



***TRAFFIC IMPACT  
ANALYSIS  
GUIDELINES***

***ADOPTED AUGUST 24, 2004  
(UPDATED AND ADOPTED XX, 2020)***

***DRAFT***





*Prepared by:  
City of Irvine  
Public Works and Transportation Department*

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## TRAFFIC IMPACT ANALYSES

### WHY A TRAFFIC IMPACT ANALYSIS STUDY IS REQUIRED

Historically, and since the adoption of the Traffic Impact Analysis (TIA) Guidelines in 2004<sup>[LT2]</sup>, a hierarchy of federal and state laws has required the correlation of the Land Use Element building intensities in the General Plan with the Circulation Element capacity (i.e., Government Code 65302(C), Congestion Management Program (CMP), California Environmental Quality Act (CEQA), and Measure M). Specific only to CEQA, new CEQA legislation (SB 743) adopted by the State of California in 2017 mandates that local jurisdictions, by July 1, 2020, must adopt a new measure of traffic impact to satisfy CEQA requirements. This new Vehicle Miles Traveled (VMT) measure of traffic impact is in addition to the traffic impacts outlined in this TIA Guidelines document. The VMT impact analysis is included as Exhibit 8<sup>CA</sup> of this updated TIA Guidelines and is applicable for all projects that require CEQA clearance.

The traffic impact analysis serves as a test of this correlation during the development review process. ~~Within the City, traffic impact analyses are categorized as traffic studies and limited scope traffic studies.~~ The following outlines the criteria for when each type of analysis is applied.

### WHEN IS A TRAFFIC/LIMITED SCOPE COMPREHENSIVE AND LIMITED SCOPE TRAFFIC STUDY REQUIRED?

A comprehensive traffic study<sup>[LT3]</sup><sup>[SM4]</sup> shall be required under the conditions outlined in Exhibit 3.~~for~~. These conditions for preparation of a traffic study are based on adopted Zoning Ordinance language, project description, level of discretionary or non-discretionary approval required, and geographic location (i.e., specific Planning Area of the project).

- Discretionary projects generating ~~which produce~~ 50 or more peak hour trips during the AM peak period or the PM peak period from a project site where no budget/trip cap has been established for the site and/or Planning Area; or

—Discretionary projects which exceed the established trip cap for the project site by 50 or more trips.

- —This traffic study trip threshold requirement shall be calculated using the City's approved land use trip generation rates. If the City approved Irvine Transportation Analysis Model (ITAM) land use trip generation rates do not correlate to the use(s) proposed, the Director of Public Works and Transportation will approve the use of another rate.

A comprehensive traffic study may also be required for:

- Projects pursuant to the ~~California Environmental Quality Act (CEQA) guidelines<sup>[LT5]</sup>, Congestion Management Program (CMP) requirements or as otherwise required by City Ordinances/resolutions.~~

A limited scope traffic study is required for:

- Discretionary projects generating between 1 and 49 trips from a project site where no budget/trip cap has been established for the site and/or Planning Area; or
- Discretionary projects which exceed the established trip cap for the project site and/or Planning Area by 1 to 49 trips. If the project exceeds the established trip cap by 50 or more trips, see the requirements for a traffic study above. This limited scope traffic study trip threshold requirement shall be calculated using the City's approved land use trip generation rates. If City approved land use trip generation rates do not correlate to the use(s) proposed, the Director of Public Works and Transportation will approve the use of another rate.

In cases where projects are within approved budget/trip caps and zoning, but are proposing new or altering existing access points, the site access analysis procedures outlined ~~on Page 15 of~~ in the Special Issues section shall be followed in order to design and locate access points.

Exhibit 2 highlights the key differences between a Comprehensive Traffic Study and a Limited Scope Traffic Study.

#### Transfer of Development Rights (TDRs) and Intensity Shifts

- Within the Irvine Business Complex (IBC), TDRs are permitted. Outside of the IBC, transfer of development (intensity shifts) may be allowed, if permitted by the zoning ordinance and/or land use regulations. If a TDR or an intensity shift is proposed, City approved land use trip rates shall be used in determining whether a traffic study or limited scope traffic study is required. If the project involves a TDR or intensity shift of 50 peak hour trips or more, a traffic study will be required. If the project involves a TDR or intensity shift of between 1 and 49 peak hour trips, a limited scope traffic study will be required. In either case, a cumulative impact analysis that may include all known applications of this nature on file with the City at the time of the subject project's scope of work approval will be required (see ~~Page 11 for~~ Cumulative Impact Analysis).

The use of an existing traffic/limited scope traffic study for a project can be considered by the Director of Public Works and Transportation if the land use assumptions, background conditions, and character of traffic analyzed in the existing study are not significantly changed in the proposed project. ~~The determination of the longevity of an existing study will be consistent with CEQA Guideline 15162.~~

#### METHODOLOGY OF SUBMITTAL

Prior to beginning any study, the applicant and/or his/her transportation consultant shall meet with City staff. This meeting is considered the "Pre-Application Conference." The purpose of the Pre-Application Conference is to establish assumptions and the process of preparing the study. When interjurisdictional impacts are anticipated, appropriate representatives from the affected agencies will be informed in writing of the agreed upon assumptions by the Director of Public Works and Transportation.

In order to establish a Pre-Application Conference, the applicant shall submit to the Director of Community Development a Pre-Application. For information on the submittal of the Pre-Application, the applicant is referred to the "Pre-Application" Information Sheet provided at the Community Development planning front counter and City's on-line form catalog.

The following points will be discussed and methodology established at the Pre-Application Conference regarding traffic:

- Site Plan and Development Assumptions
- Access Points
- Committed Roadway Improvements<sup>1</sup>
- Trip Generation
- Trip Distribution
- Trip Assignment
- Preliminary Study Area
- Background Traffic (Ambient Growth and Approved Developments)
- Development Time Frame and Phasing
- Processing Schedule
- Other Pertinent Factors

Additional planning issues, submittal requirements, etc. may also be addressed at this Pre-Application Conference, as identified and deemed appropriate by ~~Development Services~~ City staff.

The schedule shall be determined in accordance with the overall schedule associated with the type of application being requested and/or with CEQA requirements. The Pre-Application Conference shall also identify information which will be supplied by the City.

### **Scopes of Work**

Based on the agreements reached at the Pre-Application Conference, a scope of work shall be prepared by the applicant's traffic consultant and approved prior to commencement of the study. Waiver of portions of these guidelines for a project may be approved by the Director of Public Works. Studies will not be accepted unless the ~~traffic study/limited scope~~ traffic study scope of work has been approved by city staff under the direction of the Director of Public Works and Transportation.

The City Council reserves the right to approve traffic study scopes of work. Once approved by the City Council, they will be processed in the same manner as if approved by or under the direction of the Director or Public Works.

An approved scope of work is valid for twelve months. Prior to commencing the study, the applicant shall confirm with the City the appropriate version of ITAM to utilize. The study must be submitted for the first screen check review within twelve months of the scope of work

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<sup>1</sup>See definition in the Committed Improvements section.

approval. A new scope of work is required if the twelve month period expires without a submittal.

Scopes of Work for projects within the North Irvine Traffic Mitigation (NITM) Program are subject to the specific requirements defined in the adopted NITM Ordinance included as Exhibit 7.

### **Approval**

City staff under the direction of ~~The Director of Public Works and Transportation~~ shall review a traffic study and determine if the traffic study is consistent with the approved scope of work. ~~If deemed consistent, city staff under the direction of the the Director of Public Works shall approve and advance the traffic study with any recommendations to the next reviewing/approval body for appropriate action.~~

~~Limited scope traffic studies are reviewed and approved at the staff level only.~~

### **Miscellaneous Submittal Requirements**

Four (4) copies of the screen check draft study shall be submitted in conjunction with the remainder of the development application package. It should be noted that no development application for which a study is required, will be accepted without the appropriate number of copies of that study. Once finalized, 10 copies of the final study shall be provided to staff for use in Commission packets and files. If City Council approval of the project is required, a total of 16 copies of the final study shall be provided.

The applicant shall be responsible for the study and all costs associated with it. This may include, but is not limited to, preparation of the scope of work, preparation of the study, including consultant fees and computer model runs, review of the study by City staff and Commissions/Committees/Council.

All studies must be prepared under the supervision of and signed, stamped and dated by a Registered Traffic or Civil Engineer with appropriate transportation engineering and/or planning credentials.

### OBJECTIVES OF A TRAFFIC/LIMITED SCOPE TRAFFIC STUDY

The study has ~~four~~ three basic objectives, as outlined below:

1. To provide a tool to analyze a specific project as it relates to the General Plan (long term).
2. To provide a means to identify specific short term circulation, operational and access needs.
3. ~~3.~~ 3.—To provide a basis for equitable impact mitigation.

3.4. Demonstrate compliance with SB 743 for CEQA purposes, when applicable

TRAFFIC/LIMITED SCOPE TRAFFIC STUDY FORMAT

In order to provide consistency and facilitate staff review of studies, the format identified below and in the approved scope of work must be followed. Under each heading, the content and methodologies to be utilized are discussed. An outline of the study is attached as Exhibit 1.

**Executive Summary**

The Executive Summary of the report shall be a clear, concise description of the study findings. It shall include a general description of all data, project scope and purpose, findings, conclusions, mitigation measures, and recommendations.

Technical publications, calculations, documentation, data reporting, and detailed design should not be included in this section. The Executive Summary should be concise, complete in itself, and not dependent on supplementary data included by reference.

**Introduction**

The Introduction shall supply the reader with a general description of the project. This description shall include the size of the parcel, general terrain features, and the existing and proposed uses of the site (including phasing) based on the zoning and general plan categories outlined in the City's Zoning Ordinance and the General Plan. In addition, specific uses for which the request is being made must be identified, as a number of uses may be permitted under the same Zoning or General Plan Category. This information shall include the square footage of each use or number and size of units proposed.

The intent of the study is to evaluate traffic impacts for the most probable case or maximum entitlement permitted for the development or parcel proposed by the Subdivision Map Level, Zoning Ordinance or the General Plan. If several different uses are permitted, the land use(s) with the greatest overall traffic impact shall be assumed in the study, unless the applicant specifies the uses for the site. This most probable case analysis may be waived by the Director of Public Works and Transportation only if the development is conditioned for the specific uses analyzed in the study.

In addition, the location of the project site shall be described. As part of this description, a vicinity map shall be provided. The map shall include roadways, which afford access to the site and are included in the study area.

For projects which are reviewed in accordance with CEQA requirements, the required alternatives to the project shall be analyzed. The proposed alternatives shall be defined in the Introduction section.

The limits of the study area for the traffic study shall be based on the potential impact of the proposed project on the City's existing and ultimate street network, and the existing traffic conditions surrounding the site. In all instances, however, the study area limits must include

areas with significant impacts based on the approved Performance Criteria (see the Performance Criteria section). If an agreement cannot be reached on an appropriate study area boundary, the Director of Public Works and Transportation may require that a preliminary study area be established through a “select zone” analysis of ~~Irvine’s Transportation Analysis Model (ITAM)~~. This preliminary study area shall be expanded or reduced, as appropriate, to meet the Performance Criteria or impacts by phase of the development.

The study area boundary for a limited scope traffic study is limited to all project access points and immediately adjacent intersections.

### **Existing Conditions**

The study must identify the existing conditions in the vicinity of the project site, including a description of the area to be affected by the development. This is to provide a comparison of the impacts over time on land use and circulation.

Existing roadway conditions shall include the following:

- Existing Roadway Network
- Number of Existing Lanes
- Intersection Configurations
- Traffic Control (i.e., signal, stop sign, etc.) - For signalized intersections, where split phasing or right turn overlap is in place, this information shall be provided in the study
- Traffic Counts<sup>2,3</sup>
  - Average Daily Traffic
  - Peak Hour Intersection Volumes Both A.M. and P.M. (Turning Movements)
- Pedestrian Activity/Circulation (identification of pedestrian activity, trails, sidewalks in the project area)
- Level of Service Calculations Both Daily and Peak Hour

### **Existing Conditions with Proposed Development**

In order to assess the existing environmental setting as it exists at the time of the notice of preparation for a proposed development, existing conditions with the project in place must be analyzed. Existing traffic conditions based on the current circulation system shall represent the existing environmental setting.

Existing plus project projections shall be developed through the use of ~~Irvine's Transportation Analysis Model (ITAM)~~. The proposed land uses for the project site and any project-related circulation improvements shall be added to the ITAM database and ITAM model runs with and without the project shall be used to determine the traffic model impact of the project on the existing circulation system.

### **Future Traffic Without Proposed Development**

#### Projected Traffic

Future traffic without the proposed development's impact is also called "background" traffic or "baseline" traffic. This baseline traffic consists of three components:

- Regional traffic - Through traffic which has neither origin nor destination within

<sup>2</sup>Counts for intersections on the CMP Highway System (i.e., Irvine Blvd., Irvine Center Drive, Jamboree Road, and Laguna Canyon Road) shall be conducted on at least three separate days (not necessarily consecutive). An average of three counts will be used for existing LOS in the Level of Service calculation.

<sup>3</sup>Count data must have been collected within the previous one year period from the approval date of the scope of work during the AM (generally between 7-10 AM) and PM (generally between 3:30-6:30 PM) peak period. However, traffic counts cannot be older than 18 months from the date of the first screen check traffic/access study submittal. For access analysis purposes, midday peak hour counts may be requested by the City depending on where the project is located in relation to certain intersections. Counts should be conducted on a Tuesday, Wednesday or Thursday during weeks not containing a holiday. Current counts which have been performed by the City will be made available at the request of the applicant. However, if the City does not have counts or if the counts are not current, the applicant will be required to perform the counts. Should concerns or discrepancies arise regarding the traffic count data collected, the City may request additional counts.

Orange County.

- Sub-Regional traffic - Through traffic which has neither origin nor destination within the City of Irvine.
- Other development traffic - Traffic generated by all other development with either origin or destination within the City of Irvine. If the proposed project involves a TDR, General Plan and/or Zoning Ordinance intensity modification or intensity shift, the development traffic of project applications on file with the City will be assumed in a cumulative impact analysis (see Page 11 - Cumulative Impact Analysis for details). A list of all said projects shall be included as an attachment in the approved scope of work

Within the City of Irvine, background traffic is generally estimated using ~~Irvine's Transportation Analysis Model (ITAM)~~.

The following horizon years are required to be analyzed:

- Existing
- Short-term Interim Year (~~short term~~, typically a 5-year horizon), assumptions include committed roadway improvements by this timeframe and tolled corridor facilities
- Long-range Interim Year (~~long term~~, typically 20 to 25 year horizon), assumptions include committed improvements by this timeframe and tolled corridor facilities
- Buildout of City, assumptions include full buildout of adopted General Plan and Master Plan of Arterial Highways and tolled corridor facilities

The database shall be modified to include only those uses for the project site which exist at the time of application (i.e., existing land use - if vacant, the database shall have zero land use for that site) or, in the case of legally vested development, that amount of land use which is vested. Documentation of the vesting of land uses will be required of the applicant with the application. Computer model runs will then be performed for all horizon years. These runs will represent the background traffic volumes against which the "with project" analyses will be compared to develop ~~mitigation~~ [MC6] measures. In an expansion project, the expansion and any existing development to be expanded will be considered the "with project" scenario (see Exhibit 3).

For limited scope traffic studies, the horizon year by which time the project will be built out will be the only horizon year analyzed.

The study shall specify the volumes and levels of service associated with the daily, A.M. and P.M. peak hour conditions. Daily information shall be shown in a graphic format. Peak hour information shall be summarized in a table which identifies the levels of service (volume-to-capacity ratios from the Intersection Capacity Utilization {ICU} worksheets). In addition, ICU worksheets shall be attached as an appendix.

Committed Improvements

For interim conditions, improvements funded by government agencies (i.e., in the Capital Improvement Project {CIP}) or other development (as approved by the Director of Public Works) shall be identified. This list would include the nature of the improvement project, its extent, implementation schedule, and the agency or funding source responsible. An official list of these “committed improvements” shall be obtained from the City. A list shall be provided showing the location of such facilities or projects.

The currently approved General Plan Master Plan of Arterial Highway Designation (General Plan ~~Figure B-1~~<sup>[MC7]</sup>~~Exhibit D-5~~) and the Orange County Master Plan of Arterial Highways (MPAH - for adjacent Cities’ roadways, as appropriate) shall be the basis for roadway improvements considered to be in place for the buildout analysis. The network assumptions for the analysis years will be discussed in the report.

### **Proposed Project Level of Service (LOS) Impacts**

#### Definition of LOS Impact

Impacts of development on the circulation network shall be mitigated compared to the existing land use of the site at the time of submittal for development approval or, in the case of vested development, that amount of land use which is vested. Documentation of the vesting of land use will be required of the applicant with the application.

#### Model Trip Generation

The calculation of traffic volumes used to determine impacts of the development shall be based on the latest plans submitted for planning areas or on land use intensity allowed (including a trip cap adopted by the City) under the existing (or proposed) Zoning Ordinance or the General Plan. For proposed mixed-use developments, the analysis will assume the plan presented by the developer and any trip cap established for the area. When a zone change is requested that proposes to increase the trip cap, the traffic impact analysis for the proposed use will assess the impacts of the project by comparing the new proposal to a no project condition. To achieve the new project to no project comparison, the analysis will add project mitigation at the end of the analysis versus keeping previous mitigations in from the beginning.

Trip generation rates shall be based on the most recently approved socioeconomic data-based trip rates or as approved through the NITM Program for NITM area projects, when applicable. ~~These rates are included in the technical documentation for the Irvine Transportation Analysis Model (ITAM).~~

Land use trip generation rates will be based on the most recent edition of Institute of Transportation Engineers utilized by ITAM (at the time of this publication ITE 106<sup>th</sup> Edition was used).

Land use information will be converted to the following socioeconomic variables:

- Single-Family Residential
- Multi-Family Residential
- Population

- Employed Residents
- Retail Employment
- Service Employment
- Other Employment
- K-12 Students
- University Students

The conversion shall be based on the most recently approved land use to socioeconomic data conversion factors. These factors are included in the technical documentation for the ~~Irvine Transportation Analysis Model (ITAM)~~.

Additional information, such as income or special generators, shall be based on the most recent regional model, Orange County Transportation Analysis Model (OCTAM) or as otherwise approved by the City.

Non-ITE land use trip generation rates may be used, based on recognized local resources or rates based on three-day traffic counts taken for three similar and preferably local sites, if available, at the discretion of the Director of Public Works and Transportation. The detailed recommended rate methodology shall be included in the scope of work and approved by the Director of Public Works and Transportation.

A summary table listing each type of land use, corresponding size or number of units (square feet, dwelling units, beds, rooms, etc.) for the project site for all horizon years of model runs shall be provided. The table should include:

- AM peak hour, PM peak hour and daily vehicle trips based on socioeconomic data for each use, if feasible, otherwise for the project.
- AM peak hour, PM peak hour and daily vehicle trips based on land use trip rates for each use.
- A comparison of the project trip generation and land uses versus the zoning level trip cap allocation available on the site.

#### Adjustments to Trip Generation

The City will examine the feasibility of implementing a policy which would allow applicants a reduction in trip generation rates for the subject project's study. When the City establishes such a program, a reduction in trip generation can be granted by the City, at the applicant's request, for the project. The City may require, at a minimum, that the following information be included in the request and corresponding study: 1) demonstration of the ability to achieve the specific levels of trip reduction assumed; and 2) documentation of a monitoring and compliance program to ensure the success of its Transportation Demand Management (TDM) program. The City may require additional mitigation or the payment of fees if the project generates trips in excess of the levels approved through the study. Additional information regarding TDM is provided in the Transportation Demand Management section.

Where applicable, the Spectrum Trip Reduction Policy approved as part of the Northern Sphere

developments (see Appendix A) and the IBC Trip Reduction Program shall be utilized.

### Trip Distribution and Trip Assignment

Traffic generated by the site must be distributed and assigned to the roadway network in order to determine the project's impacts. Trip distribution refers to the direction a vehicle will take to access or leave the project site and can vary depending on:

- Type of proposed development surrounding the site;
- Similar land uses in the vicinity;
- Size of the proposed development; and
- Conditions on the roadway network in the vicinity.

For each horizon year, the distribution of project trips shall be shown in graphic format using percentages of project traffic by geographical direction. Trip distribution shall be based on model output. Adjustments to the model output may be necessary. However, any adjustments shall be approved by the Director of Public Works and Transportation prior to the submittal of the study. The text should describe the methodology and assumptions which are used in the determination of trip distribution.

Trip assignment identifies the actual routes taken by project traffic to and from the site. The identification of the project assignment shall be performed utilizing ~~Irvine's Transportation Analysis Model (ITAM)~~. Graphic presentations, as well as discussions of the analysis and results in text of the trip assignment, shall be provided in the report.

### Phased Projects

This section discusses phased construction of developments, trips they will generate, and phased mitigations planned. Studies for projects planned to be developed in phases must document impacts as the phases develop (i.e., Phase 1 impacts separately, Phase 2 impacts would include Phase 1 impacts).

Traffic generation for the project phases shall be determined as outlined earlier in the report based on the applicant's phasing proposal. The development shall be conditioned to adhere to the phasing schedule, as building permits shall be conditioned to be tied to the approved phasing plan.

Projections of future traffic, both with and without the project, shall be determined as outlined above. If the year of buildout of the phase does not have an existing database, alternate methods of projecting traffic may be utilized, with the approval of the Director of Public Works and Transportation.

### **Future Traffic with Proposed Development**

In order to develop mitigation measures for development, conditions with the project in place must be known. These future conditions with the proposed development are based on computer

model runs for horizon years which include the project's proposed land use.

As in "Future Traffic Without Proposed Development" above, traffic projections shall be developed through the use of ~~Irvine's Transportation Analysis Model (ITAM)~~. The assumed land use for the project shall be based on the proposed land uses for the site. This information shall be added to the database. This will represent the "with project" condition.

### **Cumulative Impact Analysis**

A cumulative impact analysis is required if a proposed project involves a Transfer of Developer Rights (TDR), General Plan and/or Zoning Ordinance intensity modification or intensity shift from one development area to another. Further, if a project does not involve one of the above conditions, but other pending applications for projects within the traffic study area do involve one of the above conditions, the Director of Public Works and Transportation may require that the cumulative impact analysis described below be performed. The cumulative impact analysis will include, in addition to those scenarios outlined and discussed ~~on Pages 7 and 10 in the~~ ("Future Traffic Without Proposed Project" and "Future Traffic Wwith Proposed Project" sections), a "baseline plus cumulative projects without project" and a "baseline plus cumulative projects with project" scenario for each horizon year. The cumulative impact analysis is one that analyzes a project with projects currently on file with the City that are likely and foreseeable at the time of the project scope of work approval. For a cumulative impact analysis, a project to be included as a cumulative project is defined as one that also involves a TDR, General Plan and/or Zoning Ordinance intensity modification or intensity shift from one development area to another that also requires a traffic impact analysis. The analysis may consider the inclusion of all project applications (also requiring a traffic impact analysis) on file with the City at the time of the scope of work approval. At a minimum, the projects within the study area boundary shall be included in the cumulative impact analysis. Projects outside the study area boundary will be included in the analysis as determined by the Director of Public Works and Transportation. A list of all these projects to be assumed as part of the cumulative impact analysis shall be included as an attachment in the approved traffic study scope of work. If the cumulative impact analysis yields potential deficiencies, mitigation will be based on a fair share contribution.

### **Analysis**

#### Level of Service (LOS) Analyses

Level of Service (LOS) E shall be considered acceptable for links and intersections in accordance with the City's General Plan Objective B-1 and as approved in the Level of Service E Policy for the Northern Sphere Area developments (see appendix B). LOS D shall be considered acceptable for all other areas of the City.

In general, levels of service are defined in the City of Irvine General Plan as follows:

Level of Service A: The volume/capacity ratio ranges from 0.0 to 0.60. At this LOS, traffic volumes are low and speed is not restricted by other vehicles. All signal cycles clear with no vehicles waiting through more than one original cycle.

Level of Service B: The volume/capacity ratio ranges from 0.61 to 0.70. At this LOS, traffic volumes begin to be affected by other traffic. Between one and ten percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.

Level of Service C: The volume/capacity ratio ranges from 0.71 to 0.80. At this LOS, operating speeds and maneuverability are closely controlled by other traffic. Between 11 and 30 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.

Level of Service D: The volume/capacity ratio ranges from 0.81 to 0.90. At this LOS, traffic will operate at tolerable operating speeds, although with restricted maneuverability.

Level of Service E: The volume/capacity ratio ranges from 0.91 to 1.00. Traffic will experience restricted speeds, vehicles will frequently have to wait through two or more cycles at signalized intersections, and any additional traffic will result in breakdown of the traffic carrying ability of the system.

Level of Service F: Long queues of traffic, unstable flow, ~~stoppages-gridlock~~ of long duration ~~with traffic volumes and traffic, speed can drop to zero~~. Traffic volumes will be less than the volume which occurs at Level of Service E.

For existing and future conditions, Levels of Service at intersections shall be calculated using the Intersection Capacity Utilization (ICU) method. All calculations shall recognize special phasing arrangements, where applicable. In addition, the lane capacity used in the ICU calculations shall be 1,700 vehicles per hour, per lane. Adjustment factors for this value shall consist of the following:

- A lost time of 0.05 shall be added to the ICU calculation.
- If the distance from the edge of the outside through lane is at least 19 feet and parking is prohibited during the peak period, right turning vehicles may be assumed to utilize this “unofficial” right turn lane. Otherwise, all right turn traffic shall be assigned to the outside through lane. If a right turn lane exists, right turn on red may be assumed, if not prohibited at that location. However, the assumption of the number of vehicles turning right on red must be reasonable and not conflict with any other critical movements. If a free right turn lane exists (right turns do not have to stop for the signal), a flow rate of 1,700 vehicles per hour, per lane may be assumed. The V/C ratio of the right turn lane should be reported but not included in the sum of the critical V/C ratios.

Pedestrian adjustments shall be performed on a case-by-case basis and assessed according to procedures outlined in Chapter 16 of the latest version of the Highway Capacity Manual (HCM) for those intersections which have more than 100 existing pedestrians per peak hour, per intersection leg. No adjustment is required for pedestrian volumes less than 100 per peak hour.

Link LOS shall be determined using the Average Daily Trips (ADT) volume-to-capacity (V/C)

ratios and peak hour link V/C ratios. Values of V/C associated with the various levels of service are stated below:

LEVEL OF SERVICE	V/C
A	0.00 - 0.60
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	> 1.00

The capacities to be used to determine V/C ratios for roadway links shall be those approved by the City of Irvine. They are outlined below, subject to future revisions:

Facility Type	Number of Lanes	Capacity	
		<u>LOS D</u>	<u>LOS E</u>
Freeways	10	189,000	210,000
	8	158,400	176,000
	6	121,500	135,000
	4	81,000	90,000
Freeway Ramps	2	19,800	22,000
	1	14,400	16,000
Expressway	6	121,500	135,000
Major Highway	8	64,800	72,000
	6	48,600	54,000
Primary Highway	4	28,800	32,000
Secondary Highway	4	25,200	28,000
Commuter	2	11,700	13,000
Commuter (Rural)	2	16,200	18,000

Roadway facility types shall be based on the General Plan Circulation Element's Figure B-1, Master Plan of Arterial Highways~~Exhibit D-5, Arterial Highway Designation~~. If not listed on the above table, facility/number of lanes/capacity will be interpolated.

**\*\*NOTE: Intersections and roadway links shall be analyzed and meet the performance criteria on an individual basis. Grouping and screen line calculations will not be accepted.**

### Performance Criteria

Performance criteria are established in order to determine what mitigation measures would be required of the development based on its impacts.

A traffic impact occurs when:

- A location is at acceptable level of service (LOS) in the baseline condition and the project causes the location to become deficient; or
- A location is deficient (i.e., at unacceptable LOS) in the baseline condition and the project causes the location to further deteriorate by ~~at least~~ two percent or more.

~~For intersection analysis, if the roadway link or an intersection in question is determined to be an impact based on the criteria above, then the project will be required to mitigate the intersection, at a minimum, back to the baseline condition. exceeds the acceptable LOS in the baseline condition and the impact of the development is:~~

#### Intersections (Citywide)

~~Greater than or equal to 0.02, rounded to the second decimal place, then project mitigation will be required back, at a minimum, to baseline as determined in "Definition of Impact" on Page 8.~~

For intersections projected to be deficient in the most recent Circulation Phasing Analysis Report, the criteria as follows will be applied for intersections in the interim year (short term) only:

Greater than or equal to 0.01, rounded to the third decimal place, then project mitigation will be required back, at a minimum, to baseline as determined in "Definition of Impact" on Page 8 or contribution of fair share towards a mitigation back to an acceptable level of service. If mitigation back to baseline condition is not feasible by determination of the Director of Public Works and Transportation, then the contribution of fair share towards a mitigation will be considered.

For roadway link analysis, if a roadway link in question is determined to be an impact based on performance criteria on page 14, the  
Roadway Links

~~Greater than or equal to 0.02, rounded to the second decimal place, project mitigation will be required to mitigate back, at a minimum, to baseline as determined in "Definition of Impact" on Page 98. Mitigation opportunities include capacity augmentation, in accordance with the provisions of Objective D-1, Implementing Action (m) of the Circulation Element.~~

For roadway links projected to be deficient based on ADT V/C ratios, further Peak Hour Link Analysis (PHLA) is required to determine if the roadway link is an impact based on performance criteria.

#### Peak Hour Link Analysis

A Peak Hour Link Analysis (PHLA) will be required for all links which exceed the defined Level-of-Service (LOS) standards when comparing the forecast average daily traffic (ADT) volume-to-roadway capacities, as defined by the City. The PHLA shall be consistent with the December 16, 1996, Transportation and Infrastructure action approving the "Revised Peak Hour Link Analysis Methodology".

The PHLA will determine directional AM and PM volume-to-capacity (V/C) ratios for each link which is projected to exceed LOS standards. The peak hour capacity will be determined by multiplying the midblock number of lanes for each direction by a lane

capacity of 1,600 vehicles per hour. Where the distance between controlled intersections is one or more miles, the midblock number of lanes shall be multiplied by a lane capacity of 2,000 vehicles per hour.

If the peak hour V/C ratio results do not meet City LOS standards, additional lanes will be needed for each deficient direction consistent with the Master Plan of Arterial Highways. The added lane(s) may function either as an auxiliary lane (does not go through the down stream intersection) or a through lane, as determined by the ICU analyses of the downstream intersections.

When the study area boundary, arterials and intersections fall under the jurisdiction of agencies outside the City of Irvine, all applicable performance criteria and practices for those jurisdictions will be considered.

### **Special Analyses/Issues (Optional As Needed)**

Every project is unique and, therefore, may have special issues which require discussion and analysis. In many instances, concerns are raised regarding issues, which though transportation related, are not always included in studies. These include, but are not limited to, site access, traffic signals, stacking/queuing analyses and pedestrian circulation. The inclusion of any or all of the special issues analyses shall be determined by the Director of Public Works and Transportation prior to approval of the scope of work. The scope of work shall outline the extent and type of analyses required. Analysis of these issues shall be provided in the manner outlined below.

#### Site Access Analysis

The project's impact to access points and on-site circulation will be analyzed. The analysis will, as appropriate, include the following:

- number of access points needed without negatively impacting traffic flow along the arterials, deceleration lanes into the site
- spacing between driveways and intersections
- signalization of driveways
- shared access
- turn conflicts/restrictions
- adequate sight, distance/corner clearance
- driveway improvements
- any other operational characteristics

If the proposed project is a residential use with privacy gates or a non-residential use with controlled access gates, the applicant shall provide a stacking analysis for review and approval. If the proposed project is a non-residential use with security gates, a stacking analysis is not required unless required by the Director of Community Development (per City Zoning Ordinance Section 4-4-8, Gates). The adequacy of the interface with the arterial network may be analyzed and necessary improvements to adjacent intersections may be required.

The site access analysis shall comply with adopted City standards and utilize, as appropriate, the City's Transportation Design Procedures (dated February 2007). ~~Guidelines (dated July 30, 1993).~~

The City's ~~Transportation Analysis Model (ITAM)~~ will be used to determine the project's trip distribution. The trips shall be manually reallocated to the access points based on the latest ITE land use trip generation rates for the site.

Any existing trips or trips associated with other approved uses, utilizing the same access points as the proposed project's trips, will be added in order to capture the full impacts to the access points.

When details of a project site may not be available, such as at the zoning level, access points and their locations are considered conceptual in nature. The final placement of such access points shall be finalized and approved as part of the subsequent development application or when the project details have been refined.

Independent of ~~traffic/limited scope~~ traffic study requirements and thresholds, when a project is within approved trip budget/caps and zoning and is only altering existing or proposing new access points, the discussion outlined in this Site Access Analysis section is the only applicable section of the document.

The scope of work for and the approval of a site access analysis that is independent of a comprehensive traffic study or limited scope traffic study are the purview of the Director of Public Works and Transportation. All site access analyses that are part of a larger traffic study ~~or limited scope traffic study~~ shall be approved as part of the larger study consistent with the parameters discussed in this document <sup>(SM8)</sup>.

### Traffic Signals

The need for new traffic signals shall be based on warrants outlined in the latest edition of the State of California Department of Transportation (Caltrans) Traffic Manual, the United States Department of Transportation Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), or any additional warrants established by the National or California Committee on Uniform Traffic Control Devices.

The application of signal warrants, including the appropriate warrants, figures and assumptions (ex: roadway speed) to be utilized shall be clearly outlined and identified in the study's scope of work.

In determining the location of a new signal on an arterial street, traffic progression is of paramount importance. Impacts on the progression for arterial network may be analyzed using procedures deemed appropriate by the City's Traffic Engineer. Currently, the City uses SYNCHRO software for signal progression purposes. The applicant shall contact the City Traffic Engineer prior to commencement of a signal progression analysis to discuss the study and appropriate signal progression methodology and assumptions.

#### Pedestrian Circulation and Transit Connectivity

The City places special emphasis on the safety and protection of pedestrians and bicyclists, especially school children on their way to and from school. The study shall identify all existing and future pedestrian interface locations affected by the project, pedestrian facilities within a project and explore the need for appropriate traffic control devices. City General Plan Objective B-3: Pedestrian Circulation shall be the goal of every project. In addition, to the extent applicable, the study shall address the project's conformance to City General Plan Objectives B-4: Bicycle Circulation and B-5: Riding and Hiking Trail Networks.

Other special issues and the appropriate analyses required to address said issues shall be identified by the City at the pre-application conference.

#### Congestion Management Program (CMP) Consistency/Requirements

In June 1990, California voters approved Proposition 111 which established a nine cent per gallon gas tax, staged over a 5-year period, for the purpose of funding transportation related improvements statewide. In order to be eligible for the revenues associated with Proposition 111, Congestion Management Program –(CMP) legislation (AB 471 amended to AB 1791) requires urbanized counties in California to adopt a Congestion Management Program. The goal of CMP is to promote a more coordinated approach to land use and transportation decisions. As part of the requirements for CMP, a traffic impact analysis may be required of certain developments. The City of Irvine requires that all roadways, including those on the CMP Highway System, be analyzed as outlined below. Completion of the City of Irvine "CMP Monitoring Checklist: Land Use Coordination Component" (Exhibit 4) shall be required of the applicant or his/her consultant, as outlined in the Congestion Management Program (CMP) Consistency/Requirements section. The completed checklist shall be submitted with the application for development.

As part of the study, the applicant shall be required to demonstrate that roadways on the CMP network will not deteriorate due to the development below the requirements for CMP purposes. Exemptions from the requirements for CMP are outlined in Exhibit 65. Exemption from the completion of a CMP traffic impact analysis does not exempt the applicant from the completion of a traffic impact analysis based on the City of Irvine requirements.

Within the City of Irvine, the following roadways are on the CMP Highway System:

- Irvine Boulevard
- Jamboree Road
- Irvine Center Drive

- Laguna Canyon Road/SR-133
- Tollways: SR-133, SR-241, SR-261, SR-73
- Freeways: I-5, I-405

For these roadways and specifically any intersections on these roadways, the completion of the “CMP Monitoring Checklist: Land Use Coordination Component” for the City of Irvine (Exhibit 54) is required. Any future additions to the CMPHS will be subject to the same CMP requirements outlined in this section.

#### CEQA VMT Impact Analysis

A summary of the project’s VMT Impact Analysis shall be provided for all projects subject to CEQA requirements. If a VMT Impact Analysis is not required, then this will be stated in this Special Issues section. The VMT impact analysis will be based on the CEQA VMT Impact Analysis Guidelines (SB 743) included in Exhibit 8.

### **Required Mitigation Measures/Recommendations**

#### Improvement Needs

Mitigation measures, improvements to the roadway network (including intersections) required due to the project, shall be identified for all portions of the network which meet the Performance Criteria outlined above. The recommendations section shall include:

Proposed Recommended Improvements: This section shall describe the location, nature, and extent of proposed improvements to assure sufficient roadway capacity. Mitigation measures shall be identified for all years analyzed above. A plan drawing of each improvement may be required in the study illustrating the length, width, and other pertinent geometric features of the proposed improvements.

The determination of whether a plan is needed shall be made by the Director of Public Works and Transportation.

Level of Service Calculations: A table illustrating the effectiveness of the improvement for all years analyzed shall be provided. The table shall include the LOS for the “with” project scenario without proposed mitigations, and the “with” project scenario with proposed mitigations.

~~The application of an Advanced Transportation Management Systems (ATMS) credit may be considered as an alternative mitigation measure. Such consideration will be made only if the City maintains an appropriately adopted ATMS policy and implementation methodology, and such ATMS consideration is made in full compliance with both. (See Appendix C – City Council Ordinance 03-08 adopted March 25, 2003)~~

For impacts at Circulation Phasing Analysis Report identified intersections, if a previously identified ultimate improvement is required in the interim year, fair share will

be determined through negotiations with the Director of Public Works and the applicant.

It should be noted that additional improvements may be required of the development other than those improvements outlined in the LOS mitigation measures for the project. Improvements may be required as a result of the TDP operational analysis and as a result of the VMT impact analysis.

#### Schedule/Cost of Improvements

The timing of the proposed improvements, based on the various years analyzed, shall be identified in this section of the report.

In addition, preliminary cost estimates for the improvements may need to be identified, if deemed necessary by the Director of Public Works and Transportation. These cost estimates shall include, but not be limited to, costs associated with studies, design, signalization, signing, pavement markings, bridges, engineering, construction and construction administration as well as right-of-way.

The construction component shall include, but not be limited to, maintenance of traffic, clearing and grubbing, carthwork, subgrade stabilization, base material, paving, curb and gutter, and sidewalks. Reconstruction improvements shall be increased accordingly to account for such items as removal of concrete pavement, bituminous pavement, poor soil, subsoil excavation and replacement with acceptable material, connecting streets, and driveway connections.

Current unit values for the various items shall be used in the cost estimates. These values will then be adjusted, if necessary, based on Construction Pricing Indices or other appropriate inflation indices.

#### Fee Assessment/Responsibility for LOS Improvements

Many A few mechanisms exist for the purpose of assigning responsibility for mitigation of LOS traffic impacts to the development. A project may be fully or partially responsible for implementing an improvement needed and may do so through construction of the improvement as part of the project or through agreement between the City and the developer to define the terms of the implementation of the improvement.

Fair-share responsibility of an improvement may be identified if the LOS traffic impact is identified in the cumulative (or "pending") scenario. The fair-share responsibility calculation is defined by the ratio of the project's contributing peak hour volume to the total peak volume at an intersection or roadway link.

For intersections, the fair-share responsibility is defined as the project's contributing peak hour volume at all approaches divided by the total peak hour volume at all approaches, during the peak hour period in which an impact is identified. If an impact occurs during both the morning and evening peak periods, then the project is responsible for the higher fair-share percentage calculated.

For roadway links, the fair-share responsibility is determined based on a multi-step process. First, the higher percentage calculated by direction, based on the contributing peak hour volume for each directional link of the roadway segment divided by the total peak hour volume for each directional link of the roadway segment. If an impact occurs during both the morning and evening peak periods, then the project is responsible for the highest fair-share percentage calculated by directional link and by peak period.

Development within the North Irvine Mitigation Program (NITM) are subject to the NITM Ordinance in terms of NITM mitigation fee responsibilities. Sections of the NITM Ordinance are included as Exhibit 7. Some of these are listed in Exhibit 6.

### Transportation Demand Management

In some cases, there are opportunities to provide for transportation alternatives to the single occupant automobile, or to shift the impacts of automobile use. Developers may be required to provide facility improvements in accordance with the City's Trip Reduction Ordinance (TRO), City Council Ordinance No. 91-22, subsequently updated as City Council Ordinance No. 96-03, that encourage use of alternative modes of transportation to and from the worksite. In addition, projects within the Irvine Spectrum and Irvine Business Complex (IBC) will be subject to Spectrum Trip Reduction and IBC Trip Reduction Programs.

The City will examine the feasibility of implementing a policy which would allow applicants a reduction in trip generation rates for the subject project's study. When the City establishes such a program, a reduction in trip generation can be granted by the City, at the applicant's request, for the project. The City may require, at a minimum, that the following information be included in the request: 1) demonstration of the ability to achieve the specific levels of trip reduction assumed; and 3) documentation of the monitoring and compliance program to ensure success of its TDM program. The City may require additional mitigation or the payment of fees if the project generates trips in excess of the levels approved through the study.

Another approach may be to determine allowable trip thresholds instead of granting square footage thresholds. Monitoring shall be used to establish progress toward trip thresholds. The applicant shall be responsible to limit trip generation through ridesharing, transit, and other means. If the applicant fails to limit trips to the approved threshold, the City may require the applicant to forego future development (for phased projects), provide additional mitigation measures, or pay fees. Each applicant shall be conditioned to implement a monitoring and compliance program to ensure the successful implementation of its TDM program.

### CONCLUSION

This section of the study shall summarize the required improvements and the proposed mitigation measures. This shall include:

- Roadway Improvements
- Resultant LOS with Proposed Improvements in Place
- Costs

- Schedule
- Funding Sources
- TDM Inclusion
- Identification of TDM Monitoring
- Results of VMT impact analysis (if applicable)

#### INTERJURISDICTIONAL IMPACTS/REVIEWS

Review of the study by jurisdictions potentially impacted by the development shall be consistent with CEQA and any agreements that may be in place between the City and that jurisdiction.

Any comments received from the affected jurisdiction shall be addressed by the applicant, to the satisfaction of the Director of Public Works and Transportation of the City of Irvine.

If impacts on other jurisdictions are identified, such impacts shall be mitigated. The applicant shall be conditioned to enter into an agreement between the applicant (and/or his/her successors), the City of Irvine and the affected jurisdiction. This agreement shall establish the manner in which the improvements will be made, timing of those improvements and the procedure by which funding shall be made by the applicant for the improvements.



**EXHIBITS**

**EXHIBIT 1**

**~~TRAFFIC/LIMITED SCOPE~~ TRAFFIC STUDY OUTLINE**

- I. Executive Summary
- II. Introduction
  - A. Study Area
- III. Existing Conditions
- IV. Existing Conditions with Proposed Development
- V. Future Traffic Without Proposed Development
  - A. Projected Traffic
  - B. Committed Improvements
- VI. Proposed Project Impacts
  - A. Model Trip Generation
  - B. Adjustments to Trip Generation
  - C. Trip Distribution and Trip Assignment
  - D. Phased Projects
- VII. Future Traffic With Proposed Development
- VIII. Cumulative Impact Analysis (if applicable)
- IX. Analysis/Performance Criteria
- X. Special Analyses/Issues (~~Optional~~As Needed)
  - ~~A.~~ A. ~~Site Access Analysis~~
  - ~~B.~~ B. ~~Transit Connectivity and Pedestrian Circulation~~
  - ~~C.~~ C. ~~Congestion Management Program~~ (CMP)  
Consistency/Requirements
  - ~~D.~~ D. ~~Circulation Phasing Locations~~  
~~—CEQA VMT Analysis Summary~~
  - ~~E.~~ E. ~~Site Access Analysis~~
  - ~~CB.~~ CB. ~~Traffic Signals~~
  - ~~DC.~~ DC. ~~Pedestrian Circulation~~
  - ~~ED.~~ ED. ~~Others, as appropriate~~
  - ~~—~~
  - ~~F.~~ F. ~~XI. Congestion Management Program~~ (CMP)

Consistency/Requirements

- XII. Required Mitigation Measures/Recommendations
  - A. Improvement Needs
  - B. Schedule/Cost of Improvements
  - C. Fee Assessment/Responsibility for Improvements
  - D. Transportation Demand Management
  
- XIII. Conclusion

**EXHIBIT 2**

**COMPREHENSIVE TRAFFIC STUDY VS LIMITED SCOPE TRAFFIC STUDY REQUIREMENTS**

A comprehensive traffic study and a limited scope traffic study are generally prepared in the same manner and under the same general criteria. The following table highlights the key differences between a comprehensive traffic study and a limited scope traffic study:

	<u>Comprehensive Traffic Study</u>	<u>Limited Scope Traffic Study</u>
Study Area	Per guidelines	Limited to adjacent intersections
Analysis	<u>Short-term and Long-range Interim and Long Term Years, General Plan Buildout Year</u>	<u>Short-term Interim Year (/Project Buildout) Year</u>
Scopes of Work	<u>Approved by Director of Public Works and Transportation or assigned staff under the direction of the Director</u>	<u>Approved by Director of Public Works and Transportation or assigned staff under the direction of the Director</u>
Approval	<u>Director of Public Works and Transportation recommendation to the Planning Commission body and/or City Council</u>	<u>Director of Public Works and Transportation recommendation to the Commission body and/or City Council Staff</u>

### EXHIBIT 3

#### Traffic Study Types

Traffic Study Type	When is this type of study required?	What is included in this study?
<b>APPLICABLE CITYWIDE (except NITM and IBC areas)</b>		
<u>Comprehensive Traffic Study</u>	<ul style="list-style-type: none"> <li>• If proposed project requires a General Plan Amendment/Zone Change (GPA/ZC); or</li> <li>• Proposed project is estimated to generate 50 or more peak hour trips beyond existing or previously entitled use(s)</li> </ul>	<ul style="list-style-type: none"> <li>• Potential project impacts (including cumulative impacts)</li> <li>• Existing, short-term, long-range, built out conditions</li> <li>• Large study area</li> <li>• Includes Access Study if site access and operations known</li> </ul>
<u>Limited-Scope Traffic Study</u>	If proposed project is estimated to generate between 1 and 49 peak hour trips beyond existing or previously entitled use(s).	<ul style="list-style-type: none"> <li>• Potential project impacts (incl. cumulative impacts)</li> <li>• Existing and short-term conditions</li> <li>• Localized study area</li> <li>• Includes Access Study</li> </ul>
<u>Access Study</u>	If proposed project includes a new, removed or relocated driveway with no other changes to land use or estimated peak hour trips that would trigger the need for a comprehensive or limited-scope traffic study	Analysis of site access and operations (driveway lengths, turn pocket lengths, e
<b>APPLICABLE IN NORTH IRVINE TRANSPORTATION MITIGATION (NITM) AREA ONLY</b>		
<b><i>(Planning Areas 1, 5, 6, 9, 40 and 51)Comprehensive Traffic Study</i></b>		

<u>Comprehensive Traffic Study</u>	<u>If proposed project requires a General Plan Amendment/Zone Change (GPA/ZC);</u>	<ul style="list-style-type: none"> <li>• <u>Potential project impacts (including cumulative impacts)</u></li> <li>• <u>Existing, short-term, long-range, build-out conditions</u></li> <li>• <u>Extensive NITM study area (defined in NITM Ordinance)</u></li> <li>• <u>Includes Access Study if site access and operations known</u></li> </ul>
<u>Map-Level Traffic Study</u>	<ul style="list-style-type: none"> <li>• <u>If proposed project includes a large-scale ("A" map) that entitles land uses; or</u></li> <li>• <u>If proposed project includes a more detailed ("B" map) that increases trips above prior approved map-level traffic study.</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>Potential project impacts</u></li> <li>• <u>Short-term condition</u></li> <li>• <u>Extensive NITM study area</u></li> <li>• <u>Includes Access Study</u></li> </ul>
<u>Traffic Evaluation Report</u>	<ul style="list-style-type: none"> <li>• <u>If proposed project is determined to be "additive" consistent with Section 9-0-3(C) of the City's Municipal Code and General Plan Land Use Element Objective A-4; or</u></li> <li>• <u>If proposed project includes a change in land uses or roadway network from a previously approved project "A" map or "B" map; and</u></li> <li>• <u>If proposed project does not propose an increase in trips.</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>Potential project impacts to confirm findings of previously approved project</u></li> <li>• <u>Smaller study area than previously approved study</u></li> <li>• <u>Includes Access Study</u></li> </ul>
<u>Trip Generation/Unit Comparison Report</u>	<ul style="list-style-type: none"> <li>• <u>If proposed project includes a change in land uses from a previously approved project "A" map or "B" map; and</u></li> <li>• <u>If proposed project does not change roadway network from previously approved map; and</u></li> <li>• <u>If proposed project does not propose an increase in trips.</u></li> </ul>	<u>Comparison of project description and trips against previously approved project and trips</u>
<b>APPLICABLE IN IRVINE BUSINESS COMPLEX (IBC) ONLY</b> <i>(Planning Area 36)</i>		
<u>Comprehensive Traffic Study</u>	<ul style="list-style-type: none"> <li>• <u>If proposed project requires a General Plan Amendment/Zone Change (GPA/ZC); or</u></li> <li>• <u>If proposed project requires a Transfer of Development Rights (TDR); or</u></li> <li>• <u>If proposed project is estimated to generate 50 or more peak hour trips beyond existing or previously entitled use(s).</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>Potential project impacts (including cumulative impacts) for multiple study years: existing, short-term, long-range build-out conditions</u></li> <li>• <u>Large study area</u></li> <li>• <u>May include ADT Waiver Report if project proposes an ADT beyond the ADT DIV</u></li> <li>• <u>Includes Access Study if site access and operations known</u></li> </ul>
<u>Limited-Scope Traffic Study</u>	<u>If proposed project is estimated to generate between 1 and 49 peak hour trips beyond existing or previously entitled use(s).</u>	<ul style="list-style-type: none"> <li>• <u>Potential project impacts (incl. cumulative impacts)</u></li> <li>• <u>Existing and short-term conditions</u></li> <li>• <u>Localized study area</u></li> <li>• <u>May include ADT Waiver Report if project proposes an ADT beyond the ADT DIV</u></li> <li>• <u>Includes Access Study</u></li> </ul>

<u>Access Study</u>	<u>If proposed project includes a new, removed or relocated driveway and no other changes to land use or estimated peak hour trips are proposed that would trigger the need for a comprehensive or limited-scope traffic study</u>	<u>Site access and operations (i.e., driveway lengths, turn pocket lengths, etc.)</u>
<u>Average Daily Trips (ADT) Waiver Report</u>	<u>If proposed project results in additional average daily trips (ADT) beyond the ADT Development Intensity Values (DIVs) assigned to that parcel</u>	<ul style="list-style-type: none"> <li>• <u>Potential project impacts (including cumulative impacts) for adjacent roadway links in the existing, short-term, long-range and build-out conditions</u></li> <li>• <u>Localized study area</u></li> </ul>

**EXHIBIT 4EXHIBIT-3**

**EXPANSION OF USE ASSUMPTIONS MATRIX**

If a proposed development exceeds its trip budget or zoning entitlement, an analysis is performed using the following matrix:

Horizon Year	Vacant	Existing Development
<u>Short-term/ Interim Year</u> (currently Year 2007)	<b>Baseline</b> – zero <b>With Project</b> - Total development proposed by this timeframe	<b>Baseline</b> – Existing development on the ground <b>With Project</b> – Total development proposed by this timeframe including existing development
<u>Long-range Interim Year -term</u> (currently Year 2025)	<b>Baseline</b> – approved zoning <b>With Project</b> – Total development proposed by this timeframe	<b>Baseline</b> – Existing development on the ground with approved zoning <b>With Project</b> – Total development proposed by this timeframe including existing development
<u>General Plan Long Term/Buildout</u> (currently Post 2025)Year	<b>Baseline</b> – approved zoning <b>With Project</b> – Total development proposed by this timeframe	<b>Baseline</b> – Existing development on the ground with approved zoning <b>With Project</b> – Total development proposed by this timeframe including existing development

Note: All previously approved/analyzed entitlement is assumed to have been mitigated



CONGESTION MANAGEMENT PROGRAM  
(CMP) MONITORING CHECKLIST  
LAND USE COORDINATOR COMPONENT

The CMP legislation requires that the CMP Agency monitor the implementation of the Orange County CMP, including CMP land use coordination component requirements. The following is a CMP Monitoring Checklist for the Land Use Coordination Component which has been developed to monitor impacts on CMP Highway System (CMPHS) links and intersections.

1. Project Applicant: \_\_\_\_\_
2. Project Name: \_\_\_\_\_
3. Project Description (Describe proposed land uses, square footage, # of dwelling units, size of parcel, etc.): \_\_\_\_\_
4. Previous Approvals: \_\_\_\_\_
5. Address/Location: \_\_\_\_\_
6. Case Number: \_\_\_\_\_
7. Date of Case Submittal: \_\_\_\_\_
8. Total Average Daily Trips: \_\_\_\_\_
9. Level of Service at CMP intersection: \_\_\_\_\_

Development Project Submittal:

10. Does the proposed development project generate 2,400 or more Average Daily Trips?  
\_\_\_\_\_ Yes \_\_\_\_\_ No

11. Does the proposed development project generate more than 1,600 Average Daily Trips with direct access to, or in close proximity to, a CMP Highway System?  
\_\_\_\_\_ Yes \_\_\_\_\_ No

\*\* If you have answered NO to Items 10 and 11, a CMP Traffic Study is not required.

\*\* If you have answered YES to Items 10 and 11, a CMP Traffic Study is required. Please continue.

CMP Traffic Impact Analysis:

12. Did the Traffic Study identify whether any CMP Highway System links/intersections would exceed their established Level of Service standard as a result of project related traffic?  
\_\_\_\_\_ Yes \_\_\_\_\_ No

13. If so, which CMPHS links/intersections and proposed mitigation?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

14. Which, if any, of these impacted CMPHS links/intersections are located outside the boundaries of the City of Irvine?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

15. Did the City of Irvine participate in interjurisdictional discussions with the affected jurisdictions to develop a mitigation strategy for each impacted link/intersection?  
\_\_\_\_\_ Yes \_\_\_\_\_ No

If Yes to 15, briefly explain: \_\_\_\_\_

Projects Exempt From CMP Requirements:

16. Is the proposed development project exempt from CMP requirements?  
\_\_\_\_\_ Yes \_\_\_\_\_ No

17. If so, please identify why the project was exempt from CMP requirements.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\*\* A brief explanation to those items answered NO should be provided by the Transportation Engineer/Analyst.

Checklist Reviewed By:

\_\_\_\_\_  
Director of Public Works and Transportation

\_\_\_\_\_  
Date

**EXHIBIT 56** [SM15]

**CMP TRAFFIC IMPACT ANALYSIS EXEMPT PROJECTS**

Those projects which are exempt from the mandatory CMP Traffic Impact Analysis are listed below. This list is not meant to be all-inclusive. Any inquiries regarding exemptions shall be transmitted in writing to the City of Irvine and the Orange County Transportation Authority, attention CMP Program Manager.

1. Applicants for subsequent development permits (i.e., conditional use permits, subdivision maps, site plans, etc.) for entitlement specified in and granted in a development agreement entered into prior to July 10, 1989.<sup>3</sup>
2. Any development application generating vehicular trips below the Average Daily Trip (ADT) threshold for CMP Traffic Impact Analysis, specifically, any project generating less than 2,400 ADT total, or any project generating less than 1,600 ADT directly onto the CMPHS.<sup>2,3</sup>
3. Final tract and parcel maps.<sup>1,2,3</sup>
4. Issuance of building permits.<sup>1,2,3</sup>
5. Issuance of Certificates of Use and Occupancy.<sup>1,2,3</sup>
6. Minor modifications to approved developments where the location and intensity of project uses have been approved through previous and separate local government actions prior to January 1, 1992.<sup>1,2,3</sup>

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<sup>1</sup>A CMP TIA is not required for these projects only in those instances where development approvals granting entitlement for the project sites were granted prior to the effective date of CMP TIA requirements (i.e., January 1, 1992).

<sup>2</sup>Exemption from conduction of a CMP TIA shall not be considered an exemption from such projects' participation in approved, transportation fee programs established by the local jurisdiction.

<sup>3</sup>Vehicular trips generated by CMP TIA-exempt development applications shall not be factored out in any traffic analyses or levels of service calculations for the CMPHS.

-----  
Source: Orange County Congestion Management Program-2001, Orange County Transportation Authority

EXHIBIT 67

North Irvine Traffic Mitigation (NITM) City Council Ordinance 03-61<sup>[SM16]</sup>

~~MITIGATION MECHANISM EXAMPLES~~

~~(IMPACT FEES~~<sup>[SM17])</sup>

[SM18]



CITY COUNCIL RESOLUTION NO. 03-61

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF IRVINE ADOPTING SCOPE OF WORK REQUIREMENTS FOR THE NORTH IRVINE TRANSPORTATION MITIGATION (NITM) PROGRAM

WHEREAS, by City Council Ordinance No. 03-21, the City of Irvine has adopted the North Irvine Transportation Mitigation ("NITM") Program, for the purpose of funding, implementing and expediting the coordinated and phased installation of required traffic and transportation improvements identified in previously certified CEQA documents in connection with land use entitlements for City Planning Areas 1, 2, 5, 6, 8, 9, 30, 40, and 51; and

WHEREAS, Section 6-3-703.E of the NITM Program requires the City Council to adopt, by Resolution, the required scope of work for a Comprehensive NITM Traffic Study, a Transfer of Intensity Analysis, a NITM Future Development Area Fee Allocation Plan, and a TTM/TPM Traffic Study, each of which is required to be conducted and/or prepared pursuant to the NITM Program (the "NITM Scopes of Work"); and

NOW THEREFORE BE IT RESOLVED that the City Council does hereby resolve as follows:

1. The scopes of work attached hereto and incorporated herein as Exhibit "A" as the NITM Scopes of Work are hereby approved.
2. Pursuant to Section 6-3-703.E of the NITM Program, the Director of Community Development is hereby authorized to revise any of the attached NITM Scopes of Work upon the unanimous recommendation of all of the members of the NITM Advisory Committee.

PASSED AND ADOPTED by the City Council of the City of Irvine at a regular meeting held on the 27th day of May 2003.

  
MAYOR OF THE CITY OF IRVINE

ATTEST:

  
CITY CLERK OF THE CITY OF IRVINE

STATE OF CALIFORNIA )  
COUNTY OF ORANGE ) SS  
CITY OF IRVINE )

I JERI L. STATELY, City Clerk of the City of Irvine, HEREBY DO CERTIFY that the foregoing resolution was duly adopted at a regular meeting of the City Council of the City of Irvine, held on the 27th day of May 2003.

AYES: 5 COUNCILMEMBERS: Krom, Mears, Shea, Ward and Agran  
NOES: 0 COUNCILMEMBERS: None  
ABSENT: 0 COUNCILMEMBERS: None

  
CITY CLERK OF THE CITY OF IRVINE

## Comprehensive NITM Traffic Study

### I. Background

The North Irvine Transportation Mitigation (NITM) Program was initially conducted in conjunction with the entitlement of Northern Sphere development, Planning Area 40, and the City of Irvine's Great Park (the "NITM Properties"). This program will provide the required funding for implementing the identified circulation improvements within the study area. It is recognized that this program will require periodic updates in response to the changes in land use and circulation system surrounding the analysis area.

Furthermore, changes may be warranted in response to applications for modified development plans within the areas subject to the fee Ordinance. Therefore, the following procedures are established for conducting Comprehensive NITM Traffic Studies.

### II. When A Comprehensive NITM Traffic Study is Required

A Comprehensive NITM Traffic Study is required to be prepared in conjunction with any of the following:

- 5-Year Reviews or Interim Reviews to reflect the latest land use, circulation, traffic modeling assumptions and procedures, and significant changes in the development features outside the NITM Properties. (See Section III.D.)
- Interim Reviews, as requested by an applicant, to address a proposed General Plan Amendment/Zone Change affecting one or more Future Development Areas. (See Section III.E.)
- Interim Reviews, as requested by an applicant, to address potential reduction to the List of NITM Improvements and associated NITM Fees due to land use intensity reduction within one or more Future Development Areas. (See Section III.F.)

The City shall initiate 5-Year Reviews in accordance with the NITM Program until such time that all required NITM Improvements are implemented and the collected fees are expended.

All Comprehensive NITM Traffic Studies shall be reviewed by the NITM Advisory Committee.

### III. Comprehensive NITM Traffic Study Scope and Methodology

Each Comprehensive NITM Traffic Study shall contain the following key elements and shall be prepared in accordance with the methodology outlined below:

## Comprehensive NITM Traffic Study

### A. Executive Summary

The type of review shall be discussed in this section. If the review is related to a project application, a short, clear, and concise description of the project triggering the review and the analysis findings shall be included in this section. Also included in this section shall be a summary of the recommended changes to the List of NITM Improvements and the correspondingly recommended NITM Fee modifications.

### B. Introduction

This section of the report shall include a comprehensive description of the project including the size of the Future Development Area and existing and proposed uses within each zoning category. Also included in this section shall be a detailed comparison of the proposed project to the assumptions included in the April 30, 2003 NITM Program Nexus Study prepared by Austin-Foust Associates or the latest Comprehensive NITM Traffic Study, whichever is more current.

The following elements shall be identified for the purpose of conducting the Comprehensive NITM Traffic Study:

#### 1. Project Site

Project-specific information.

A project vicinity map showing the existing and the planned roadways to serve the project site, and a project site plan shall be included in this section of the report.

#### 2. Study Area Boundary

The study area boundary for all Comprehensive NITM Traffic Studies shall be as shown on Exhibit A.

#### 3. Existing, General Plan and Proposed Site Uses

Existing site uses and zoning as included in the April 30, 2003 NITM Program Nexus Study prepared by Austin-Foust Associates or the latest Comprehensive NITM Traffic Study, whichever is more current, shall be described. Proposed land uses shall be described and tabulated.

### C. Existing Conditions

A summary of the status of the List of NITM Improvements (i.e. whether constructed, funding commitments from other programs) shall be discussed in this section.

D. 5-Year Reviews And Interim Reviews

It is anticipated that land use patterns and circulation system conditions will change in the future. These changes may impact the need for certain unconstructed NITM Improvements. Therefore, this review procedure shall be conducted to assess the need for the NITM Improvements previously identified on the List of NITM Improvements. This review procedure will not add any further projects to the List of NITM Improvements but could identify that some NITM Improvements are not needed or identify alternative improvements to the current List of NITM Improvements.

The following future conditions shall be analyzed for 5-Year Reviews and Interim Reviews, except for (i) Interim Reviews associated with a General Plan Amendment/Zone Change (GPZ/ZC) and (ii) project intensity reductions, which are discussed in Sections III.E. and III.F.:

1. New Interim Year (currently Year 2007)

The latest adopted Interim Year ITAM shall be used for conducting this study. Land use and circulation assumptions within the NITM study area shall be reviewed to ensure consistency with the latest approvals and project features. The model network and land use assumptions shall be updated, as required. The purpose of this analysis is to aid the City in its identification of NITM Improvement phasing priorities or alternative improvements.

2. Interim Year Long Term (currently Year 2025)

The latest adopted Interim Year Long Term ITAM (currently Year 2025) shall be used for conducting this analysis. Land use and circulation assumptions within the NITM study area shall be reviewed to ensure consistency with the latest approvals and project features. The model network and land use assumptions shall be updated, as required. The purpose of this analysis is to determine if any NITM Improvements are no longer required based on updated assumptions or if alternative improvements are appropriate.

3. Build-out (Currently Post 2025)

The latest adopted Build-out Year (currently Post 2025) ITAM shall be used for conducting this study. Land use and circulation assumptions within the NITM study area shall be reviewed to ensure consistency with the latest approvals and project features. The model network and land use assumptions shall be updated, as required. The purpose of this analysis is to determine if any NITM Improvements are no longer required based on updated assumptions or if alternative improvements are appropriate.

## Comprehensive NITM Traffic Study

### 4. Cost Estimates

Cost estimates for all projects on the List of NITM Improvements shall be updated for 5-Year Reviews only. Actual costs will be reflected for constructed improvements. Updated estimates will be prepared for unconstructed improvements.

### 5. Fair Share Allocation Update

Upon review of the List of NITM Improvements resulting from the analysis conducted in Sections III.D.2. and III.D.3. and by utilizing the ITAM model version and methodology used in the April 30, 2003 NITM Program Nexus Study prepared by Austin-Foust Associates or the latest Comprehensive NITM Traffic Study, whichever is more current, NITM Fees shall be recalculated as specified in Section 6-3-706 of the Ordinance. The fair-share percentage allocation to any Future Development Area shall be the same allocation as established in the April 30, 2003 NITM Program Nexus Study prepared by Austin-Foust Associates or as revised with the Interim Reviews conducted per Sections III.E. and III.F. or as revised through a Transfer of Intensity Analysis. Any new improvements which have not been included in the List of NITM Improvements are assumed to have been caused by land use/circulation changes outside of the NITM Properties and thus will not be added to the List of NITM Improvements. However, the 5-Year Review and Interim Reviews will include a discussion on alternative funding strategies that could be adopted to ensure construction of these new improvement needs.

### E. Interim Reviews For General Plan Amendment/Zone Change Applications

As discussed earlier, project related Interim Reviews are required to be prepared for several scenarios. A GPA/ZC in a Future Development Area or deletion of a General Plan level roadway will require an Interim Review. The impacts of such a land use change or road deletion must be analyzed and appropriate potential mitigation measures must be identified. The applicant is 100% responsible for implementing any new circulation mitigation measures resulting from the GPA/ZC that are not included in the List of NITM Improvements. Also, the applicant shall be responsible for any increased fair-share allocation for NITM Improvements allocated to the future development of the Future Development Area in which the subject GPA/ZC is located, which would simultaneously result in a reduction of fair-share allocation to other Future Development Areas, as specified in Section 6-3-706 of the Ordinance.

GPA/ZC associated NITM Reviews shall conduct the following analysis:

## Comprehensive NITM Traffic Study

1. Interim Year (currently Year 2007)

The latest adopted interim year ITAM version shall be revised to reflect the proposed project changes and new findings shall be presented regarding the phasing needs for NITM Improvements or alternative improvements.

2. Interim Year Long Term (currently Year 2025)

The latest adopted Interim Year Long Term (currently Year 2025) shall be revised to reflect the proposed project changes. The purpose of this analysis shall be to determine if a) any new improvements are needed, b) any NITM Improvements are no longer needed or c) alternative improvements are appropriate.

3. Build-out (currently Post 2025)

The latest adopted Build-out ITAM (currently Post-2025) shall be revised to reflect the proposed project changes. The purpose of this analysis shall be to determine if a) any new improvements are needed, b) any NITM Improvements are no longer needed or c) alternative improvements are appropriate.

4. NITM Fee Update for GPA/ZC

Upon review of the List of NITM Improvements resulting from the analysis conducted in Section III.E.2. and III.E.3., and by utilizing the ITAM model version and methodology used in the April 30, 2003 NITM Program Nexus Study prepared by Austin-Foust Associates, the NITM Fees shall be recalculated per the requirements of Section 6-3-706 of the Ordinance and reflecting any fair-share allocation modifications based on previously approved 5-Year Reviews, Interim Reviews and/or Transfer of Intensity Analyses. However, the fair-share allocation to any Future Development Area, except the Future Development Area site included in the GPA/ZC, shall not exceed the allocation established prior to the Interim Review. In no case will the NITM Fees for a Future Development Area which is not the subject of a GPA/ZC be increased.

F. Interim Reviews For Project Intensity Reductions

Intensity reductions in a Future Development Area without a GPA/ZC would potentially reduce the number or extent of NITM Improvements identified in the List of NITM Improvements. Such reductions shall not result in the increase of NITM Fees to any other Future Development Areas. Therefore, the following scenarios may be analyzed by the project applicant for determining if NITM Fees can be reduced:

## Comprehensive NITM Traffic Study

### 1. Interim Year (Currently 2007)

The latest adopted interim year ITAM (currently 2007) study traffic model shall be revised to reflect proposed project changes if such changes might impact the City's assessment of NITM Improvement priorities or alternatives.

### 2. Interim Year Long Term (currently 2025)

The latest adopted Interim Year Long Term ITAM (currently 2025) shall be revised to reflect the proposed project changes and new findings will be presented including updated improvements. The purpose of this analysis is to determine if the reduced land use intensity will eliminate any needed NITM Improvements or result in alternative improvements.

### 3. Revised Build-out (currently Post 2025)

The latest adopted NITM analysis traffic model shall be revised to reflect the proposed project changes and new findings shall be presented including updated improvements. The purpose of this analysis is to determine if the reduced land use intensity will eliminate any needed NITM Improvements or result in alternative improvements.

### 4. NITM Fee Update For Intensity Reductions

Upon review of the List of NITM Improvements resulting from the analysis conducted in Sections III.F.2. and III.F.3., and by utilizing the ITAM model version and methodology used in the April 30, 2003 NITM Program Nexus Study prepared by Austin-Foust Associates, the NITM Fees shall be recalculated by eliminating any NITM Improvements no longer needed and reflecting any fair-share allocation modifications based on previously approved 5-Year Reviews, Interim Reviews and/or Transfer of Intensity Analyses. The fair-share percentage allocation to any Future Development Area for the remaining projects on the List of NITM Improvements shall be the same level as established prior to the Interim Review.

## IV. Comprehensive Traffic Study Technical Elements

### A. Fair-Share Allocation

It is recognized that updated trip generation rates, circulation assumptions and land use assumptions will be used in Comprehensive NITM Traffic Studies prepared in conjunction with the NITM Program. However, for the purpose of recalculating the fair-share allocation of Future Development Areas for the List of NITM Improvements, the methodology and assumptions (i.e. trip generation rates)

## Comprehensive NITM Traffic Study

shall be consistent with the methodology and assumptions used in the April 30, 2003 NITM Program Nexus Study prepared by Austin-Foust Associates.

B. Trip Distribution

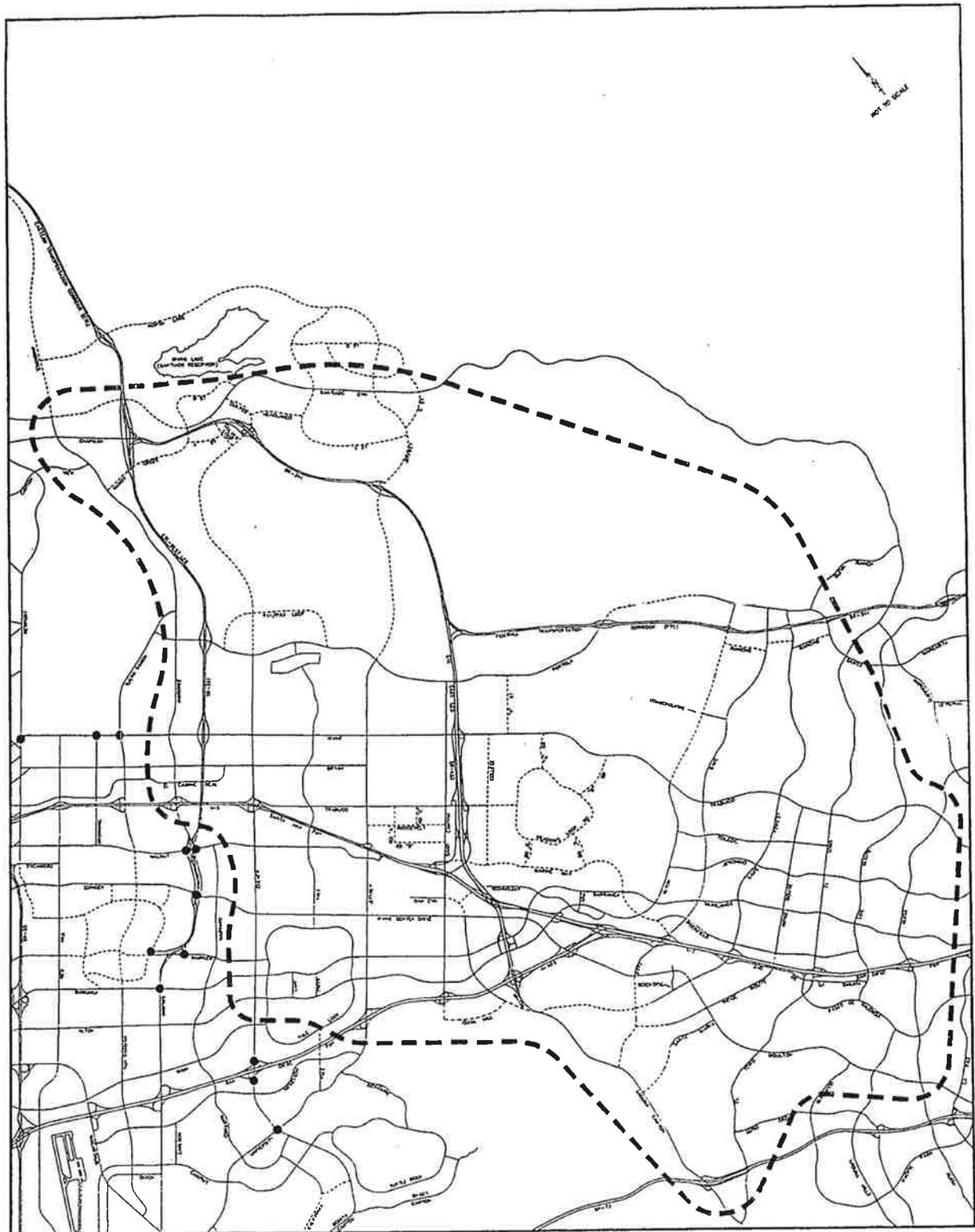
Trip distribution shall be based on ITAM model distribution.

C. Trip Assignment

Trip assignment shall be based on ITAM model assignment.

V. Performance Criteria

The performance criteria to re-assess the List of NITM Improvements and revise NITM Fees for 5-Year Reviews and Interim Reviews shall be consistent with the methodology utilized in the April 30, 2003 NITM Program Nexus Study prepared by Austin-Foust Associates, and is attached as Exhibit B. It is recognized that performance criteria for assessing the impacts for a proposed GPA/ZC for CEQA purposes would be updated, as applicable.



**Legend**

Study area boundary.  
 Intersections analyzed outside of the defined study area.

Figure 1-1  
 NITM PROGRAM TRAFFIC ANALYSIS  
 STUDY AREA

**EXHIBIT A**

Table 1-2  
CIRCULATION SYSTEM PERFORMANCE CRITERIA

**I. Arterial Roads**

**V/C Calculation Methodology**

Level of service to be based on average daily traffic (ADT) volume/capacity (V/C) ratios calculated using the following capacities:

**City of Irvine**

Major Arterial	8 lane	72,000
	6 lane	54,000
Primary Arterial	4 lane	32,000
Secondary Arterial	4 lane	28,000
Commuter	2 lane	13,000

**City of Orange**

Major Arterial	8 lane	75,000
	6 lane	56,300
Primary Arterial	4 lane	37,500
Secondary Arterial	4 lane	24,000
Commuter	2 lane	15,000

**County of Orange and Cities of Aliso Viejo, Laguna Hills, Laguna Woods, Lake Forest, Mission Viejo and Tustin**

Major Arterial	8 lane	75,000
	6 lane	56,300
Primary Arterial	4 lane	37,500
Secondary Arterial	4 lane	25,000
Commuter	2 lane	12,500

As required by the City of Irvine Link Capacity Analysis guidelines, arterial deficiencies identified based on ADT V/C ratios are to be further examined using peak hour data.

**Performance Standard**

CMP arterials outside the City of Irvine, PA33 (Spectrum 1/Irvine Center) arterials and Lake Forest commercial streets: Level of Service E (peak hour V/C less than or equal to 1.00).

All other arterials: Level of Service D (peak hour V/C less than or equal to 0.90).

**II. Intersections**

**V/C Calculation Methodology**

Level of service to be based on peak hour intersection capacity utilization (ICU) values calculated using the following assumptions:

Saturation Flow Rate: 1,700 vehicles/hour/lane

Table 1-2 (cont)  
CIRCULATION SYSTEM PERFORMANCE CRITERIA

**II. Intersections (cont)**

**V/C Calculation Methodology (cont)**

Clearance Interval: 0.05  
Right-Turn-On-Red Utilization Factor\*: 0.00 for County of Orange intersections, 0.75 for intersections in all other jurisdictions.

\* "De-facto" right-turn lane is assumed in the ICU calculation if 19 feet from edge to outside of through-lane exists and parking is prohibited during peak periods.

**Performance Standard**

CMP and Irvine Planning Area 33 (Spectrum 1/Irvine Center) intersections, the Bake Parkway/I-5 northbound ramp intersection, and intersections of Lake Forest commercial streets:  
Level of Service E (peak hour ICU less than or equal to 1.00).

All other intersections: Level of Service D (peak hour ICU less than or equal to 0.90).

**III. Freeway/Tollway Mainline Segments**

**V/C Calculation Methodology**

Level of service to be based on peak hour V/C ratios calculated using the following capacities:

2,000 vehicles per hour per lane (vphpl) for mixed-flow (general purpose) lanes.

1,600 vphpl for a one-lane buffer-separated HOV facility.

1,750 vphpl for a two-lane buffer-separated HOV facility.

**Performance Standard**

Level of Service E (peak hour V/C less than or equal to 1.00).

**IV. Freeway/Tollway Ramps**

**V/C Calculation Methodology**

Level of service to be based on peak hour V/C ratios calculated using the following capacities:

**Metered On-Ramps**

A maximum capacity of 900 vehicles per hour (vph) for a one-lane metered on-ramp with only one mixed-flow lane at the meter.

Table 1-2 (cont)  
CIRCULATION SYSTEM PERFORMANCE CRITERIA

**IV. Freeway/Tollway Ramps (cont)**

**V/C Calculation Methodology (cont)**

**Metered On-Ramps (cont)**

A maximum capacity of 1,080 (20 percent greater than 900) vph for a one-lane metered on-ramp with one mixed-flow lane at the meter plus one high occupancy vehicle (HOV) preferential lane at the meter.

A maximum capacity of 1,500 vph for a one-lane metered on-ramp with two mixed-flow lanes at the meter.

A maximum capacity of 1,800 vph for a two-lane metered on-ramp with two mixed-flow lanes at the meter.

**Toll Ramps (On-Ramps and Off-Ramps)**

A maximum capacity of 1,500 vph for a one-lane toll ramp with one cash (stopped) lane and one FasTrak (unstopped) lane.

**Non-Metered and Non-Tolled On-Ramps and Off-Ramps**

A maximum capacity of 1,500 vph for a one-lane ramp.

A maximum capacity of 2,250 (50 percent greater than 1,500) vph for a two-lane on-ramp that tapers to one merge lane at or beyond the freeway mainline gore point and for a two-lane off-ramp with only one auxiliary lane.

A maximum capacity of 3,000 vph for a two-lane on-ramp that does not taper to one merge lane and for a two-lane off-ramp with two auxiliary lanes.

**Performance Standard**

Level of Service E (peak hour V/C less than or equal to 1.00).

Abbreviations: CMP – Orange County Congestion Management Program

EXHIBIT A-2

TENTATIVE MAPS (TTM/TPM) TRAFFIC STUDY SCOPES OF WORK

## **Tentative Maps (TTM/TPM) Traffic Study Scope-Of-Work**

The traffic study is intended to analyze the potential impacts of a proposed project on the affected segments of the circulation system and to identify appropriate mitigation measures where needed. The analysis will assess the potential impacts of a project in the short range City model horizon year scenario.

The study will address the transportation impacts of a project at the Tentative Map (TTM/TPM) level. The participation of the project in the NITM Program will address the project's long range and area-wide impacts. This study will serve as the basis of design for all internal project level roadways and it is intended to satisfy the requirements of all future phases of development within the project area, which will be developed consistent with the assumptions used in this analysis.

The Map level traffic study will also be utilized by the City in determining the priority of implementation for the List of NITM Improvements. Additionally, the City will use the information presented in these studies in evaluating the applicants' request for construction of improvements and corresponding credit and reimbursements in accordance with Section 6-3-709 of the Ordinance.

The traffic study will include the following key elements:

### **I. EXECUTIVE SUMMARY**

This section will provide a short, clear and concise description of the project and the traffic study findings. Also, included in this section will be the proposed project mitigation measures. A discussion will be included to indicate that for purposes of this traffic analysis the project is assumed to be fully built-out by the City model short range horizon year (Interim Year - currently 2007).

### **II. INTRODUCTION**

This section of the report will include a comprehensive description of the project including size of the planning area, general terrain features, existing and proposed uses within each zoning category, and key elements of the traffic analysis.

The following elements are identified for the purpose of conducting the traffic study:

Tentative Maps (TTM/TPM)  
Traffic Study Scope-Of-Work

A. Project Site

Project-specific information.

A project vicinity map showing the existing and the planned roadways to serve the project site, and a project site plan will be included in this section of the report.

B. Traffic Study Boundary

The traffic study boundary for all map level traffic studies will be consistent with the study area included in the April 30, 2003 NITM Program Nexus Study prepared by Austin-Foust Associates.

C. Existing, General Plan and Proposed Site Uses

Existing site uses and zoning will be described. Proposed land uses will be described and tabulated.

III. EXISTING CONDITIONS

A. Existing Site Uses

Existing land use on the site will be identified.

B. Existing Roadways and Intersections

The characteristics of the site's surrounding roadway network will be surveyed to verify the existing number of lanes, traffic signal locations, intersection configurations, and other visible factors which may have to be analyzed.

Existing roadway volumes, volume to capacity ratio and Level of Service at intersections will be included for the surrounding roadways and intersections adjacent to the project site.

IV. FUTURE CONDITIONS

The following future condition will be analyzed in the report:

A. Interim Year (currently 2007) without Proposed Project

The most current City of Irvine Transportation Analysis Model (ITAM) Interim Year version, with the most recently approved land uses and corresponding

Approved: \_\_\_\_\_

Date: \_\_\_\_\_

network assumptions, will be used for conducting this analysis. Any additional development beyond the existing uses in the project area that might be assumed in ITAM will be deleted for the analysis of this scenario.

**B. Interim Year (currently 2007) with Proposed Project**

The most current City of Irvine Transportation Analysis Model (ITAM) Interim Year version, with the most recently approved land uses and corresponding network assumptions, will be used for conducting this analysis. The project will be assumed to be fully built-out for this analysis.

**V. MODELING METHODOLOGY/APPROACH**

The latest adopted Short Range Horizon Year (currently 2007) version of ITAM, which has been updated with the most recently approved land uses and corresponding circulation system features, will be used for conducting the traffic analysis. The modeling methodology and post processing procedures utilized in the model will be consistent with the methodology used in the April 30, 2003 NITM Program Nexus Study prepared by Austin-Foust Associates or the latest Comprehensive NITM Traffic Study, whichever is more current.

**VI. PROPOSED PROJECT IMPACT**

**A. Trip Generation**

A summary of trip generation characteristics and trip generation rates for each and all proposed land uses will be included in the report, consistent with ITAM trip generation rates and methodology. This information will be provided in a tabular form in the report.

**B. Trip Distribution**

The directions of approach to and departure from the site will be obtained based on the ITAM distribution and will be shown on an exhibit in the report. Where modifications are needed, appropriate methodology will be presented in the report for review and approval by the City.

**C. Trip Assignment**

Trip assignment will be based on model assignment.

Approved: \_\_\_\_\_

Date: \_\_\_\_\_

**VII. PERFORMANCE CRITERIA**

The performance criteria to determine project impact and mitigation will be consistent with the City's criteria as utilized in the NITM Program analysis, which are consistent with the criteria used in Environmental Impact Reports (EIR) for Northern Sphere, Planning Area 40, and the City's Great Park. The traffic analysis performance criteria are further detailed on the attached Table 1. Also, the peak hour link analysis methodology utilized in the Northern Sphere and Great Park traffic studies will be followed for evaluating roadway capacity conditions and need for mitigation measures.

The use of and justification for utilizing the ATMS credit is subject to approval by the Director of Public Works per the applicable provisions of the City's ATMS program.

In accordance with the adopted City Council Resolutions No. 02-64 and 02-65, Level of Service "E" will be deemed acceptable in the Irvine Spectrum Area (Planning Areas 13, 30, 31, 32, 33, 34, 35, 39) and at Sand Canyon/I-5 interchange intersection.

**VIII. PHASING**

The project will be assumed to be fully built-out by Interim Year (currently 2007).

**IX. SPECIAL ISSUES**

**A. Project Site Access and Internal Circulation Analysis**

The traffic study will evaluate the design and location of the proposed project access locations. Traffic control measures, including traffic signal warrant analysis, will be completed and discussed in the study. Also, the traffic analysis will address the internal circulation system design, traffic control measures, and lane requirements. Additionally, the study will provide recommendations for left turn and right turn pocket design features and lengths at all project access points, new intersections and modified existing intersections.

**B. Pedestrian and Bicycle Circulation**

The pedestrian and bicycle circulation and corresponding traffic control measures within the project area will be discussed in this section of the report.

The report will include a discussion demonstrating how Policies a, b, and c of General Plan Objective B-3, and how Policies a-k of Objective B-4 will be met with this project.

**C. Circulation Phasing Report Intersections**

Approved: \_\_\_\_\_

Date: \_\_\_\_\_

Tentative Maps (TTM/TPM)  
Traffic Study Scope-Of-Work

Should the project adversely impact any Circulation Phasing Report identified intersections (latest City of Irvine version) within the project study area, an analysis, as required, will be included in this section of the study.

**D. CMP Checklist**

A Congestion Management Program (CMP) checklist will be completed in this section. Any affected CMP facility will be analyzed consistent with the CMP procedures.

E. Other issues as deemed appropriate by the Director of Public Works.

**X. REQUIRED MITIGATION MEASURES AND/OR RECOMMENDATIONS**

Project mitigation measures will be identified for the analysis horizon year. Based upon the results of the analysis, physical and/or operational improvements required in order to mitigate any potentially adverse project impacts will be identified in the traffic study. If NITM Improvements are proposed to be constructed as part of the project, the analysis shall be performed to identify the Level of Service at the location of the NITM Improvement both with and without the proposed NITM Improvement.

If the analysis identifies an impact at a location where there are no proposed NITM Improvements, then the applicant must implement the required improvement to mitigate this impact if the deficiency is caused by the project. However, if the project is adding to an existing deficiency at this location then the applicant will be required to pay its fair share of the required improvements to mitigate this impact. The fair share responsibility shall be determined consistent with the procedures utilized to determine NITM Fees.

**XI. CONCLUSIONS**

A summary of the results of the analysis and recommended improvements will be prepared.

**XII. REVISIONS TO TRAFFIC STUDY**

Revisions to the traffic study will be provided to respond to City of Irvine comments.

**XIII. SIGNATURE**

The traffic study will be prepared under the supervision of and signed, stamped and dated by a registered traffic engineer or a registered professional civil engineer with appropriate engineering and/or planning credentials.

Approved: \_\_\_\_\_

Date: \_\_\_\_\_

Table 1

TRAFFIC ANALYSIS PERFORMANCE CRITERIA

**I. Arterial Roads**

**V/C Calculation Methodology**

Level of service to be based on average daily traffic (ADT) volume/capacity (V/C) ratios calculated using the following capacities:

**City of Irvine**

Major Arterial	8 lane	72,000
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**City of Orange**

Major Arterial	8 lane	75,000
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Secondary Arterial	4 lane	24,000
Commuter	2 lane	15,000

**County of Orange and Cities of Aliso Viejo, Laguna Hills, Laguna Woods, Lake Forest, Mission Viejo and Tustin**

Major Arterial	8 lane	75,000
	6 lane	56,300
Primary Arterial	4 lane	37,500
Secondary Arterial	4 lane	25,000
Commuter	2 lane	12,500

**Performance Standard**

CMP arterials outside the City of Irvine, PA33 (Spectrum 1/Irvine Center) arterials and Lake Forest commercial streets: Level of Service E (peak hour V/C less than or equal to 1.00).

All other arterials: Level of Service D (peak hour V/C less than or equal to .90).

**Mitigation Requirement**

For V/C greater than the acceptable level of service, mitigation of the project contribution is required to bring link location back to acceptable level of service or to no-project conditions if project contribution is .02 or greater or greater than .03 for CMP roadways outside the City of Irvine (the impact threshold specified in the CMP).

(continued)

Approved: \_\_\_\_\_

Date: \_\_\_\_\_

Tentative Maps (TTM/TPM)  
Traffic Study Scope-Of-Work

Table 1 (cont)  
TRAFFIC ANALYSIS PERFORMANCE CRITERIA

**II. Intersections**

**V/C Calculation Methodology**

Level of service to be based on peak hour intersection capacity utilization (ICU) values calculated using the following assumptions:

Saturation Flow Rate: 1,700 vehicles/hour/lane

Clearance Interval: .05

Right-Turn-On-Red Utilization Factor\*: .00 for County of Orange intersections, .75 for intersections in all other jurisdictions.

\* "De-facto" right-turn lane is assumed in the ICU calculation if 19 feet from edge to outside of through-lane exists and parking is prohibited during peak periods.

**Performance Standard**

CMP and Irvine Planning Area 33 (Spectrum 1/Irvine Center) intersections, the Bake Parkway/I-5 northbound ramp intersection, and intersections of Lake Forest commercial streets:  
Level of Service E (peak hour ICU less than or equal to 1.00).

All other intersections: Level of Service D (peak hour ICU less than or equal to .90).

**Mitigation Requirement**

For ICU greater than the acceptable level of service, mitigation of the project contribution is required to bring intersection back to acceptable level of service or to no-project conditions if project contribution is greater than .03 at CMP locations (the impact threshold specified in the CMP), .02 or greater at locations in the Cities of Aliso Viejo, Irvine, Laguna Hills, Laguna Woods, Lake Forest, Mission Viejo, Orange and Tustin, and .01 or greater at County of Orange locations (the impact threshold specified in the GMP).

**III. Freeway/Tollway Mainline Segments**

**V/C Calculation Methodology**

Level of service to be based on peak hour V/C ratios calculated using the following capacities:

2,000 vehicles per hour per lane (vphpl) for mixed-flow (general purpose) lanes.

1,600 vphpl for a one-lane buffer-separated HOV facility.

1,750 vphpl for a two-lane buffer-separated HOV facility.

**Performance Standard**

Level of Service E (peak hour V/C less than or equal to 1.00).

**Mitigation Requirement**

Approved: \_\_\_\_\_

Date: \_\_\_\_\_

Tentative Maps (TTM/TPM)  
Traffic Study Scope-Of-Work

For V/C greater than the acceptable level of service, mitigation of the project contribution is required to bring freeway/tollway mainline location back to acceptable level of service or to no-project conditions if project contribution is greater than .03 (the impact threshold specified in the CMP).

(continued)

Table 1 (cont)  
TRAFFIC ANALYSIS PERFORMANCE CRITERIA

**IV. Freeway/Tollway Ramps**

**V/C Calculation Methodology**

Level of service to be based on peak hour V/C ratios calculated using the following capacities:

**Metered On-Ramps**

A maximum capacity of 900 vehicles per hour (vph) for a one-lane metered on-ramp with only one mixed-flow lane at the meter.

A maximum capacity of 1,080 (20 percent greater than 900) vph for a one-lane metered on-ramp with one mixed-flow lane at the meter plus one high occupancy vehicle (HOV) preferential lane at the meter.

A maximum capacity of 1,500 vph for a one-lane metered on-ramp with two mixed-flow lanes at the meter.

A maximum capacity of 1,800 vph for a two-lane metered on-ramp with two mixed-flow lanes at the meter.

**Toll Ramps (On-Ramps and Off-Ramps)**

A maximum capacity of 1,500 vph for a one-lane toll ramp with one cash (stopped) lane and one FasTrak (unstopped) lane.

**Non-Metered and Non-Tolled On-Ramps and Off-Ramps**

A maximum capacity of 1,500 vph for a one-lane ramp.

A maximum capacity of 2,250 (50 percent greater than 1,500) vph for a two-lane on-ramp that tapers to one merge lane at or beyond the freeway mainline gore point and for a two-lane off-ramp with only one auxiliary lane.

A maximum capacity of 3,000 vph for a two-lane on-ramp that does not taper to one merge lane and for a two-lane off-ramp with two auxiliary lanes.

**Performance Standard**

Level of Service E (peak hour V/C less than or equal to 1.00).

**Mitigation Requirement**

For V/C greater than the acceptable level of service, mitigation of the project contribution is required to bring ramp back to acceptable level of service or to no-project conditions if project contribution is greater than .03 for ramps at CMP intersections (the impact threshold specified in the CMP), .02 or greater for ramps at intersections in the Cities of Aliso Viejo, Irvine, Laguna Hills, Laguna Woods, Lake Forest, Mission Viejo, Orange and Tustin, and .01 or greater for ramps at County of Orange intersections (the impact threshold specified in the GMP).

Approved: \_\_\_\_\_

Date: \_\_\_\_\_

Tentative Maps (TTM/TPM)  
Traffic Study Scope-Of-Work

Abbreviations: CMP – Orange County Congestion Management Program  
GMP – Growth Management Plan

Approved: \_\_\_\_\_

Date: \_\_\_\_\_

EXHIBIT A-3

TRANSFER OF INTENSITY ANALYSIS

## Transfer of Intensity Analysis

### 1. Transfer of Intensity Analysis

A Transfer of Intensity Analysis shall be prepared in connection with a proposed transfer of development rights or intensity (dwelling unit transfers) between Future Development Areas as permitted in City of Irvine Zoning Code, Sections 9-5-7, 9-6-7, 9-8-7 and 9-9-7. The purpose of a Transfer of Intensity Analysis is to identify the amount of Total Future Development Area NITM Impact Fees which will be transferred from one Future Development Area to another Future Development Area.

### 2. Transfer of Intensity Analysis Scope-of-Work

- a. In conjunction with the filing of a request for a transfer of development rights, the applicant shall submit a Transfer of Intensity Analysis to the Director. This request will identify the specific number of dwelling units to be transferred from one Future Development Area to another Future Development Area.
- b. The Transfer of Intensity Analysis shall identify the amount of Total Future Development Area NITM Fees to be transferred based on ADT trip generation. The NITM Fees to be transferred will be in direct proportion to the percentage of trip generation within a Future Development Area that is being transferred. For example, if 5% of the ADT is being transferred, then 5% of the Total Future Development Area NITM Fees will be transferred.

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EXHIBIT A-4

NITM FEE ALLOCATION PLAN

## **NITM Fee Allocation Plan**

Pursuant to the NITM Ordinance, an applicant may, prior to the earlier of (i) the Issuance of First Building Permit, or (ii) the Commencement of Construction, elect a payment method other than that of paying, at that time, all of the Total Future Development Area NITM Fees for a particular Future Development Area. After such election has been made, a NITM Fee Allocation Plan ("Plan") must be submitted to the City of Irvine ("City") Director of Community Development ("Director") in conjunction with the submittal of an application for each TPM or TTM within that Future Development Area that covers property which has not already been mapped in a previous TPM or TTM.

### **NITM Fee Allocation Plan**

The following procedures must be followed in developing a Plan:

#### **1. Identify Payment Option**

With submittal of the First TTM or TPM within an FDA, identify the payment option to be selected for the first TTM or TPM as outlined in Section 6-3-705.B of the Ordinance. Payment of all or a portion of Total Future Development Area NITM Fees can be satisfied through use of available credits and/or construction of NITM Improvements (see 3 below).

#### **2. Alternative Payment Selection**

After the applicant has elected one of the three alternative payment selection options identified in Section 6-3-705.B, the applicant shall submit a Plan that assigns NITM fees to the entire TTM/TPM and apportions these fees to each of the Parcels within the TTM/TPM. The Plan shall include the following elements:

- a. In the case in which the TTM or TPM covers the entire FDA, the Plan shall identify whether the Total Future Development Area NITM Fees shall be funded through an Assessment District ("AD"), Community Facilities District ("CFD"), contractual arrangement, building permit impact fees, utilization of available credits, construction of NITM Improvements or a combination of the above. If a portion of the Total Future Development Area NITM Fees are to be satisfied through the use of available credits and/or construction of NITM Improvements, the Plan must identify which Parcel(s) will utilize such credits or NITM Improvements towards satisfaction of its Total Parcel NITM Fee obligation.
- b. For cases in which the TTM or TPM is a portion of the FDA, the Plan shall include an allocation of the Total TPM/TTM NITM Fees for the subject TTM or TPM, as well as a summary of the status of the remaining Total Future Development Area NITM Fee obligation, by providing the following:

- Submission to the Director of a trip generation-based “Cost Assignment Matrix” clearly showing the amount of the Total Future Development Area NITM Fees to be allocated to the TTM or TPM and the amount of the Total Future Development Area NITM Fees to be allocated to other properties within the FDA. The amount to be allocated to a TTM or TPM shall be based on the percentage of socioeconomic-based trip generation ADT of the TTM or TPM to the total ADT within the FDA. The socioeconomic- based trip generation rates shall be the same rates utilized in the April 30, 2003 NITM Nexus Study prepared by Austin-Foust and Associates. If a TTM or TPM has previously been approved within a FDA, the Total TTM/TPM NITM Fee allocation for the subsequent TTM or TPM shall be based on the percentage of ADT of the subsequent TTM or TPM to total ADT within the FDA less the ADT of the previously approved TTM or TPM. The following example demonstrates how this allocation procedure will be implemented:

Total FDA NITM Fee	=	\$10,000,000
Total FDA ADT	=	10,000
Initial TTM ADT	=	2,000
Remainder of FDA ADT = (10,000-2,000)	=	8,000
Initial TTM NITM Fee = \$10M x (2,000/10,000)	=	\$2,000,000
Remainder of FDA NITM Fee	=	\$8,000,000
Second TTM ADT	=	4,000
Second TTM NITM Fee = \$8M x (4,000/8,000)	=	\$4,000,000
Remainder of Total FDA NITM Fee	=	\$4,000,000

- Identification of how the allocation of Total TTM/TPM NITM Fees will be funded through AD, CFD, contractual arrangement, available credits, construction of NITM improvements or a combination of the above. The Plan should summarize the status of the Total Future Development Area NITM Fee obligations for the FDA.
- Summary of the portion of the Total Future Development Area Fees that will not be funded by the TTM or TPM.
- If a portion of the Total TTM/TPM NITM Fees are to be satisfied through the use of available credits and/or construction of NITM Improvements, the Plan must identify which specific Parcel(s) will utilize such credits or NITM Improvements towards satisfaction of its NITM Fee obligations.

c. Assessment District or Community Facilities District Financing

Where AD or CFD financing is used, provide information on the boundary of the AD or CFD, timing of availability of funds, and NITM Improvements to be constructed by AD or CFD. The Plan shall identify how NITM Fees within the TTM or TPM are to be paid if bond proceeds are not available prior to issuance of the First Building Permits or Commencement of Construction.

d. Contractual Arrangement

Where a contractual arrangement financing is to be used, describe proposed arrangement including payment schedule, utilization of available credits (if any), and timing of construction (if any) of NITM Improvements (see 3 below). The Plan shall identify how NITM Fees shall be paid within the TTM or TPM if the NITM Improvements are not constructed per the terms of the agreement required in Section 6-3-709 of the Ordinance.

e. Building Permit Fees

Where NITM Fees are to be paid with building permits, provide how the Total TTM/TPM NITM Fee obligation will be distributed among the Parcels within the TTM or TPM. The actual unit fees must be identified at the time a subsequent TTM or TPM or Master Plan is filed, as noted below.

- The developer of each Parcel shall be responsible for paying the Total Parcel NITM Fees, even if the development ultimately proposed and constructed is less than the amount of development assumed when the Plan was approved. The Total Parcel NITM Fees may only be modified in conjunction with the approval of a General Plan Amendment, Zone Change, Transfer of Intensity, or a Five Year Review, Interim Review, or annual inflation escalator.
  - With the exception of the annual inflation escalator, the Total Parcel NITM Fees assigned to each Parcel may not be adjusted for any reason once a final map has been recorded within that Parcel and a building permit has been issued.
  - In conjunction with subsequent applications to develop or subdivide a Parcel, the applicant shall submit a plan to allocate the Total Parcel NITM Fee obligation through a unit based fee payment schedule with a fixed amount per dwelling unit, building square foot or acre. The plan shall account for the entire Total Parcel NITM Fee obligation. This plan must be approved prior to the issuance of the first building permit or commencement of construction within the Parcel.
3. Identify those NITM Improvements and associated costs that the applicant is proposing to construct in conjunction with the development of the TTM or TPM in lieu of payment of NITM Fees. If these improvements and associated costs do not cover the Total TTM/TPM NITM Fees covered by the Plan, explain how the remainder of the Total TTM/TPM NITM Fees will be paid. Submit an exhibit showing any applicant owned right-of-way, which has been identified for NITM Improvements, and associated costs that the applicant is proposing to provide to the City in conjunction with the development of the TTM or TPM in lieu of payment of NITM Fees. Any reimbursements or credits for such improvements and/or right-of-way are subject to the provisions of Section 6-3-709 of the Ordinance.

4. EXHIBIT 8

VMT Impact Analysis Guidelines (SB 743)





***DRAFT***

***CEQA VMT IMPACT ANALYSIS GUIDELINES***

***ADOPTED MAY xx, 2020***



Prepared by:

City of Irvine

Public Works and Transportation Department

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## INTRODUCTION

VMT impact analysis is required in order to comply with the State's updated California Environmental Quality Act (CEQA) Guidelines and implement Senate Bill (SB) 743 (Steinberg). On September 27, 2013, Governor Jerry Brown signed SB 743 into law, which requires a shift in the way cities measure environmental impacts. The Office of Planning and Research (OPR) is requiring all cities to measure transportation impacts using vehicle miles traveled (VMT) as the metric to determine the significance under CEQA. This approach promotes the reduction of greenhouse gas emissions, the development of multimodal transportation networks prioritizing safety and access of all street users, and a diversity of land uses.

State guidelines require that all cities implement VMT as the metric for CEQA impact analysis by July 1, 2020. This document serves as the implementation guideline for VMT impact analysis required for projects within the City of Irvine.

The City's methodology for evaluating traffic impacts based on level of service (LOS) outside of the CEQA requirements will remain unchanged.

## BACKGROUND

The VMT approach was selected to address traffic impacts with the goal of reducing vehicle emissions by optimizing land use planning and enhancing the multimodal transportation system to promote less dependency on vehicles through job-housing balancing in localized areas. Prior CEQA laws addressed traffic impacts with the goal of reducing vehicle emissions by way of improving Level of Service (LOS) or traffic delay. The LOS is improved by construction of new roadways or additional capacity on roadways, that in turn, reduces vehicle idling and thereby lowers emissions. The unintended consequence is the encouragement of vehicle dependency, thereby increasing vehicle emissions.

VMT captures the automobile trips generated by a proposed development, multiplied by the estimated number of miles driven for each trip. However, in December 2018 OPR issued a Technical Advisory that recommended using VMT per capita for residential projects and VMT per employee for office projects as "efficiency" metrics, rather than the absolute level of VMT. The VMT per capita or VMT per employee for each project would then be compared to the corresponding regional or sub-regional average to determine whether a project causes a significant impact or not.

The rationale for using the per capita and per employee "efficiency" metric is that typically, development located further from key destinations, such as job centers or transit, may result in longer average driving distance than development situated closer to complementary uses and transit.

## CEQA VMT IMPACT ANALYSIS FOR LAND USE PROJECTS

The OPR Technical Advisory recommends screening thresholds for land use projects. Consistent with the OPR Technical Advisory recommendations, the City determines certain land use projects to have less than significant impact and therefore, do not require VMT analysis. The

City's VMT impact analysis is a multi-tiered approach that addresses less than significant projects and projects that could potentially lead to significant impact.

## SIGNIFICANT IMPACT THRESHOLDS FOR LAND USE PROJECTS

The City of Irvine is considering a recommendation of 15% below existing conditions for each of the two threshold goals consistent with OPR's Technical Advisory recommendations. The City's VMT traffic model (ITAM TransCAD 2018 VMT) is the tool used to identify the City's significance threshold goal of 15% reduction in existing VMT, aligning with the OPR Technical Advisory recommendations. The City's VMT traffic model is calibrated and validated to represent baseline existing conditions, and this unique VMT traffic model is used for all VMT impact analysis for a project.

For residential development projects, the VMT per capita specific to a project is calculated by the project's change in the countywide population VMT divided by the resulting change in the countywide population caused by the project. For non-residential projects, the VMT per employee specific to a project is calculated by the change in the project's sum of countywide commute and other countywide work-related VMT trips to and from that non-residential use divided by the resulting change in the number of countywide employees caused by the project.

The residential rate of 14.90 VMT per capita is based on county-wide data and the non-residential rate of 41.68 VMT per employee is based on county-wide data.

**Table 1 VMT Rate Threshold Goals for Projects within City of Irvine**

Land Use Type	Rate
Residential	14.90
Non-Residential	41.68

## WHEN IS A VMT IMPACT ANALYSIS REQUIRED FOR LAND USE PROJECTS?

All discretionary land use projects subject to CEQA will evaluate the need for VMT impact analysis as part of their environmental review process. A discretionary development application is a development proposal that requires approval by the City Council, Planning Commission or Zoning Administrator at a public hearing before grading or building permit applications may be submitted and/or approved.

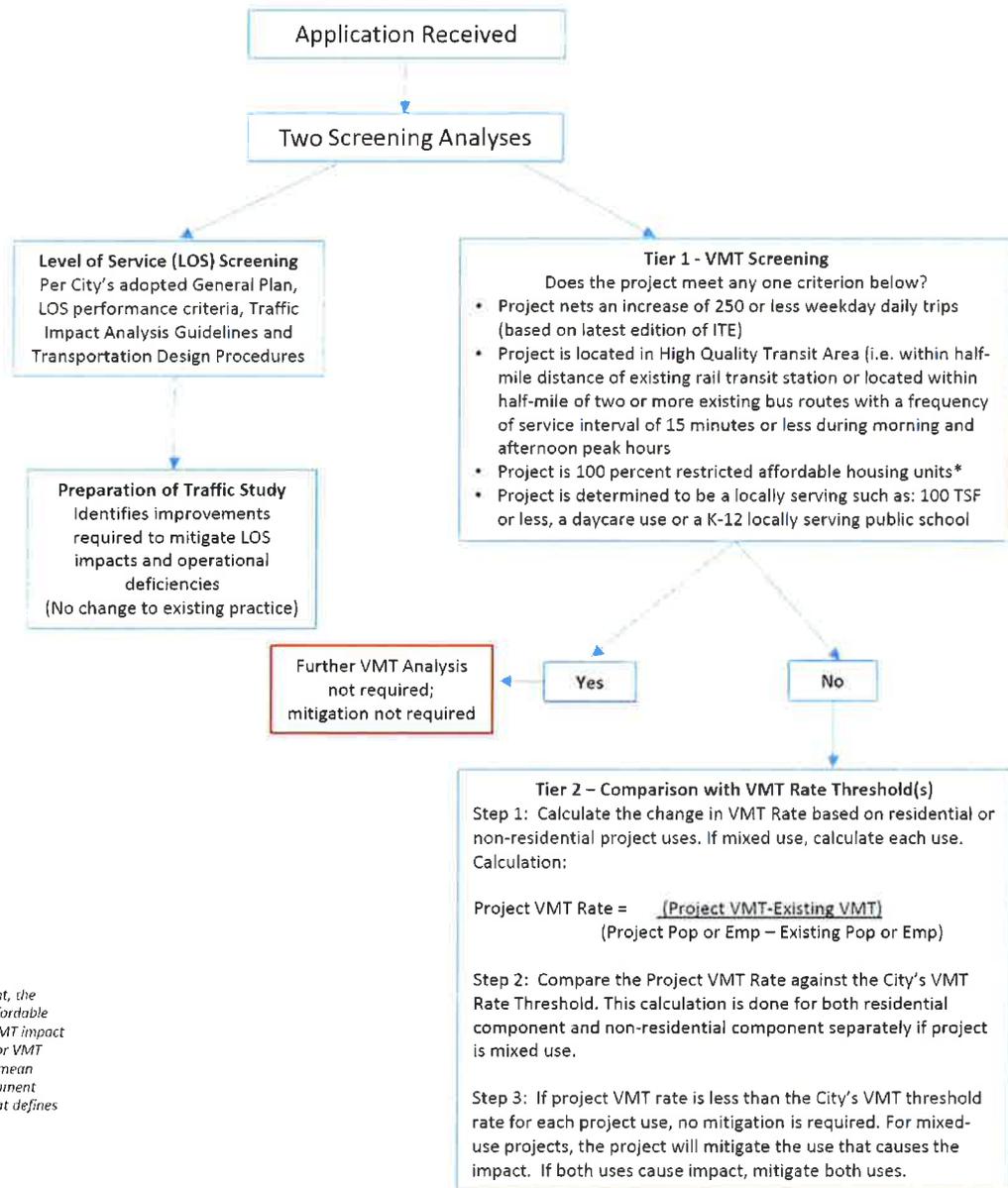
Examples of discretionary development applications include but are not limited to:

- Master Plans (MP) for development of certain sites and land uses in particular zoning districts;
- Conditional Use Permits (CUP) for development of proposed land uses not permitted by right in a particular zoning district as identified in the Zoning Ordinance; and
- Subdivision, Maps (i.e., tentative tract and/or parcel) for development that divides land into lots for the purpose of sale, leasing, or financing.

## IMPACT ANALYSIS METHODOLOGY FOR LAND USE PROJECTS

The VMT impact analysis methodology is a two-tiered approach in the identification of potential VMT impacts and mitigations. All projects that require CEQA analysis must include a VMT Impact Analysis discussion (i.e., Tiers 1 and 2) within the Special Issues section of a project's traffic study. Figure 1 illustrates the different tiers of VMT analysis.

**Figure 1 VMT Impact Analysis Methodology Flow Chart**



*\* If less than 100 percent, the number of restricted affordable units is not subject to VMT impact analysis. "Restricted" for VMT analysis purposes shall mean having a recorded instrument against the property that defines affordability terms*

## TIER 1: SCREENING

If a discretionary land use project is required to analyze environmental impacts related to transportation (i.e., VMT impact analysis) as part of their environmental review process, and the project applicant demonstrates to the satisfaction of the Director of Public Works and Transportation (or assigned staff under the direction of the Director) that the project meets any one of the following four screening criteria, then no further VMT impact analysis is required:

1. The project nets an increase of 250 or less weekday daily trips (ITE based);
2. The project is located in a High Quality Transit Area (i.e., within half-mile distance of existing rail transit station or located within half-mile of two or more existing bus routes with a frequency of service interval of 15 minutes or less during morning and evening peak hours);
3. The project is a 100 percent restricted affordable housing units (Note: If less than 100 percent, the number of restricted affordable units is not subject to VMT impact analysis. "Restricted" for VMT analysis purposes shall mean having a recorded instrument against the property that defines affordability terms); or
4. The project is locally serving such as 100 TSF or less retail, daycare use or a K-12 locally serving public school.

## TIER 2: FULL VMT IMPACT ANALYSIS

For all projects that require further VMT impact analysis beyond the Tier 1 screening, the project's analysis of resulting VMT rate must be evaluated and compared against the applicable adopted VMT rate threshold using the City's VMT traffic model (ITAM TransCAD 2018 VMT):

- For residential projects, the project's Residential VMT per capita rate will be evaluated against the residential VMT per capita threshold goal:
  - If the project's residential VMT rate is less than or equal to the City's adopted residential VMT rate threshold, then no impact results and no mitigation is required.
  - If the project's residential VMT rate is greater than the City's adopted residential VMT rate threshold, then the project has a VMT impact and mitigation is required.
- For non-residential projects (i.e., office, industrial, retail greater than 100,000 total gross square feet, hotels, hospitals, commercial recreation, university uses), the project's non-residential VMT per employee rate will be evaluated against the non-residential VMT per employee threshold goal:
  - If the project's non-residential VMT rate is less than or equal to the City's adopted non-residential VMT rate threshold, then no impact results and no mitigation is required.
  - If the project's non-residential VMT rate is greater than the City's adopted non-residential VMT rate threshold, then the project has a VMT impact and mitigation is required.
- For mixed-use projects that include both residential and non-residential uses, all project land uses will be evaluated, except for those specific land uses screened out in Tier 1. Both the residential VMT per capita and non-residential VMT per employee will be

evaluated. If both residential and non-residential uses cause impacts, both uses will be mitigated.

If the project results in a VMT impact, then mitigation is required to reduce the project's VMT rate to the City's adopted VMT rate threshold. If the project cannot meet the adopted VMT threshold rate after all feasible mitigations are incorporated, then a Statement of Overriding Considerations must be adopted along with preparation of an Environmental Impact Report in accordance with CEQA Guidelines.

## MITIGATION MEASURES

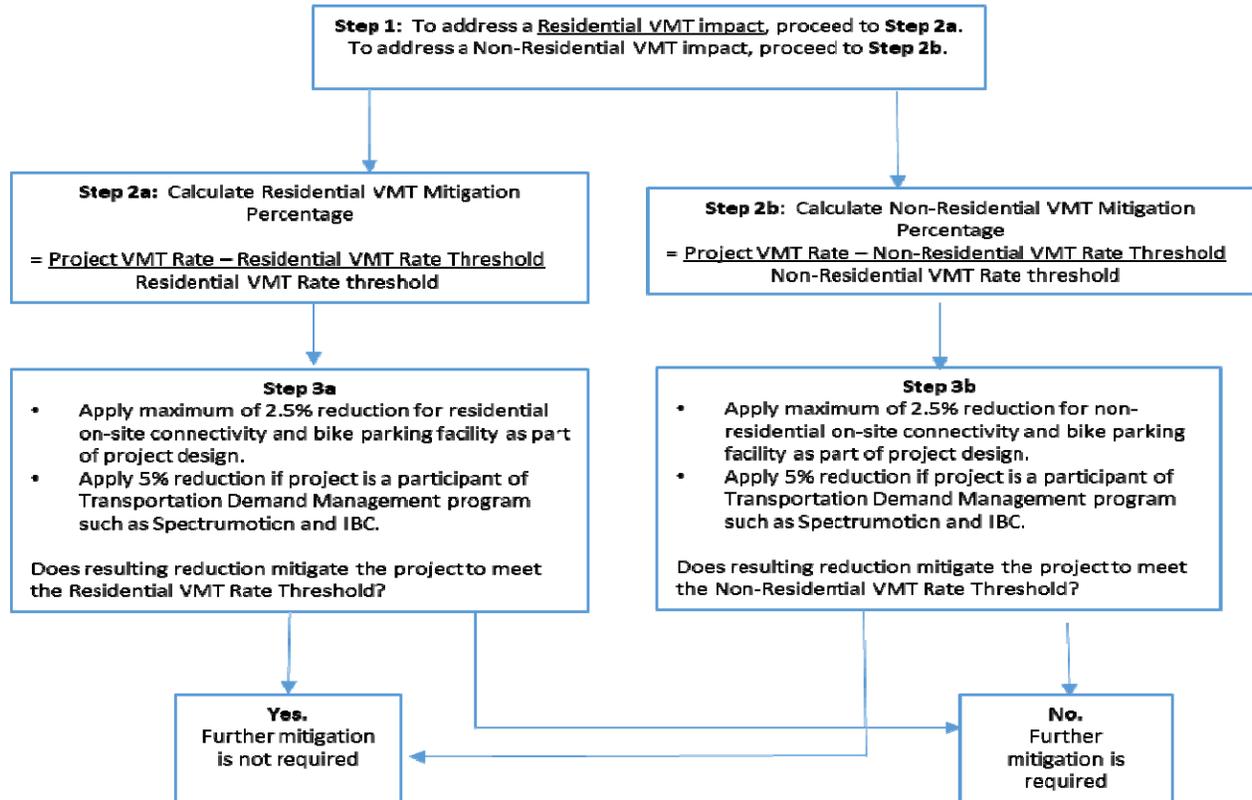
When a project results in a significant VMT impact, it must identify the appropriate (i.e., essential nexus and rough proportionality) mitigation measures to reduce the impact to a level that meets the City's adopted VMT threshold rate. All feasible mitigation measures must be incorporated into the project to substantially reduce the impact even if the project cannot meet the adopted VMT threshold rate. Figure 2 illustrates the methodology for identifying mitigation measures for projects.

As illustrated in Figure 2, residential projects may apply 2.5% VMT rate reduction for on-site connectivity improvements as part of the project design to promote bicycle activity (i.e., bike facilities) and pedestrian walkability (i.e., connected sidewalks from building entrances to public streets). Non-residential projects may apply 2.5% VMT rate reduction for on-site connectivity improvements as part of the project design to promote bicycle activity and pedestrian walkability.

Projects that are participants of Transportation Demand Management (TDM) programs such as Spectrumotion may apply a 5% VMT rate reduction in support of the City's goals toward reducing vehicle emissions and VMT.

Projects may propose mitigation measures that are not included on Table 2. The project applicant must demonstrate to the satisfaction of the Director of Public Works and Transportation (or assigned staff under the direction of the Director) that the proposed mitigation measures are supported by substantial evidence documenting their effect on reducing project VMT per capita or VMT per employee.

**Figure 2 VMT Mitigation Flow Chart**



**Table 2 VMT On-Site Mitigation and Percentage Reduction**

Type	Strategy	VMT Reduction Potential	Irvine Programs	Suggested VMT Reduction Value
Tier 1 - On-Site Infrastructure (100% Applicant Funded)	Provide Bicycle and Pedestrian Network Connectivity and facilities	Mode shift to walking	Meet City Standard Plans for non-vehicular connectivity	2.5%
Tier 2 - On-Site TDM (100% Applicant Funded)	Participation in a TDM Program	Mode shift from single occupancy vehicle	Spectrumotion, IBC	5%
Tier 3 - VMT Mitigation Fee Program	Provide Financing	Mode shift to transit	Provide funding for local shuttles, transit access improvements, non-vehicular infrastructure improvements that promote bicycle and pedestrian connectivity.	TBD

**CEQA VMT IMPACT ANALYSIS FOR TRANSPORTATION PROJECTS**

According to the OPR Technical Advisory, local agencies should consider the effects of transportation projects on vehicle travel. Projects that lead to additional vehicle travel are referred to as “induced vehicle travel” and are required to analyze the growth impacts under CEQA. The Technical Advisory identifies transportation projects that add through lanes on existing or new highways, including general purpose lanes, high occupancy vehicle lanes, peak period lanes, auxiliary lanes, or lanes through grade separated interchanges as projects that would likely lead to a measurable and substantial increase in vehicle travel.

The Technical Advisory lists the following projects that would not likely lead to a substantial or measurable increase in vehicle travel, and therefore generally should not require induced travel analysis.

Transportation projects that do not require VMT analysis:

- **Maintenance:** Rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation assets (e.g., highways; roadways; bridges; culverts; Transportation Management System field elements such as cameras, message signs, detection, or signals; tunnels; transit systems; and assets that serve bicycle and pedestrian facilities) and that do not add additional motor vehicle capacity
- **Roadside Safety:** Roadside safety devices or hardware installation such as median barriers and guardrails
- **Roadway Shoulder:** Roadway shoulder enhancements to provide “breakdown space,” which is dedicated space for use only by transit vehicles, to provide bicycle access, or to otherwise improve safety, but which will not be used as motor vehicle travel lanes
- **Non-through Lanes:** Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, two-way left turn lanes, or emergency breakdown lanes that are not utilized as through lanes
- **Through Lanes:**
  - Addition of roadway capacity on local or collector streets provided that project

- also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit (e.g., protected and separated Class IV bikeway as well as pedestrian refuges, bulb-outs, and elements that shorten pedestrian crossing distances); or
- Addition of a new lane that is permanently restricted to use only by transit vehicles; or
  - Reduction in number of through lanes; or
  - Grade separation to separate vehicles from rail, transit, pedestrian or bicycles or to replace a lane in order to separate preferential vehicles (e.g. HOV, HOT, or trucks) from general vehicles; or
  - Conversion of streets from one-way to two-way operation with no net increase in number of traffic lanes
- **Traffic Control Devices:**
    - Installation, removal or reconfiguration of traffic control devices including Transit Signal Priority (TSP) features; or
    - Installation of traffic metering systems, detection systems, cameras, changeable message signs and other electronics designed to optimize vehicle, bicycle, or pedestrian flow; or
    - Timing of signals to optimize vehicle, bicycle, or pedestrian flow
  - **Traffic Circles:** Installation of roundabouts or traffic circles
  - **Traffic Calming Devices:** Installation or reconfiguration of traffic calming devices
  - **Parking:**
    - Removal or relocation of off-street or on-street parking spaces; or
    - Adoption or modification of on-street parking or loading restrictions (including meters, time limits, accessible spaces, and preferential/reserved parking permit programs)
  - **Traffic Wayfinding:** Addition of traffic wayfinding signage
  - **Active Transportation:**
    - Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way; or
    - Addition of Class bike paths, trails, multi-use paths, or other off-road facilities that serve non-motorized travel
  - **Fuel/Charging Infrastructure:** Installation of publicly available alternative fuel/charging infrastructure

## VMT IMPACT ANALYSIS METHODOLOGY FOR TRANSPORTATION PROJECTS

Transportation projects that do not meet the conditions listed above (i.e., projects that will likely lead to additional vehicle travel) are required to prepare a VMT impact analysis. This analysis must evaluate the net change in VMT with and without the project under the existing conditions scenario based on the City's adopted version of the VMT traffic model (ITAM TransCAD 2018 VMT). The difference between with and without project VMT is the VMT attributable to the project. A project that results in a net decrease in the VMT does not result in significant impact and therefore does not require mitigation. A project that results in a net increase in VMT may be deemed significant and may require mitigation such as Intelligent Transportation Systems (ITS) that integrate advanced communications technologies into transportation infrastructure and vehicles to advance safety and mobility.

Traffic improvements that are part of a land use project to address Level of Service (LOS) traffic impacts or operational deficiencies must be analyzed as part of the land use project's VMT impact analysis. Those traffic improvements that are a project's responsibility are included as part of the "with project" scenario for analysis.

### CEQA VMT IMPACT ANALYSIS FORMAT

This section describes the key elements of a typical VMT Impact Analysis. In order to provide consistency and facilitate staff review of VMT Impact Analysis, the format identified below must be followed. This VMT Impact Analysis shall be an appendix to the project's traffic study. A summary of the VMT Impact Analysis shall be included under the Special Issues section of the project's traffic study and reference made to the VMT Impact Analysis within the Appendix of the traffic study.

#### **Executive Summary**

The Executive Summary of the report shall be a clear, concise description of the level of VMT Impact Analysis required (Tier 1 or 2) and description of the study findings. It shall include a general description of all data, purpose, findings, conclusions, mitigation measures, and recommendations.

Technical publications, calculations, documentation, data reporting, and detailed design should not be included in this section. The Executive Summary should be concise, complete in itself, and not dependent on supplementary data included by reference.

#### **Introduction and Project Description**

The Introduction shall supply the reader with a general description of the project. This description shall include the size of the overall project site including all comprising parcels, general terrain features, all existing/proposed uses and their numbers by type (e.g., units) and sizes (e.g., gross square footage, rooms) (including any project phasing) based on the zoning and general plan categories outlined in the City's Zoning Ordinance and the General Plan.

In addition, the location of the project site shall be described and a vicinity map shall be provided. The map shall include roadways, which afford access to the site and are included in the study area. If multiple project alternatives are proposed, then all alternatives must be defined and discussed in this section.

The study must identify the existing conditions in the vicinity of the project site, including a description of the area to be affected by the development. This is to provide a comparison of the impacts over time on land use and circulation.

The proposed land uses for the project site and any project-related traffic improvements shall be described in this section.

## **Proposed Project Impacts and Mitigation Measures**

The VMT impact analysis for the project is described in this section, including discussion of the use of the City's VMT traffic model (ITAM TransCAD 2018 VMT). VMT impacts caused by the project are identified based on the methodology outlined in Figure 1. A project's VMT impacts shall be mitigated to the adopted VMT rate thresholds rates adopted on Table 1, and a discussion of the mitigation measures is included in this section.

## **Conclusions**

This section of the analysis shall summarize the requirement improvements and the proposed mitigation measures. This shall include:

- Mitigation measures  
Resultant VMT rates with proposed mitigations

## APPENDIX A

### Spectrum Trip Rate Reduction Policy

In conjunction with individual tract map level traffic study submittals for Planning Areas 5B, 6, 8A, and 9, reduced Spectrum non-residential trip rates will be permitted within Planning Areas 12, 13, 17, 30, 31, 32, 33, 34, 35 and 39 if traffic count data, acceptable to the City, is provided that demonstrates that a peak hour trip rate reduction is justified.

#### METHODOLOGY:

1. Any proposed trip rate reduction must be included and approved by the City in the scope of work for each traffic study to be performed.
2. A trip rate reduction will not be considered unless a minimum 5% reduction can be justified based on traffic count data.
3. The maximum trip rate reduction in any Planning Area shall be 15%, if a reduction of 40% is demonstrated a reduction of 20% will be approved.
4. Trip rate reductions will be approved for a specific Planning Area only (i.e. no averaging of trip rates for all Planning Areas or grouping of Planning Areas will be permitted).
5. A trip rate reduction permitted for a specific traffic study will not be utilized in subsequent studies unless the trip rate reduction is demonstrated to be still valid.
6. Trip rate reductions for a Planning Area will only be considered if traffic count data is provided to justify such reduction. Traffic count data must be collected for a minimum of 5 years. However, the City may allow trip reduction prior to completion of the 5-year count program, at their discretion, subject to an agreement to complete the 5-year traffic count monitoring.
7. The procedures for conducting the traffic count data to justify a peak hour trip rate reduction will be consistent with current procedures utilized by Spectrumotion for conducting the Spectrum 3 and 4 Annual Transportation Monitoring Program. These procedures include the following:
  - a. Only those sites that have been occupied for at least six months will be counted. The PM peak period is defined as 4:00 to 6:00 PM. The actual number of PM peak hour trips will be based on the highest four consecutive 15-minute intervals during the defined two hour peak period.
  - d. Counts will be taken during the months of February through June on Tuesdays and Wednesdays. No holiday will occur during the week that counting is performed. Counters are positioned in a manner that isolates trips to the site being counted. Where this is not possible, sites are combined for counting and reporting purposes.
  - f. Sites that are 95% or more occupied are considered to be 100 % occupied and the trips for these sites are not adjusted. For sites that are less than 95 % occupied, the trips will be adjusted to reflect the percentage of occupancy.
  - g. To the extent possible, driveway traffic counts in the Spectrum area will be utilized in the calibration of the ITAM traffic model. Specifically, the model calibration may assume a higher trip rate reduction for Spectrum than permitted for long-range traffic studies.

## APPENDIX B

### Level of Service 'E' Policy

LOS "E" or better shall be considered acceptable within the Irvine Business Complex (IBC-PA 36, "IBC"), Irvine Spectrum Center (PA 33), and at the intersection of Bake Parkway and the I-5 northbound off-ramp. In conjunction with individual subdivision map level traffic studies for development proposed in Planning Areas 5B, 6, 8A, and 9, and 51, a LOS "E" standard would be considered acceptable for application to intersections impacted in Planning Areas 13, 31, 32, 34, 35, 39 and a portion of 51 the intersection of Sand Canyon/I-5 interchange ramps as further described in the following.

LOS "E" would be considered acceptable as described above, subject to the following conditions being met:

1. Preparation, submittal, processing and approval of a traffic study for the specific subdivision map.
2. Level of Service "E" will only be considered acceptable for an intersection that does not contain a residential quadrant unless residential development has a net density of 30 dwelling units to the acre or greater. No Level of Service "E" will be accepted along Sand Canyon, except at the Sand Canyon/I-5 Interchange ramps/intersections.
3. Participation/funding toward an upgraded traffic signal system as defined in the Traffic Management Systems Operations Study (TMSOS) and/or an Advanced Traffic Management System (ATMS) which may be in place at the time of processing of the individual subdivision map traffic studies. The City, in conjunction with the specific subdivision map processing, shall determine the level of participation/funding using criteria and a process developed concurrent with submittal of subsequent subdivision maps.

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LOS "D" or better shall be considered acceptable within all other areas.