ATTACHMENT D

2021 Orange County Congestion Management Program Report

Orange County Transportation Authority

November 2021

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2021 Update

The 2021 Congestion Management Program (CMP) report offers a snapshot of some of the many evolving circumstances and challenges both Orange County and the Orange County Transportation Authority (OCTA) have been facing in recent years. Although many of these challenges are not unique to the region or the agency, OCTA continues to adapt its systems and programs as it navigates through new societal, technological, and political dynamics. Following is a summary of key changes made in the 2021 update of the Orange County CMP:

1. **Coronavirus (COVID-19) Impacts on the Transportation System –** A significant new challenge OCTA has encountered in the delivery of its projects and services is the ongoing impacts from the COVID-19 pandemic. Since 2020, this has resulted in a number of significant changes to travel patterns in Orange County, including a reduction in ridership on OCTA's bus system, Metrolink's rail system, and reduced traffic on Orange County's streets and roads. Some of these impacts may be temporary and others may be more long-term. The 2021 CMP update discusses and reflects these trends throughout the document, most particularly in the data sets it includes.

2. **Discussion of SB 743 (Chapter 5, Statutes of 2017) Implementation in Relationship to the CMP** – SB 743 was first referenced as part of the 2019 CMP update as a means of providing some initial guidance and clarity on evaluating transportation impacts under California Environmental Quality Act (CEQA). This information was included at the end of Chapter 1: Introduction as a new subsection on SB 743 legislation. The 2021 update has now added new language under Chapter 5: Land-Use Impact Analysis, as well that builds on the information first introduced in 2019. These changes clarify that all jurisdictions in Orange County are expected to comply with the CMP Land-Use Coordination analysis by following a process consistent with the CMP Traffic Impact Analysis (TIA) guidelines for the purpose of monitoring Orange County's highway system performance.

Chapter 1: Introduction

Purpose and 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 CMP. The following year, Orange County's local governments designated the 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 AB 2419 (Chapter 293, Statutes of 1996), 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 Code of Federal Reulations 450.320), which is 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 necessary as an eligibility requirement under Measure M2 (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, to provide a mechanism for coordinating land-use and development decisions that support the regional economy, and to support gas tax funding 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 https://leginfo.legislature.ca.gov/faces/codes.xhtml, 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 Congestion Management Program Highway System (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 addresses 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 CEQA.

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 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 developed a uniform database on traffic impacts for use in a countywide transportation computer model. This database is consistent with the database maintained by SCAG, the regional agency. The Orange County Transportation Analysis Model (OCTAM) is developed and maintained by OCTA. OCTAM uses standardized assumptions and conventions and is consistent with the methodologies adopted by SCAG. OCTA encourages local jurisdictions to use OCTAM to determine the quantitative impacts of development on the circulation system. This approach to modeling and data consistency reflects a consensus approach developed through discussions between OCTA and local jurisdictions.

Appendix G discusses this requirement in more detail.

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. If required, a multi-jurisdictional deficiency plan must be adopted by all participating local jurisdictions. 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.

Other Relevant Legislation

SB 743

Approved in 2013, SB 743 amended the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts. Since its passing, the Governor's Office of Planning and Research has proposed changes to the CEQA Guidelines that identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts. Since adoption by the California Natural Resources Agency in 2018, automobile delay, as measured by LOS and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA.

The intent of this legislation is to balance the need for traffic LOS standards with the need to build infill housing and mixed-use commercial developments within walking distance of mass transit facilities, downtowns, and town centers. In doing so, this legislation aims to provide greater flexibility to local governments to balance these sometimes competing needs.

Lead agencies, including OCTA, are required to comply with SB 743 requirements in the CEQA Guidelines, and OCTA even evaluates VMT in plans such as the Long-Range Transportation Plan (LRTP). However, a jurisdiction may still adopt LOS as a performance standard for analyzing traffic conditions and maintaining throughput on its highway system. Therefore as Orange County's Congestion Management Agency, OCTA still requires LOS analysis for certain projects as defined in the CMP TIA Guidelines.

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 LOS at CMPHS intersections. The CMP LOS grade chart is illustrated in Figure 1.

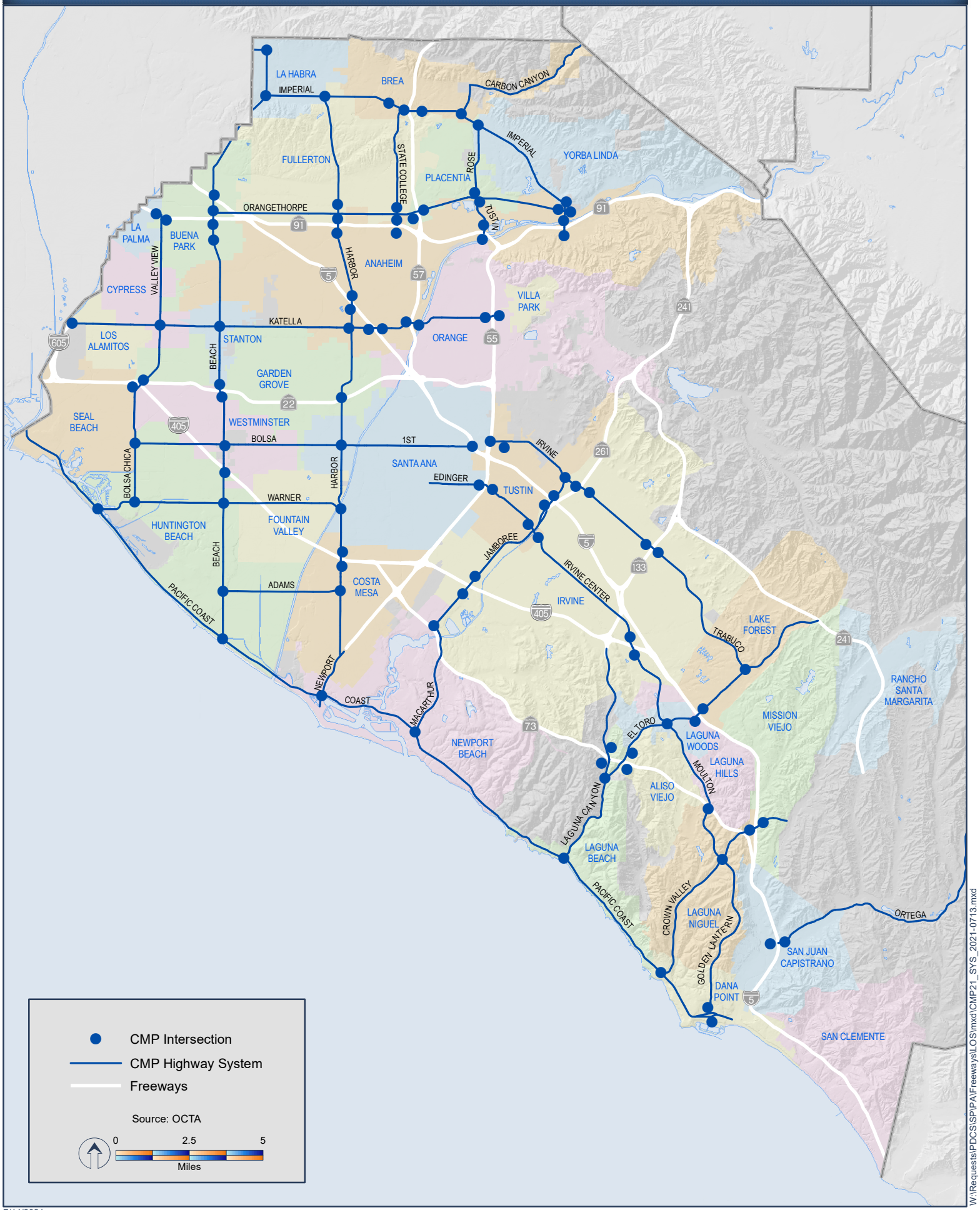
FIGURE 1: LOS Grade Chart

Level of Service	ICU Rating
A	0.00 – 0.60
B	0.60 – 0.70
C	0.70 – 0.80
D	0.80 – 0.90
E	0.90 – 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 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 3.

Figure 2: 2021 Congestion Management Program Highway System



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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 of any deficiencies on State facilities.

Chapter 3: System Performance

Highway and 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 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 mid-week 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 percent 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 may be requested to factor in bicycle and pedestrian activity for effected lanes. These calculations shall use standard reductions in accordance with the most recent Highway Capacity Manual. 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 2021 LOS ratings for the CMP intersections have been mapped in Figure 3. A spreadsheet of the baseline and 2021 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 2021, the average AM ICU improved from 0.67 to 0.43 (an improvement of 35.82 percent), and the PM ICU improved from 0.72 to 0.52 (an improvement of 27.77 percent). The ICU improvements indicate that Orange County agencies are effectively operating, maintaining, and improving the CMP Highway System. However, data collected for the 2021 CMP occurred during the COVID-19 pandemic and might reflect an anomaly for intersection LOS ratings.

Figure 3: 2021 CMP Intersection Level of Service

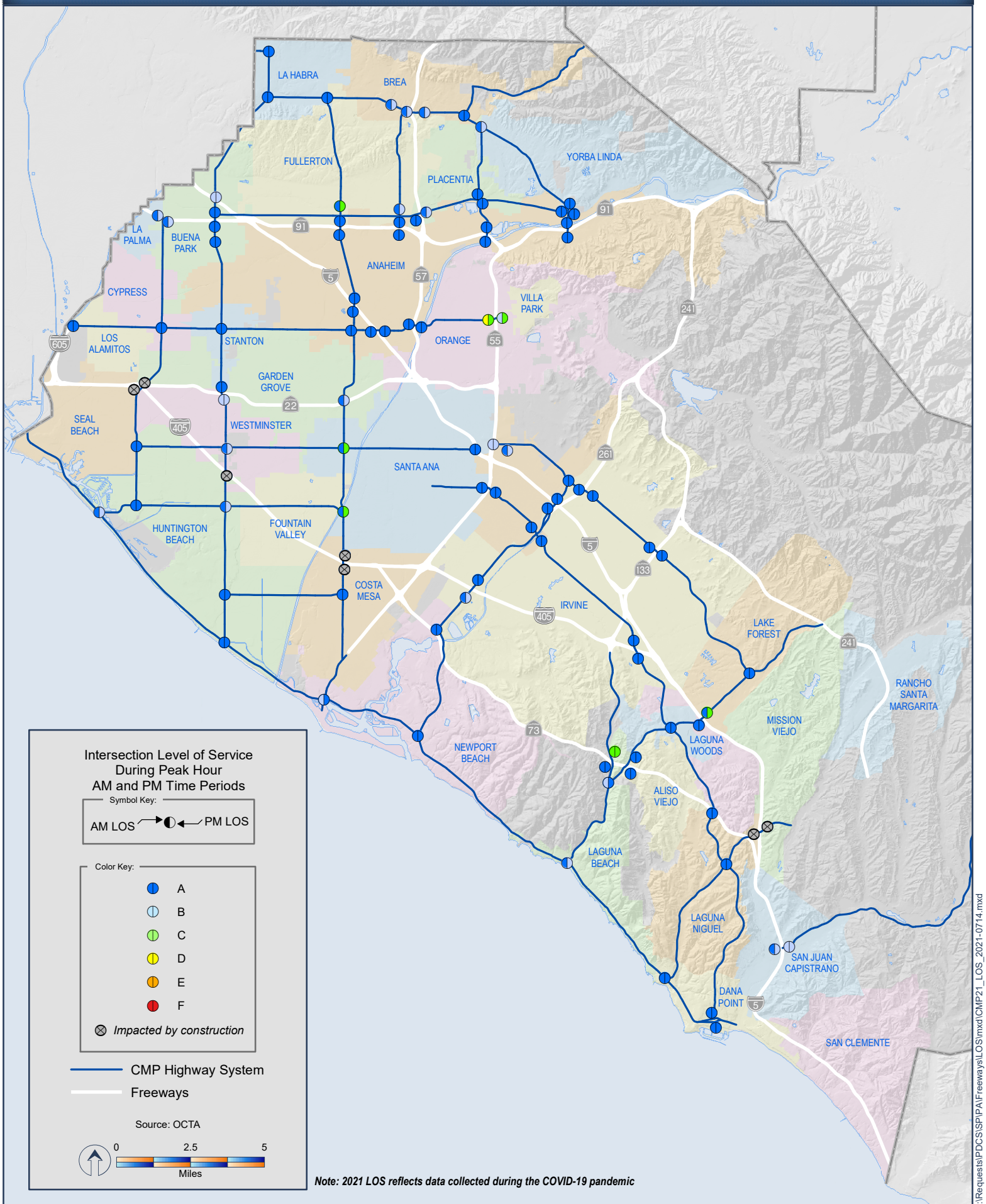

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FIGURE 4: 2021 CMP Level of Service Chart

Jurisdiction	Intersection/Interchange	Baseline AM LOS	Baseline AM ICU	2021 AM LOS	2021 AM ICU	Baseline PM LOS	Baseline PM ICU	2021 PM LOS	2021 PM ICU
Anaheim	Anaheim Boulevard-I-5 NB Ramp/Katella Avenue	A	0.49	A	0.32	D	0.82	A	0.41
Anaheim	Harbor Boulevard/Katella Avenue	A	0.53	A	0.3	B	0.67	A	0.42
Anaheim	Harbor Boulevard/I-5 SB Ramps	A	0.29	A	0.19	A	0.31	A	0.24
Anaheim	Harbor Boulevard/SR-91 EB Ramps	A	0.46	A	0.35	A	0.52	A	0.5
Anaheim	I-5 NB Ramp/Harbor Boulevard	A	0.52	A	0.31	A	0.54	A	0.41
Anaheim	I-5 SB Ramps/Katella Avenue	A	0.48	A	0.43	A	0.41	A	0.5
Anaheim	SR-57 NB Ramps/Katella Avenue	A	0.51	A	0.27	A	0.41	A	0.31
Anaheim	SR-57 SB Ramps/Katella Avenue	A	0.52	A	0.31	A	0.51	A	0.34
Anaheim	SR-91 EB Ramp/Imperial Highway	C	0.73	A	0.45	C	0.79	A	0.59
Anaheim	SR-91 EB Ramps/State College Boulevard	B	0.69	A	0.37	D	0.82	A	0.39
Anaheim	SR-91 EB Ramps/Tustin Avenue	B	0.66	A	0.43	D	0.84	A	0.37
Anaheim	SR-91 WB Ramp/Harbor Boulevard	B	0.61	A	0.42	C	0.77	A	0.54
Anaheim	SR-91 WB Ramp/Imperial Highway	C	0.71	A	0.42	B	0.63	A	0.49
Anaheim	SR-91 WB Ramp/State College Boulevard	A	0.55	A	0.37	B	0.63	A	0.51
Anaheim	SR-91 WB Ramps/Tustin Avenue	B	0.64	A	0.54	A	0.6	A	0.54
Anaheim	Imperial Highway Off/SB On/Orangethorpe Avenue	A	0.32	A	0.33	A	0.39	A	0.4
Anaheim	Imperial Highway NB On/Orangethorpe Avenue	A	0.26	A	0.18	A	0.3	A	0.26
Anaheim	Imperial Highway/Orangethorpe Avenue Ramps	A	0.41	A	0.32	A	0.42	A	0.36
Brea	SR-57 SB Ramps/Imperial Highway	B	0.68	A	0.5	B	0.7	B	0.61
Brea	State College Boulevard/Imperial Highway	C	0.73	A	0.55	E	0.93	B	0.68
Brea	Valencia Avenue/Imperial Highway	A	0.56	A	0.35	A	0.59	A	0.36
Brea	SR-57 NB Ramp/Imperial Highway	C	0.78	A	0.49	E	0.91	B	0.64
Buena Park	Beach Boulevard/Orangethorpe Avenue	C	0.76	A	0.41	D	0.87	A	0.49
Buena Park	I-5 SB Ramps/Beach Boulevard	C	0.72	B	0.62	C	0.78	B	0.69
Buena Park	SR-91 EB Ramp/Beach Boulevard	C	0.74	A	0.39	D	0.84	A	0.54
Buena Park	SR-91 EB Ramp/Valley View Street	A	0.58	A	0.43	D	0.86	B	0.62
Buena Park	SR-91 WB Ramp/Beach Boulevard	A	0.58	A	0.33	A	0.59	A	0.42
Buena Park	SR-91 WB Ramp/Valley View Street	C	0.8	A	0.49	E	0.94	B	0.69
Costa Mesa	Harbor Boulevard/Adams Avenue	E	0.99	A	0.4	F	1.09	A	0.57
Costa Mesa	I-405 SB Ramps/Harbor Boulevard	A	0.53	Impacted by Construction		B	0.63	Impacted by Construction	
Costa Mesa	I-405 NB Ramps/Harbor Boulevard	E	0.95	Impacted by Construction		F	1.07	Impacted by Construction	
Cypress	Valley View Street/Katella Avenue	B	0.63	A	0.45	D	0.87	A	0.56
Dana Point	Crown Valley Parkway/Bay Drive/PCH	F	1.41	A	0.44	F	1.62	A	0.58
Dana Point	Street of the Golden Lantern/Del Prado Avenue	A	0.32	A	0.2	A	0.53	A	0.36
Dana Point	Street of the Golden Lantern/PCH	A	0.42	A	0.49	A	0.55	A	0.6
Fullerton	Harbor Boulevard/Orangethorpe Avenue	A	0.6	A	0.45	E	0.94	C	0.71
Fullerton	State College Boulevard/Orangethorpe Avenue	C	0.8	A	0.48	D	0.86	B	0.62
Garden Grove	SR-22 WB/Beach Boulevard	C	0.73	B	0.63	C	0.73	B	0.62
Garden Grove	SR-22 WB Ramp/Valley View Street	C	0.76	Impacted by Construction		D	0.87	Impacted by Construction	
Garden Grove	SR-22 WB Ramps/Harbor Boulevard	F	1.1	A	0.58	F	1.16	B	0.67
Huntington Beach	Beach Boulevard/405 SB Ramp/Edinger Avenue	B	0.63	Impacted by Construction		E	1.03	Impacted by Construction	
Huntington Beach	Beach Boulevard/Adams Avenue	A	0.55	A	0.42	C	0.67	A	0.58
Huntington Beach	Beach Boulevard/PCH	A	0.45	A	0.37	A	0.47	A	0.5
Huntington Beach	Beach Boulevard/Warner Avenue	C	0.78	A	0.56	E	0.93	B	0.66
Huntington Beach	Bolsa Chica Street/Bolsa Avenue	B	0.66	A	0.36	A	0.53	A	0.43
Huntington Beach	Bolsa Chica Street/Warner Avenue	A	0.57	A	0.47	D	0.81	A	0.58

FIGURE 4: 2021 CMP Level of Service Chart

Jurisdiction	Intersection/Interchange	Baseline AM LOS	Baseline AM ICU	2021 AM LOS	2021 AM ICU	Baseline PM LOS	Baseline PM ICU	2021 PM LOS	2021 PM ICU
Huntington Beach	PCH/Warner Avenue	D	0.81	A	0.46	B	0.72	B	0.61
Irvine	SR-133 NB Ramps/Irvine Boulevard	A	0.37	A	0.36	A	0.33	A	0.44
Irvine	SR-133 SB Ramps/Irvine Boulevard	A	0.37	A	0.34	A	0.29	A	0.36
Irvine	SR-261 NB Ramps/Irvine Boulevard	A	0.38	A	0.21	A	0.53	A	0.32
Irvine	SR-261 SB Ramps/Irvine Boulevard	A	0.42	A	0.23	A	0.4	A	0.29
Irvine	I-405 NB Ramps/Enterprise/Irvine Center Drive	E	0.95	A	0.3	A	0.39	A	0.46
Irvine	I-405 NB Ramps/Jamboree Road	F	1.03	A	0.48	C	0.78	A	0.59
Irvine	I-405 SB Ramps/Irvine Center Drive	E	1	A	0.31	A	0.57	A	0.4
Irvine	I-405 SB Ramps/Jamboree Road	E	0.92	A	0.55	B	0.66	B	0.69
Irvine	I-5 NB Ramps/Jamboree Road	A	0.54	A	0.43	C	0.75	A	0.57
Irvine	I-5 SB Ramps/Jamboree Road	A	0.4	A	0.48	A	0.35	A	0.52
Irvine	MacArthur Boulevard/Jamboree Road	B	0.61	A	0.31	B	0.69	A	0.36
La Habra	Harbor Boulevard/Imperial Highway	D	0.81	A	0.43	D	0.86	A	0.57
La Habra	Beach Boulevard/Imperial Highway	D	0.85	A	0.36	D	0.87	A	0.58
La Habra	Beach Boulevard/Whittier Boulevard	A	0.33	A	0.33	A	0.29	A	0.46
Laguna Beach	El Toro Road/SR-73 NB Ramps	E	0.91	A	0.39	A	0.59	A	0.49
Laguna Beach	El Toro Road/SR-73 SB Ramps	A	0.41	A	0.36	B	0.67	A	0.46
Laguna Beach	Laguna Canyon Rd/SR-73 NB Ramps	C	0.73	C	0.72	C	0.72	C	0.72
Laguna Beach	Laguna Canyon Rd/SR-73 SB Ramps	A	0.32	A	0.32	A	0.33	A	0.3
Laguna Beach	Laguna Canyon Road/El Toro Road	F	1.54	B	0.63	F	1.16	A	0.57
Laguna Beach	Laguna Canyon Road/PCH	D	0.84	A	0.59	C	0.74	B	0.65
Laguna Hills	I-5 SB Ramp/Avenida de la Carlotta/El Toro Road	F	1.18	A	0.41	F	1.13	A	0.42
Laguna Niguel	Moulton Parkway/SR-73 SB Ramps	A	0.45	A	0.27	A	0.38	A	0.3
Laguna Niguel	Moulton Parkway/Crown Valley Parkway	A	0.56	A	0.43	B	0.65	A	0.49
Laguna Niguel	I-5 SB Ramps/Crown Valley Parkway	E	0.94	Impacted by Construction		F	1.26	Impacted by Construction	
Laguna Woods	Moulton Parkway/El Toro Road	A	0.56	A	0.4	D	0.81	A	0.45
Lake Forest	I-5 NB/Bridger/El Toro Road	F	1.03	A	0.55	C	0.8	C	0.74
Lake Forest	Trabuco Road/El Toro Road	B	0.69	A	0.48	B	0.65	A	0.51
Los Alamitos	I-605 NB Ramps/Katella Avenue	B	0.68	A	0.28	B	0.69	A	0.37
Mission Viejo	I-5 NB Ramps/Crown Valley Parkway	D	0.86	Impacted by Construction		F	1.01	Impacted by Construction	
Newport Beach	MacArthur Boulevard/PCH	A	0.51	A	0.46	B	0.7	A	0.56
Newport Beach	Newport Boulevard/PCH	A	0.56	B	0.6	A	0.49	A	0.54
Orange	SR-55 NB Ramps/Sacramento/Katella Avenue	C	0.75	B	0.6	D	0.85	C	0.77
Orange	SR-55 SB Ramps/Katella Avenue	C	0.73	D	0.89	E	0.95	C	0.8
Placentia	Rose Drive/Imperial Highway	E	0.95	A	0.46	E	0.99	B	0.63
Placentia	SR-57 NB Ramps/Orangethorpe Avenue	B	0.67	A	0.55	C	1.03	B	0.61
Placentia	SR-57 SB Ramps/Iowa Place/Orangethorpe Avenue	C	0.74	A	0.41	B	0.8	A	0.44
Placentia	Del Cerro Dr/Orangethorpe Ave	A	0.29	A	0.2	A	0.69	A	0.23
Placentia	Rose Dr/Del Cerro Dr	A	0.59	A	0.4	A	0.69	A	0.41
San Juan Capistrano	I-5 NB Ramps/Ortega Highway	A	0.52	B	0.66	A	0.51	B	0.69
San Juan Capistrano	I-5 SB Ramps/Ortega Highway	B	0.61	A	0.58	C	0.58	B	0.62
Santa Ana	Harbor Boulevard/1st Street	A	0.48	A	0.57	D	0.77	C	0.7
Santa Ana	Harbor Boulevard/Warner Avenue	E	0.93	A	0.56	E	0.81	C	0.71
Santa Ana	I-5 SB Ramps/1st Street	A	0.29	A	0.41	A	0.98	A	0.44
Santa Ana	SR-55 SB Ramp/Auto Mall/Edinger Avenue	D	0.9	A	0.5	F	0.46	A	0.53
Santa Ana	SR-55 SB Ramps/Irvine Boulevard	B	0.68	B	0.6	D	1.06	B	0.64

FIGURE 4: 2021 CMP Level of Service Chart

Jurisdiction	Intersection/Interchange	Baseline AM LOS	Baseline AM ICU	2021 AM LOS	2021 AM ICU	Baseline PM LOS	Baseline PM ICU	2021 PM LOS	2021 PM ICU
Stanton	Beach Boulevard/Katella Avenue	D	0.89	A	0.48	F	0.83	A	0.56
Tustin	Jamboree Road/Edinger Avenue-NB Ramp	A	0.28	A	0.31	A	0.32	A	0.41
Tustin	Jamboree Road/Edinger Avenue-SB Ramp	D	0.81	A	0.31	A	0.41	A	0.41
Tustin	Jamboree Road/Irvine Boulevard	B	0.65	A	0.43	A	0.59	A	0.51
Tustin	SR-55 NB Ramps/Edinger Avenue	C	0.72	A	0.36	B	0.65	A	0.54
Tustin	SR-55 NB Ramps/Irvine Boulevard	A	0.59	A	0.5	A	0.45	B	0.68
Westminster	SR-22 EB/Beach Boulevard	A	0.53	A	0.45	A	0.54	A	0.46
Westminster	Beach Boulevard/Bolsa Avenue	F	1.09	A	0.59	F	1.11	B	0.66
Westminster	Bolsa Chica Road/Garden Grove Boulevard	E	0.91	Impacted by Construction		E	0.97	Impacted by Construction	
	COUNTY AVERAGE		**0.67**		**0.43**		**0.72**		**0.52**

*2021 LOS reflects data collected during the COVID-19 pandemic

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 proposed improvements.

A deficiency plan process was 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.

Per §65089.4, the following three CMP intersections have adjustment factors applied to their traffic counts as a result of interregional travel:

- *Beach Boulevard/Whittier Boulevard (City of La Habra)*
- *Beach Boulevard/Imperial Highway (City of La Habra)*
- *Harbor Boulevard/Imperial Highway (City of La Habra)*

There are no intersections exceeding the CMP level of service standard in 2021. However, it should also be noted that data collected for the 2021 CMP occurred during the COVID-19 pandemic and might reflect an anomaly for intersection LOS ratings.

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 reported separately because it is an extension of the fixed-route service. The CMP performance measures are used to help ensure that bus and rail services meet demand.

COVID – 19 Impacts to Bus Service

OCTA implemented an emergency service change on March 23, 2020. This emergency service change reduced service levels to balance a reduction in demand for transit service resulting from the federal and state emergency declarations. This included the State's stay-at-home order to help reduce the spread of the COVID-19 and correlating public health guidance.

Based on these factors, service levels were adjusted to provide a baseline level of service for customers needing to make essential trips. Bus service was subsequently increased slightly in June 2020 as demand increased and to help ensure social distancing for passengers and OCTA coach operators. Staff will continue to reinstate service as the economy reopens and demand increases. COVID-19 continues to have a negative impact on bus ridership.

Fixed-Route Bus Service

OCTA's fixed-route bus service includes local routes, express routes, community routes, limited-stop/Bus Rapid Transit (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. OCTA also provides Xpress service which are local routes with limited-stop trips.

- Express routes (numbered 200 to 299 and 700 to 799) provide higher speed point-to-point service along freeways and high-occupancy vehicle (HOV) facilities providing peak period commuter transportation to employment centers. Relatively few stops are made and service is generally designed to match typical work-time spreads. OCTA's 200-series intracounty express routes operate within Orange County while the 700-series intercounty services connect Orange County with neighboring counties such as Los Angeles and Riverside County.
- Community routes (numbered 100 to 199) are typically shorter distance services that may act as community circulators and are less direct compared to the local routes. 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) provide trips with higher average speeds and connect with other OCTA bus networks and modes. The speed advantage is realized by making fewer stops which are spaced about a three-fourth-mile to one 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/Stationlink routes (numbered 400 to 499) provide first and last mile trips during peak hours 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.
- Circulator Shuttle routes (numbered 800 to 899) typically provide short-distance connections to local business on a frequent timed headway. Route 862 is an example implemented to connect the Santa Ana Regional Transportation Center to the Santa Ana Downtown area while the OC Streetcar is under construction. The alignment and timed headway of Route 862 is similar to the planned OC Streetcar service and will help to acclimate riders to transition to the OC Streetcar upon its opening.

OCTA's pre-pandemic fixed-route bus service has a total of 58 routes. The network is comprised of 36 local routes, five express routes (two intra- and three inter-county routes), eight community routes, three limited-stop routes, five rail feeder routes, and one circulator shuttle, as listed above.

After the implementation of the state's stay-at-home order in March 2020, weekday OC Bus ridership dropped significantly. Weekday ridership decreased from approximately 125,000 boardings to the low 30,000s immediately after the stay-at-home order, but has been steadily recovering and is now in the mid 60,000s. In March 2020, OCTA reduced fixed-route bus service to 41 routes (approximately 40 percent of revenue vehicle hours (RVH)) by implementing Sunday service schedules on all routes, seven days a week. Starting in June 2020, an enhanced Saturday service schedule was implemented on weekdays and a regular schedule on Saturdays and Sundays. This increase to 50 routes equates to about 75 percent of RVH for pre-COVID-19 service levels. OCTA anticipates adding incremental amounts of service as ridership increases.

Bus Restructuring Study

OCTA last completed a bus restructuring study nearly a decade ago, in 2012. The "Transit System Study" was the basis for OC Bus 360 changes that were implemented between 2016 and 2018. In general, these changes reallocated service from lower productivity routes and areas to the core service area where these resources could yield additional ridership. COVID-19 has affected transit ridership significantly in Orange County and throughout the nation, although it is not yet clear which impacts may be temporary and which might have more long-term affects. With these considerations, OCTA is looking to restructure the OC Bus system based on changing demand, travel patterns, and funding.

Performance Measures

The section that follows describes OCTA's transit performance measures for vehicle load, vehicle headway, on-time performance, and service accessibility. These performance measures are used to evaluate the effectiveness of transit service provided by OCTA.

Performance Measure 1: Vehicle Load

Vehicle load refers to the maximum number of passengers allowed on a service vehicle, expressed as the ratio of passengers to the number of seats on the vehicle and varied by mode and by time of day. OCTA monitors vehicle load to help ensure the safety and comfort of customers. All pre-pandemic routes have less than 100 percent average peak loads based on an analysis of 2018 Automatic Passenger Counter data.

During COVID-19, OCTA started with a 15-passenger capacity. This was a limit many transit agencies began with, and was less than half of the seated load (36 on a 40' bus) to maintain social distance. These precautions were accompanied with encouragement or

requirement of face coverings, use of hand sanitizers installed on all buses, rear door boarding, and signage along with a marketing campaign preceding these precautions. These precautions considered local, state and federal guidelines, discussions with American Public Transportation Association subcommittees, and the availability of resources to use trippers to mitigate capacity limitation impacts (pass-bys due to overcrowding).

After the installation of plexi-glass shields for coach operators, OCTA switched back to all door boarding and an increase to a 20-passenger capacity. Staff's approach was to leave an empty seat between each passenger (50 percent of the seated capacity equaling 18 passengers). To account for groups that may ride together, staff assumed two to three such groups. Therefore, allowing two additional customers, bringing the total to 20. As of June 15th, 2021, state and local distancing measures were lifted and OCTA has reinstated regular passenger load standards.

Performance Measure 2: 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. Vehicle headway varies by mode and time of day and is primarily determined by bus ridership. However, it is also limited by the availability of resources to operate the system. To keep up with changing conditions and to make improvements to service, OCTA continually monitors ridership along routes and their respective headways. This process generally results in an identification of improvement priorities pending funding availability.

Due to the impact of COVID-19, OCTA responded with the reduction of frequency to account for the drop in demand for transit service. However, where passenger loads exceeded OCTA's COVID-19 capacity considerations (described above), trippers were used to ensure social distancing measures were met with approximately 130 extra trippers per day.

Peak Weekday Vehicle Headways

Service	≤15 Min.	16 – 30 min.	>30 min.
Local Routes	6	12	19
BRT / Limited	0	1	0
Community Routes	0	0	7
Express Routes	0	0	0
Rail Feeder Routes	0	0	0

Performance Measure 3: On-Time Performance (OTP)

OCTA defines OTP as not more than five minutes late. OTP is measured at the time point. A trip is on-time if 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. System-wide OTP for fiscal year (FY) 2020-21 was 83 percent.

Performance Measure 4: Service Accessibility

Service accessibility is the percentage of population and employment in proximity to bus service. A review of service accessibility conducted in 2018 shows that 86 percent of all population and employment, and 95 percent of population and employment within minority communities (census tracts with a minority population of 53.75 percent or greater), are within a half-mile of OCTA bus services.

During COVID-19, travel and commute patterns changed dramatically. Demand for transit service dropped further and this drop required a reduction in frequency, span of service, and area coverage affecting service accessibility. Moving forward, OCTA will look to the Bus Restructuring Study to establish future coverage.

The impacts of COVID-19 on the OC Flex service have also made it challenging to evaluate the performance of this pilot program. Prior to March 2020, ridership in south Orange County had been steadily increasing, and key metrics such as subsidy per boarding continued to improve. Due to its success, the pilot program in south Orange County will be extended through December 2021 for further evaluation. The service portions in the Cities of Huntington Beach and Westminster have been suspended indefinitely because of low ridership. The OCTA Bus Restructuring effort may also lead to further expansion of the program in other zones in the future.

Meeting Transit Service Challenges

The lack of ongoing operating revenues, competing resources (e.g., increasing resources dedicated to paratransit costs), decreases in ridership, and impacts from COVID-19 in recent years have all contributed to an increasing set of challenges. The priorities for improvements include addressing vehicle loads, headways, on-time performances, and service accessibility. OCTA's current Bus Restructuring Study will be considering these priorities and identifying system improvements where appropriate.

Coordination of Transit Service with Other Carriers

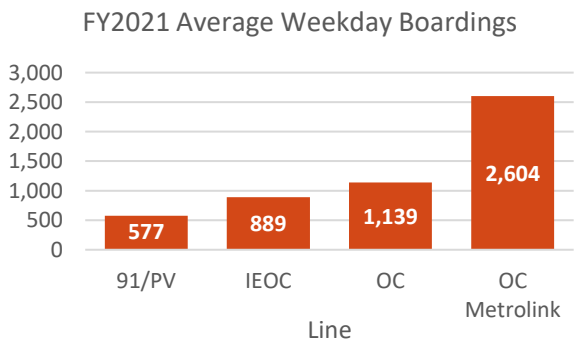
OCTA coordinates the delivery of transit services with several transit agencies. They include the City of Laguna Beach, the City of Irvine, Riverside Transit Agency, Norwalk Transit System, Los Angeles County Metropolitan Transportation Authority, Long Beach Transit, Foothill Transit, North County Transit District, Omnitrans, Anaheim Transportation Network, various specialized charter bus services, and commuter rail services. OCTA also coordinates with cities during the planning and implementation of Project V community circulators. Additionally, internet-based services, such as Google transit, can often provide service schedules and identify available transfers between the various systems.

Commuter Rail Service

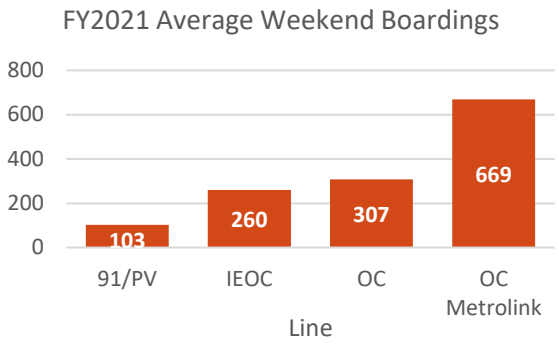
Metrolink is Southern California's commuter rail system that links residential communities to employment and activity centers. Metrolink is operated by the Southern California Regional Rail Authority (SCRRA), a joint powers authority of five member agencies representing the counties of Los Angeles, Orange,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

In 2021, Metrolink provides service on seven routes, covering 538 miles through six counties in Southern California. On an average weekday, there are 108 trains serving nearly 7,000 passenger trips at 61 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 2,604 average weekday boardings, comprising more than 35 percent of Metrolink's total system-wide boardings. There are 11 stations in Orange County that serve a total of 41 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 / Perris Valley (91/PV) Line**: Daily service from South Perris through Riverside and 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/PV 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/PV Lines combined carry a total of approximately 669 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 five dedicated StationLink bus routes that connect with Orange County Metrolink stations in Orange, Santa Ana, Tustin, and Irvine. The iShuttle in the City of Irvine has six routes that provide peak hour connections to and from the Tustin and Irvine stations. Anaheim Resort Transportation provides transfers at the Anaheim Regional Transportation Intermodal Center to various destinations. These local transit connections offer Metrolink ticket holders free, 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 with 18 trains between Los Angeles Union Station and 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 Pier.

Future Transit Improvements

Completed in 2018, the OC Transit Vision (Vision) is a 20-year plan for enhancing and expanding public transit service in Orange County. The Vision identifies near-term and long-term projects and programs that can make transit a more compelling travel option for Orange County residents and visitors. The Vision recognizes that transit is important for Orange County, both today and in the future. Transit can provide a sustainable, accessible, and affordable mobility option that serves different markets and travel needs

in a variety of ways. The recommendations from the OC Transit Vision were included in OCTA's 2018 LRTP.

The OC Transit Vision continues the process of modernizing transit by moving away from a "one-size-fits-all" approach. As described in the OC Transit Vision, some corridors with high demand may benefit from a high-capacity transit service such as streetcar or rapid bus. For example, serving the high concentration of employment in the Irvine Business Complex might be better accomplished using Freeway Bus Rapid Transit rather than standard buses on arterial roadways. Areas with a low density of transit demand might be addressed through flexible "microtransit" such as the pilot OC Flex service. These modernized transit services benefit from technological advances as they strive to serve existing and potential Orange County transit customers while controlling costs.

Commuter Rail Service Improvements

Following the completion of the Metrolink Service Expansion Program (MSEP) improvements in 2012, OCTA deployed a total of ten new Metrolink intra-county trains operating between the Cities of Fullerton and Laguna Niguel/Mission Viejo, primarily during midday and evening hours. Efforts to increase ridership through a redeployment of the trains without significantly impacting operating costs have been underway since 2014. In April 2015, a schedule change added a connection between the 91/PV Line and the intra-county service at Fullerton to allow a later southbound peak evening departure from Los Angeles to Orange County. Additional service increases will vary based on funding availability; however, the OCTA Comprehensive Business Plan does not include new service at this time. Funding for the MSEP is being provided though 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 from every local jurisdiction for Orange County's 1991 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 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 implementing 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 HOV (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. OCTA also provides community routes for connecting to the local and express bus networks, as well as limited-stop routes for higher speed connections to other OCTA modes and networks. OC 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 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

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 (Spectrumotion)
- Anaheim (Anaheim Transportation Network)

Park-and-Ride Lots

Currently there are 29 park-and-ride lots in Orange County providing 10,383 parking spaces. Of the 29 lots, 11 are located at Metrolink stations, accounting for 7,604 of the parking spaces. Also, six of the lots are located at OCTA transit centers, which account for 1,492 parking spaces. The remaining 1,287 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 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 AB 1358 (Chapter 657, Statutes of 2008), 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 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.

As identified in OCTA's Pedestrian Action Plan, OCTA staff has developed a Complete Streets Checklist to consider bicycle and pedestrian accommodation in projects planned and designed by OCTA. This provides a method to illustrate decision-making and

transparency in ultimate design outcomes and avoid conflict when a project is ready for construction. Furthermore, the Orange County Council of Governments Complete Streets Initiative Design Handbook serves as another resource for both OCTA staff and Orange County's local agency staff that identifies best practices for complete street design specific to the Orange County context.

Active Transportation

In 2021, the League of American Bicyclists renewed their designation of Orange County as a bronze-level bike friendly community. This was in recognition of the collective county-level and local efforts to improve conditions for bicycling in Orange County. This includes countywide regional bikeway planning, recent bicycle and pedestrian safety marketing campaigns, and encouraging first/last mile linkages to transit for both bicyclists and pedestrians. In support of these efforts, OCTA allocates funding to local agencies through the Bicycle Corridor Improvement Program call for projects.

The broad serving active transportation program addresses topics serving people bicycling and walking. Completed in 2019, OC Active is the countywide active transportation plan. OC Active includes the first effort to analyze pedestrian needs throughout Orange County. OC Active provides maps of high need pedestrian areas and maps future bikeways for each jurisdiction. The plan guides active transportation investments and enables local agencies to secure funding for infrastructure and non-infrastructure improvements countywide. Further efforts by OCTA have been centered around Safe Routes to School (SRTS) programming in the form of OCTA's SRTS Action Plan and Safe Travels Education Program campaign. Work focused on provided SRTS activities and programming directly to schools that serve disadvantaged communities as well as developing a strategic plan for implementing a countywide SRTS Program.

Forthcoming work includes continued encouragement activities at local schools, a study to mirror the OC Loop concept in central and south Orange County with a cross county connector providing a connection from northeast to southwest. OCTA will also be

undertaking a bus stop safety and accessibility study as well as the project approval and environmental documentation phase of a bike trail connecting Downtown Santa Ana and Garden Grove along the Pacific Electric Right-of-Way.

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 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 CMP TIA measures impacts of proposed development projects on the CMPHS. In the past, Orange County's jurisdictions were allowed to select either the process outlined in the CMP TIA guidelines (Appendix B-1), or their previously existing traffic-environmental analysis process, so long as consistency was maintained with the CMP TIA Guidelines.

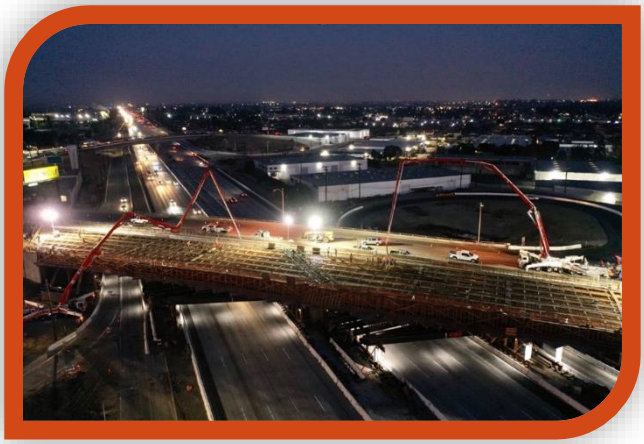
Today, the traffic-environmental analysis process under CEQA no longer considers traffic delay and, instead, recommends a VMT analysis as the measure for identifying transportation impacts (as discussed under State Legislation, pg. 8). Nevertheless, all jurisdictions in Orange County are expected to comply with the CMP Land-Use Coordination analysis by following a process consistent with the CMP TIA guidelines for the purpose of monitoring Orange County's highway system performance. The selected TIA process must be consistently applied to all development projects meeting the adopted trip generation thresholds. Traffic impact analyses focus on:

- Identifying locations where, and the extent to which, trips generated by the proposed project caused CMPHS intersections to exceed their 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, interjurisdictional discussion when proposed CMP mitigation strategies included modifications to roadway networks beyond the jurisdiction's boundaries; and/or, when a proposed development will increase traffic at CMPHS locations outside the jurisdiction's boundaries.

OCTA does allow exemptions from this requirement for selected categories of development projects, consistent with state legislation (Appendix B-2 for a listing of exempt projects).

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 OCTA. It includes projects that will help to maintain or improve traffic conditions on the 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 multimodal 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/Sustainable Communities Strategy (RTP/SCS), both of which are approved by SCAG.

Projects that significantly increase single occupant vehicle (SOV) capacity in the region are monitored and regulated by the federal government, and should be developed consistent with the federal Congestion Management Process. In carrying out this process, SCAG identifies SOV capacity increasing projects in the FTIP that are at least one-mile in length. These projects, if at least partially funded by federal sources, require the lead agency to document and demonstrate the consideration of alternative Transportation Systems

Management/TDM strategies during the alternatives analysis. Those that are considered safety, operational, or bottleneck improvements are exempt from this process.

Lastly, based upon a resolution by the California Transportation Commission (G-17-22), the M2 program of projects is being included in the 2021 CMP (by reference) in order to satisfy the CMP requirement of this resolution. For a listing of the M2 program of projects please see Appendix F.

Chapter 7: CMP Conformance

As Orange County's CMA, OCTA is legislatively required to monitor the implementation of all elements of the 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 LOS standards;
- Adoption of CIPs;
- 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 LOS at intersections throughout the 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 2021 CMP update:

LOS

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 TIA processes for analyzing the impacts of land-use decisions on the CMPHS. 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 2021 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 RTP/SCS and with the CMPs of adjoining counties, and incorporates the program into the FTIP, once consistency is determined.

FIGURE 5: Summary of Conformance

Jurisdiction	Capital Improvement Program	Deficiency Plan	Land-use	Level of Service	2021 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	N/A	Yes

*No CMP intersections within jurisdiction

Appendix A: Freeway Level of Service

The following freeway performance information includes 1) the 2019 LOS for AM and PM peak hours, as well as the 2019 annual average daily traffic (AADT) volumes for the freeways and toll roads in Orange County; and 2) the first Quarter Mobility Performance Reports for 2020 and 2021, comparing VMT, vehicle hours of delay, and other performance measures from the most recent quarter and the previous four quarters.

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	64	4516	1213	0.93	7.22	20	C	48	6052	1588	0.95	7.22	35	D	
																	143,000
1.000	AVENIDA CALIFIA	4	68	4408	1179	0.93	7.22	18	B	58	5832	1522	0.96	7.22	27	D	
																	148,000
1.627	EL CAMINO REAL	4	67	4744	1212	0.98	7.22	19	C	59	6164	1571	0.98	7.22	28	D	
																	155,700
2.306	AVENIDA PRESIDIO[3]	4	68	5005	1440	0.87	7.22	22	C	67	5903	1494	0.99	7.22	23	C	
																	154,000
2.663	AVENIDA PALIZADA[3]	4	66	5726	1638	0.87	7.22	26	C	58	6499	1639	0.99	7.22	29	D	
																	173,400
3.393	AVENIDA PICO	4	45	5517	1445	0.95	7.22	34	D	58	5481	1391	0.99	7.22	25	C	
																	172,200
5.801	CAMINO ESTRELLA	5	70	6812	1765	0.96	7.22	21	C	58	6796	1742	0.98	7.22	25	C	
																	205,600
6.780	JCT RTE 1	4	68	6145	1578	0.97	4.25	24	C	54	5216	1389	0.94	4.25	26	D	
																	191,200
7.344	CAMINO CAPISTRANO	4	47	6862	1806	0.95	4.25	39	E	60	6030	1556	0.97	4.25	27	D	
																	212,000
8.795	SAN JUAN CREEK	4	63	8004	2105	0.95	4.25	34	D	57	6622	1706	0.97	4.25	31	D	
																	215,000
9.604	JCT. RTE. 74	4	65	7292	1897	0.96	4.27	30	D	60	6030	1556	0.97	4.27	27	D	
																	253,000
10.910	JUNIPERO SERRA	5	69	8549	2201	0.97	4.27	26	C	62	7152	1847	0.97	4.27	24	C	
																	267,000
12.490	JCT RTE 73	4	66	6092	1559	0.98	4.27	24	C	60	6030	1556	0.97	4.27	27	D	
																	234,000
12.943	AVERY PARKWAY	4	67	5683	1460	0.97	4.27	22	C	68	5434	1480	0.92	4.27	22	C	
																	255,000
13.776	CROWN VALLEY PARKWAY	4	64	7207	1861	0.97	3.50	29	D	60	6928	1849	0.94	3.50	32	D	
																	300,000
15.217	OSO PARKWAY	4	43	8303	2292	0.91	3.50	55	F	60	8648	2272	0.95	3.50	39	E	
																	316,000
16.528	LA PAZ ROAD[4]	4	62	8387	2201	0.95	3.50	36	E	65	7563	1929	0.98	3.50	30	D	
																	333,000
17.472	ALICIA PARKWAY	6	52	10022	2600	0.96	3.50	34	D	63	8169	2084	0.98	3.50	22	C	
																	341,000

18.685	NIGUEL/EL TORO	5	70	11631	3034	0.96	3.50	35	**E**	69	8968	2266	0.99	3.50	27	**D**	
																	415,000
19.890	LAKE FOREST	6	64	12120	3170	0.96	3.50	33	**D**	64	9611	2487	0.97	3.50	26	**D**	
																	371,000
21.304	JCT. RTE. 405[1]	3	62	4796	1225	0.98	3.37	27	**D**	62	4205	1084	0.97	3.37	24	**C**	
																	283,000
22.213	ALTON PARKWAY	5	69	7048	1821	0.97	3.37	22	**C**	59	7797	2038	0.96	3.37	28	**D**	
																	315,000
23.120	JCT. RTE. 133	4	55	6918	1794	0.96	5.50	34	**D**	60	7245	1895	0.96	5.50	33	**D**	
																	309,000
23.942	SAND CANYON	5	67	7568	1932	0.98	4.97	24	**C**	61	8897	2348	0.95	4.97	32	**D**	
																	294,000
24.991	JEFFREY ROAD[5]	5	58	8334	2225	0.94	4.97	31	**D**	58	7720	2076	0.93	4.97	29	**D**	
																	290,000
26.583	CULVER DRIVE[5]	6	40	9121	2460	0.93	4.97	42	**E**	46	8092	2064	0.98	4.97	30	**D**	
																	330,000
27.589	JAMBOREE ROAD[5]	5	48	8359	2197	0.95	4.97	38	**E**	43	7186	1826	0.98	4.97	35	**E**	
																	354,000
28.250	TUSTIN RANCH[5]	5	66	9066	2370	0.96	4.97	30	**D**	63	7955	2031	0.98	4.97	27	**D**	
																	377,000
29.091	RED HILL AVENUE	5	53	8954	2330	0.96	4.97	36	**E**	49	8047	2047	0.98	4.97	34	**D**	
																	292,000
29.616	NEWPORT AVENUE	5	57	9656	2501	0.97	4.97	36	**E**	51	8252	2118	0.97	4.97	34	**D**	
																	292,000
30.263	JCT. RTE. 55	4	55	7486	1961	0.95	5.50	37	**E**	52	5876	1540	0.95	5.50	30	**D**	
																	269,200
30.8	1ST STREET	5	60	10432	2675	0.97	5.50	37	**E**	56	8018	2091	0.96	5.50	31	**D**	
																	465,000
31.23	4TH STREET	5	62	9939	2552	0.97	5.50	34	**D**	40	7989	2093	0.95	5.50	43	**E**	
																	465,000
32.3	17TH STREET[2]	5	52	7910	2041	0.97	5.50	32	**D**	45	6814	1740	0.98	5.50	31	**D**	
																	382,000
33.2	MAIN STREET	5	62	9829	2500	0.98	5.50	33	**D**	52	9030	2317	0.97	5.50	36	**E**	
																	338,000
35	CHAPMAN	5	67	7216	1860	0.97	7.00	23	**C**	45	8047	2050	0.98	7.00	38	**E**	
																	279,000
35.1	STATE COLLEGE	5	68	6202	1600	0.97	7.00	20	**C**	63	7163	1876	0.95	7.00	25	**C**	
																	279,000
35.6	GENE AUTRY	5	68	6427	1642	0.98	7.00	20	**C**	64	7584	1990	0.95	7.00	26	**C**	
																	240,900

36.48	KATELLA	4	66	6077	1566	0.97	9.60	25	**C**	41	7051	1814	0.97	9.60	47	**F**	
																	285,000
37.38	HARBOR	4	66	4478	1152	0.97	9.60	18	**C**	44	6676	1708	0.98	9.60	40	**E**	
																	284,000
37.7	BALL	4	66	6633	1665	1.00	9.60	26.6	**D**	43	8378	2140	0.98	9.60	52	**F**	
																	307,000
38.9	LINCOLN	5	67	6057	1566	0.97	9.50	20	**C**	62	8471	2150	0.99	9.50	29	**D**	
																	293,000
39.3	EUCLID	4	67	5892	1558	0.95	9.60	24	**C**	62	7792	1978	0.98	9.60	34	**D**	
																	296,000
40.5	BROOKHURST	4	66	5827	1506	0.97	9.60	24	**C**	61	7217	1888	0.96	9.60	32	**D**	
																	290,000
40.98	LA PALMA	5	68	6176	1630	0.95	9.60	20	**C**	59	7575	1969	0.96	9.60	28	**D**	
																	241,000
41.8	MAGNOLIA	4	69	3922	1019	0.96	9.60	16	**B**	67	4576	1176	0.97	9.60	18	**C**	
																	145,000
42.5	ORANGETHORPE	6	70	5812	1556	0.93	9.35	16	**B**	67	6196	1592	0.97	9.35	17	**B**	

** % Truck and ADT Values are the most recent values published at
www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

1. Percent Observed is 0%
2. Percent Observed is 39%
3. Used timeframe of 2/4 - 2/10
4. Used timeframe of 6/3 - 6/9
5. Used timeframe of 9/23 - 9/29

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	64	4674	1244	0.94	7.22	20	C	63	5641	1514	0.93	7.22	25	C	
																	143,000
1.000	AVENIDA CALIFIA	4	66	4651	1231	0.94	7.22	19	C	66	5599	1502	0.93	7.22	24	C	
																	148,000
1.627	EL CAMINO REAL	4	64	4639	1231	0.94	7.22	20	C	66	5635	1507	0.93	7.22	24	C	
																	155,700
2.306	AVENIDA PRESIDIO	4	61	4933	1293	0.95	7.22	22	C	63	6110	1569	0.97	7.22	26	C	
																	154,000
2.663	AVENIDA PALIZADA[4]	5	66	6587	1716	0.96	7.22	22	C	62	6946	1761	0.99	7.22	23	C	
																	173,400
3.393	AVENIDA PICO	4	68	3854	1017	0.95	7.22	16	B	64	4906	1260	0.97	7.22	20	C	
																	172,200
5.801	CAMINO ESTRELLA	4	70	4447	1155	0.96	7.22	17	B	69	5824	1519	0.96	7.22	23	C	
																	205,600
6.780	JCT RTE 1	5	70	4261	1126	0.95	4.25	13	B	71	5875	1510	0.97	4.25	17	B	
																	191,200
7.344	CAMINO CAPISTRANO	5	65	5936	1531	0.97	4.25	19	C	62	8000	2087	0.96	4.25	27	D	
																	212,000
8.795	SAN JUAN CREEK	4	62	6688	1817	0.92	4.25	30	D	58	8447	2133	0.99	4.25	38	E	
																	215,000
9.604	JCT. RTE. 74	4	66	5200	1353	0.96	4.27	21	C	69	6890	1779	0.97	4.27	26	D	
																	253,000
10.910	JUNIPERO SERRA	5	72	6369	1715	0.93	3.98	19	C	70	8256	2095	0.99	3.98	24	C	
																	267,000
12.490	JCT RTE 73	4	70	5865	1553	0.94	3.98	23	C	68	6389	1622	0.98	3.98	24	C	
																	234,000
12.943	AVERY PARKWAY	4	65	5326	1393	0.96	3.98	22	C	68	5827	1468	0.99	3.98	22	C	
																	255,000
13.776	CROWN VALLEY	4	66	5615	1506	0.93	3.50	23	C	68	5905	1511	0.98	3.50	23	C	
																	300,000
15.217	OSO PARKWAY	4	68	6814	1796	0.95	3.50	27	D	68	6752	1726	0.98	3.50	26	C	
																	316,000
16.528	LA PAZ ROAD[5]	4	70	6842	1811	0.94	3.50	26	D	70	8168	2064	0.99	3.50	30	D	
																	333,000
17.472	ALICIA PARKWAY	4	64	6471	1699	0.95	3.50	27	D	59	8507	2156	0.99	3.50	37	E	
																	341,000
18.685	NIGUEL/EL TORO	5	66	7527	1938	0.97	3.50	24	C	49	9144	2426	0.94	3.50	40	E	

																	415,000
19.890	LAKE FOREST	6	65	8466	2229	0.95	3.50	23	**C**	46	9678	2598	0.93	3.50	39	**E**	
																	371,000
21.304	JCT. RTE. 405[1]	3	67	4370	1128	0.97	3.37	23	**C**	65	4513	1150	0.98	3.37	24	**C**	
																	283,000
22.213	ALTON PARKWAY[6]	4	58	6854	1790	0.96	3.37	32	**D**	64	6720	1707	0.98	3.37	27	**D**	
																	315,000
23.120	JCT. RTE. 133[6]	5	47	7323	1904	0.96	5.50	34	**D**	64	7176	1848	0.97	5.50	24	**C**	
																	309,000
23.942	SAND CANYON[6]	5	61	8263	2115	0.98	4.97	28	**D**	69	7814	1982	0.99	4.97	23	**C**	
																	294,000
24.991	JEFFREY ROAD[6]	5	45	9351	2393	0.98	4.97	43	**E**	58	10832	2767	0.98	4.97	39	**E**	
																	290,000
26.583	CULVER DRIVE	5	44	8310	2134	0.97	4.97	40	**E**	63	9280	2358	0.98	4.97	31	**D**	
																	330,000
27.589	JAMBOREE ROAD	6	51	8341	2095	1.00	4.97	28	**D**	62	9356	2383	0.98	4.97	26	**D**	
																	354,000
28.250	TUSTIN RANCH[4]	5	51	9110	2318	0.98	4.97	37	**E**	51	9289	2385	0.97	4.97	38	**E**	
																	377,000
29.091	RED HILL AVENUE	5	55	9512	2438	0.98	4.97	37	**E**	61	10074	2557	0.98	4.97	34	**D**	
																	292,000
29.616	NEWPORT AVENUE	6	52	9635	2442	0.99	4.97	32	**D**	55	10525	2710	0.97	4.97	33	**D**	
																	292,000
30.263	JCT. RTE. 55	4	44	6355	1630	0.97	5.50	38	**E**	56	6974	1803	0.97	5.50	33	**D**	
																	269,200
30.8	1ST STREET[1]	5	47	8480	2206	0.96	5.50	39	**E**	62	9347	2350	0.99	5.50	31	**D**	
																	465,000
31.23	4TH STREET	5	42	8702	2256	0.96	5.50	44	**E**	59	9327	2365	0.99	5.50	33	**D**	
																	465,000
32.3	17TH STREET	5	48	9328	2440	0.96	5.50	41	**E**	55	9416	2422	0.97	5.50	36	**E**	
																	382,000
33.2	MAIN STREET[4]	4	31	6442	1705	0.94	5.50	56	**F**	63	6265	1599	0.98	5.50	26	**C**	
																	338,000
35	CHAPMAN	6	31	8309	2129	0.98	7.00	48	**F**	66	8030	2039	0.98	7.00	21	**C**	
																	279,000
35.1	STATE COLLEGE	5	41	8591	2201	0.98	7.00	44	**E**	61	8102	2047	0.99	7.00	28	**D**	
																	279,000
35.6	GENE AUTRY	5	45	7212	1840	0.98	7.00	34	**D**	68	6937	1755	0.99	7.00	21	**C**	
																	240,900

36.48	KATELLA[3]	4	51	6967	1809	0.96	9.60	37	**E**	59	6434	1664	0.97	9.60	29	**D**	
																	285,000
37.38	HARBOR	5	55	8420	2195	0.96	9.60	33	**D**	68	8005	2068	0.97	9.60	26	**C**	
																	284,000
37.7	BALL	4	51	7426	1879	0.99	9.60	39	**E**	60	7045	1798	0.98	9.60	32	**D**	
																	307,000
38.9	LINCOLN	4	59	7390	1872	0.99	9.50	33	**D**	62	7218	1847	0.98	9.50	31	**D**	
																	293,000
39.3	EUCLID	4	47	6735	1766	0.95	9.60	39	**E**	64	6557	1671	0.98	9.60	27	**D**	
																	296,000
40.5	BROOKHURST	4	50	6856	1795	0.95	9.60	38	**E**	64	7167	1815	0.99	9.60	30	**D**	
																	290,000
40.98	LA PALMA	6	39	7128	1857	0.96	9.60	33	**D**	70	7554	1926	0.98	9.60	19	**C**	
																	241,000
41.8	MAGNOLIA	6	42	6864	1757	0.98	9.60	29	**D**	69	6939	1770	0.98	9.60	18	**C**	
																	145,000
42.5	ORANGETHROPE	4	64	4149	1056	0.98	9.35	17	**B**	68	4464	1154	0.97	9.35	18	**B**	

** % Truck and ADT Values are the most recent values published at
www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

1. Percent Observed is 66%
2. Percent Observed is 78%
3. Percent Observed is 73%
4. Used timeframe of 9/23 - 9/29
5. Used timeframe of 6/3-6/9
6. Used timeframe of 5/6 - 5/12

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	
R0.000	LOS ANGELES/ORANGE COUNTY LINE	3	0	0	0	N/A	8.70	N/A	N/A	0	0	0	N/A	8.70	N/A	N/A	
																	100,000
R0.650	JCT. RTE. 405	3	58	4809	1261	0.95	8.70	30	**D**	64	4445	1134	0.98	8.70	25	**C**	
																	147,000
R2.653	WESTMINSTER, KNOTT AVENUE/GOLDEN WEST STREET INTERCHANGE	3	46	4877	1283	0.95	8.70	39	**E**	64	4734	1215	0.97	8.70	27	**D**	
																	150,500
R3.587	GARDEN GROVE, JCT. RTE. 39	3	44	6150	1601	0.96	4.90	50	**F**	54	5773	1449	1.00	4.90	37	**E**	
																	189,100
R4.812	GARDEN GROVE, MAGNOLIA STREET INTERCHANGE	4	61	6900	1797	0.96	4.90	30	**D**	65	6621	1673	0.99	4.90	26	**D**	
																	196,400
R5.817	GARDEN GROVE, BROOKHURST STREET INTERCHANGE	4	48	7192	1862	0.97	4.90	40	**E**	52	6785	1720	0.99	4.90	34	**D**	
																	202,100
R6.811	GARDEN GROVE, EUCLID STREET INTERCHANGE	4	50	6311	1675	0.94	4.90	35	**D**	44	5782	1487	0.97	4.90	34	**D**	
																	216,500
R7.829	GARDEN GROVE, HARBOR BOULEVARD	4	44	6534	1766	0.92	4.70	41	**E**	61	6056	1537	0.99	4.70	26	**C**	
																	230,500
R8.822	GARDEN GROVE, GARDEN GROVE BOULEVARD INTERCHANGE	4	34	5676	1439	0.99	4.70	43	**E**	27	5510	1423	0.97	4.70	53	**F**	
																	229,600
R9.729	ORANGE, MANCHESTER AVENUE/ CITY DRIVE INTERCHANGE	2	33	3294	880	0.94	4.70	55	**F**	29	3274	831	0.98	4.70	59	**F**	
																	235,500
R10.478	SANTA ANA, JCT. RTES. 5 AND 57; SANTA ANA/ ORANGE FREEWAYS	2	41	3292	881	0.93	4.50	44	**E**	59	3335	848	0.98	4.50	29	**D**	
																	151,300

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R10.992	SANTA ANA, MAIN STREET	2	58	4007	1025	0.98	4.50	36	**E**	52	3777	954	0.99	4.50	38	**E**	
																	146,700
R11.825	ORANGE, GLASSELL STREET INTERCHANGE[1]	3	59	5222	1335	0.98	4.50	31	**D**	51	5766	1471	0.98	4.50	39	**E**	
																	141,800
R12.866	TUSTIN AVENUE INTERCHANGE[1.]	5	55	7308	1873	0.98	4.50	28	**D**	50	7960	2072	0.96	4.50	34	**D**	
																	118,400
R13.164	JCT. RTE. 55, COSTA MESA FREEWAY[1]		0	0	0					0	0	0					

** % Truck and ADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

1. Used timeframe of 6/3 - 6/9

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	
R0.000	LOS ANGELES/ORANGE COUNTY LINE	2	62	2273	594	0.96	8.70	20	C	58	2252	600	0.94	8.70	22	C	
																	100,000
R0.650	JCT. RTE. 405	3	67	4035	1034	0.98	8.70	21	C	65	3936	1008	0.98	8.70	21	C	
																	147,000
R2.653	WESTMINSTER, KNOTT AVENUE/GOLDEN WEST STREET INTERCHANGE	3	57	4251	1136	0.94	8.70	28	D	54	4281	1235	0.87	8.70	32	D	
																	150,500
R3.587	GARDEN GROVE, JCT. RTE. 39	3	59	5299	1344	0.99	4.90	31	D	55	5302	1339	0.99	4.90	33	D	
																	189,100
R4.812	GARDEN GROVE, MAGNOLIA STREET INTERCHANGE	4	65	6042	1598	0.95	4.90	25	C	64	6346	1695	0.94	4.90	27	D	
																	196,400
R5.817	GARDEN GROVE, BROOKHURST STREET INTERCHANGE	4	64	6032	1566	0.96	4.90	25	C	59	6797	1784	0.95	4.90	31	D	
																	202,100
R6.811	GARDEN GROVE, EUCLID STREET INTERCHANGE	4	61	6652	1705	0.98	4.90	29	D	59	7616	1966	0.97	4.90	34	D	
																	216,500
R7.829	GARDEN GROVE, HARBOR BOULEVARD	5	65	6805	1766	0.96	4.70	22	C	55	7558	1971	0.96	4.70	29	D	
																	230,500
R8.822	GARDEN GROVE, GARDEN GROVE BOULEVARD INTERCHANGE	4	69	6440	1690	0.95	4.70	25	C	68	7265	1865	0.97	4.70	28	D	
																	229,600
R9.729	ORANGE, MANCHESTER AVENUE/ CITY DRIVE INTERCHANGE	4	66	5802	1496	0.97	4.70	23	C	44	5655	1438	0.98	4.70	34	D	
																	235,500
R10.478	SANTA ANA, JCT. RTES. 5 AND 57; SANTA ANA/ ORANGE FREEWAYS	3	62	5368	1378	0.97	4.50	30	D	43	5168	1311	0.99	4.50	41	E	
																	151,300
R10.992	SANTA ANA, MAIN STREET	3	66	3805	992	0.96	4.50	20	C	44	3906	990	0.99	4.50	31	D	

																	146,700
R11.825	ORANGE, GLASSELL STREET INTERCHANGE	3	46	6035	1547	0.98	4.50	46	**F**	47	5547	1443	0.96	4.50	42	**E**	
																	141,800
R12.866	TUSTIN AVENUE INTERCHANGE[1.]	4	61	7027	1874	0.94	4.50	31	**D**	43	6581	1718	0.96	4.50	41	**E**	
																	118,400
R13.164	JCT. RTE. 55, COSTA MESA FREEWAY[1]		0	0	0					0	0	0					

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1. Used timeframe of 6/3 - 6/9

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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																
																	55,700
0.267	JCT. RTE. 1																
																	93,000
1.513	COSTA MESA, EAST 17TH STREET																
																	93,000
1.82	COSTA MESA, HARBOR BOULEVARD																
																	80,000
2.021	COSTA MESA, 19TH STREET																
																	85,000
R2.772	COSTA MESA, VICTORIA/22ND STREETS	4	68	4235	1116	0.95	3.60	17	**B**	68	3400	873	0.97	3.60	13	**B**	
																	140,000
R4.022	COSTA MESA, MESA DRIVE	4	50	6156	1689	0.91	3.60	34	**D**	52	4469	1179	0.95	3.60	23	**C**	
																	138,000
R4.77	JCT. RTE. 73, CORONA DEL MAR FREEWAY	3	39	4866	1284	0.95	3.60	45	**E**	66	3727	951	0.98	3.60	20	**C**	
																	153,600
R5.99	JCT. RTE. 405, SAN DIEGO FREEWAY	3	54	4523	1204	0.94	2.10	30	**D**	53	3240	830	0.98	2.10	21	**C**	
																	167,400
R6.99	SANTA ANA, MAC ARTHUR BOULEVARD	4	52	7031	1892	0.93	5.80	38	**E**	63	6170	1573	0.98	5.80	26	**C**	
																	290,800
R7.85	SANTA ANA, DYER ROAD	4	57	7026	1806	0.97	5.80	32	**D**	61	6393	1669	0.96	5.80	28	**D**	
																	242,400
R9.437	SANTA ANA, EDINGER AVENUE	4	54	7580	1951	0.97	5.80	37	**E**	49	6917	1761	0.98	5.80	37	**E**	
																	272,300
R9.96	TUSTIN, MC FADDEN STREET INTERCHANGE	5	57	8523	2168	0.98	5.80	31	**D**	46	8243	2116	0.97	5.80	38	**E**	
																	280,000
10.45	TUSTIN, JCT. RTE. 5, SANTA ANA FREEWAY	3	60	5047	1316	0.96	7.70	30	**D**	45	5064	1300	0.97	7.70	40	**E**	
																	246,100

10.979	SANTA ANA, FOURTH STREET INTERCHANGE	4	66	6677	1738	0.96	7.70	27	**D**	53	7401	1881	0.98	7.70	37	**E**	
																	226,600
11.785	TUSTIN, SEVENTEENTH STREET INTERCHANGE	4	64	5727	1482	0.97	7.70	24	**C**	36	6631	1709	0.97	7.70	49	**F**	
																	227,500
12.967	JCT. RTE. 22 WEST, GARDEN GROVE FREEWAY	4	68	8582	2187	0.98	5.90	33	**D**	68	8164	2063	0.99	5.90	31	**D**	
																	271,900
13.7	CHAPMAN AVENUE	4	65	6497	1760	0.92	5.90	28	**D**	47	7168	1838	0.97	5.90	40	**E**	
																	238,300
15.242	ORANGE, KATELLA AVENUE INTERCHANGE	4	61	6436	1784	0.90	5.90	30	**D**	40	6163	1575	0.98	5.90	40	**E**	
																	212,900
16.981	ORANGE, LINCOLN AVENUE INTERCHANGE	4	64	6805	1834	0.93	5.90	30	**D**	36	6575	1729	0.95	5.90	49	**F**	
																	211,600
17.876	JCT RTE 91		0	0	0		5.90			0	0	0		5.90			

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Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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																
																	55,700
0.267	JCT. RTE. 1						3.60							3.60			
																	93,000
1.513	COSTA MESA, EAST 17TH STREET						3.60							3.60			
																	93,000
1.82	COSTA MESA, HARBOR BOULEVARD						3.60							3.60			
																	80,000
2.021	COSTA MESA, 19TH STREET						3.60							3.60			
																	85,000
R2.772	COSTA MESA, VICTORIA/22ND STRETS[1]	3	59.517	3151	827	0.95	3.60	19	**C**	52	3266	840	0.97	3.60	22	**C**	
																	140,000
R4.022	COSTA MESA, MESA DRIVE[2]	4	64	4784	1264	0.95	3.60	20	**C**	57	6296	1604	0.98	3.60	29	**D**	
																	138,000
R4.77	JCT. RTE. 73, CORONA DEL MAR FREEWAY	3	63	3680	964	0.95	3.60	21	**C**	60	5359	1353	0.99	3.60	31	**D**	
																	153,600
R5.99	JCT. RTE. 405, SAN DIEGO FREEWAY[3]	3	44	4213	1070	0.98	2.10	33	**D**	44	4850	1268	0.96	2.10	39	**E**	
																	167,400
R6.99	SANTA ANA, MAC ARTHUR BOULEVARD	4	58	7569	1916	0.99	5.80	34	**D**	57	7227	1844	0.98	5.80	33	**D**	
																	290,800
R7.85	SANTA ANA, DYER ROAD	4	61	8316	2114	0.98	5.80	36	**E**	55	7353	1925	0.95	5.80	36	**E**	
																	242,400
R9.437	SANTA ANA, EDINGER AVENUE	4	59	8395	2112	0.99	5.80	37	**E**	63	7455	1913	0.97	5.80	31	**D**	

																	272,300
R9.96	TUSTIN, MC FADDEN STREET INTERCHANGE	4	44	8385	2113	0.99	5.80	49	**F**	55	7558	1938	0.97	5.80	36	**E**	
																	280,000
10.45	TUSTIN, JCT. RTE. 5, SANTA ANA FREEWAY	4	69	5035	1285	0.98	6.60	19	**C**	54	4731	1270	0.93	6.60	24	**C**	
																	246,100
10.979	SANTA ANA, FOURTH STREET INTERCHANGE	3	61	7067	1829	0.97	6.60	41	**E**	58	6763	1729	0.98	6.60	41	**E**	
																	226,600
11.785	TUSTIN, SEVENTEENTH STREET INTERCHANGE	4	61	7405	1957	0.95	6.60	33	**D**	68	7564	1920	0.98	6.60	29	**D**	
																	227,500
12.967	JCT. RTE. 22 WEST, GARDEN GROVE FREEWAY	5	48	6747	1759	0.96	7.50	30	**D**	50	6770	1726	0.98	7.50	29	**D**	
																	271,900
13.7	CHAPMAN AVENUE	4	62	6137	1599	0.96	5.90	26	**D**	65	6223	1579	0.99	5.90	25	**C**	
																	238,300
15.242	ORANGE, KATELLA AVENUE INTERCHANGE	4	59	6791	1757	0.97	5.90	31	**D**	65	6221	1585	0.98	5.90	25	**C**	
																	212,900
16.981	ORANGE, LINCOLN AVENUE INTERCHANGE	4	0	0	0	N/A	5.90	N/A	N/A	0	0	0	N/A	5.90	N/A	N/A	
																	211,600
17.876	JCT RTE 91		0.0	0	0		5.90			0.0	0	0		5.90			

** % Truck and ADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

1. Percent Observed is 65%
2. Percent Observed is 72%
3. Used timeframe of 4/8-4/14

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	69	7103	1894	0.94	6.14	23	C	67	6881	1825	0.94	6.14	22	C	
																	202,600
11.22	CHAPMAN	5	67	6754	1814	0.93	6.14	22	C	64	6344	1644	0.96	6.14	21	C	
																	228,700
11.68	ORANGEWOOD	5	71	7730	2007	0.96	6.14	23	C	59	7706	2014	0.96	6.14	28	D	
																	228,700
12.2	STADIUM	5	0	0	0	N/A	6.14	N/A	N/A	0	0	0	N/A	6.14	N/A	N/A	
																	228,700
12.5	KATELLA	5	70	7671	2004	0.96	6.14	24	C	64	7266	1846	0.98	6.14	24	C	
																	259,600
12.9	DOUGLASS	5	69	7779	2013	0.97	6.14	24	C	44	7554	1913	0.99	6.14	36	E	
																	259,600
13.38	BALL	5	70	6980	1811	0.96	6.14	21	C	45	6628	1730	0.96	6.14	32	D	
																	270,700
13.9	WAGNER	5	67	8686	2253	0.96	6.14	28	D	47	8684	2204	0.99	6.14	38	E	
																	270,700
14.73	LINCOLN	5	66	7225	1848	0.98	6.14	23	C	60	6733	1753	0.96	6.14	24	C	
																	278,800
15.4	LA PALMA	3	61	6129	1563	0.98	6.14	35	E	54	5517	1406	0.98	6.14	36	E	
																	278,800
15.7	N OF 91	3	64	6078	1550	0.98	6.14	33	D	61	5610	1442	0.97	6.14	33	D	
																	196,000
16.5	ORANGETHROPE[1]	6	67	8190	2141	0.96	6.14	22	C	67	9098	2339	0.97	6.14	24	C	
																	309,800
17.18	PLACENTIA	5	63	9549	2481	0.96	6.14	32	D	58	9687	2453	0.99	6.14	35	D	
																	309,800
18.3	YORBA LINDA	5	70	6610	1744	0.95	6.14	21	C	69	7377	1897	0.97	6.14	23	C	
																	244,000
19.1	ROLLING HILLS	4	66	7422	1945	0.95	6.14	31	D	65	8023	2061	0.97	6.14	33	D	
																	244,000
19.8	IMPERIAL	5	68	5653	1536	0.92	6.14	19	C	50	6418	1667	0.96	6.14	27	D	
																	229,000

21.16	LAMBERT ROAD[2]	4	65	5566	1462	0.95	6.14	23	**C**	44	5518	1425	0.97	6.14	33	**D**	
																	242,300
22	TONNER CANYON[3]	4	67	6081	1632	0.93	6.14	25	**C**	63	6105	1564	0.98	6.14	26	**C**	
																	239,000

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1. Used timeframe of 6/3 - 6/9
2. Used timeframe of 2/4 - 2/10
3. Used timeframe of 2/11 - 2/17

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Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	45	5996	1512	0.99	6.14	35	D	51	5865	1518	0.97	6.14	31	D	
																	228,700
11.55	ORANGEWOOD[1]	4	51	7521	1994	0.94	6.14	41	E	53	7632	1968	0.97	6.14	38	E	
																	228,700
12.2	STADIUM	4	0	0	0	N/A	6.14	N/A	N/A	0	0	0	N/A	6.14	N/A	N/A	
																	228,700
12.4	KATELLA	4	56	7294	1854	0.98	6.14	34	D	58	7571	1978	0.96	6.14	35	E	
																	259,600
12.9	DOUGLAS	4	41	7200	1816	0.99	6.14	46	F	53	7406	1879	0.99	6.14	36	E	
																	259,600
13.27	BALL	4	50	6776	1747	0.97	6.14	36	E	45	7046	1784	0.99	6.14	41	E	
																	270,700
13.9	WAGNER	5	49	7926	2015	0.98	6.14	34	D	59	7874	2045	0.96	6.14	29	D	
																	270,700
14.65	LINCOLN	5	60	7529	1911	0.98	6.14	26	D	66	7482	1961	0.95	6.14	25	C	
																	278,800
15.4	LA PALMA	4	51	5372	1358	0.99	6.14	28	D	60	5652	1485	0.95	6.14	26	C	
																	278,800
15.7	N OF 91	4	63	5335	1370	0.97	6.14	22	C	68	5580	1431	0.97	6.14	22	C	
																	196,000
16.46	ORANGETHROPE	5	54	7348	1884	0.98	6.14	29	D	61	7511	1882	1.00	6.14	25	C	
																	309,800
17.18	CHAPMAN	4	37	6606	1712	0.96	6.14	48	F	57	6810	1737	0.98	6.14	31	D	
																	280,300
18.18	YORBA LINDA	5	43	6433	1638	0.98	6.14	31	D	66	6707	1704	0.98	6.14	21	C	
																	244,000
19.1	ROLLING HILLS	4	44	6787	1829	0.93	6.14	42	E	63	6921	1794	0.96	6.14	29	D	
																	244,000
19.73	IMPERIAL	4	38	5980	1624	0.92	6.14	44	E	66	5666	1494	0.95	6.14	23	C	
																	229,000
20.7	LAMBERT[2]	4	38	5784	1508	0.96	6.14	40	E	53	5476	1393	0.98	6.14	27	D	
																	242,300
22.06	TONNER CANYON[2]	4	45	6446	1701	0.95	6.14	39	E	64	6383	1618	0.99	6.14	26	D	
																	239,000

** % Truck and ADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

1. Percent Observed is 73%
2. Used timeframe of 2/4 - 2/10

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	63	4329	1131	0.96	0.95	24	C	66	2137	565	0.95	0.95	12	B	
																	32,150
11.760	GREENFIELD DR	3	64	3651	956	0.95	0.95	20	C	58	1754	478	0.92	0.95	11	B	
																	31,600
13.404	LA PAZ ROAD	3	64	4699	1261	0.93	0.95	27	D	69	1956	533	0.92	0.95	10	A	
																	45,200
14.393	ALISO CREEK ROAD	4	65	6242	1627	0.96	0.95	25	C	69	2144	592	0.91	0.95	9	A	
																	50,000
16.250	EL TORO ROAD	3	59	5346	1392	0.96	1.04	31	D	68	2036	550	0.93	1.04	11	A	
																	57,500
18.696	TOLL PLAZA	3	64	6251	1609	0.97	1.04	33	D	64	2758	702	0.98	1.04	15	B	
																	57,500
21.428	NEWPORT COAST DRIVE	4	64	6710	1750	0.96	1.04	28	D	69	2797	747	0.94	1.04	11	A	
																	62,400
22.448	BONITA CANYON DRIVE/FORD ROAD	5	62	7111	1877	0.95	1.04	24	C	72	2904	797	0.91	1.04	9	A	
																	60,600
24.78	JAMBOREE ROAD	3	59	5976	1505	0.99	1.04	34	D	56	4964	1309	0.95	1.04	31	D	
																	119,200
26.58	COSTA MESA, JCT RTE 55	3	65	3786	964	0.98	1.04	20	C	51	4886	1258	0.97	1.04	33	D	
																	95,700
27.28	COSTA MESA, BEAR STREET	3	66	4157	1076	0.97	1.04	22	C	59	4262	1124	0.95	1.04	26	C	
																	135,500
27.81	JCT RTE 405, SAN DIEGO FREEWAY	3	61	3705	965	0.96	2.35	21	C	65	3835	997	0.96	2.35	21	C	

** % Truck and ADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	67.65833	1502	405	0.93	0.95	8	**A**	70.2333	2899	740	0.98	0.95	14	**B**	
																	32,150
11.760	GREENFIELD DR	3	67.575	1102	291	0.95	0.95	6	**A**	66.4917	2466	636	0.97	0.95	13	**B**	
																	31,600
13.404	LA PAZ ROAD	3	66.61667	1315	363	0.91	0.95	7	**A**	56.95	3089	821	0.94	0.95	19	**C**	
																	45,200
14.393	ALISO CREEK ROAD	3	64.65	1493	402	0.93	0.95	8	**A**	58.0333	4281	1193	0.90	0.95	28	**D**	
																	50,000
16.250	EL TORO ROAD	3	64.66667	1599	429	0.93	1.04	9	**A**	64.8333	4901	1345	0.91	1.04	28	**D**	
																	57,500
18.696	TOLL PLAZA	5	71.525	1957	529	0.92	1.04	6	**A**	64.5917	5838	1613	0.90	1.04	20	**C**	
																	57,500
21.428	NEWPORT COAST DRIVE	4	70.01667	1831	517	0.89	1.04	7	**A**	54.85	5780	1554	0.93	1.04	28	**D**	
																	62,400
22.448	BONITA CANYON DRIVE/FORD ROAD	4	67.38333	1937	499	0.97	1.04	7	**A**	54.8583	6088	1656	0.92	1.04	30	**D**	
																	60,600
24.78	JAMBOREE ROAD	3	55.61667	4243	1094	0.97	1.04	26	**D**	59.575	5051	1343	0.94	1.04	30	**D**	
																	119,200
26.58	COSTA MESA, JCT RTE 55	3	29.08333	4641	1192	0.97	1.04	55	**F**	63.7833	3637	936	0.97	1.04	20	**C**	
																	95,700
27.28	COSTA MESA, BEAR STREET	3	46.10833	4441	1138	0.98	1.04	33	**D**	62.6583	3969	1027	0.97	1.04	22	**C**	
																	135,500
27.81	JCT RTE 405	3	66.7	3941	1028	0.96	2.35	21	**C**	56.5333	3880	998	0.97	2.35	24	**C**	

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Postmile	SEGMENT	# of Lanes	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	0	0	0	N/A	6.29	N/A	**N/A**	0	0	0	N/A	6.29	N/A	**N/A**	
																	275,400
R0.489	LA PALMA, ORANGETHORPE AVENUE	4	53	5620	1507	0.93	6.29	29	**D**	64	5763	1449	0.99	6.29	23	**C**	
																	300,400
R0.848	BUENA PARK, VALLEY VIEW STREET	4	53.275	6185	1577	0.98	6.29	31	**D**	42	7037	2028	0.87	6.29	49	**F**	
																	300,400
R1.842	BUENA PARK, KNOTT AVENUE	4	59	5880	1515	0.97	6.29	26	**D**	62	6311	1625	0.97	6.29	27	**D**	
																	312,700
R2.615	BUENA PARK, JCT. RTE. 39/BEACH[1. 3.]	4	59	6583	1678	0.98	8.08	30	**D**	47	6623	1676	0.99	8.08	37	**E**	
																	319,000
R3.638	FULLERTON, JCT. RTE. 5, SANTA ANA FREEWAY	3	26	3627	1002	0.90	6.80	52	**F**	51	4057	1064	0.95	6.80	29	**D**	
																	120,200
1.232	ANAHEIM, BROOKHURST AVENUE	4	41	6026	1596	0.94	6.80	41	**E**	59	6136	1581	0.97	6.80	28	**D**	
																	312,400
2.234	EUCLID AVENUE INTERCHANGE[2. 3.]	4	44	5629	1489	0.95	6.80	35	**D**	47	5626	1439	0.98	6.80	32	**D**	
																	317,000
3.258	FULLERTON, HARBOR BOULEVARD	4	47	6388	1703	0.94	7.10	38	**E**	60	6108	1557	0.98	7.10	27	**D**	
																	306,600
3.512	ANAHEIM, LEMON STREET/ HARVARD AVENUE	4	47	6388	1703	0.94	7.10	38	**E**	60	6108	1557	0.98	7.10	27	**D**	
																	306,600
4.256	ANAHEIM, EAST STREET	4	31	6290	1599	0.98	7.10	54	**F**	57	6160	1570	0.98	7.10	28	**D**	
																	287,000
5.258	ANAHEIM, STATE COLLEGE BOULEVARD	4	56	6873	1781	0.96	9.20	33	**D**	59	6635	1683	0.99	9.20	30	**D**	
																	279,300

6.119	ANAHEIM, JCT. RTE. 57, ORANGE FREEWAY	3	62	4334	1129	0.96	8.70	26	**C**	60	4090	1027	1.00	8.70	24	**C**	
																	228,700
7.353	KRAEMER BOULEVARD/ GLASSELL STREET	3	59	4525	1148	0.99	8.70	27	**D**	63	4278	1113	0.96	8.70	25	**C**	
																	239,000
8.399	TUSTIN AVENUE INTERCHANGE	4	49	6492	1737	0.93	8.70	37	**E**	39	6500	1756	0.93	8.70	47	**F**	
																	228,500
9.187	JCT. RTE. 55 SOUTH	4	0	0	0	N/A	4.50	N/A	**N/A**	0	0	0	N/A	4.50	N/A	**N/A**	
																	287,400
10.091	LAKEVIEW AVENUE	6	65	7465	1896	0.98	4.50	20	**C**	63	7886	2037	0.968	4.50	22	**C**	
																	290,000
11.540	PERALTA, JCT. RTE. 90 WEST	5	67	6405	1639	0.98	4.75	20	**C**	67	6484	1666	0.973	4.75	20	**C**	
																	279,000
14.431	WEIR CANYON ROAD	5	68	6299	1682	0.94	4.75	20	**C**	65	5945	1515	0.981	4.75	19	**C**	
																	279,000
15.925	JCT RTE 241	4	61	5969	1615	0.92	4.75	27	**D**	61	6484	1661	0.98	4.75	28	**D**	
																	272,000
16.404	GYPSUM CANYON ROAD INTERCHANGE	4	59	5841	1556	0.94	4.75	27	**D**	65	6353	1616	0.98	4.75	26	**C**	
																	280,000
17.950	COAL CANYON ROAD	5	65	7433	1901	0.98	4.75	24	**C**	45	8333	2174	0.96	4.75	39	**E**	
																	139,500
18.905	ORANGE/RIVERSIDE COUNTY LINE	5	0	0	0	N/A	4.75	N/A	**N/A**	0	0	0	N/A	4.75	N/A	**N/A**	

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1. Percent Observed is 75%
2. Percent Observed is 71%
3. Used timeframe of 2/4 - 2/10

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	0	0	0	N/A	6.29	N/A	**N/A**	0	0	0	N/A	6.29	N/A	**N/A**	
																	275,400
R0.6	LA PALMA, ORANGETHORPE AVENUE	4	62	5590	1420	0.98	6.29	24	**C**	61	6133	1575	0.97	6.29	27	**D**	
																	300,400
R1	BUENA PARK, VALLEY VIEW STREET	4	61	5546	1418	0.98	6.29	24	**C**	61	6074	1551	0.98	6.29	26	**D**	
																	300,400
R1.99	BUENA PARK, KNOTT AVENUE[3]	4	58	6822	1753	0.97	6.29	31	**D**	61	6747	1715	0.98	6.29	29	**D**	
																	312,700
R2.6	BUENA PARK, JCT. RTE. 39/BEACH	4	55	6917	1800	0.96	8.08	34	**D**	49	6705	1706	0.98	8.08	37	**E**	
																	319,000
R3.4	FULLERTON, JCT. RTE. 5, SANTA ANA FREEWAY[1]	3	55	4773	1225	0.97	6.80	30	**D**	37	4865	1236	0.98	6.80	46	**F**	
																	120,200
1.12	ANAHEIM, BROOKHURST AVENUE	4	62	6964	1801	0.97	6.80	30	**D**	63	7274	1841	0.99	6.80	30	**D**	
																	312,400
2.11	EUCLID AVENUE INTERCHANGE[2]	4	60	6183	1582	0.98	6.80	27	**D**	58	6580	1658	0.99	6.80	30	**D**	
																	317,000
3.13	FULLERTON, HARBOR BOULEVARD	4	58	7732	1984	0.97	7.10	35	**E**	48	7638	1936	0.986	7.10	41	**E**	
																	306,600
3.91	ANAHEIM, LEMON STREET/ HARVARD AVENUE	4	59	6688	1719	0.973	7.10	30	**D**	62	8174	2123	0.963	7.10	36	**E**	
																	306,600
4.18	ANAHEIM, EAST STREET	4	58	6796	1728	0.98	7.10	31	**D**	53	7002	1831	0.96	7.10	36	**E**	
																	287,000
5.14	ANAHEIM, STATE COLLEGE BOULEVARD	4	59	6289	1634	0.96	9.20	29	**D**	53	6322	1615	0.98	9.20	32	**D**	
																	279,300
6.15	ANAHEIM, JCT. RTE. 57, ORANGE FREEWAY	3	39	5446	1427	0.95	8.70	52	**F**	57	5294	1366	0.97	8.70	34	**D**	
																	228,700
7.4	KRAEMER BOULEVARD/ GLASSELL STREET	5	61	6885	1773	0.97	8.70	24	**C**	65	6632	1718	0.97	8.70	22	**C**	
																	239,000
8.36	TUSTIN AVENUE INTERCHANGE	6	5	7815	2090	0.93	8.70	291	**F**	5	7422	1918	0.97	8.70	267	**F**	
																	228,500
9.187	JCT. RTE. 55 SOUTH	4	0	0	0	N/A	4.50	N/A	**N/A**	0	0	0	N/A	4.50	N/A	**N/A**	

																	287,400
10.091	LAKEVIEW AVENUE	5	50	7526	1988	0.946	4.50	32	**D**	52	7568	1915	0.952	4.50	31	**D**	
																	290,000
11.540	PERALTA, JCT. RTE. 90 WEST	5	71	6729	1697	0.991	4.75	20	**C**	63	6429	1639	0.981	4.75	21	**C**	
																	279,000
14.431	WEIR CANYON ROAD	5	75	6849	1748	0.98	4.75	19	**C**	67	6096	1541	0.989	4.75	19	**C**	
																	141,700
15.925	JCT RTE 241	4	66	7035	1806	0.97	4.75	28	**D**	59	6600	1675	0.99	4.75	29	**D**	
																	272,000
16.404	GYPSUM CANYON ROAD INTERCHANGE	4	66	6916	1764	0.98	4.75	27	**D**	62	6466	1634	0.99	4.75	27	**D**	
																	280,000
17.950	COAL CANYON ROAD	5	57	9092	2311	0.98	4.75	33	**D**	56	8021	2018	0.99	4.75	29	**D**	
																	139,500
18.905	ORANGE/RIVERSIDE COUNTY LINE	4	34	5903	1499	0.98	4.75	45	**F**	58	5347	1399	0.96	4.75	25	**C**	

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1. Percent Observed is 65%
2. Percent Observed is 49%
3. Used timeframe of 2/4 - 2/10

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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																
																	22,900
0.230	LAGUNA BEACH, N OR CLIFF DRIVE																
																	31,400
0.962	LAGUNA BEACH, CANYON ACRES DRIVE																
																	33,800
3.416	LAGUNA BEACH, EL TORO ROAD																
																	20,700
7.710	LAGUNA CANYON ROAD																
																	n/a
8.376	JCT. RTE. 405, SAN DIEGO FREEWAY																
																	36,100
8.990	BARRANCA1	2	61	1806	494	0.91	4.53	17	**B**	58	2875	747	0.96	4.53	27	**D**	
																	37,700
9.100	BARRANCA2[1]	3	54	3053	811	0.94	4.53	21	**C**	56	4169	1106	0.94	4.53	27	**D**	
																	37,700
9.37	S OF 5	2	67	693	194	0.89	4.53	6	**A**	62	2042	556	0.92	4.53	18	**C**	
																	37,700
9.77	N OF 5	2	67	1339	370	0.90	4.53	11	**B**	64	3830	978	0.98	4.53	31	**D**	
																	37,700
10.05	MARINE WAY	2	64	1177	332	0.89	4.53	11	**A**	66	3249	883	0.92	4.53	27	**D**	
																	45,000
10.50	N OF MARINE	3	67	1175	333	0.88	4.53	7	**A**	68	3330	913	0.91	4.53	18	**C**	
																	45,000
10.73	S OF PM 11	4	70	1495	418	0.89	4.53	6	**A**	66	4472	1212	0.92	4.53	19	**C**	
																	45,000
11.08	AT PM 11	3	68	1470	404	0.91	4.53	8	**A**	65	4403	1182	0.93	4.53	25	**C**	
																	45,000
11.35	N OF PM 11	3	64	1491	408	0.91	4.53	9	**A**	65	4480	1184	0.95	4.53	25	**C**	
																	45,000
11.70	IRVINE BLVD 1	3	70	2036	552	0.92	4.53	11	**A**	65	6005	1630	0.92	4.53	34	**D**	

																	45,000
12.05	IRVINE BLVD 3	3	68	1358	358	0.95	3.19	7	**A**	65	4032	1094	0.92	3.19	23	**C**	
																	45,000
12.42	S OF PORTOLA	4	70	1472	386	0.95	3.19	6	**A**	64	4212	1132	0.93	3.19	18	**B**	
																	51,700
12.77	NB 133 TO 241	2	66	866	246	0.88	3.19	8	**A**	65	2088	572	0.91	3.19	18	**B**	
																	51,700
13.04	ORANGE 1	2	67	869	242	0.90	3.19	7	**A**	61	2082	567	0.92	3.19	19	**C**	
																	51,700
13.42	ORANGE 2	2	70	863	233	0.93	3.19	7	**A**	68	2101	566	0.93	3.19	17	**B**	
																	51,700

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1. Percent Observed is 0%

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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						3.41							3.41			
																	22,900
0.230	LAGUNA BEACH, N OR CLIFF DRIVE						3.41							3.41			
																	31,400
0.962	LAGUNA BEACH, CANYON ACRES DRIVE						3.41							3.41			
																	33,800
3.416	LAGUNA BEACH, EL TORO ROAD						1.14							1.14			
																	20,700
7.710	LAGUNA CANYON ROAD						1.14							1.14			
																	35,000
8.376	JCT. RTE. 405, SAN DIEGO FREEWAY						3.76							3.76			
																	35,000
8.990	BARRANCA2	3	55	2790	728	0.96	4.53	18	**C**	66	2071	528	0.98	4.53	11	**A**	
																	30,100
9.37	S OF 5	2	60	1777	479	0.93	4.53	16	**B**	64	822	281	0.73	4.53	9	**A**	
																	46,900
9.77	N OF 5	2	56	2666	696	0.96	4.53	26	**C**	64	894	240	0.93	4.53	8	**A**	
																	46,900
10.05	MARINE WAY	3	54	4290	1125	0.95	4.53	28	**D**	63	1352	351	0.96	4.53	8	**A**	
																	46,900
10.50	N OF MARINE	3	62	4307	1142	0.94	4.53	25	**C**	68	1346	356	0.95	4.53	7	**A**	
																	46,900
10.73	S OF PM 11	4	60	9450	2437	0.97	4.53	42	**E**	69	3040	824	0.92	4.53	12	**B**	
																	46,900
11.08	AT PM 11	3	61	5549	1431	0.97	4.53	32	**D**	67	1568	416	0.94	4.53	8	**A**	
																	46,900
11.35	N OF PM 11	3	61	6128	1588	0.96	4.53	36	**E**	61	1718	460	0.93	4.53	10	**A**	
																	46,900
11.70	IRVINE BLVD 1	3	63	4686	1252	0.94	3.19	27	**D**	67	1205	322	0.94	3.19	6	**A**	
																	47,200
12.05	IRVINE BLVD 3	3	63	4724	1266	0.93	3.19	27	**D**	66	1222	332	0.92	3.19	7	**A**	
																	47,200
12.42	S OF PORTOLA	4	61	5167	1423	0.91	3.19	24	**C**	67	1515	415	0.91	3.19	6	**A**	

																	47,200
13.04	ORANGE 1	2	63	2321	641	0.91	3.19	21	**C**	66	784	221	0.89	3.19	7	**A**	
																	47,200
13.42	ORANGE 2	2	68	2295	592	0.97	3.19	18	**B**	63	835	218	0.96	3.19	7	**A**	
																	47,200

** % Truck and ADT Values are the most recent values published at
www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	64	876	239	0.92	6.36	8	**A**	65	429	124	0.86	6.36	4	**A**	
																	31,100
17.768	ANTONIO	2	64	876	239	0.92	6.36	8	**A**	65	429	124	0.86	6.36	4	**A**	
																	25,700
18.488	SANTA MARGARITA	2	67	1441	401	0.90	6.36	12	**B**	66	563	156	0.90	6.36	5	**A**	
																	38,000
20.077	LOS ALISOS	3	68	3031	799	0.95	1.70	16	**B**	67	1117	291	0.96	1.70	6	**A**	
																	38,100
21.802	PORTOLA UC	3	68	3154	832	0.95	1.70	16	**B**	67	1038	272	0.95	1.70	5	**A**	
																	32,400
23.418	ALTON	3	67	3735	1035	0.90	3.08	21	**C**	66	1437	381	0.94	3.08	8	**A**	
																	35,900
24.968	PORTOLA	3	65	3902	1033	0.94	3.08	21	**C**	69	1740	478	0.91	3.08	9	**A**	
																	37,200
27.378	JCT RTE 133	2	68	953	257	0.93	3.08	8	**A**	68	1078	309	0.87	3.08	9	**A**	
																	37,000
32.541	CHAPMAN-SANTIAGO RD UC	2	68	1507	413	0.91	3.08	12	**B**	66	2108	570	0.92	3.08	18	**B**	
																	56,600
36.099	WINDY RIDGE TOLL	3	68	1985	532	0.93	3.08	11	**A**	57	3687	954	0.97	3.08	23	**C**	
																	47,800
39.079	JCT RTE 91	4	67	2082	560	0.93	1.66	8	**A**	38	3906	1011	0.97	1.66	26	**D**	

** % Truck and ADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	0	0	0	N/A	6.36	N/A	**N/A**	0	0	0	N/A	6.36	N/A	**N/A**	
																	31,100
17.768	ANTONIO[1]	2	63	906	239	0.95	6.36	8	**A**	63	1442	387	0.93	6.36	13	**B**	
																	25,700
18.488	SANTA MARGARITA	2	66	514	146	0.88	6.36	5	**A**	67	1107	309	0.90	6.36	10	**A**	
																	38,000
20.077	LOS ALISOS	2	57	1610	451	0.89	1.70	16	**B**	51	2994	784	0.95	1.70	31	**D**	
																	38,100
21.802	PORTOLA UC[1]	2	65	1088	304	0.89	1.70	9	**A**	66	2435	654	0.93	1.70	20	**C**	
																	32,400
23.418	ALTON	3	69	1410	362	0.97	3.08	7	**A**	68	2720	727	0.94	3.08	14	**B**	
																	35,900
24.968	PORTOLA	2	69	1829	475	0.96	3.08	14	**B**	69	2889	760	0.95	3.08	22	**C**	
																	37,200
27.378	JCT RTE 133[2]	2	67	1316	353	0.93	3.08	11	**A**	62	1217	313	0.97	3.08	10	**A**	
																	37,000
32.541	CHAPMAN-SANTIAGO RD UC	2	59	2661	692	0.96	3.08	24	**C**	65	1135	297	0.96	3.08	9	**A**	
																	56,600
36.099	WINDY RIDGE TOLL	3	46	5543	1398	0.99	3.08	41	**E**	66	1776	472	0.94	3.08	10	**A**	
																	47,800
39.079	JCT RTE 91	5	39	5928	1583	0.94	1.66	33	**D**	74	1806	462	0.98	1.66	5	**A**	

** % Truck and ADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

1. Percent Observed is 0%
2. Percent Observed is 47%

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	69	280	83	0.84		2	**A**	63	2124	572	0.93		12	**B**	
																	71,100
0.239	JAMBOREE	2	66	271	80	0.85		2	**A**	67	2089	560	0.93		17	**B**	
																	37,500
1.638	IRVINE	2	67	344	100	0.86		3	**A**	66	2039	516	0.99		16	**B**	
																	37,900
2.848	PORTOLA	3	69	385	114	0.84		2	**A**	70	1935	509	0.95		10	**A**	
																	38,600
6.035	CHAPMAN	3	69	465	136	0.85		3	**A**	71	1568	417	0.94		8	**A**	
																	28,000
6.205	JCT RTE 241		0	0	0					0	0	0					

** % Truck and ADT Values are the most recent values published at
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Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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[1]	2	60	2852	736	0.97		25	**C**	67	960	253	0.95		8	**A**	
																	71,100
0.239	JAMBOREE[2]	2	68	3653	988	0.92		29	**D**	67	670	186	0.90		6	**A**	
																	37,500
1.638	IRVINE	3	60	3252	845	0.96		19	**C**	70	494	133	0.93		3	**A**	
																	37,900
2.848	PORTOLA	2	63	3145	816	0.96		26	**C**	68	489	132	0.93		4	**A**	
																	38,600
6.035	CHAPMAN	2	62	2772	711	0.97		23	**C**	68	502	135	0.93		4	**A**	
																	28,000
6.205	JCT RTE 241		0	0	0					0	0	0					

** % Truck and ADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

1. Used timeframe of 8/19 - 8/25
2. Used timeframe of 2/4 - 2/10

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	IRVINE, JCT. RTE. 5	3	64	4338	1155	0.94	5.00	24	**C**	66	2945	753	0.98	5.00	16	**B**	
																	196,100
0.949	IRVINE CENTER DRIVE[1.4.]	6	63	6342	1609	0.99	5.00	17	**B**	68	5637	1490	0.95	5.00	15	**B**	
																	212,900
1.804	IRVINE, JCT. RTE. 133	5	42	8563	2273	0.94	4.90	44	**E**	55	7528	1971	0.95	4.90	29	**D**	
																	258,200
2.876	IRVINE, SAND CANYON AVENUE[1. 4.]	4	47	7889	2123	0.93	5.20	46	**F**	56	6937	1753	0.99	5.20	32	**D**	
																	255,900
3.947	UNIVERSITY DRIVE	4	47	8173	2071	0.99	5.60	45	**F**	42	7070	1859	0.95	5.60	46	**F**	
																	251,900
5.618	IRVINE, CULVER DRIVE	5	62	9351	2407	0.97	5.60	32	**D**	57	7682	1991	0.96	5.60	29	**D**	
																	268,400
6.917	IRVINE, JAMBOREE BOULEVARD	5	55	9391	2431	0.97	5.60	37	**E**	56	8511	2177	0.98	5.60	32	**D**	
																	277,000
7.803	IRVINE, MAC ARTHUR BOULEVARD	5	62	9194	2333	0.99	5.00	31	**D**	48	8698	2268	0.96	5.00	38	**E**	
																	287,900
8.740	COSTA MESA, JCT. RTE. 55	4	68	4651	1191	0.98	3.49	18	**B**	61	5237	1365	0.96	3.49	23	**C**	
																	246,700
9.46	COSTA MESA, BRISTOL STREET	4	65	5123	1334	0.96	3.49	21	**C**	58	5485	1416	0.97	3.49	25	**C**	
																	229,200
9.9	BEAR	5	0	0	NO DATA	N/A	3.49	N/A	**N/A**	0	0	NO DATA	N/A	3.49	N/A	**N/A**	
																	229,200
10.9	FAIRVIEW	6	68	8025	2056	0.98	3.49	20	**C**	52	8621	2266	0.95	3.49	30	**D**	
																	292,400
11.4	COSTA MESA, HARBOR BOULEVARD	6	65	8549	2158	0.99	3.49	22	**C**	57	9236	2351	0.98	3.49	28	**D**	
																	312,400
12.85	FOUNTAIN VALLEY, EUCLID STREET	5	70	10153	2684	0.95	3.49	31	**D**	50	10552	2797	0.94	3.49	45	**F**	
																	291,300
13.74	FOUNTAIN VALLEY, BROOKHURST STREET	4	67	7398	1953	0.95	3.49	29	**D**	60	7794	2046	0.95	3.49	35	**D**	
																	269,200

14.82	FOUNTAIN VALLEY, WARNER AVENUE	4	58	6715	1765	0.95	3.49	31	**D**	48	6924	1744	0.99	3.49	37	**E**	
																	252,400
15.17	HUNTINGTON BEACH, MAGNOLIA STREET	4	70	7633	2012	0.95	3.49	29	**D**	48	9266	2343	0.99	3.49	50	**F**	
																	266,000
16.52	BEACH	4	66	6402	1613	0.99	3.49	25	**C**	53	6974	1799	0.97	3.49	34	**D**	
																	274,300
17.45	MCFADDEN	4	0	0	0	N/A	3.49	N/A	**N/A**	0	0	0	N/A	3.49	N/A	**N/A**	
																	274,300
17.92	GOLDENWEST[3.4.]	4	65	6341	1667	0.95	3.49	26	**D**	57	6946	1775	0.98	3.49	32	**D**	
																	262,700
19.24	WESTMINISTER	4	60	7365	1920	0.96	3.49	32	**D**	59	8351	2136	0.98	3.49	37	**E**	
																	245,400
20.33	BRYANT	4	65	10868	2779	0.98	3.49	44	**E**	50	10771	2778	0.97	3.49	56	**F**	
																	389,400
22.55	SEAL BEACH	6	66	10355	2609	0.99	3.00	27	**D**	44	10247	2598	0.99	3.00	40	**E**	
																	370,100
23.62	SALMON	5	63	8492	2201	0.96	3.00	29	**D**	58	8721	2225	0.98	3.00	31	**D**	
																	262,500

** % Truck and ADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

1. Percent Observed is 66%
2. Percent Observed 75%
3. Percent Observed 73%
4. Used timeframe of 5/6 - 5/12

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	IRVINE, JCT. RTE. 5	5	65	5792	1535	0.94	5.00	19	**C**	65	6601	1689	0.98	5.00	21	**C**	
																	196,100
0.949	IRVINE CENTER DRIVE	4	64	5449	1416	0.96	5.00	23	**C**	64	6108	1564	0.98	5.00	25	**C**	
																	212,900
1.804	IRVINE, JCT. RTE. 133[3]	4	66	6985	1808	0.97	4.90	28	**D**	64	6343	1631	0.97	4.90	26	**D**	
																	258,200
2.876	IRVINE, SAND CANYON AVENUE[1]	4	54	6058	1549	0.98	5.20	30	**D**	48	5617	1431	0.98	5.20	31	**D**	
																	255,900
3.947	UNIVERSITY DRIVE	4	59	8390	2189	0.96	5.60	38	**E**	51	7565	1958	0.97	5.60	39	**E**	
																	251,900
5.618	IRVINE, CULVER DRIVE	4	60	8031	2072	0.97	5.60	35	**E**	57	7461	1947	0.96	5.60	35	**E**	
																	268,400
6.917	IRVINE, JAMBOREE BOULEVARD	6	62	7647	2034	0.94	5.60	22	**C**	59	8057	2065	0.98	5.60	24	**C**	
																	277,000
7.803	IRVINE, MAC ARTHUR BOULEVARD	6	49	11561	2933	0.99	5.00	41	**E**	64	9813	2472	0.99	5.00	26	**D**	
																	287,900
8.740	COSTA MESA, JCT. RTE. 55	4	61	7471	1894	0.99	3.49	32	**D**	65	6298	1616	0.97	3.49	25	**C**	
																	246,700
9.54	COSTA MESA, BRISTOL STREET	5	50	8920	2334	0.96	3.49	38	**E**	66	6270	1639	0.96	3.49	20	**C**	
																	229,200
9.9	BEAR	4	0	0	NO DATA	N/A	3.49	N/A	**N/A**	0	0	NO DATA	N/A	3.49	N/A	**N/A**	
																	229,200
10.28	FAIRVIEW	5	0	0	NO DATA	N/A	3.49	N/A	**N/A**	0	0	NO DATA	N/A	3.49	N/A	**N/A**	
																	292,400

11.2	COSTA MESA, HARBOR BOULEVARD	6	56	9636	2429	0.99	3.49	29	**D**	62	8577	2190	0.98	3.49	24	**C**	
																	312,400
12.5	FOUNTAIN VALLEY, EUCLID STREET	5	47	8788	2247	0.98	3.49	39	**E**	63	7820	1999	0.98	3.49	26	**C**	
																	291,300
13.81	FOUNTAIN VALLEY, BROOKHURST STREET	4	47	9783	2498	0.98	3.49	54	**F**	62	8807	2268	0.97	3.49	37	**E**	
																	269,200
14.72	FOUNTAIN VALLEY, WARNER AVENUE	4	45	6547	1793	0.91	3.49	41	**E**	52	6580	1693	0.97	3.49	33	**D**	
																	252,400
15.16	HUNTINGTON BEACH, MAGNOLIA STREET	4	43	5618	1514	0.93	3.49	35	**E**	62	6029	1514	1.00	3.49	25	**C**	
																	266,000
16.26	EDINGER	5	51	7824	2137	0.92	3.49	34	**D**	67	8482	2170	0.98	3.49	26	**D**	
																	266,000
16.6	BEACH	4	49	1272	388	0.82	3.49	8	**A**	50	1628	412	0.99	3.49	8	**A**	
																	274,300
17.45	MCFADDEN	4	0	0	0	N/A	3.49	N/A	**N/A**	0	0	0	N/A	3.49	N/A	**N/A**	
																	274,300
17.98	GOLDENWEST	4	49	7559	2147	0.88	3.49	45	**E**	66	8483	2172	0.98	3.49	34	**D**	
																	262,700
19.05	WESTMINSTER, WESTMINSTER AVENUE[2. 3.]	4	48	6820	1869	0.91	3.49	40	**E**	62	7128	1838	0.97	3.49	30	**D**	
																	245,400
20.33	BRYANT	4	62	9580	2506	0.96	3.49	41	**E**	57	10561	2731	0.97	3.49	49	**F**	
																	389,400
22.54	SEAL BEACH	6	63	10533	2718	0.97	3.00	29	**D**	46	10958	2846	0.96	3.00	42	**E**	
																	370,100
23.62	SALMON	4	61	8617	2268	0.95	3.00	38	**E**	66	8682	2263	0.96	3.00	35	**E**	
																	262,500

** % Truck and ADT Values are the most recent values published at www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

1. Percent Observed is 24%
2. Percent Observed 40%
3. Used timeframe of 9/23 - 9/29

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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	65	5174	1319	0.98	4.63	21	**C**	36	5859	1573	0.93	4.63	44	**E**	
																	167,000
R 1.55	KATELLA 2	4	68	4905	1285	0.95	4.63	19	**C**	46	5451	1414	0.96	4.63	32	**D**	
																	167,000

** % Truck and ADT Values are the most recent values published at
www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

Postmile	SEGMENT	# of LANES	AM PEAK PERIOD							PM PEAK PERIOD							2019 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[1]	4	64	5742	1532	0.94	4.63	25	**C**	62	5356	1408	0.95	4.63	23	**C**	
																	167,000
R 1.55	KATELLA 2	4	58	5147	1380	0.93	4.63	25	**C**	62	4778	1219	0.98	4.63	20	**C**	
																	167,000

** % Truck and ADT Values are the most recent values published at
www.dot.ca.gov/hq/traffops/saferesr/trafdata/ which is currently 2018 data **

1. Used timeframe of 4/8 - 4/14

District 12
Mobility Performance Report

2020 First Quarter

DEPARTMENT OF TRANSPORTATION

May 6, 2020

DISTRICT 12 TMC

DISTRICT 12 MOBILITY PERFORMANCE REPORT

2020 1st Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 12 (Orange County) is located in southern California and is neighbors with District 7 (Los Angeles), District 8 (San Bernardino), and District 11 (San Diego). As of July 2017, the total population in Orange County was 3,190,400. The jurisdictional boundaries of Orange County encompass a metropolitan area of 794 square miles, including 34 cities, and 17 state highway routes. The county has 1,059 lane miles of general purpose lanes and 226 lane miles of High-Occupancy Vehicle (HOV) lanes, which is one of California's largest HOV lane networks. Orange County is the third most populous county in California, the sixth-most populous in the United States, and more populous than twenty-one U.S. states. Its county seat is Santa Ana. It is the second most densely populated county in the state.

The Mobility Performance quarterly analysis compares information from the most recent quarter and the previous 4 quarters, involving the following performance measures:

- Vehicle Miles of Travel (VMT)
- Vehicle Hours of Delay (VHD)
- Lost Lane Miles (LLM)
- Detector Health

This information is based on data collected every day of the quarter, twenty-four hours a day, by automated vehicle detector stations deployed on urban-area freeways where congestion is regularly experienced. The MPR uses congestion at two speed thresholds: delay from vehicles traveling below 35 MPH and delay from vehicles traveling below 60 mph. The 35 MPH limit

represents severe congestion while the 60 MPH limit represents light and heavy congestion. These thresholds/limits are set by Caltrans and are based upon engineering experience and District input.

FINDINGS

In the 1st quarter, of 2020, total delay equaled to 1.3 million vehicle hours of delay (VHD) at the 35mph speed threshold and 4.5 million VHD at 60mph threshold. Compared to the fourth quarter, there was a -39.8 percent decrease in 35mph VHD and -27.4 percent decrease in 60mph VHD.

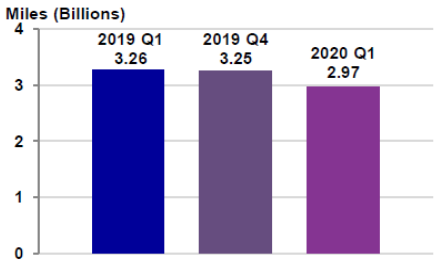
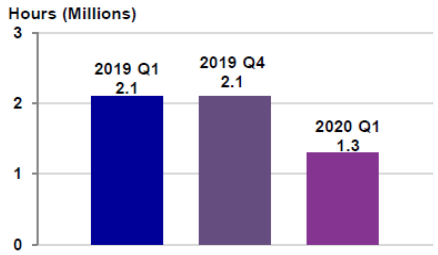
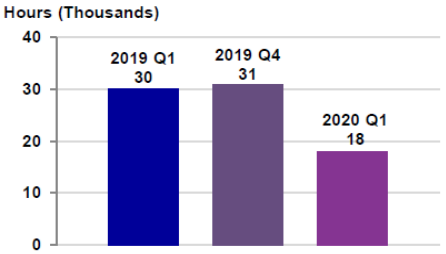
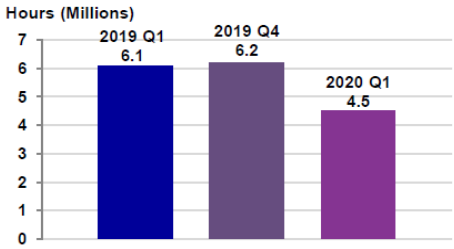
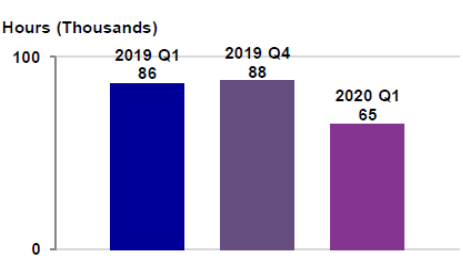
The average weekday VHD experienced in this quarter was approximately 18 thousand VHD at 35mph and 65 thousand VHD at 60mph. Compared to the third quarter, there was -40.2 percent decrease in 35 mph VHD and -26.9 percent decrease in 60 mph VHD.

Top 10 Bottlenecks for the 1st Quarter of 2020

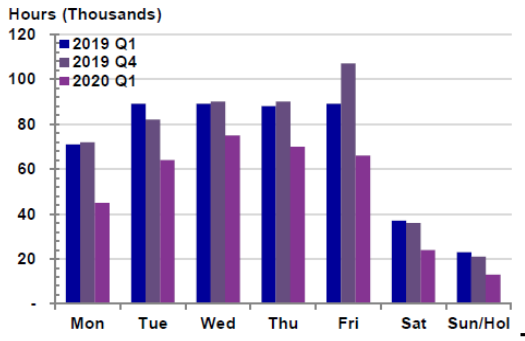
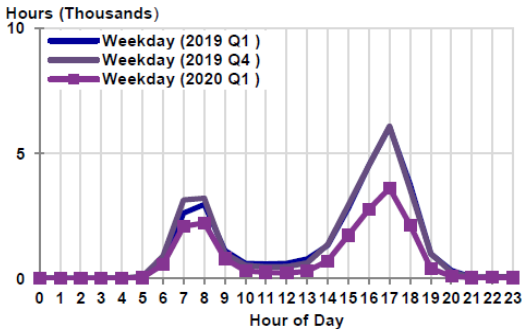
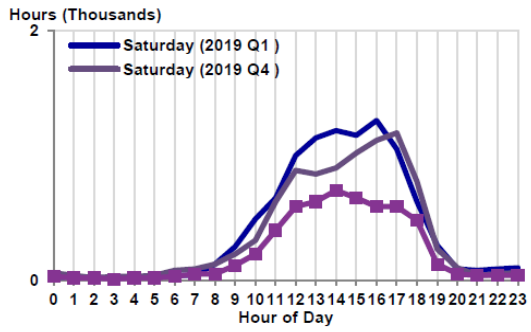
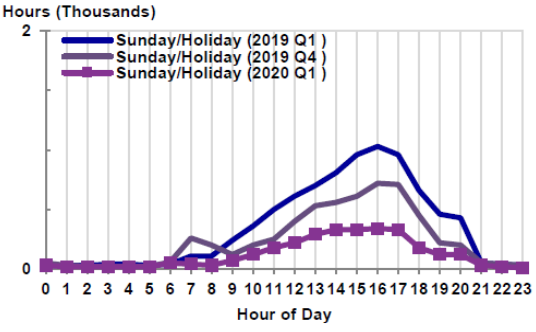
Fwy	Location	Shift	Abs PM	CA PM	# Days Active	Avg Extent (Miles)	Total Delay (veh-hrs)	Total Duration (mins)
I405-N	BROOKHUR1	PM	13.51	13.74	51	3.33	36,045.90	8,740.00
I5-N	B ST	PM	102.25	30	50	4.11	21,561.90	10,765.00
I405-N	)CATION 5013 I	PM	12.89	13.122	49	2.71	20,070.50	3,190.00
I5-S	S OF 22	AM	105.99	33.8	51	1.12	18,734.60	9,580.00
I5-S	EUCLID 1	AM	111.49	39.3	49	2.58	16,143.00	5,760.00
I405-S	TMS 5015 SB	AM	15.49	15.722	50	2.95	13,517.40	3,025.00
SR55-N	TAFT	PM	15.78	15.8	46	2.97	11,634.00	9,305.00
I5-N	1ST	PM	103.05	30.8	32	0.77	11,627.50	7,435.00
SR91-E	LAKEVIEW1	PM	28.45	R10.08	52	2.61	10,709.60	8,475.00
I405-N	TMS 5015 NB	PM	15.43	15.66	28	1.25	10,651.80	2,570.00

Quarterly Mobility Statistics

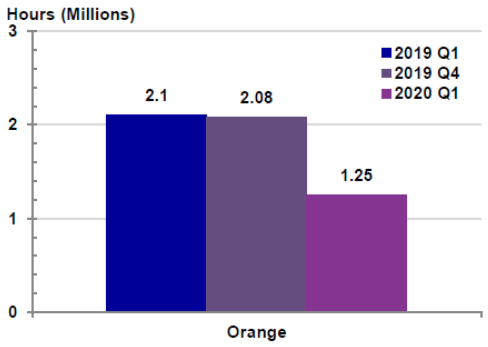
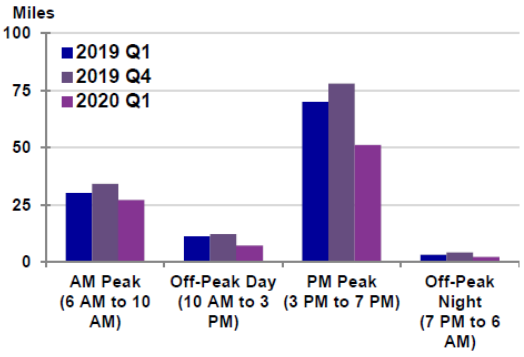
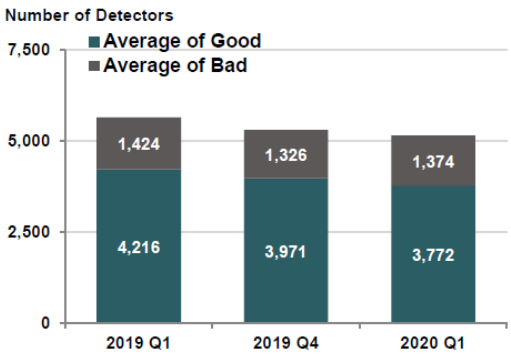
2020 Q1
Quarterly Mobility Statistics
District 12

Measure	Graph	Percentage Change	
		Over one year ago	Over last quarter
Vehicle Miles of Travel (VMT)		-8.9%	-8.6%
Total Vehicle Hours of Delay (VHD) at 35 mph		-40.3%	-39.8%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		-39.4%	-40.2%
Total Vehicle Hours of Delay (VHD) at 60 mph		-25.7%	-27.4%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		-24.7%	-26.9%

2020 Q1
Quarterly Mobility Statistics
District 12

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago Monday -36.4% Largest Magnitude Increase over one year ago –	Largest Magnitude Decrease over last quarter Friday -38.8% Largest Magnitude Increase over last quarter –
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago 5 PM -40.4% Largest Magnitude Weekday Increase over one year ago 11 PM 18.8%	Largest Magnitude Weekday Decrease over last quarter 5 PM -40.6% Largest Magnitude Weekday Increase over last quarter –
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 4 PM -53.8% Largest Magnitude Saturday Increase over one year ago 7 AM 20%	Largest Magnitude Saturday Decrease over last quarter 5 PM -50.6% Largest Magnitude Saturday Increase over last quarter –
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 4 PM -67.3% Largest Magnitude Sun./Holiday Increase over one year ago 6 AM 11.1%	Largest Magnitude Sun./Holiday Decrease over last quarter 4 PM -53.5% Largest Magnitude Sun./Holiday Increase over last quarter 3 AM 28%

2020 Q1
Quarterly Mobility Statistics
District 12

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Orange -40.3% ↓ Largest Magnitude Increase over one year ago –	Largest Magnitude Decrease over last quarter Orange -39.8% ↓ Largest Magnitude Increase over last quarter –
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago PM Peak -26.5% ↓ Largest Magnitude Increase over one year ago –	Largest Magnitude Decrease over last quarter PM Peak -34.2% ↓ Largest Magnitude Increase over last quarter –
Average Number of Good and Bad Detectors		Change in Good over one year ago -11% ↓ Change in Bad over one year ago -4% ↓	Change in Good over last quarter -5% ↓ Change in Bad over last quarter 4% ↑

2020 Q1
Quarterly Mobility Statistics
District 12

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2020 Q1-2019 Q1		Difference 2020 Q1-2019 Q4		Rank		
Route	County	2019 Q1	2019 Q4	2020 Q1	Absolute	Percentage	Absolute	Percentage	2019 Q1	2019 Q4	2020 Q1
I5	Orange	516,905	528,946	337,866	-179,040	-34.6%	-191,080	-36.1%	2	1	1
I405	Orange	586,241	471,857	282,330	-303,912	-51.8%	-189,528	-40.2%	1	2	2
SR91	Orange	347,765	345,495	222,665	-125,100	-36.0%	-122,830	-35.6%	3	3	3
SR55	Orange	233,619	323,434	138,704	-94,915	-40.6%	-184,729	-57.1%	4	4	4
SR57	Orange	109,188	152,316	98,455	-10,732	-9.8%	-53,861	-35.4%	6	5	5
SR22	Orange	129,748	106,308	72,478	-57,270	-44.1%	-33,829	-31.8%	5	6	6
SR73	Orange	107,251	92,510	54,077	-53,174	-49.6%	-38,433	-41.5%	7	7	7
SR241	Orange	26,855	36,479	27,753	898	3.3%	-8,726	-23.9%	8	8	8
I605	Orange	20,801	9,425	6,001	-14,800	-71.2%	-3,424	-36.3%	9	9	9
SR74	Orange	998	3,662	5,523	4,525	453.6%	1,861	50.8%	12	12	10
SR133	Orange	20,537	9,213	4,659	-15,878	-77.3%	-4,555	-49.4%	10	10	11
SR142	Orange	1,338	4,630	3,623	2,285	170.8%	-1,007	-21.7%	11	11	12
SR261	Orange	219	456	786	567	258.6%	331	72.6%	13	13	13
SR1	Orange	48	0	0	-48	-100.0%	0		14		
TOTALS		**2,101,514**	**2,084,730**	**1,254,920**	**-846,594**	**-40.3%**	**-829,810**	**-39.8%**			

District 12 Mobility Performance Report

2021 1st Quarter

DEPARTMENT OF TRANSPORTATION

April 29, 2021

District 12 Traffic Operations Northwest

DISTRICT 12 MOBILITY PERFORMANCE REPORT

2021 1st Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 12 (Orange County) is located in southern California and is neighbors with District 7 (Los Angeles), District 8 (San Bernardino), and District 11 (San Diego). As of July 2017, the total population in Orange County was 3,190,400. The jurisdictional boundaries of Orange County encompass a metropolitan area of 794 square miles, including 34 cities, and 17 state highway routes. The county has 1,059 lane miles of general purpose lanes and 226 lane miles of High-Occupancy Vehicle (HOV) lanes, which is one of California's largest HOV lane networks. Orange County is the third most populous county in California, the sixth-most populous in the United States, and more populous than twenty-one U.S. states. Its county seat is Santa Ana. It is the second most densely populated county in the state.

The Mobility Performance quarterly analysis compares information from the most recent quarter and the previous 4 quarters, involving the following performance measures:

- Vehicle Miles of Travel (VMT)
- Vehicle Hours of Delay (VHD)
- Lost Lane Miles (LLM)
- Detector Health

This information is based on data collected every day of the quarter, twenty-four hours a day, by automated vehicle detector stations deployed on urban-area freeways where congestion is regularly experienced. The MPR uses congestion at two speed thresholds: delay from vehicles traveling below 35 MPH and delay from vehicles traveling below 60 MPH. The 35 MPH limit

represents severe congestion while the 60 MPH limit represents light and heavy congestion. These thresholds/limits are set by Caltrans and are based upon engineering experience and District input.

FINDINGS

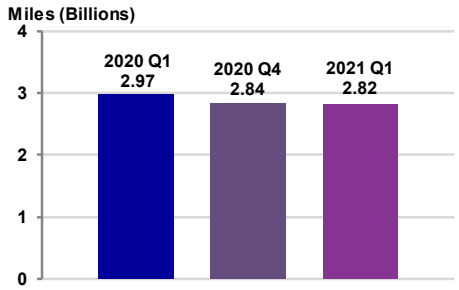
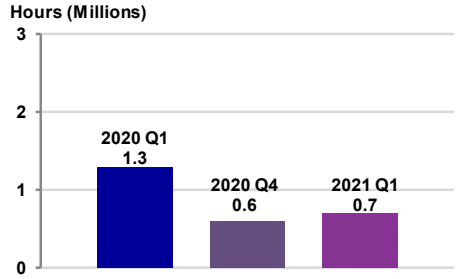
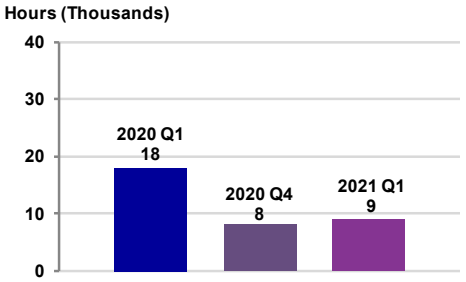
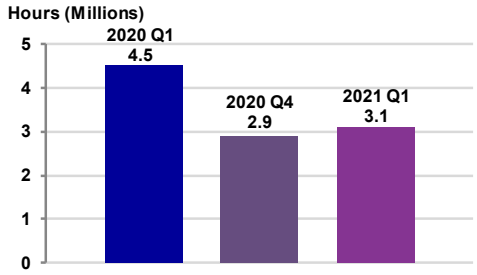
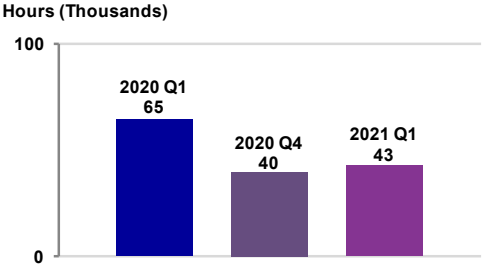
In the 1st quarter of 2021, total delay equaled to 0.73 million vehicle hours of delay (VHD) at the 35 MPH speed threshold and 3.08 million VHD at 60 MPH threshold. Compared to the previous quarter, there was a 14 percent increase in 35 MPH VHD and 7.8 percent increase in 60 MPH VHD.

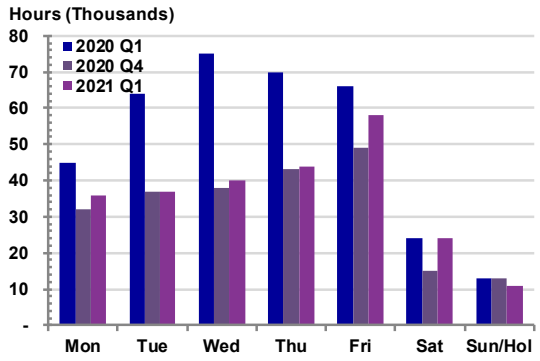
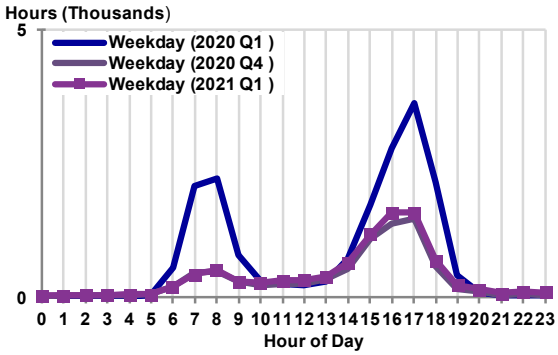
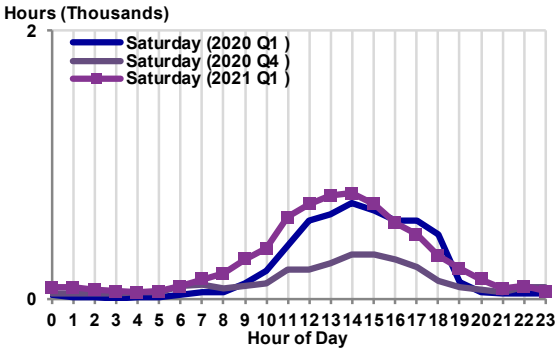
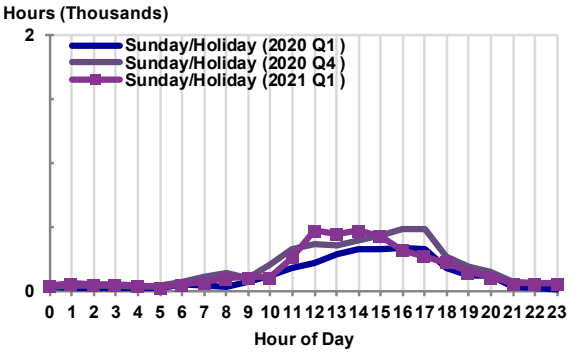
The average weekday VHD experienced in this quarter was approximately 9 thousands VHD at 35 MPH and 43 thousands VHD at 60 MPH. Compared to the previous quarter, there was 11 percent increase in 35 MPH VHD and 8.2 percent increase in 60 mph VHD.

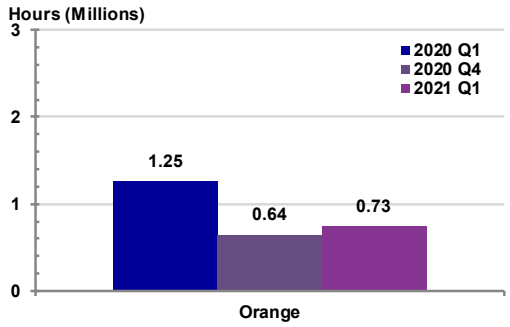
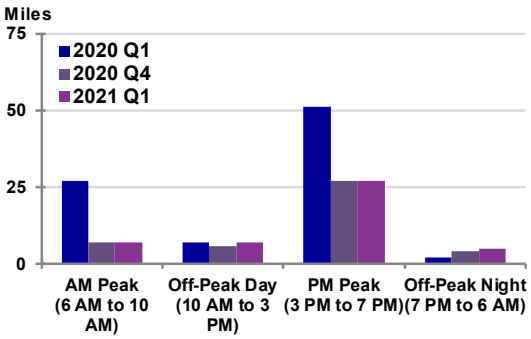
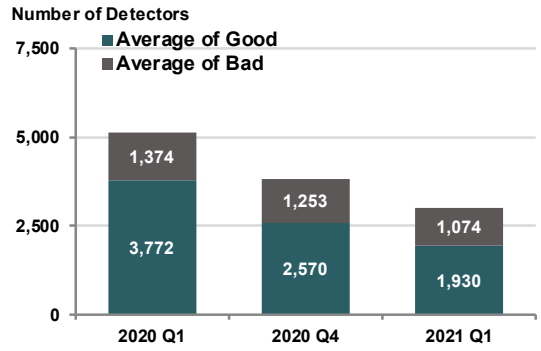
Top 10 Bottlenecks for the 1st Quarter of 2021

Co	Shift	Fwy	Dir	Abs PM	CA PM	Latitude	Longitude	# Days Active	Avg Extent (Miles)	Total Delay (veh-hrs)	Total Duration (mins)
ORA	PM	I405	N	13.51	13.74	33.70	-117.95	38	2.52	27,156.80	4,580.00
ORA	PM	I5	N	100.35	28.1	33.72	-117.80	41	3.88	19,176.90	7,430.00
ORA	PM	I5	S	91.53	19.33	33.62	-117.71	36	1.06	12,965.20	4,585.00
ORA	PM	SR91	E	32.99	R14.62	33.87	-117.74	36	1.79	12,884.70	5,110.00
ORA	PM	I405	N	11.37	11.6	33.69	-117.92	42	0.40	11,958.60	6,405.00
ORA	PM	SR91	E	28.45	R10.08	33.85	-117.81	37	2.55	11,742.60	4,700.00
ORA	AM	SR91	W	36.85	R18.435	33.87	-117.68	42	0.80	10,008.70	8,000.00
ORA	PM	I405	N	16.53	16.76	33.73	-117.99	42	0.70	9,557.20	7,915.00
ORA	AM	I5	S	105.19	33	33.77	-117.87	42	0.60	8,918.40	4,950.00
ORA	PM	SR91	E	34.14	R15.793	33.87	-117.72	36	2.54	8,401.30	3,300.00

2021 Q1 Quarterly Mobility Statistics

Measure	Graph	Percentage Change	
		Over one year ago	Over last quarter
Vehicle Miles of Travel (VMT)		-4.9%	-0.5%
Total Vehicle Hours of Delay (VHD) at 35 mph		-42.1%	14.1%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		-48.5%	11%
Total Vehicle Hours of Delay (VHD) at 60 mph		-31.9%	7.8%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		-33.5%	8.2%

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago Wednesday -46.3%	Largest Magnitude Decrease over last quarter Sun/Hol -15.8%
		Largest Magnitude Increase over one year ago –	Largest Magnitude Increase over last quarter Friday 18.7%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago 5 PM -56.1%	Largest Magnitude Weekday Decrease over last quarter 7 AM -7.6%
		Largest Magnitude Weekday Increase over one year ago 12 PM 49.8%	Largest Magnitude Weekday Increase over last quarter 4 PM 13.2%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 6 PM -34.2%	Largest Magnitude Saturday Decrease over last quarter 11 PM -34.9%
		Largest Magnitude Saturday Increase over one year ago 11 AM 51.6%	Largest Magnitude Saturday Increase over last quarter 1 PM 185%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 5 PM -17.2%	Largest Magnitude Sun./Holiday Decrease over last quarter 5 PM -43.1%
		Largest Magnitude Sun./Holiday Increase over one year ago 12 PM 107.1%	Largest Magnitude Sun./Holiday Increase over last quarter 12 PM 26.5%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago Orange -42.1%	Largest Magnitude Decrease over last quarter –
		Largest Magnitude Increase over one year ago –	Largest Magnitude Increase over last quarter Orange 14.1%
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago PM Peak -47.7%	Largest Magnitude Decrease over last quarter PM Peak -0.2%
		Largest Magnitude Increase over one year ago Off-Peak Night 85%	Largest Magnitude Increase over last quarter Off-Peak Day 17.1%
Average Number of Good and Bad Detectors		Change in Good over one year ago -49%	Change in Good over last quarter -25%
		Change in Bad over one year ago -22%	Change in Bad over last quarter -14%

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2021 Q1-2020 Q1		Difference 2021 Q1-2020 Q4		Rank		
Route	County	2020 Q1	2020 Q4	2021 Q1	Absolute	Percentage	Absolute	Percentage	2020 Q1	2020 Q4	2021 Q1
I5	Orange	337,866	173,883	229,130	-108,735	-32.2%	55,247	31.8%	1	2	1
SR91	Orange	222,665	188,132	219,653	-3,012	-1.4%	31,521	16.8%	3	1	2
I405	Orange	282,330	93,118	98,267	-184,063	-65.2%	5,149	5.5%	2	3	3
SR57	Orange	98,455	53,220	71,223	-27,233	-27.7%	18,002	33.8%	5	5	4
SR55	Orange	138,704	57,826	38,849	-99,855	-72.0%	-18,977	-32.8%	4	4	5
SR22	Orange	72,478	40,148	33,698	-38,780	-53.5%	-6,450	-16.1%	6	6	6
SR73	Orange	54,077	20,844	20,302	-33,775	-62.5%	-542	-2.6%	7	7	7
SR241	Orange	27,753	5,696	7,213	-20,540	-74.0%	1,517	26.6%	8	8	8
I605	Orange	6,001	1,648	3,057	-2,943	-49.1%	1,409	85.5%	9	9	9
SR133	Orange	4,659	957	3,031	-1,628	-34.9%	2,074	216.7%	11	10	10
SR142	Orange	3,623	832	989	-2,634	-72.7%	156	18.8%	12	11	11
SR74	Orange	5,523	25	629	-4,895	-88.6%	604	2454.9%	10	12	12
SR261	Orange	786	9	63	-723	-92.0%	55	644.7%	13	13	13
SR1	Orange	0	0	0	0		0				
TOTALS		**1,254,920**	**636,337**	**726,103**	**-528,817**	**-42.1%**	**89,766**	**14.1%**			

Appendix B-1: Meeting CMP Traffic Impact Analysis Requirements

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 the CMP Highway System, 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 the CMP Highway System, 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.

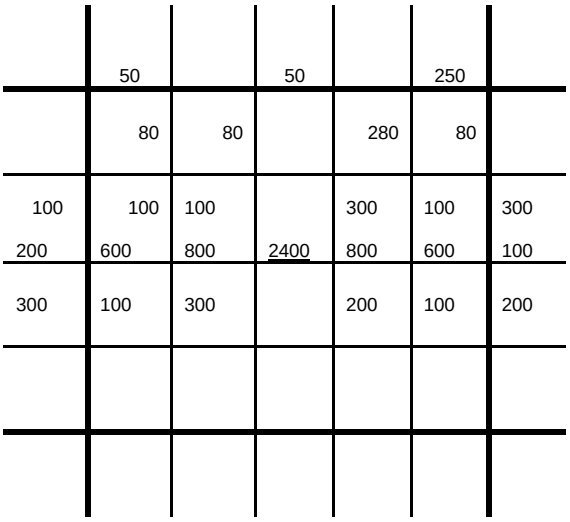
A level of impact below 3% is not recommended because it sets thresholds which are generally too sensitive for the planning and analytical tools available. Minor changes in project assumptions can significantly alter the results of the analysis and the end result can be additional unnecessary cost to 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.

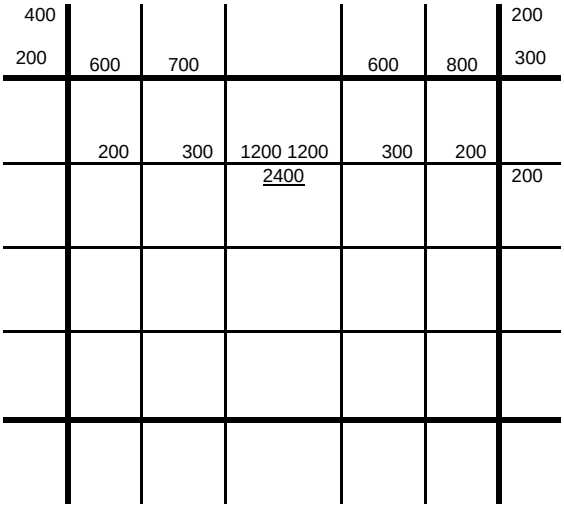
The table included on the following page illustrates the daily trip generation thresholds which would produce various levels of impact on the CMP System for project locations with and without direct access to the system. Based on a 3% impact the trip generation thresholds for requiring a TIA are 1,600 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

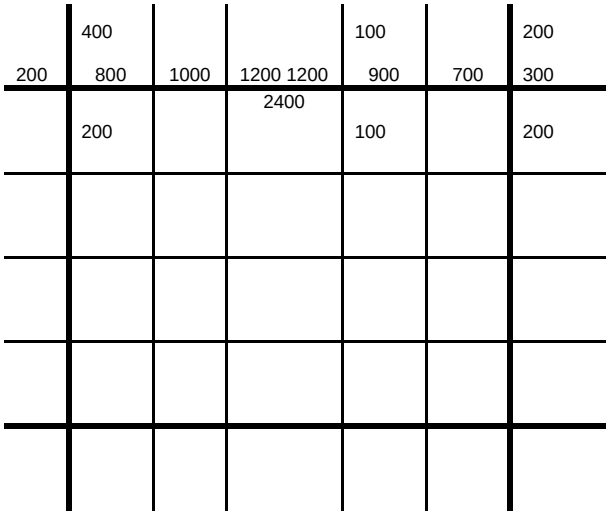
Based on proximity to CMP System



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

Appendix B-2: Traffic Impact Analysis Exempt Projects

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]

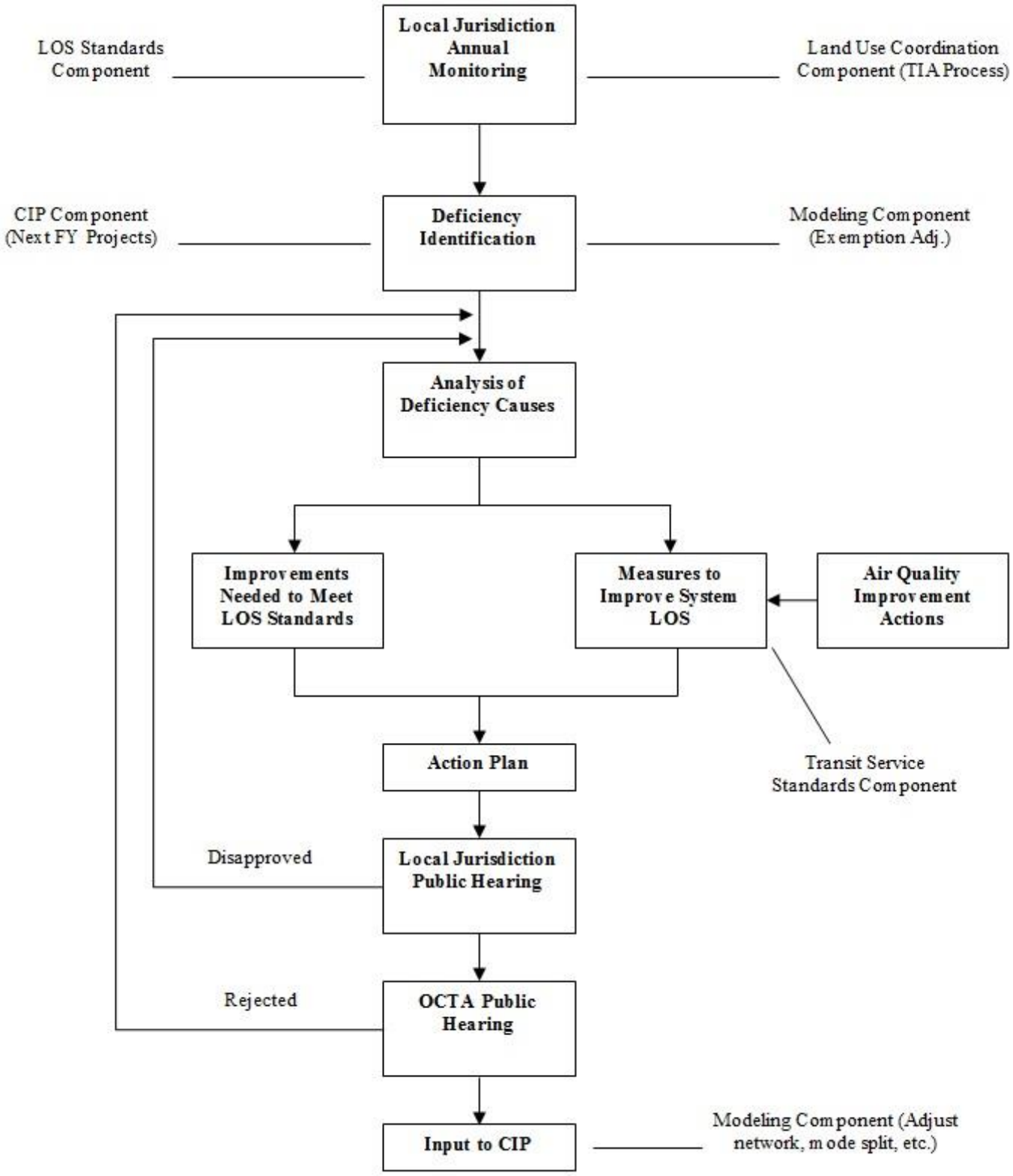
[1] Vehicular trips generated by CMP TIA-exempt development applications shall not be factored out in any traffic analyses or levels of service calculations for the CMPHS.

[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).

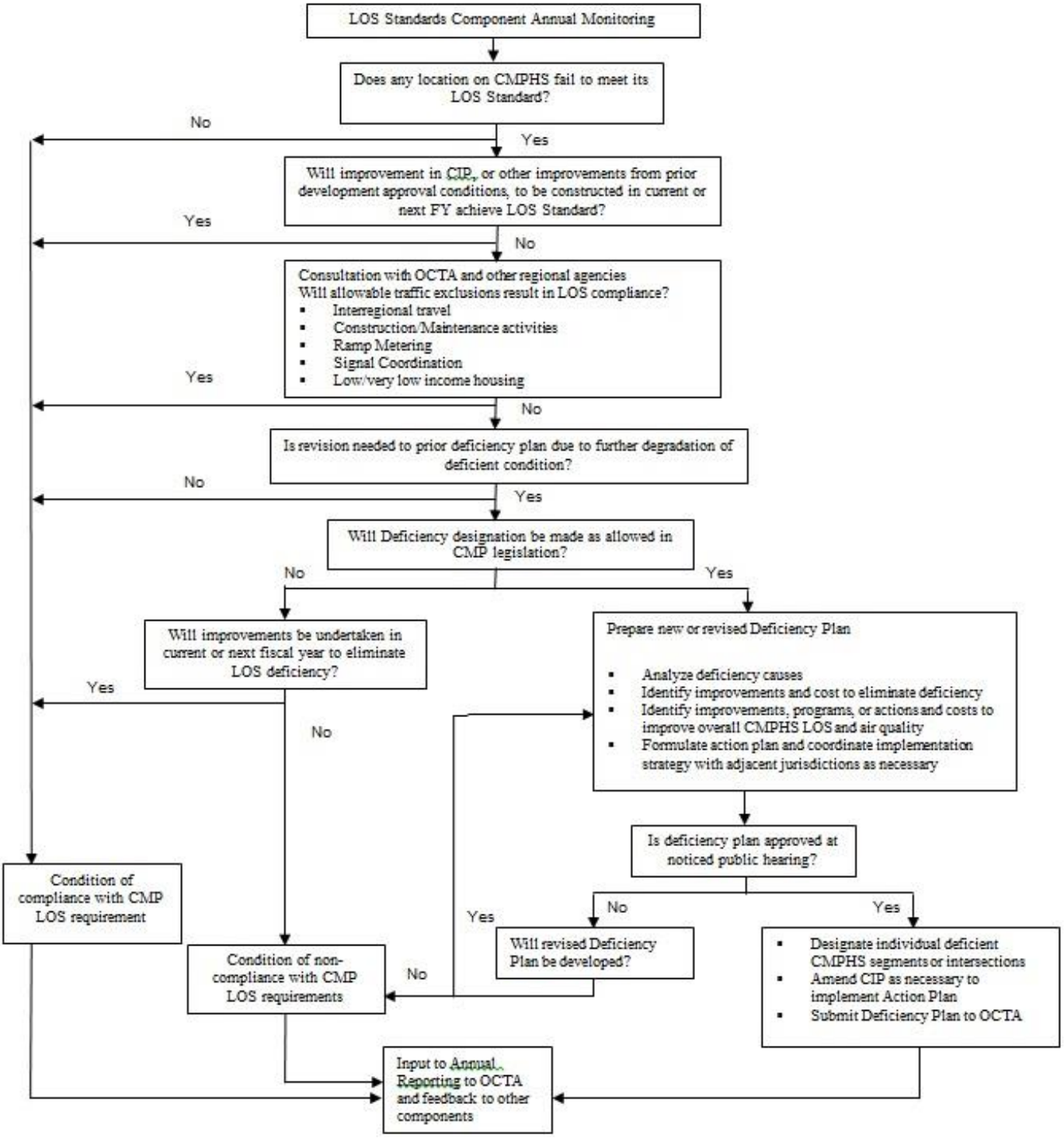
Appendix C-1: CMP Deficiency Plan Flow Chart

APPENDIX C-1: CMP Deficiency Plan Flow Chart



Appendix C-2: Deficiency Plan Decision Flow Chart

APPENDIX C-2: Deficiency Plan Decision Flow Chart



Appendix D: CMP Monitoring Checklists

Jurisdiction:	Choose an item.

CMP Monitoring Checklist: Level of Service (LOS)				
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 jurisdiction 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:				

[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				
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 CMP Highway System (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 REMAINING QUESTIONS.				
2.	If any, please list those intersections found that are not operating at 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 South Coast Air Quality Management District (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.)				
CMP Checklist		**YES**	**NO**	**N/A**
6.	Are the capital improvements identified in the deficiency plan programmed in your seven-year 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:				

CMP Monitoring Checklist: Land Use Coordination				
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:				

[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, and 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 (CIP)				
CMP Checklist		**YES**	**NO**	**N/A**
1.	Did you submit a seven-year 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 OC Fundtracker CIP provided by the OCTA used to prepare the CIP?	☐	☐	☐
Additional Comments:				

OPTIONAL - CMP Monitoring Checklist: Federal Congestion Management				
CMP Checklist		**YES**	**NO**	**N/A**
1.	Does any federally funded project in the CIP result in a significant increase in single occupant vehicle (SOV) capacity?	☐	☐	☐
NOTE: ONLY THOSE AGENCIES THAT CHECKED "YES" FOR QUESTION 1 NEED TO ANSWER THE REMAINING QUESTION.				
2.	If so, was the project developed as part of the federal Congestion Management Process, in other words, was there an appropriate analysis of reasonable travel demand reduction and operational strategies?	☐	☐	☐
Additional Comments:				

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

Name (Print)	Title	Signature	Date

Appendix E: Capital Improvement Programs

Available online at:

http://www.octa.net/Plans-and-Programs/Congestion-Management-Program/Overview/

Appendix F: Measure M2 Program of Projects

OCGO PROJECTS

FREEWAY IMPROVEMENT PROGRAM

Interstate 5 (I-5) Projects

- (A) **I-5**, SR-55 to SR-57
- (B) **I-5**, El Toro "Y" Area to SR-55
- (C) **I-5**, SR-73 to El Toro Road
- (C) **I-5**, Avenida Pico to San Juan Creek Road
- (D) **I-5** Highway Interchanges

State Route 22 (SR-22) Projects

- (E) **SR-22** Access Improvements

State Route 55 (SR-55) Projects

- (F) **SR-55**, I-405 to I-5
- (F) **SR-55**, I-5 to SR-91

State Route 57 (SR-57) Projects

- (G) **SR-57** NB, Orangewood Avenue to Katella Avenue
- (G) **SR-57** NB, Katella Avenue to Lincoln Avenue
- (G) **SR-57** NB, Orangethorpe Avenue to Lambert Road
- (G) **SR-57** NB, Lambert Road to Tonner Canyon Road

State Route 91 (SR-91) Projects

- (H) **SR-91** WB, I-5 to SR-57
- (I) **SR-91**, SR-57 to SR-55
- (J) **SR-91**, SR-55 to Riverside County Line

Interstate 405 (I-405) Projects

- (K) **I-405**, I-605 to SR-73
- (L) **I-405**, SR-55 to El Toro "Y" Area

Interstate 605 (I-605) Projects

- (M) **I-605** Katella Interchange Improvements

Freeway Mitigation Restoration Projects
Part of Projects A-M

Freeway Mitigation Acquisition Projects
Part of Projects A-M

STREETS & ROADS

- (O) **Grade Separation Program** (shown)
- (P) **Signal Synchronization Project Corridors**

TRANSIT PROJECTS

- (R) **Grade Separation and Station Improvement Projects**
- (S) **Transit Extensions to Metrolink**
- (T) **Metrolink Station Conversion to accept Future High-Speed Rail Systems**

OC GO PROJECTS NOT SHOWN

Project N: Freeway Service Patrol

Project O: Streets & Roads - Regional Capacity Program

Project Q: Local Fair Share Program

Project R: Grade crossing and Trail Safety Enhancements

Metrolink Service Expansion Program

Project U: Senior Mobility Program (SMP), Senior Non-emergency Medical Transportation Program (SNEMT), and Fare Stabilization Programs

Project V: Community Based Transit/Circulators

Project W: Safe Transit Stops

Project X: Environmental Cleanup Program

Appendix G: Orange County Subarea Modeling Guidelines

Note: *The primary purpose of these guidelines are to promote consistency in transportation modeling within Orange County.*

Available online at:

http://www.octa.net/Plans-and-Programs/Congestion-Management-Program/Overview/