal authority for approving a local development proposal or land use change. March JPA is also responsible for reviewing the TIS for errors and omissions. If the mitigation measures require work within the State highway right-of-way, an encroachment permit from Caltrans will be required. This work will also be subject to Caltrans standards and specifications. Consultation between March JPA, other local agencies, Caltrans and those preparing the TIS early in the planning process is strongly recommended to expedite the review of local development proposals and to reduce conflicts and misunderstandings in both the March JPA CEQA review process, as well as the Caltrans encroachment permit process.

At a minimum, the TIS should include a table showing the pro rata share of project traffic affecting each required mitigation measure (intersection and/or link/segment). In addition, the TIS should identify the feasibility or infeasibility of each mitigation measure and the potential funding sources that may be applicable to the mitigation measure. March JPA may require that feasibility be demonstrated by a conceptual (not engineering) drawing, with key dimensions noted. If requested by March JPA, the feasibility of acquiring right-of-way should also be addressed.

8.0 TRAFFIC IMPACT ANALYSIS FORMAT

The TIS will generally include the following major components:

- **Level of service analysis;**
- **Proposed mitigation measures;**
- **Traffic signal warrant analysis;**
- **On-site circulation analysis;**
- **Identification of safety and operational improvements; and**
- **Identification of regional funding mechanisms.**

Section 5.5 of this Guide refers to the collection of traffic data.

In addition to the above, General Plan Amendments and Specific Plans shall include the following:

- **Specific Plan signalization analysis;**



- **General Plan conformance review; and**
- **Community and Environmental Transportation Acceptability Process (CETAP) conformance review.**

Projects that involve special uses, such as truck-intensive projects or special events, may also be required to perform additional analysis to determine project impacts.

8.1 Level of Service Analysis

All study area intersections and all connecting street and road links segments to the intersections studied should be analyzed to determine if additional lanes are required to address traffic volumes for each analysis scenario. Link or segment analysis is required to determine required mitigation or improvements to achieve the required level of service along a link or segment between intersections. The General Plan allows March JPA to approve development projects even in instances where the target LOS is exceeded (e.g., if the project has overriding benefits). As noted in Section 6 of this Guide, these projects are required to mitigate traffic impacts to the extent that it is economically feasible as determined by March JPA based on an evaluation of cost benefit.

8.2 Proposed Mitigation Measures

All studies that propose increasing the number of travel lanes on a road or intersection as mitigation measures, either beyond existing conditions or for General Plan conditions, beyond what is planned for that level of roadway, shall clearly identify the impacts associated with such a change. Identification of fund mechanisms available to fund the improvements and exhibits showing the lane configuration must be provided in the report.

As growth continues to occur, transportation demand management and transportation systems management (TDM/TSM) will be necessary to preserve and increase available roadway “capacity”. To the extent feasible and practical, TDM and TSM measures should be applied to reduce trips generated by a project and to improve traffic flow.

The exhibits illustrating the improvements must be approximately to scale but conceptual in nature (not engineering drawings). The concept illustrations must depict, in addition to existing and required right-of-way, any physical barriers that might preclude making the needed improvements. Barriers that may preclude making the improvements, such as railroads, major drainage structures, power lines, and others must be identified. Any other features that might render the improvements infeasible must also be identified. The objective is to ensure that when Conditions of Approval are written, there will be every expectation that the required improvements will, in fact, be made.

Concept illustrations, as described above, shall be prepared for the following instances:

- All improvements, whether on-site or off-site, necessary to mitigate impacts under Existing plus Ambient Grow, plus Project conditions;
- All improvements abutting the proposed project and that are necessary to mitigate impacts under Existing plus Ambient Growth, plus Cumulative Projects, plus Project conditions; and





- All improvements where the required improvements exceed the number of lanes, under any traffic scenario, that would typically be developed at full implementation of roadways per the General Plan and the standards for the applicable roadway classification.

In all cases, the feasibility of the proposed improvements must be demonstrated, and the availability of right-of-way must be ascertained. Acquisition of additional right-of-way, if necessary, is the responsibility of the project proponent. If additional right-of-way must be acquired, either adjacent to the project or off-site, the project proponent should consult with March JPA.

Community and Environmental Transportation Acceptability Process Conformance – Riverside County, in conjunction with RCTC, has evaluated various major transportation corridors as part of CETAP. The TIS shall identify if a project is located adjacent to a potential CETAP corridor. The TIS preparer shall contact RCTC to determine if the project is impacted by a potential CETAP corridor.

Regional and Sub-Regional Funding Mechanisms – Identify if the project is affected by the Western Riverside County Transportation Uniform Mitigation Fee Program, the Van Buren Boulevard Fair Share Analysis, is located within an existing Road and Bridge Benefit District (RBBB) and/or in an Assessment District, or identified in another regional funding mechanism.

8.3 Traffic Signal Warrant Analysis

The traffic consultant shall review intersections within the study area, including the project access points, to determine if signal warrants are met for any of the study year scenarios (existing, opening year with and without project, etc.). The signal warrant analysis shall utilize the CAMUTCS peak hour warrants, unless circumstances dictate use of other warrants. The warrant analysis worksheets shall be included in the study appendices.

If the TIS states that “a traffic signal is warranted” (or “a traffic signal appears to be warranted,” or similar statement) at an existing unsignalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection. This information will enable March JPA to assess whether or not a traffic signal should be installed at the intersection.

8.4 On-Site Circulation

The TIS shall examine the proposed on-site circulation for the project and address its adequacy. This includes identifying the desired level of traffic control at project driveways and/or intersections.

8.5 Safety and Operational Analysis

The TIS shall examine existing roadway conditions to determine if safety and/or operational improvements are necessary due to increases in traffic from the project or cumulative projects. The types of improvements to be identified may include, but are not limited to the following:

- Need for turning lanes (the TIS should include left turn lane (either a raised median or a two-way left turn lane) and acceleration/deceleration lane analysis for all streets of collector status or higher;



- Intersections needing future sight distance studies;
- Parking restrictions;
- Measures to reduce cut-through project traffic in adjacent residential areas;
- Potential impacts to adjacent schools;
- Queue lengths and impacts to adjacent intersections; and
- Need for signal interconnect systems.

8.6 Specific Plan Signalization Analysis

For traffic signals that are found to be warranted within or bordering a Plan Area, the TIS shall identify, after consultation with March JPA, which of these signals are the responsibility of development within the Plan Area.

8.7 General Plan Conformance

The TIS shall identify if the roadway system proposed in the Circulation Element of the General Plan is adequate to accommodate traffic from the project, or if changes to the General Plan are proposed as part of the project approval.

8.8 Special Uses

Truck Intensive Uses (Conditional Use Permits, Surface Mining Permits, etc.).

In addition to the standard TIS requirements, or if the standard TIS requirements are waived, projects that are “truck intensive” (distribution centers, surface mining permits, etc.) may be required to submit a study addressing truck access routes, adequacy of the existing streets to be used (in terms of geometry and structural section), safety issues related to the truck traffic, and the impacts of the truck traffic on existing residences or businesses. March JPA in consultation with the March JPA Traffic Engineer will determine when/if a study analyzing special uses is required.

8.9 Special Event Uses

Special event land uses that do not exhibit typical trip generation characteristics may require unique analysis, including weekend and off-peak scenarios. Examples of such uses would be churches, sports stadiums, racetracks, or uses that exhibit substantial traffic peaking associated with special events that are scheduled on a periodic basis. The traffic analysis for such uses shall include a traffic management plan to control traffic impacts associated with the special event. Adequate circulation shall be provided to the site and all impacts shall be alleviated to the maximum extent possible in accordance with the Traffic Management Plan prepared for the project.

9.0 SUBMITTAL REQUIREMENTS AND PROCEDURE

A Traffic Study Scoping Agreement must be submitted for approval prior to the preparation of the TIS. A sample agreement is provided in Appendix C of this guide. Identification of a case number must be included in order to process the agreement. The Traffic Study Scoping Agreement must also show the land use designation per the applicable plans and the proposed land use designation.





Upon approval of the Traffic Study Scoping Agreement and completion of the TIS report, the traffic consultant shall submit three (3) bound copies and three (3) copies in Word format on CDs (or thumb drives) of the TIS report to March JPA. Clearly identify the case number on the cover of the report and CD cases. Copies of the approved Traffic Study Scoping Agreement shall be included with the copies of the TIS.

If revisions to the TIS are necessary, re-submit copies (as required above) along with a copy of the comments provided by March JPA.



Appendix A - Uses That Generate 100 or More Peak Hour Trips

Uses That Generate 100 or More Peak Hour Trips

Maximum Facility Size At 100 AM or PM Peak Hour Trips					
	ITE Code	Facility Type	Units	Size	Trips
1	110	General Light Industrial	Employees Square Feet Acres	109 160,406 13.31	100 100 100
2	130	Industrial Park	Employees Square Feet Acres	163 75,181 7.644	100 100 100
3	140	Manufacturing	Employees Square Feet Acres	250 144,730 11.947	100 100 100
4	150	Warehouse ¹	Employees Square Feet Acres	95 171,571 7.53	100 100 100
5	210	Single-Family Detached Housing	Dwelling Units Persons Vehicles Acres	92 321 141 36.496	100 100 100 100
6	220	Apartment	Dwelling Units Persons Vehicles	149 251 114	100 100 100
7	230	Residential Condominium/Townhouse	Dwelling Units Persons Vehicles	185 398 283	100 100 100
8	240	Mobile Home Park	Occupied Dwelling Units Persons Vehicles Acres	172 384 277 21.54	100 100 100 100
9	310	Hotel	Occupied Rooms Rooms Employees	166 169 117	100 100 100
10	312	Business Hotel	Occupied Rooms Employees	161 13	100 100
11	412	County Park	Acres	1,666.667	100
12	414	Water Slide Park	Parking Spaces	60	100

¹ Does not apply to ecommerce or parcel hub

Appendix A (continued) - Uses That Generate 100 or More Peak Hour Trips

Maximum Facility Size At 100 AM or PM Peak Hour Trips					
	ITE Code	Facility Type	Units	Size	Trips
13	430	Golf Course	Employee Acres Holes	68 528.460 36	100 100 100
14	431	Miniature Golf Course	Holes	303	100
15	444	Movie Theater with Matinee	Movie Screens	2	100
16	465	Ice Rink	Square Feet	42,373	100
17	491	Tennis Courts	Tennis Courts Acres Employees	27 72.464 18	100 100 100
18	493	Health Club	Square Feet	24,691	100
19	520	Elementary School	Students Employees Square Feet	301 29 26,655	100 100 100
20	521	Private School (K-12)	Students Employees Square Feet	156 5 28,249	100 100 100
21	522	Middle School/Junior High School	Students Square Feet	415 22,988	100 100
22	530	High School	Students Employees Square Feet	161 22 32,679	100 100 100
23	560	Church	Square Feet	138,888	100
24	565	Day Care Center	Employees Square Feet Students	20 7,818 130	100 100 100
25	590	Library	Employees Square Feet	21 7,908	100 100
26	610	Hospital	Employees Square Feet Beds	203 83,333 108	100 100 100
27	630	Clinic	Employees Full-Time Doctors	81 26	100 100
28	710	General Office Building	Employees Square Feet	108 18,919	100 100
29	720	Medical-Dental Office Building	Employees Square Feet	104 29,107	100 100
30	812	Building Materials and Lumber Store	Employees Square Feet	42 20,511	100 100
31	813	Free-Standing Discount Superstore	Square Feet	37,226	100



Appendix A (continued) - Uses That Generate 100 or More Peak Hour Trips

Maximum Facility Size At 100 AM or PM Peak Hour Trips					
	ITE Code	Facility Type	Units	Size	Trips
32	814	Specialty Retail Center	Square Feet	32,716	100
33	817	Nursery (Garden Center)	Employees	50	100
			Square Feet	26,316	100
			Acres	13.298	100
34	820	Shopping Center	Square Feet	47,370	100
35	831	Quality Restaurant	Square Feet	13,351	100
			Seats	385	100
36	832	High-Turnover (Sit-Down) Restaurant	Square Feet	8,680	100
			Seats	213	100
37	834	Fast-Food Restaurant with Drive-Through Window	Square Feet	1,882	100
			Seats	75	100
38	841	New Car Sales	Employees	104	100
			Square Feet	40,924	100
39	845	Gasoline/Service Station with Convenience Market	Vehicle Fueling Positions	5	100
			Square Feet	1,649	100
			Traffic on Adjacent Street	1,000	100
40	850	Supermarket	Square Feet	5,918	100
41	851	Convenience Market (Open 24 Hours)	Square Feet	1,491	100
42	854	Discount Supermarket	Square Feet	11,235	100
43	861	Discount Club	Square Feet	23,584	100
			Employees	27	100
44	862	Home Improvement Superstore	Square Feet	40,816	100
45	863	Electronics Superstore	Square Feet	22,222	100
46	870	Apparel Store	Square Feet	17,777	100
47	880	Pharmacy/Drugstore without Drive-Through Window	Square Feet	11,876	100
48	890	Furniture Store	Square Feet	217,391	100
49	911	Walk-in Bank	Square Feet	2,379	100

Source: VRPA Technologies, Inc. based on trip generation rates published by the Institute of Transportation Engineers (Trip Generation, 7th and 8th Edition, ITE, Tables prepared March 2011).





Appendix B - Traffic Impact Study, Exemptions

Traffic Impact Study

EXEMPTIONS

The following types of development proposals are generally exempt from TIS requirements because they typically will not generate greater than 100 peak hour trips:

- **All Residential Parcel Maps;**
- **Single Family Residential Tracts of less than 100 lots;**
- **Apartment s and other Multiple Family projects of less than 150 units;**
- **Plot Plans for projects of one acre or less;**
- **Neighborhood Parks and Community Parks;**
- **Mini Storage Yards:**
- **Congregate Care Facilities that contain significant special services, such as medical facilities, dining facilities, recreation facilities, and support retail facilities;**
- **Projects in areas where a comprehensive traffic analysis has been performed and road improvement infrastructure funding mechanisms are in place, March JPA may, however, require a TIS for projects that exhibit potential adverse impacts to the circulation system;**
- **Any use which can demonstrate, based on the most recent edition of the Trip Generation Report public by the Institute of Transportation Engineer (ITE) or other approved tip generation data, project trip generation of less than 100 vehicle trips during the peak hours; and**
- **Uses listed in Appendix A of this Guide or other uses, which generate less than 100 peak hour trips.**

These exemptions will apply in most cases; however, March JPA reserves the right to require a TIS for any development regardless of size and/or type. The level of analysis shall be determined on an individual basis. The following are examples of conditions under which an exemption would not be granted:

- **The presence of an existing or potential safety problem;**
- **The location of the development is in an environmentally or otherwise sensitive area, or in an area that is likely to generate public controversy;**





-
- The presence of a nearby substandard intersection or street. This is normally considered to be an existing LOS “E” or worse level of service condition or the presence of substandard improvements;
 - The need for a focused TIS to address access/operation issues; and

Appendix B (*continued*) - Traffic Impact Study, Exemptions

- A request from a March JPA Member agency or an affected agency, such as Caltrans or an adjacent jurisdiction, which is deemed by March JPA to be reasonable and rational.





Appendix C - March Joint Powers Authority Traffic Study Scoping Agreement

March Joint Powers Authority

TRAFFIC IMPACT STUDY SCOPING AGREEMENT

This Traffic Study Scoping Agreement specifies March JPA requirements for a Traffic Impact Study (TIS) of the following Project. The TIS must follow and address requirements set forth in the March JPA Traffic Impact Study Preparation Guide dated August 3, 2011. Not all of the request information is relevant to all projects. Please provide relevant information for the Project under consideration.

PROJECT OVERVIEW

Project No.:

Related Projects:

Project Name:

Project Address:

Project Description:

Attached additional description content as Attachment 1.





Appendix C (continued) - March JPA Traffic Impact Study Scoping Agreement

CONTACTS

	Consultant	Applicant
Name:	<input type="text"/>	<input type="text"/>
Address:	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>
Telephone:	<input type="text"/>	<input type="text"/>
Cellular:	<input type="text"/>	<input type="text"/>
Email Address:	<input type="text"/>	<input type="text"/>

TRIP GENERATION

1. Source: ITE _____th Edition or _____

2. Land Use/Zoning:

Proposed Land Use: (land use, acreage, access)	Existing Land Use: (land use, acreage, access)
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
Proposed Zoning:	Existing Zoning:
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

3. Peak Period(s) to be Analyzed:

(Check all that apply) ☐ AM ☐ PM ☐ FRI ☐ SAT ☐ SUN





Appendix C (continued) - March JPA Traffic Impact Study Scoping Agreement

4. Peak Hours of Generator [List Hour(s)]:

_____AM _____PM

5. Estimated Trip Generation (Provide acreage, square footage, employees, students, seats):

AM Trips	In	Out	Total	In	Out	Total
----------	----	-----	-------	----	-----	-------

Estimated Trip Generation (continued)

PM Trips	In	Out	Total	In	Out	Total
Internal Trip Allowance	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	(_____% Trip Discount)	
Pass-By Trip Allowance	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	(_____% Trip Discount)	

TRIP DISTRIBUTION

N _____% S _____% E _____% W _____%
(Attach exhibit for detailed assignment as Attachment 2)

EXTERNAL FACTORS THAT COULD AFFECT PROJECT

(Planned road improvements, approved nearby development

EXISTING TRAFFIC DATA TO BE UTILIZED

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts.

Date of Counts _____





Appendix C (continued) - March JPA Traffic Impact Study Scoping Agreement

BACKGROUND TRAFFIC

Existing Conditions Year: _____
Opening Day Year: _____
Future Year(s) Phases: _____
Project Build-out Year: _____
Annual Ambient Growth Rate %: _____

OTHER AREA PROJECTS TO BE ANALYZED *(list and expand as Attachment 3)*

STUDY INTERSECTIONS *(NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments are received from other agencies.) Expand if necessary, as Attachment 4*

1. _____	5. _____
2. _____	6. _____
3. _____	7. _____
4. _____	8. _____

STUDY ROADWAY SEGMENTS *(NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments are received from other agencies.) Expand if necessary, as Attachment 5*

1. _____	5. _____
2. _____	6. _____
3. _____	7. _____
4. _____	8. _____





Appendix C (continued) - March JPA Traffic Impact Study Scoping Agreement

INTERSECTION AND SEGMENT LEVEL OF SERVICE METHODOLOGY

The following software programs shall be used for LOS analysis:

Synchro: _____

HCS: _____

Software Programs (continued)

Other (list): _____

Peak Hour Factors to be applied include the following:

1. For Existing and Near-Term analysis, the counted Peak Hour Factor shall be used.
2. For Future Year scenarios, a Peak Hour factor of .92 shall be applied.

ADDITIONAL ANALYSIS REQUIRED (if known)

[Examples: Queuing, Merging, Signal Actuation/Coordination, Bike/Pedestrian Facilities, Weaving Analysis, Application of Transportation Demand Management Measures, Other (list below)]

OTHER JURISDICTIONAL IMPACTS

Is this project within the County or within a City's Sphere of Influence or one-mile radius
Of City boundaries? ☐ Yes ☐ No

If so, name of Jurisdiction(s): _____

SITE PLAN (please attached reduced copy as Attachment 6)





Appendix C (continued) - March JPA Traffic Impact Study Scoping Agreement

OTHER SPECIFIC ISSUES TO BE ADDRESSED IN THE STUDY *(in addition to the standard analysis described in the March JPA TIS Preparation Guide)*

TRAFFIC STUDY SCOPING AGREEMENT SUBMITTAL

Project Applicant or Representative

Date

Traffic Study Scoping Agreement Submitted on

Date

Revised on

Date

TRAFFIC STUDY SCOPING AGREEMENT APPROVAL

March JPA Representative

Date





Appendix D - Traffic Impact Study Format

Traffic Impact Study Format

The TIS Shall Generally include the following items, unless waived by March JPA. Required Exhibits and Tables are indicated.

I. Executive Summary

- A. Project Description
- B. Existing Conditions
- C. Probable Impacts of the Project
 - Existing Conditions – current year traffic volumes and peak hour LOS analysis (usually timed with the release of a Notice of Preparation – if applicable);
 - Existing Plus Project Conditions – Project trip generation and trip distribution added to the previous scenario and LOS analysis;
 - Near-Term Analysis (Existing plus Ambient Growth plus Proposed Project Conditions) – trip generation and trip distribution and ambient growth added to the previous scenario and LOS analysis;
 - Cumulative Horizon Year Conditions – Horizon year conditions (LOS analysis) as per the General Plan (20 years from existing conditions and consistent with the latest and most appropriate Traffic Model);
 - Cumulative Horizon Year Plus Proposed Project Conditions – project traffic added to the previous scenario and LOS analysis; and
 - If any phasing is to take place, then such phasing should be studied at its appropriate build-out year in addition to the above scenarios.
- D. Traffic Operations Analysis (consistent with the scenarios identified in Item C above)
- E. Mitigation Measures/Recommendations
- F. Conclusions

NOTE: The Executive Summary shall be provided as a condensed, easy to understand (by the general public) and as a “stand alone” document.

II. Introduction

- A. Purpose of the TIS and Study Objectives





- B. Site Location and study area (**Exhibit 1**)

Appendix D (*continued*) -Traffic Impact Study Format

- C. Project identification – March JPA Case Number and related case numbers, e.g.: Specific Plan Amendment number, Environmental Impact Report number, etc.
- D. Project description
 - 1. Project size and description
 - 2. Existing land use and zoning
 - 3. Proposed land use and zoning
 - 4. Site plan of proposed project (reduced but readable) (**Exhibit 2**)
 - 5. Proposed project opening year
 - 6. Any proposed project phasing

III. **Area Conditions – (The Baseline)**

- A. Study area and intersections
- B. Existing traffic controls and intersection geometrics (**Exhibit 3**) – include descriptions of existing roads (number of lanes, etc.)
- C. Existing traffic volumes – AM and PM peak hour turning movements and roadway links (if required) (**Exhibit 4A – AM and Exhibit 4B – PM**)

IV. **Existing Traffic Impact Analysis**

- A. Existing delay and LOS a study intersections/roadway links (**Table 1**)
- B. Reference applicable provisions of the General Plan Circulation Element in the project vicinity (Baseline) (**Exhibit 5**)
- C. Indicate if transit service is available in the area and affected routes

V. **Projected Future Traffic**

- A. Project Traffic and Project Phasing (each study year)
 - 1. Ambient growth rate





2. Project trip generation (**Table 2**) – (the latest edition of the ITE Trip Generation Manual). Other sources require prior approval by March JPA

Appendix D (continued) -Traffic Impact Study Format

3. Project trip distribution and assignment (**Exhibit 6**)
 4. Other factors affecting trip generation (identify any factors used to adjust trip generation, such as pass-by trips, internal trips, or modal choice. Use of any factors require prior approval by March JPA and should be based on accepted traffic engineering documentation such as the trip generation manual or other appropriate source)
 5. Project peak hour turning movement traffic (**Exhibit 7A – AM and Exhibit 7B – PM**)
 6. Project completion or phase completion traffic volumes (**Exhibit 8A – AM and Exhibit 8B – PM for project or Phase I completion, Exhibits 8C and 8D for Phase II, etc.**)
- B. Cumulative Traffic (background)
1. Ambient growth rate
 2. Identify location of other approved or proposed development projects within a 5-mile radius (**Exhibit 9**)
 3. Trip generation from other approved projects (**Table 3**)
 4. Trip distribution and assignment of other approved development projects (**Exhibits 10A, 10B, etc.**)
 5. Total background peak hour turning movement volumes (**Exhibit 11A – AM and Exhibit 11B– PM**)
- VI. Project Traffic Analysis
- A. Capacity and level of service and improvement analysis
1. Delay and level of service for Existing Plus Project traffic conditions, with existing improvements (**Table 4**)
 2. Delay and level of service for study years with project, with existing and committed improvements (funded for construction) (**Table 5**)
 3. Delay and level of service for study years with additional improvements (if required to achieve the General Plan required level of service) (**Table 6**)





4. Delay and level of service under Near-Term and Cumulative conditions, with existing and committed improvements (funded for construction) and without and with additional improvements **(Tables 7 and 8)**

Appendix D (continued) -Traffic Impact Study Format

VII. Findings and Recommendations

- A. Traffic impacts and level of service analysis
 1. Proposed mitigation measure to achieve LOS at impacted intersections resulting from analysis conducted in Sections IV and VI above **(list as Table 9 and also show graphically as Exhibit 12)**. Identify if improvements are scheduled for construction, funded for future implementation by a regional mechanism, or not funded
- B. Traffic signal warrant analysis – indicate intersections found to meet signal warrants for each study year and share of project traffic contribution (use peak hour for existing intersections and daily for new intersections)
- C. Circulation recommendations/mitigation measures
 1. On-site
 2. Area wide – provide exhibit showing roadway improvements and signal locations **(Exhibit 13)**
 3. Phasing (if appropriate)
- D. Safety and operational improvements
- E. Specific Plan signalization analysis (for Specific Plans only)
- F. General Plan Conformation (for Specific Plans and General Plan Amendments only **(show any proposed General Plan Amendments as Exhibit 14)**)
- G. Community and Environmental Transportation Acceptability Process (CETAP) conformance **(show any CETAP corridors adjacent to the project as Exhibit 15)**
- H. Existing or proposed regional funding mechanisms
- I. Discussion of significant and unavoidable impacts

