2015 Orange County Congestion Management Program

Orange County Transportation Authority

November 2015

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Chapter 1: Introduction

Purpose & Need

In June 1990, the passage of the Proposition 111 gas tax increase required California's urbanized areas – areas with populations of 50,000 or more – to adopt a Congestion Management Program (CMP). The following year, Orange County's local governments designated the Orange County Transportation Authority (OCTA) as the Congestion Management Agency (CMA) for the County. As a result, OCTA is responsible for the development, monitoring, and biennial updating of Orange County's CMP.

The passage of Assembly Bill 2419, in July 1996, provided local agencies the option to elect out of the CMP process without the risk of losing state transportation funding. However, local jurisdictions in Orange County expressed a desire to continue the existing CMP process, because the requirements were similar to those of the Orange County Measure M Growth Management Program (GMP), and because it contributes to fulfilling federal requirements for the Congestion Management Process (23 CFR 450.320), prepared by the Southern California Association of Governments (SCAG). The OCTA Board of Directors affirmed the decision to continue with the existing CMP process on January 13, 1997. Although the GMP ended with the sunset of Measure M, the CMP remains relevant as an eligibility requirement under Measure M2.

As mentioned above, the CMP contributes to federal Congestion Management Process requirements, which is a systematic and regionally-accepted approach for managing congestion. The federal Congestion Management Process provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management that meet state and local needs.

The Congestion Management Process is also intended to serve as a systematic process that provides for consistent and effective integrated monitoring and management of the multimodal transportation system.

The process includes:

- Development of congestion management objectives;
- Establishment of measures of multimodal transportation system performance;
- Collection of data and system performance monitoring to define the extent and duration of congestion and determine the causes of congestion;
- Identification of congestion management strategies;
- Implementation activities, including identification of an implementation schedule and possible funding sources for each strategy; and
- Evaluation of the effectiveness of implemented strategies.

A federal Congestion Management Process is required in metropolitan areas with population exceeding 200,000, known as Transportation Management Areas (TMAs). Federal requirements also state that in all TMAs, the CMP shall be developed and implemented as an integrated part of the metropolitan transportation planning process.

CMP Goals

The goals of Orange County's CMP are to support regional mobility objectives by reducing traffic congestion; and to provide a mechanism for coordinating land use and development decisions that support the regional economy; and to determine gas tax fund eligibility.

To meet these goals, the CMP contains a number of policies designed to monitor and address system performance issues. OCTA developed the policies that makeup Orange County's CMP in coordination with local jurisdictions, the California Department of Transportation (Caltrans), and the South Coast Air Quality Management District (SCAQMD).

State Legislation

Required Elements

California Government Code Section 65089(b) requires the CMP to include specific elements, as summarized below. The full text of the Government Code can be viewed at www.leginfo.ca.gov/calaw.html, sections 65088-65089.10.

Traffic Level of Service Standards – §65089(b)(1)(A) & (B)

Traffic level of service (LOS) standards shall be established for a system of highways and roadways. The highways and roadway system shall be designated by OCTA and shall include, at minimum, all state highways and principal arterials. None of the designated facilities may be removed, and new state highways and principal arterials must be added, except if they are within an infill opportunity zone. The LOS must be measured using a

method that is consistent with the Highway Capacity Manual. The LOS standards must not be below level of service "E", unless the levels of service from the baseline CMP dataset were lower. If a CMPHS segment or intersection does not meet the minimum LOS standard outside an infill opportunity zone, a deficiency plan must be adopted (subject to exclusions).

Chapter 2 specifically addresses this element.

Performance Measures – §65089(b)(2)

Performance measures shall be established to evaluate the current and future performance of the transportation system. At a minimum, measures must be established for the highway and roadway system, frequency and routing of public transit, and for the coordination of transit service by separate operators. These measures will be used to support improvements to mobility, air quality, land use, and economic objectives and shall be incorporated into the Capital Improvement Program, the Land Use Analysis Program, and any required deficiency plans.

Chapter 3 specifically address this element.

Travel Demand – §65089(b)(3)

A travel demand element shall be established to promote alternative transportation methods, improve the balance between jobs and housing, and other trip reduction strategies. These methods and strategies may include, but are not limited to, carpools, vanpools, transit, bicycles, park-and-ride lots, flexible work hours, telecommuting, parking management programs, and parking cash-out programs.

Chapter 4 specifically addresses this element.

Land Use Analysis Program – §65089(b)(4)

A program shall be established to analyze the impacts of land use decisions on the transportation system, using the previously described performance measures. The analysis must also include cost estimates associated with mitigating those impacts. To avoid duplication, this program may require implementation through the requirements and analysis of the California Environmental Quality Act.

Chapter 5 specifically addresses this element.

Capital Improvement Program – §65089(b)(5)

The CMP shall use the performance measures described above to determine effective projects that mitigate impacts identified in the land use analysis program, through an adopted seven-year capital improvement program. This seven-year program will conform to transportation-related air quality mitigation measures and will include any projects that increase the capacity of the transportation system. Furthermore, consideration will

be given to maintaining or improving bicycle access and safety within the project areas. Projects necessary for preserving investments in existing facilities may also be included.

Chapter 6 specifically addresses this element.

CMA Requirements

As Orange County's CMA, OCTA is responsible for the administration of the CMP, as well as providing data and models that are consistent with those used by the Southern California Association of Governments (SCAG). OCTA is also responsible for developing the deficiency plan processes. These requirements are described in the legislation, and are summarized below.

Modeling and Data Consistency – §65089(c)

In consultation with SCAG and local jurisdictions, OCTA shall develop a uniform data base on traffic impacts for use in a countywide transportation computer model. Moreover, OCTA shall approve transportation models that will be used by local jurisdictions to determine the quantitative impacts of development on the circulation system. Every local jurisdiction's traffic model must be based on the countywide model and standardized modeling assumptions and conventions. All models and databases shall be consistent with the modeling methodology and databases used by SCAG.

Appendix F addresses this requirement.

Deficiency Plan Procedures – §65089.4

OCTA is responsible for preparing and adopting procedures for local deficiency plan development and implementation. OCTA's deficiency plan procedures incorporate a methodology for determining if deficiency impacts are caused by more than one local jurisdiction within Orange County; in which case a multi-jurisdictional deficiency plan, adopted by all participating local jurisdictions, may be required. The procedures also provide for a conflict resolution process for addressing conflicts or disputes between local jurisdictions in meeting the multi-jurisdictional deficiency plan responsibilities.

Chapter 3 and Appendix C discuss this requirement in more detail.

Chapter 2: Traffic Level of Service Standards

In 1991, the OCTA implemented an Intersection Capacity Utilization (ICU) monitoring method, developed with technical staff members from local and State agencies, for measuring the Level of Service (LOS) at CMPHS intersections. The CMP LOS grade chart is illustrated in Figure 1.

FIGURE 1: LOS Grade Chart

Level of Service	ICU Rating
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 first CMP LOS measurement recorded, which was in 1992 for most CMP intersections, established the baseline for comparing future measurements. During subsequent LOS monitoring, CMP statute requires that CMPHS intersections maintain a LOS grade of 'E' or better, unless the baseline is lower than 'E'; in which case, the ICU rating cannot increase by more than 0.10. Chapter 3 discusses the ICU method in more detail.

OCTA has an established CMP Highway System (CMPHS), consisting of Orange County's State highways and the arterials included in OCTA's Smart Street network (Figure 2). If, during any monitoring period, a CMPHS intersection is determined to be performing below the LOS standards the responsible agency must identify improvements necessary to meet the LOS standards. This is accomplished either through existing plans or capital improvement programs, or through the development of a deficiency plan. This is described in more detail in Chapter three.

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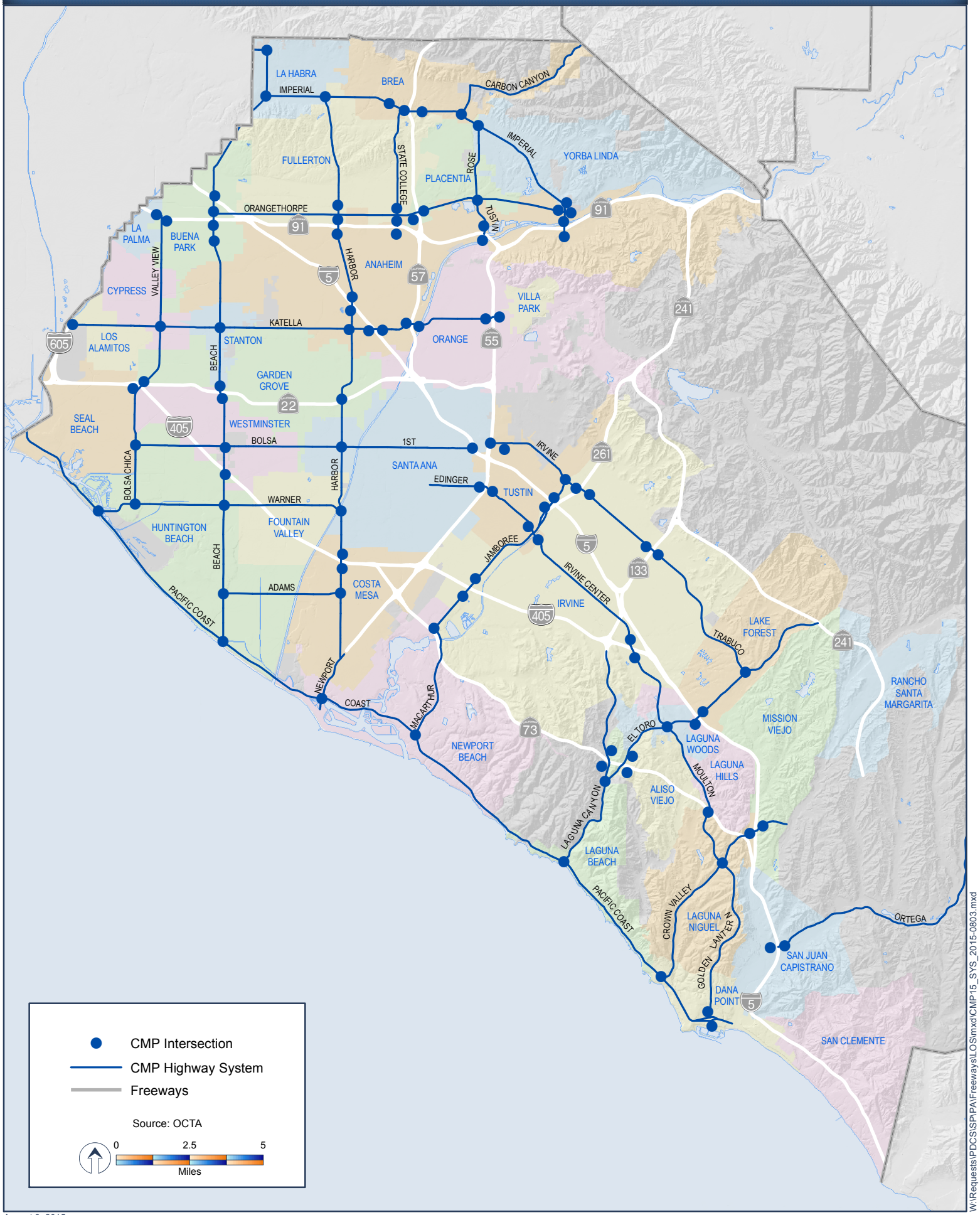
Figure 2: 2015 Congestion Management Program Highway System



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The 2015 freeway monitoring results, provided by Caltrans District 12, are located in Appendix A. Caltrans is responsible for monitoring freeway performance and addressing any deficiencies on State-operated facilities. Caltrans' responsibilities include, but are not limited to:

A. Evaluating current conditions and identifying deficiencies.

B. Developing plans and strategies to address deficiencies.

C. Evaluating development projects of local and regional significance to determine whether they will impact the State transportation system and, if so, working with lead agencies to develop potential mitigation measures.

For the State transportation system, Caltrans does not use CMP thresholds and analysis methodologies to determine if significant impacts occur under CEQA. Their specific focus is on maintaining the safety of State highways. As such, their performance measures tend to focus upon freeway segment/ramps, ramp metering operations, queue lengths, and signal operations (timing, phasing, and system/series progression) metrics.

Local agencies are encouraged to coordinate with the Caltrans Local Development/ Intergovernmental Review Branch early in the development process to determine what methodologies and thresholds of significance should be used to identify impacts to the State transportation system. During the development of the Orange County CMP, OCTA works with Caltrans to obtain necessary freeway and State controlled intersection data, as well as notifying Caltrans on any deficiencies to State facilities.

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Chapter 3: System Performance

Highway & Roadway System Performance Measures

This section discusses the process for determining ICU ratings, as well as how ICU ratings determine the LOS at CMPHS intersections. This method is generally consistent with the Highway Capacity Manual.

Overview of Intersection Capacity Utilization (ICU) Methodology

Traffic counts are manually collected at CMPHS intersections to initiate the ICU calculation process. The counts monitor the traffic flow, including the approach (northbound, eastbound, southbound, or westbound) and movement (left turn, through, or right turn) for each vehicle.

Each intersection has counts conducted in 15-minute increments, during peak periods in the AM (6:00-9:00) and PM (3:00-7:00) on three separate mid-week days (Tuesday, Wednesday, and Thursday). Counts are not taken during periods when irregular conditions exist (inclement weather, holidays, construction, etc.).

The highest count total during any four consecutive 15-minute count intervals within a peak period represents the peak-hour count set. For each intersection, a peak-hour count set is determined for each day's AM and PM peak period, resulting in a group of three AM peak-hour count sets and a group of three PM peak-hour count sets (one for each midweek count day).

The group of AM peak-hour count sets is averaged, as is the group of PM peak-hour count sets. The results are the volumes used to determine AM and PM volume-to-capacity (V/C) ratios for each movement through the intersection. A number of assumptions determine the capacities for each movement.

An example of an assumption used to determine capacity is the saturation flow-rate, which represents the theoretical maximum number of vehicles that are able to move through an intersection in a single lane during a green light phase. In 1991, OCTA and the technical staff members from local and State agencies agreed upon a saturation flow-rate of 1,700 vehicles per lane per hour. However, other factors can adjust this assumption.

Such factors include right turn lanes, which can increase the saturation flow-rate by 15% in specific circumstances. Right turn overlaps (signalized right turn lanes that are green during the cross traffic's left turn movements) and free right turns (lanes in which vehicles are allowed to turn right without stopping, even when the through signal is red) are some of the circumstances that will increase the saturation flow-rate. If right turns on red are permitted, a *de facto* right turn lane (approaches that do not have designated right turn lanes, but which are at least 19 feet wide and prohibit on-street parking during peak hours) may also increase the saturation flow rate.

Roadway capacity can also be reduced under certain conditions. For example, if a lane is shared for through and turn movements, the saturation flow-rate of 1,700 could be reduced. This occurs only when the turn movement volumes reach a certain threshold that is calculated for each intersection with shared lanes. The reduction represents the slower turning movements interfering with through movements.

Finally, bicycle and pedestrian counts are conducted simultaneously with vehicle counts. Saturation flow-rate calculations to factor in the impacts of bicycle and pedestrian activity for the effected lanes using standard reductions in accordance with Chapter 18 of the Highway Capacity Manual 2010, may be requested. Reductions are only considered when field observations indicate the presence of more than 100 pedestrians per hour on one leg of an intersection.

Once the V/C ratios are determined for each movement, critical V/C ratios are calculated. Conflicting movements determine which V/C ratios are included in the calculation of the critical V/C ratios. Conflicting movements represent a situation where a movement from one approach prevents a movement from the opposite approach. For example, if through movements are being made from the southbound approach, left turn movements cannot simultaneously be made from the northbound approach. For each set of opposing approaches (north/south and east/west), the two conflicting movements with the greatest summed V/C ratios are identified. These summed V/C ratios then become known as the critical V/C ratios.

OCTA and technical staff members from local and State agencies also agreed upon a lost time factor of 0.05 in 1991. The lost time factor represents the assumed amount of time it takes for a vehicle to travel through an intersection. For each intersection, the critical V/C ratios are summed (north/south + east/west), and the lost time factor is added to the sum, producing the ICU rating for the intersection.

Based on a set of ICU rating ranges, which were agreed upon by OCTA and technical staff members from local and State agencies, grades are assigned to each intersection. The grades indicate the LOS for intersections, and are used to determine whether the intersections meet the performance standards described at the beginning of the chapter.

The 2015 LOS ratings for the CMP intersections have been mapped in Figure 3. A spreadsheet of the baseline and 2015 LOS ratings for the CMP intersections, and corresponding ICU measurements, is located in Figure 4.

Note that in Figure 4, Orange County's average ICU rating has improved over the baseline. Between 1991 and 2015, the average AM ICU improved from 0.67 to 0.59 (an 12.61 percent improvement), and the PM ICU improved from 0.72 to 0.62 (a 13.92 percent improvement). During the 2013 CMP monitoring, the State Route 55 southbound ramps and Katella Avenue intersection exceeded the level of service standard for the AM peak period. Traffic conditions have improved since that time and the intersection now performs at an acceptable LOS. The ICU improvements indicate that Orange County agencies are effectively operating, maintaining, and improving the CMP Highway System.

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Figure 3: 2015 CMP Intersection Level of Service

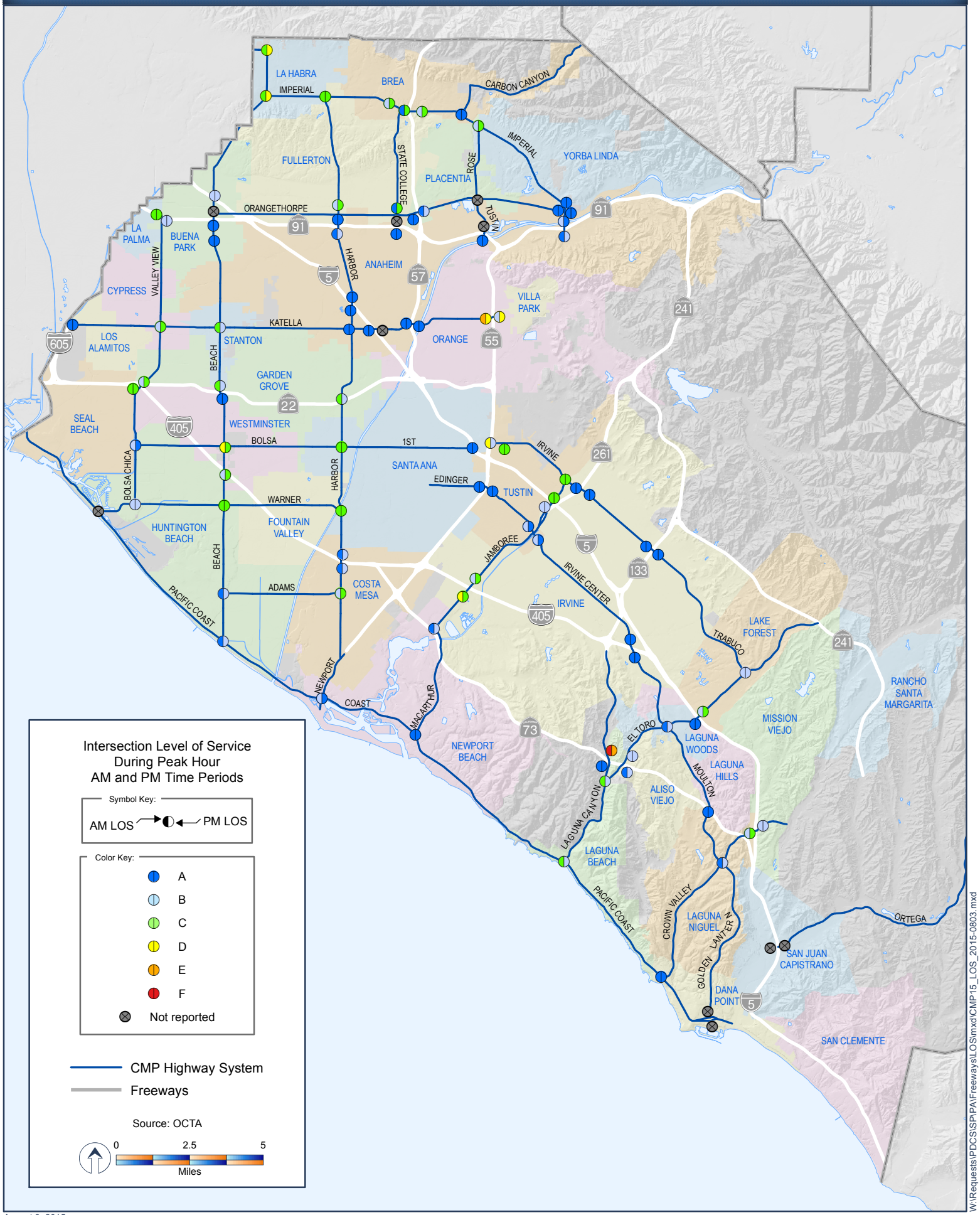

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FIGURE 4: 2015 CMP Level of Service Chart

Jurisdiction	Intersection/Interchange	Baseline AM LOS	Baseline AM ICU	2015 AM LOS	2015 AM ICU	Baseline PM LOS	Baseline PM ICU	2015 PM LOS	2015 PM ICU
Anaheim	Anaheim Blvd-I-5 NB Ramp/Katella Avenue	A	0.49	Under Construction		D	0.82	Under Construction	
Anaheim	Harbor Blvd./Katella Avenue	A	0.53	A	0.52	B	0.67	A	0.51
Anaheim	Harbor Boulevard/I-5 SB Ramps	A	0.29	A	0.27	A	0.31	A	0.32
Anaheim	Harbor Boulevard/SR-91 EB Ramps	A	0.46	A	0.47	A	0.52	B	0.61
Anaheim	I-5 NB Ramp/Harbor Boulevard	A	0.52	A	0.45	A	0.54	A	0.48
Anaheim	I-5 SB Ramps/Katella Avenue	A	0.48	A	0.52	A	0.41	A	0.52
Anaheim	SR-57 NB Ramps/Katella Avenue	A	0.51	A	0.34	A	0.41	A	0.41
Anaheim	SR-57 SB Ramps/Katella Avenue	A	0.52	A	0.36	A	0.51	A	0.46
Anaheim	SR-91 EB Ramp/Imperial Highway	C	0.73	A	0.59	C	0.79	B	0.63
Anaheim	SR-91 EB Ramps/State College Boulevard	B	0.69	A	0.41	D	0.82	A	0.47
Anaheim	SR-91 EB Ramps/Tustin Avenue	B	0.66	A	0.53	D	0.84	A	0.45
Anaheim	SR-91 WB Ramp/Harbor Boulevard	B	0.61	A	0.58	C	0.77	A	0.58
Anaheim	SR-91 WB Ramp/Imperial Highway	C	0.71	B	0.62	B	0.63	A	0.59
Anaheim	SR-91 WB Ramp/State College Boulevard	A	0.55	Under Construction		B	0.63	Under Construction	
Anaheim	SR-91 WB Ramps/Tustin Avenue	B	0.64	Under Construction		A	0.6	Under Construction	
Anaheim	Imperial Hwy/Orangethorpe Ave Ramps	A	0.41	A	0.51	A	0.42	A	0.42
Anaheim	Imperial Hwy NB On/Orangethorpe Ave	A	0.26	A	0.27	A	0.3	A	0.27
Anaheim	Imperial Hwy Off/SB On/Orangethorpe Ave	A	0.32	A	0.49	A	0.39	A	0.43
Brea	SR-57 SB Ramps/Imperial Highway	B	0.68	A	0.58	B	0.7	C	0.74
Brea	State College Boulevard/Imperial Highway	C	0.73	B	0.65	E	0.93	C	0.74
Brea	Valencia Avenue/Imperial Highway	A	0.56	A	0.52	A	0.59	A	0.5
Brea	SR-57 NB Ramp/Imperial Highway	C	0.78	B	0.62	E	0.91	C	0.71
Buena Park	Beach Boulevard/Orangethorpe Avenue	C	0.76	Under Construction		D	0.87	Under Construction	
Buena Park	I-5 SB Ramps/Beach Boulevard	C	0.72	B	0.61	C	0.78	B	0.65
Buena Park	SR-91 EB Ramp/Beach Boulevard	C	0.74	A	0.47	D	0.84	A	0.55
Buena Park	SR-91 EB Ramp/Valley View Street	A	0.58	B	0.63	D	0.86	B	0.68
Buena Park	SR-91 WB Ramp/Beach Boulevard	A	0.58	A	0.51	A	0.59	A	0.59
Buena Park	SR-91 WB Ramp/Valley View Street	C	0.8	C	0.73	E	0.94	C	0.74
Costa Mesa	Harbor Boulevard/Adams Avenue	E	0.99	B	0.64	F	1.09	C	0.71
Costa Mesa	I-405 SB Ramps/Harbor Boulevard	A	0.53	A	0.44	B	0.63	B	0.6
Costa Mesa	I-405 NB Ramps/Harbor Boulevard	E	0.95	A	0.52	F	1.07	B	0.66
Cypress	Valley View Street/Katella Avenue	B	0.63	B	0.66	D	0.87	C	0.72
Dana Point	Crown Valley Parkway/Bay Drive/PCH	F	1.41	A	0.57	F	1.62	A	0.56
Dana Point	Street of the Golden Lantern/Del Prado Avenue	A	0.32	Under Construction		A	0.53	Under Construction	
Dana Point	Street of the Golden Lantern/PCH	A	0.42	Under Construction		A	0.55	Under Construction	
Fullerton	Harbor Boulevard/Orangethrope Avenue	A	0.6	B	0.63	E	0.94	C	0.78
Fullerton	State College Boulevard/Orangethorpe Avenue	C	0.8	A	0.56	D	0.86	C	0.7
Garden Grove	SR-22 WB/Beach Boulevard	C	0.73	C	0.73	C	0.73	B	0.69
Garden Grove	SR-22 WB Ramp/Valley View Street	C	0.76	B	0.67	D	0.87	C	0.76
Garden Grove	SR-22 WB Ramps/Harbor Boulevard	F	1.1	C	0.71	F	1.16	B	0.68
Huntington Beach	Beach Boulevard/405 SB Ramp/Edinger Avenue	B	0.63	B	0.67	E	1.03	C	0.76
Huntington Beach	Beach Boulevard/Adams Avenue	A	0.55	A	0.58	C	0.67	B	0.66
Huntington Beach	Beach Boulevard/Pacific Coast Highway	A	0.45	A	0.55	A	0.47	B	0.64
Huntington Beach	Beach Boulevard/Warner Avenue	C	0.78	C	0.74	E	0.93	C	0.78
Huntington Beach	Bolsa Chica Street/Bolsa Avenue	B	0.66	B	0.6	A	0.53	A	0.57

FIGURE 4: 2015 CMP Level of Service Chart

Jurisdiction	Intersection/Interchange	Baseline AM LOS	Baseline AM ICU	2015 AM LOS	2015 AM ICU	Baseline PM LOS	Baseline PM ICU	2015 PM LOS	2015 PM ICU
Huntington Beach	Bolsa Chica Street/Warner Avenue	A	0.57	B	0.67	D	0.81	B	0.66
Huntington Beach	Pacific Coast Highway/Warner Avenue	D	0.81	Under Construction		B	0.72	Under Construction	
Irvine	SR-133 NB Ramps/Irvine Boulevard	A	0.37	A	0.58	A	0.33	A	0.56
Irvine	SR-133 SB Ramps/Irvine Boulevard	A	0.37	A	0.5	A	0.29	A	0.51
Irvine	SR-261 NB Ramps/Irvine Boulevard	A	0.38	A	0.42	A	0.53	A	0.53
Irvine	SR-261 SB Ramps/Irvine Boulevard	A	0.42	A	0.42	A	0.4	A	0.43
Irvine	I-405 NB Ramps/Enterprise/Irvine Center Drive	E	0.95	A	0.56	A	0.39	A	0.51
Irvine	I-405 NB Ramps/Jamboree Road	F	1.03	B	0.68	C	0.78	C	0.74
Irvine	I-405 SB Ramps/Irvine Center Drive	E	1	A	0.54	A	0.57	A	0.52
Irvine	I-405 SB Ramps/Jamboree Road	E	0.92	D	0.83	B	0.66	C	0.73
Irvine	I-5 NB Ramps/Jamboree Road	A	0.54	C	0.73	C	0.75	C	0.71
Irvine	I-5 SB Ramps/Jamboree Road	A	0.4	B	0.63	A	0.35	B	0.6
Irvine	MacArthur Boulevard/Jamboree Road	B	0.61	A	0.59	B	0.69	B	0.68
La Habra	Harbor Boulevard/Imperial Highway	D	0.81	B	0.64	D	0.86	B	0.69
La Habra	Beach Boulevard/Imperial Highway	D	0.85	A	0.59	D	0.87	B	0.65
La Habra	Beach Boulevard/Whittier Boulevard	A	0.33	A	0.46	A	0.29	A	0.46
Laguna Beach	El Toro Road/SR-73 NB Ramps	E	0.91	B	0.63	A	0.59	B	0.66
Laguna Beach	El Toro Road/SR-73 SB Ramps	A	0.41	A	0.47	B	0.67	B	0.63
Laguna Beach	Laguna Canyon Rd/SR-73 NB Ramps	C	0.73	F	1.04	C	0.72	E	0.97
Laguna Beach	Laguna Canyon Rd/SR-73 SB Ramps	A	0.32	A	0.38	A	0.33	A	0.43
Laguna Beach	Laguna Canyon Road/El Toro Road	F	1.54	C	0.72	F	1.16	B	0.63
Laguna Beach	Laguna Canyon Road/Pacific Coast Highway	D	0.84	C	0.76	C	0.74	B	0.63
Laguna Hills	I-5 SB Ramp/Avenida de la Carlotta/El Toro Road	F	1.18	A	0.47	F	1.13	A	0.48
Laguna Niguel	Moulton Parkway/SR-73 SB Ramps	A	0.45	A	0.42	A	0.38	A	0.45
Laguna Niguel	Moulton Parkway/Crown Valley Parkway	A	0.56	A	0.56	B	0.65	B	0.61
Laguna Woods	Moulton Parkway/El Toro Road	E	0.94	A	0.58	F	1.26	B	0.67
Lake Forest	I-5 NB/Bridger/El Toro Road	A	0.56	B	0.62	D	0.81	C	0.72
Lake Forest	Trabuco Road/El Toro Road	F	1.03	B	0.67	C	0.8	B	0.61
Los Alamitos	I-605 NB Ramps/Katella Avenue	B	0.69	A	0.38	B	0.65	A	0.53
Mission Viejo	I-5 NB Ramps/Crown Valley Parkway	B	0.68	B	0.6	B	0.69	B	0.6
Mission Viejo	I-5 SB Ramps/Crown Valley Parkway	D	0.86	B	0.62	F	1.01	C	0.72
Newport Beach	MacArthur Boulevard/Pacific Coast Highway	A	0.51	A	0.54	B	0.7	A	0.59
Newport Beach	Newport Boulevard/Pacific Coast Highway	A	0.56	B	0.68	A	0.49	A	0.59
Orange	SR-55 NB Ramps/Sacramento/Katella Avenue	C	0.75	B	0.69	D	0.85	D	0.82
Orange	SR-55 SB Ramps/Katella Avenue	C	0.73	E	0.93	E	0.95	D	0.85
Placentia	Rose Drive/Imperial Highway	E	0.95	B	0.63	E	0.99	C	0.75
Placentia	Rose Drive/Tustin Avenue/Orangethorpe Avenue	C	0.76	Under Construction		F	1.03	Under Construction	
Placentia	SR-57 NB Ramps/Orangethorpe Avenue	B	0.67	A	0.52	C	0.8	B	0.61
Placentia	SR-57 SB Ramps/Iowa Place/Orangethrope Avenue	C	0.74	A	0.41	B	0.69	A	0.48
San Juan Capistrano	I-5 NB Ramps/Ortega Highway	A	0.52	Under Construction		A	0.58	Under Construction	
San Juan Capistrano	I-5 SB Ramps/Ortega Highway	B	0.61	Under Construction		C	0.77	Under Construction	
Santa Ana	Harbor Boulevard/1st Street	A	0.48	C	0.72	D	0.81	C	0.78
Santa Ana	Harbor Boulevard/Warner Avenue	E	0.93	C	0.76	E	0.98	C	0.79
Santa Ana	I-5 SB Ramps/1st Street	A	0.29	A	0.49	A	0.46	A	0.6
Santa Ana	SR-55 SB Ramp/Auto Mall/Edinger Avenue	D	0.9	A	0.57	F	1.06	A	0.58

FIGURE 4: 2015 CMP Level of Service Chart

Jurisdiction	Intersection/Interchange	Baseline AM LOS	Baseline AM ICU	2015 AM LOS	2015 AM ICU	Baseline PM LOS	Baseline PM ICU	2015 PM LOS	2015 PM ICU
Santa Ana	SR-55 SB Ramps/Irvine Boulevard	B	0.68	D	0.89	D	0.83	B	0.69
Stanton	Beach Boulevard/Katella Avenue	D	0.89	C	0.71	F	1.02	B	0.68
Tustin	Jamboree Road/Edinger Avenue-NB Ramp	A	0.28	B	0.6	A	0.32	A	0.59
Tustin	Jamboree Road/Edinger Avenue-SB Ramp	D	0.81	B	0.6	A	0.41	A	0.59
Tustin	Jamboree Road/Irvine Boulevard	B	0.65	C	0.76	A	0.59	C	0.76
Tustin	SR-55 NB Ramps/Edinger Avenue	C	0.72	A	0.45	B	0.65	A	0.58
Tustin	SR-55 NB Ramps/Irvine Boulevard	A	0.59	C	0.71	A	0.45	C	0.79
Westminster	SR-22 EB/Beach Boulevard	A	0.53	A	0.55	A	0.54	A	0.51
Westminster	Beach Boulevard/Bolsa Avenue	F	1.09	D	0.82	F	1.11	C	0.78
Westminster	Bolsa Chica Road/Garden Grove Boulevard	E	0.91	C	0.72	E	0.97	C	0.78
	COUNTY AVERAGE		**0.67**		**0.59**		**0.72**		**0.62**

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Deficiency Plans

If an intersection does not meet LOS standards, then a deficiency plan is required, as described under California Government Code Section 65089.4. The deficiency plan identifies the cause of congestion, the improvements needed to solve the problem, and the cost and timing for implementing the proposed improvements.

A deficiency plan process has been developed by the CMP Technical Advisory Committee to provide local jurisdictions with a framework for maintaining compliance with the CMP when a portion of the CMPHS fails to meet its established LOS standard (Appendix C-1). The Deficiency Plan Decision Flow Chart (Appendix C-2) illustrates the individual steps that must be taken in order for a local jurisdiction to meet CMP deficiency plan requirements.

Deficiency plans are not required if a deficient intersection is brought into compliance within 18 months of its initial detection, using improvements that have been previously planned and programmed in the CMP Capital Improvement Program. In addition, CMP legislation specifies that the following shall be excluded from deficiency determinations:

- Interregional travel (trips with origins outside the Orange County CMPHS)
- Construction, rehabilitation, or maintenance of facilities that impact the system
- Freeway ramp metering
- Traffic signal coordination by the State or multi-jurisdictional agencies
- Traffic generated by the provision of low-income and very low-income housing
- Traffic generated by high-density residential development located within one-quarter mile of a fixed rail passenger station
- Traffic generated by any mixed-use development located within one-quarter mile of a fixed rail passenger station, but only if more than half of the land area, or floor area, of the mixed-use development is used for high-density residential housing.

In 2015, one intersection exceeded the CMP level of service standard. However, it is operated and controlled by Caltrans, who is not subject to CMP conformance determinations (§65089(3)).

- *Laguna Canyon Road/State Route 73 northbound ramps (City of Laguna Beach)* – ICU 1.04 (LOS F) in the AM peak hour and ICU 0.97 (LOS F) in the PM peak hour

Caltrans continues to address congestion at CMP intersections and is underway with a project that would add an additional lane to the SR-73 northbound ramps to Laguna Canyon Road.

Transit System Performance Measures

As Orange County's transit provider, OCTA continually monitors the frequency and routing of its transit services. Bus and rail transit are essential components of Orange County's transportation system, and are important tools for achieving a balanced multi-modal transportation system capable of maintaining level of service standards.

The CMP performance measures provide an index of the effectiveness and efficiency of Orange County's fixed-route bus and commuter rail services. ACCESS, OCTA's complementary paratransit service, is not included separately in the CMP analysis because it is an extension of the fixed-route service.

The OCTA Board-approved "Systemwide Bus Service Standards & Policies" are the basis for the performance analysis included in the CMP. The standards and policies allow for identification of areas in need of additional resources in transit service. Furthermore, once adequate transit operating funds are available, the transit performance measures will work to ensure that bus and rail services meet demand and are coordinated between counties.

Fixed-Route Bus Service

OCTA's fixed route bus service includes local routes, express routes, community routes, limited-stop/BRT routes, rail feeder and shuttle routes.

- Local routes (numbered 1 to 99) operate primarily along arterial corridors serving multiple bus stops spaced about 1/4 –mile apart, serving multiple destinations such as residential areas, employment centers, educational institutions and health care facilities. They are the most heavily used bus routes and in many cases require additional trips during peak commute periods.
- Express routes (numbered 200 to 299 and 700 to 799) provide higher speed point-to-point service along freeways and HOV facilities providing commuter period transportation to employment centers. Relatively few stops are made and service is generally designed to match typical work-time spreads. OCTA's 200-series express routes operate within Orange County while the 700-series services connect Orange County with neighboring counties.

- Community routes (numbered 100 to 199) are typically shorter distance services that may act as community circulators. They often provide connections to the local and express bus network. Community routes typically operate throughout the service day.
- Limited-stop/BRT routes (numbered 500 to 599) work with local routes and provide higher speed trips over major arterials. The speed advantage is realized by making fewer stops which are spaced about ¾-mile to 1 mile apart. Local bus riders making longer distance trips are among the transit users that are attracted to limited-stop/BRT service. Like local and community routes, these services operate throughout the service day.
- Rail feeder routes (numbered 400 to 499) provide access to and from employment centers for commuters using Metrolink commuter rail service. Feeder trips are scheduled to match specific train trips and, like express routes, operate only during commute hours.
- Shuttle routes (numbered 600 to 699) serve special event venues or provide additional connections to community points of interest as a traffic mitigation tool. Shuttle routes may be point-to-point and seasonal in nature such as OCTA's Orange County Fair Express network or confined to a single community perhaps using a short distance circular route structure.

As of June 2015, OCTA's fixed route bus service has a total of 77 routes. The network is comprised of 40 local routes, 14 community routes, 10 express routes (five intra- and five inter-county routes), 12 rail feeder routes, and one limited-stop route.

Target Service Standards and Policies

OCTA target service standards direct the development, implementation, monitoring, and modification of OCTA bus services. These standards are intended to govern the planning and design of the service. As such, they depict a desirable state against which existing service is assessed. The standards currently in place were adopted by the OCTA Board of Directors in 2012 and are summarized in Figure 5.

FIGURE 5: System-Wide Bus Service Standards and Policies

TARGET SERVICE STANDARDS & POLICIES

SPAN OF SERVICE:	LOCAL ROUTES (1-99 series)	BUS RAPID TRANSIT LIMITED (500-series)	COMMUNITY ROUTES (100-199 series)	EXPRESS ROUTES (200, 700-series)	RAIL FEEDER ROUTES (400-series)	SPECIAL EVENTS (600-series)
WEEKDAY:	5:30 A.M. - 8:30 P.M.	5:30 A.M. - 8:30 P.M. (1)	5:30 A.M. - 8:30 P.M. (1)	(1)	(1)	N/A
WEEKENDS & HOLIDAYS	7:00 A.M. - 7:00 P.M.	7:00 A.M. - 7:00 P.M.	7:00 A.M. - 7:00 P.M.	N/A	N/A	N/A

Span is defined as the first and last trips departing the terminal of origin.
(1) Based on Demand

PERFORMANCE STANDARDS:	LOCAL ROUTES (1-99 series)	BUS RAPID TRANSIT LIMITED (500-series)	COMMUNITY ROUTES (100-199 series)	EXPRESS ROUTES (200, 700-series)	RAIL FEEDER ROUTES (400-series)	SPECIAL EVENTS (600-series)
BOARDINGS/REVENUE VEHICLE HOUR:	30	25	10	N/A	N/A	N/A
SEAT OCCUPANCY ROUTE:	N/A	N/A	N/A	50%	N/A	N/A

Target service standards are work-toward goals and contigent on available funding

The current (June 2015) adherence to these standards is detailed below:

Weekday Span of Service Standard Compliance

Service	Yes	No	Partial
Local Routes	24	8	8
Bus Rapid Transit / Limited[1]	0	0	1
Community Routes	3	10	1
Express Routes	Based on Demand		
Rail Feeder Routes	Based on Demand		

[1] Bus Rapid Transit/Limited is in partial compliance with AM service starting at 5:00 AM. The standard is 5:30 AM to 8:30 PM, based on demand.

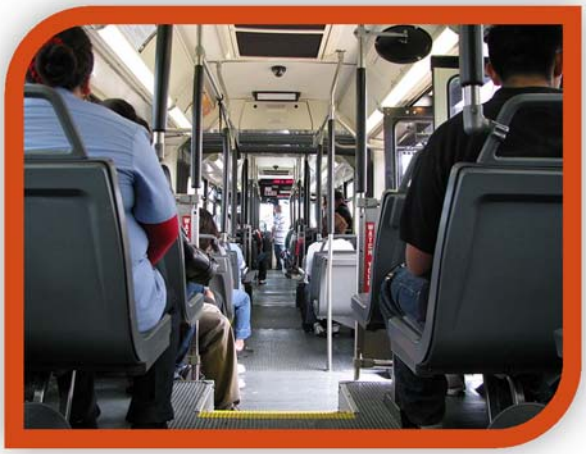
Weekday Productivity Standard Compliance

Service	Yes	No
Local Routes	20	20
Bus Rapid Transit / Limited	1	0
Community Routes	9	5
Express Routes	NA	
Rail Feeder Routes	NA	

Performance Standards and Policies

The section that follows describes OCTA's Performance Standards & Policies for vehicle load, vehicle headway, on-time performance, and service accessibility. These standards were adopted by the OCTA Board of Directors and are summarized in Figure 6.

While service standards guide the delivery of service, performance measures evaluate the effectiveness of the service.



Performance Measure 1: Vehicle Headway

Vehicle Headway is the time interval between vehicles on a route that allows passengers to gauge how long they will have to wait for the next vehicle. Similar to vehicle load, vehicle headway varies by mode and time of day. Vehicle headway is primarily determined by bus ridership and is limited by the availability of resources to operate the system.

Weekday Vehicle Headway Standard Compliance

Service	Yes	No	Partial
Local Routes	18	16	6
Bus Rapid Transit / Limited	1	0	0
Community Routes	11	3	0
Express Routes	9	1	0
Rail Feeder Routes	12	0	0

Performance Measure 2: Vehicle Load

OCTA's Vehicle Load applies to the maximum number of passengers allowed on a service vehicle in order to ensure the safety and comfort of customers. The load standard is expressed as the ratio of passengers to the number of seats on the vehicle and it varies by mode and by time of day. OCTA passenger loads should not exceed 130 percent of seating capacity during any one-hour peak period on individual local fixed-routes or 100 percent on any express trip. OCTA regularly monitors the system to ensure appropriate allocation of trips on its lines. Lines with one or two trips experiencing overloading are usually addressed through additional trips. Lines with more than two trips experiencing overloading problems are analyzed for possible schedule changes or increases in frequency.

Performance Measure 3: On-time Performance (OTP)

OCTA defines On-Time Performance as not more than five minutes late. On-Time Performance is measured at the time-point. A trip is on-time as long as it does not leave the time-point ahead of the scheduled departure time and no more than five minutes later than the scheduled departure time.

The On-Time Performance Service Standard is measured at the system line level of 85% of the actual departure times will meet the definition for being on-time. Exclusions from On-Time Performance are early departure times at time-points located within Free Running time route segments and Stationlink routes are measured for trips scheduled to arrive at Metrolink stations in the evening. System-wide On-Time Performance for FY14-15 was 87%.

Performance Measure 4: Service Accessibility

Service Accessibility is the percentage of population in proximity to bus service. Accessibility to OCTA service is defined as 90% of Orange County jobs and residents are within ½ mile of an OCTA bus route. A review of service accessibility conducted in 2015 shows that 91 % of jobs and residents are within ½ mile of an OCTA bus route.

Meeting Transit Service Standards and Policies

The lack of ongoing operating revenues and competing resources contribute to OCTA's inability to meet all the standards and policies. The OCTA Short-Range Transit Plan outlines the priorities for meeting transit policies and standards as new resources become available. Below is the allocation priority included in the FY13-14 plan:

1. Addressing on-time performance issues, especially for low-income and/or minority routes. The poorest performing routes should be addressed first, along with routes with long headways (30 minutes or more) where customers are more likely to time their arrival at stops based on the scheduled times.
2. Addressing loads, focusing on routes with the greatest number of trips where loads exceed 130 percent of capacity.
3. Addressing headway issues. Applying the headway standards will be an iterative process, because many of the routes with headways exceeding the maximum standard have low demand and/or cycle times that do not fit a 30-minute or 60-minute schedule. Routing adjustments may be needed to maximize the efficiency of the schedules, or exceptions may be allowed in specific cases.
4. Addressing coverage issues, adding service in areas where gaps in coverage have been identified and land use patterns and/or demographics suggest that there is demand for transit service.

FIGURE 6: Performance Standards and Policies

PERFORMANCE STANDARDS AND POLICIES

TIME PERIOD DEFINITIONS:

WEEKDAY PEAK PERIODS: 6 A.M. - 9 A.M. AND 3 P.M. - 6 P.M.
OFF-PEAK: WEEKDAYS OFF-PEAK ARE THE PERIODS PRECEDING OR FOLLOWING THE DEFINED A.M. AND P.M. PEAK PERIODS, AND ALL-DAY ON WEEKENDS. AND ALL-DAY ON WEEKENDS AND HOLIDAYS

HEADWAYS:

Policy: Service operates on Local Routes (1-99 series) and Bus Rapid Transit/Limited Stop Routes (500-series) every 30-minutes or better during weekdays and weekends. Service operates on Community Routes (100-199 series) every 60-minutes or better during weekdays and weekends. Service operates on Express Routes (200-series and 700-series), and Rail Feeder Routes (400-series) weekdays only with a minimum of two trips scheduled in the morning and afternoon commute periods. Service operates on Special Event Routes (600-series) for a limited period of time with service scheduled to meet the needs of the event.

TARGET HEADWAY STANDARDS:	LOCAL ROUTES (1-99 series)	BUS RAPID TRANSIT LIMITED (500-series)	COMMUNITY ROUTES (100-199 series)	EXPRESS ROUTES (200, 700-series)	RAIL FEEDER ROUTES (400-series)	SPECIAL EVENTS (600-series)
PEAK WEEKDAY PERIOD (6-9 A.M., 3-6 P.M.):	30 MIN	30 MIN	60 MIN	(2)	(2)	N/A
OFF-PEAK/WEEKENDS:	30 MIN	30 MIN	60 MIN	N/A	N/A	N/A

(2) Minimum two one-way trips per peak weekday period.

LOADING STANDARDS:

Policy: The average of all loads during the weekday peak periods should not exceed achievable vehicle capacity which is 20 to 26 passengers for intermediate size buses; 44 to 49 passengers for low floor 40-foot buses; and 83 passengers for 60-foot buses.

Vehicle Type	Average Passenger Capacities				
	Seated	Standing	Total	Maximum Load Factor	Maximum Load Factor %
26' Cut-Away Bus	20	N/A	20	1.0	100%
31' Cut-Away Bus	26	N/A	26	1.0	100%
*40' Standard Bus**	34	10	44	1.3	130%
*40' Standard Bus**	36	10	46	1.3	130%
*40' Standard Bus**	37	11	48	1.3	130%
*40' Standard Bus**	38	11	49	1.3	130%
60' Articulated Bus	64	19	83	1.3	130%

**OCTA standard 40-foot buses vary in seats provided, from 34-seats on buses used for freeway express service to 38-seats on LNG buses.*

TARGET LOAD STANDARDS BY SERVICE TYPE:	LOCAL ROUTES (1-99 series)	BUS RAPID TRANSIT LIMITED (500-series)	COMMUNITY ROUTES (100-199 series)	EXPRESS ROUTES (200, 700-series)	RAIL FEEDER ROUTES (400-series)	SPECIAL EVENTS (600-series)
WEEKDAY PEAK PERIOD(% SEATS):	130% (3)	130% (3)	130% (3)	100%	130%	N/A
OFF-PEAK/WEEKEND (% SEATS):	100%	100%	100%	N/A	N/A	N/A

(3) 130% average during peak one hour in each peak period; maintain 125% average in remaining two hours in each peak

ON-TIME PERFORMANCE STANDARD:

Defined: Measured at the timepoint, a trip is on-time as long as it does not leave the timepoint ahead of the scheduled departure time, and no more than 5-minutes later than the scheduled departure time.

Standard: At the system level, 85% of the actual departure times will meet the definition for being On-Time. Change to 85% at the line level as reliable On-Time Performance measuring system becomes available.

Exclusions: Early departure times at timepoints located within Free Running time route segments will be considered to be On-Time. Stationlink routes OTP is measured for trips scheduled to arrive at Metrolink Stations in the P.M.

TARGET ACCESSIBILITY STANDARD:

% OF SERVICE AREA POPULATION & JOBS WITHIN 1/2 MILE OF A BUS ROUTE: 90% OR HIGHER

Coordination of Transit Service with Other Carriers

OCTA coordinates the delivery of transit services with several transit agencies. They include the City of Laguna Beach, the City of Irvine, Riverside Transit Agency, Norwalk Transit System, Los Angeles County Metropolitan Transportation Authority, Long Beach Transit, Foothill Transit, North County Transit District, Omnitrans, Anaheim Transportation Network, various specialized charter bus services, and commuter rail services.

OCTA also coordinates schedules and bus stops with neighboring agencies and commuter rail services. Internet-based services such as Google transit include respective service schedules and facilitate transfers between the various systems where feasible.

Commuter Rail Service

Metrolink is Southern California's commuter rail system that links residential communities to employment and activity centers. Metrolink is operated by the Southern California Regional Rail Authority (SCRRA), a joint powers authority of five member agencies representing the counties of Los Angeles, Orange, Riverside, San Bernardino and Ventura.

Currently, Metrolink provides service on seven routes, covering 512 miles through six counties in Southern California. On an average weekday, there are 165 trains serving roughly 44,000 passenger trips at 55 stations. Orange County plays an important and growing role within this system.

As one of the five SCRRA member agencies, OCTA administers and funds Orange County's portion of the Metrolink commuter rail system. Orange County's share of Metrolink service covers 68 route miles and sees approximately 16,000 average weekday boardings, comprising more than 30 percent of Metrolink's total system-wide boardings. There are 11 stations in Orange County that serve a total of 54 one-way trips each weekday on three lines:

- **Orange County (OC) Line**: Daily service from Los Angeles Union Station to Oceanside;
- **Inland Empire-Orange County (IEOC) Line**: Daily service from San Bernardino and Riverside through Orange to Oceanside; and
- **91 Line**: Daily service from Riverside through Fullerton to Los Angeles Union Station.

- **Inland Empire-Orange County (IEOC) Line**: Daily service from San Bernardino and Riverside through Orange to Oceanside; and
- **91 Line**: Daily service from Riverside through Fullerton to Los Angeles Union Station.

In 2006, Metrolink Weekend service was introduced on the OC and IEOC Lines, with increased service during the summer travel season. In July 2014, weekend service was added on the 91 Line, providing four trains between Riverside and Los Angeles Union Station. Weekend ridership varies considerably dependent upon the season and local events, but generally the OC, IEOC and 91 Lines carry a total of approximately 4,000 riders per weekend day.

OCTA and other local agencies provide free transfers to local bus service to deliver Metrolink passengers to their final destinations. OCTA has 12 dedicated StationLink bus routes that connect with Orange County Metrolink stations in Anaheim Canyon, Anaheim, Orange, Santa Ana, Tustin, Irvine and Laguna Niguel/Mission Viejo. In Irvine, the iShuttle has four routes that provide peak hour connections to and from the Tustin and Irvine stations. Anaheim Resort Transportation also provides transfers at the Anaheim station. These local transit connections offer Metrolink ticket holders easy connections between stations and major employment and activity centers, with schedules designed to meet Metrolink weekday train arrivals and departures.

In addition to Metrolink, Amtrak's Pacific Surfliner provides daily service from Los Angeles Union Station to downtown San Diego as an alternative for commuters. Within Orange County, Amtrak station stops include Fullerton, Anaheim, Santa Ana, Irvine, San Juan Capistrano, and San Clemente (seasonal).

Future Transit Improvements

OCTA's 2014 Long-Range Transportation Plan (LRTP) outlines a vision for multi-modal transportation improvements throughout Orange County. OCTA is continuing to work towards implementing all of the components presented in the LRTP.

The components of the Preferred Plan, as presented in the 2014 LRTP, include transit improvements such as: (1) expanding bus service hours and routes, (2) expanding the level of Metrolink commuter rail service to Los Angeles, (3) improving local connections

to and from Metrolink stations, (4) implementing streetcar connections between Metrolink stations and popular destinations, and (5) connecting Metrolink service to new regional transportation systems and centers over the span of the plan.

OCTA completed the 2013 Short-Range Transit Plan (SRTP), which directs fixed-route transit improvements if additional resources become available. Any additional revenue service hours will be split between schedule maintenance and new service. The SRTP outlines the criteria for which routes will receive additional service and corridors for new service in the next five years.

Commuter Rail Service Improvements

Metrolink commuter rail service in Orange County is enhanced through OCTA's Metrolink Service Expansion Program (MSEP). SCRRA and OCTA staff have developed an implementation plan to provide higher-frequency Metrolink service on the OC Line between the Laguna Niguel/Mission Viejo station and the Fullerton Transportation Center. The increased Orange County Metrolink service provides additional passenger capacity as well as new off-peak trips, making Metrolink a more convenient travel alternative.

The MSEP also included significant track and switch improvements, railroad signal and communication upgrades, station and platform improvements, including added parking capacity, and safety enhancements, and a countywide grade crossing safety project, which are all now complete. OCTA is also working to design and construct a new Metrolink station in the City of Placentia. These improvements will be needed to accommodate the expected growth in ridership that will come with the service expansion. Funding for the MSEP is being provided though Measure M2, Orange County's half-cent sales tax for transportation improvements.

Chapter 4: Transportation Demand Management

Transportation Demand Management (TDM) strategies are geared toward increasing vehicle occupancy, promoting the use of alternative modes, reducing the number of automobile trips, decreasing overall trip lengths, and improving air quality. The adoption of a TDM ordinance was required of every local jurisdiction for Orange County's 1991 Congestion Management Program (CMP). The adoption of these ordinances is no longer a statutory requirement, however OCTA continues to encourage local jurisdictions to maintain these ordinances as a means of reducing greenhouse gas emissions.

TDM Ordinances

The model TDM ordinance, prepared by OCTA, promotes carpools, vanpools, alternate work hours, park and ride facilities, telecommuting, and other traffic reduction strategies. OCTA updated the model ordinance in 2001 to reflect the adoption of Rule 2202 by the South Coast Air Quality Management District (SCAQMD), which requires employers with 250 or more employees at a worksite to develop an emission reduction program to help meet an emission reduction target set by the SCAQMD.

Principal provisions of the TDM model ordinance are as follows:

- Applies to non-residential public and private development proposals expected to generate more than 250 employees;
- Contains a methodology for determining projected employment for specified land use proposals;
- Includes mandatory facility-based development standards (conditions of approval) that apply to proposals that exceed the established employment threshold;
- Presents optional provisions for implementing operational TDM programs and strategies that target the property owner or employer, and requires annual reporting on the effectiveness of programs and strategies proposed for facilities;
- Contains implementation and monitoring provisions; and
- Includes enforcement and penalty provisions.

Several jurisdictions have adopted ordinances that go beyond those contained in the model TDM ordinance. Such strategies include:

- Encouraging employers to establish and help subsidize telecommuting, provide monetary incentives for ridesharing, and implement alternative work hour programs;
- Proposing that new development projects establish and/or participate in Transportation Management Associations (TMAs);
- Implementing bus loading facilities at worksites;
- Implementing pedestrian facilities such as sidewalks, paved pathways, and pedestrian grade separations over arterial streets to connect worksites to shopping, eating, recreation, parking, or transit facilities; and
- Participating in the development of remote parking facilities and the high-occupancy vehicles (i.e., shuttles, etc.) to serve them.

Countywide TDM Strategies

TDM efforts in Orange County are not just limited to the implementation of the local TDM ordinance provisions. Countywide services and programs, as described below, also help to manage demand on the multimodal system.

Transit/Shuttle Services

Local fixed-route bus service comprises the largest portion of OCTA's transit services. In addition, OCTA provides feeder bus service to commuter rail (Metrolink) stations. Express bus service provides patrons with longer routes that utilize freeways to connect residential areas to Orange County's main employment centers. ACCESS is OCTA's shared-ride service for people who are unable to use the regular, fixed-route bus service because of functional limitations caused by a disability. These passengers must be certified by OCTA to use the ACCESS system by meeting the Americans with Disabilities Act (ADA) eligibility criteria.

OCTA Vanpool Program

The OCTA Vanpool Program assists commuters working in Orange County. OCTA coordinates with commuters, employers, and private vanpool operators to organize and sustain vanpools, and provides a monthly subsidy for each vanpool to offset vehicle lease and maintenance costs. In addition to Caltrans-maintained park-and-ride lots, OCTA

maintains park-and-ride lots throughout the County and supports the Guaranteed Ride Home Program. OCTA provides trip planning tools on their website and on the phone through the new 5-1-1 service. OCTA has also provided the necessary data to Google Transit® to integrate trip planning with other Southern California transit operators. These efforts are designed to reduce single-occupancy commuting.

Transportation Management Associations

Transportation Management Associations (TMAs) are comprised of groups of employers who work together to solve mutual transportation problems by implementing programs to increase average vehicle ridership. Presently, Orange County has TMAs located in the following areas:

- Irvine (Irvine Spectrum TMA)
- Anaheim (Anaheim Transportation Network)

Park-and-Ride Lots

Currently there are 28 park-and-ride lots in Orange County providing 9,241 parking spaces. Of the 28 lots, 11 are located at Metrolink stations, accounting for 7,038 of the parking spaces. Also, four of the lots are located at OCTA transit centers, which account for 1,282 parking spaces. The remaining 921 spaces are at Caltrans-managed lots.

Park-and-ride lots serve as transfer points for commuters to change from one mode of travel (usually single-occupancy automobile) to another, higher capacity mode (bus, train, carpool, or vanpool). Providing a convenient system of park-and-ride transfer points throughout Orange County encourages ridesharing and the use of higher capacity transit systems, which improves the efficiency of the transportation system. Park-and-ride lots are also a natural companion to Orange County's network of High Occupancy Vehicle (HOV) lanes and transitways on the freeways.

Parking Cash-Out Programs

Parking cash-out programs are employer-funded programs that provide cash incentives to employees who do not drive to work. The most effective programs provide an incentive equal to the full cost of employee parking. State law requires certain employers who provide subsidized parking for their employees to offer a cash allowance in lieu of a parking space. This law is called the parking cash-out program. The intent of the law is to

reduce vehicle commute trips and emissions by offering employees the option of "cashing out" their subsidized parking space and taking transit, biking, walking or carpooling to work.

Guaranteed Ride Home Program

Employers throughout Orange County have the option to participate in OCTA's Guaranteed Ride Home Program. This program provides reliability for those who rideshare but are faced with an unexpected illness, at-home emergency, or unexpected overtime.

Complete Streets

On September 30, 2008 Governor Arnold Schwarzenegger signed Assembly Bill 1358, the California Complete Streets Act. The Act states: "In order to fulfill the commitment to reduce greenhouse gas emissions, make the most efficient use of urban land and transportation infrastructure, and improve public health by encouraging physical activity, transportation planners must find innovative ways to reduce vehicle miles traveled (VMT) and to shift from short trips in the automobile to biking, walking and use of public transit."

The legislation impacts local general plans by adding the following language to Government Code Section 65302(b)(2)(A) and (B):

> (A) Commencing January 1, 2011, upon any substantial revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of the streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.
>
> (B) For the purposes of this paragraph, "users of streets, roads, and highways" means bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.

Active Transportation

In 2012, the League of American Bicyclists declared Orange County a Bronze-level bike friendly community. This was in recognition of the collective county-level and local efforts to improve the viability of bicycling in Orange County. This includes regional bikeway planning, a bike safety marketing campaign, and targeting first/last mile connectivity to transit for both bicyclists and pedestrians. In support of these efforts, OCTA allocates funding to local agencies through the Bicycle Corridor Improvement Program (BCIP) call for projects.

There are also efforts to improve conditions for pedestrians. OCTA's Pedestrian Action Plan recommends actions to improve pedestrian safety countywide. Work on many of these actions has entailed: regular bicycle and pedestrian safety campaigns, hosting educational webinars for community members and local agency staff, collaboration with the Southern California Association of Governments on a region-wide safety campaign, an inventory of sidewalks on major roadways, support to cities pursuing active transportation funding, and supporting legislation related to hit-and-run convictions.

Motorist Aid and Traffic Information System (511)

Orange County's 511 service is a one-stop source for up-to-the-minute travel information, advisories and trip planning information. Traffic and transit updates are provided via the free Go511 application, calling 511, or visiting Go511.com.

The 511 Motorist Aid and Travelers' Information System (MATIS) helps commuters outsmart traffic with the following services:

- Real-time traffic speed, congestion & incident information
- Live freeway cameras & roadwork advisories
- Bus & rail trip planner
- Scheduled departures for 70+ transit agencies in SoCal
- Carpool & ride matching information
- Park & Ride lot locations (website/phone)
- Airport information (website only)
- Bike maps, tips & resources (website only)
- Local weather conditions (website only)

The 511 system can be accessed around the clock throughout Orange County by calling 511. Accessing the Go511 system from other surrounding counties is also available by calling 877.22.go511.

Freeway Construction Mitigation

OCTA and Caltrans developed a comprehensive public outreach program for commuters impacted by construction projects and improvements on Orange County freeways. The outreach program alleviates traffic congestion during freeway construction by providing

up-to-date ramp, lane, and bridge closure information; as well as suggestions for alternate routes and travel modes.

Outreach efforts include public workshops, open houses, fast fax construction alerts, flyers and newsletters, as well as other materials and presentation events. Also, OCTA's website (www.octa.net), and the Orange County Freeway Construction Helpline (1-800 724-0353), make detour and closure information available. In addition, most jurisdictions implement traffic management plans to alleviate roadway congestion during construction.

Chapter 5: Land Use Impact Analysis

The Congestion Management Program (CMP) Traffic Impact Analysis (TIA) measures impacts of proposed development projects on the CMP Highway System (CMPHS). Each jurisdiction in Orange County was allowed to select either the process outlined in the CMP TIA guidelines (Appendix B-1), or their existing traffic-environmental analysis process, as long as consistency is maintained with the CMP TIA guidelines.

Since 1994, the selected TIA process has been consistently applied to all development projects meeting the adopted trip generation thresholds (i.e., 2,400 or more daily trips for projects adjacent to the CMPHS, and 1,600 or more daily trips for projects that directly access the CMPHS).

OCTA allowed exemptions from this requirement for selected categories of development projects, consistent with State legislation (Appendix B-2 for a listing of exempt projects). Each of the traffic impact analyses conducted focused on:

- Identifying locations where, and the extent to which, trips generated by the proposed project caused CMPHS intersections to exceed their Level of Service (LOS) standards;
- Assessing feasible mitigation strategies capable of reducing the identified impact, thereby maintaining the LOS standard; and,
- Utilizing existing environmental processes and inter jurisdictional forums to conduct cooperative, inter jurisdictional discussion when proposed CMP mitigation strategies included modifications to roadway networks beyond the jurisdiction's boundaries; and/or, when a proposed development was identified that will increase traffic at CMPHS locations outside the jurisdiction's boundaries.

The biennial reporting process enables jurisdictions to report any locations where projected measurements would not meet the CMPHS LOS standards; as well as to discuss the projected impacts from development projects undergoing CMP traffic impact analyses. All jurisdictions in Orange County comply with the CMP land use coordination requirement.

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Chapter 6: Capital Improvement Program

The Capital Improvement Program (CIP) is a seven-year program of projects and programs that is adopted by each Orange County jurisdiction and integrated into a countywide CIP by the OCTA. It includes projects that will help to maintain or improve traffic conditions on the Congestion Management Program Highway System (CMPHS) and adjacent facilities. In addition to traditional capital projects, which preserve investments in existing facilities, the CIP can include projects that increase the capacity of the multi-modal system and provide air quality benefits, such as transit projects. Consistency with statewide standards is emphasized in order for projects in the CIP to compete for State funding.

The CIP projects, prepared by local jurisdictions for inclusion in the Orange County CMP, mitigate transportation impacts identified in the Land Use Impact Analysis component of the CMP, and preserve and maintain CMPHS infrastructure. Many types of CIP projects have been submitted by local jurisdictions in the past, including freeway ramp widenings, transportation systems management projects such as bus turnouts, intersection improvements, roadway widenings, signal coordination projects, and roadway resurfacing projects.

Each Orange County jurisdiction's CIP is included in Appendix E, which is published separately and provided on OCTA's website at www.octa.net/Plans-and-Programs/Congestion-Management-Program/Overview/. All projects in the CIP that are State or federally funded, or locally funded but of regional significance, are included in the Orange County portion of the Federal Transportation Improvement Program (FTIP), and are consistent with the Regional Transportation Plan (RTP), both of which are approved by SCAG.

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Chapter 7: CMP Conformance

As Orange County's Congestion Management Agency, the Orange County Transportation Authority (OCTA) is legislatively required to monitor the implementation of all elements of the Congestion Management Program (CMP), and biennially determine conformance. In so doing, OCTA consults with local jurisdictions.

OCTA determines if the local jurisdictions are in conformance with the CMP by monitoring the following:

- Consistency with level of service standards;
- Adoption of Capital Improvement Programs;
- Adoption and implementation of a program to analyze the impacts of land use decisions, including an estimate of the costs associated with mitigating those impacts; and
- Adoption and implementation of deficiency plans when highway and roadway level of service standards are not maintained.

OCTA gathers local traffic data to determine the levels of service (LOS) at intersections throughout the CMP Highway System (CMPHS), as discussed in Chapter 2. In addition, the local jurisdictions complete a set of checklists, developed by OCTA, that guide them through the CMP conformity process (Appendix D). The checklists address the legislative requirements of the CMP, including land use coordination, the Capital Improvement Program, and transportation demand management strategies.

Based on the LOS data and CMP checklists completed by the local jurisdictions, as summarized in Figure 7, the following was determined for the 2015 CMP Update:

Level of Service

The LOS data, collected by OCTA, was provided to local jurisdictions for verification. A few discrepancies in LOS reporting occurred as a result of slight variations in the data collection methodology used by the cities and OCTA, or due to erroneously reported intersection geometry. Any discrepancies in the LOS reporting were resolved through an

interactive, cooperative process between the cities and OCTA. The data shows that all local jurisdictions are in compliance with the established LOS standards.

Capital Improvement Program

All local jurisdictions submitted adopted seven-year capital improvement programs. The CIPs included projects to maintain or improve the traffic LOS on the CMPHS, or adjacent facilities which benefit the CMPHS.

Land Use Coordination

All local jurisdictions have adopted CMP Traffic Impact Analysis (TIA) processes for analyzing the impacts of land use decisions on the CMP Highway System. All local jurisdictions have applied their TIA processes to development projects that met the CMP minimum threshold of 2,400 or more daily trips (1,600 or more trips per day for development projects that will directly access the CMPHS).

Deficiency Plans

Based on the data exhibited in Figure 7, all non-exempt intersections on the CMP highway system were found in compliance with LOS requirements. Therefore, no deficiency plans were required for the 2015 CMP.

Regional Consistency

To ensure consistency between CMPs within the SCAG region, OCTA submits each biennial update of the Orange County CMP to SCAG. As the regional agency, SCAG evaluates consistency with the Regional Transportation Plan and with the CMPs of adjoining counties, and incorporates the program into the Federal Transportation Improvement Program (FTIP), once consistency is determined.

FIGURE 7: Summary of Conformance

Jurisdiction	Capital Improvement Program	Deficiency Plan	Land Use	Level of Service	2015 Compliance
Aliso Viejo *	Yes	N/A	Yes	N/A	Yes
Anaheim	Yes	N/A	Yes	Yes	Yes
Brea	Yes	N/A	Yes	Yes	Yes
Buena Park	Yes	N/A	Yes	Yes	Yes
Costa Mesa	Yes	N/A	Yes	Yes	Yes
Cypress	Yes	N/A	Yes	Yes	Yes
Dana Point	Yes	N/A	Yes	Yes	Yes
Fountain Valley *	Yes	N/A	Yes	N/A	Yes
Fullerton	Yes	N/A	Yes	Yes	Yes
Garden Grove	Yes	N/A	Yes	Yes	Yes
Huntington Beach	Yes	N/A	Yes	Yes	Yes
Irvine	Yes	N/A	Yes	Yes	Yes
La Habra	Yes	N/A	Yes	Yes	Yes
La Palma*	Yes	N/A	Yes	N/A	Yes
Laguna Beach	Yes	N/A	Yes	Yes	Yes
Laguna Hills	Yes	N/A	Yes	Yes	Yes
Laguna Niguel	Yes	N/A	Yes	Yes	Yes
Laguna Woods	Yes	N/A	Yes	Yes	Yes
Lake Forest	Yes	N/A	Yes	Yes	Yes
Los Alamitos	Yes	N/A	Yes	Yes	Yes
Mission Viejo	Yes	N/A	Yes	Yes	Yes
Newport Beach	Yes	N/A	Yes	Yes	Yes
Orange	Yes	N/A	Yes	Yes	Yes
Placentia	Yes	N/A	Yes	Yes	Yes
Rancho Santa Margarita *	Yes	N/A	Yes	N/A	Yes
San Clemente *	Yes	N/A	Yes	N/A	Yes
San Juan Capistrano	Yes	N/A	Yes	Yes	Yes
Santa Ana	Yes	N/A	Yes	Yes	Yes
Seal Beach *	Yes	N/A	Yes	N/A	Yes
Stanton	Yes	N/A	Yes	Yes	Yes
Tustin	Yes	N/A	Yes	Yes	Yes
Villa Park *	Yes	N/A	Yes	N/A	Yes
Westminster	Yes	N/A	Yes	Yes	Yes
Yorba Linda *	Yes	N/A	Yes	N/A	Yes
County *	Yes	N/A	Yes	Yes	Yes

*No CMP intersections within jurisdiction

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Appendix A: Freeway Level of Service

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Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
0.000	SAN DIEGO COUNTY LINE	4	37	5427	1541	0.88	7.22	43	E	45	5792	1555	0.93	7.22	36	E	
																	138,500
1.000	AVENIDA CALIFIA	4	30	5201	1435	0.91	7.22	50	F	40	5518	1492	0.92	7.22	39	E	
																	147,000
1.627	EL CAMINO REAL	4	55	4195	1239	0.85	7.22	23	C	40	4303	1153	0.93	7.22	30	D	
																	160,000
2.306	AVENIDA PRESIDIO	4	56	5616	1573	0.89	7.22	29	D	17	5604	1551	0.90	7.22	95	F	
																	162,000
2.663	AVENIDA PALIZADA	4	27	6053	1663	0.91	7.22	64	F	19	5961	1613	0.92	7.22	88	F	
																	187,000
3.393	AVENIDA PICO	4	53	5884	1551	0.95	7.22	30	D	49	6147	1732	0.89	7.22	37	E	
																	199,500
5.801	CAMINO ESTRELLA	4	59	7413	2000	0.93	7.22	35	E	61	7515	1905	0.99	7.22	32	D	
																	242,000
6.780	JCT RTE 1	4	58	6708	1774	0.95	4.25	31	D	62	6318	1683	0.94	4.25	28	D	
																	234,100
7.344	CAMINO CAPISTRANO	4	61	6931	1831	0.95	4.25	31	D	63	6475	1699	0.95	4.25	28	D	
																	251,300
8.795	SAN JUAN CREEK	4	60	7572	1995	0.95	4.27	34	D	61	6595	1669	0.99	4.27	28	D	
																	258,800
9.604	JCT. RTE. 74	4	68	8145	2163	0.94	4.27	32	D	64	7084	1861	0.95	4.27	30	D	
																	278,400
10.910	JUNIPERO SERRA	5	54	10031	2566	0.98	4.27	39	E	68	8813	2270	0.97	4.27	27	D	
																	286,200
12.490	JCT RTE 73	4	67	6058	1626	0.93	4.27	25	C	62	6003	1559	0.96	4.27	26	C	
																	248,000
12.943	AVERY PARKWAY	4	56	5740	1512	0.95	4.27	28	D	33	5382	1376	0.98	4.27	43	E	
																	255,200
13.776	CROWN VALLEY	4	46	5929	1668	0.89	3.50	37	E	58	6009	1572	0.96	3.50	28	D	
																	302,000
15.217	OSO PARKWAY	4	27	6514	1669	0.98	3.50	63	F	63	6592	1693	0.97	3.50	27	D	
																	315,000
16.528	LA PAZ ROAD	4	45	8014	2069	0.97	3.50	47	F	61	7361	1854	0.99	3.50	31	D	
																	311,100
17.472	ALICIA PARKWAY	5	43	8907	2343	0.95	3.50	44	E	64	7506	1915	0.98	3.50	24	C	
																	332,800

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Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
18.685	NIGUEL/EL TORO	5	48	10210	2618	0.97	3.50	44	E	65	8277	2126	0.97	3.50	27	D	
																	354,000
19.890	LAKE FOREST	5	70	10295	2713	0.95	3.50	32	D	63	7916	2037	0.97	3.50	26	D	
																	278,500
21.304	JCT. RTE. 405,	3	61	5022	1300	0.97	3.37	29	D	64	4252	1343	0.79	3.37	28	D	
																	153,000
22.213	ALTON PARKWAY	4	70	6876	1797	0.96	3.37	26	D	69	6194	1568	0.99	3.37	23	C	
																	200,000
23.120	JCT. RTE. 133	4	56	6947	1810	0.96	5.50	33	D	62	6761	1928	0.88	5.50	32	D	
																	242,700
23.942	SAND CANYON	6	55	8173	2160	0.95	5.50	27	D	55	8534	2286	0.93	5.50	28	D	
																	255,000
24.991	JEFFREY ROAD	5	65	8330	2188	0.95	5.50	28	D	54	7614	2067	0.92	5.50	31	D	
																	270,300
26.583	CULVER DRIVE	5	54	7768	2098	0.93	5.50	32	D	35	7358	1856	0.99	5.50	44	E	
																	293,400
27.589	JAMBOREE ROAD	5	51	8146	2158	0.94	5.50	35	D	62	7263	1849	0.98	5.50	25	C	
																	315,300
28.250	TUSTIN RANCH	6	33	9767	2484	0.98	5.50	52	F	55	9467	2482	0.95	5.50	31	D	
																	323,000
29.091	RED HILL AVENUE	5	55	9514	2485	0.96	5.50	37	E	49	8830	2281	0.97	5.50	38	E	
																	323,100
29.616	NEWPORT AVENUE	5	58	10100	2626	0.96	5.50	37	E	49	9343	2408	0.97	5.50	40	E	
																	278,200
30.263	JCT. RTE. 55,	5	60	7740	2009	0.96	5.50	28	D	46	6435	1665	0.97	5.50	30	D	
																	328,000
30.8	1ST STREET	5	65	10681	2750	0.97	5.50	35	D	51	8888	2284	0.97	5.50	37	E	
																	351,000
31.23	4TH STREET	5	64	10350	2675	0.97	5.50	34	D	60	8555	2199	0.97	5.50	30	D	
																	351,000
32.3	17TH STREET	5	62	9899	2570	0.96	5.50	34	D	49	8777	2273	0.97	5.50	38	E	
																	361,300
33.2	MAIN STREET	5	59	10188	2614	0.97	5.50	36	E	48	9475	2410	0.98	5.50	41	E	
																	365,000
35	CHAPMAN	5	65	6430	1635	0.98	7.00	21	C	59	7705	1964	0.98	7.00	28	D	

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Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
																	252,100
35.1	STATE COLLEGE	5	63	8168	2071	0.99	7.00	27	D	42	9112	2386	0.95	7.00	47	F	
																	290,000
35.6	GENE AUTRY	4	67	7427	1903	0.98	7.00	29	D	41	8981	2376	0.94	7.00	60	F	
																	263,900
36.48	KATELLA	4	69	5918	1528	0.97	9.60	23	C	36	7174	1938	0.93	9.60	56	F	
																	263,900
37.38	HARBOR	4	69	5569	1443	0.96	9.60	22	C	41	7210	1895	0.95	9.60	48	F	
																	263,100
37.7	BALL	4	68	6405	1637	0.98	9.60	25	C	45	8294	2193	0.95	9.60	51	F	
																	275,600
38.9	LINCOLN	5	70	6184	1629	0.95	9.60	20	C	62	8448	2204	0.96	9.60	30	D	
																	265,000
39.3	EUCLID	4	69	5828	1541	0.95	9.60	23	C	54	7821	2013	0.97	9.60	39	E	
																	260,000
40.5	BROOKHURST	4	68	5722	1487	0.96	9.60	23	C	60	7309	1870	0.98	9.60	33	D	
																	242,000
40.98	LA PALMA	5	70	5874	1521	0.97	9.60	18	C	58	7668	1964	0.98	9.60	28	D	
																	242,000
41.8	MAGNOLIA	4	67	3763	958	0.98	9.60	15	B	65	4529	1221	0.93	9.60	20	C	
																	242,000
42.5	ORANGETHROPE	6	71	5077	1328	0.96	11.60	13	B	65	5771	1480	0.97	11.60	16	B	

** % Truck and AADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is still currently 2013 data **

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
0.000	SAN DIEGO COUNTY LINE	4	52	5826	1466	0.99	7.22	29	D	61	5759	1559	0.92	7.22	26	D	
																	138,500
1.000	AVENIDA CALIFIA	4	54	5802	1472	0.99	7.22	28	D	61	5730	1512	0.95	7.22	26	C	
																	147,000
1.627	EL CAMINO REAL	4	66	5848	1495	0.98	7.22	23	C	66	5844	1502	0.97	7.22	24	C	
																	160,000
2.306	AVENIDA PRESIDIO	4	64	6231	1596	0.98	7.22	26	C	62	6198	1580	0.98	7.22	26	D	
																	162,000
2.663	AVENIDA PALIZADA	5	63	6204	1576	0.98	7.22	21	C	60	6183	1576	0.98	7.22	22	C	
																	187,000
3.393	AVENIDA PICO	5	67	7110	1806	0.98	7.22	22	C	66	6893	1781	0.97	7.22	22	C	
																	199,500
5.801	CAMINO ESTRELLA	4	59	8443	2155	0.98	7.22	38	E	62	8410	2121	0.99	7.22	35	E	
																	242,000
6.780	JCT RTE 1	5	39	3377	856	0.99	4.25	18	B	48	3669	954	0.96	4.25	16	B	
																	234,100
7.344	CAMINO CAPISTRANO	5	31	7657	1961	0.98	4.25	52	F	45	8257	2210	0.93	4.25	40	E	
																	251,300
8.795	SAN JUAN CREEK	4	43	6094	1558	0.98	4.27	37	E	43	6094	1558	0.98	4.27	37	E	
																	258,800
9.604	JCT. RTE. 74	4	38	7626	1968	0.97	4.27	53	F	60	8405	2158	0.97	4.27	37	E	
																	278,400
10.910	JUNIPERO SERRA	5	42	6553	1673	0.98	4.27	33	D	65	7493	1901	0.99	4.27	24	C	
																	286,200
12.490	JCT RTE 73	4	66	6129	1579	0.97	4.27	24	C	66	6327	1623	0.97	4.27	25	C	
																	248,000
12.943	AVERY PARKWAY	4	65	4648	1176	0.99	4.27	18	C	65	4786	1215	0.98	4.27	19	C	
																	155,200
13.776	CROWN VALLEY	4	64	6069	1562	0.97	3.50	25	C	65	6063	1575	0.96	3.50	25	C	
																	302,000
15.217	OSO PARKWAY	4	60	6578	1681	0.98	3.50	29	D	68	7088	1831	0.97	3.50	27	D	
																	315,000
16.528	LA PAZ ROAD	4	58	7873	2066	0.95	3.50	36	E	60	8882	2273	0.98	3.50	39	E	
																	311,100
17.472	ALICIA PARKWAY	4	60	7243	1987	0.91	3.50	34	D	55	8316	2153	0.97	3.50	40	E	
																	332,800

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Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
18.685	NIGUEL/EL TORO	5	68	8352	2127	0.98	3.50	25	C	56	10131	2579	0.98	3.50	37	E	
																	354,000
19.890	LAKE FOREST	6	58	8516	2243	0.95	3.50	26	D	56	9971	2606	0.96	3.50	32	D	
																	278,500
21.304	JCT. RTE. 405,	3	65	4456	1133	0.98	3.37	24	C	43	4533	1187	0.95	3.37	37	E	
																	153,000
22.213	ALTON PARKWAY	4	65	6492	1685	0.96	3.37	26	D	65	6508	1706	0.95	3.37	27	D	
																	200,000
23.120	JCT. RTE. 133	5	37	7200	1871	0.96	5.50	42	E	61	7040	1816	0.97	5.50	24	C	
																	242,700
23.942	SAND CANYON	5	59	7575	1944	0.97	5.50	27	D	63	7227	1845	0.98	5.50	24	C	
																	255,000
24.991	JEFFREY ROAD	5	60	9001	2318	0.97	5.50	32	D	64	8823	2292	0.96	5.50	29	D	
																	270,300
26.583	CULVER DRIVE	5	50	8048	2096	0.96	5.50	34	D	59	8040	2087	0.96	5.50	29	D	
																	293,400
27.589	JAMBOREE ROAD	5	40	8042	2056	0.98	5.50	42	E	53	8660	2269	0.95	5.50	35	E	
																	315,300
28.250	TUSTIN RANCH	5	60	11350	2874	0.99	5.50	39	E	61	11397	2858	1.00	5.50	39	E	
																	232,000
29.091	RED HILL AVENUE	5	51	10167	2567	0.99	5.50	41	E	54	10405	2675	0.97	5.50	41	E	
																	232,100
29.616	NEWPORT AVENUE	6	45	10415	2647	0.98	5.50	40	E	49	10840	2780	0.97	5.50	39	E	
																	278,200
30.263	JCT. RTE. 55,	4	45	6451	1635	0.99	5.50	37	E	53	7065	1796	0.98	5.50	35	D	
																	328,000
30.8	1ST STREET	5	36	8957	2302	0.97	5.50	53	F	41	9456	2445	0.97	5.50	49	F	
																	351,000
31.23	4TH STREET	5	45	8982	2275	0.99	5.50	42	E	44	9415	2450	0.96	5.50	46	F	
																	351,000
32.3	17TH STREET	5	38	9385	2451	0.96	5.50	53	F	51	9185	2331	0.99	5.50	38	E	
																	361,300
33.2	MAIN STREET	6	31	6694	1707	0.98	5.50	38	E	55	6385	1695	0.94	5.50	21	C	
																	365,000
35	CHAPMAN	6	33	8445	2159	0.98	7.00	45	F	44	7946	2017	0.98	7.00	32	D	
																	252,100

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Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
35.1	STATE COLLEGE	5	37	8420	2133	0.99	7.00	48	F	61	7787	2001	0.97	7.00	27	D	
																	240,000
35.6	GENE AUTRY	4	48	10785	2808	0.96	7.00	61	F	60	10655	2714	0.98	7.00	47	F	
																	263,900
36.48	KATELLA	4	30	6966	1762	0.99	9.60	62	F	66	6419	1652	0.97	9.60	26	D	
																	263,900
37.38	HARBOR	4	49	8243	2121	0.97	9.60	45	F	58	7146	1882	0.95	9.60	34	D	
																	263,100
37.7	BALL	4	49	7755	1975	0.98	9.60	42	E	62	7210	1945	0.93	9.60	33	D	
																	275,600
38.9	LINCOLN	4	38	7471	1747	1.07	9.60	48	F	62	7045	1798	0.98	9.60	30	D	
																	265,000
39.3	EUCLID	4	38	7467	1990	0.94	9.60	55	F	65	7225	1841	0.98	9.60	30	D	
																	260,000
40.5	BROOKHURST	4	34	6850	1854	0.92	9.60	57	F	62	7187	1863	0.96	9.60	31	D	
																	242,000
40.98	LA PALMA	6	38	7145	1954	0.91	9.60	36	E	69	7440	1930	0.96	9.60	20	C	
																	242,000
41.8	MAGNOLIA	6	31	6738	1895	0.89	9.60	43	E	67	6755	1813	0.93	9.60	19	C	
																	242,000
42.5	ORANGETHROPE	4	51	4200	1186	0.89	9.35	24	C	64	4320	1214	0.89	9.35	20	C	

** % Truck and AADT Values are the most recent values published at
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SB SR-55

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
0	TUSTIN, FINLEY AVENUE																
																	48,500
0.267	JCT. RTE. 1																
																	55,500
1.513	COSTA MESA, EAST 17TH STREET																
																	87,500
1.82	COSTA MESA, HARBOR BOULEVARD																
																	71,500
2.021	COSTA MESA, 19TH STREET																
																	94,500
R2.772	COSTA MESA, VICTORIA/22ND STRETS	3	58	3194	887	0.90	3.60	21	C	29	3206	842	0.95	3.60	39	E	
																	134,000
R4.022	COSTA MESA, MESA DRIVE	4	66.0	4138	1097	0.94	3.60	17	B	62.0	5501	1420	0.97	3.60	23	C	
																	153,400
R4.77	JCT. RTE. 73, CORONA DEL MAR FREEWAY	3	65.0	3611	964	0.94	3.60	20	C	60.0	4709	1206	0.98	3.60	27	D	
																	153,400
R5.99	JCT. RTE. 405, SAN DIEGO FREEWAY	3	56.0	5769	1467	0.98	3.50	36	E	41.0	6642	1718	0.97	3.50	57	F	
																	161,200
R6.99	SANTA ANA, MAC ARTHUR BOULEVARD	4	60.0	7653	1973	0.97	5.80	34	D	45.0	7544	1932	0.98	5.80	44	E	
																	281,000
R7.85	SANTA ANA, DYER ROAD	4	54.0	8330	2157	0.97	5.80	41	E	55.0	7299	1872	0.97	5.80	35	E	
																	287,900
R9.437	SANTA ANA, EDINGER AVENUE	4	61.0	8707	2220	0.98	5.80	37	E	62.0	7691	1943	0.99	5.80	32	D	

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Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
																	303,000
R9.96	TUSTIN, MC FADDEN STREET INTERCHANGE	4	47.0	8764	2278	0.96	5.80	50	F	57.0	7950	2012	0.99	5.80	36	E	
																	287,000
10.45	TUSTIN, JCT. RTE. 5, SANTA ANA FREEWAY	3	45.0	6641	1717	0.97	7.70	53	F	58.0	5481	1421	0.96	7.70	34	D	
																	238,500
10.979	SANTA ANA, FOURTH STREET INTERCHANGE	3	58.0	4823	1357	0.89	7.70	32	D	61.0	4606	1316	0.88	7.70	30	D	
																	259,000
11.785	TUSTIN, SEVENTEENTH STREET INTERCHANGE	4	37.0	7488	2011	0.93	7.70	56	F	48.0	7407	1925	0.96	7.70	42	E	
																	250,000
12.967	JCT. RTE. 22 WEST, GARDEN GROVE FREEWAY	4	68.0	5575	1492	0.93	7.50	23	C	67.0	5703	1491	0.96	7.50	23	C	
																	262,500
13.7	CHAPMAN AVENUE	4	37.0	6786	1780	0.95	5.90	50	F	46.0	6879	1792	0.96	5.90	40	E	
																	230,000
15.242	ORANGE, KATELLA AVENUE INTERCHANGE	4	52.0	6472	1718	0.94	5.90	34	D	64.0	6756	1780	0.95	5.90	29	D	
																	214,000
16.981	ORANGE, LINCOLN AVENUE INTERCHANGE	4	56.0	7401	1944	0.95	5.90	36	E	57.0	6879	1765	0.97	5.90	32	D	
																	215,100
17.876	JCT RTE 91																

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NB SR-57

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
11.1	AT CHAPMAN OFF	5	46	8479	2491	0.85	6.14	45	E	37	8849	2270	0.97	6.14	51	F	
																	244,000
11.22	CHAPMAN	5	64	6104	1577	0.97	6.14	20	C	67	5583	1494	0.93	6.14	18	C	
																	244,000
11.68	ORANGEWOOD	5	65	7127	1842	0.97	6.14	23	C	65	6827	1754	0.97	6.14	22	C	
																	250,100
12.2	STADIUM	5	N/A	N/A	N/A	N/A	6.14	N/A	N/A	N/A	N/A	N/A	N/A	6.14	N/A	N/A	
																	250,100
12.5	KATELLA	4	N/A	N/A	N/A	N/A	6.14	N/A	N/A	N/A	N/A	N/A	N/A	6.14	N/A	N/A	
																	250,100
12.9	DOUGLAS	4	67	6534	1715	0.95	6.14	26	D	58	5767	1477	0.98	6.14	26	D	
																	250,100
13.38	BALL	4	63	6096	1571	0.97	6.14	26	C	42	5431	1395	0.97	6.14	34	D	
																	251,700
13.9	WAGNER	4	61	6787	1771	0.96	6.14	30	D	46	6662	1691	0.98	6.14	38	E	
																	251,700
14.73	LINCOLN	4	65	3740	1015	0.92	6.14	16	B	28	3936	1054	0.93	6.14	39	E	
																	251,000
15.4	LA PALMA	3	62	6420	1676	0.96	6.14	37	E	61	5781	1511	0.96	6.14	34	D	
																	251,000
15.7	N OF 91	3	61	6964	1787	0.97	6.14	40	E	53	5535	1452	0.95	6.14	38	E	
																	278,500
16.5	ORANGETHROPE	5	67	7498	1916	0.98	6.14	24	C	60	7118	1814	0.98	6.14	25	C	
																	227,500
17.18	CHAPMAN	5	65	9279	2377	0.98	6.14	30	D	63	9625	2433	0.99	6.14	32	D	
																	227,500
18.3	YORBA LINDA	4	66	5916	1519	0.97	6.14	24	C	44	5984	1523	0.98	6.14	36	E	
																	244,200
19.1	ROLLING HILLS	4	61	3986	1066	0.93	6.14	18	C	46	4797	1250	0.96	6.14	28	D	
																	244,200
19.8	IMPERIAL	4	67	5226	1362	0.96	6.14	21	C	63	5576	1467	0.95	6.14	24	C	
																	224,200

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21.16	LAMBERT ROAD	4	65	5709	1539	0.93	6.14	24	C	44	5742	1582	0.91	6.14	37	E	
																	228,000
22	TONNER CANYON	4	68	5638	1495	0.94	6.14	23	C	55	5155	1342	0.96	6.14	25	C	
																	221,000

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SB SR-57

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
11.08	CHAPMAN	4	35	6660	1721	0.97	6.14	51	F	55	6567	1713	0.96	6.14	32	D	
																	244,000
11.55	ORANGEWOOD	4	57	7579	2186	0.87	6.14	40	E	61	7816	2068	0.94	6.14	35	D	
																	250,100
12.2	STADIUM	5	N/A	N/A	N/A	N/A	6.14	N/A	N/A	N/A	N/A	N/A	N/A	6.14	N/A	N/A	
																	250,100
12.4	KATELLA	4	51	9666	2532	0.95	6.14	51	F	36	9467	2513	0.94	6.14	72	F	
																	250,100
12.9	DOUGLAS	4	N/A	N/A	N/A	N/A	6.14	N/A	N/A	N/A	N/A	N/A	N/A	6.14	N/A	N/A	
																	250,100
13.27	BALL	4	48	7319	1958	0.93	6.14	42	E	35	7117	1813	0.98	6.14	53	F	
																	251,700
13.9	WAGNER	5	N/A	N/A	N/A	N/A	6.14	N/A	N/A	N/A	N/A	N/A	N/A	6.14	N/A	N/A	
																	251,700
14.65	LINCOLN	5	50	7036	1804	0.98	6.14	30	D	52	6848	1779	0.96	6.14	28	D	
																	251,000
15.4	LA PALMA	4	61	5176	1343	0.96	6.14	23	C	65	5181	1785	0.73	6.14	28	D	
																	251,000
15.7	N OF 91	4	66	5835	1547	0.94	6.14	24	C	69	5326	1371	0.97	6.14	20	C	
																	278,500
16.46	ORANGETHROPE	5	N/A	N/A	N/A	N/A	6.14	N/A	N/A	N/A	N/A	N/A	N/A	6.14	N/A	N/A	
																	277,500
17.18	CHAPMAN	4	32	7531	1953	0.96	6.14	63	F	55	7382	1886	0.98	6.14	35	E	
																	277,500
18.18	YORBA LINDA	5	34	7506	1990	0.94	6.14	48	F	52	7085	1827	0.97	6.14	29	D	
																	244,200
19.1	ROLLING HILLS	4	30	6134	1621	0.95	6.14	56	F	56	5600	1570	0.89	6.14	29	D	
																	244,200
19.73	IMPERIAL	4	21	6606	1755	0.94	6.14	86	F	51	5964	1652	0.90	6.14	33	D	
																	244,200
20.7	LAMBERT	4	25	6709	1866	0.90	6.14	77	F	67	5719	1484	0.96	6.14	23	C	
																	228,000
22.06	TONNER CANYON	4	31	6872	1905	0.90	6.14	63	F	62	6192	1577	0.98	6.14	26	D	
																	221,000

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NB SR-73

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
10.000	JCT RTE 5	3	62	3218	863	0.93	0.95	19	C	63	2714	1107	0.61	0.95	24	C	
																	34,800
11.760	GREENFIELD DR	3	63	2855	755	0.95	0.95	16	B	66	1271	352	0.90	0.95	7	A	
																	38,700
13.404	LA PAZ ROAD	3	68	3802	993	0.96	0.95	20	C	68	1460	386	0.95	0.95	8	A	
																	47,500
14.393	ALISO CREEK ROAD	4	66	4883	1300	0.94	0.95	20	C	67	1656	447	0.93	0.95	7	A	
																	26,600
16.250	EL TORO ROAD	4	66	4926	1300	0.95	1.04	20	C	66	1790	463	0.97	1.04	7	A	
																	66,700
18.696	TOLL PLAZA	4	58	5963	1529	0.97	1.04	26	D	65	2369	608	0.97	1.04	9	A	
																	66,700
21.428	NEWPORT COAST DRIVE	4	66	5114	1303	0.98	1.04	20	C	64	1956	506	0.97	1.04	8	A	
																	67,200
22.448	BONITA CANYON DRIVE/FORD ROAD	4	68	5696	1463	0.97	1.04	22	C	66	2072	533	0.97	1.04	8	A	
																	64,100
24.78	JAMBOREE ROAD	3	63	5919	1551	0.95	1.04	33	D	51	4568	1191	0.96	1.04	31	D	
																	173,700
26.58	COSTA MESA, JCT RTE 55	4	63	3500	935	0.94	1.04	15	B	65	1536	719	0.53	1.04	11	B	
																	116,500
27.28	COSTA MESA, BEAR STREET	3	65	6224	1647	0.94	1.04	34	D	63	7223	1825	0.99	1.04	39	E	
																	106,700
27.81	JCT RTE 405, SAN DIEGO FREEWAY	3	67	3799	982	0.97	2.35	20	C	37	4479	1167	0.96	2.35	43	E	

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SB SR-73

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
10.000	JCT RTE 5	3	64	2199	1037	0.53	0.95	22	C	53	3622	1167	0.78	0.95	29	D	
																	34,800
11.760	GREENFIELD DR	3	68	1198	313	0.96	0.95	6	A	66	2961	783	0.95	0.95	16	B	
																	38,700
13.404	LA PAZ ROAD	4	69	1085	281	0.97	0.95	4	A	61	2898	771	0.94	0.95	13	B	
																	47,500
14.393	ALISO CREEK ROAD	3	68	1170	311	0.94	0.95	6	A	63	4044	1074	0.94	0.95	23	C	
																	26,600
16.250	EL TORO ROAD	3	70	1503	400	0.94	1.04	8	A	62	4902	1285	0.95	1.04	28	D	
																	66,700
18.696	TOLL PLAZA	4	68	2839	730	0.97	1.04	11	A	63	7404	1952	0.95	1.04	31	D	
																	66,700
21.428	NEWPORT COAST DRIVE	4	70	1657	430	0.96	1.04	6	A	62	5347	1472	0.91	1.04	24	C	
																	67,200
22.448	BONITA CANYON DRIVE/FORD ROAD	4	68	1763	459	0.96	1.04	7	A	64	5527	1551	0.89	1.04	24	C	
																	64,100
24.78	JAMBOREE ROAD	3	50	4635	1191	0.97	1.04	32	D	52	4780	1262	0.95	1.04	33	D	
																	173,700
26.58	COSTA MESA, JCT RTE 55	3	53	4429	1133	0.98	1.04	29	D	59	3992	1037	0.96	1.04	24	C	
																	116,500
27.28	COSTA MESA, BEAR STREET	3	43	4894	1261	0.97	1.04	39	E	61	4393	1131	0.97	1.04	25	C	
																	106,700
27.81	JCT RTE 405	2	54	3059	782	0.98	2.35	29	D	60	2749	714	0.96	2.35	24	C	

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EB SR-91

Postmile	SEGMENT	# of Lanes	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
0	LOS ANGELES-ORANGE COUNTY LINE	4	63	6740	1758	0.96	6.48	29	D	61	6402	1628	0.98	6.48	28	D	
R0.489	LA PALMA, ORANGETHORPE AVENUE	4	64	6050	1577	0.96	6.48	25	C	59	5901	1502	0.98	6.48	26	D	
R0.848	BUENA PARK, VALLEY VIEW STREET	4	31	6208	1577	0.98	6.48	53	F	58	6530	1673	0.98	6.48	30	D	
R1.842	BUENA PARK, KNOTT AVENUE	4	34	6451	1627	0.99	6.48	49	F	58	6344	1642	0.97	6.48	29	D	
R2.615	BUENA PARK, JCT. RTE. 39/BEACH	4	30	7037	1823	0.97	8.08	63	F	60	6922	1761	0.98	8.08	31	D	
R3.638	FULLERTON, JCT. RTE. 5, SANTA ANA FREEWAY	3	30	3773	958	0.98	6.80	44	E	44	4078	1035	0.99	6.80	32	D	
1.232	ANAHEIM, BROOKHURST AVENUE	4	67	6349	1668	0.95	6.80	26	C	64	6184	1558	0.99	6.80	25	C	
2.234	EUCLID AVENUE INTERCHANGE	4	N/A	N/A	N/A	N/A	6.80	N/A	N/A	N/A	N/A	N/A	N/A	6.80	N/A	N/A	
3.258	FULLERTON, HARBOR BOULEVARD	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
3.512	ANAHEIM, LEMON STREET/ HARVARD AVENUE	4	N/A	N/A	N/A	N/A	6.80	N/A	N/A	N/A	N/A	N/A	N/A	6.80	N/A	N/A	
4.256	ANAHEIM, EAST STREET	4	N/A	N/A	N/A	N/A	6.80	N/A	N/A	N/A	N/A	N/A	N/A	6.80	N/A	N/A	

EB SR-91

Postmile	SEGMENT	# of Lanes	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
5.258	ANAHEIM, STATE COLLEGE BOULEVARD	4	57	6903	1788	0.97	9.20	33	D	61	6842	1750	0.98	9.20	30	D	
																	223,600
6.119	ANAHEIM, JCT. RTE. 57, ORANGE FREEWAY	3	58	4492	1158	0.97	8.70	28	D	61	4292	1085	0.99	8.70	25	C	
																	216,000
7.353	KRAEMER BOULEVARD/ GLASSELL STREET	3	63	4705	1209	0.97	8.70	27	D	66	4565	1166	0.98	8.70	25	C	
																	231,000
8.399	TUSTIN AVENUE INTERCHANGE	4	65	5002	1298	0.96	8.70	21	C	66	5422	1405	0.96	8.70	22	C	
																	321,000
9.187	JCT. RTE. 55 SOUTH	4	N/A	N/A	N/A	N/A	6.5	N/A	N/A	N/A	N/A	N/A	N/A	6.5	N/A	N/A	
																	302,000
10.091	LAKEVIEW AVENUE	6	66	7731	1953	0.9896	4.5	20	C	66	8549	2173	0.9835	4.5	22	C	
																	255,000
11.540	PERALTA, JCT. RTE. 90 WEST	5	67	6243	1592	0.9804	5	19	C	68	6711	1720	0.9754	5	21	C	
																	233,000
14.431	WEIR CANYON ROAD	5	70	5702	1444	0.9872	5	17	B	68	6203	1587	0.9772	5	19	C	
																	259,000
15.925	JCT RTE 241	4	65	5494	1413	0.97	5.00	22	C	60	5347	1348	0.99	5.00	23	C	
																	259,000
16.404	GYPSUM CANYON ROAD INTERCHANGE	4	66	6238	1602	0.97	5.00	25	C	64	6445	1661	0.97	5.00	27	D	
																	259,000
17.950	COAL CANYON ROAD	5	71	7446	1935	0.96	5.00	22	C	33	8413	2161	0.97	5.00	54	F	
																	259,000
18.905	ORANGE/RIVERSIDE COUNTY LINE	5	69	7437	1882	0.99	5.00	22	C	27	8324	2163	0.96	5.00	66	F	

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WB SR-91

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
0	LOS ANGELES-ORANGE COUNTY LINE	4	42	6923	1841	0.94	6.48	45	F	60	6973	1831	0.95	6.48	32	D	
																	235,000
R0.49	LA PALMA, ORANGETHORPE AVENUE	4	46	6209	1601	0.97	6.48	36	E	48	6183	1578	0.98	6.48	34	D	
																	254,400
R1	BUENA PARK, VALLEY VIEW STREET	4	50	5267	1370	0.96	6.48	28	D	64	5977	1756	0.85	6.48	28	D	
																	259,000
R1.99	BUENA PARK, KNOTT AVENUE	4	65	6877	1772	0.97	6.48	28	D	60	6731	1788	0.94	6.48	31	D	
																	265,000
R2.6	BUENA PARK, JCT. RTE. 39/BEACH	4	62	7288	1874	0.97	8.08	31	D	52	7025	1796	0.98	8.08	36	E	
																	263,500
R3.4	FULLERTON, JCT. RTE. 5, SANTA ANA FREEWAY	3	62	4973	1289	0.96	6.80	29	D	59	5086	1282	0.99	6.80	30	D	
																	198,500
1.12	ANAHEIM, BROOKHURST AVENUE	3	63	5498	1411	0.97	6.80	31	D	61	5620	1412	1.00	6.80	32	D	
																	261,700
2.11	EUCLID AVENUE INTERCHANGE	3	63	5375	1416	0.95	6.80	31	D	61	5328	1451	0.92	6.80	33	D	
																	273,600
3.13	FULLERTON, HARBOR BOULEVARD	4	64	5388	1433	0.94	7.10	23	C	65	5227	1344	0.97	7.10	21	C	
																	265,000
3.91	ANAHEIM, LEMON STREET/ HARVARD AVENUE	4	N/A	N/A	N/A	N/A	6.80	N/A	N/A	N/A	N/A	N/A	N/A	6.80	N/A	N/A	
																	265,000
4.18	ANAHEIM, EAST STREET	3	54	4951	1436	0.86	6.80	37	E	61	5023	1274	0.99	6.80	29	D	
																	258,000
5.14	ANAHEIM, STATE COLLEGE BOULEVARD	3	53	6080	1540	0.99	9.20	41	E	57	5943	1531	0.97	9.20	37	E	
																	253,000
6.15	ANAHEIM, JCT. RTE. 57, ORANGE FREEWAY	3	67	4739	1231	0.96	8.70	26	C	68	4458	1130	0.99	8.70	23	C	
																	223,600
7.4	KRAEMER BOULEVARD/ GLASSELL STREET	5	71	6464	1657	0.98	8.70	19	C	67	5934	1517	0.98	8.70	19	C	

WB SR-91

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
																	26,000
8.36	TUSTIN AVENUE INTERCHANGE	4	60	5761	1446	1.00	8.70	25	C	62	5803	1469	0.99	8.70	25	C	
																	231,000
9.187	JCT. RTE. 55 SOUTH	4	N/A	N/A	N/A	N/A	6.50	N/A	N/A	N/A	N/A	N/A	N/A	6.50	N/A	N/A	
																	321,000
10.091	LAKEVIEW AVENUE	5	71	8362	2178	0.96	4.50	25	C	56	7959	2069	0.914	4.50	32	D	
																	302,000
11.540	PERALTA, JCT. RTE. 90 WEST	5	74	7488	1948	0.961	5.00	22	C	65	6390	1628	0.981	5.00	21	C	
																	255,000
14.431	WEIR CANYON ROAD	6	69	7329	1943	0.943	5.00	19	C	69	5827	1500	0.971	5.00	15	B	
																	233,000
15.925	JCT RTE 241	4	66	6602	1700	0.97	5.00	26	D	64	5934	1530	0.97	5.00	25	C	
																	259,000
16.404	GYPSUM CANYON ROAD INTERCHANGE	4	66	7527	1999	0.94	5.00	31	D	64	5546	1508	0.92	5.00	24	C	
																	259,000
17.950	COAL CANYON ROAD	5	59	9957	2552	0.98	5.00	35	E	57	7776	2203	0.88	5.00	32	D	
																	259,000
18.905	ORANGE/RIVERSIDE COUNTY LINE	7	51	8341	2182	0.96	5.00	25	C	65	6061	1534	0.99	5.00	14	B	

** % Truck and AADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is still currently 2013 data **

NB SR-133

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
0.000	LAGUNA BEACH, JCT. RTE. 1, PACIFIC COAST HIGHWAY																
																	21,800
0.230	LAGUNA BEACH, N OR CLIFF DRIVE																
																	28,200
0.962	LAGUNA BEACH, CANYON ACRES DRIVE																
																	37,600
3.416	LAGUNA BEACH, EL TORO ROAD																
																	19,000
7.710	LAGUNA CANYON ROAD																
																	19,000
8.376	JCT. RTE. 405, SAN DIEGO FREEWAY																
																	34,500
8.990	BARRANCA1	2	67	1306	356	0.92	4.53	11	A	58	2113	567	0.93	4.53	20	C	
																	29,100
9.100	BARRANCA2	3	65	1692	467	0.91	4.53	10	A	58	3287	874	0.94	4.53	21	C	
																	29,100
9.37	S OF 5	2	67	1326	360	0.92	4.53	11	A	59	2154	577	0.93	4.53	20	C	
																	42,200
9.77	N OF 5	2	65	1259	689	0.46	4.53	22	C	65	3868	1030	0.94	4.53	32	D	
																	42,200
10.05	MARINE WAY	2	62	1015	325	0.78	4.53	11	A	64	2955	770	0.96	4.53	25	C	
																	42,200
10.50	N OF MARINE	2	66	1122	300	0.94	4.53	9	A	65	3063	801	0.96	4.53	25	C	
																	42,200
10.73	S OF PM 11	3	68	1462	404	0.90	4.53	8	A	65	4915	1303	0.94	4.53	27	D	
																	42,200
11.08	AT PM 11	2	66	1136	303	0.94	4.53	9	A	65	4104	1071	0.96	4.53	34	D	
																	42,200
11.35	N OF PM 11	2	65	2030	523	0.97	4.53	16	B	62	6445	1630	0.99	4.53	54	F	
																	42,200

NB SR-133

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
11.70	IRVINE BLVD 1	3	70	1614	420	0.96	3.19	8	A	66	5883	1591	0.92	3.19	33	D	
																	27,000
12.05	IRVINE BLVD 3	3	67	1189	309	0.96	3.19	6	A	63	4051	1114	0.91	3.19	24	C	
																	47,000
12.42	S OF PORTOLA	4	67	1250	340	0.92	3.19	5	A	64	4229	1163	0.91	3.19	18	C	
																	47,000
12.77	NB133 TO 241	2	61	4120	1142	0.90	3.19	38	E	57	3676	961	0.96	3.19	34	D	
																	47,000
13.04	ORANGE 1	2	67	681	174	0.98	3.19	5	A	66	1968	551	0.89	3.19	17	B	
																	47,000
13.42	ORANGE 2	3	65	1465	381	0.96	3.19	8	A	64	2564	682	0.94	3.19	14	B	
																	47,000

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SB SR-133

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
0.000	LAGUNA BEACH, JCT. RTE. 1, PACIFIC COAST HIGHWAY																
																	21,800
0.230	LAGUNA BEACH, N OR CLIFF DRIVE																
																	28,200
0.962	LAGUNA BEACH, CANYON ACRES DRIVE																
																	37,600
3.416	LAGUNA BEACH, EL TORO ROAD																
																	19,000
7.710	LAGUNA CANYON ROAD																
																	19,000
8.376	JCT. RTE. 405, SAN DIEGO FREEWAY																
																	34,500
8.990	BARRANCA1	3	56	3336	930	0.90	4.53	23	C	64	1929	499	0.97	4.53	11	A	
																	29,100
9.37	S OF 5	2	60	2077	587	0.88	4.53	20	C	65	807	213	0.95	4.53	7	A	
																	34,500
9.77	N OF 5	2	61	2750	750	0.92	4.53	25	C	66	767	212	0.90	4.53	7	A	
																	34,500
10.05	MARINE WAY	3	61	3889	1042	0.93	4.53	23	C	65	1153	322	0.90	4.53	7	A	
																	34,500
10.50	N OF MARINE	2	68	3834	1031	0.93	4.53	31	D	68	1121	293	0.96	4.53	9	A	
																	34,500
10.73	S OF PM 11	3	66	8744	2369	0.92	4.53	49	F	68	2926	769	0.95	4.53	15	B	
																	34,500
11.08	AT PM 11	2	65	4909	1340	0.92	4.53	42	E	66	1523	402	0.95	4.53	12	B	
																	34,500
11.35	N OF PM 11	2	62	4903	1308	0.94	4.53	43	E	66	1517	409	0.93	4.53	13	B	
																	34,500
11.70	IRVINE BLVD 1	3	64	4559	1230	0.93	3.19	26	D	67	1330	357	0.93	3.19	7	A	
																	47,000
12.05	IRVINE BLVD 3	3	48	4685	1212	0.97	3.19	34	D	78	3801	1109	0.86	3.19	19	C	
																	47,000

SB SR-133

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
12.42	S OF PORTOLA	4	61	7356	1904	0.97	3.19	32	D	66	2077	544	0.95	3.19	8	A	
																	47,000
13.04	ORANGE 1	2	65	2065	557	0.93	3.19	17	B	66	662	182	0.91	3.19	6	A	
																	47,000
13.42	ORANGE 2	2	67	1479	389	0.95	3.19	12	B	65	783	251	0.78	3.19	8	A	
																	47,000

** % Truck and AADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is still currently 2013 data **

SR 241 NB

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
14.550	OSO	2	68	739	217	0.85	6.36	7	A	68	332	115	0.72	6.36	3	A	
																	6,600
17.768	ANTONIO	3	65	7025	274	6.41	6.36	6	A	64	1250	328	0.95	6.36	7	A	
																	16,000
18.488	SANTA MARGARITA	2	68	1581	429	0.92	6.36	13	B	68	575	166	0.87	6.36	5	A	
																	36,500
20.077	LOS ALISOS	3	67	3119	789	0.99	1.70	16	B	66	1067	286	0.93	1.70	6	A	
																	37,100
21.802	PORTOLA UC	3	66	3809	997	0.96	1.70	20	C	66	1088	284	0.96	1.70	6	A	
																	32,200
23.418	ALTON	3	62	4242	1140	0.93	3.08	25	C	65	1486	406	0.92	3.08	8	A	
																	39,700
24.968	PORTOLA	3	67	3791	1033	0.92	3.08	21	C	68	1650	449	0.92	3.08	9	A	
																	38,700
27.378	JCT RTE 133	2	68	830	223	0.93	3.08	7	A	65	936	264	0.89	3.08	8	A	
																	32,500
32.541	CHAPMAN-SANTIAGO RD UC	2	65	1149	304	0.94	3.08	9	A	58	1896	513	0.92	3.08	18	B	
																	47,700
36.099	WINDY RIDGE TOLL	3	67	1949	526	0.93	3.08	11	A	62	3592	919	0.98	3.08	20	C	
																	47,700
39.079	JCT RTE 91	4	67	2410	663	0.91	1.66	10	A	33	4329	1149	0.94	1.66	35	E	

** % Truck and AADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is still currently 2013 data **

SR 241 SB

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
14.550	OSO	2	68	288	86	0.84	6.36	3	A	68	598	175	0.85	6.36	5	A	
																	6,600
17.768	ANTONIO	2	68	2562	661	0.97	6.36	20	C	66	3019	1017	0.74	6.36	32	D	
																	16,000
18.488	SANTA MARGARITA	2	58	824	223	0.92	6.36	8	A	62	1671	487	0.86	6.36	16	B	
																	36,500
20.077	LOS ALISOS	2	67	807	245	0.82	1.70	7	A	63	2428	676	0.90	1.70	22	C	
																	37,100
21.802	PORTOLA UC	2	67	668	192	0.87	1.70	6	A	65	2292	586	0.98	1.70	18	C	
																	32,200
23.418	ALTON	3	40	1277	438	0.73	3.08	15	B	23	3401	899	0.95	3.08	53	F	
																	39,700
24.968	PORTOLA	3	66	1653	440	0.94	3.08	9	A	64	2791	748	0.93	3.08	16	B	
																	38,700
27.378	JCT RTE 133	2	68	886	230	0.96	3.08	7	A	67	695	194	0.90	3.08	6	A	
																	32,500
32.541	CHAPMAN-SANTIAGO RD UC	2	63	1568	402	0.98	3.08	13	B	63	1205	323	0.93	3.08	10	A	
																	47,700
36.099	WINDY RIDGE TOLL	3	65	5068	1301	0.97	3.08	27	D	66	1587	408	0.97	3.08	8	A	
																	47,700
39.079	JCT RTE 91	5	66	6468	1667	0.97	1.66	20	C	68	2267	609	0.93	1.66	7	A	

** % Truck and AADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is still currently 2013 data **

SR 261 NB

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
0.000	WALNUT AVENUE	3	64	1046	394	0.66		8	A	65	2633	685	0.96		14	B	
																	83,000
0.239	JAMBOREE	2	68	607	237	0.64		7	A	66	1836	484	0.95		15	B	
																	37,500
1.638	IRVINE	2	66	598	233	0.64		7	A	67	1830	469	0.98		14	B	
																	35,600
2.848	PORTOLA	3	64	743	354	0.52		7	A	66	2409	688	0.88		14	B	
																	32,000
6.035	CHAPMAN	3	65	939	358	0.66		7	A	66	2193	686	0.80		14	B	
																	32,000
6.205	JCT RTE 241																

** % Truck and AADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is still currently 2013 data **

I 405 NB

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
0.230	JCT. RTE. 5	3	53	4038	1061	0.95	5.00	27	D	68	3780	1049	0.90	5.00	21	C	
																	190,500
0.949	IRVINE CENTER	5	52	6997	1804	0.97	5.00	28	D	70	5409	1443	0.94	5.00	17	B	
																	212,600
1.804	JCT. RTE. 133,	5	59	9016	2355	0.96	5.20	33	D	57	7722	2108	0.92	5.20	30	D	
																	249,200
2.876	SAND CANYON	4	47	6717	1745	0.96	5.20	38	E	42	5782	1501	0.96	5.20	37	E	
																	255,500
3.947	UNIVERSITY	4	59	8523	2225	0.96	5.60	39	E	56	7312	1880	0.97	5.60	35	D	
																	243,000
5.618	CULVER DRIVE	4	60	9019	2298	0.98	5.60	39	E	57	7547	1976	0.95	5.60	36	E	
																	268,700
6.917	JAMBOREE	5	63	8917	2304	0.97	5.60	30	D	64	7436	1952	0.95	5.60	25	C	
																	278,000
7.803	MAC ARTHUR	5	65	8934	2292	0.97	5.00	29	D	57	8667	2289	0.95	5.00	33	D	
																	279,500
8.740	JCT. RTE. 55	4	66	4673	1228	0.95	3.49	19	C	55	5247	1350	0.97	3.49	25	C	
																	239,500
9.46	BRISTOL	4	63	5731	1473	0.97	3.49	24	C	54	6126	1625	0.94	3.49	31	D	
																	229,700
9.9	BEAR	5	64	7947	2067	0.96	3.49	26	D	43	8497	2240	0.95	3.49	42	E	
																	229,700
10.9	FAIRVIEW	6	67	8370	2204	0.95	3.49	22	C	26	8869	2321	0.96	3.49	61	F	
																	292,500
11.4	HARBOR	4	64	10049	2627	0.96	3.49	42	E	39	10915	2804	0.97	3.49	73	F	
																	312,600
12.85	EUCLID	5	60	8516	2220	0.96	3.49	30	D	54	8570	2220	0.97	3.49	33	D	
																	291,700
13.74	BROOKHURST	4	54	6940	1831	0.95	3.49	34	D	48	7154	1810	0.99	3.49	38	E	
																	269,500
14.82	WARNER	4	65	6772	1794	0.94	3.49	28	D	56	6831	1720	0.99	3.49	31	D	
																	251,800
15.17	MAGNOLIA	4	60	5871	1563	0.94	3.49	27	D	61	5875	1530	0.96	3.49	26	C	
																	265,200
16.52	BEACH	4	66	6832	1720	0.99	3.49	27	D	57	6801	1736	0.98	3.49	31	D	
																	265,200

I 405 NB

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
17.45	MCFADDEN	4	62	7828	2038	0.96	3.49	33	D	62	7683	1962	0.98	3.49	32	D	
																	262,100
17.92	GOLDENWEST	4	61	6819	1740	0.98	3.49	29	D	62	7095	1814	0.98	3.49	30	D	
																	262,100
19.24	WESTMINISTER	4	60	5835	1510	0.97	3.49	26	C	51	6384	1664	0.96	3.49	33	D	
																	245,500
20.33	BRYANT	4	66	6674	1756	0.95	3.49	27	D	60	6794	1740	0.98	3.49	30	D	
																	377,000
22.55	SEAL BEACH	6	59	11512	2989	0.96	3.49	34	D	59	10835	2737	0.99	3.49	31	D	
																	369,100
23.62	SALMON	5	N/A	N/A	N/A	N/A	3.49	N/A	N/A	N/A	N/A	N/A	N/A	3.49	N/A	N/A	
																	369,100

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I 405 SB

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
0.230	JCT. RTE. 5	5	68	5576	1428	0.98	5.00	17	B	66	6422	1699	0.94	5.00	21	C	
																	190,500
0.949	IRVINE CENTER	5	58	5477	1395	0.98	5.00	20	C	64	6091	1542	0.99	5.00	20	C	
																	212,600
1.804	JCT. RTE. 133,	4	65	6309	1614	0.98	4.90	25	C	62	6323	1606	0.98	4.90	27	D	
																	249,200
2.876	SAND CANYON	4	53	6649	1690	0.98	5.20	33	D	51	7039	1790	0.98	5.20	36	E	
																	255,500
3.947	UNIVERSITY	4	57	7675	1945	0.99	5.60	35	E	61	7093	1837	0.97	5.60	31	D	
																	243,600
5.618	CULVER DRIVE	4	55	7592	4961	0.38	5.60	93	F	57	7051	1828	0.96	5.60	33	D	
																	268,700
6.917	JAMBOREE	6	65	7392	1944	0.95	5.60	20	C	36	7669	1944	0.99	5.60	37	E	
																	278,000
7.803	MAC ARTHUR	5	57	9913	2524	0.98	5.00	36	E	63	8124	2045	0.99	5.00	27	D	
																	279,500
8.740	JCT. RTE. 55,	5	57	7931	2016	0.98	3.49	29	D	59	6769	1733	0.98	3.49	24	C	
																	239,500
9.54	BRISTOL	5	62	9552	2425	0.98	3.49	32	D	66	6234	1665	0.94	3.49	21	C	
																	229,700
9.9	BEAR	4	56	8274	2113	0.98	3.49	38	E	63	5737	1446	0.99	3.49	23	C	
																	229,700
10.28	FAIRVIEW	5	51	9155	2331	0.98	3.49	37	E	65	6636	1700	0.98	3.49	21	C	
																	292,500
11.2	HARBOR	6	62	11109	2823	0.98	3.49	31	D	67	9058	2303	0.98	3.49	23	C	
																	292,500
12.5	EUCLID	5	55	10311	2600	0.99	3.49	38	E	67	8503	2145	0.99	3.49	26	D	
																	291,700
13.81	BROOKHURST	4	53	8642	2184	0.99	3.49	42	E	61	8435	2139	0.99	3.49	36	E	
																	269,500
14.72	WARNER	4	45	7164	1903	0.94	3.49	43	E	62	7192	1881	0.96	3.49	31	D	
																	269,500
15.16	MAGNOLIA	4	42	7034	1931	0.91	3.49	47	F	59	7160	1864	0.96	3.49	32	D	
																	265,200
16.26	EDINGER	5	43	7155	1934	0.92	3.49	37	E	67	7783	1970	0.99	3.49	24	C	
																	265,200

I 405 SB

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
16.6	BEACH	4	46	5751	1513	0.95	3.49	33	D	52	5967	1541	0.97	3.49	30	D	
																	265,200
17.45	MCFADDEN	4	63	7246	1887	0.96	3.49	30	D	44	7750	1979	0.98	3.49	46	F	
																	265,200
17.98	GOLDENWEST	4	63	6598	1697	0.97	3.49	27	D	63	6746	1698	0.99	3.49	27	D	
																	262,100
19.05	WESTMINISTER	4	39	6644	1865	0.89	3.49	49	F	44	6807	1719	0.99	3.49	40	E	
																	245,500
20.33	BRYANT	4	47	7133	2013	0.89	3.00	43	E	57	7454	1974	0.94	3.00	35	E	
																	245,500
22.54	SEAL BEACH	6	61	7109	1795	0.99	3.00	20	C	61	7124	1806	0.99	3.00	20	C	
																	369,100
23.62	SALMON	4	N/A	N/A	N/A	N/A	3.00	N/A	N/A	N/A	N/A	N/A	N/A	3.00	N/A	N/A	
																	369,100

** % Truck and AADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is still currently 2013 data **

I 605 NB

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
R 1.26	KATELLA 1	4	67	5142	1311	0.98	4.63	20	C	61	6139	1556	0.99	4.63	26	D	
																	161,500
R 1.55	KATELLA 2	4	66	4664	1201	0.97	4.63	19	C	59	5704	1452	0.98	4.63	25	C	
																	166,000

** % Truck and AADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is still currently 2013 data **

I 605 SB

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2013 AADT
			AM Speed	AM (PHV)	PHV (15 min)	PHF	% Truck	AM Density	AM LOS	PM Speed	PM (PHV)	PHV (15 min)	PHF	% Truck	PM Density	PM LOS	
R 1.26	KATELLA 1	4	58	4773	1370	0.87	4.63	24	C	67	4626	1198	0.97	4.63	18	C	
																	161,500
R 1.55	KATELLA 2	4	65	4856	1417	0.86	4.63	22	C	66	4650	1226	0.95	4.63	19	C	
																	166,000

** % Truck and AADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is still currently 2013 data **

Appendix B-1: Meeting CMP Traffic Impact Analysis Requirements

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Meeting CMP Traffic Impact Analysis Requirements

AN OPTIONAL GUIDANCE FOR LOCAL JURISDICTIONS

Prepared for:

Orange County Environmental Management Agency
Orange County Transportation Commission
Orange County Transit District
League of Cities, Orange County Division
Transportation Corridor Agencies

Prepared by:

Kimley-Horn and Associates, Inc.
and
The Planning Center

June 11, 1991

CMP-TIA REQUIREMENTS

Requirements of CMP legislation

- Analyze impacts of land use decisions on CMP Highway System.
- Estimate costs associated with mitigation of impacts on CMP Highway System.
- Exclude costs associated with mitigating the impacts of interregional travel.
- Allow credits against mitigation costs for local public and private contributions to improvements to the CMP Highway System.
  - For toll road facilities, allow credits only for local public and private contributions which will not be reimbursed from toll revenues or other state or federal sources.
- Report annually on actions taken to adopt and implement a program to analyze the impacts of land use decisions on the CMP Highway System and to estimate the costs of mitigating those impacts.

Year One Goal

- Identify the impacts of development anticipated to occur over the next 7 years on the CMP Highway System and the projected costs of mitigating those impacts.

Actions Required of Local Jurisdictions

- A TIA will be required for CMP purposes for all proposed developments generating 2,400 or more daily trips. For developments which will directly access a CMP Highway System link, the threshold for requiring a TIA should be reduced to 1,600 or more trips per day.
- Document procedures used to identify and analyze traffic impacts of new development on CMP Highway System. This documentation should include the following:
  - Identification of type of development proposals which are subject to a traffic impact analyses (TIA);
  - Description of required or acceptable TIA methodology; and
  - Description of inter-jurisdictional coordination process used when impacts cross local agency boundaries.
- Document procedures/standards used to determine the costs of mitigation requirements for impacts of new development on CMP Highway System.
- Document methodology and procedures for determining applicable credits against mitigation costs including allowable credits associated with contributions to toll road facilities.

SECTION 1 – INTRODUCTION

Purpose

State legislation creating the Congestion Management Program (CMP) requires that the program contain a process to analyze the impacts of land use decisions by local governments on the regional transportation system. Once impacts of a land use decision are identified, the CMP also requires that the costs to mitigate the impacts be determined.

For CMP purposes, the regional transportation system is defined by the legislation as all state highways and principal arterials at a minimum. This system is referred to as the CMP Highway System. The identification and analysis of impacts along with estimated mitigation costs are determined with respect to this CMP Highway System.

The objectives of this report are to:

- Provide guidance to local agencies in conducting traffic impact analyses.
- Assist local agencies in maintaining eligibility for funds through documentation of CMP compliance.
- Make available minimum standards for jurisdictions wishing to use them for identifying and analyzing impacts on CMP Highway System.
- Establish CMP documentation requirements for those jurisdictions which elect to use their own TIA methodology.
- Establish a baseline from which TIA standardization may evolve as experience is gained in the CMP process.
- Cause the analysis of impacts on the CMP Highway System to be integrated into the local agency development review process.
- Provide a method for determining the costs associated with mitigating development impacts.
- Provide a framework for facilitating coordination between agencies when appropriate.

Background

Through a coordinated effort among local jurisdictions, public agencies, business and community groups, Orange County has developed a Congestion Management Program framework in response to the requirements of Assembly Bill 1791. This framework is contained in the Congestion Management Program Preparation Manual which was issued in January 1991 as a joint publication of the following agencies:

- County of Orange
- Orange County Division, League of California Cities
- Orange County Transportation Commission
- Orange County Transit District

- Transportation Corridor Agencies

The CMP Manual describes the CMP Program requirements for each component prescribed by the CMP provision of AB 1791. The components include one entitled Land Use Coordination, which sets forth the basic requirements for the assessment, mitigation, and monitoring of traffic impacts to the CMP Highway System which are attributable to development projects.

Consolidation of Remaining Issues

This report is intended to present a useful reference in addressing the remaining issues associated with the identification and treatment of development impacts on the CMP Highway System. It is desirable that a standardized approach be utilized for determining which projects require analysis and in carrying out the resulting traffic impact analysis (TIA). It is also desirable that a reasonably uniform approach be utilized in determining appropriate mitigation strategies and estimating the associated costs.

TIA Survey History

In 1989, Kimley-Horn and Associates, Inc. conducted a survey of TIA procedures being used at the time by local jurisdictions within Orange County. The survey revealed that although there were some commonalities, there was considerable variation in approach, scope, evaluation methodology, and project disposition.

As part of the CMP process, it was determined that the identification of TIA elements which can or should be standardized should be accomplished. Additional documentation of cost estimating practices and the development of standardized costs and estimating procedures will be valuable in achieving desired consistency among jurisdictions.

In order to accomplish these objectives, Kimley-Horn's previous TIA survey was updated and additional information was solicited from each local agency within Orange County. The information was obtained through telephone interviews with City Engineers and Planners after they had an opportunity to examine the survey questionnaire which was mailed to them in advance of the interview. The information obtained was used in preparing the methodology recommendations contained in this report. A summary of the update survey results is provided in the Appendix.

Relationships with Other Components

In addition to being an integral part of the Land Use Coordination component of the CMP, the traffic impact analysis requirements also relate to all other CMP components to a greater or lesser degree. These components include the following:

- Modeling
- Level of Service
- Transit Standards
- Traffic Demand Management
- Deficiency Plans
- Capital Improvement Program

The Land Use Coordination section in Chapter 3 of the CMP Preparation Manual dated January, 1991 contains a detailed description of each of the component linkages listed above.

SECTION 2- REQUIREMENTS OF CMP LEGISLATION

The complete text of CMP legislation is contained in Appendix A to the Preparation Manual for the Congestion Management Program for Orange County dated January, 1991. For ease of reference, the requirements of this legislation related to analysis of the impacts of land use decisions made by local jurisdictions are summarized as follows:

- Analyze impacts of land use decisions on CMP Highway System.
- Estimate costs associated with mitigation of impacts on CMP Highway System.
- Exclude costs associated with mitigating the impacts of interregional travel.
- Allow credits against mitigation costs for local public and private contributions to improvements to the CMP Highway System.
    - For toll road facilities, allow credits only for local public and private contributions which will not be reimbursed from toll revenues or other state or federal sources.
- Report annually on actions taken to adopt and implement a program to analyze the impacts of land use decisions on the CMP Highway System and to estimate the costs of mitigating those impacts.

SECTION 3 - ACTIONS REQUIRED OF LOCAL AGENCIES

The provisions of CMP legislation, as summarized in the preceding section, impose a requirement on local jurisdictions to carry out certain actions in order to demonstrate their compliance with the CMP program. This compliance will maintain eligibility to receive state gas tax funds made available by the voter approved Proposition 111. The actions and documentation requirements related to the identification and analysis of traffic impacts include the following:

- A TIA will be required for CMP purposes for all proposed developments generating 2,400 or more daily trips. For developments which will directly access a CMP Highway System link, the threshold for requiring a TIA should be reduced to 1,600 or more trips per day.
- Document procedures used to identify and analyze traffic impacts of new development on CMP Highway System. This documentation should include the following:
    - Identification of type of development proposals which are subject to a traffic impact analyses (TIA);
    - Description of required or acceptable TIA methodology; and
    - Description of inter-jurisdictional coordination process used when impacts

cross local agency boundaries.

- Document procedures/standards used to determine the costs of mitigation requirements for impacts of new development on CMP Highway System.
- Document methodology and procedures for determining applicable credits against mitigation costs including allowable credits associated with contributions to toll road facilities.
- Establish annual monitoring and reporting process to summarize activities performed in analyzing the impacts of land use decisions on the CMP Highway System and in estimating the associated mitigation costs. Procedures for incorporating mitigation measures into the Capital Improvement Program should also-be established.
- For the first year, local jurisdictions may assume that all interregional travel occurs on the freeway system or they may develop an analysis methodology to determine the amount of interregional travel occurring on arterials which are part of the CMP Highway System. During the first year, TIAs need to analyze only the impacts to arterial portions of the CMP Highway System.

SECTION 4 - CMP TRAFFIC IMPACT ANALYSIS METHODOLOGY

In order to assure that the CMP Program meets its objectives of linking land use decisions with the adequate evaluation of impacts related to those decisions, traffic impact analyses must often be undertaken. There are a number of essential elements which should be included in traffic impact analyses (TIA) used to support the program. Many local jurisdictions already employ development review processes which will be adequate for addressing CMP requirements. For those jurisdictions wishing technical guidance in carrying out the analysis of traffic impacts on the CMP Highway System, this section offers an appropriate TIA methodology.

PROJECTS REQUIRING TIA ANALYSIS

All development in Orange County will use the CMP Network to a greater or lesser extent from time-to-time. The seven-year capital improvement program, together with deficiency plans to respond to deficiencies which cannot be resolved in the 7-year timeframe, are developed in response to anticipated growth in travel within a jurisdiction. Thus, a certain level of travel growth is addressed in the normal planning process and it is not necessary to evaluate relatively small projects with a TIA or to rely on TIA's as the primary means of identifying needed CMP Highway System improvements. Furthermore, County voters have approved a sales tax increase which will fund major improvements to the transit and highway systems serving the County.

Many jurisdictions will require an EIR for a proposed development project. When required, the EIR should include steps necessary to incorporate the required CMP analysis. Most or all of the TIA elements described in this section would normally be

incorporated into the typical EIR traffic analysis.

Certain development projects not requiring an EIR should still be evaluated through a TIA process due to their land use type, intensity, proximity to the CMP network, and/or duration of development timeframe. In other words, developments which will significantly alter the anticipated demand on a CMP roadway should be evaluated through a TIA approach.

At the present time, there is a wide-ranging approach to determining which projects will require a TIA. In some jurisdictions, there are formal guidelines, while in others it depends primarily on the judgment of a member of staff relative to the probable significance of the project's impact on the surrounding road system.

The OCTC TIA guidelines recommended defining three percent of the level of service standard as significant impact. This seems reasonable for application for CMP purposes. Thus, project impacts of three percent or less can be mitigated by impact fees or other revenues. Projects with a potential to create an impact of more than three percent of Level of Service E capacity will require TIA's. On this basis, it is recommended that all development projects which generate more than 2,400 daily trips be subject to a TIA for CMP evaluation. For projects which will directly access or be in close proximity to a CMP Highway System link a reduced threshold of 1,600 trips/day would be appropriate. Appendix B provides background information of the derivation of these threshold values.

TIA PROCESS

There are a number of essential elements in the TIA process itself. It is desirable that all of these elements be evaluated within an acceptable range of criteria in order to assure the objectives of the CMP process and to maintain a reasonable degree of equity from jurisdiction to jurisdiction. It is recognized, however, that for certain of the elements, some variations relating to professional judgment and local criteria and characteristics are necessary and appropriate to the process. These factors have been fully considered in developing the descriptions of the following elements:

- Evaluation of existing conditions
- Trip generation
- Internal capture and passer-by traffic
- Trip distribution and assignment
- Radius of development influence
- Background traffic
- Capacity analysis methodology
- Impact costs/mitigation

Evaluation of Existing Conditions

In order to evaluate the relative impacts of a proposed development, determine CMP Highway System status and define appropriate mitigation for new impacts, it is necessary to understand the existing conditions on the affected roadway network. Evaluation of

existing conditions is common to nearly all jurisdictions in Orange County. Given that most jurisdictions use link and intersection capacity analysis techniques compatible with the techniques identified in the level-of-service component, no changes in existing local jurisdiction procedures should be necessary in connection with the CMP Program.

Trip Generation

At the foundation of traffic impact analyses is the quantification of trip generation. Use of the ITE Trip Generation Manual is common throughout Orange County. In addition, other widely accepted practices are being used when appropriate to supplement the lit data. These practices include use of acceptable rates published by local agencies and surveys conducted at similar sites, subject to approval of the reviewing agency. Given the uniformity of practice in Orange County to date, no major adjustments in this procedure should be required. It would be desirable however to establish a central library for reporting the results of special trip generation studies and making these results available to all other jurisdictions who wish them.

Internal Capture and Passer-by Traffic

Techniques for identifying the internal relationship of travel within mixed-use developments and the degree to which development captures passer-by trips as opposed to creating new trips are being applied by approximately 2/3 of the local jurisdictions within Orange County. The use of guidelines in the ITE Trip Generation Manual and appropriate professional judgment are the predominant techniques employed. To supplement the guidance available through ITE documentation, local jurisdictions are encouraged to undertake additional studies to document rates applicable within their jurisdiction. The determination of applicable rates should be undertaken by experienced transportation engineering professionals with thorough documentation of the methodology, data, and assumptions used. It is recommended that those jurisdictions which do not currently allow these adjustments establish revised TIA procedures incorporating this element. As with trip generation data, a central library would be desirable for reporting of data and analyses performed locally related to determination of appropriate factors.

Trip Distribution and Assignment

Several appropriate distribution and assignment techniques are used in Orange County, depending on the size of the development and the duration of buildout. Manual and computer modeling approaches are used as appropriate. Manual methods based on the best socio-economic information available to the agency and applicant should be acceptable except when a development's size makes a modeling approach more appropriate. Sources of this information include demographic surveys, market analyses, and previous studies.

Radius of Development Influence

There are numerous ways to identify the study area to be evaluated in a TIA. These include both qualitative and quantitative approaches. One of the most effective ways is through the determination of the quantity of project traffic on CMP roadway links compared to a selected level of impact. The goal of a quantitative approach is to be sure that all elements

of the CMP network are addressed in a comparable manner from jurisdiction to jurisdiction. This is important due to the potential for overlapping impacts among jurisdictions. It is also important to maintain flexibility within a quantitative process to allow transportation professionals at local jurisdictions to add areas to the study which are of specific concern. It is not intended that CMP practices should restrict this aspect of each agency's existing TIA process.

It is recommended that the study area for CMP Highway System links be defined by a measure of significant impact on the roadway links. As a starting point, it is proposed that the measure be three percent of existing roadway capacity. Thus, when a traffic impact analysis is being done it would require the inclusion of CMP roadway links that are impacted by 3 percent or more of their LOS E capacity. If a TIA is required only for CMP purposes, the study area would end when traffic falls below three percent of capacity on individual roadway links. If the TIA is also required for other purposes, additional analysis can be required by the local jurisdiction based on engineering judgment or local regulation as applicable.

Background Traffic

In order for a reasonable assessment of the level of service on the CMP network, it is necessary to not only identify the proposed development impact, but also the other traffic which can be expected to occur during the development of the project. There are numerous methods of evaluating background traffic. The implications of these alternative methods are that certain methodologies may result in deficiencies, while other methodologies may find an acceptable operating conditions.

The cost to mitigate impacts of a land use decision is unrelated to background traffic. Rather, it is related to the cost of replacing the capacity which is consumed by the proposed development. However, it is necessary to understand background traffic in order to evaluate level-of-service. Background traffic is composed of existing traffic demands and growth from new development which will occur over a specific period of time. Both the existing and the growth elements of background traffic contain sub-elements. These include traffic which is generated within Orange County, that which begins and/or ends within the County, and interregional traffic which has neither end in Orange County. CMP legislation stipulates that interregional traffic will not be considered in CMP evaluations with respect to LOS compliance or determining costs of mitigation.

Given that the CMP process is new, there is no existing practice of separating interregional traffic from locally generated traffic. Until a procedure for identifying interregional traffic is developed, local jurisdictions may assume that all interregional traffic occurs on the freeway system. Initially TIA's required for CMP purposes need only analyze the impacts to arterial portions of the CMP Highway System.

Local governments in Orange County are generally consistent in their approach to background traffic. There are three major approaches used. The first is to use historical growth factors which are applied to existing traffic volumes to project future demands. The second is to aggregate the impacts of specific individual projects which have been approved or planned but not built to identify the total approved background traffic on the study area roadway system. A third method is to use computer modeling to identify

total traffic demands which represent both background traffic and project impact traffic. For the present CMP program, it is recommended that the discretion for the appropriate process lie within the local jurisdiction, however, the method to be used in the jurisdiction should be clearly defined in the agency's TIA rules and procedures. In addition, it is recommended that all jurisdictions create a listing of approved development projects and a map showing their locations which would be updated frequently and be available to other jurisdictions on request. The listing should include information related to type and size of land use and phasing for each project.

It is appropriate to periodically update long range forecasts based on development approvals and anticipated development growth in the region and plan a transportation system which will provide the necessary level-of-service for this amount of development. When a development proposal will significantly alter this long-term plan, it will be necessary to address the aggregate of all approved development to assure that there is a long-term solution. However, from a TIA perspective, it is reasonable and practical to consider only that development traffic which can be expected to exist at the time of buildout of a new development proposal. That is to say, for CMP purposes background traffic should be limited to that traffic which is generated by development which will exist at the time of buildout of a proposed development. CEQA requirements may dictate that other background traffic scenarios be analyzed as well.

Capacity Analysis Methodology

Once the projected traffic demands are known, it is necessary to evaluate these demands relative to available and planned roadway capacity. The methodology used in capacity determination in Orange County is relatively uniform. Additionally, the level of service (LOS) component of the CMP Program has identified specific criteria which are to be used in determining level-of-service on the CMP Highway System.

Impact Costs/Mitigation

This element is at the heart of the CMP process; that is to identify the costs of mitigating a land development decision on the CMP System.

The current practice throughout Orange County is to require mitigation only when the level-of-service standard is exceeded. However, some jurisdictions require regular impact mitigation fees and phasing road improvements with development. The growth management requirement of the sales tax Measure M mandates a traffic phasing program. Often, mitigation is equated to construction of roadway improvements to maintain an acceptable level-of-service and/or to maintain the existing level-of-service. In some instances, a pay and go mitigation approach is allowed. This means that new development may pay its fair share and go forward and the provision of improvements remain the responsibility for the local jurisdiction.

In order to assess responsibility for impacts, there are a variety of approaches. One approach is to consider impact traffic as a percent of total traffic. Impact traffic may also be taken as a percentage of existing capacity. Another common approach is to use the net impact of development as a percent of total future traffic demand.

Since CMP legislation requires the identification of costs of land use decisions and impacts

across jurisdictional lines, it is desirable that the CMP program have a consistent method for identifying the costs of development impacts. On the other hand, a wide variety of mitigations can occur from jurisdiction to jurisdiction.

It is recommended that the impact costs be calculated as the total of new development traffic on a roadway link requiring improvement divided by the capacity of the improvement times the cost of the improvement. This can be expressed in a formula as follows:

$$\textbf{Impact Cost} = \frac{\text{Development Traffic}}{\text{Capacity of Improvement}} \times \text{Improvement Cost}$$

Improvements to be included in the cost analysis should be those identified in the jurisdiction's adopted Circulation Element and any additional improvements identified in the development TIA. The total impact cost for a development would be the sum of costs for all significantly impacted links. Funds collected from these assessments could be aggregated and applied to specific projects on an annual basis in accordance with locally established priorities. If project impacts extend across jurisdictional boundaries the impact costs calculated for significantly impacted links in an adjacent jurisdiction should be allocated to that jurisdiction for use in its program of prioritized improvements.

Through this process, progress can be achieved in implementing system improvements without having to wait for 100% of the funds being collected for each individual improvement. In theory, all required improvements will be accomplished over time as new developments are approved which will generate traffic to utilize available and planned system capacity. The costs should be based on recent Unit cost experience in Orange County and may include planning, permitting, preliminary engineering, design, right-of-way, construction, landscaping, construction inspection, and, if applicable, financing costs.

There are two approaches to mitigation. One is traffic reduction and the other is to build improvements to accommodate the new traffic. Traffic reduction through transportation demand ordinances or other regulations which will reduce impacts can be calculated in the same way a development impact would be calculated. But in this case, it would be taken as a credit or a reduction in impact. Mitigation techniques such as TDM or phasing or reduction in project intensity merely reduce for a new development the amount of impact which must be mitigated and are changes which should occur prior to the calculation of project impact costs. A monitoring program should be established to confirm that anticipated reductions are realized.

To comply with the CMP process, a local jurisdiction should accomplish two things. First, it should demonstrate that it is analyzing and mitigating the impact of new development on the CMP Highway System. Second, it should maintain the level-of-service standards or adopt a deficiency plan Consistent with CMP legislation. In order to demonstrate the mitigation which has been undertaken, the local jurisdiction should maintain a record of the cumulative impact cost of all development approvals and the cumulative mitigation value of improvements provided by the local jurisdiction. These could be construction programs or credits from a TDM ordinance or other traffic reduction measures. It is then

only necessary to show on an annual basis that the total improvement costs plus traffic reduction credits are equal to or greater than the total impact cost of new development approvals to prove mitigation compliance.

The maintenance of level-of-service would come through implementation of improvements contained in the 7-year capital improvements element, Measure M and state-funded improvements, additional improvements which may be made in conjunction with development approvals, and from deficiency plans which may be required from time to time. From a TIA perspective, it would be necessary to document the following:

a. the level-of-service on the CMP network at buildout of the proposed development will be: 1) level—of-service "E or better, or 2) will not result in a cumulative increase of more than 0.10 in v/c ratio if the established LOS standard is worse than LOS E.

b. a deficiency plan exists to address the links for which level-of-service is not provided, and

c. a deficiency plan will be developed for a new link when a deficiency will occur.

DOCUMENTATION OF RULES AND PROCEDURES

To assure a clear understanding of the TIA procedures which are necessary to support a viable CMP program, it is recommended that a set of rules and procedures be established by each local jurisdiction. Ideally, these rules and procedures would cover the requirements for the full TIA analysis and would include minimum requirements for the CMP process. Local jurisdictions which prefer not to adopt separate CMP TIA standards could implement standards for CMP requirements within a TIA and maintain their existing approach for all other aspects of their existing TIA process. The following is a summary of the elements which should be included in CMP procedures documentation and the methodologies applicable to each element:

1. **Thresholds for Requiring a TIA for CMP** - Projects with the potential to create an impact of more than 3% of LOS "E' capacity on CMP Highway system links should require a TIA. All projects generating 2,400 or more daily trips should require a TM for CMP evaluation. If a project will have direct access to a CMP link this threshold should be reduced to 1,600 or more daily trips. A TIA should not be required again if one has already been performed for the project as part of an earlier development approval which takes the impact on the CMP Highway System into account.

2. **Existing Conditions Evaluation** - Identify current level-of-service on CMP roadways and intersections where the proposed development traffic will contribute to 3 percent of the existing capacity. Use procedures defined in the level-of-service component for evaluation of level—of-service.

3. **Trip Generation** - ITE trip generation rates or studies from other agencies and locally approved studies for specific land uses.

4. **Internal Capture and Passerby Traffic** - Justification for internal capture should be

included in the discussion. Passerby traffic should be calculated based upon ITE data or approved special studies.

5. **Distribution and Assignment** - Basis for trip distribution should be discussed and should be linked to demographic or market data in the area. Quantitative and/or qualitative information can be used depending on the size of the proposed development. As the size of the project increases, there should be a tendency to use a detailed quantitative approach for trip distribution. Trip assignment should be based on existing and projected travel patterns and the future roadway network and its travel time characteristics.
6. **Radius of Impact/Project Influence** - The analysis should identify the traffic assignment on all CMP roadway links until the impact becomes less than 3 percent of level of service E capacity.
7. **Background Traffic** - Total traffic which is expected to occur at buildout of the proposed development should be identified.
8. **Impact Assessment Period** - This should be the buildout timeframe of the proposed development.
9. **Capacity Analysis Methodology**- The methodology should be consistent with that specified in the level-of—service component of the CMP Program.
10. **Improvement Costs** - The cost of roadway improvements should include all costs of implementation including studies, design, right-of-way, construction, construction inspection, and financing costs, if applicable.
11. **Impact Costs and Mitigation** - The project impact divided by the capacity of a roadway improvement times the cost of the improvement should be identified for each significantly impacted CMP link and summed for the study area.
12. **Projected Level-of-Service** - The TIA should document that the projected level-of-service on all CMP links in the study area will be at Level-of-Service "E" or the existing level-of-service whichever is less, or that a deficiency plan exists or will be developed to address specific links or intersections.

SECTION 5 – APPENDICES

Appendix A – Summary of TIA Update Survey Results (Available Upon Request)

Appendix B – Deviation of Thresholds for Projects Requiring TIA Analysis

APPENDIX B

DERIVATION OF THRESHOLDS FOR PROJECTS REQUIRING TRAFFIC IMPACT ANALYSIS

The TIA process recommendation is to require a TIA for any project generating 2,400 or more daily trips. This number is based on the desire to analyze any impacts which will be 3% or more of the existing capacity. Since most CMP Highway System will be four lanes or more, the capacity used to derive the threshold is a generalized capacity of 40,000 vehicles/day. The calculations are as follows:

40,000 veh./day x 3% = 1,200 veh./day

Assuming 50/50 distribution of project traffic on a CMP link

1,200 x 2 = 2,400 veh./day total generation

As can be seen, a project which will generate 2,400 trips/day will have an expected maximum link impact on the CMP system of 1,200 trips/day based on a reasonably balanced distribution of project traffic. On a peak-hour basis, the 3% level of impact would be 120 peak-hour trips. For intersections, a 3% level of impact applied to the sum of critical volume (1,700 veh./hr.) would be 51 vehicles per hour.

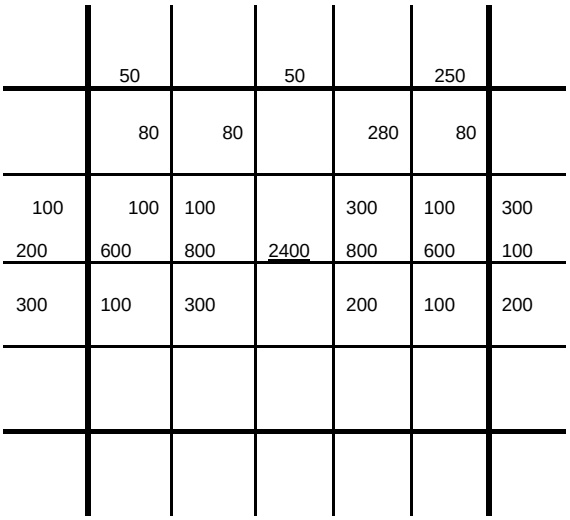
A level of impact below 3% is not recommended because it sets thresholds which are generally too sensitive for the planning and analytical tools available. Minor changes in project assumptions can significantly alter the results of the analysis and the end result can be additional unnecessary cost to the developer and additional review time by staff with little benefit. Additionally, a lower threshold of significance will expand the study area, which also increases effort and costs, and increases the probability that the analysis would extend beyond jurisdictional boundaries.

The following illustration shows that the 2,400 trip/day threshold would be expected to produce a 3% impact on the CMP System only when the project has relatively direct access to a CMP link. As a project location moves further off the CMP System the expected impacts is reduced. With a more directional distribution of project traffic a development with direct CMP System access cold produce a 3% impact with somewhat lower daily trip generation.

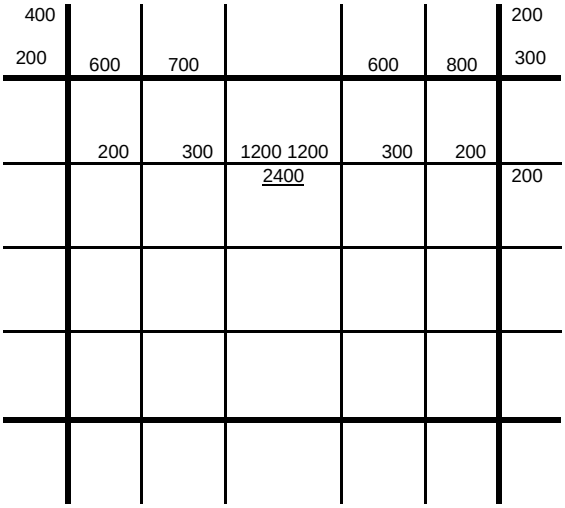
The table included on the following page illustrates the daily trip generation thresholds which would produce various levels of impact on the CMP System for project locations with and without direct access to the system. Based on a 3% impact the trip generation thresholds for requiring a TIA are 1,600 veh./day with direct CMP System access and 2,400 veh./day if a project does not have direct CMP System access.

CMP Highway System Impacts for Development Generating 2,400 trips/day

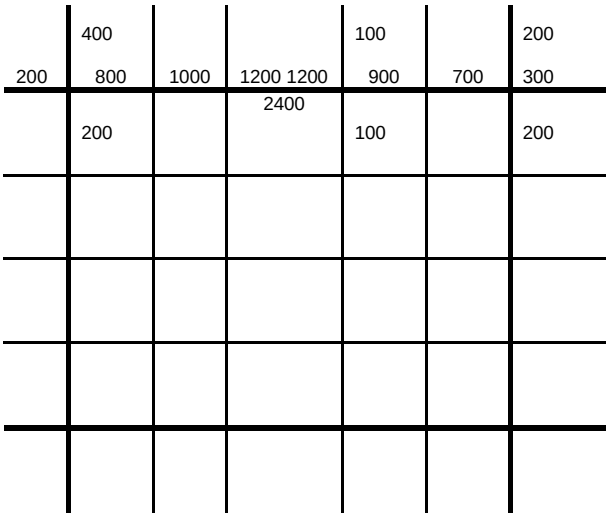
Based on proximity to CMP System



MAXIMUM IMPACT < 1%



MAXIMUM = 1.8%



MAXIMUM = 3%
COULD BE 4.5% WITH 75/25 SPLIT

Alternative Criteria

Assume 75/25 distribution

For direct access to CMP System:
1,200/.75 = 1,600 veh./day

For no direct CMP System Access:
Approximately 1/3 less impact on CMP System
1,600 x 3/2 = 2,400 veh./day

Daily Trip Generation

Significant Impact	Direct Access	No Direct Access
1%	500	800
2%	1,100	1,600
3%	1,600	2,400

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Appendix B-2: Traffic Impact Analysis Exempt Projects

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Appendix B-2: Traffic Impact Analysis Exempt Projects

Projects exempt from the requirements of a mandatory, CMP Traffic Impact Analysis are listed below. This list is not meant to be all-inclusive. Any inquiries regarding additional exemptions shall be transmitted in writing to the Orange County Transportation Authority, attention CMP Program Manager.

Project Not Requiring a CMP TIA Analysis:

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.[1]
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. [1, 2]
3. Final tract and parcel maps. [1, 2, 3]
4. Issuance of building permits. [1, 2, 3]
5. Issuance of certificates of use and occupancy. [1, 2, 3]
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. [1, 2, 3]

[1] 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.

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

[3] 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 1992).

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Appendix C-1: CMP Deficiency Plan Flow Chart

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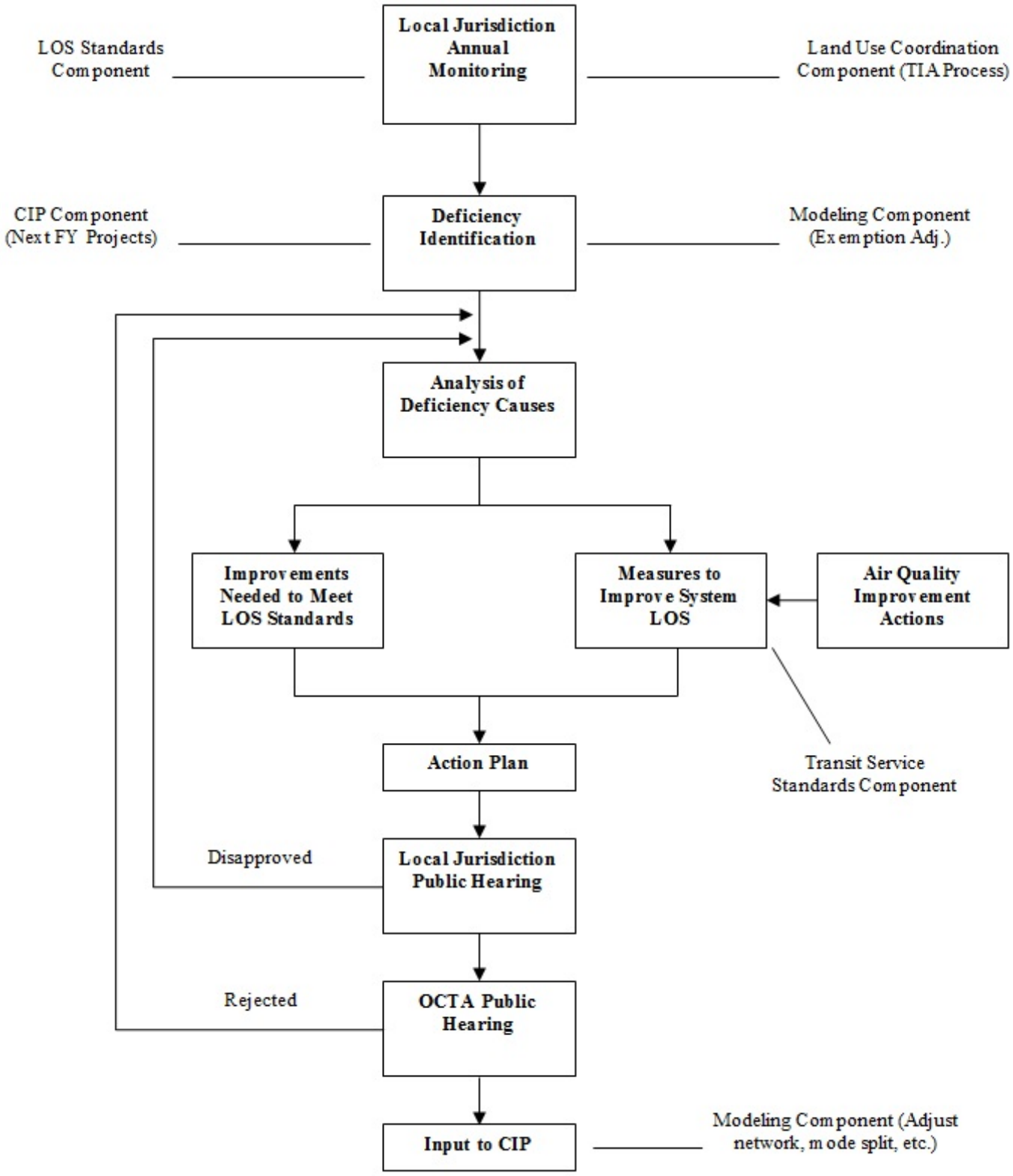
APPENDIX C-1: CMP Deficiency Plan Flow Chart



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Appendix C-2: Deficiency Plan Decision Flow Chart

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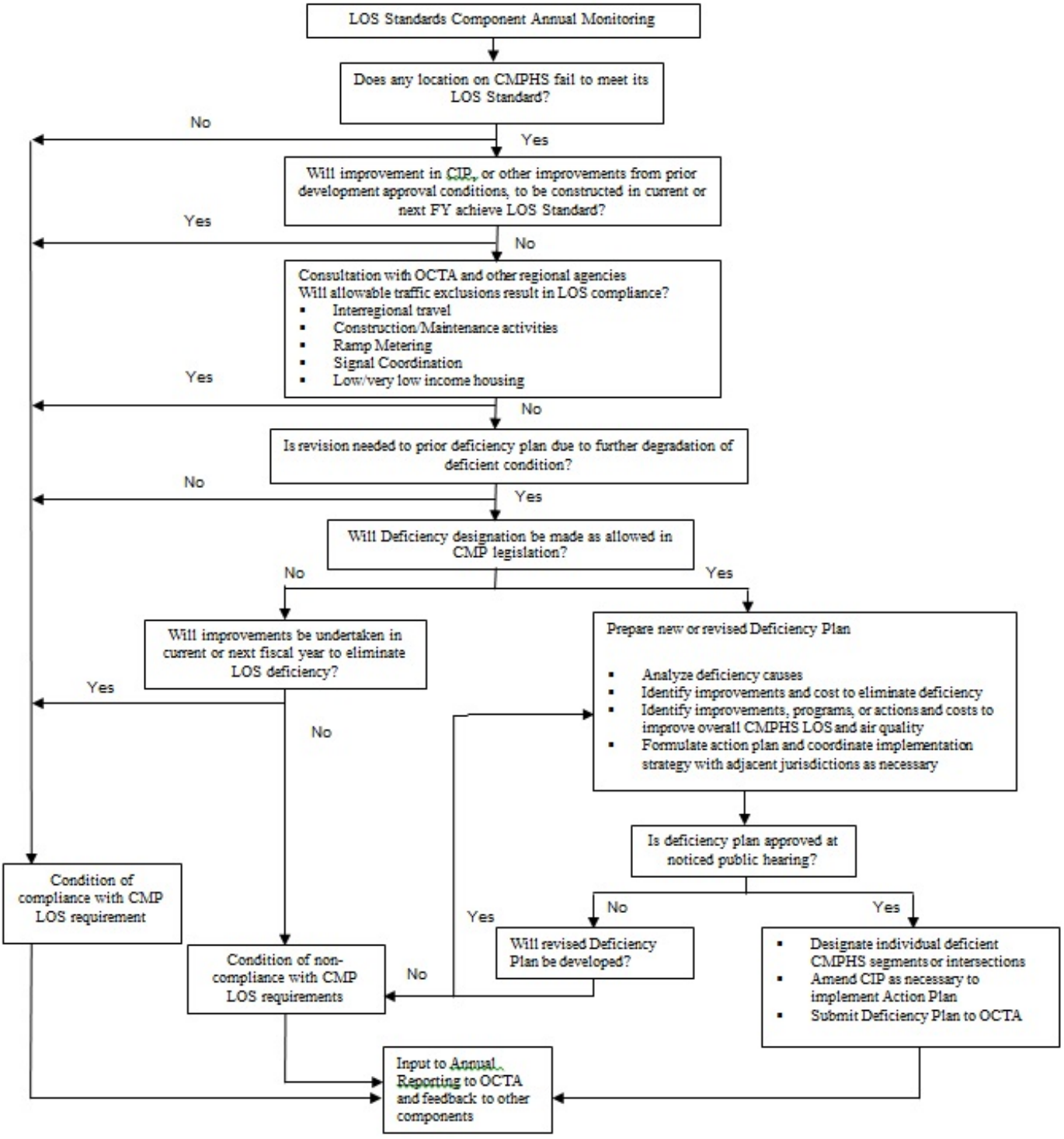
APPENDIX C-2: Deficiency Plan Decision Flow Chart



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Appendix D: CMP Monitoring Checklists

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Congestion Managemement Program (CMP) Checklist

CMP Monitoring Checklist: Level of Service

Jurisdiction:

CMP Checklist	YES	NO	N/A
1. Check "Yes" if either of the following apply: • There are no CMP intersections in your jurisdiction. • Factoring out statutorily-exempt activities[1], all CMP intersections within your jurisdiction are operating at LOS E (or the baseline level, if worse than E) or better.	☐	☐	
NOTE: ONLY THOSE AGENCIES THAT CHECKED "NO" FOR QUESTION 1 NEED TO ANSWER THE REMAINING QUESTIONS.			
2. If any, please list those intersections that are not operating at the CMP LOS standards. • _____ • _____ • _____			☐
3. Will deficient intersections, if any, be improved by mitigation measures to be implemented in the next 18 months or improvements programmed in the first year of any recent funding program (i.e., local agency CIP, CMP CIP, Measure M CIP)?	☐	☐	☐
a. If not, has a deficiency plan been developed for each intersection that will be operating below the CMP LOS standards?	☐	☐	☐

Additional Comments:

I certify that the information contained in this checklist is true.

Signature: _____

Title: _____

[1] The following activities are statutorily-exempt from deficiency determinations: interregional travel, traffic generated by the provision of low and very low income housing, construction rehabilitation or maintenance of facilities that impact the system, freeway ramp metering, traffic signal coordination by the state or multi-jurisdictional agencies, traffic generated by high-density residential development within 1/4 mile of a fixed-rail passenger station, traffic generated by mixed-use residential development within 1/4 mile of a fixed-rail passenger station.

CMP Monitoring Checklist: Deficiency Plans

Jurisdiction:			
CMP Checklist	YES	NO	N/A
1. Check "Yes" if either of the following apply: • There are no CMP intersections in your jurisdiction. • Factoring out statutorily-exempt activities[2], all CMPHS intersections within your jurisdiction are operating at LOS E (or the baseline level, if worse than E) or better.	☐	☐	
NOTE: ONLY THOSE AGENCIES THAT CHECKED "NO" FOR QUESTION 1 NEED TO ANSWER THE REMAING QUESTIONS.			
2. If any, please list those intersections found to not meet the CMP LOS standards. • _____ • _____ • _____			☐
3. Are there improvements to bring these intersections to the CMP LOS standard scheduled for completion during the next 18 months or programmed in the first year of the CIP?	☐	☐	☐
NOTE: ONLY THOSE AGENCIES THAT CHECKED "NO" FOR QUESTION 3 NEED TO ANSWER THE REMAINING QUESTIONS.			
4. Has a deficiency plan or a schedule for preparing a deficiency plan been submitted to OCTA?	☐	☐	☐
5. Does the deficiency plan fulfill the following statutory requirements:			
a. Include an analysis of the causes of the deficiency?	☐	☐	☐
b. Include a list of improvements necessary to maintain minimum LOS standards on the CMPHS and the estimated costs of the improvements?	☐	☐	☐
c. Include a list of improvements, programs, or actions, and estimates of their costs, which will improve LOS on the CMPHS and improve air quality?	☐	☐	☐
i. Do the improvements, programs, or actions meet the criteria established by SCAQMD (see the CMP Preparation Manual)?	☐	☐	☐

[2] The following activities are statutorily-exempt from deficiency determinations: interregional travel, traffic generated by the provision of low and very low income housing, construction rehabilitation or maintenance of facilities that impact the system, freeway ramp metering, traffic signal coordination by the state or multi-jurisdictional agencies, traffic generated by high-density residential development within 1/4 mile of a fixed-rail passenger station, traffic generated by mixed-use residential development within 1/4 mile of a fixed-rail passenger station.

CMP Monitoring Checklist: Deficiency Plans (cont.)

Jurisdiction:

CMP Checklist	YES	NO	N/A
6. Are the capital improvements identified in the deficiency plan programmed in your seven-year CMP CIP?	☐	☐	☐
7. Does the deficiency plan include a monitoring program that will ensure its implementation?	☐	☐	☐
8. Does the deficiency plan include a process to allow some level of development to proceed pending correction of the deficiency?	☐	☐	☐
9. Has necessary inter-jurisdictional coordination occurred?	☐	☐	☐
10. Please describe any innovative programs, if any, included in the deficiency plan:			☐

Additional Comments:

I certify that the information contained in this checklist is true.

Signature: _____

Title: _____

CMP Monitoring Checklist: Land Use Coordination

Jurisdiction:

CMP Checklist	YES	NO	N/A
1. Have you maintained the CMP traffic impact analysis (TIA) process you selected for the previous CMP?	☐	☐	
a. If not, have you submitted the revised TIA approach and methodology to OCTA for review and approval?	☐	☐	☐
2. Did any development projects require a CMP TIA during this CMP cycle?[3]	☐	☐	
NOTE: ONLY THOSE AGENCIES THAT CHECKED "YES" FOR QUESTION 2 NEED TO ANSWER THE REMAINING QUESTIONS.			
3. If so, how many?		_____	
4. Please list any CMPHS links & intersections that were projected to not meet the CMP LOS standards (indicate whether any are outside of your jurisdiction). • _____ • _____ • _____			☐
a. Were mitigation measures and costs identified for each and included in your seven-year CIP?	☐	☐	☐
b. If any impacted links & intersections were outside your jurisdiction, did your agency coordinate with other jurisdictions to develop a mitigation strategy?	☐	☐	☐
5. If a local traffic model was/will be used, did you follow the data and modeling consistency requirements as described in the CMP Preparation Manual (available online at http://www.octa.net/pdf/cmpprepmanual.pdf)?	☐	☐	☐

Additional Comments:

I certify that the information contained in this checklist is true.

Signature: _____

Title: _____

[3] Exemptions include:

- any development generating less than 2,400 daily trips
- any development generating less than 1,600 daily trips (if it directly accesses a CMP highway)
- final tract and parcel maps,
- issuance of building permits,
- issuance of certificate of use and occupancy,
- 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

CMP Monitoring Checklist: Capital Improvement Program

Jurisdiction:

CMP Checklist	YES	NO	N/A
1. Did you submit a seven-year Capital Improvement Program (CIP) to OCTA by June 30?	☐	☐	☐
2. Does the CIP include projects to maintain or improve the performance of the CMPHS (including capacity expansion, safety, maintenance, and rehabilitation)?	☐	☐	☐
3. Is it consistent with air quality mitigation measures for transportation- related vehicle emissions?	☐	☐	☐
4. Was the Web Smart CIP provided by the OCTA used to prepare the CMP CIP?	☐	☐	☐

Additional Comments:

I certify that the information contained in this checklist is true.

Signature: _____

Title: _____

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