



# Ramp Metering Development Plan



**DIVISION OF TRAFFIC OPERATIONS  
CALIFORNIA DEPARTMENT OF TRANSPORTATION  
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# Introduction

## Purpose of the Ramp Metering Development Plan

Caltrans has 12 districts located throughout California. All districts except District 1 and District 9 are currently operating ramp meters or plan to operate ramp meters in the next ten years. District 1, covering the rural Del Norte, Humboldt, Mendocino, and Lake counties, and District 9, covering the rural Inyo, Mono and eastern Kern counties, do not expect to implement ramp metering in the next ten years.

As required by Caltrans' latest version of Deputy Directive 35, "Ramp Metering", each district that currently operates or plans to operate ramp meters within the next decade, shall prepare a section for the Ramp Metering Development Plan (RMDP). The RMDP contains a list of ramp metering locations currently in operation or planned for operation in the next ten years. Each district works in partnership with its Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPAs) to program ramp metering projects and implement the RMDP.

The RMDP is intended for planning purposes and is a snapshot of estimated current conditions and a forecast of future conditions. The RMDP lists the ramp metering locations as of 2022 and does not commit Caltrans to install or operate, nor does it require local and regional agencies to install or upgrade ramp meters at the locations listed. The data is not intended for detailed service or facility planning. Such planning requires in-depth site analysis and field confirmation of actual conditions. Early coordination and consultation with RTPAs, MPOs, and local agencies is done to ensure a collaborative effort when planning and implementing ramp meters on the State Highway System (SHS).

The 2023 RMDP is an update of the 2017 RMDP. This version of the RMDP supersedes all previous versions. The RMDP will be updated as needed to reflect the ongoing collaboration between Caltrans, its local and regional partners, evolving statewide policies and regulations. The RMDP was prepared by the Division of Transportation Planning, Division of Traffic Operations, and Caltrans' 12 districts. The RMDP is used as a tool to work with Caltrans' internal functional units, and regional and local partner agencies to ensure that ramp metering projects are included in planning and programming documents. Ramp meters in the "planned" category should be incorporated into planning and programming documents, after broad and inclusive outreach to all stakeholders.

This RMDP should be incorporated into long-range (20-25 year) district system plans and documents, such as:

- Caltrans District System Management Plan (DSMP) – A planning document that describes how each district envisions their transportation system will be maintained, managed, and developed over the next 20 years and beyond.
- Caltrans District System Management Plan-Project List (DSMP-PL) – A list of

planned projects and pre-Project Initiation Document (PID) candidates. The DSMP-PL is prepared with the collaboration of local and regional partners.

- Transportation Concept Reports (TCR) and Corridor System Management Plans (CSMP) – Evaluates current and projected conditions along district routes and provides information for the development of each route.
- Managed Lanes System Plan (MLSP) – A list of each managed lane facility that is currently in operation or planned for operation within the next twenty years.

## **What is Ramp Metering?**

Ramp metering is a proven Traffic Systems Management and Operations (TSMO) program strategy that uses a system of traffic signals installed at freeway entrance ramps, connectors, and mainlines to control the frequency at which vehicles enter the flow of traffic on the freeway. Ramp metering reduces overall freeway congestion by managing the volume of traffic entering the freeway and breaking up vehicle platoons. By regulating the amount of traffic entering the freeway, the total traffic volume can be kept below capacity. When the total traffic volume cannot be prevented from exceeding capacity, ramp metering reduces overall freeway congestion by delaying the onset of congestion and reducing the total time the freeway is congested. In addition, ramp metering breaks up vehicle platoons that create bottlenecks and make it difficult to merge onto the freeway. The result of successful ramp metering preserves highway capacity and improves reliability and safety.

Ramp meters may operate with fixed metering rates, local traffic-responsive metering rates, or corridor-wide traffic-adaptive metering rates. Many freeway meters in California have local traffic-responsive meters, where metering rates are determined by adjacent freeway traffic conditions monitored by vehicle detection systems. During peak commute hours, vehicles are released onto the freeway in proportion to the level of congestion on the mainline. When the freeway is free-flowing, metering release rates for mainline entry are relatively fast. When the freeway is congested the metering release rates are relatively slow. Some districts operate local traffic-responsive metering rates during extended hours outside of commuter peak hours to alleviate freeway congestion. Corridor-wide traffic-adaptive metering utilizes a central system to monitor freeway traffic conditions and determine the metering rate that maximizes freeway traffic performance along a freeway corridor.

### **Ramp Metering and TSMO**

Ramp metering is one of the many TSMO strategies that Caltrans uses to manage and operate the State Highway System at full capacity and support regional congestion management processes. On its own, ramp metering is an effective tool to improve system performance. However, by integrating the successful operation of ramp metering systems with other TSMO strategies, greater improvements to system performance can be realized. TSMO is an integrated program, with strategies that include, but are not limited to, ramp metering, integrated corridor management, road

weather management, and incident management, that require continuous and active management to provide optimized system performance to existing freeway infrastructure. The result is a program that increases freeway throughput, freeway operating speeds, and improves overall freeway operation. As Caltrans further adopts the TSMO approach and framework and different performance metrics such as person-hours delay, the RMDP will likely be updated more frequently to reflect the evolving nature of traffic management, land use, California's mobility needs, and environmental constraints.

### **Benefits of Ramp Metering**

Effective ramp metering programs realize significant, long-term benefits that include improved mobility, reliability, efficiency, and safety along with reduced environmental impacts for all communities. The widespread benefits of ramp metering, relative to its costs, make it one of the most effective freeway management strategies.

- **Mobility, Reliability, and Efficiency** – Ramp metering reduces mainline congestion and overall delay while increasing mobility and traffic throughput for the freeway corridor. Travel times, even when considering time in queue on the ramp, are reduced when ramp metering is implemented. Ramp metering can also reduce the variations in day-to-day travel times which improves travel time reliability.

Caltrans identifies Daily Person Hours of Delay (DPHD) as the primary performance metric for ramp meters funded by the Operational Improvement Program within the State Highway Operation and Protection Program (SHOPP). DPHD supports the Caltrans' goal to enhance and connect the multimodal transportation network, aligning with Climate Action Plan for Transportation Infrastructure (CAPTI) and the current Caltrans Strategic Plan. The Division of Traffic Operations also identifies average speed, throughput, and corridor travel time as other key performance metrics when analyzing ramp metering effectiveness.

- **Safety** – Ramp metering helps break up vehicle platoons that enter the freeway and would compete for the same limited gaps in traffic. If left unbroken, vehicle platoons from the onramp can cause sudden speed reductions to freeway traffic that can lead to unsafe lane changes and vehicle collisions. By allowing for smooth merging maneuvers, collisions on the freeway can be avoided. Safety studies throughout the county have shown significant reductions in collisions when ramp metering is implemented. The Bay Area Metropolitan Transportation Commission (MTC) cites a 15 to 50 percent reduction in collisions due to ramp metering. Ramp metering supports the Caltrans' Safe Systems Approach (SSA) that aims to eliminate fatalities and serious injuries by taking a realistic and holistic view of safety for all road users. The key pillars of the SSA include identifying proven safety countermeasures and accelerating the adoption and implementation of advanced technologies. Ramp metering is a proven safety improvement strategy and further investments to expand and increase the effectiveness of ramp metering technology can reduce the number of dangerous freeway collisions.

- Environmental Impacts – Ramp metering smooths the flow of traffic entering the freeway so vehicles can merge with mainline traffic with minimal disruption to traffic flow. The elimination of prolonged periods of stop-and-go conditions due to congestion can reduce greenhouse gas emissions and fuel consumption. While there are wait times associated with ramp metering that may increase localized greenhouse gas emissions and fuel consumption which can impact the air quality of nearby communities, the overall improvement of traffic flow can reduce the overall environmental impact of the corridor. The Twin Cities Metro Area Ramp Meter Study<sup>1</sup> conducted by the Minnesota Department of Transportation in 2001 identified a net annual savings of 1,160 tons of emissions.
- Benefit vs. Cost – A benefit/cost analysis is a comprehensive analysis to evaluate and compare the cost effectiveness of ramp metering implementation and operation against the 'no ramp metering' condition. The measured benefits of implementing ramp metering systems can outweigh the associated costs by a ratio of 15:1, as concluded in the Twin Cities Ramp Meter Evaluation. A 15:1 benefit/cost ratio is excellent for transportation improvements.
- Equity – Successful ramp metering addresses congestion by installing ramp meters at all on-ramps along a freeway corridor. Caltrans strives to eliminate disparities while improving outcomes for all and not inadvertently harm disadvantaged communities through its decisions. The nature of ramp meters needing to be placed at all on-ramps along a corridor to be successful provides an equitable strategy to mitigate congestion. Also, to reduce on-ramp traffic overflowing onto local streets which can impact local communities living near the on-ramps, ramp meters can increase signal timing to limit the impacts of overflow onto city streets. Metered ramps are intended to be designed to reduce the likelihood of overflow onto local streets and Caltrans actively works to coordinate with local cities and transportation agencies to address these concerns.

Below are several studies that demonstrate the benefits of successful ramp metering programs.

- A past study performed on State Route 94 in San Diego indicated that installing freeway metering improved mainline speeds from below 30 miles per hour (mph) to above 55 mph.
- The August 2008 *I-580 Ramp Metering Before and After Studies – Phase II Final Report*, showed that the installing metering over an 18-mile segment of I-580 in Alameda County led to a 30 percent reduction of travel time.
- The MTC published the *Freeway Performance Initiative: Regional System Efficiency & Integration in the Works* fact sheet detailing the effect of freeway metering deployments since 2007. This fact sheet showed a 30 percent or greater delay reduction on 80 percent of the freeway segments analyzed in the Bay Area.
- The most recent field study conducted by the California Partners for Advanced

Transportation Technology (PATH) with the District 3 Transportation Management Center (TMC) titled the *Field Experiment of Coordinated Ramp Metering* performed field testing of the coordinated ramp metering (CRM) algorithm to determine the technical feasibility of implementing coordinated ramp metering based on real-time data. The field test on State Route (SR) 99 between Elk Grove Boulevard and south of US 50 and SR-99 merge resulted in improving the corridor traffic flow by seven percent. Phase III of the project will integrate arterial corridor intersection traffic signal control into the CRM system.

- The *Twin Cities Metro Area Ramp Meter Study*<sup>1</sup> evaluated the traffic flow and safety impacts of ramp metering by turning off all 430 ramp meters in the Minneapolis/St. Paul area for six weeks as mandated by the 2001 Minnesota Legislature. The results indicated that when ramp meters were turned off, freeway throughput was reduced by nine percent, travel time increased by 22 percent, speed dropped by seven percent, and the number of crashes increased by 26 percent.

## **Caltrans Ramp Metering Program**

### **Status in California**

Since the 1960s, Caltrans has implemented ramp metering to mitigate congestion and protect its investment in the SHS. As of 2022, there are 3,273 ramp meters in California with many more being installed each year.

### **California Freeway Metering Policies**

As stated in latest version of Deputy Directive 35, Caltrans is committed to using ramp metering as an effective traffic management strategy to maximize movement capacity for people and goods, protect the investment made in constructing freeways, minimize the system's impact on the environment, and keep freeways operating at or near capacity. The updated policies in Deputy Directive 35, in conjunction with the state's environmental policies and goals, require that all metered entrance ramps and freeway-to-freeway connectors include an additional High Occupancy Vehicle (HOV) preferential lane. The HOV preferential lanes provide faster discharge rates that support Caltrans' transit and carpools initiatives to prioritize the movement of people rather than vehicles and encourage increased transit usage and carpooling.

Director's Policy 08, "Freeway System Management", Director's Policy 26, "Intelligent Transportation Systems", and the Caltrans Strategic Plan 2020-2024<sup>2</sup> state that Caltrans implements advanced technologies and new processes that combine information, electronic, and communications technologies with management strategies to enhance the Intelligent Transportation System (ITS), Traffic Management System (TMS), and freeway metering systems to produce a coordinated and integrated traffic

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<sup>1</sup> [Minnesota Department of Transportation. \*Twin Cities Metro Area Ramp Meter Study\*.](#)

<sup>2</sup> [California Department of Transportation, \*Caltrans Strategic Plan 2020-2024\*,](#)

management system. The implementation of these policies enhances Caltrans ability to maximize movement capacity for people, goods, and information, while at the same time providing good stewardship of the public's investment in California's transportation infrastructure and minimizing the metering system's impacts on the environment.

In addition to improving the SHS performance, each ramp metering project should improve safety, access, reliability, and mobility for all travelers in California to ensure an equitable transportation network. Caltrans recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system. As with all transportation projects on the SHS, the context of each project location must be consistent with Caltrans Director's Policy 37, "Complete Streets". Highway ramp intersections with local roads are particularly important opportunities for Caltrans to improve pedestrian safety, bicycle safety, and mobility through optimal design and operations. While the Highway Design Manual (HDM) and the Ramp Metering Design Manual (RMDM) are used when developing ramp meter projects, the project team should also reference the Complete Intersections Guide and the Districts' system planning products to ensure the needs of pedestrians and bicyclists are considered.

The Caltrans Local Development Review (LDR) program works with local jurisdictions to mitigate potential adverse impacts of local development projects to the SHS based on the California Environmental Quality Act (CEQA). CEQA requires that potential ramp metering projects are documented on a project-by-project, site-specific basis. Ramp metering can be an appropriate and feasible CEQA-based component of an LDR traffic congestion mitigation plan. As such, the RMDP can be a resource for Caltrans district LDR staff and local communities to identify potential mitigation features for future projects.

### **Ramp Metering Going Forward**

The Division of Traffic Operations works in cooperation with the districts to develop the ramp metering program. The ramp metering program will continue to work to support and integrate with other strategies as Caltrans further develops a TSMO Plan and integrates the TSMO framework into its programs and processes. The TSMO Plan will outline several critical dimensions for more effective TSMO strategies, including businesses processes, systems and technology, and culture. A brief description of how ramp metering supports each dimension is listed below:

- Business processes – including formal scoping planning, programming, and budgeting.
  - The Division of Traffic Operations develops this RMDP as part of the planning and programming process. Additionally, Traffic Operations is working to improve the program budgeting process to allow the districts more flexibility to reallocate funding as needed to support and identify ramp metering strategies that are most effective in their specific regions.
- Systems and technology – including systems architecture, standards, interoperability, and standardizing and documentation.

- Caltrans continues to conduct research to develop and implement new performance ideas and products. For ramp metering, Caltrans has implemented Active Traffic Management Systems (ATMS) and Corridor Adaptive Traffic Management Systems (CATMS) with remote monitoring. By implementing these systems and technologies, Caltrans is working on expanding their implementation by improving and replacing the outdated existing ramp metering TMS elements.
- The Middle Mile Broadband Initiative, which will expand the state's broadband fiber infrastructure through Senate Bill 156, will improve the capability and connectivity of the TMS infrastructure that ramp metering relies on. These connectivity improvements will allow for the further implementation of ATMS and CATMS, which will greatly improve ramp metering performance.
- Improvements to detectors on the mainline and ramps are also needed. In addition to identifying and replacing faulty detectors, Caltrans is researching advanced detector technologies, including inductive loop signature technology which can identify specific vehicle classifications to improve data collection. ITS elements, including off-pavement sensors, such as artificial intelligent cameras and lidar, are also being considered to support ramp metering and improve ATMS and CATMS.
- Regarding ramp metering firmware, Caltrans is progressing toward unified ramp metering firmware that minimizes operational and maintenance costs. A firmware package named Universal Ramp Metering Software (URMS) operating on the Model 2070 Controller is the current statewide standard. Currently, URMS has been fully deployed in Districts 3, 5, 6, 7, 10 and 12. Other districts continue to use their existing ramp metering firmware packages or their existing ramp metering communication protocols while evaluating the URMS for full deployment. District 4 uses the Traffic Operations System (TOS). District 7 uses the Semi-Automatic Traffic Management System (SATMS) as their communication protocol with URMS firmware. District 8 uses the San Diego Ramp Metering System Revision 8 (Rev8). District 11 uses URMS firmware with the SDRMS and REV 8 protocols. District 12 uses URMS firmware with the Orange County Ramp Metering System (OCRMS) and URMS communication protocols. To prevent disruptions to their ramp metering operations, Districts 4, 7, 8, 11, and 12 are carefully and systematically executing their URMS deployment plan for their respective regions.
- The fast development and deployment of Connected and Automated Vehicles (CAV) and Vehicle-to-Everything (V2X) technologies in the automotive and ITS industries present the potential to see unprecedented transportation system improvements. Caltrans is actively focusing on connected infrastructure and V2X technologies to identify how the CAV implementation can be supported. This support includes connected infrastructure where the traffic management infrastructure such as ramp meters would be able to communicate with CAVs.

Opportunities to enhance URMS will be considered in the future to better prepare for the future and meet the new demands.

- As message signs, software, and telecommunications technologies continue to advance and become more cost effective, the Division of Traffic Operations, in close collaboration with California Highway Patrol (CHP) and local partners, will also investigate active traffic management treatments in conjunction with ramp meters to further enhance the effectiveness and safety of ramp metering implementations. Such treatments may include part-time shoulder use, transit and freight priority, queue warning, and real-time driver and active transportation user alerts.
- The Division of Traffic Operations collaborates with the Division of Research, Innovation, and System Information (DRISI) to conduct research. A brief description of ongoing ramp metering research projects are as follows:
  - Congestion-Responsive On-Ramp Metering – Recommendations toward a Statewide Policy: The objective of this research is to analyze the performance improvements associated with implementing extended hour ramp metering and make recommendations for extended hour local traffic responsive on-ramp metering.
  - Congestion-Responsive On-Ramp Metering Before-and-After Studies: The objective of this project was to evaluate the validity of enacting ramp metering in direct response to the varied start and end times of recurrent freeway congestion. This evaluation was done by means of before-and-after field studies on a real-world freeway section supplemented by simulation modeling. Currently, the researchers are working with District 4 staff.
  - Coordination of Freeway Ramp Meters and Arterial Traffic Signals (Phase IIB) – Field Operational Test: Researchers are working with District 4 operations staff on field test site selection. The objective of the field test is to develop software that will coordinate ramp metering and local street traffic signals, to efficiently utilize local street queue storage, and improve overall system performance.
  - Over the past several years, Caltrans has evaluated several ramp metering strategies. The latest strategy is in its third phase of testing, involves field testing along SR-99 in District 3. The University of California PATH modified their Asservissement Linéaire d'Entrée Autoroutière (ALINEA) algorithm for integration of SR-99 freeway metering and local street traffic signal control to further improve mobility, safety, and reduce the energy and emissions impacts of freeway congestion.
  - Caltrans is exploring a statewide policy to utilize traffic-adaptive ramp meters 24 hours a day and seven days a week based on real-time traffic data. Statewide standardization of Caltrans freeway metering operations will alleviate both recurrent and non-recurrent congestion on the SHS. In

preparation for statewide standardization, District 4 has implemented traffic-adaptive ramp metering using fuzzy logic on the I-80 corridor. District 3's CRM demonstration along SR-99 has reported a seven percent improvement in corridor traffic flow.

- Culture – including technical understanding, leadership, policy commitment, outreach, and program authority
  - The Division of Traffic Operations continuously works to train its staff and partners to improve technical understanding and better align the different program functions. The “Fundamentals of Ramp Metering” training has been developed and is being conducted across the State through the “Traffic Mobility Workshop.” The target audience includes operations engineers, project engineers, project managers, resident engineers, planners, and local agency staff. Ramp metering topics are covered in the “Project Engineer Academy.” These training sessions promote ramp metering as an effective strategy throughout the planning, design, and construction phases.

### **Ramp Metering Funding**

The SHOPP is one of the primary funding sources for ramp metering and the primary program available to Caltrans to execute the “Asset Management Plan.” Senate Bill 1 (SB 1), the “Road Repair and Accountability Act of 2017”, invests \$54 billion over ten years to fix roads, freeways, and bridges in communities across California. SB 1 provides support for state and local systems to meet four critical needs: congestion relief, trade corridor improvements, improved transit and rail travel, and pedestrian and cyclist safety.

The SHOPP Ten Year Plan is developed under legislative directive, which supports Caltrans “fix-it-first” approach, sustainability, stewardship, efficiency, and system performance goals. For each SHOPP cycle, the priorities are evaluated for funding through the goals established in the Caltrans *Strategic Plan 2020-2024*. Ramp meter replacement could be funded through SHOPP as part of a “fix-it-first” project when the metering equipment exceeds its service life or obsolete. Over the next ten years, 60 percent of Caltrans' existing ramp meters must be replaced due to their end of service life. These ramp meters are identified in the 2021 SHOPP for 2022/23 through FY 2025/26. As SHOPP projects are programmed and planned, they will continue to address the repair and replacement of ramp meters in addition to new installations where operational efficiency is most needed.

The Caltrans System Investment Strategy (CSIS) establishes a framework with standard methodologies to guide transportation investments in alignment with the CAPTI. The installation of new ramp meters can be funded through non-SHOPP projects seeking funding through the Solutions for Congested Corridors Program (SCCP). Ramp metering aligns with the following CSIS criteria:

- Mode shift – Ramp metering facilitates mode shifting through the use of HOV preferential lanes to prioritize the transit and carpool lane.

- Vehicle Miles Travelled (VMT) – Ramp metering improves highway system performance by preserving the existing capacity rather than expanding capacity and increasing VMT. HOV preferential lanes at ramp meters also encourage carpools and transit usage through improved travel time reliability which reduces VMT.
- Safety – Ramp metering is proven to improve corridor safety through the reduction of dangerous merging maneuvers which decreases freeway collisions in alignment with the SSA.
- Climate Change – Ramp metering smooths the flow of traffic which reduces greenhouse gas emissions by reducing congestion.

## **Ramp Metering High-Priority Location Selection**

The following criteria are commonly used by Caltrans to identify potential ramp metering locations:

- Deputy Directive 35 and the RMDM.
- Mitigate traffic safety during freeway merging operations.
- Mitigate current or future mainline congestion or other operational issues.
- Improve operations by closing gaps of unmetered ramp entrances.
- Respond to requests or complaints from the public or local agencies.
- Implement projects within the ten-year planning horizon of the RMDP.
- Meet state's environmental performance policies and goals
- Meet performance goals in SHOPP's ten-year plan, CSMPs, and planning documents, such as and Regional Concept for Transportation Operations.

In addition to the guidance and policy set forth in the latest version of Deputy Directive 35 and the RMDM, districts may use additional criteria to address local needs. For District criteria, refer to the ramp metering strategies discussed in each of the 2023 RMDP district sections.

Once funding becomes available, further prioritization of the planned ramp metering locations is determined. The CSMP guidelines and Mobility Performance Reports (MPR), that identify existing bottleneck locations, are generally used to identify locations for ramp metering. Operational experience also plays a significant role in the prioritization process. Documents such as Regional Transportation Plans, Transportation Concept Reports, District System Management Plans, the Transportation Management System Master Plan, and Climate Action Plan for Transportation Infrastructure provide additional justification for the prioritization. In addition, district Managed Lanes System Plans currently under development can be used to identify future ramp metering locations. Since the ramp metering HOV preferential lane breaks HOV platoons, it can be used a strategy to reduce managed lane degradation.

Based on freeway congestion and unique geographical characteristics, Districts establish high-priority ramp metering locations. These locations are considered the most critical to mitigate local congestion and are highlighted in gray in each district's list of freeway meters in the 2023 RMDP. It should be noted that the prioritized locations do not represent a commitment for funding by Caltrans or others. The high-priority ramp metering locations should be nominated for funding or incorporated into other capital improvement projects when opportunities arise.

Preliminary conceptual cost ranges for high-priority ramp metering locations were provided by district personnel for advance planning purposes. The average conceptual cost shown in the district narratives is derived from the conceptual construction cost estimates listed in Table 1-1. Actual cost estimates for each project will be determined in the PID phase.

**Table 1. 2023 Ramp Metering Conceptual Construction Cost Estimates**

<b>Number of Lanes Proposed</b>	<b>Electrical Cost (\$K)*</b>	<b>Civil Cost (\$K)**</b>	<b>Total Cost (\$K)***</b>
1-Lane	175	312.5	487.5
2-Lane	200	925	1,125
3-Lane	337.5	1062.5	1,400
Connector Ramp Meter	1,025	1,400	2,425

\*Electrical cost includes electrical equipment (metering signals, conduit, controller cabinets, controllers, advance warning signs, and detectors).

\*\*Civil Cost includes civil work to widen freeway entrance ramps and connectors, maintenance vehicle pullout (MVP), CHP enforcement area, signing, and striping.

\*\*\*Generally, estimates are for typical freeway entrance ramps and connectors with no structural work and right of way acquisition. Longer and shorter freeway entrance ramps and connectors will vary from the above estimates. Estimates provided does not include support cost (approximately 33 percent) or contingencies cost (approximately 25 percent). These estimates do not include traffic control, modification to existing drainage, removal of sound walls, barriers, and Midwest Guardrail System (MGS).

### **General Comparison with the 2023 and 2017 Statewide RMDP**

Table 1-2, 1-3, and 1-4 below show the summary ramp metering location information as contained in the 2023, 2017, and 2015 RMDPs. The 2023 RMDP shows a statewide total of 3,273 existing freeway meters, which is 259 more than the 2017 RMDP.

The 2023 RMDP lists the 1,684 metering locations planned for the next ten years. Except for District 1 and District 9, all districts plan to install additional ramp meters.

View [Geographic Information System data of metered freeway locations](#).

**Table 2. 2023 RMDP Metering Locations by District**

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	Total
Existing	0	0	235	893	9	95	1,030	336	0	43	333	327	3,273
Planned	0	11	265	463	56	135	195	208	0	162	188	3	1,673
Total	0	11	500	1,356	65	230	1,225	544	0	205	521	330	4,946

**Table 3. 2017 RMDP Metering Locations by District**

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	Total
Existing	0	0	197	734	6	87	1,029	306	0	2	322	331	3,014
Planned	0	11	230	612	33	136	200	227	0	173	199	19	1,840
Total	0	11	427	1,346	39	223	1,229	533	0	175	521	350	4,854

**Table 4. 2015 RMDP Metering Locations by District**

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	Total
Existing	0	0	210	708	6	76	1,025	278	0	2	318	331	2,954
Planned	0	11	148	637	20	130	192	241	0	169	130	19	1,697
Total	0	11	358	1,345	26	206	1,217	519	0	171	448	350	4,651

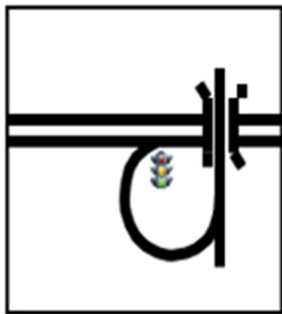
## Data Field Definitions

The TMS Inventory database contains information that includes the following: county, route, post mile, funding information, installation date, controller type, controller software, and controller communication medium. Many of the TMS Inventory database fields are not relevant to the RMDP, therefore, the RMDP is a subset of the TMS inventory information. The data fields used in the RMDP are defined by the TMS inventory database. Eleven data fields are used to describe each ramp metering location contained in the RMDP: Status, District, County, Route, Post Mile, Direction, Location, Ramp Type, Number of Lanes, High Occupancy Vehicle-Preferential Lane, and Comments.

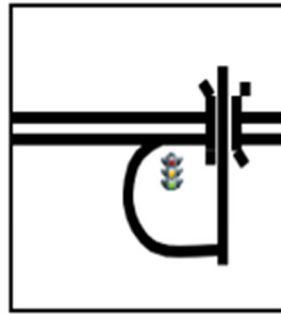
A detailed description of each field is provided as follows:

1. **Status:** A black dot (●) identifies existing freeway metering locations. This includes locations where there are operational freeway meters or locations where freeway metering hardware is fully installed and accepted by the Division of Traffic Operations but currently not activated (non-operational). Freeway meters that are in construction are identified as “planned” freeway metering locations.
2. **District:** A management region defined by Caltrans. There are 12 Caltrans districts.
3. **County:** The largest territorial division for local government within California.
4. **Route:** The legislatively identified number for major highways connecting two or more destinations.
5. **Post Mile:** A number designating a unique location on a roadway measured in miles from the county line. This value may include an alphabetic prefix or suffix, which indicates roadway realignment. Post miles begin at zero at the county line and generally increase from west to east and from south to north.
6. **Direction:** The following direction identifiers are used in the RMDP:
  - NB = Northbound
  - SB = Southbound
  - EB = Eastbound
  - WB = Westbound
7. **Location:** The name of the adjacent road, arterial, or connecting freeway from which traffic enters the freeway entrance ramp and connector.
8. **Ramp Type:** The configuration of a dedicated road facility providing a connection between two roadways; at least one of the roadways a ramp connects to is typically a high-speed facility such as a freeway. The following entrance ramp types are identified in the RMDP:

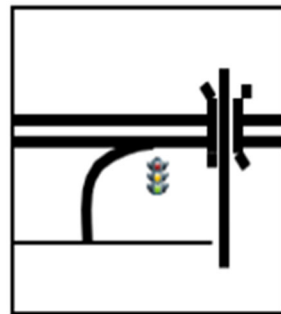
- L = Loop
- H = Hook
- C = Freeway-to-freeway connector or flyover
- S = Slip or diagonal
- D = Collector/distributor/angle
- M = Metered HOVPL



Free Flow Loop



Partial Cloverleaf Loop



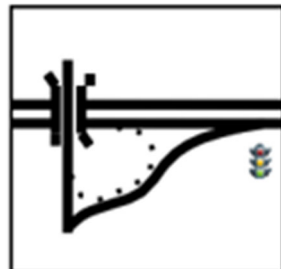
Hook



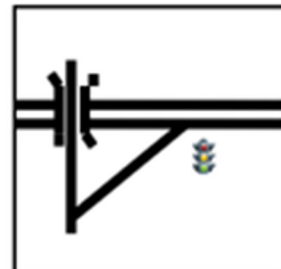
Freeway to Freeway  
Connector



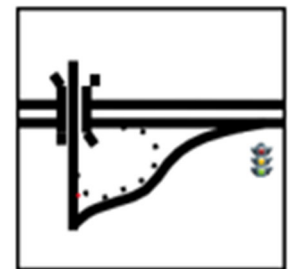
Direct Connection  
Diagonal



Outer Connection  
Diagonal



Diagonal



Diamond/Angel

9. **Number (#) of Lanes:** A numeric value describing the total number of lanes present at the meter limit line.

10. **High Occupancy Vehicle-Preferential Lanes (HOVPL):** HOVPL are designated for vehicles with a specified minimum number of occupants may also be for low-emission vehicle models. The following HOVPL types are identified in the RMDP:

- M = Metered HOVPL
- NM = Non-metered HOVPL
- Blank Space = No HOVPL present

11. **Operational Status:** Where applicable the comment section of the RMDP will include the following terms to describe the status of the freeway meter. The comment section can also include district-specific comments which are

described in the district's narrative:

- Operational – Freeway meter is currently actively metering.
- Non-Operational (Non-Op) – Freeway metering hardware is fully installed and accepted by the Division of Traffic Operations, but it is currently not activated.
- Partially Constructed (Part Constr.) – Freeway meter in construction, or just the underground equipment is constructed, with no controller/signs/signal standards in place.
- Planned – Metering non-existent; only planned, proposed, or programmed.

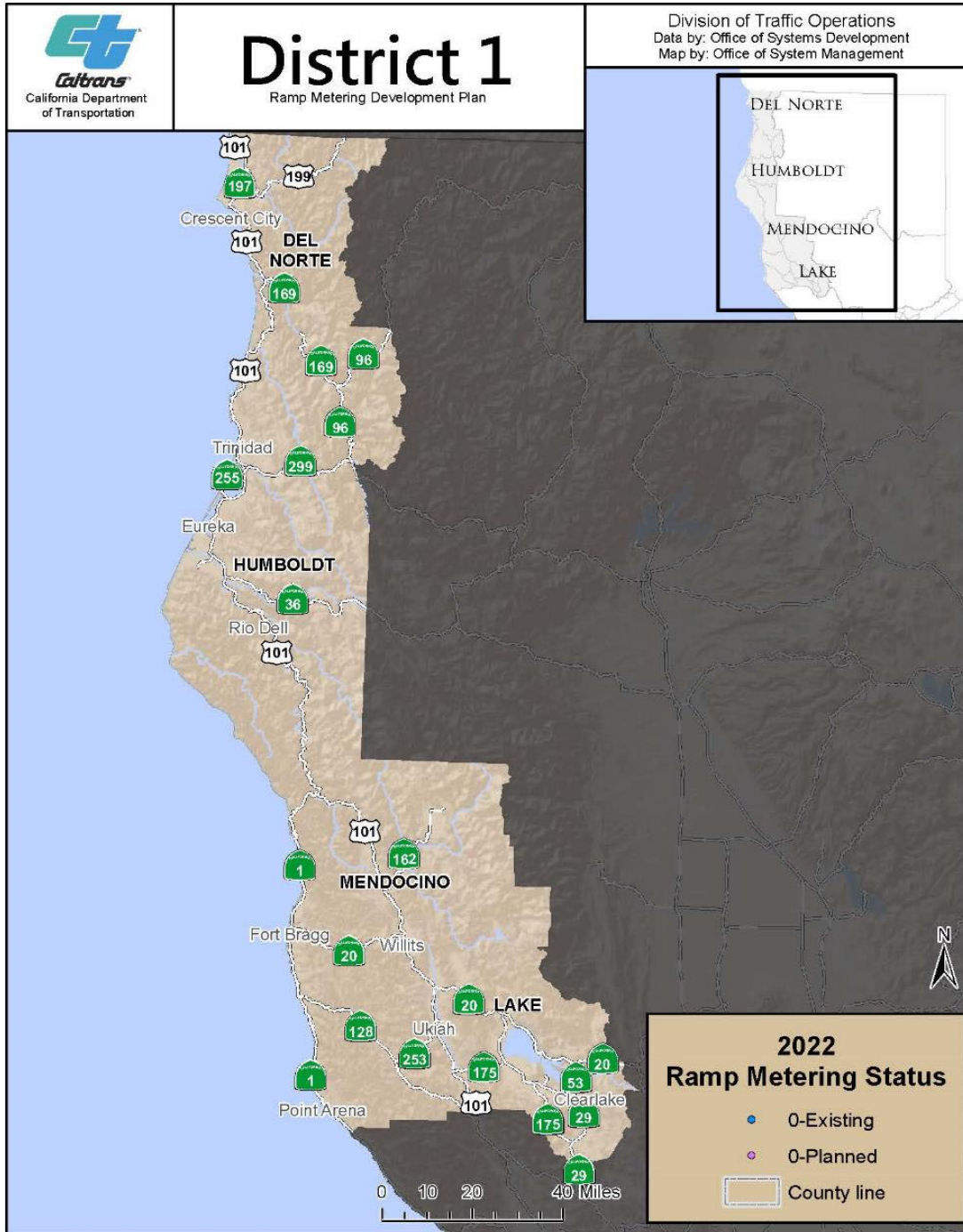
12. Districts establish high-priority freeway metering locations. These planned locations are considered the most critical to mitigate local congestion and are highlighted in gray in each district's list of metered freeway locations.

# 2023 Ramp Metering Development Plan Map



# District 1

Figure 1. District 1 Ramp Metering Map



## **District 1 Ramp Metering Narrative**

District 1, primarily a rural District with headquarters located in Eureka it is composed of four counties: Del Norte, Humboldt, Lake, and Mendocino. District 1 has a population of 317,395 in an area of 9,348 square miles. This makes it the third most sparsely populated Caltrans District with only 34 people per square mile. There are 947 centerline miles and 2,394 lane-miles of highway managed by Caltrans in District 1.

District 1, also known as the "North Coast," depends on its highway infrastructure for both commerce and tourism. United States Route 101 (US-101), traversing north to south through the heart of the district, has often been characterized as the "lifeline of the North Coast."

### **Current or Planned Ramp Metering Routes**

No routes have current or planned ramp metering in District 1 as illustrated in the district's map on the previous page.

### **Congestion Challenges**

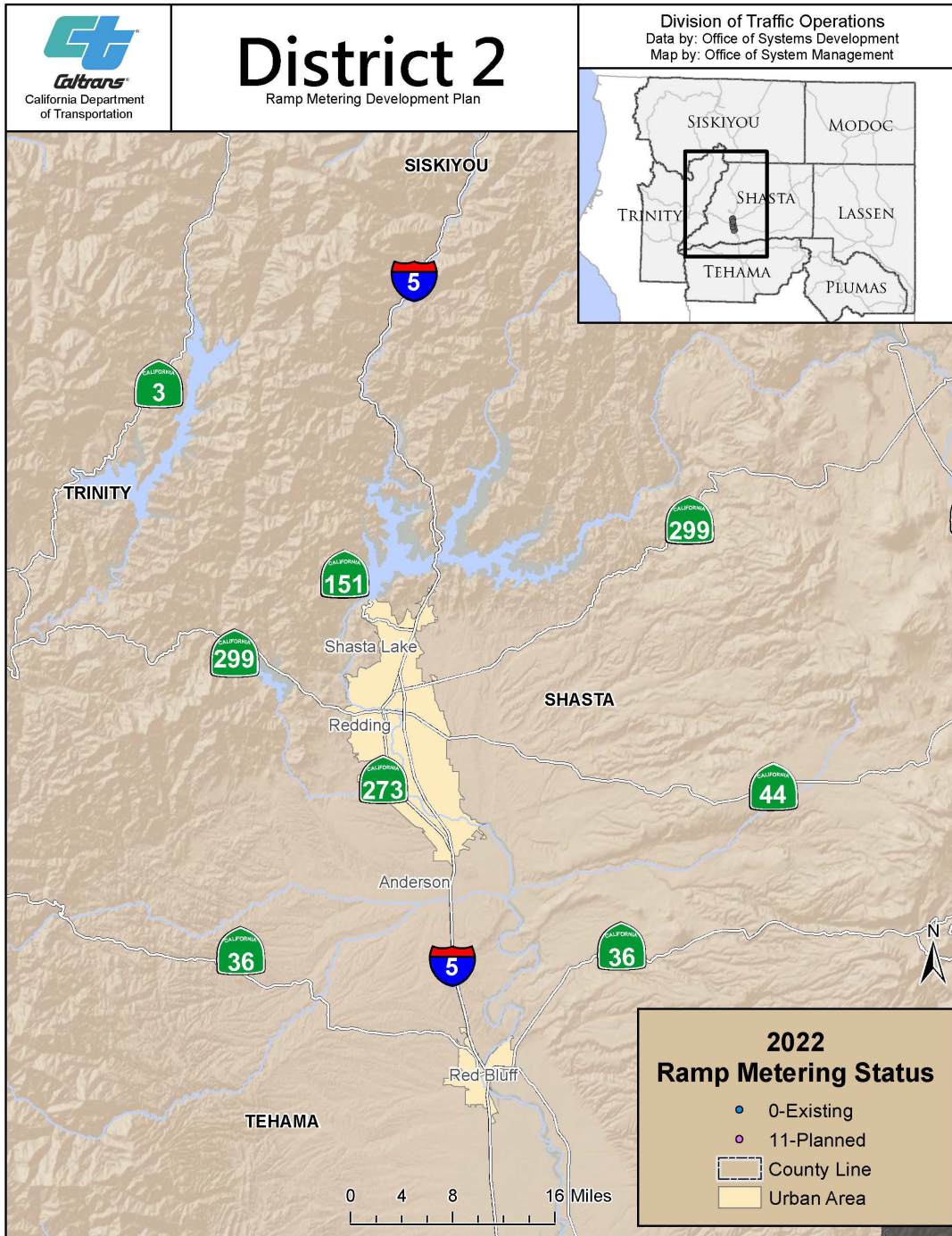
No regular or serious congestion issues occur on District 1 freeway corridors that can be addressed by ramp metering.

### **District Ramp Metering Strategies**

Recurrent urban freeway congestion is not sufficient to justify ramp meters in the ten-year horizon of the RMPD.

# District 2

Figure 2. District 2 Ramp Metering Map



## **District 2 Ramp Metering Narrative**

District 2 is composed of seven counties in the northeast portion of California: Tehama, Shasta, Trinity, Siskiyou, Plumas, Lassen, and Modoc. The counties are rural in nature except for Redding/Anderson urban area in Shasta County. District 2 has a population of approximately 360,000 in 27,307 square miles, with a density of about 13 people per square mile. This makes it the second most sparsely populated district. Caltrans manages 1,752 centerline miles and 4,038 highway lane-miles in District 2.

### **Current or Planned Ramp Metering Routes**

Interstate 5 (I-5) and State Route 44 (SR-44). District 2 has no existing ramp meters and 11 planned ramp meters. Due to a road-widening project, the 11 ramp meters are planned near the end of the ten-year period covered by the RMDP. Currently there are no proposed high-priority locations in District 2. The ramp meter locations are illustrated on the district's RMDP map.

### **Congestion Challenges**

Some non-freeway routes within District 2 experience sporadic congestion during summer months. However, ramp metering is not an appropriate option for these facilities. Recurring congestion within the district is generally limited to peak periods on portions of facilities located in the northern end of the Sacramento Valley between the cities of Redding (Shasta County) and Red Bluff (Tehama County). I-5 is the primary highway serving this area and is the focus of the District 2 ramp metering effort.

### **District Ramp Metering Strategies**

District Directive DD-10, "Freeway Ramp Meter Implementation", contains the criteria for consideration of ramp metering for freeway and interchange projects within District 2. The directive establishes four levels of ramp meter implementation based on projected ten-year peak-hour traffic density on mainline highway lanes. Ramp meters are included in the RMDP although they are expected to be required and fully operational outside of the ten-year period.

**Table 5. District 2 Ramp Metering Development Plan**

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	2	SHA	5	9.65	SB	Knighton Rd				Planned
	2	SHA	5	9.90	NB	Knighton Rd				Planned
	2	SHA	5	11.96	SB	S Bonnyview				Planned
	2	SHA	5	12.26	NB	S Bonnyview				Planned
	2	SHA	5	14.28	SB	Cypress				Planned
	2	SHA	5	14.76	NB	Cypress				Planned
	2	SHA	5	17.05	SB	Lake Blvd				Planned
	2	SHA	5	17.57	NB	Lake Blvd				Planned
	2	SHA	5	17.92	SB	Twin View Blvd				Planned
	2	SHA	5	18.22	NB	Twin View Blvd				Planned
	2	SHA	44	0.13	WB	Dana Dr				Part Const

# District 3

Figure 3. District 3 Ramp Metering Map 1

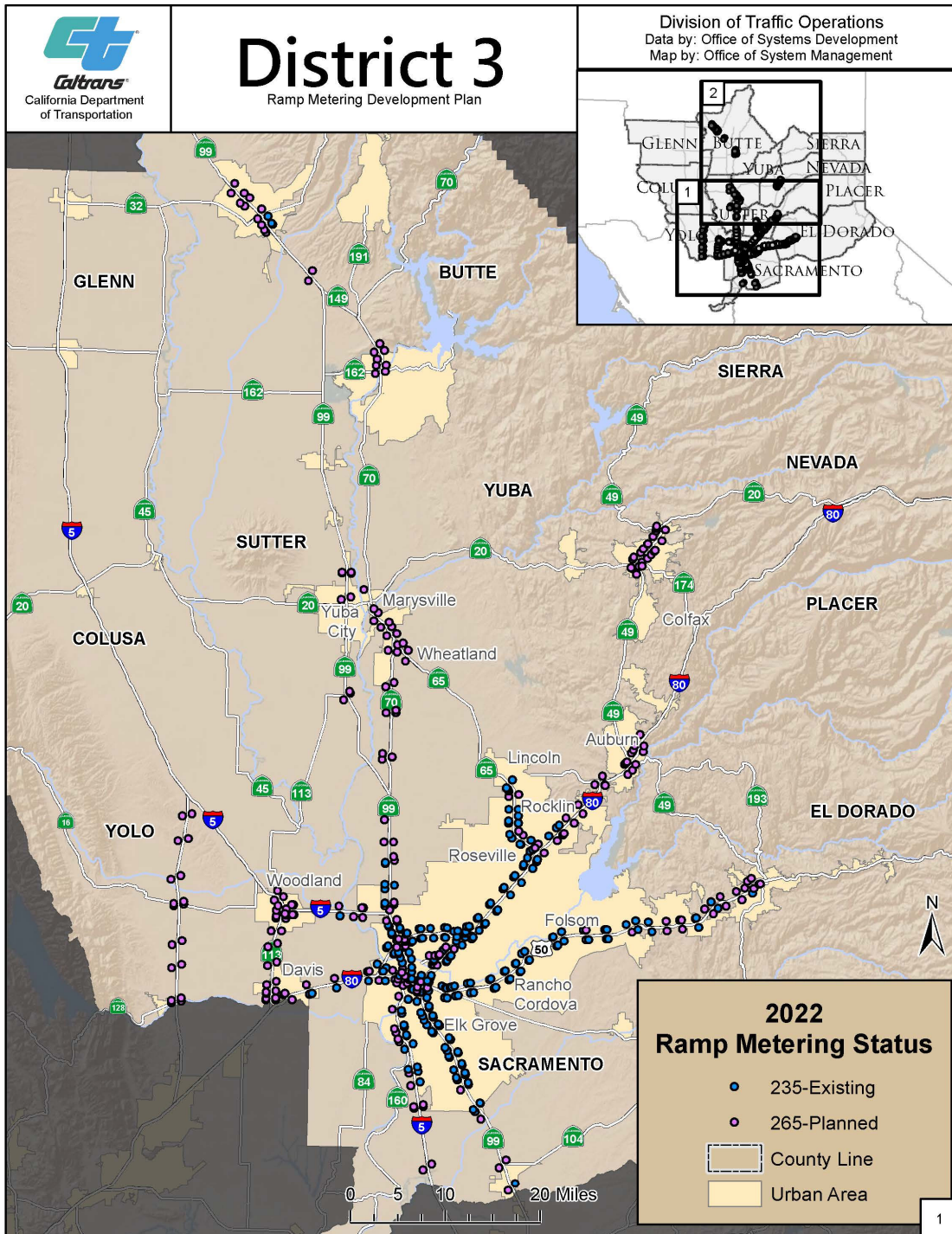
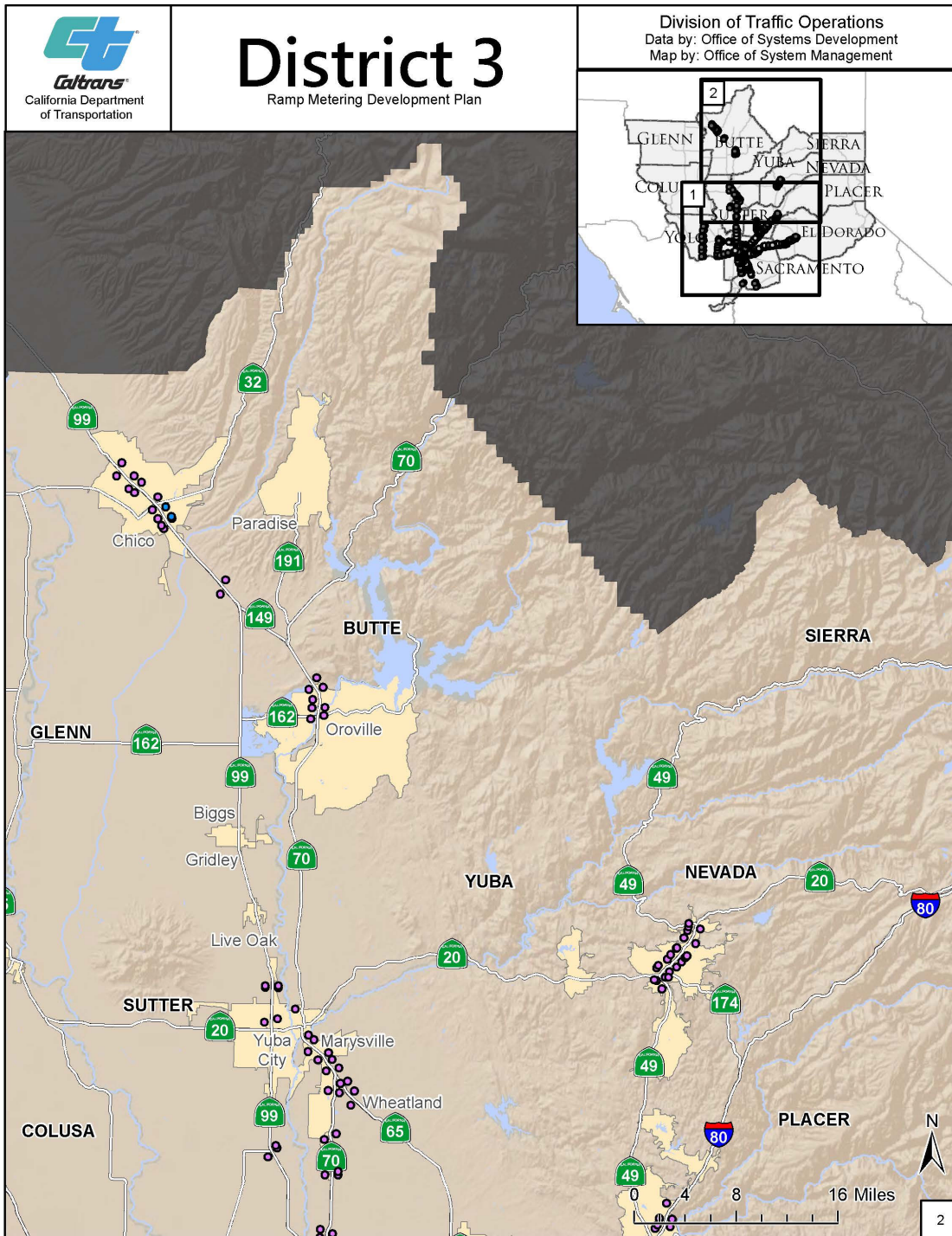


Figure 4. District 3 Ramp Metering Map 2



## **District 3 Ramp Metering Narrative**

District 3 is composed of 11 counties in the Sacramento Valley and Northern Sierras: Glenn, Butte, Colusa, Sierra, Sutter, Yuba, Placer, El Dorado, Sacramento, Yolo, and Nevada. Most of these counties are rural in nature except for the major urban areas of the Sacramento Region. District 3 has a 2021 population estimate of 2,837,366, which represents 7.2 percent of the total state population and saw a population increase of 0.5 percent from 2020 to 2021. District 3 was responsible for maintaining 3,004 directional rural and urban mainline miles in 2021.

### **Routes with Current or Planned Ramp Metering**

Ramp meters in District 3 are currently in operation, or planned to be installed on I-5, I-80, I-505, US-50, SR-20, SR-49, SR-51, SR-65, SR-70, SR-99, SR-113, and SR-160. There are 235 existing and 265 planned ramp meters on these routes for a projected total of 500 ramp meters for the ten-year period covered by the RMDP. Ramp meter locations are illustrated in the district's map.

### **Congestion Challenges**

Congestion is a common occurrence in the Sacramento metropolitan area due to heavy directional commute traffic and the large volume of interregional truck traffic. The City of Sacramento is the major hub in the Central Valley for the movement of goods, services, jobs, and recreational traffic. I-5 and SR-99 are major north-south routes, and I-80 and US 50 are the major east-west routes through District 3. The rate of commercial and residential development in the area continues to be among the highest in the State, which places stress on the transportation infrastructure.

According to the District 3 2021 *Mobility Performance Report*, which utilizes Performance Measurement System (PeMS) data, there was a 6.1 percent increase of 13.2 million VMT compared to 2020. Vehicle hours of delay (VHD) for 2021 reported an annual district-wide total of 2.7 million VHD at 35 miles per hour (mph) and 9.6 million VHD at 60 mph. This was an increase of 15.8 percent VHD at 35 mph and 21.3 percent increase in VHD at 60 mph. The increase in VMT and VHD between 2020 and 2021 is attributable to the significant change in travel patterns during the initial onset of the COVID-19 pandemic and those travel patterns almost returning to pre-pandemic levels in 2021.

### **District Ramp Metering Strategies**

The district's ramp metering strategies follow guidance and policy set forth in latest version of Deputy Directive 35, the RMDM, and the HDM. Planned and existing ramp meter locations are included in the RMDP. Individual interchanges and freeway segments are regularly monitored, and ramp metering needs are prioritized. The RMDP is consistent with the Sacramento Area Council of Governments Metropolitan Transportation Plan and a part of District 3's overall strategy for providing mobility and congestion relief.

Most traffic congestion occurs in urban or developed areas. As a result, most of the existing and future ramp meters have been identified for these locations. New interchanges near developed areas as well as existing interchanges where development encroaches were added to the RMDP list. Currently, there are 228 existing activated ramp meters in District 3.

The CRM algorithm is currently being used on a segment of SR-99 and is also being studied for district-wide application. After conducting pilot projects and studies in 2019 with successful results, District 3 completed the transition to expand hours of ramp metering along all its corridors, except for locations under construction, to demand-based, 24 hours a day, and 7 days a week. Expanded hours of operation helps to manage traffic congestion during typical non-peak periods such as weekends and during incidents.

### **Ramp Metering Priorities**

Ramp metering is an effective strategy to alleviate congestion in corridors prone to bottleneck conditions. Corridors are evaluated and if chronic congestion and bottleneck conditions occur, the entire corridor is then targeted for ramp metering. This is because placing a ramp meter only at the location of the bottleneck tends to move the bottleneck to a non-metered ramp, so the entire corridor benefits from continuous metering. District 3 has prioritized adding meters to all non-metered ramps, as well as non-metered HOV preferential lanes, on interchanges within corridors that have current or projected congestion issues.

The locations listed in the following table are along corridors that have bottlenecks identified. Chosen locations for ramp metering experience severe peak hour congestion. HOV preferential lanes are provided wherever ramp meters are installed, and each HOV preferential lane should be metered as per the policies identified in the RMDM. However, HOV preferential lanes cannot be installed at all locations due to the geometric constraints of that ramp configuration. When these preferential lanes are not installed, a Policy Exception is required.

**Table 6. District 3 Ramp Metering Development Plan**

High Priority Locations

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	3	BUT	70		13.70	WB	SR-162	C	1		Planned
	3	BUT	70		14.06	EB	SR-162	C	1		Planned
	3	BUT	70		14.47	WB	Montgomery St	S	1		Planned
	3	BUT	70		14.73	EB	Montgomery St	S	1		Planned
	3	BUT	70		15.29	WB	Grant Ave	S	1		Planned
	3	BUT	70		15.89	EB	Nelson Rd	S	1		Planned
	3	BUT	70		16.47	WB	Garden Dr	S	1		Planned
	3	BUT	70		16.77	EB	Garden Dr	S	1		Planned
	3	BUT	99		23.69	SB	Durham-Pentz Rd	S	1		Planned
	3	BUT	99		24.15	NB	Durham-Pentz Rd	S	1		Planned
	3	BUT	99		30.45	SB	EB Skyway Rd	S	1		Planned
	3	BUT	99		30.65	NB	EB Skyway Rd	L	2		Part Const
	3	BUT	99		30.70	SB	WB Skyway Rd	L	1		Planned
	3	BUT	99		30.82	NB	WB Skyway Rd	S	2		Part Const
	3	BUT	99		31.32	SB	E 20th St	S	2		Planned
	3	BUT	99		31.68	NB	E 20th St	S	2		Part Const
	3	BUT	99		32.26	SB	E 8th St/SR-32	S	1		Planned
	3	BUT	99		32.54	NB	E 8th St/SR-32	S	2		Planned
	3	BUT	99		34.79	SB	E 1st St	S	2		Planned
	3	BUT	99		35.07	NB	E 1st St	S	1		Planned
	3	BUT	99		34.22	NB	Cohasset Rd	L	1		Planned
	3	BUT	99		34.27	SB	Cohasset Rd	L	1		Planned
	3	BUT	99		34.79	SB	East Ave	S	1		Planned
	3	BUT	99		35.07	NB	East Ave	S	1		Planned
	3	BUT	99		36.13	SB	E Eaton Ave	S	1		Planned
	3	BUT	99		36.48	NB	E Eaton Ave	S	1		Planned
●	3	ED	50		0.69	WB	El Dorado Blvd	S	3	NM	Operational
	3	ED	50		1.04	EB	Latrobe Rd	S	1		Planned
●	3	ED	50	R	1.77	EB	Silva Valley/White Rock Rd	L	2		Operational
●	3	ED	50	R	1.70	WB	Silva Valley Pkwy	S	2	NM	Operational
	3	ED	50	R	3.06	WB	Bass Lake Rd	S	1		Part Const
	3	ED	50	R	3.43	EB	Bass Lake Rd	S	1		Part Const
	3	ED	50		4.92	EB	Cambridge Rd	L	2		Planned
	3	ED	50		5.00	WB	Cambridge Rd	L	2		Planned
	3	ED	50		6.41	WB	SB Cameron Park Dr	S	2		Planned
	3	ED	50		6.60	WB	NB Cameron Park Dr	L	2		Planned
	3	ED	50		6.71	EB	Cameron Park Dr	S	2		Planned

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status	
•	3	ED	50	R	8.40		WB	SB Ponderosa Rd	S	1		Part Const
•	3	ED	50	R	8.54		EB	Ponderosa Rd/ S Shingle Rd	L	1		Part Const
•	3	ED	50	R	8.59		WB	NB S Shingle Rd	L	1		Part Const
	3	ED	50	R	10.14		WB	Shingle Springs Dr	S	2		Planned
	3	ED	50	R	10.48		EB	Shingle Springs Dr	S	2		Planned
•	3	ED	50	R	11.08		WB	Red Hawk Pkwy	S	1		Operational
•	3	ED	50	R	11.37		EB	Red Hawk Pkwy	S	1		Operational
	3	ED	50	R	11.99		WB	Greenstone Rd	S	1		Planned
	3	ED	50		12.47		EB	Greenstone Rd	S	1		Planned
	3	ED	50		13.87		WB	El Dorado Rd	S	1		Planned
	3	ED	50		14.13		EB	El Dorado Rd	S	1		Planned
	3	ED	50	R	14.85		WB	Missouri Flat Rd	S	3		Planned
•	3	ED	50	R	15.13		EB	Missouri Flat Rd	S	2		Operational
	3	ED	50		15.75		WB	Placerville Dr	S	1		Planned
	3	ED	50		15.98		EB	Forni Rd	H	1		Planned
	3	ED	50		16.37		WB	Ray Lawyer Dr	S	1		Planned
•	3	ED	50		16.47		EB	Ray Lawyer Dr/ Forni Rd	H	2	M	Operational
	3	ED	50		17.12		EB	Placerville Dr	S	1		Planned
	3	NEV	20		12.02		WB	Mill St	S	1		Planned
	3	NEV	20		12.08		EB	McCourtney Rd	S	1		Planned
	3	NEV	20		12.47		EB	W Empire St	S	1		Planned
	3	NEV	20		12.73		WB	S Auburn St	S	1		Planned
	3	NEV	20		13.25		EB	Bennett St	S	1		Planned
	3	NEV	20		13.40		WB	E Main St	S	1		Planned
	3	NEV	20		13.66		EB	Idaho Maryland Rd	L	1		Planned
	3	NEV	20		14.05		WB	Dorsey Dr	S	1		Planned
	3	NEV	20		14.33		EB	Dorsey Dr	S	1		Planned
	3	NEV	20		14.73		WB	SB Brunswick Rd	S	1		Planned
	3	NEV	20		14.77		EB	SB Brunswick Rd	L	1		Planned
	3	NEV	20		14.82		WB	NB Brunswick Rd	L	1		Planned
	3	NEV	20		14.87		EB	NB Brunswick Rd	S	1		Planned
	3	NEV	20		15.80		WB	Gold Flat Rd	S	1		Planned
	3	NEV	20		16.04		EB	Gold Flat Rd	S	1		Planned
	3	NEV	20		16.64		WB	Sacramento St	S	1		Planned
	3	NEV	20		17.28		EB	Washington St	S	1		Planned
	3	NEV	20		16.86		WB	Broad St	S	1		Planned
	3	NEV	20		17.24		WB	Coyote Rd	S	1		Planned
	3	NEV	49		13.56		SB	McKnight Wy	S	1		Planned
	3	NEV	49		13.75		NB	McKnight Wy	S	1		Planned

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	3	NEV	49		14.35	SB	W Empire St	S	1		Planned
	3	PLA	65	R	5.23	NB	WB I-80	H	1		Planned
●	3	PLA	65	R	5.70	SB	Galleria Blvd	S	3	M	Operational
●	3	PLA	65	R	6.15	NB	Stanford Ranch Rd	S	3	M	Operational
●	3	PLA	65	R	6.93	SB	EB Pleasant Grove	S	2		Operational
●	3	PLA	65	R	7.03	SB	WB Pleasant Grove	L	2	NM	Operational
	3	PLA	65	R	7.14	NB	Pleasant Grove Blvd	L	2		Planned
●	3	PLA	65	R	7.91	SB	EB Blue Oaks	S	2	NM	Operational
	3	PLA	65	M	8.01	NB	Blue Oaks Blvd	L	2		Planned
●	3	PLA	65	M	8.21	SB	WB Blue Oaks	L	1		Operational
●	3	PLA	65	R	9.18	SB	EB Sunset Blvd	S	3	NM	Operational
●	3	PLA	65	R	9.20	NB	WB Sunset Blvd	S	2	NM	Operational
●	3	PLA	65	R	9.41	SB	WB Sunset Blvd	L	2	NM	Operational
●	3	PLA	65	R	9.98	NB	EB Sunset Blvd	L	2	NM	Operational
●	3	PLA	65	R	10.63	SB	Whitney Ranch Pkwy	L	1		Operational
●	3	PLA	65	R	10.66	NB	Whitney Ranch Pkwy	S	1		Operational
	3	PLA	65	R	11.95	SB	Twelve Bridges	L	2		Planned
	3	PLA	65	R	12.20	NB	Twelve Bridges	S	2		Planned
●	3	PLA	65	R	12.85	SB	Industrial Blvd	S	2		Operational
	3	PLA	65	R	13.26	SB	EB Ferrari Ranch Rd	S	2		Planned
●	3	PLA	65	R	13.44	SB	WB Ferrari Ranch Rd	L	2	NM	Operational
●	3	PLA	65	R	13.56	NB	Ferrari Ranch Rd	S	2	NM	Operational
●	3	PLA	80		0.17	WB	EB Riverside Ave	S	2		Operational
●	3	PLA	80		0.37	WB	WB Riverside Ave	L	1		Operational
●	3	PLA	80		0.41	EB	Auburn Blvd	S	3	NM	Operational
●	3	PLA	80		1.81	WB	EB Douglas Blvd	S	1		Operational
●	3	PLA	80		1.99	WB	WB Douglas Blvd	L	2		Operational
●	3	PLA	80		2.20	EB	Douglas Blvd	S	2		Operational
●	3	PLA	80		2.81	WB	Atlantic St	S	3		Operational
●	3	PLA	80		3.01	EB	EB Eureka Rd	L	1		Operational
●	3	PLA	80		3.24	EB	WB Eureka Rd	S	3	NM	Operational
●	3	PLA	80		3.61	WB	Taylor Rd	S	1		Operational
	3	PLA	80		3.95	WB	SR-65	C	2		Planned
	3	PLA	80		4.50	EB	SR-65	C	1		Planned
	3	PLA	80		5.93	WB	Rocklin Rd	S	2		Planned
	3	PLA	80		6.27	EB	Rocklin Rd	S	1		Planned
	3	PLA	80		7.10	EB	SB Sierra College Blvd	L	1		Planned

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	3	PLA	80		7.10	WB	SB Sierra College Blvd	S	2	NM	Operational
	3	PLA	80		7.34	EB	NB Sierra College Blvd	S	2		Planned
•	3	PLA	80		7.51	WB	NB Sierra College Blvd	L	2	NM	Operational
	3	PLA	80		8.57	WB	Horseshoe Bar Rd	S	1		Planned
	3	PLA	80		8.86	EB	Horseshoe Bar Rd	S	1		Planned
	3	PLA	80		10.27	EB	Penryn Rd	L	1		Planned
	3	PLA	80		10.44	WB	Penryn Rd	L	1		Planned
	3	PLA	80		13.67	WB	Newcastle Rd	S	1		Planned
	3	PLA	80		13.79	EB	Newcastle Rd	S	1		Planned
	3	PLA	80		14.32	WB	SR-193	L	1		Planned
	3	PLA	80		14.52	EB	SR-193	S	1		Planned
	3	PLA	80		16.96	EB	Ophir Rd	S	2		Planned
	3	PLA	80		17.19	WB	Nevada St	H	1		Planned
	3	PLA	80		17.49	WB	SR-49	S	1		Planned
	3	PLA	80		17.60	EB	SR-49	S	1		Planned
	3	PLA	80		17.75	WB	Elm Avenue	S	1		Planned
	3	PLA	80		17.91	EB	Elm Avenue	S	1		Planned
	3	PLA	80		18.79	WB	Russell Road	H	1		Planned
	3	PLA	80	R	19.31	WB	Auburn Ravine Rd	S	1		Planned
	3	PLA	80	R	19.57	EB	Auburn Ravine Rd	S	1		Planned
	3	PLA	80	R	20.00	WB	Bowman Undercrossing	S	1		Planned
	3	PLA	80	R	20.26	EB	Bowman Undercrossing	S	1		Planned
	3	PLA	80	R	20.98	WB	Bell Rd	S	1		Planned
	3	SAC	5		1.93	SB	Twin Cities Rd	S	1		Planned
	3	SAC	5		2.33	NB	Twin Cities Rd	S	1		Planned
	3	SAC	5		8.44	NB	EB Hood Franklin Blvd	L	1		Planned
	3	SAC	5		8.44	SB	EB Hood Franklin Blvd	S	1		Planned
	3	SAC	5		8.65	SB	WB Hood Franklin Blvd	L	1		Planned
	3	SAC	5		8.65	NB	WB Hood Franklin Blvd	S	1		Planned
	3	SAC	5		10.88	SB	Elk Grove Blvd	L	2		Planned
•	3	SAC	5		11.11	NB	Elk Grove Blvd	S	3	NM	Operational
	3	SAC	5		12.19	SB	Laguna Blvd	L	2		Planned
•	3	SAC	5		12.19	NB	Laguna Blvd	S	3	NM	Operational
•	3	SAC	5		12.60	SB	EB Cosumnes River Blvd	S	2	NM	Non-Op

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	3	SAC	5		12.70	NB	EB Cosumnes River Blvd	L	2	NM	Operational
•	3	SAC	5		14.80	SB	WB Cosumnes River Blvd	L	2	NM	Non-Op
•	3	SAC	5		14.98	NB	WB Cosumnes River Blvd	S	3	NM	Operational
•	3	SAC	5		16.03	SB	EB Pocket Rd	S	1		Part Const
•	3	SAC	5		16.08	NB	EB Pocket Rd	L	2	NM	Operational
•	3	SAC	5		16.20	SB	WB Pocket Rd	L	1		Part Const
•	3	SAC	5		16.29	NB	WB Pocket Rd	S	2		Operational
•	3	SAC	5		16.92	SB	EB Florin Rd	S	1		Part Const
•	3	SAC	5		17.11	NB	EB Florin Rd	L	1		Operational
•	3	SAC	5		17.26	SB	WB Florin Rd	L	1		Part Const
•	3	SAC	5		17.47	NB	WB Florin Rd	S	1		Operational
•	3	SAC	5		18.80	NB	43rd Ave	S	2		Operational
•	3	SAC	5		19.19	SB	Seamas Ave	S	2		Part Const
•	3	SAC	5		19.47	NB	Seamas Ave	S	2	NM	Operational
•	3	SAC	5		20.39	SB	Sutterville Rd	S	2		Part Const
•	3	SAC	5		20.69	NB	Sutterville Rd	S	2	NM	Operational
	3	SAC	5		22.14	SB	WB US-50	C	2		Planned
	3	SAC	5		22.35	SB	EB US-50	C	1		Planned
	3	SAC	5		22.65	NB	EB US-50	C	1		Planned
•	3	SAC	5		22.79	NB	W/5th St	S	1		Operational
	3	SAC	5		22.86	NB	WB US-50	C	2		Planned
•	3	SAC	5		22.98	SB	P St	S	2		Operational
•	3	SAC	5		23.30	NB	P St	S	2		Operational
	3	SAC	5		23.64	SB	I St	S	1		Planned
•	3	SAC	5		23.73	NB	L St	S	2		Operational
•	3	SAC	5		23.92	NB	I St	S	2		Operational
•	3	SAC	5		24.51	SB	Richards Blvd	S	2		Operational
•	3	SAC	5		24.82	NB	Richards Blvd	S	2		Operational
•	3	SAC	5		25.37	SB	Garden Hwy	L	1		Operational
•	3	SAC	5		25.51	NB	Garden Hwy	S	1		Operational
•	3	SAC	5		25.85	SB	EB W El Camino	S	1		Operational
•	3	SAC	5		26.02	SB	WB W El Camino	L	2		Operational
	3	SAC	5		26.55	SB	EB I-80	C	1		Planned
	3	SAC	5		26.55	SB	WB I-80	C	2		Planned
	3	SAC	5		26.72	NB	EB I-80	C	3		Planned
	3	SAC	5		26.96	NB	WB I-80	C	1		Planned
•	3	SAC	5		27.96	SB	EB Arena Blvd	S	2	NM	Operational
•	3	SAC	5		28.00	NB	EB Arena Blvd	L	2	NM	Operational
•	3	SAC	5		28.14	SB	WB Arena Blvd	L	2		Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	3	SAC	5		28.20	NB	WB Arena Blvd	S	2	NM	Operational
●	3	SAC	5		28.88	SB	EB Del Paso Rd	S	1		Operational
	3	SAC	5		28.96	NB	EB Del Paso Rd	L	1		Planned
●	3	SAC	5		29.08	SB	WB Del Paso Rd	L	2		Operational
	3	SAC	5		29.16	NB	WB Del Paso Rd	S	1		Planned
	3	SAC	5		29.54	SB	SR-99	C	2		Planned
●	3	SAC	5		30.15	NB	SR-99	C	1		Part Const
●	3	SAC	5		31.5	SB	Metro Air Parkway	L	2	M	Part Const
●	3	SAC	5		31.65	NB	Metro Air Parkway	S	2	M	Part Const
	3	SAC	5		32.69	NB	NB Airport Blvd	L	1		Planned
	3	SAC	5		32.79	SB	Airport Blvd	L	1		Planned
	3	SAC	5		32.87	NB	SB Airport Blvd	S	1		Planned
	3	SAC	5		33.72	SB	Rest Area	S	1		Planned
	3	SAC	50	L	0.16	WB	SB I-5	C	1		Planned
	3	SAC	50	L	0.16	WB	NB I-5	C	2		Planned
	3	SAC	50	L	0.43	WB	5th St	S	2		Planned
	3	SAC	50	L	0.47	EB	NB I-5	C	1		Planned
	3	SAC	50	L	0.47	EB	SB I-5	C	2		Planned
●	3	SAC	50	L	1.19	WB	15th St	S	2		Operational
●	3	SAC	50	L	1.43	EB	11th St	S	2		Operational
●	3	SAC	50	L	1.64	EB	16th St	S	2		Operational
	3	SAC	50	L	2.01	WB	SR-51	C	2		Planned
	3	SAC	50	L	2.20	WB	SR-99	C	2		Planned
●	3	SAC	50	L	2.39	EB	28th St	S	1		Operational
	3	SAC	50	R	0.34	EB	SR-51	C	2		Planned
	3	SAC	50	R	0.34	EB	SR-99	C	1		Planned
●	3	SAC	50	R	0.60	WB	Stockton Blvd	L	1		Operational
●	3	SAC	50	R	0.71	EB	Stockton Blvd	S	2		Operational
●	3	SAC	50	R	1.93	WB	59th St	S	2	NM	Operational
●	3	SAC	50	R	2.44	WB	SB 65th St	S	1		Operational
●	3	SAC	50	R	2.61	EB	SB 65th St	L	2	NM	Operational
●	3	SAC	50	R	2.68	WB	NB 65th St	L	1		Operational
●	3	SAC	50	R	2.81	EB	NB 65th St	S	2	NM	Operational
●	3	SAC	50	R	3.23	WB	Hornet Dr	S	2	NM	Operational
●	3	SAC	50	R	3.43	WB	SB Howe Ave	S	2	M	Operational
●	3	SAC	50	R	3.63	EB	SB Howe Ave	L	2		Operational
●	3	SAC	50	R	3.76	WB	NB Howe Ave	L	2	NM	Operational
●	3	SAC	50	R	3.88	EB	NB Howe Ave	S	2	NM	Operational
●	3	SAC	50	R	5.06	WB	SB Watt Ave	S	3	NM	Operational
●	3	SAC	50	R	5.29	EB	SB Watt Ave	L	2		Operational
●	3	SAC	50	R	5.38	WB	NB Watt Ave	L	2		Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	3	SAC	50	R	5.63	EB	NB Watt Ave	S	2	NM	Operational
•	3	SAC	50	R	7.62	WB	SB Bradshaw Rd	S	1		Operational
•	3	SAC	50	R	7.67	EB	SB Bradshaw Rd	L	2	NM	Operational
•	3	SAC	50	R	7.81	WB	NB Bradshaw Rd	L	2	NM	Operational
•	3	SAC	50	R	7.89	EB	NB Bradshaw Rd	S	2		Operational
•	3	SAC	50	R	9.35	WB	SB Mather Field Rd	S	1		Operational
•	3	SAC	50	R	9.47	EB	SB Mather Field Rd	L	2	NM	Operational
•	3	SAC	50	R	9.55	WB	NB Mather Field Rd	L	2	NM	Operational
•	3	SAC	50	R	9.63	EB	NB Mather Field Rd	S	2		Operational
•	3	SAC	50	R	10.85	EB	SB Zinfandel Dr	L	2	M	Operational
•	3	SAC	50	R	10.86	WB	SB Zinfandel Dr	S	1		Operational
•	3	SAC	50	R	10.98	EB	NB Zinfandel Dr	S	2	M	Operational
•	3	SAC	50	R	10.99	WB	NB Zinfandel Dr	L	2		Operational
•	3	SAC	50		12.23	WB	SB Sunrise Blvd	S	3	NM	Operational
•	3	SAC	50		12.45	WB	NB Sunrise Blvd	L	1		Operational
•	3	SAC	50		12.55	EB	SB Sunrise Blvd	L	2	NM	Operational
•	3	SAC	50		12.66	EB	NB Sunrise Blvd	S	2	NM	Operational
•	3	SAC	50		15.81	WB	SB Hazel Blvd	S	3	NM	Operational
•	3	SAC	50		15.82	EB	SB Hazel Blvd	L	2	NM	Operational
•	3	SAC	50		15.93	WB	NB Hazel Blvd	L	1		Operational
•	3	SAC	50		15.97	EB	NB Hazel Blvd	S	2	NM	Operational
•	3	SAC	50		16.81	WB	Folsom Blvd	S	3	NM	Operational
•	3	SAC	50		16.91	EB	Folsom Blvd	L	2	NM	Operational
•	3	SAC	50		18.99	WB	SB Prairie City Rd	S	2	NM	Operational
	3	SAC	50		19.26	WB	NB Prairie City Rd	L	2		Planned
	3	SAC	50		19.34	EB	NB Prairie City Rd	S	2		Planned
•	3	SAC	50		19.58	EB	SB Prairie City Rd	S	2	NM	Operational
•	3	SAC	50		21.30	WB	SB East Bidwell St	S	2	NM	Operational
•	3	SAC	50		21.44	EB	SB Scott/East Bidwell Rd	L	2	NM	Operational
•	3	SAC	50		21.53	WB	NB East Bidwell St	L	2	NM	Operational
•	3	SAC	50		21.66	EB	NB Scott Rd	S	1		Operational
•	3	SAC	51		0.08	SB	T St	S	2		Operational
	3	SAC	51		0.14	NB	EB US-50	C	2		Planned
	3	SAC	51		0.14	NB	WB US-50	C	1		Planned
•	3	SAC	51		0.59	SB	N St	S	2		Operational
•	3	SAC	51		0.77	NB	P St	S	2		Operational
•	3	SAC	51		1.07	SB	H St	S	2		Operational
•	3	SAC	51		1.26	NB	J St	S	2		Operational
•	3	SAC	51		1.58	NB	E St	S	2		Operational
•	3	SAC	51		3.30	SB	EB Exposition Blvd	S	1		Operational
•	3	SAC	51		3.40	SB	WB Exposition Blvd	L	2		Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	3	SAC	51		4.07	SB	Arden Way	L	1		Planned
	3	SAC	51		4.09	NB	SR-160	C	2		Planned
●	3	SAC	51		4.23	NB	Arden Way	S	2		Operational
●	3	SAC	51		4.60	SB	EB El Camino Ave	S	1		Operational
●	3	SAC	51		4.73	NB	EB El Camino Ave	L	1		Operational
●	3	SAC	51		4.76	SB	WB El Camino Ave	L	2		Operational
●	3	SAC	51		4.92	NB	WB El Camino Ave	S	1		Operational
	3	SAC	51		5.37	SB	Marconi Ave	S	1		Planned
	3	SAC	51		5.95	NB	Howe Ave	S	1		Planned
●	3	SAC	51		6.67	SB	Fulton Ave	S	1		Operational
●	3	SAC	51		6.92	NB	Fulton Ave	S	3	NM	Operational
●	3	SAC	51		7.52	SB	Auburn Blvd	S	1		Operational
●	3	SAC	51		7.87	NB	SB Watt Ave	L	1		Operational
●	3	SAC	51		7.89	SB	SB Watt Ave	S	1		Operational
●	3	SAC	51		8.14	NB	NB Watt Ave	S	1		Operational
●	3	SAC	51		8.60	SB	SR-244	S	1		Operational
●	3	SAC	80	M	1.19	WB	EB West El Camino Ave	S	1		Operational
●	3	SAC	80	M	1.32	EB	EB West El Camino Ave	L	1		Operational
●	3	SAC	80	M	1.35	WB	WB West El Camino Ave	L	1		Operational
●	3	SAC	80	M	1.52	EB	WB West El Camino Ave	S	1		Operational
	3	SAC	80	M	2.34	WB	SB I-5	C	1		Planned
	3	SAC	80	M	2.61	WB	NB I-5	C	1		Planned
	3	SAC	80	M	2.66	EB	SB I-5	C	1		Planned
	3	SAC	80	M	2.92	EB	NB I-5	C	2		Planned
●	3	SAC	80	M	3.49	WB	SB Truxel Rd	S	2		Operational
●	3	SAC	80	M	3.59	EB	SB Truxel Rd	L	2		Operational
●	3	SAC	80	M	3.70	WB	NB Truxel Rd	L	2		Operational
●	3	SAC	80	M	3.80	EB	NB Truxel Rd	S	2		Operational
●	3	SAC	80	M	4.83	WB	SB Northgate Blvd	S	1		Operational
●	3	SAC	80	M	4.94	EB	SB Northgate Blvd	L	2		Operational
●	3	SAC	80	M	5.03	WB	NB Northgate Blvd	L	1		Operational
●	3	SAC	80	M	5.10	EB	NB Northgate Blvd	S	2		Operational
●	3	SAC	80	M	5.97	WB	Norwood Ave	S	1		Operational
●	3	SAC	80	M	6.33	EB	Norwood Ave	S	2		Operational
●	3	SAC	80	M	7.46	WB	SB Raley Blvd	S	1		Operational
●	3	SAC	80	M	7.61	EB	SB Raley Blvd	L	1		Operational
●	3	SAC	80	M	7.66	WB	NB Raley Blvd	L	1		Operational
●	3	SAC	80	M	7.81	EB	NB Raley Blvd	S	1		Operational
●	3	SAC	80	M	8.54	WB	Winters St	S	2	NM	Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	3	SAC	80	M	8.85	EB	Winters St	S	2	NM	Operational
•	3	SAC	80	M	9.15	WB	Longview Dr	S	2		Operational
•	3	SAC	80	M	9.61	EB	Longview Dr	S	2	NM	Operational
•	3	SAC	80	M	10.10	WB	SB Watt Ave	S	1		Operational
•	3	SAC	80	M	10.35	WB	NB Watt Ave	L	1		Operational
•	3	SAC	80	M	10.35	WB	SR-244	S	2		Operational
	3	SAC	80	R	10.79	EB	Watt Ave RT Station	S	1		Planned
•	3	SAC	80	R	11.52	EB	SR-244 Connector	S	2	NM	Operational
•	3	SAC	80		12.36	WB	EB Madison Ave	S	3	NM	Operational
•	3	SAC	80		12.45	EB	EB Madison Ave	L	2	NM	Operational
•	3	SAC	80		12.50	WB	WB Madison Ave	L	2		Operational
•	3	SAC	80		12.65	EB	WB Madison Ave	S	2	NM	Operational
•	3	SAC	80		14.31	WB	EB Elkhorn Blvd	S	3	NM	Operational
•	3	SAC	80		14.41	EB	EB Greenback Ln	L	2	NM	Operational
•	3	SAC	80		14.50	WB	WB Elkhorn Blvd	L	2		Operational
•	3	SAC	80		14.60	EB	WB Greenback Ln	S	2	NM	Operational
•	3	SAC	80		16.49	WB	EB Antelope Rd	S	2	NM	Operational
•	3	SAC	80		16.67	EB	Antelope Rd	L	2		Operational
•	3	SAC	80		16.70	WB	WB Antelope Rd	L	2		Operational
	3	SAC	99		0.68	SB	C St	S	1		Planned
•	3	SAC	99		0.93	NB	A St	S	3	NM	Operational
	3	SAC	99		3.35	SB	Twin Cities Rd/SR-104	S	1		Planned
	3	SAC	99		3.69	NB	Twin Cities Rd/SR-104	S	1		Planned
•	3	SAC	99		8.94	SB	Eschinger Rd	H	1		Part Const
•	3	SAC	99		9.93	SB	EB Grantline Rd	S	2	NM	Operational
•	3	SAC	99		10.20	NB	EB Grantline Rd	L	2	NM	Operational
•	3	SAC	99		10.21	SB	WB Grantline Rd	L	2	NM	Operational
•	3	SAC	99		10.23	NB	WB Grantline Rd	S	2	NM	Operational
	3	SAC	99		12.61	SB	Elk Grove Blvd	S	2		Planned
•	3	SAC	99		12.62	NB	Stockton Blvd (EG loop)	S	2		Operational
•	3	SAC	99		12.89	NB	Elk Grove Blvd	S	3	NM	Operational
•	3	SAC	99		13.66	SB	EB Laguna Blvd	S	1		Part Const
•	3	SAC	99		13.78	NB	EB Laguna Blvd	L	1		Operational
•	3	SAC	99		13.89	SB	WB Laguna Blvd	L	1		Part Const
•	3	SAC	99		14.00	NB	WB Laguna Blvd	S	1		Operational
	3	SAC	99		14.72	SB	Sheldon Rd	S	1		Part Const
•	3	SAC	99		14.82	NB	EB Sheldon Rd	L	2	NM	Operational
•	3	SAC	99		15.02	NB	WB Sheldon Rd	S	3	NM	Operational
	3	SAC	99		16.12	SB	EB Calvine Rd	S	2		Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	3	SAC	99		16.19	NB	EB Calvin Rd	L	2	NM	Operational
	3	SAC	99		16.31	SB	WB Calvin Rd	L	2		Operational
•	3	SAC	99		16.32	NB	WB Calvin Rd	S	3	NM	Operational
•	3	SAC	99		16.98	SB	Stockton Blvd	C	1		Operational
•	3	SAC	99		17.51	SB	Bruceville Rd	H	1		Operational
•	3	SAC	99		17.67	NB	EB Mack Rd	L	2	NM	Operational
•	3	SAC	99		17.91	NB	WB Mack Rd	S	2	M	Operational
•	3	SAC	99		19.48	SB	EB Florin Rd	S	2		Operational
•	3	SAC	99		19.52	NB	EB Florin Rd	L	1		Operational
•	3	SAC	99		19.71	SB	WB Florin Rd	L	2		Operational
•	3	SAC	99		19.75	NB	WB Florin Rd	S	2	NM	Operational
•	3	SAC	99		20.53	SB	EB 47th Ave	S	2		Operational
•	3	SAC	99		20.78	NB	EB 47th Ave	L	2	NM	Operational
•	3	SAC	99		20.94	SB	WB 47th Ave	L	2		Operational
•	3	SAC	99		20.99	NB	WB 47th Ave	S	2	NM	Operational
•	3	SAC	99		21.44	SB	Martin Luther King Rd	L	2	M	Operational
•	3	SAC	99		21.83	SB	Fruitridge Rd	S	2		Operational
•	3	SAC	99		21.87	NB	EB Fruitridge Rd	L	1		Operational
•	3	SAC	99		22.08	NB	WB Fruitridge Rd	S	1		Operational
•	3	SAC	99		22.91	SB	14th Ave (12th Ave)	S	2		Operational
•	3	SAC	99		23.24	NB	12th Ave	S	1		Operational
•	3	SAC	99		23.85	SB	Broadway	S	2		Operational
	3	SAC	99		24.07	SB	EB US-50	C	2		Planned
	3	SAC	99		24.23	SB	WB US-50	C	1		Planned
	3	SAC	99		33.18	SB	EB Elkhorn Blvd	S	1		Planned
	3	SAC	99		33.32	NB	EB Elkhorn Blvd	L	1		Planned
	3	SAC	99		33.41	SB	WB Elkhorn Blvd	L	1		Non-Op
	3	SAC	99		33.55	NB	WB Elkhorn Blvd	L	1		Planned
	3	SAC	99		34.90	SB	EB Elverta Rd	S	2	NM	Non-Op
	3	SAC	99		35.33	NB	EB Elverta Rd	L	1	NM	Non-Op
	3	SAC	99		35.40	SB	WB Elverta Rd	L	1	NM	Non-Op
	3	SAC	99		35.30	NB	WB Elverta Rd	S	1	NM	Non-Op
	3	SAC	160		45.48	SB	Canterbury Rd	S	1		Planned
	3	SAC	160		45.77	NB	Canterbury Rd	S	1		Planned
	3	SAC	160		45.98	NB	Exposition Blvd	S	1		Planned
	3	SAC	160		46.04	SB	Royal Oaks Dr	S	1		Planned
	3	SAC	160		46.33	NB	Tribute Rd	S	1		Planned
	3	SAC	160		46.89	SB	EB Arden Wy	S	1		Planned
	3	SAC	160		47.00	SB	WB Arden Wy	L	1		Planned
	3	SUT	70		3.84	SB	Nicolaus Ave	S	1		Planned

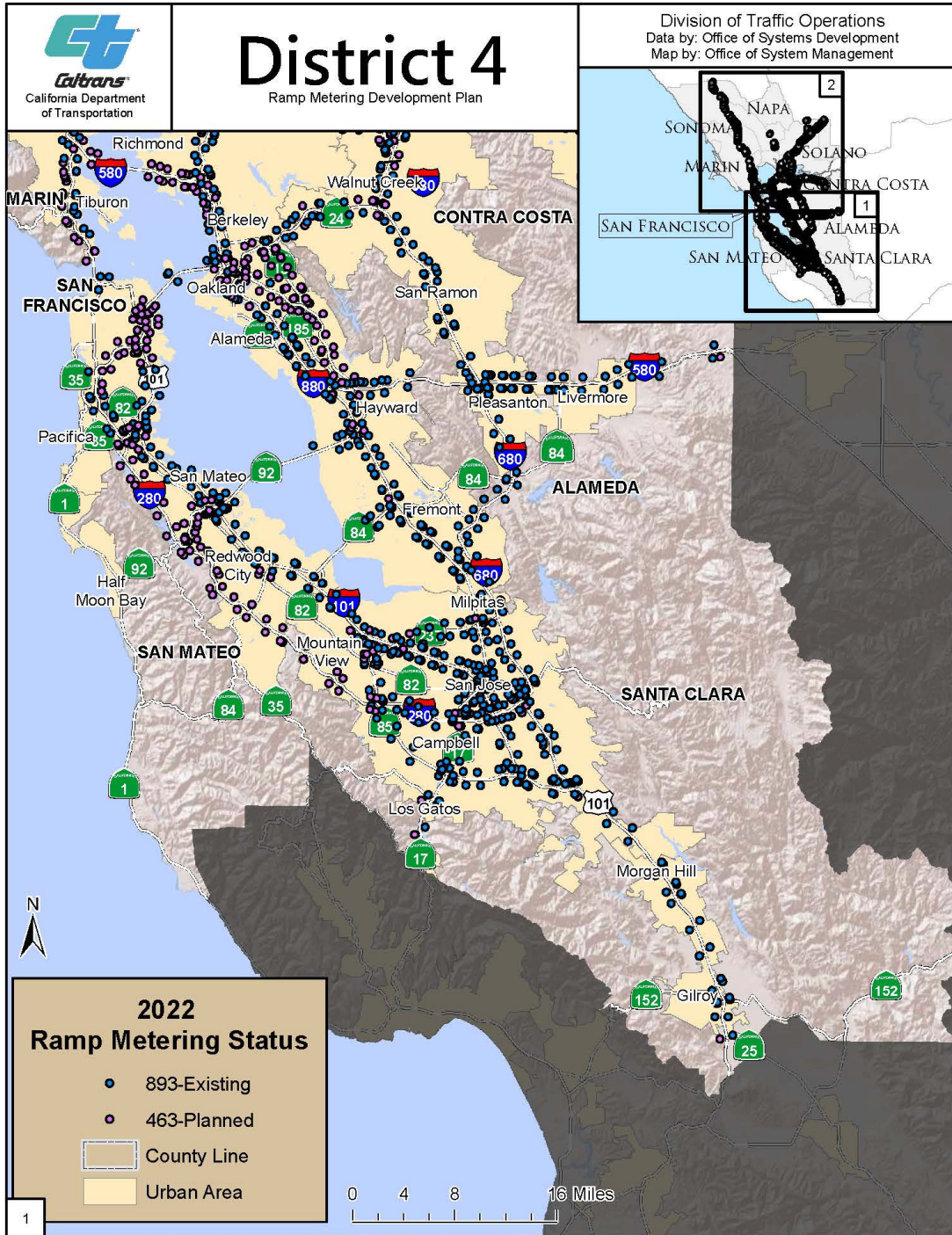
Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	3	SUT	70		4.01	NB	Nicolaus Ave	L	1		Planned
	3	SUT	70		4.21	SB	Nicolaus Ave	L	1		Planned
	3	SUT	70		4.21	NB	Nicolaus Ave	S	1		Planned
●	3	SUT	99		0.75	SB	EB Riego Rd	S	2	NM	Non-Op
	3	SUT	99		0.95	NB	EB Riego Rd	S	2	NM	Planned
●	3	SUT	99		0.98	SB	WB Riego Rd	L	2	NM	Non-Op
	3	SUT	99		1.24	NB	WB Riego Rd	S	2	NM	Planned
	3	SUT	99		3.04	NB	Sankey Rd	M	1		Planned
	3	SUT	99		3.04	SB	Sankey Rd	M	1		Planned
	3	SUT	99		5.40	SB	Howsley Rd	S	2		Planned
	3	SUT	99		TBD	NB	WB Sutter Bay Blvd				Planned
	3	SUT	99		TBD	NB	EB Sutter Bay Blvd				Planned
	3	SUT	99		TBD	SB	EB Sutter Bay Blvd				Planned
	3	SUT	99		TBD	SB	WB Sutter Bay Blvd				Planned
	3	SUT	99		19.80	SB	SR-113	S	1		Planned
	3	SUT	99		19.95	NB	SR-113	L	1		Planned
	3	SUT	99		20.17	NB	Tudor Road	S	1		Planned
	3	SUT	99		31.17	SB	Queens Ave	S	1		Planned
	3	SUT	99		31.43	NB	Queens Ave	S	1		Planned
	3	SUT	99		33.89	SB	EB Eager Rd	S	1		Planned
	3	SUT	99		33.90	NB	EB Eager Rd	L	1		Planned
	3	SUT	99		34.00	SB	WB Eager Rd	L	1		Planned
	3	SUT	99		34.01	NB	WB Eager Rd	S	1		Planned
●	3	YOL	5		0.55	SB	Old River Rd	H	1		Operational
	3	YOL	5		0.67	NB	Old River Rd	H	1		Planned
●	3	YOL	5		5.38	SB	SB Co Rd 102	S	2	NM	Operational
	3	YOL	5		5.49	NB	SB Co Rd 102	L	1		Planned
	3	YOL	5		5.57	SB	NB Co Rd 102	L	1		Planned
	3	YOL	5		5.69	NB	NB Co Rd 102	S	1		Planned
	3	YOL	5		6.23	SB	E Main St	S	2		Planned
	3	YOL	5	R	7.49	NB	NB SR-113	C	2		Planned
	3	YOL	5	R	7.97	SB	N East St	S	2		Planned
	3	YOL	5	R	8.12	NB	N East St	L	1		Planned
	3	YOL	50		0.72	EB	WB I-80 to EB 50	C	2		Planned
●	3	YOL	50		1.07	WB	SB Harbor Blvd	S	2	NM	Operational
●	3	YOL	50		1.11	WB	NB Harbor Blvd	L	2	NM	Operational
●	3	YOL	50		1.34	EB	Harbor Blvd	S	3	NM	Operational
	3	YOL	50		2.30	WB	Tower Bridge Gateway	S	2		Planned
	3	YOL	50		2.66	EB	Jefferson Blvd	S	2		Planned
	3	YOL	50		2.81	WB	Jefferson Blvd	S	1		Planned
	3	YOL	50		2.82	EB	S River Rd	L	1		Planned

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	3	YOL	80		0.07	WB	SB Richards Blvd	S	2		Planned
	3	YOL	80		0.28	WB	NB Richards Blvd	L	2		Planned
	3	YOL	80		0.45	EB	Richards Blvd	S	2		Planned
	3	YOL	80		2.46	WB	Mace Blvd	S	2		Planned
•	3	YOL	80		2.64	EB	SB Mace Blvd	L	2	NM	Operational
•	3	YOL	80		2.82	EB	NB Mace Blvd	S	2	NM	Operational
	3	YOL	80		5.50	WB	Chiles Rd	S	1		Planned
•	3	YOL	80		5.61	EB	Chiles Rd	H	1		Operational
•	3	YOL	80		9.07	EB	Enterprise Blvd	H	2		Operational
	3	YOL	80		9.08	WB	West Capitol Ave	S	1		Planned
	3	YOL	80		9.32	WB	Enterprise Blvd	H	1		Planned
•	3	YOL	80	R	10.99	WB	Reed Ave	S	2		Operational
•	3	YOL	80	R	11.22	EB	Reed Ave	L	2		Operational
	3	YOL	113	R	0.31	SB	EB Hutchison Dr	S	1		Planned
	3	YOL	113	R	0.36	NB	EB Hutchison Dr	L	1		Planned
	3	YOL	113	R	0.46	SB	WB Hutchison Dr	L	1		Planned
	3	YOL	113	R	0.56	NB	WB Hutchison Dr	S	1		Planned
	3	YOL	113	R	0.97	SB	EB Russell Blvd	S	1		Planned
	3	YOL	113	R	1.13	SB	WB Russell Blvd	L	1		Planned
	3	YOL	113	R	1.30	NB	Russell Blvd	S	1		Planned
	3	YOL	113	R	1.91	SB	W Covell Blvd	S	1		Planned
	3	YOL	113	R	2.29	NB	W Covell Blvd	S	1		Planned
	3	YOL	113	R	3.94	SB	Co Rd 29	S	1		Planned
	3	YOL	113	R	4.36	NB	Co Rd 29	S	1		Planned
	3	YOL	113	R	5.93	SB	Co Rd 27	S	1		Planned
	3	YOL	113	R	6.38	NB	Co Rd 27	S	1		Planned
	3	YOL	113	R	7.42	SB	Co Rd25A	S	1		Planned
	3	YOL	113	R	7.87	NB	Co Rd 25A	S	1		Planned
	3	YOL	113	R	8.96	SB	EB E Gibson Rd	S	1		Planned
	3	YOL	113	R	9.19	NB	EB E Gibson Rd	L	1		Planned
	3	YOL	113	R	9.28	SB	WB E Gibson Rd	L	1		Planned
	3	YOL	113	R	9.46	NB	WB E Gibson Rd	S	1		Planned
	3	YOL	113	R	9.91	SB	E Main St	S	1		Planned
	3	YOL	113	R	10.08	NB	E Main St	L	1		Planned
	3	YOL	113	R	11.14	SB	SB I-5	C	1		Planned
	3	YOL	505		0,16	SB	SR-128/Russell	S	1		Planned
	3	YOL	505		0.38	NB	Russell Blvd	L	1		Planned
	3	YOL	505		0.41	SB	SR-128/Russell	L	1		Planned
	3	YOL	505		0.67	NB	Russell Blvd	S	1		Planned
	3	YOL	505		3.86	SB	Co Rd 29 A	S	1		Planned
	3	YOL	505		4.19	NB	Co Rd 29 A	S	1		Planned

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status	
	3	YOL	505		6.34		SB	Co Rd 27	S	1		Planned
	3	YOL	505		6.75		NB	Co Rd 27	S	1		Planned
	3	YOL	505		10.42		SB	SR-16	S	1		Planned
	3	YOL	505		10.60		NB	SR-16	L	1		Planned
	3	YOL	505		10.65		SB	SR-16	L	1		Planned
	3	YOL	505		10.86		NB	SR-16	S	1		Planned
	3	YOL	505		13.26		SB	Co Rd 19	S	1		Planned
	3	YOL	505		13.74		NB	Co Rd 19	S	1		Planned
	3	YOL	505		17.23		SB	Co Rd 14	S	1		Planned
	3	YOL	505		17.68		NB	Co Rd 14	S	1		Planned
	3	YOL	505		19.92		SB	Co Rd 12 A	S	1		Planned
	3	YOL	505		20.27		NB	Co Rd 12 A	S	1		Planned
	3	YUB	65	R	6.66		SB	Forty Mile Rd	S	1		Planned
	3	YUB	65	R	7.10		NB	Forty Mile Rd	S	1		Planned
	3	YUB	65	R	7.86		SB	McGown Rd	S	1		Planned
	3	YUB	65	R	8.21		NB	McGown Rd	S	1		Planned
	3	YUB	70		0.28		SB	Feather River Blvd	S	1		Planned
	3	YUB	70		0.35		NB	Feather River Blvd	L	1		Planned
	3	YUB	70		0.58		NB	Feather River Blvd	S	1		Planned
	3	YUB	70	R	3.30		WB	Plumas Lake Blvd	S	1		Planned
	3	YUB	70	R	3.40		EB	Plumas Lake Blvd	L	1		Planned
	3	YUB	70	R	7.07		WB	McGown Rd	S	1		Planned
	3	YUB	70	R	7.60		EB	McGown Rd	S	1		Planned
	3	YUB	70	R	8.51		EB	SR-65	C	2		Planned
	3	YUB	70	R	9.09		WB	Olivehurst Ave	S	1		Planned
	3	YUB	70	R	9.27		EB	Olivehurst Ave	H	1		Planned
	3	YUB	70	R	10.01		EB	Lindhurst Ave	H	1		Planned
	3	YUB	70	R	10.03		WB	Erie Rd	S	1		Planned
	3	YUB	70	R	11.26		WB	Feather River Blvd (Yuba)	S	1		Planned
	3	YUB	70	R	11.35		EB	Feather River Blvd/N Beale Rd	L	1		Planned
	3	YUB	70		13.57		EB	N Beale Rd	S	1		Planned
	3	YUB	70		15.78		WB	F St/1st St	L	1		Planned

# District 4

Figure 4. District 4 Ramp Metering Map 1





## **District 4 Ramp Metering Narrative**

District 4 is composed of a mix of urbanized areas around the San Francisco Bay, lower density suburban areas, agricultural areas, and open space. The nine Counties in District 4 are: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. There are over 100 incorporated cities in District 4. District 4 has a population of approximately 7.77 million (2020 US census) in an area of 6,984 square miles. With more than 1,100 people per square mile, District 4 maintains and operates 7,600 lane miles with over 770 centerline miles of conventional highways and 690 miles of freeway including 494 miles of managed lanes.

### **Current or Planned Ramp Metering Routes**

The following freeways in District 4, have or are planned to have metering: I-80, I-238, I-280, I-380, I-505, I-580, I-680, I-780, I-880, I-980, US-101, SR-4, SR-13, SR-17, SR-24, SR-29, SR-84, SR-85, SR-87, SR-92, SR-237, and SR-242.

District 4 operates 665 active ramp metering locations, including the mainline metering of westbound I-80 at the San Francisco/Oakland Bay Bridge. In addition, there are 96 ramp metering locations that have metering equipment fully installed but remain inactive. There are also 123 ramp metering locations that have underground equipment installed and currently used as monitoring stations. Additional funding is needed to build complete metering systems and activate meters at these locations. There are also nine metering locations under construction. Work has been planned and budgeted to develop and activate ramp meters at an additional 23 locations. Of the total 1,356 locations listed in this District 4 RMDP, funding is still required to develop plans, install, and activate ramp meters at the remaining 440 locations.

The conceptual cost estimate to install meters at all the District 4 high priority locations is \$454 million. Structural widening is required at several proposed metering locations, especially at connectors, to provide HOV lanes. This cost estimate does not account for right-of-way costs. The actual design and construction costs for each proposed metering location will be determined during the project development phases when project scope and schedule are finalized. Additional costs are also required to activate meters.

### **Congestion Challenges**

As traffic on the freeways in several counties have almost fully returned to pre-pandemic levels, traffic congestion can be found in most of the familiar locations. It continues to be a challenge for the district to manage. In addition to ramp metering, long-term solutions include the Next Generation Bay Area Freeway Study, funded by Caltrans Strategic Partnership Grant and lead by the MTC, for an all-lane per-mile toll to be charged to vehicles on the region's congested freeway corridors with transit alternatives, as recommended by the Plan Bay Area 2050, the Bay Area's Regional Transportation Plan and Sustainable Communities Strategy, starting at a regionwide scale across all congested corridors, and then refining at a corridor level later.

## **District Ramp Metering Strategies**

District 4 commits to safety, modality, innovation, and efficiency, and partnerships through the use of ITS, a prominent TSMO operational strategy, to manage highway traffic. Following the District 4 RMDP list, work for the ramp metering branches continues to fill the gaps in corridors with existing active ramp meters, activate currently inactive ramp metering locations, review the construction of new ramp metering locations, and secure funding with plans for future ramp metering locations.

District 4 in partnership with MTC, as well as county and city agencies, work to upgrade the current ramp metering systems by switching from local responsive ramp metering algorithms to adaptive ramp metering algorithms. The local traffic responsive ramp metering algorithms operate by responding to traffic conditions at their freeway entrance ramps and connectors and the freeway mainline upstream. Adaptive ramp metering algorithms are preferable. It is because meters on freeway corridors with adaptive ramp metering algorithms will communicate to each other and synchronize by responding to their upstream and downstream freeway traffic conditions as well as queues on freeway ramps. As a result, they will effectively manage the freeway corridors as a whole. Adaptive ramp meters with livestream monitoring capability on Closed Circuit Television Cameras (CCTVs) have been installed and operated in the I-80 corridor in Alameda and Contra Costa Counties.

Under the MTC Freeway Performance Initiative, with funding from the Congestion Mitigation and Air Quality Improvement Program and the SHOPP, District 4 plans to upgrade the existing ramp meters and adopt adaptive ramp metering algorithms along I-880 in Alameda and Santa Clara Counties. Additional adaptive ramp metering systems have been planned for other freeway corridors, such as US-101 and I-680.

District 4 ramp metering branches have also been tasked to replace 170 controllers with 2070 controllers and to install new 4G modems. This upgrade prepares the District 4 active ramp metering locations for adaptive ramp metering algorithms.

In 2021, District 4, in partnership with MTC, Santa Clara Valley Transportation Authority, the City of Palo Alto, City of Sunnyvale, City of Mountain View, and Santa Clara County, worked to close the ramp metering gap on the northbound US-101 in Santa Clara and San Mateo Counties. The ramp meters on the northbound US-101 between Fair Oaks Avenue in the City of Sunnyvale and Embarcadero Road/Oregon Expressway in the city of Palo Alto were activated. The NB US-101 from Santa Clara to San Mateo has become a long freeway corridor with active ramp metering systems.

In 2023, District 4 is planning to activate ramp meters along northbound I-680 from SR-237/E Calaveras Blvd interchange in Milpitas to the Stoneridge Dr interchange in Pleasanton. The project will connect with the existing ramp metering systems on the northbound I-680 in Santa Clara County. There is also a near-term plan to expand ramp meters on the northbound I-680 in Contra Costa County to the Benicia–Martinez Bridge Toll Plaza. The ultimate 10-year plan is to meter all the freeway entrance ramps and

connectors along the northbound I-680 freeway from Santa Clara County to Solano County.

Ramp meters and TOS equipment such as Vehicle Detector Stations, CCTVs, Changeable Message Signs, Fiber Communications, and Highway Advisory Radios are the key elements of the TMS. They are used to monitor and manage the SHS. The TMS is one of the 4 primary state highway physical assets under the *2021 State Highway System Management Plan (SHSMP)*, which presents a performance driven and integrated management plan for the SHS. The investment plan in the *2021 SHSMP* adopts a “fix-it-first” commitment to achieve the performance targets established in SB 1, known as the Road Repair and Accountability Act of 2017. It is anticipated that metering equipment has a 25-year life cycle. District 4 prioritizes the replacement of metering equipment that is beyond or close to the 25-year life cycle. In addition, District 4 aims to replace all outdated "METER ON" ped-head signals with the standard advance warning devices, "RAMP METER WHEN FLASHING" (W3-8). Such replacement work will be incorporated into freeway projects when opportunity arises.

District 4 ramp metering branches have also developed a project to relocate or replace the Type 1B signal standards used for ramp metering. Historical data from the Integrated Maintenance Management System database and the District 4 ramp metering repair record along with input from field staff were used to identify and prioritize work locations. Type 1B signal standards that have been frequently knocked down will be relocated to preferable locations, replaced with mast-arm signal standards, and/or protected by MGS.

According to the *2020 California HOV Facilities Degradation Action Plan*, new ramp metering activation, HOV preferential lane metering at on-ramps, corridor-wide adaptive ramp metering, and ramp widenings are among the determined statewide HOV degradation remediation strategies. Funding available from the *2020 CA HOV Facilities Degradation Action Plan* allows District 4 to prioritize and propose for ramp metering upgrade on the selected freeway corridors with degraded HOV facilities listed in the Action Plan. The funding can be used to activate new ramp metering systems that are currently inactive and partially installed. It can also be used to widen metering locations to provide additional storage for effective metering rates with minimal queue overriding.

District 4 freeway corridors that have the highest priority to have metering implemented and activated include SR-24, SR-84, SR-238, I-580, and I-680 in Alameda County; SR-4, SR-24, and I-680 in Contra Costa County; SR-17, US-101, SR-237, and I-880 in Santa Clara County; I-80 in Solano County; and US-101 in Sonoma and Marin Counties. Among this highest priority list, the freeway corridors that need funding for the complete build-out of ramp metering systems are SR-24 and I-580 in Alameda County; SR-4, SR-24, and I-680 in Contra Costa County; SR-17, US-101, and SR-237 in Santa Clara County; I-80 in Solano County; and US-101 in Sonoma and Marin Counties. The table that follows provides completed information about the District 4 ramp metering development plan.

**Table 7. District 4 Ramp Metering Development Plan**

High Priority Locations

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	4	ALA	13	4.48	NB	Mountain Blvd / Calaveras Ave	S	1		Planned
	4	ALA	13	5.31	NB	EB Redwood Rd	H	1		Planned
	4	ALA	13	5.48	NB	Redwood Rd / Mountain Blvd	H	1		Planned
	4	ALA	13	6.58	NB	Joaquin Miller Rd / Lincoln Ave / Mountain Blvd	S	1		Planned
	4	ALA	13	7.39	NB	Mountain Blvd / Park Blvd	H	1		Planned
	4	ALA	13	8.28	NB	EB Moraga Ave / Thornhill Dr	H	1		Planned
	4	ALA	13	8.37	NB	WB Moraga Ave / Thornhill Dr	S	1		Planned
	4	ALA	13	9.18	NB	Pinewood Rd / Broadway Terrace	S	1		Planned
	4	ALA	13	9.89	NB	WB SR-24	C	1		Planned
	4	ALA	13	4.89	SB	Carson St / Alison Ave	S	1		Planned
	4	ALA	13	6.22	SB	Monterey Blvd / Lincoln Ave	H	1		Planned
	4	ALA	13	7.13	SB	Monterey Blvd / Park Blvd	S	1		Planned
	4	ALA	13	8.26	SB	Estates Dr / Moraga Ave	S	1		Planned
	4	ALA	13	9.01	SB	Broadway Terrace	S	1		Planned
	4	ALA	13	9.62	SB	EB SR-24	C	1		Planned
	4	ALA	13	9.82	SB	WB SR-24	C	1		Planned
	4	ALA	24	2	EB	EB I-580	C	2		Planned
	4	ALA	24	2	EB	WB I-580	C	2		Planned
	4	ALA	24	3.25	EB	Telegraph Ave / 56th St	S	1		Planned
	4	ALA	24	4.39	EB	Broadway / Brookside Ave	S	1		Planned
	4	ALA	24	5.39	EB	NB SR-13	C	2		Part Const
	4	ALA	24	5.714	EB	Broadway	S	1		Part Const
	4	ALA	24	2.155	WB	Martin Luther King Jr Way / 52nd St	S	2		Planned
	4	ALA	24	3.27	WB	Claremont Ave / Hudson St	S	1		Planned
	4	ALA	24	3.98	WB	Miles Ave / Patton St	S	1		Planned
	4	ALA	24	4.81	WB	NB SR-13	C	1		Planned
	4	ALA	24	5.58	WB	Caldecott Ln	S	1		Part Const
	4	ALA	80	3.43	EB	WB I-580	C	2		Planned
	4	ALA	80	3.68	EB	NB I-880	C	3	NM	Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	4	ALA	80	3.848	EB	Powell St	S	2		Operational
•	4	ALA	80	4.671	EB	Ashby Ave (NB SR-13) / Potter St	S	2		Operational
•	4	ALA	80	5.93	EB	WB University Ave	S	2		Operational
•	4	ALA	80	6.79	EB	Gilman St / Eastshore Hwy	S	2		Operational
•	4	ALA	80	7.54	EB	Buchanan St	S	1		Operational
•	4	ALA	80	1.992	WB	San Francisco–Oakland Bay Bridge	M	16	M	Operational
	4	ALA	80	2.43	WB	NB I-880 for HOV	C	1	NM	Planned
	4	ALA	80	2.45	WB	NB I-880	C	3	NM	Planned
	4	ALA	80	2.54	WB	W Grand Ave / Maritime St / Wake Ave	S	1		Planned
	4	ALA	80	3.05	WB	WB I-580	C	4	NM	Planned
	4	ALA	80	3.45	WB	Powell St	S	1		Part Const
•	4	ALA	80	3.888	WB	W Frontage Rd / Powell St	H	2		Operational
•	4	ALA	80	4.401	WB	Ashby Ave (SR-13) / W Frontage Rd / Point Emery Ln	D	3	M	Operational
•	4	ALA	80	5.894	WB	University Ave	L	2	M	Operational
•	4	ALA	80	6.423	WB	Gilman St	S	2	M	Operational
•	4	ALA	80	7.11	WB	Buchanan St	S	2		Operational
	4	ALA	80	7.16	WB	EB I-580	C	2		Planned
•	4	ALA	84	3.68	NB	WB Paseo Padre Pkwy / Thornton Ave	L	1		Non-Op
•	4	ALA	84	3.86	NB	EB Thornton Ave / Paseo Padre Pkwy	S	1		Non-Op
•	4	ALA	84	5.09	NB	Newark Blvd / Ardenwood Blvd	S	3	NM	Non-Op
•	4	ALA	84	3.138	SB	Dumbarton Bridge	M	7	NM	Non-Op
•	4	ALA	84	3.67	SB	WB Paseo Padre Pkwy / Thornton Ave	S	1		Non-Op
•	4	ALA	84	3.77	SB	EB Thornton Ave / Paseo Padre Pkwy	L	1		Non-Op
•	4	ALA	84	4.77	SB	Ardenwood Blvd / Newark Blvd	S	1		Non-Op
	4	ALA	84	5.86	SB	SB I-880	C	1		Planned
•	4	ALA	92	4.42	EB	Clawiter Rd / Eden Landing Rd	L	2	M	Operational
•	4	ALA	92	5.1	EB	Industrial Blvd / Sleepy Hollow Ave	L	2	M	Operational
•	4	ALA	92	5.84	EB	Hesperian Blvd (On SR-92 Seg)	S	2		Operational
	4	ALA	92	6.35	EB	SB I-880	C	1		Planned
	4	ALA	92	6.55	EB	NB I-880	C	1		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	ALA	92	2.529	WB	San Mateo–Hayward Bridge	M	8	NM	Non-Op
●	4	ALA	92	4.54	WB	Clawiter Rd / Breakwater Ct	L	2	M	Operational
●	4	ALA	92	5	WB	Industrial Blvd / Cryer St	S	2	M	Operational
●	4	ALA	92	5.62	WB	Hesperian Blvd	S	2	M	Operational
	4	ALA	92	6.26	WB	SB I-880	C	2		Planned
	4	ALA	92	6.51	WB	NB I-880	C	1		Planned
●	4	ALA	238	14.512	NB	Castro Valley Blvd / Foothill Blvd	S	2		Non-Op
	4	ALA	238	14.77	NB	WB I-580	C	3		Planned
	4	ALA	238	14.82	NB	EB I-580	C	2		Part Const
●	4	ALA	238	15.171	NB	170th Ave / SR-185 / E 14th St	S	1		Non-Op
●	4	ALA	238	15.001	SB	E Lewelling Blvd / Mission Blvd / E 14th St	S	2		Non-Op
●	4	ALA	238	16.321	SB	Hesperian Blvd / College St	L	1		Non-Op
	4	ALA	238	16.42	SB	NB I-880	C	2		Planned
	4	ALA	238	16.42	SB	SB I-880 / Washington Ave	D	2		Planned
●	4	ALA	580	1.38	EB	Jess Ranch Rd / W Grant Line Rd	S	1		Non-Op
●	4	ALA	580	5.69	EB	N Flynn Rd / Carroll Rd	S	1		Non-Op
●	4	ALA	580	8.52	EB	Southfront Rd / Greenville Rd	S	2	M	Operational
●	4	ALA	580	9.48	EB	NB N Vasco Rd	S	2	M	Operational
●	4	ALA	580	10.571	EB	First St / Springtown Blvd	S	2	M	Operational
●	4	ALA	580	12.421	EB	N Livermore Ave	S	2		Operational
●	4	ALA	580	14.03	EB	NB Isabel Ave (SR-84) / Airway Blvd	S	3	M	Operational
●	4	ALA	580	14.11	EB	SB Isabel Ave/ Portola Ave	L	2	M	Operational
●	4	ALA	580	14.98	EB	SB Airway Blvd	L	2	M	Operational
●	4	ALA	580	16.504	EB	NB El Charro Rd / Fallon Rd	S	2	M	Operational
●	4	ALA	580	16.71	EB	SB Fallon Rd / El Charro Rd	L	2	M	Operational
●	4	ALA	580	17.738	EB	NB Santa Rita Rd / Tassajara Rd	S	3	M	Operational
●	4	ALA	580	17.94	EB	SB Tassajara Rd / Santa Rita Rd	L	2	M	Operational
●	4	ALA	580	18.671	EB	NB Hacienda Dr	S	2	M	Operational
●	4	ALA	580	18.851	EB	SB Hacienda Dr	L	1		Operational
●	4	ALA	580	19.741	EB	NB Hopyard Rd / Dougherty Rd	S	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	ALA	580	19.871	EB	SB Dougherty Rd / Hopyard Rd	L	2	M	Operational
●	4	ALA	580	20.089	EB	NB I-680	C	2		Non-Op
●	4	ALA	580	20.15	EB	SB I-680	C	2		Non-Op
●	4	ALA	580	21.319	EB	NB Foothill Rd / San Ramon Rd	S	2	M	Operational
●	4	ALA	580	21.32	EB	SB San Ramon Rd / Foothill Rd	L	1		Operational
	4	ALA	580	26.07	EB	Palo Verde Rd / Eden Canyon Rd	S	1		Part Const
	4	ALA	580	28.27	EB	NB Grove Way / Crow Canyon Rd	S	1		Part Const
	4	ALA	580	28.55	EB	SB Grove Way / Crow Canyon Rd	H	1		Part Const
●	4	ALA	580	29.21	EB	Redwood Rd	S	3	NM	Non-Op
	4	ALA	580	30.155	EB	Strobridge Ave / Gary Dr	S	1		Part Const
	4	ALA	580	30.49	EB	SB I-238	C	3		Planned
●	4	ALA	580	30.53	EB	NB SR-238 / Foothill Blvd	S	2	NM	Non-Op
	4	ALA	580	31.63	EB	Liberty St / 163rd Ave	S	1		Planned
	4	ALA	580	32.59	EB	Fairmont Dr / Freedom Ave	S	1		Planned
	4	ALA	580	34.09	EB	Grand Ave	S	1		Planned
	4	ALA	580	34.88	EB	SB MacArthur Blvd / Foothill Blvd	S	1		Planned
	4	ALA	580	36.25	EB	98th Ave / Golf Links Rd	S	1		Planned
	4	ALA	580	37.62	EB	Keller Ave / Fontaine St	S	1		Planned
	4	ALA	580	38.73	EB	Kuhnle Ave / Sunnymere Ave / Seminary Ave	S	1		Planned
	4	ALA	580	38.98	EB	SB SR-13	C	1		Planned
	4	ALA	580	39.85	EB	SB MacArthur Blvd	S	1		Planned
	4	ALA	580	40.97	EB	Coolidge Ave / Harold St	S	1		Part Const
●	4	ALA	580	42.03	EB	Beaumont Ave / MacArthur Blvd	S	1		Non-Op
	4	ALA	580	43.381	EB	Lakeshore Ave / MacArthur Blvd / Grand Ave	S	1		Planned
	4	ALA	580	44.021	EB	SB W MacArthur Blvd	S	1		Planned
	4	ALA	580	44.022	EB	Oakland Ave	S	1		Planned
	4	ALA	580	44.882	EB	EB I-980 / 27th St	D	2		Planned
	4	ALA	580	44.926	EB	West St / 35th St	S	1		Planned
	4	ALA	580	44.93	EB	WB SR-24 / Martin Luther King Jr Way	C	2		Planned
	4	ALA	580	46.502	EB	WB I-80	C	2		Planned
	4	ALA	580	46.503	EB	EB I-80	D	3		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	4	ALA	580	47.086	EB	W Grand Ave / Maritime St / Wake Ave (On I-80 Seg)	S	1		Planned
	4	ALA	580	1	WB	WB I-205	C	3		Planned
•	4	ALA	580	1.66	WB	W Grant Line Rd / Altamont Pass Rd / Jess Ranch Rd	S	2	M	Operational
•	4	ALA	580	6.22	WB	Carroll Rd / N Flynn Rd	S	1		Operational
•	4	ALA	580	8.539	WB	Altamont Pass Rd / Greenville Rd	S	2	M	Operational
•	4	ALA	580	9.791	WB	NB N Vasco Rd	L	2		Operational
•	4	ALA	580	9.792	WB	SB N Vasco Rd	S	3	M	Operational
•	4	ALA	580	10.817	WB	Springtown Blvd / First St	S	2	M	Operational
•	4	ALA	580	12.645	WB	N Livermore Ave	S	2		Operational
•	4	ALA	580	14.02	WB	NB Isabel Ave (SR-84) / Airway Blvd	L	3	M	Operational
•	4	ALA	580	14.59	WB	SB Isabel Ave/ Portola Ave	S	2	M	Operational
•	4	ALA	580	15.003	WB	NB Airway Blvd	L	2	M	Operational
•	4	ALA	580	15.17	WB	SB Airway Blvd	S	3	M	Operational
•	4	ALA	580	16.66	WB	NB El Charro Rd / Fallon Rd	L	2	M	Operational
•	4	ALA	580	16.903	WB	SB Fallon Rd / El Charro Rd	S	2	M	Operational
•	4	ALA	580	17.944	WB	NB Santa Rita Rd / Tassajara Rd	L	2	M	Operational
•	4	ALA	580	18.07	WB	SB Tassajara Rd / Santa Rita Rd	S	2	M	Operational
•	4	ALA	580	18.791	WB	NB Hacienda Dr	L	2	M	Operational
•	4	ALA	580	18.941	WB	SB Hacienda Dr	S	2	M	Operational
•	4	ALA	580	19.851	WB	NB Hopyard Rd / Dougherty Rd	L	2	M	Operational
•	4	ALA	580	19.961	WB	SB Dougherty Rd / Hopyard Rd	S	2	M	Operational
	4	ALA	580	20.677	WB	NB I-680	C	1		Planned
•	4	ALA	580	20.906	WB	SB I-680	C	2	NM	Non-Op
•	4	ALA	580	21.54	WB	NB Foothill Rd / San Ramon Rd	L	2	M	Operational
•	4	ALA	580	21.54	WB	SB San Ramon Rd / Foothill Rd	S	2	M	Operational
	4	ALA	580	26.41	WB	Eden Canyon Rd / Palo Verde Rd	S	1		Part Const
	4	ALA	580	28.36	WB	E Castro Valley Blvd / Crow Canyon Rd / Grove Way / Center St	H	2		Part Const
•	4	ALA	580	29.53	WB	Redwood Rd	S	1		Non-Op

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	4	ALA	580	30.64	WB	I-238 / NB Foothill Blvd / Castro Valley Blvd / Mattox Rd	D	2		Planned
	4	ALA	580	32.07	WB	Foothill Blvd / Carolyn St	S	2		Planned
	4	ALA	580	32.98	WB	150th Ave / Foothill Blvd	S	1		Planned
	4	ALA	580	34.06	WB	Grand Ave / Benedict Dr	S	1		Planned
	4	ALA	580	34.66	WB	Benedict Dr / Marlow Dr	S	1		Planned
	4	ALA	580	35.15	WB	NB Foothill Blvd / Revere Ave	S	1		Planned
	4	ALA	580	35.87	WB	Peralta Oaks Dr / 106th Ave	S	1		Planned
	4	ALA	580	36.5	WB	Golf Links Rd / Mountain Blvd	S	1		Planned
	4	ALA	580	37.93	WB	Mountain Blvd / Maynard Ave / Keller Ave	S	1		Planned
	4	ALA	580	38.43	WB	Edwards Ave / Mountain Blvd / Leona Dr	S	1		Planned
	4	ALA	580	39.28	WB	Rusting Ave / Mountain Blvd	S	1		Planned
	4	ALA	580	39.45	WB	SB SR-13 / Calaveras Ave / Davenport Ave / Mountain Blvd	D	1		Planned
	4	ALA	580	39.96	WB	MacArthur Blvd	S	1		Planned
	4	ALA	580	40.19	WB	High St	S	1		Planned
	4	ALA	580	40.78	WB	35th Ave	S	1		Planned
	4	ALA	580	41.73	WB	Fruitvale Ave / Montana St / Dimond Ave	S	1		Planned
	4	ALA	580	42.775	WB	Park Blvd / Chatham Rd	S	1		Planned
	4	ALA	580	42.776	WB	Excelsior Ave / Park Blvd / Grosvenor Pl	S	1		Planned
	4	ALA	580	43.78	WB	Grand Ave / Santa Clara Ave	S	1		Planned
	4	ALA	580	44.133	WB	Harrison St / Oakland Ave	D	1		Planned
	4	ALA	580	45.34	WB	EB I-980 / 27th St	D	2		Planned
	4	ALA	580	45.571	WB	WB SR-24 / WB 52nd St / Martin Luther King Jr Way	D	2		Planned
●	4	ALA	580	46.235	WB	W MacArthur Blvd / Emery St / Peralta St / SR-123 (Also to EB I-80)	D	1		Non-Op
	4	ALA	580	47.461	WB	Buchanan St	S	1		Planned
●	4	ALA	680	0.41	NB	Scott Creek Rd	S	2	NM	Non-Op
●	4	ALA	680	2.613	NB	Mission Blvd / SR-262	D	3		Non-Op

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	ALA	680	3.99	NB	Durham Rd / Auto Mall Pkwy	L	2		Operational
●	4	ALA	680	5.6	NB	Washington Blvd	S	2	M	Operational
●	4	ALA	680	6.46	NB	Mission Blvd (SR-238)	L	2		Operational
●	4	ALA	680	7.19	NB	Vargas Rd	H	1		Non-Op
●	4	ALA	680	9.84	NB	Andrade Rd / Athenour Way	S	1		Operational
	4	ALA	680	10.97	NB	Calaveras Rd / Paloma Rd / SR-84	L	1		Part Const
	4	ALA	680	11.45	NB	SB SR-84	C	1		Part Const
●	4	ALA	680	12.11	NB	Koopman Rd / Pleasanton Sunol Rd	S	2		Non-Op
●	4	ALA	680	14.96	NB	Sunol Blvd / Pleasanton Sunol Rd	S	2	NM	Non-Op
●	4	ALA	680	16.51	NB	Bernal Ave	S	2	NM	Non-Op
●	4	ALA	680	18.74	NB	EB Stoneridge Dr	L	1		Non-Op
●	4	ALA	680	18.9	NB	WB Stoneridge Dr	S	1		Non-Op
	4	ALA	680	19.47	NB	EB I-580	C	1		Planned
	4	ALA	680	19.74	NB	WB I-580	C	2		Planned
	4	ALA	680	19.84	NB	Village Pkwy / Dublin Blvd	H	2		Part Const
●	4	ALA	680	0.029	SB	Scott Creek Rd	S	2		Operational
●	4	ALA	680	2.09	SB	Mission Blvd / SR-262	D	2		Operational
●	4	ALA	680	3.85	SB	Auto Mall Pkwy / Durham Rd	S	2		Operational
●	4	ALA	680	5.33	SB	Washington Blvd	L	2	M	Operational
●	4	ALA	680	6.39	SB	Mission Blvd (SR-238)	S	2		Operational
●	4	ALA	680	7.37	SB	Vargas Rd	S	1		Operational
●	4	ALA	680	8.2	SB	Sheridan Rd / Mission Rd	S	1		Operational
●	4	ALA	680	9.57	SB	Andrade Rd / Mission Rd	S	1		Operational
●	4	ALA	680	10.88	SB	Paloma Rd / Calaveras Rd / SR-84	S	1		Operational
●	4	ALA	680	10.98	SB	SB SR-84 / Vallecitos Rd	C	2		Operational
●	4	ALA	680	14.67	SB	Sunol Blvd / Pleasanton Sunol Rd	L	1		Operational
●	4	ALA	680	15.98	SB	Bernal Ave	S	2	M	Operational
●	4	ALA	680	18.59	SB	EB Stoneridge Dr	S	2	M	Operational
●	4	ALA	680	18.81	SB	WB Stoneridge Dr	L	2	M	Operational
	4	ALA	680	19.919	SB	EB I-580	C	1		Planned
	4	ALA	680	19.92	SB	WB I-580	C	1		Planned
●	4	ALA	680	20.18	SB	St Patrick Way / Amador Plaza Rd / Dublin Blvd	H	2		Non-Op
	4	ALA	680	21.22	SB	Alcosta Blvd / Westside Dr	S	2		Part Const

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	ALA	880	0.071	NB	California Cir / Dixon Landing Rd	H	1		Operational
●	4	ALA	880	0.072	NB	WB Dixon Landing Rd	S	2	M	Operational
●	4	ALA	880	2.37	NB	Warren Ave	L	2	M	Operational
●	4	ALA	880	2.53	NB	SB Mission Blvd (SR-262)	C	3	M	Operational
●	4	ALA	880	3.312	NB	NB Fremont Blvd	L	2	M	Operational
●	4	ALA	880	3.501	NB	SB Fremont Blvd	S	1		Operational
●	4	ALA	880	4.697	NB	EB Auto Mall Pkwy	L	2	M	Operational
●	4	ALA	880	4.888	NB	WB Auto Mall Pkwy	S	2	M	Operational
●	4	ALA	880	6.203	NB	NB Stevenson Blvd	L	1	M	Operational
●	4	ALA	880	6.397	NB	SB Stevenson Blvd	S	3	M	Operational
●	4	ALA	880	7.157	NB	EB Mowry Ave	L	2	M	Operational
●	4	ALA	880	7.368	NB	WB Mowry Ave	S	2		Operational
●	4	ALA	880	8.827	NB	NB Thornton Ave	L	2	M	Operational
●	4	ALA	880	9.008	NB	SB Thornton Ave	S	3	M	Operational
●	4	ALA	880	10.281	NB	NB Decoto Rd (SR-84)	L	2		Operational
●	4	ALA	880	10.491	NB	SB Decoto Rd (SR-84)	S	1		Operational
●	4	ALA	880	11.55	NB	Alvarado Blvd / Fremont Blvd	S	3	M	Operational
●	4	ALA	880	13.136	NB	Alvarado Niles Rd	S	3	M	Operational
●	4	ALA	880	13.9	NB	Whipple Rd	D	1		Operational
●	4	ALA	880	14.633	NB	W Industrial Pkwy	S	2		Operational
●	4	ALA	880	15.81	NB	EB W Tennyson Rd	L	1		Operational
●	4	ALA	880	15.81	NB	WB W Tennyson Rd	S	2	M	Operational
●	4	ALA	880	16.845	NB	EB SR-92 (J Arthur Younger Fwy)	C	3	M	Operational
●	4	ALA	880	16.846	NB	WB SR-92 (W Jackson St)	C	1		Operational
●	4	ALA	880	17.825	NB	W Winton Ave	D	2		Operational
●	4	ALA	880	18.478	NB	W A St	S	2	M	Operational
●	4	ALA	880	20.42	NB	WB Lewelling Blvd	S	2	M	Operational
●	4	ALA	880	20.91	NB	Washington Ave	L	1		Operational
●	4	ALA	880	20.92	NB	I-238	C	2		Non-Op
●	4	ALA	880	22.946	NB	Marina Blvd	S	2		Operational
●	4	ALA	880	23.693	NB	EB Davis St (SR-112)	L	1		Operational
●	4	ALA	880	23.694	NB	WB Davis St (SR-112)	S	1		Operational
●	4	ALA	880	24.716	NB	EB 98th Ave	L	2	M	Operational
●	4	ALA	880	24.899	NB	WB 98th Ave	S	1		Operational
●	4	ALA	880	25.522	NB	NB Hegenberger Rd / Edges Ave	L	2		Operational
●	4	ALA	880	25.611	NB	SB Hegenberger Rd	S	1		Operational
●	4	ALA	880	26.701	NB	WB 66th Ave	D	1		Operational
●	4	ALA	880	26.702	NB	EB 66th Ave / Zhone Way / Coliseum Way	S	2		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	ALA	880	27.86	NB	42nd Ave (SR-77) / High St	D	2		Operational
●	4	ALA	880	28.702	NB	29th Ave / E 9th St	S	1		Non-Op
●	4	ALA	880	29.085	NB	23rd Ave	S	3	M	Operational
●	4	ALA	880	31.421	NB	Jackson St	S	2		Operational
	4	ALA	880	32.79	NB	Union St / 5th St	S	2		Planned
●	4	ALA	880	34.75	NB	W Grand Ave / Frontage Rd	S	1		Non-Op
●	4	ALA	880	0.01	SB	WB Dixon Landing Rd	L	3	M	Operational
●	4	ALA	880	1.67	SB	SB Mission Blvd (SR-262)	C	3	M	Operational
●	4	ALA	880	1.92	SB	Warren Ave	L	3	M	Operational
●	4	ALA	880	3.091	SB	Fremont Blvd / Cushing Pkwy	S	3	M	Operational
●	4	ALA	880	3.261	SB	SB Fremont Blvd	L	2	M	Operational
●	4	ALA	880	4.553	SB	EB Auto Mall Pkwy	S	2	M	Operational
●	4	ALA	880	4.741	SB	WB Auto Mall Pkwy	L	2	M	Operational
●	4	ALA	880	6.075	SB	NB Stevenson Blvd	S	2	M	Operational
●	4	ALA	880	6.279	SB	SB Stevenson Blvd	L	2	M	Operational
●	4	ALA	880	7.032	SB	EB Mowry Ave	S	2	M	Operational
●	4	ALA	880	7.227	SB	WB Mowry Ave	L	2	M	Operational
●	4	ALA	880	8.645	SB	NB Thornton Ave	S	3	M	Operational
●	4	ALA	880	8.868	SB	SB Thornton Ave	L	2	M	Operational
●	4	ALA	880	10.121	SB	NB Decoto Rd (SR-84)	S	2		Operational
●	4	ALA	880	10.321	SB	SB Decoto Rd (SR-84)	L	1		Operational
●	4	ALA	880	11.341	SB	EB Alvarado Blvd / Fremont Blvd	S	3	M	Operational
●	4	ALA	880	11.42	SB	WB Fremont Blvd / Alvarado Blvd	L	1		Operational
●	4	ALA	880	12.871	SB	EB Alvarado Niles Rd	S	2	M	Operational
●	4	ALA	880	13.04	SB	WB Alvarado Niles Rd	L	2	M	Operational
●	4	ALA	880	13.554	SB	Whipple Rd	S	3	M	Operational
●	4	ALA	880	14.524	SB	W Industrial Pkwy	L	1		Operational
●	4	ALA	880	15.548	SB	EB W Tennyson Rd	S	2	M	Operational
●	4	ALA	880	15.549	SB	WB W Tennyson Rd	L	1		Operational
●	4	ALA	880	16.555	SB	EB SR-92 (J Arthur Younger Fwy)	C	1		Operational
●	4	ALA	880	16.556	SB	WB SR-92 (W Jackson St)	C	2	M	Operational
●	4	ALA	880	17.483	SB	EB W Winton Ave	S	2	M	Operational
●	4	ALA	880	17.484	SB	WB W Winton Ave	L	1		Operational
●	4	ALA	880	18.246	SB	W A St	S	2	M	Operational
●	4	ALA	880	19.961	SB	Hesperian Blvd / Grant Ave / Lewelling Blvd	H	2		Operational
●	4	ALA	880	20.21	SB	NB I-238	C	3		Non-Op
●	4	ALA	880	20.651	SB	Washington Ave	L	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	4	ALA	880	22.727	SB	Marina Blvd	S	2		Operational
•	4	ALA	880	23.624	SB	EB Davis St (SR-112)	S	2	M	Operational
•	4	ALA	880	23.709	SB	WB Davis St (SR-112)	L	2	M	Operational
•	4	ALA	880	24.68	SB	EB 98th Ave	S	3	M	Operational
•	4	ALA	880	24.787	SB	WB 98th Ave	L	2	M	Operational
•	4	ALA	880	25.268	SB	NB Hegenberger Rd	H	3	M	Operational
•	4	ALA	880	25.471	SB	SB Hegenberger Rd	L	1		Operational
•	4	ALA	880	26.581	SB	EB 66th Ave / Zhone Way / Oakport St	S	1		Operational
•	4	ALA	880	26.582	SB	WB 66th Ave / Zhone Way	L	1		Operational
•	4	ALA	880	27.415	SB	Oakport St / High St	D	1		Operational
•	4	ALA	880	28.651	SB	29th Ave	S	1		Operational
•	4	ALA	880	28.881	SB	Kennedy St / E 7th St / 23rd Ave	H	1		Operational
	4	ALA	880	30.028	SB	Embarcadero / 10th Ave	S	1		Planned
•	4	ALA	880	30.961	SB	Oak St	S	3	M	Operational
•	4	ALA	880	31.308	SB	Broadway	S	2		Operational
	4	ALA	880	31.68	SB	WB I-980	C	2		Planned
•	4	ALA	880	32.04	SB	Adeline St / 5th St	S	2	NM	Non-Op
•	4	ALA	880	33.29	SB	7th St / Maritime St	S	3		Non-Op
	4	ALA	880	34.189	SB	EB I-80	C	2		Planned
	4	ALA	880	34.189	SB	WB I-80	C	3		Planned
	4	ALA	980	0.9	EB	Castro St / 12th St	S	2		Planned
	4	ALA	980	1.01	EB	Castro St / 18th St	S	2		Planned
	4	ALA	980	1.663	EB	27th St (to EB I-580)	S	1		Planned
	4	ALA	980	1.86	EB	27th St (to SR-24)	S	2		Planned
	4	ALA	980	0.42	WB	Brush St / 11th St	S	2		Planned
	4	ALA	980	0.63	WB	17th St / West St	S	2		Planned
	4	ALA	980	1.84	WB	EB I-580	C	2		Planned
	4	ALA	980	1.84	WB	WB I-580	C	2		Planned
	4	CC	4	0.13	EB	EB I-80	C	2		Planned
	4	CC	4	0.2	EB	Willow Ave	H	1		Planned
	4	CC	4	1.29	EB	Sycamore Ave / Palm Ave / Claeys Ln	H	1		Planned
	4	CC	4	3.65	EB	Christie Rd	H	1		Planned
	4	CC	4	4.51	EB	Cummings Skyway / Franklin Canyon Rd	L	1		Planned
	4	CC	4	5.33	EB	Mc Ewen Rd / Franklin Canyon Rd	S	1		Planned
•	4	CC	4	8.72	EB	Alhambra Ave	S	2		Operational
•	4	CC	4	9.35	EB	Center Ave / Pine St	S	2	M	Operational
•	4	CC	4	10.468	EB	Morello Ave / Muir Rd	S	2		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	CC	4	12.35	EB	Pacheco Blvd / Muir Rd	H	2		Operational
	4	CC	4	12.627	EB	SB I-680	C	1		Part Const
	4	CC	4	12.796	EB	NB I-680	C	1		Part Const
●	4	CC	4	13.94	EB	Solano Way / Arnold Industrial Way / March Dr	S	2	M	Operational
	4	CC	4	14.82	EB	SR-242	C	3		Planned
●	4	CC	4	15.733	EB	Port Chicago Hwy	D	2	M	Operational
●	4	CC	4	17.18	EB	Willow Pass Rd / Avila Rd	S	2	M	Operational
●	4	CC	4	18.73	EB	SB Willow Pass Rd / San Marco Blvd / W Leland Rd	L	1		Operational
●	4	CC	4	18.96	EB	NB San Marco Blvd / Willow Pass Rd / W Leland Rd	S	1		Operational
●	4	CC	4	20.29	EB	Bailey Rd	S	2	M	Operational
●	4	CC	4	23.184	EB	Railroad Ave	S	3	M	Operational
●	4	CC	4	24.402	EB	Loveridge Rd	S	3	M	Operational
●	4	CC	4	26.19	EB	Somersville Rd / Auto Center Dr	S	3	M	Operational
●	4	CC	4	27.074	EB	Contra Loma Blvd / L St	S	2	M	Operational
●	4	CC	4	27.94	EB	Lone Tree Way / A St	S	2	M	Operational
●	4	CC	4	29.09	EB	Hillcrest Ave	S	2		Operational
●	4	CC	4	30.771	EB	SB SR-160	C	1		Operational
●	4	CC	4	31.353	EB	Laurel Rd	L	1		Operational
●	4	CC	4	31.599	EB	Laurel Rd	S	1		Operational
●	4	CC	4	33.121	EB	Lone Tree Way	S	2	M	Operational
●	4	CC	4	34.157	EB	Sand Creek Rd	L	1		Operational
	4	CC	4	0.1	WB	WB I-80	C	1		Planned
	4	CC	4	0.615	WB	Willow Ave	S	1		Planned
	4	CC	4	1.81	WB	Franklin Canyon Rd / Sycamore Ave	S	1		Planned
	4	CC	4	2.26	WB	Franklin Canyon Rd	S	1		Planned
	4	CC	4	4.7	WB	Cummings Skyway	S	1		Planned
●	4	CC	4	8.41	WB	Alhambra Ave	S	1		Operational
●	4	CC	4	9.05	WB	Pine St / Center Ave	S	2	M	Operational
●	4	CC	4	10.18	WB	Morello Ave / Arnold Dr	S	2		Operational
●	4	CC	4	12.31	WB	Pacheco Blvd / Blum Rd	S	2	M	Operational
	4	CC	4	12.505	WB	SB I-680	C	1		Part Const
	4	CC	4	12.705	WB	NB I-680	C	1		Part Const
●	4	CC	4	13.71	WB	Solano Way / Arnold Industrial Way	S	2	M	Operational
	4	CC	4	14.36	WB	SR-242	C	1		Part Const
●	4	CC	4	14.616	WB	Port Chicago Hwy	S	2	M	Operational

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●	4	CC	4	15.173	WB	Port Chicago Hwy (to SR-242)	S	1		Non-Op
●	4	CC	4	16.69	WB	Willow Pass Rd / Evora Rd / Willow Pass Ct	S	2	M	Operational
●	4	CC	4	18.57	WB	SB Willow Pass Rd / San Marco Blvd / Evora Rd	S	2		Operational
●	4	CC	4	18.81	WB	NB San Marco Blvd / Willow Pass Rd / Evora Rd	L	1		Operational
●	4	CC	4	19.95	WB	Bailey Rd	S	3	M	Operational
●	4	CC	4	22.824	WB	Railroad Ave	S	2		Operational
●	4	CC	4	24.11	WB	California Ave / Loveridge Rd	H	2		Operational
●	4	CC	4	25.82	WB	Auto Center Dr / Somersville Rd	S	3	M	Operational
●	4	CC	4	26.81	WB	L St / Contra Loma Blvd	S	3	M	Operational
●	4	CC	4	27.66	WB	A St / Lone Tree Way	S	3	M	Operational
●	4	CC	4	28.795	WB	Hillcrest Ave	S	2		Operational
●	4	CC	4	28.986	WB	Slatten Ranch Rd / Hillcrest Ave	H	2		Operational
●	4	CC	4	30.17	WB	SB SR-160	C	2		Operational
●	4	CC	4	31.506	WB	Laurel Rd	S	3	M	Operational
●	4	CC	4	32.727	WB	WB Lone Tree Way	S	2	M	Operational
●	4	CC	4	33.166	WB	Jeffery Way / Lone Tree Way	H	1		Operational
●	4	CC	4	34.169	WB	Sand Creek Rd	S	3	M	Operational
	4	CC	24	0.71	EB	Old Tunnel Rd / Fish Ranch Rd	S	1		Part Const
	4	CC	24	1.316	EB	Wilder Rd	S	1		Part Const
	4	CC	24	2.31	EB	SB Camino Pablo	L	1		Planned
	4	CC	24	2.59	EB	Bryant Way / Vashell Way / Davis Rd	S	1		Part Const
	4	CC	24	3.66	EB	St Stephens Dr / Hidden Valley Rd / Wanda Ln	S	1		Part Const
	4	CC	24	4.34	EB	SB Acalanes Rd	L	1		Part Const
	4	CC	24	4.51	EB	Acalanes Rd / Mt Diablo Blvd	S	1		Part Const
	4	CC	24	6.67	EB	First St	S	1		Part Const
	4	CC	24	7.81	EB	NB Pleasant Hill Rd / Mt Diablo Blvd	S	2		Part Const
	4	CC	24	7.81	EB	SB Pleasant Hill Rd	L	1		Part Const
	4	CC	24	0.62	WB	Fish Ranch Rd	S	1		Part Const
	4	CC	24	1.01	WB	California Shakespeare Theater Way / Wilder Rd	S	1		Part Const
	4	CC	24	2.12	WB	SB Camino Pablo / Santa Maria Way	S	1		Part Const

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	4	CC	24	2.36	WB	NB Camino Pablo	L	1		Part Const
	4	CC	24	3.25	WB	St Stephens Dr / El Nido Ranch Rd / E Altarinda Dr	S	1		Planned
	4	CC	24	4.21	WB	El Nido Ranch Rd	H	1		Planned
	4	CC	24	4.35	WB	NB Acalanes Rd	L	1		Part Const
	4	CC	24	6.4	WB	Deer Hill Rd / Laurel Dr / First St	H	1		Part Const
	4	CC	24	7.55	WB	NB Pleasant Hill Rd	L	1		Planned
	4	CC	24	7.55	WB	SB Pleasant Hill Rd	S	1		Planned
	4	CC	24	8.67	WB	Mt Diablo Blvd / Camino Diablo / Boulevard Cir	S	1		Part Const
	4	CC	24	8.69	WB	NB I-680	C	2		Planned
	4	CC	24	8.7	WB	SB I-680	C	3		Planned
	4	CC	24	9.43	WB	Hillside Ave / Ygnacio Valley Rd (on I-680 Seg)	L	1		Planned
●	4	CC	80	0.349	EB	Central Ave	S	2		Operational
●	4	CC	80	1.125	EB	Carlson Blvd	S	2		Operational
●	4	CC	80	1.975	EB	WB Cutting Blvd	S	2		Operational
●	4	CC	80	2.031	EB	EB Cutting Blvd	L	1		Operational
	4	CC	80	2.189	EB	Cutting Blvd for HOV	S	1	NM	Part Const
●	4	CC	80	3.058	EB	San Pablo Ave / Roosevelt Ave	S	2		Operational
●	4	CC	80	4.583	EB	San Pablo Dam Rd / Amador St	S	1		Operational
●	4	CC	80	5.464	EB	El Portal Dr	S	2		Operational
●	4	CC	80	5.95	EB	EB Hilltop Dr	L	1		Operational
●	4	CC	80	6.147	EB	Hilltop Dr	S	2	M	Operational
●	4	CC	80	6.73	EB	EB Fitzgerald Dr / Richmond Pkwy	L	2		Operational
●	4	CC	80	6.975	EB	WB Fitzgerald Dr / Richmond Pkwy	H	1		Operational
●	4	CC	80	7.574	EB	SB Appian Way	L	1		Operational
●	4	CC	80	7.733	EB	NB Appian Way	S	2		Operational
●	4	CC	80	8.716	EB	Pinole Valley Rd	S	1		Operational
●	4	CC	80	10.293	EB	SR-4 (John Muir Pkwy)	C	2		Operational
●	4	CC	80	10.867	EB	Willow Ave	S	1		Operational
●	4	CC	80	12.986	EB	Cummings Skyway	S	2		Operational
	4	CC	80	13.707	EB	Pomona St / San Pablo Ave	S	1		Planned
●	4	CC	80	0.137	WB	Central Ave	S	1		Operational
●	4	CC	80	0.827	WB	Carlson Blvd	S	1		Operational
●	4	CC	80	1.542	WB	Potrero Ave / Eastshore Blvd	S	2		Operational
●	4	CC	80	2.716	WB	Barrett Ave / 44th St	S	2		Operational

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●	4	CC	80	3.304	WB	Solano Ave	S	1		Operational
●	4	CC	80	4.224	WB	San Pablo Dam Rd	S	2		Operational
●	4	CC	80	4.747	WB	El Portal Dr	S	2		Operational
●	4	CC	80	5.824	WB	EB Hilltop Dr	S	2	M	Operational
●	4	CC	80	6.022	WB	WB Hilltop Dr	L	1		Operational
	4	CC	80	6.494	WB	Richmond Pkwy / Fitzgerald Dr for HOV	S	1	NM	Part Const
●	4	CC	80	6.69	WB	Richmond Pkwy / Fitzgerald Dr	L	1		Operational
●	4	CC	80	7.453	WB	Appian Way	S	2		Operational
●	4	CC	80	8.397	WB	Pinole Valley Rd	S	2		Operational
●	4	CC	80	9.561	WB	SR-4 (John Muir Pkwy)	C	3	M	Operational
●	4	CC	80	10.537	WB	Willow Ave	S	2		Operational
●	4	CC	80	12.535	WB	Cummings Skyway	S	1		Operational
●	4	CC	80	13.476	WB	San Pablo Ave / Pomona St	S	1		Operational
	4	CC	242	0.23	NB	NB I-680	C	3		Planned
●	4	CC	242	1.5	NB	EB Concord Ave	L	2	M	Operational
●	4	CC	242	1.67	NB	WB Concord Ave / Market St	S	3	M	Operational
●	4	CC	242	2.27	NB	Solano Way / Grant St	S	1		Operational
●	4	CC	242	0.66	SB	Clayton Rd / Market St	S	2		Operational
●	4	CC	242	1.46	SB	Concord Ave	L	2	M	Operational
●	4	CC	242	2.05	SB	Solano Way / Grant St	S	2	M	Operational
●	4	CC	242	2.72	SB	EB Olivera Rd	S	1		Operational
●	4	CC	242	2.73	SB	WB Olivera Rd	L	1		Operational
●	4	CC	242	3.176	SB	EB SR-4	C	1		Non-Op
	4	CC	242	3.178	SB	WB SR-4	C	3		Planned
	4	CC	580	0.12	EB	Central Ave / Rydin Rd	S	1		Planned
	4	CC	580	1.21	EB	Bayview Ave / S 51st St	H	1		Planned
	4	CC	580	2.01	EB	Regatta Blvd / Meade St	L	1		Planned
	4	CC	580	2.74	EB	NB Marina Bay Pkwy / S 23rd St	S	1		Planned
	4	CC	580	2.93	EB	SB S 23rd St / Marina Bay Pkwy	L	1		Planned
	4	CC	580	3.49	EB	Hoffman Blvd / NB S Harbour Way	S	1		Planned
	4	CC	580	3.62	EB	SB S Harbour Way	L	1		Planned
	4	CC	580	4.5	EB	Canal Blvd / Tewksbury Ave	S	1		Planned
	4	CC	580	5.36	EB	E Standard Ave / Marine St	H	2		Planned
	4	CC	580	5.78	EB	Western Dr	S	1		Planned

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	4	CC	580	0.36	WB	Central Ave	S	1		Planned
	4	CC	580	1.42	WB	Bayview Ave	S	1		Planned
	4	CC	580	2.3	WB	Juliga Woods St / Regatta Blvd	H	1		Planned
	4	CC	580	2.85	WB	NB Marina Bay Pkwy / S 23rd St	L	1		Planned
	4	CC	580	3.05	WB	SB S 23rd St / Marina Bay Pkwy	S	1		Planned
	4	CC	580	3.87	WB	WB Cutting Blvd	S	1		Planned
	4	CC	580	4.76	WB	Canal Blvd	S	1		Planned
	4	CC	580	5.04	WB	NB Castro St / WB E Standard Ave	L	1		Planned
	4	CC	580	6.07	WB	Western Dr	H	1		Planned
	4	CC	680	0.17	NB	Alcosta Blvd	S	3		Part Const
	4	CC	680	2.83	NB	EB Bollinger Canyon Rd	L	1		Part Const
	4	CC	680	3.04	NB	WB Bollinger Canyon Rd	S	2		Part Const
	4	CC	680	4.24	NB	EB Crow Canyon Rd	L	1		Part Const
	4	CC	680	4.44	NB	WB Crow Canyon Rd	S	2		Part Const
	4	CC	680	6.91	NB	Sycamore Valley Rd	S	1		Part Const
	4	CC	680	7.52	NB	EB Diablo Rd	L	1		Part Const
	4	CC	680	7.72	NB	WB Diablo Rd	S	1		Part Const
	4	CC	680	8.32	NB	El Cerro Blvd	S	1		Part Const
	4	CC	680	8.84	NB	El Pintado Rd	S	1		Part Const
	4	CC	680	10.55	NB	Stone Valley Rd	S	1		Part Const
	4	CC	680	11.4	NB	Livorna Rd	S	1		Part Const
	4	CC	680	12.717	NB	Danville Blvd / Rudgear Rd	H	1		Part Const
	4	CC	680	14.09	NB	Olympic Blvd	S	1		Part Const
	4	CC	680	14.55	NB	SR-24	C	3		Planned
	4	CC	680	15.734	NB	Lawrence Way / Penniman Way / N Main St	S	2		Part Const
	4	CC	680	16.695	NB	Buskirk Ave / Treat Blvd	S	1		Part Const
	4	CC	680	16.85	NB	Oak Rd / Elena Ct / Coggins Dr	H	1		Part Const
	4	CC	680	17.83	NB	Monument Blvd	S	1		Planned
	4	CC	680	19.2	NB	Willow Pass Rd	S	2		Planned
	4	CC	680	19.836	NB	WB Burnett Ave	H	1		Planned
	4	CC	680	20.04	NB	WB Concord Ave	S	1		Planned
	4	CC	680	21.132	NB	EB SR-4	C	1		Part Const
	4	CC	680	21.394	NB	WB SR-4	C	1		Part Const
	4	CC	680	22.83	NB	Arthur Rd	S	1		Part Const
	4	CC	680	24.314	NB	Waterfront Rd / Marina Vista	S	1		Part Const

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	4	CC	680	0.091	SB	San Ramon Valley Blvd / Alcosta Blvd	H	3		Part Const
	4	CC	680	2.74	SB	EB Bollinger Canyon Rd	S	1		Part Const
	4	CC	680	2.94	SB	WB Bollinger Canyon Rd	L	1		Part Const
	4	CC	680	3.91	SB	EB Crow Canyon Rd	S	1		Part Const
	4	CC	680	4.11	SB	WB Crow Canyon Rd	L	2		Part Const
	4	CC	680	6.7	SB	Sycamore Valley Rd	S	2		Part Const
	4	CC	680	7.43	SB	Diablo Rd	S	1		Part Const
	4	CC	680	8.06	SB	El Cerro Blvd	S	1		Part Const
	4	CC	680	10.21	SB	Stone Valley Rd	S	1		Part Const
	4	CC	680	11.13	SB	W Livorna Rd	S	1		Part Const
	4	CC	680	12.42	SB	Rudgear Rd / Danville Blvd	S	1		Part Const
	4	CC	680	13.094	SB	S Main St	L	1		Part Const
	4	CC	680	13.81	SB	EB Olympic Blvd	S	1		Planned
	4	CC	680	13.81	SB	WB Olympic Blvd	L	1		Part Const
	4	CC	680	14.027	SB	SR-24	C	2		Planned
	4	CC	680	14.672	SB	Hillside Ave / Ygnacio Valley Rd	S	2		Planned
	4	CC	680	15.501	SB	San Luis Rd / N Main St	S	1		Part Const
	4	CC	680	16.287	SB	Geary Rd / Treat Blvd	S	1		Part Const
	4	CC	680	16.548	SB	N Main St / Sunnyvale Ave	H	1		Part Const
	4	CC	680	17.32	SB	Boyd Rd / SB Contra Costa Blvd	S	1		Part Const
	4	CC	680	17.47	SB	Monument Blvd	S	1		Part Const
	4	CC	680	18.44	SB	SR-242	C	3		Planned
	4	CC	680	19.05	SB	EB Sunvalley Blvd / Willow Pass Rd	S	1		Part Const
	4	CC	680	19.07	SB	WB Willow Pass Rd / Sunvalley Blvd	L	1		Part Const
	4	CC	680	19.702	SB	Concord Ave / Chilpancingo Pkwy	S	1		Part Const
	4	CC	680	19.889	SB	Contra Costa Blvd	H	1		Planned
	4	CC	680	21.031	SB	EB SR-4	C	1		Part Const
	4	CC	680	21.262	SB	WB SR-4	C	1		Part Const
	4	CC	680	22.363	SB	Pacheco Blvd	S	1		Part Const
	4	CC	680	24.246	SB	Marina Vista / Waterfront Rd	S	1		Part Const
	4	MRN	101	0.06	NB	Vista Point	S	1		Planned
	4	MRN	101	0.312	NB	Alexander Ave / Bunker Rd	S	1		Planned
●	4	MRN	101	1.832	NB	Monte Mar Dr / Spencer Ave	S	1		Non-Op
●	4	MRN	101	2.402	NB	Rodeo Ave	S	1		Non-Op

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•	4	MRN	101	3.568	NB	N Bridge Blvd / Bridgeway / Gate 6 Rd / Donahue St (Marin City)	S	1		Non-Op
•	4	MRN	101	4.016	NB	SB SR-1 (Shoreline Hwy / Almonte Blvd)	H	1		Non-Op
•	4	MRN	101	4.752	NB	Redwood Hwy Frontage Rd / De Silva Dr	H	1		Non-Op
•	4	MRN	101	5.657	NB	EB E Blithedale Ave / Tiburon Blvd	L	1		Non-Op
•	4	MRN	101	5.834	NB	WB SR-131 (Tiburon Blvd / E Blithedale Ave)	S	1		Non-Op
•	4	MRN	101	7.333	NB	EB Tamalpais Dr	L	1		Non-Op
•	4	MRN	101	7.505	NB	WB Tamalpais Dr / Redwood Hwy / San Clemente Dr	S	1		Non-Op
•	4	MRN	101	8.846	NB	Sir Francis Drake Blvd	S	3	NM	Non-Op
•	4	MRN	101	10.003	NB	WB I-580 / Bellam Blvd / Francisco Blvd	D	3		Non-Op
•	4	MRN	101	11.2	NB	Mission Ave	S	2		Non-Op
•	4	MRN	101	12.27	NB	Villa Ave / Lincoln Ave / Lillian Ln	H	1		Non-Op
	4	MRN	101	12.85	NB	N San Pedro Rd	S	1		Planned
	4	MRN	101	13.63	NB	EB Manuel T Freitas Pkw / Civic Center Dr	H	1		Planned
	4	MRN	101	13.759	NB	Redwood Frontage Rd / Civic Center Dr	S	1		Planned
	4	MRN	101	14.655	NB	EB Lucas Valley Rd	L	1		Planned
	4	MRN	101	14.794	NB	WB Smith Ranch Rd / Lucas Valley Rd	S	1		Planned
	4	MRN	101	15.748	NB	St Vincent Dr / Miller Creek Rd	S	1		Planned
	4	MRN	101	16.791	NB	Nave Dr / Bolling Dr	H	1		Planned
	4	MRN	101	18.046	NB	Nave Dr / Ignacio Blvd / Roblar Dr	H	1		Part Const
	4	MRN	101	18.183	NB	Bel Marin Keys Blvd / Ignacio Blvd / Nave Dr	S	2		Part Const
•	4	MRN	101	19.241	NB	WB SR-37 / EB Novato Blvd	C	2		Non-Op
•	4	MRN	101	20.4	NB	Rowland Blvd	S	2		Non-Op
•	4	MRN	101	21.23	NB	De Long Ave / Davidson St	S	1		Non-Op
•	4	MRN	101	22.11	NB	Atherton Ave	S	2		Non-Op
•	4	MRN	101	25.657	NB	San Antonio Rd / Redwood Sanitary Landfill Rd	S	1		Non-Op
	4	MRN	101	0.17	SB	Alexander Ave / Conzelman Rd / Sausalito Lateral	S	1		Planned

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	4	MRN	101	1.714	SB	Spencer / Monte Mar Dr	H	1		Planned
	4	MRN	101	2.491	SB	Rodeo Ave	H	1		Planned
	4	MRN	101	3.418	SB	Donahue St / N Bridge Blvd (Marin City)	L	1		Planned
	4	MRN	101	3.993	SB	SR-1 (Shoreline Hwy / Almonte Blvd)	S	1		Planned
	4	MRN	101	4.753	SB	Redwood Hwy Frontage Rd / Hamilton Dr	H	1		Planned
	4	MRN	101	5.556	SB	EB East Blithedale Ave / Tiburon Blvd	S	1		Planned
	4	MRN	101	5.728	SB	WB SR-131 (Tiburon Blvd) / E Blithedale Ave	L	1		Planned
	4	MRN	101	6.543	SB	Meadow Valley Rd / Casa Buena Dr	S	1		Planned
	4	MRN	101	7.24	SB	EB Tamalpais Dr	S	1		Planned
	4	MRN	101	7.396	SB	WB Tamalpais Dr	L	1		Planned
	4	MRN	101	7.637	SB	Madera Blvd	S	1		Planned
	4	MRN	101	8.169	SB	Fifer Ave	S	1		Planned
	4	MRN	101	8.455	SB	Sir Francis Drake Blvd	D	2		Part Const
	4	MRN	101	9.831	SB	W Francisco Blvd / Jacoby St / Andersen Dr	S	1		Part Const
	4	MRN	101	10.756	SB	2nd St	S	2		Part Const
●	4	MRN	101	12.096	SB	Lincoln Ave / Prospect Dr	H	1		Non-Op
	4	MRN	101	12.77	SB	Merrydale Rd / N San Pedro Rd	H	1		Planned
	4	MRN	101	13.665	SB	WB Manuel T Freitas Pkwy	L	1		Planned
	4	MRN	101	13.666	SB	EB Manuel T Freitas Pkwy / Del Presidio Blvd	S	1		Planned
	4	MRN	101	14.62	SB	Lucas Valley Rd	S	1		Planned
	4	MRN	101	15.433	SB	Miller Creek Rd	S	1		Planned
	4	MRN	101	16.663	SB	Alameda del Prado / Nave Dr	S	1		Planned
	4	MRN	101	17.887	SB	Ignacio Blvd / Enfrente Rd	S	1		Planned
●	4	MRN	101	18.661	SB	WB SR-37 / EB Novato Blvd	C	3	NM	Non-Op
●	4	MRN	101	19.974	SB	Rowland Blvd	S	3	NM	Non-Op
●	4	MRN	101	21.03	SB	De Long Ave	S	2	NM	Non-Op
●	4	MRN	101	21.85	SB	Atherton Ave	S	2	NM	Non-Op
●	4	MRN	101	25.48	SB	San Antonio Rd / Redwood Sanitary Landfill Rd	S	1	NM	Non-Op
	4	MRN	580	2.54	EB	Main St / E Francisco Blvd	S	1		Planned

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	4	MRN	580	3.177	EB	Sir Francis Drake Blvd / Andersen Dr	S	1		Planned
	4	MRN	580	4.402	EB	Bellam Blvd / NB US-101	S	1		Planned
	4	MRN	580	2.861	WB	E Francisco Blvd	H	1		Planned
	4	MRN	580	4.57	WB	Bellam Blvd / E Francisco Blvd	S	1		Planned
	4	NAP	29	10.459	NB	W Imola Ave (SB SR-121)	S	1		Planned
	4	NAP	29	11.484	NB	EB 1st St	H	1		Planned
	4	NAP	29	11.586	NB	WB 1st St	S	1		Planned
	4	NAP	29	12.157	NB	Lincoln Ave / California Blvd	S	1		Planned
	4	NAP	29	13.161	NB	Trancas St / Redwood Rd	S	1		Part Const
	4	NAP	29	19.155	NB	California Dr	S	1		Planned
	4	NAP	29	10.273	SB	EB W Imola Ave	S	1		Planned
	4	NAP	29	10.327	SB	WB W Imola Ave (SB SR-121)	L	1		Planned
	4	NAP	29	11.436	SB	1st St	S	1		Planned
	4	NAP	29	11.939	SB	Solano Ave / W Lincoln Ave	H	1		Planned
	4	NAP	29	12.855	SB	Redwood Rd / Trancas St	S	1		Part Const
	4	NAP	29	18.899	SB	California Dr	S	1		Planned
●	4	SCL	17	4.204	NB	Bear Creek Rd / Old Santa Cruz Hwy	S	1		Operational
	4	SCL	17	7.054	NB	SB Saratoga Los Gatos Rd (SR-9)	L	1		Part Const
	4	SCL	17	7.194	NB	NB Saratoga Los Gatos Rd	S	1		Part Const
●	4	SCL	17	9.026	NB	Lark Ave	S	2		Operational
●	4	SCL	17	9.283	NB	SB SR-85	C	1		Operational
●	4	SCL	17	9.536	NB	NB SR-85	C	2		Operational
●	4	SCL	17	10.548	NB	EB San Tomas Expwy / Camden Ave / Curtner Ave	H	1		Operational
●	4	SCL	17	10.57	NB	WB Camden Ave / San Tomas Expwy / White Oaks Rd	S	3	M	Operational
●	4	SCL	17	12.273	NB	EB E Hamilton Ave	L	2		Operational
●	4	SCL	17	12.484	NB	WB E Hamilton Ave	S	2		Operational
	4	SCL	17	4.028	SB	Bear Creek Rd	S	1		Planned
	4	SCL	17	6.161	SB	S Santa Cruz Ave	S	1		Planned
	4	SCL	17	6.931	SB	SB SR-9 (Saratoga Los Gatos Rd)	S	1		Part Const
	4	SCL	17	7.101	SB	NB Saratoga Los Gatos Rd	L	1		Part Const

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SCL	17	8.915	SB	Lark Ave	L	1		Non-Op
●	4	SCL	17	9.267	SB	SB SR-85	C	1		Non-Op
●	4	SCL	17	9.401	SB	NB SR-85	C	1		Non-Op
●	4	SCL	17	10.204	SB	San Tomas Expwy / Camden Ave	S	3	NM	Non-Op
●	4	SCL	17	12.241	SB	EB E Hamilton Ave	S	1		Non-Op
●	4	SCL	17	12.391	SB	WB E Hamilton Ave	L	1		Non-Op
	4	SCL	17	13.741	SB	NB I-280	C	2		Part Const
	4	SCL	17	13.819	SB	SB I-280	C	1		Part Const
●	4	SCL	85	0.33	NB	NB US-101	C	2		Operational
	4	SCL	85	0.355	NB	NB US-101 for HOV	C	1	NM	Planned
●	4	SCL	85	0.378	NB	NB Bernal Rd / Silicon Valley Blvd	L	2	M	Operational
●	4	SCL	85	0.56	NB	SB Bernal Rd / Silicon Valley Blvd	S	2	M	Operational
●	4	SCL	85	0.752	NB	SB US-101	C	2	M	Operational
●	4	SCL	85	0.915	NB	Great Oaks Blvd	S	2	M	Operational
●	4	SCL	85	1.997	NB	NB Cottle Rd	L	2		Operational
●	4	SCL	85	2.114	NB	SB Cottle Rd	S	3	M	Operational
●	4	SCL	85	3.837	NB	EB Blossom Hill Rd	L	2	M	Operational
●	4	SCL	85	4.031	NB	WB Blossom Hill Rd	S	1		Operational
●	4	SCL	85	5.178	NB	Santa Teresa Blvd	L	2	M	Operational
●	4	SCL	85	5.411	NB	SB SR-87	C	2	M	Operational
●	4	SCL	85	6.135	NB	NB Almaden Expy	L	2	M	Operational
●	4	SCL	85	6.335	NB	SB Almaden Expy	S	2		Operational
●	4	SCL	85	8.234	NB	Camden Ave	S	2		Operational
●	4	SCL	85	9.434	NB	Union Ave	S	2		Operational
●	4	SCL	85	10.47	NB	S Bascom Ave	S	2	M	Operational
●	4	SCL	85	10.88	NB	SR-17	C	2		Operational
●	4	SCL	85	11.16	NB	Winchester Blvd	S	2	M	Operational
●	4	SCL	85	13.93	NB	Saratoga Ave	S	2	M	Operational
●	4	SCL	85	16.06	NB	S De Anza Blvd	S	2		Operational
●	4	SCL	85	18.38	NB	SB I-280	C	1		Operational
●	4	SCL	85	18.5	NB	NB I-280 / Stevens Creek Blvd	C	3		Operational
●	4	SCL	85	18.85	NB	W Homestead Rd	L	1		Operational
●	4	SCL	85	20.03	NB	W Fremont Ave	S	2		Operational
●	4	SCL	85	21.69	NB	SB SR-82 (El Camino Real)	L	1		Operational
●	4	SCL	85	21.86	NB	NB SR-82 (El Camino Real)	S	2	M	Operational
●	4	SCL	85	22.13	NB	EB SR-237	C	1		Operational
●	4	SCL	85	23.01	NB	Central Expy / Easy St	S	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SCL	85	1.737	SB	NB Cottle Rd	S	1		Operational
●	4	SCL	85	1.95	SB	SB Cottle Rd	L	1		Operational
●	4	SCL	85	3.796	SB	EB Blossom Hill Rd	S	1		Operational
●	4	SCL	85	4.043	SB	WB Blossom Hill Rd	L	1		Operational
●	4	SCL	85	4.868	SB	SR-87	C	3	M	Operational
●	4	SCL	85	5.049	SB	Santa Teresa Blvd	S	1		Operational
●	4	SCL	85	6.102	SB	NB Almaden Expy	S	2	M	Operational
●	4	SCL	85	6.219	SB	SB Almaden Expy	L	1		Operational
●	4	SCL	85	7.969	SB	Camden Ave	S	2	M	Operational
●	4	SCL	85	9.101	SB	Union Ave	S	1		Operational
●	4	SCL	85	10.065	SB	S Bascom Ave / Los Gatos Blvd	S	2	M	Operational
●	4	SCL	85	10.294	SB	SR-17	C	2		Operational
●	4	SCL	85	13.52	SB	Saratoga Ave	S	2		Operational
●	4	SCL	85	15.67	SB	S De Anza Blvd	S	2		Operational
●	4	SCL	85	17.49	SB	Stevens Creek Blvd	S	2	M	Operational
	4	SCL	85	18.23	SB	SB I-280	C	2		Planned
●	4	SCL	85	18.7	SB	NB I-280	C	1		Operational
●	4	SCL	85	19.73	SB	W Fremont Ave	S	2	M	Operational
●	4	SCL	85	21.61	SB	SB SR-82 (El Camino Real)	S	2	M	Operational
●	4	SCL	85	21.82	SB	NB SR-82 (El Camino Real)	L	1		Operational
	4	SCL	85	22.2	SB	WB SR-237	C	1		Planned
●	4	SCL	85	22.49	SB	W Evelyn Ave	S	1		Operational
●	4	SCL	85	23.39	SB	Moffett Blvd	L	1		Operational
	4	SCL	85	23.66	SB	SB US-101 for HOV	C	1	NM	Planned
	4	SCL	85	23.867	SB	SB US-101	C	2		Planned
●	4	SCL	85	23.87	SB	SB N Shoreline Blvd	L	2		Operational
	4	SCL	87	0.131	NB	NB SR-85	C	2		Part Const
●	4	SCL	87	0.132	NB	SB SR-85	C	2	M	Operational
●	4	SCL	87	0.42	NB	Santa Teresa Blvd	S	2		Operational
●	4	SCL	87	1.526	NB	Narvaez Ave / Capitol Expy	S	2		Operational
●	4	SCL	87	3.066	NB	Unified Way / Curtner Ave	S	2	M	Operational
●	4	SCL	87	3.543	NB	Almaden Expy	S	3	M	Operational
●	4	SCL	87	4.364	NB	Lelong St	S	2	M	Operational
●	4	SCL	87	5.675	NB	Park Ave / Woz Way	S	2	M	Operational
	4	SCL	87	6.097	NB	I-280	C	2		Planned
●	4	SCL	87	6.269	NB	W Julian St / W St James St	S	3	M	Operational
●	4	SCL	87	7.067	NB	W Taylor St	S	3	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SCL	87	8.628	NB	Skyport Dr	S	3	M	Operational
●	4	SCL	87	1.216	SB	W Capitol Expy	S	1		Operational
●	4	SCL	87	2.662	SB	EB Curtner Ave	S	1		Operational
●	4	SCL	87	2.85	SB	WB Curtner Ave	L	1		Operational
	4	SCL	87	4.712	SB	SB I-280	C	1		Part Const
	4	SCL	87	4.713	SB	NB I-280	C	2		Part Const
●	4	SCL	87	5.146	SB	Auzerias Ave / Delmas Ave	S	2	M	Operational
●	4	SCL	87	6.025	SB	EB W Julian St	S	2	M	Operational
●	4	SCL	87	6.119	SB	WB W St James St / W Julian St	L	2		Operational
●	4	SCL	87	6.702	SB	W Taylor St	S	3	M	Operational
●	4	SCL	87	8.129	SB	Skyport Dr	S	3	M	Operational
	4	SCL	87	9.003	SB	SB US-101	C	2		Planned
●	4	SCL	87	9.004	SB	Charcot Ave / N 1st St	S	2		Operational
	4	SCL	101	3.228	NB	SR-25	S	1		Part Const
●	4	SCL	101	4.9	NB	Monterey Rd	L	2		Operational
●	4	SCL	101	6.06	NB	EB SR-152 / E 10th St	L	2	M	Operational
●	4	SCL	101	6.17	NB	WB SR-152 / 10th St	S	2		Operational
●	4	SCL	101	7.51	NB	EB Leavesley Rd	L	2		Operational
●	4	SCL	101	7.79	NB	WB Leavesley Rd	S	2	M	Operational
●	4	SCL	101	10.43	NB	Masten Ave	S	3	M	Operational
●	4	SCL	101	12.59	NB	E San Martin Ave	S	2	M	Operational
●	4	SCL	101	15.08	NB	EB Tennant Ave	L	2	M	Operational
●	4	SCL	101	15.21	NB	Tennant Ave	S	1		Operational
●	4	SCL	101	15.99	NB	EB E Dunne Ave	L	2		Operational
●	4	SCL	101	16.18	NB	WB E Dunne Ave	S	1		Operational
●	4	SCL	101	17.78	NB	EB Cochrane Rd	L	2		Operational
●	4	SCL	101	17.99	NB	WB Cochrane Rd	S	2	M	Operational
●	4	SCL	101	21.46	NB	Coyote Creek Golf Dr	S	1		Operational
●	4	SCL	101	23.5	NB	Bailey Ave	H	2		Operational
●	4	SCL	101	27.02	NB	Bernal Rd / NB Silicon Valley Blvd	L	2		Operational
●	4	SCL	101	27.22	NB	Silicon Valley Blvd / Bernal Rd	S	2	M	Operational
●	4	SCL	101	28.5	NB	EB Blossom Hill Rd / Silver Creek Valley Rd	L	2		Operational
●	4	SCL	101	28.79	NB	WB Silver Creek Valley Rd / Blossom Hill Rd	S	2	M	Operational
●	4	SCL	101	30.047	NB	Hellyer Ave / Dove Rd	L	2		Operational
●	4	SCL	101	31.19	NB	Yerba Buena Rd	S	2		Operational
●	4	SCL	101	31.824	NB	EB E Capitol Expy	L	2	M	Operational
●	4	SCL	101	31.825	NB	WB E Capitol Expy	S	3	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SCL	101	33.088	NB	EB Tully Rd	L	2	M	Operational
●	4	SCL	101	33.272	NB	WB Tully Rd	S	3	M	Operational
●	4	SCL	101	34.964	NB	SB I-280 / Story Rd	D	1		Operational
●	4	SCL	101	35.108	NB	SB I-680	C	2	M	Operational
●	4	SCL	101	35.84	NB	SR-130 / Alum Rock Ave	S	2		Operational
●	4	SCL	101	36.22	NB	McKee Rd / E Julian St	S	2		Operational
●	4	SCL	101	37.842	NB	Oakland Rd / Commercial St	S	2		Operational
●	4	SCL	101	38.257	NB	NB I-880	C	1		Non-Op
	4	SCL	101	38.789	NB	Old Bayshore Hwy	H	1		Part Const
●	4	SCL	101	39.281	NB	NB N First St	L	1		Operational
●	4	SCL	101	39.591	NB	WB E Brokaw Rd	S	2	M	Operational
●	4	SCL	101	40.096	NB	NB SR-87 (Guadalupe Pkwy)	C	3	M	Operational
●	4	SCL	101	40.654	NB	EB De La Cruz Blvd / W Trimble Rd	L	1		Operational
●	4	SCL	101	40.814	NB	WB W Trimble Rd / De La Cruz Blvd	S	2	M	Operational
●	4	SCL	101	42.08	NB	NB San Thomas Expy / Montague Expy	L	2	M	Operational
●	4	SCL	101	42.081	NB	SB Montague Expy / San Thomas Expy	S	3	M	Operational
●	4	SCL	101	42.696	NB	NB Bowers Ave / Great America Pkwy	L	1		Operational
●	4	SCL	101	42.947	NB	SB Great America Pkwy / Bowers Ave	S	1		Operational
●	4	SCL	101	43.834	NB	NB Lawrence Expy	L	2	M	Operational
●	4	SCL	101	43.984	NB	SB Lawrence Expy	S	2	M	Operational
●	4	SCL	101	44.884	NB	N Fair Oaks Ave	S	2	M	Operational
●	4	SCL	101	45.644	NB	NB N Mathilda Ave	L	2	M	Operational
	4	SCL	101	46.254	NB	WB SR-237 / W Moffett Park Dr	S	1		Part Const
●	4	SCL	101	47.274	NB	Ellis St	S	2	M	Operational
●	4	SCL	101	47.854	NB	Moffett Blvd	L	2		Operational
●	4	SCL	101	48.301	NB	NB SR-85	C	2		Operational
	4	SCL	101	48.36	NB	NB SR-85 for HOV	C	1	NM	Planned
●	4	SCL	101	48.952	NB	N Shoreline Blvd	D	3		Operational
●	4	SCL	101	49.754	NB	Rengstorff Ave	S	2		Operational
●	4	SCL	101	50.427	NB	San Antonio Rd	D	2		Operational
●	4	SCL	101	52.344	NB	Embarcadero Rd / E Bayshore Rd / EB Oregon Expy	D	2		Operational
	4	SCL	101	2.96	SB	SR-25	S	1		Planned
●	4	SCL	101	4.78	SB	Monterey Rd	S	2	M	Operational
●	4	SCL	101	5.87	SB	E 10th St / SR-152	S	2	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SCL	101	6.11	SB	WB SR-152 / E 10th St	L	2		Operational
●	4	SCL	101	7.25	SB	Leavesley Rd	S	2		Operational
●	4	SCL	101	10.12	SB	Masten Ave	S	2	M	Operational
●	4	SCL	101	12.32	SB	E San Martin Ave	S	2	M	Operational
●	4	SCL	101	14.93	SB	Tennant Ave	S	2	M	Operational
●	4	SCL	101	15.87	SB	E Dunne Ave	S	2	M	Operational
●	4	SCL	101	17.58	SB	EB Cochrane Rd	S	2	M	Operational
●	4	SCL	101	17.86	SB	WB Cochrane Rd	L	1		Operational
●	4	SCL	101	21.05	SB	Coyote Creek Golf Dr	S	1		Operational
●	4	SCL	101	23.29	SB	Bailey Ave	S	2	M	Operational
	4	SCL	101	26.44	SB	SB SR-85 for HOV	C	1	NM	Planned
●	4	SCL	101	26.69	SB	SB SR-85	C	2		Operational
●	4	SCL	101	26.71	SB	Bernal Rd	S	2	M	Operational
●	4	SCL	101	28.44	SB	EB Blossom Hill Rd / Silver Creek Valley Rd	S	1		Operational
	4	SCL	101	28.67	SB	WB Silver Creek Valley Rd / Blossom Hill Rd	L	1		Part Const
●	4	SCL	101	30.151	SB	Hellyer Ave	H	1		Operational
●	4	SCL	101	30.749	SB	Yerba Buena Rd	S	1		Operational
●	4	SCL	101	31.297	SB	EB E Capitol Expy	S	2	M	Operational
●	4	SCL	101	31.75	SB	WB E Capitol Expy	L	2	M	Operational
●	4	SCL	101	32.901	SB	EB Tully Rd	S	2	M	Operational
●	4	SCL	101	32.902	SB	WB Tully Rd	L	2	M	Operational
	4	SCL	101	34.163	SB	SB I-280 / SB I-680	C	3		Planned
	4	SCL	101	34.441	SB	EB Story Rd	S	1		Part Const
	4	SCL	101	34.442	SB	WB Story Rd	L	1		Part Const
●	4	SCL	101	35.64	SB	SR-130 (E Santa Clara St / Alum Rock Ave)	S	2		Non-Op
●	4	SCL	101	36.02	SB	McKee Rd / E Julian St	S	1		Non-Op
●	4	SCL	101	37.612	SB	Oakland Rd / N 13th St	S	2		Non-Op
●	4	SCL	101	38.174	SB	NB I-880	C	1		Non-Op
●	4	SCL	101	38.352	SB	SB I-880	C	1		Non-Op
	4	SCL	101	38.907	SB	N 4th St / Matrix Blvd / N 1st St	H	2		Planned
●	4	SCL	101	40.591	SB	EB De La Cruz Blvd / W Trimble Rd	S	3	M	Operational
●	4	SCL	101	40.751	SB	WB W Trimble Rd / De La Cruz Blvd	L	2	M	Operational
●	4	SCL	101	41.867	SB	SB Montague Expy / San Thomas Expy	L	2	M	Operational
●	4	SCL	101	41.868	SB	NB San Thomas Expy / Montague Expy	S	2	M	Operational
●	4	SCL	101	42.575	SB	NB Bowers Ave / Great America Pkwy	S	2	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SCL	101	42.772	SB	SB Great America Pkwy / Bowers Ave	L	2	M	Operational
●	4	SCL	101	43.721	SB	NB Lawrence Expy	S	3	M	Operational
●	4	SCL	101	43.881	SB	SB Lawrence Expy	L	2	M	Operational
●	4	SCL	101	44.701	SB	NB N Fair Oaks Ave	S	2	M	Operational
●	4	SCL	101	44.871	SB	SB N Fair Oaks Ave	L	2	M	Operational
●	4	SCL	101	45.631	SB	NB N Mathilda Ave	S	2	M	Operational
●	4	SCL	101	45.721	SB	SB N Mathilda Ave	L	2	M	Operational
●	4	SCL	101	46.024	SB	EB SR-237	C	1		Operational
●	4	SCL	101	46.811	SB	Ellis St	S	2	M	Operational
●	4	SCL	101	47.781	SB	Moffett Blvd	S	2	M	Operational
●	4	SCL	101	48.052	SB	N Shoreline Blvd	D	2		Operational
●	4	SCL	101	48.881	SB	Old Middlefield Way	S	2		Operational
●	4	SCL	101	49.501	SB	Rengstorff Ave	S	2	M	Operational
	4	SCL	101	49.661	SB	EB Charleston Rd	S	1		Planned
●	4	SCL	101	51.951	SB	EB Oregon Expy	S	3	M	Operational
●	4	SCL	101	52.001	SB	WB Embarcadero Rd	L	2	M	Operational
●	4	SCL	101	52.002	SB	EB Embarcadero Rd	S	1		Operational
	4	SCL	237	0.49	EB	NB SR-85	C	1		Planned
	4	SCL	237	0.87	EB	Sylvan Way / Moorpark Way	S	1		Planned
	4	SCL	237	2.06	EB	W Maude Ave	S	1		Part Const
	4	SCL	237	2.423	EB	SB US-101	C	1		Planned
	4	SCL	237	3.174	EB	N Mathilda Ave	S	1		Planned
●	4	SCL	237	4.74	EB	SB Lawrence Expy / Caribbean Dr	L	1		Operational
●	4	SCL	237	4.75	EB	NB Lawrence Expy / Caribbean Dr	S	2	M	Operational
●	4	SCL	237	6.18	EB	Great America Pkwy	S	2	M	Operational
●	4	SCL	237	7.109	EB	N First St	S	2	M	Operational
●	4	SCL	237	8.17	EB	Zanker Rd	S	3	M	Operational
	4	SCL	237	0.26	WB	SB SR-85	C	1		Planned
	4	SCL	237	0.65	WB	S Whisman Rd / E Dana St	S	1		Planned
	4	SCL	237	1.37	WB	E Middlefield Rd / W Maude Ave	S	1		Part Const
	4	SCL	237	2.537	WB	NB US-101	C	1		Planned
●	4	SCL	237	2.841	WB	N Mathilda Ave	S	1		Non-Op
	4	SCL	237	3.87	WB	Moffett Park Dr / Crossman Ave / N Fair Oaks Ave / E Java Dr	S	1		Planned
●	4	SCL	237	4.46	WB	NB Lawrence Expy / Caribbean Dr	L	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SCL	237	4.46	WB	SB Caribbean Dr / Lawrence Expy	S	1		Operational
●	4	SCL	237	5.61	WB	Great America Pkwy	S	1		Operational
●	4	SCL	237	6.702	WB	N First St	S	2		Operational
●	4	SCL	237	8.034	WB	Zanker Rd	L	2		Operational
●	4	SCL	237	8.711	WB	N McCarthy Blvd	S	2	M	Operational
	4	SCL	237	9.05	WB	SB I-880 for HOV (to Mountain View)	C	1	NM	Planned
●	4	SCL	237	9.06	WB	Calaveras Blvd	S	2		Operational
	4	SCL	237	9.335	WB	NB I-880	C	2		Planned
	4	SCL	237	9.34	WB	SB I-880	C	2		Planned
	4	SCL	280	0.26	NB	US-101	C	2		Part Const
●	4	SCL	280	0.48	NB	NB McLaughlin Ave	L	1		Operational
●	4	SCL	280	0.48	NB	SB McLaughlin Ave	S	1		Operational
●	4	SCL	280	1.59	NB	S 10th St	S	2		Operational
●	4	SCL	280	1.85	NB	S 4th St / E Reed St	S	2		Operational
●	4	SCL	280	2.46	NB	S Almaden Blvd / W Reed St / Vine St	S	2		Operational
●	4	SCL	280	2.7	NB	NB SR-87	C	2		Operational
●	4	SCL	280	2.7	NB	SB SR-87	C	1		Operational
●	4	SCL	280	3.05	NB	Bird Ave	S	2		Operational
●	4	SCL	280	4.15	NB	NB Meridian Ave	L	1		Operational
●	4	SCL	280	4.55	NB	Menker Ave / Parkmoor Ave / Meridian Ave	S	1		Operational
●	4	SCL	280	4.764	NB	Winchester Blvd / Tisch Way	S	2		Operational
●	4	SCL	280	4.82	NB	Leland Ave / Parkmoor Ave	S	2		Operational
	4	SCL	280	5.34	NB	NB SR-17	C	1		Planned
	4	SCL	280	5.68	NB	SB I-880	C	1		Planned
●	4	SCL	280	6.094	NB	Saratoga Ave	S	2		Operational
●	4	SCL	280	7.634	NB	Stevens Creek Blvd / Lawrence Exp	S	2		Operational
●	4	SCL	280	8.454	NB	NB Wolfe Rd	L	2	M	Operational
●	4	SCL	280	8.455	NB	SB Wolfe Rd	S	1		Operational
●	4	SCL	280	9.604	NB	N De Anza Blvd	S	2		Non-Op
	4	SCL	280	10.964	NB	SB SR-85	C	1		Planned
	4	SCL	280	10.965	NB	NB SR-85	C	2		Planned
	4	SCL	280	11.414	NB	NB Foothill Expy	L	1		Planned
	4	SCL	280	14.294	NB	Magdalena Rd	S	1		Planned
	4	SCL	280	15.204	NB	EB El Monte Rd	L	1		Planned
	4	SCL	280	15.205	NB	WB El Monte Rd	S	1		Planned
	4	SCL	280	18.534	NB	SB Page Mill Rd	S	1		Planned
	4	SCL	280	18.535	NB	NB Page Mill Rd	L	1		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SCL	280	1.19	SB	S 11th St	S	2		Operational
●	4	SCL	280	1.37	SB	S 7th St / E Virginia St	S	2		Operational
●	4	SCL	280	2.02	SB	SB S 1st St / S Market St	L	1		Operational
●	4	SCL	280	2.37	SB	NB SR-87	C	1		Operational
●	4	SCL	280	2.37	SB	SB SR-87	C	2		Operational
●	4	SCL	280	2.66	SB	Bird Ave	S	1		Operational
●	4	SCL	280	3.81	SB	NB Southwest Expy / Meridian Ave	D	2		Operational
●	4	SCL	280	3.876	SB	Moorpark Ave / Menker Ave / Leigh Ave	S	2		Operational
	4	SCL	280	5.28	SB	NB SR-17	C	2		Planned
	4	SCL	280	5.46	SB	SB I-880 / Stevens Creek Blvd	D	1		Planned
●	4	SCL	280	5.781	SB	Saratoga Ave	S	2		Operational
●	4	SCL	280	6.981	SB	Lawrence Expy	S	3	M	Operational
●	4	SCL	280	8.311	SB	NB Wolfe Rd	S	2	M	Operational
●	4	SCL	280	8.313	SB	SB Wolfe Rd	L	2	M	Operational
●	4	SCL	280	9.271	SB	N De Anza Blvd	S	3	M	Operational
●	4	SCL	280	10.514	SB	SB SR-85	C	3	NM	Non-Op
	4	SCL	280	10.515	SB	Stevens Creek Blvd / NB SR-85	D	1		Part Const
	4	SCL	280	11.341	SB	NB Foothill Expy	S	1		Planned
	4	SCL	280	11.342	SB	SB Foothill Expy	L	1		Planned
	4	SCL	280	14.191	SB	Magdalena Rd / Eastbrook Ave	S	1		Planned
	4	SCL	280	14.941	SB	EB El Monte Rd	S	1		Planned
	4	SCL	280	14.942	SB	WB El Monte Rd	L	1		Planned
	4	SCL	280	18.281	SB	SB Page Mill Rd	L	2		Planned
	4	SCL	280	18.282	SB	NB Page Mill Rd	S	1		Planned
	4	SCL	280	20.481	SB	NB Alpine Rd	S	1		Planned
	4	SCL	680	0.164	NB	SB US-101	C	2		Planned
	4	SCL	680	0.168	NB	NB US-101	C	2		Planned
●	4	SCL	680	0.53	NB	S King Rd	S	2		Operational
●	4	SCL	680	1.58	NB	WB E Capitol Expy	S	3		Operational
●	4	SCL	680	1.71	NB	EB SR-130 / Alum Rock Ave	L	1		Operational
●	4	SCL	680	1.87	NB	WB SR-130 / Alum Rock Ave	S	2	M	Operational
●	4	SCL	680	2.59	NB	McKee Rd	D	2		Operational
●	4	SCL	680	4.06	NB	Berryessa Rd	D	2		Operational
●	4	SCL	680	5.34	NB	N Capitol Ave	S	2	M	Operational
●	4	SCL	680	6.41	NB	Landess Ave / Montague Expy	D	2		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SCL	680	7.99	NB	E Calaveras Blvd (SR-237)	D	2		Operational
●	4	SCL	680	8.76	NB	Jacklin Rd	S	2	NM	Non-Op
●	4	SCL	680	0.2	SB	S King Rd	S	2		Operational
●	4	SCL	680	0.98	SB	S Jackson Ave	S	3	M	Operational
●	4	SCL	680	1.28	SB	WB E Capitol Expy	L	2		Operational
●	4	SCL	680	1.47	SB	WB SR-130 / Alum Rock Ave	L	1		Operational
●	4	SCL	680	2.16	SB	McKee Rd	D	2		Operational
●	4	SCL	680	3.63	SB	Berryessa Rd	D	2		Operational
●	4	SCL	680	4.47	SB	Hostetter Rd	D	2		Operational
●	4	SCL	680	4.99	SB	SB N Capitol Ave	S	2		Operational
●	4	SCL	680	5.94	SB	Montague Expy / Landess Ave	D	2		Operational
●	4	SCL	680	7.39	SB	E Calaveras Blvd (SR-237)	D	2		Operational
●	4	SCL	680	8.29	SB	Jacklin Rd	S	2	M	Operational
●	4	SCL	880	0.248	NB	NB I-280	C	1		Operational
●	4	SCL	880	0.334	NB	SB I-280	C	2		Operational
●	4	SCL	880	0.5	NB	EB Stevens Creek Blvd	L	1		Operational
●	4	SCL	880	0.515	NB	WB Stevens Creek Blvd	S	1		Operational
●	4	SCL	880	1.334	NB	N Bascom Ave	S	1		Operational
●	4	SCL	880	2.044	NB	SB SR-82 (The Alameda/El Camino Real)	L	1		Operational
●	4	SCL	880	2.204	NB	NB SR-82 (The Alameda/El Camino Real)	S	1		Operational
●	4	SCL	880	2.84	NB	Coleman Ave / McKendrie St	S	3	M	Operational
●	4	SCL	880	3.514	NB	SB N First St	L	1		Operational
●	4	SCL	880	3.734	NB	NB N First St	S	1		Operational
	4	SCL	880	4.022	NB	SB US-101	C	1		Part Const
	4	SCL	880	4.212	NB	NB US-101	C	1		Part Const
●	4	SCL	880	4.504	NB	Old Bayshore Hwy / E Gish Rd	S	2	M	Operational
●	4	SCL	880	5.214	NB	E Brokaw Rd	H	2	M	Operational
●	4	SCL	880	6.972	NB	Montague Expy	D	2		Operational
●	4	SCL	880	7.653	NB	E Tasman Dr / Great Mall Pkwy	L	2		Operational
●	4	SCL	880	8.386	NB	EB W Calaveras Blvd (SR-237)	L	1		Operational
●	4	SCL	880	8.541	NB	WB W Calaveras Blvd (SR-237) / S Abbott Ave	S	2	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SCL	880	8.82	NB	EB SR-237 for HOV (to Oakland)	C	1	NM	Planned
●	4	SCL	880	8.824	NB	EB SR-237	C	3		Operational
●	4	SCL	880	0.032	SB	Stevens Creek Blvd	S	1		Operational
●	4	SCL	880	1.251	SB	SB N Bascom Ave / Washington St	S	2		Operational
●	4	SCL	880	1.281	SB	NB N Bascom Ave / Washington St	L	1		Operational
●	4	SCL	880	1.941	SB	SB SR-82 (The Alameda)	S	1		Operational
●	4	SCL	880	2.101	SB	NB SR-82 (The Alameda)	L	1		Operational
●	4	SCL	880	2.551	SB	SB Coleman Ave	S	3	M	Operational
●	4	SCL	880	2.691	SB	NB Coleman Ave	L	2	M	Operational
●	4	SCL	880	2.692	SB	Airport Blvd (SJ International Airport)	S	2	M	Operational
●	4	SCL	880	3.441	SB	SB N First St	S	1		Operational
●	4	SCL	880	3.641	SB	NB N First St	L	1		Operational
	4	SCL	880	3.935	SB	SB US-101	C	1		Part Const
	4	SCL	880	4.133	SB	NB US-101	C	1		Part Const
●	4	SCL	880	4.391	SB	Old Bayshore Hwy	L	2		Operational
●	4	SCL	880	5.221	SB	E Brokaw Rd / O'Toole Ave	S	3	M	Operational
●	4	SCL	880	6.446	SB	SB Montague Expy	L	1		Operational
●	4	SCL	880	6.537	SB	NB Montague Expy	S	1		Operational
●	4	SCL	880	7.525	SB	E Tasman Dr / Great Mall Pkwy	S	2		Operational
●	4	SCL	880	7.989	SB	SR-237 / W Calaveras Blvd	C	2		Operational
●	4	SCL	880	10.261	SB	EB Dixon Landing Rd	S	2	M	Operational
	4	SF	80	4.08	EB	NB US-101	C	3		Planned
	4	SF	80	4.109	EB	SB US-101	C	2		Planned
	4	SF	80	4.487	EB	Bryant St / 8th St	S	1		Planned
	4	SF	80	5.077	EB	Bryant St / 5th St	S	1		Planned
	4	SF	80	5.516	EB	Harrison St / Essex St	S	2	NM	Planned
	4	SF	80	5.568	EB	Bryant St / 2nd St	S	2		Planned
	4	SF	80	5.572	EB	Harrison St / 1st St	S	1		Planned
●	4	SF	80	8.037	EB	Hillcrest Rd / S Gate Rd	S	1		Non-Op
	4	SF	80	4.341	WB	Harrison St / 7th St	S	2		Planned
	4	SF	80	4.922	WB	Harrison St / 4th St	S	2		Planned
	4	SF	80	7.754	WB	SB Treasure Island Rd	S	1		Planned
●	4	SF	80	7.986	WB	Macalla Rd / N Gate Rd	L	2	NM	Non-Op
	4	SF	101	0.692	NB	NB Bayshore Blvd / Hester Ave	S	1		Planned
	4	SF	101	2.161	NB	EB Alemany Blvd / NB San Bruno Ave	D	1		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	4	SF	101	2.237	NB	WB I-280	C	2		Planned
	4	SF	101	3.112	NB	WB Cesar Chavez St	S	1		Planned
	4	SF	101	3.113	NB	NB Bayshore Blvd	S	1		Planned
	4	SF	101	4.667	NB	WB I-80	C	2		Planned
●	4	SF	101	8.441	NB	Girard Rd / Marina Blvd	S	2		Non-Op
●	4	SF	101	9.57	NB	NB SR-1 (Veterans Blvd)	C	2		Non-Op
	4	SF	101	0.596	SB	WB Third St / SB Bayshore Blvd	D	1		Planned
	4	SF	101	1.423	SB	I-280	C	2		Part Const
	4	SF	101	1.636	SB	San Bruno Ave / WB Silliman St	H	1		Planned
	4	SF	101	2.004	SB	EB Alemany Blvd / WB Industrial St	D	1		Planned
	4	SF	101	2.935	SB	WB Cesar Chavez St / Precita Ave	S	1		Planned
	4	SF	101	2.942	SB	SB Potrero Ave	S	1		Planned
	4	SF	101	4.326	SB	WB I-80	C	3		Planned
	4	SF	101	4.453	SB	Bryant St / 10th St	S	2		Planned
	4	SF	101	5.151	SB	S Van Ness Ave	L	1		Planned
●	4	SF	101	9.344	SB	NB US 1 (Veterans Blvd)	C	2		Non-Op
	4	SF	280	0.04	NB	John Daly Blvd / Knowles Ave / Junipero Serra Blvd	S	1		Planned
	4	SF	280	0.87	NB	San Jose Ave (SR-82) / Alemany Blvd	S	1		Planned
	4	SF	280	1.92	NB	Geneva Ave / Ocean Ave	D	2		Planned
	4	SF	280	2.83	NB	Monterey Ave / Circular Ave	D	1		Planned
	4	SF	280	3.75	NB	WB Alemany Blvd / Trumbull St / Congdon St	D	1		Planned
	4	SF	280	4.52	NB	NB US-101	C	2		Planned
	4	SF	280	6.06	NB	25th St / Indiana St	S	1		Planned
	4	SF	280	6.64	NB	18th St / Minnesota St	S	1		Planned
	4	SF	280	1.56	SB	Geneva Ave	S	1		Planned
	4	SF	280	2.57	SB	SB San Jose Ave / Bosworth St / Lyell St	D	1		Planned
	4	SF	280	3.45	SB	SB Alemany Blvd / Ellsworth St	S	1		Planned
	4	SF	280	4.05	SB	SB US-101	C	2		Planned
	4	SF	280	4.06	SB	NB US-101	C	2		Planned
	4	SF	280	5.76	SB	Pennsylvania Ave / Cesar Chavez St	H	1		Planned
	4	SF	280	6.52	SB	Mariposa St / Pennsylvania St	S	1		Planned
	4	SF	280	7.186	SB	6th St / Brannan St	S	1		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	4	SM	84	24.631	NB	SB SR-82 (El Camino Real) / Hazel Ave / Linden St	H	1		Planned
	4	SM	84	24.831	NB	NB SR-82 (El Camino Real) / Laurel St	H	1		Planned
	4	SM	84	24.598	SB	SB SR-82 (El Camino Real) / Redwood Ave	H	1		Planned
	4	SM	84	24.778	SB	NB SR-82 (El Camino Real) / Main St	H	1		Planned
	4	SM	92	7.53	EB	NB I-280	C	1		Planned
	4	SM	92	7.53	EB	SB I-280	C	1		Planned
	4	SM	92	8.13	EB	Ralston Ave / Polhemus Rd	S	1		Planned
	4	SM	92	8.85	EB	De Anza Blvd	S	1		Planned
	4	SM	92	9.37	EB	EB W Hillsdale Blvd	L	1		Planned
	4	SM	92	9.53	EB	WB W Hillsdale Blvd	S	1		Planned
	4	SM	92	10.7	EB	Alameda De Las Pulgas	S	1		Planned
	4	SM	92	11.17	EB	SB SR-82 (El Camino Real)	L	1		Part Const
	4	SM	92	11.33	EB	NB SR-82 (El Camino Real)	S	1		Part Const
	4	SM	92	11.74	EB	S Delaware St / 19th Ave	S	1		Planned
	4	SM	92	12.37	EB	NB US-101	C	1		Part Const
	4	SM	92	12.37	EB	SB US-101	C	2		Part Const
	4	SM	92	12.95	EB	Mariners Island Blvd / Edgewater Blvd	H	1		Part Const
	4	SM	92	13.63	EB	Metro Center Blvd / Foster City Blvd	H	1		Part Const
	4	SM	92	6.92	WB	NB I-280	C	1		Planned
	4	SM	92	7.94	WB	Polhemus Rd / Ralston Ave	L	1		Planned
	4	SM	92	8.42	WB	De Anza Blvd	S	1		Planned
	4	SM	92	9.27	WB	W Hillsdale Blvd	S	1		Planned
	4	SM	92	10.46	WB	Alameda De Las Pulgas	S	1		Planned
	4	SM	92	11.06	WB	SB SR-82 (El Camino Real)	S	1		Part Const
	4	SM	92	11.25	WB	NB SR-82 (El Camino Real)	L	1		Part Const
	4	SM	92	11.47	WB	Concar Dr / S Delaware St	H	1		Planned
	4	SM	92	11.92	WB	SB US-101	C	1		Planned
	4	SM	92	11.96	WB	NB US-101	C	1		Planned
	4	SM	92	12.82	WB	Fashion Island Blvd / Mariners Island Blvd	S	2		Part Const
	4	SM	92	13.41	WB	Chess Dr / Foster City Blvd	H	2		Part Const

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●	4	SM	101	1.066	NB	NB University Ave (SR-109)	L	1		Operational
●	4	SM	101	1.117	NB	University Ave (SR-109) / Donohoe St	H	1		Operational
●	4	SM	101	1.854	NB	NB Willow Rd	L	2	M	Operational
●	4	SM	101	1.964	NB	SB Willow Rd	S	2	M	Operational
●	4	SM	101	3.543	NB	NB Marsh Rd	L	1		Operational
●	4	SM	101	3.695	NB	SB Marsh Rd	S	3	M	Operational
●	4	SM	101	5.334	NB	NB SR-84 / Seaport Blvd / Woodside Rd	L	2		Operational
●	4	SM	101	5.474	NB	SB Seaport Blvd / Woodside Rd	S	2	M	Operational
●	4	SM	101	6.594	NB	EB Whipple Ave	L	2		Operational
●	4	SM	101	6.666	NB	WB Whipple Ave	S	1		Operational
●	4	SM	101	8.536	NB	EB Holly St	L	2	M	Operational
●	4	SM	101	8.537	NB	WB Holly St	S	2	M	Operational
●	4	SM	101	9.693	NB	EB Ralston Ave / Marine Pkwy	L	2	M	Operational
●	4	SM	101	9.694	NB	WB Marine Pkwy / Ralston Ave	S	3	M	Operational
●	4	SM	101	11.17	NB	EB E Hillsdale Blvd	L	2	M	Operational
●	4	SM	101	11.354	NB	WB E Hillsdale Blvd	S	1		Operational
	4	SM	101	11.852	NB	EB SR-92	C	1		Planned
●	4	SM	101	12.034	NB	Fashion Island Blvd	S	2	M	Operational
●	4	SM	101	12.053	NB	WB SR-92	C	2		Operational
●	4	SM	101	12.724	NB	Kehoe Ave / Norton St	S	1		Operational
●	4	SM	101	13.624	NB	E 3rd Ave / E 4th Ave / J Hart Clinton Dr	D	2		Operational
●	4	SM	101	14.934	NB	Airport Blvd / Peninsula Ave / Coyote Point Dr	H	2		Operational
●	4	SM	101	16.051	NB	Anza Blvd / Airport Blvd	H	1		Operational
●	4	SM	101	16.772	NB	Broadway / Airport Blvd / Old Bayshore Hwy	D	2		Non-Op
●	4	SM	101	18.064	NB	E Millbrae Ave / Bayshore Hwy / S McDonnell Rd	D	2		Operational
●	4	SM	101	19.289	NB	SFO Domestic Terminals Departures (Lower level)	S	1		Operational
●	4	SM	101	20.703	NB	San Bruno Ave / SFO International Terminal Departures (Upper level)	D	2		Operational
●	4	SM	101	20.841	NB	N Access Rd (WB I-380)	S	1		Operational
●	4	SM	101	20.852	NB	EB I-380	C	2		Operational
●	4	SM	101	20.98	NB	S Airport Blvd / WB I-380	S	1		Operational
●	4	SM	101	21.496	NB	S Airport Blvd	H	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SM	101	22.144	NB	E Grand Ave / Airport Blvd	S	1		Operational
●	4	SM	101	22.922	NB	Oyster Point Blvd	S	3	M	Operational
●	4	SM	101	23.907	NB	Sierra Point Pkwy / Marina Blvd	S	1		Operational
●	4	SM	101	25.844	NB	Harney Way / Alana Way	H	1		Operational
●	4	SM	101	0.701	SB	University Ave	S	2		Operational
●	4	SM	101	1.751	SB	NB Willow Rd	S	1		Operational
●	4	SM	101	1.891	SB	SB Willow Rd	L	1		Operational
●	4	SM	101	3.479	SB	NB Marsh Rd	S	2	M	Operational
●	4	SM	101	3.647	SB	SB Marsh Rd	L	1		Operational
●	4	SM	101	5.171	SB	SR-84 / Woodside Rd	S	3	M	Operational
●	4	SM	101	6.554	SB	EB Whipple Ave	S	3	M	Operational
●	4	SM	101	6.671	SB	WB Whipple Ave	L	1		Operational
●	4	SM	101	7.471	SB	Brittan Ave	H	2		Operational
●	4	SM	101	7.792	SB	Holly St	D	2		Operational
●	4	SM	101	9.111	SB	Ralston Ave / Harbor Blvd	D	3	M	Operational
●	4	SM	101	10.877	SB	EB E Hillsdale Blvd	S	1		Operational
●	4	SM	101	11.062	SB	WB E Hillsdale Blvd	L	2		Operational
●	4	SM	101	11.687	SB	EB SR-92	C	1		Operational
●	4	SM	101	11.814	SB	Fashion Island Blvd / 19th Ave	S	2	M	Operational
	4	SM	101	11.922	SB	WB SR-92	C	1		Planned
●	4	SM	101	13.361	SB	EB E 4th Ave	S	2		Operational
●	4	SM	101	13.362	SB	WB E 3rd Ave	L	1		Operational
●	4	SM	101	14.301	SB	E Poplar Ave / N Amphlett Blvd	H	1		Operational
●	4	SM	101	16.461	SB	Rollins Rd / Broadway / Cadillac Way	S	2		Operational
●	4	SM	101	17.842	SB	EB E Millbrae Ave	S	3	M	Operational
●	4	SM	101	17.942	SB	WB E Millbrae Ave	L	1		Operational
●	4	SM	101	18.926	SB	SFO Domestic Terminals Departures (Lower Level)	S	2		Operational
●	4	SM	101	19.107	SB	SFO International Terminals Departures (Upper Level)	S	2		Operational
	4	SM	101	19.453	SB	EB I-380	C	2		Planned
●	4	SM	101	20.26	SB	San Bruno Ave	S	2		Operational
●	4	SM	101	20.48	SB	WB I-380 / N Access Rd	D	2		Operational
●	4	SM	101	21.357	SB	Produce Ave / Terminal Ct / San Mateo Ave / S Airport Blvd	S	3		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SM	101	22.436	SB	Oyster Point Blvd / Dubuque Ave	S	2		Operational
●	4	SM	101	22.774	SB	Bay Shore Blvd / Airport Blvd	H	2	M	Operational
●	4	SM	101	24.765	SB	Sierra Point Pkwy / Lagoon Rd	H	1		Operational
●	4	SM	101	25.914	SB	Beatty Ave / Candlestick Park / Tunnel Ave	S	2		Operational
	4	SM	280	0.21	NB	Alpine Rd	S	1		Planned
	4	SM	280	1.75	NB	EB Sand Hill Rd	L	1		Planned
	4	SM	280	1.75	NB	WB Sand Hill Rd	S	1		Planned
	4	SM	280	3.5	NB	SR-84 (Woodside Rd)	S	1		Planned
	4	SM	280	4.84	NB	Farm Hill Blvd	S	1		Planned
	4	SM	280	6.57	NB	Canada Rd	H	1		Planned
	4	SM	280	6.862	NB	Edgewood Rd	S	1		Planned
	4	SM	280	7.562	NB	Vista Point (Hassler Trail)	S	1		Planned
	4	SM	280	8.768	NB	Access Rd / Vista Point	S	1		Planned
	4	SM	280	9.544	NB	Gate (Sheep Camp Trail & Gate Vista Point)	S	1		Planned
	4	SM	280	10.734	NB	EB SR-92	C	1		Planned
	4	SM	280	10.991	NB	WB SR-92	C	1		Planned
	4	SM	280	12.41	NB	Bunker Hill Dr	S	1		Planned
	4	SM	280	14.54	NB	Hayne Rd / Black Mountain Rd	S	1		Planned
	4	SM	280	17.35	NB	Trousdale Dr / Skyline Blvd (SR-35)	S	1		Planned
	4	SM	280	18.68	NB	Larkspur Blvd / Skyline Blvd (SR-35)	S	1		Planned
	4	SM	280	20.26	NB	Cunningham Way / Crystal Springs Rd	S	1		Planned
	4	SM	280	21.22	NB	WB I-380	C	3		Planned
●	4	SM	280	21.36	NB	Sneath Ln / W San Bruno Ave	D	2		Operational
●	4	SM	280	22.62	NB	EB Westborough Blvd	L	1		Operational
●	4	SM	280	22.99	NB	Junipero Serra Blvd / Westborough Blvd	S	2	M	Operational
●	4	SM	280	24.18	NB	Hickey Blvd / Imperial Way	L	1		Operational
●	4	SM	280	24.78	NB	Serramonte Blvd / Junipero Serra Blvd	S	2		Operational
	4	SM	280	25.49	NB	NB SR-1	C	3		Planned
	4	SM	280	26.11	NB	Washington Ave	S	1		Planned
	4	SM	280	0.07	SB	SB Alpine Rd	L	1		Planned
	4	SM	280	1.46	SB	EB Sand Hill Rd	S	1		Planned
	4	SM	280	1.46	SB	WB Sand Hill Rd	L	1		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	4	SM	280	3.15	SB	SR-84 (Woodside Rd)	S	1		Planned
	4	SM	280	4.54	SB	Farm Hill Blvd	S	1		Planned
	4	SM	280	6.45	SB	Canada Rd	S	1		Planned
	4	SM	280	6.69	SB	Edgewood Rd	L	1		Planned
	4	SM	280	9.21	SB	Gate (Sheep Camp Trail)	S	1		Planned
	4	SM	280	10.44	SB	WB SR-92	C	2		Planned
	4	SM	280	10.75	SB	EB SR-92	S	1		Planned
	4	SM	280	12.19	SB	SR-35 / Bunker Hill Dr	H	1		Planned
	4	SM	280	14.11	SB	Hayne Rd / Skyline Blvd	S	1		Planned
	4	SM	280	17.01	SB	Trousdale Dr / Skyline Blvd (SR-35)	S	1		Planned
	4	SM	280	17.78	SB	Hillcrest Blvd / Skyline Blvd (SR-35)	S	1		Planned
	4	SM	280	19.09	SB	SB SR-35	S	1		Planned
	4	SM	280	20.61	SB	W San Bruno Ave / Sneath Ln	S	1		Planned
	4	SM	280	20.88	SB	WB I-380	C	2		Planned
●	4	SM	280	21.93	SB	Avalon Dr	S	2	M	Operational
●	4	SM	280	22.54	SB	EB Westborough Blvd	S	2		Operational
●	4	SM	280	24.08	SB	Hickey Blvd	S	2		Operational
●	4	SM	280	25.09	SB	NB SR-1	C	1		Operational
●	4	SM	280	25.22	SB	Sullivan Ave / D St	D	1		Operational
	4	SM	280	26.97	SB	SB SR-1	C	2		Planned
●	4	SM	280	27.008	SB	John Daly Blvd / Alemany Blvd	D	2		Operational
	4	SM	380	4.89	EB	SB I-280	C	2		Planned
	4	SM	380	4.9	EB	NB I-280	C	2		Planned
	4	SM	380	5.409	EB	SB El Camino Real (SR-82)	L	1		Planned
	4	SM	380	5.603	EB	NB El Camino Real (SR-82)	S	1		Planned
	4	SM	380	6.406	EB	SB US-101	C	1		Planned
	4	SM	380	6.407	EB	NB US-101	C	1		Planned
	4	SM	380	5.304	WB	SB El Camino Real (SR-82)	S	1		Planned
	4	SM	380	5.521	WB	NB El Camino Real (SR-82)	L	1		Planned
	4	SM	380	5.983	WB	NB US-101	C	2		Planned
	4	SM	380	6.074	WB	SB US-101	C	2		Planned
	4	SM	380	6.46	WB	N Access Rd	S	1		Planned
	4	SM	380	6.46	WB	S Airport Blvd	S	2		Planned
	4	SOL	80	1.723	EB	E Lincoln Rd / Magazine St	H	1		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	4	SOL	80	2.326	EB	EB I-780	C	1		Planned
	4	SOL	80	2.327	EB	WB I-780	C	1		Planned
	4	SOL	80	2.968	EB	Georgia St / Miller Ave / Steffan St	H	1		Planned
	4	SOL	80	3.171	EB	Florida St / E Lincoln Rd / Solano Ave / Springs Rd	H	1		Planned
	4	SOL	80	3.6	EB	Admiral Callaghan Ln / Tennessee St	H	1		Planned
	4	SOL	80	3.6	EB	Humboldt St / Tennessee St / Admiral Callaghan Ln	H	1		Planned
●	4	SOL	80	4.579	EB	Redwood St / Admiral Callaghan Ln	H	1		Operational
●	4	SOL	80	5.741	EB	Columbus Pkwy	C	1		Operational
●	4	SOL	80	6.076	EB	SR-37	C	2		Operational
●	4	SOL	80	8.355	EB	American Canyon Rd / Hiddenbrook Pkwy	S	1		Operational
●	4	SOL	80	11.51	EB	Red Top Rd	S	1		Operational
●	4	SOL	80	12.26	EB	EB SR-12 (Lincoln Hwy)	C	2		Operational
●	4	SOL	80	12.92	EB	I-680 / Lopes Rd / Green Valley Rd	D	3		Non-Op
●	4	SOL	80	13.643	EB	Pittman Rd / Suisun Valley Rd	S	3	M	Operational
●	4	SOL	80	16.29	EB	Chadbourne Rd / Abernathy Rd / Suisun Pkwy / Auto Mall Pkwy	S	2		Operational
●	4	SOL	80	16.908	EB	Auto Mall Pkwy / Raleigh Dr	S	1		Operational
●	4	SOL	80	17.527	EB	Beck Ave / W Texas St	S	2		Operational
●	4	SOL	80	18.078	EB	Travis Blvd	S	2		Operational
●	4	SOL	80	19.284	EB	Air Base Pkwy / Waterman Blvd	S	2	M	Operational
●	4	SOL	80	21.026	EB	Manuel Campos Pkwy / N Texas St	S	2	M	Operational
●	4	SOL	80	23.24	EB	Lincoln Hwy / Lagoon Valley Rd	S	1		Operational
●	4	SOL	80	23.927	EB	Pena Adobe Rd / Lincoln Hwy / Rivera Rd	S	1		Operational
●	4	SOL	80	25.38	EB	Alamo Dr / Lincoln Hwy / Butcher Rd	S	1		Operational
●	4	SOL	80	25.86	EB	Davis St / Bella Vista Rd	H	1		Operational
●	4	SOL	80	26.36	EB	Cliffside Dr / Peabody Rd / Elmira Rd / Mason St	H	2		Operational
●	4	SOL	80	27.12	EB	SB Allison Dr / E Monte Vista Ave	L	2	M	Operational
●	4	SOL	80	27.35	EB	NB Allison Dr / Nut Tree Pkwy / Monte Vista	S	2	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SOL	80	28.27	EB	I-505 / County Airport Rd / E Monte Vista Ave	C	1		Operational
●	4	SOL	80	28.39	EB	Orange Dr / Lawrence Dr / Nut Tree Rd	S	2	M	Operational
	4	SOL	80	29.85	EB	EB Vaca Valley Pkwy / SB Leisure Town Rd	L	1		Part Const
	4	SOL	80	30.023	EB	NB Leisure Town Rd / WB Vaca Valley Pkwy	S	1		Part Const
	4	SOL	80	31.373	EB	N Meridian Rd / Weber Rd	H	2		Planned
	4	SOL	80	32.787	EB	Midway Rd / Lewis Rd	S	2		Planned
	4	SOL	80	35.551	EB	W A St / W Dixon Ave / Batavia Rd	H	2		Planned
	4	SOL	80	36.859	EB	Pitt School Rd / Stratford Ave	S	2		Planned
	4	SOL	80	38.383	EB	NB SR-113 (N 1st St)	S	2		Planned
	4	SOL	80	39.728	EB	Pedrick Rd / Sparling Rd	L	2		Planned
	4	SOL	80	41.51	EB	Kidwell Rd / Sparling Rd	S	1		Planned
	4	SOL	80	43.38	EB	SB SR-113	C	2		Planned
	4	SOL	80	43.55	EB	Old Davis Rd	S	2		Planned
	4	SOL	80	1.07	WB	SB Sonoma Blvd (SR-29) / Sequoia Ave	S	1		Part Const
	4	SOL	80	1.241	WB	W Lincoln Rd / Sequoia Ave / Maritime Academy Dr / Sonoma Blvd (SR-29)	H	1		Planned
	4	SOL	80	1.733	WB	W Lincoln Rd / Pint St / Magazine St	H	1		Planned
	4	SOL	80	2.04	WB	San Mique Rd / San Diego Dr	H	1		Planned
	4	SOL	80	2.148	WB	WB I-780	C	1		Planned
	4	SOL	80	2.293	WB	EB I-780	C	1		Planned
	4	SOL	80	2.796	WB	Campbell Ave / 14th St / Georgia St	H	1		Planned
	4	SOL	80	3.13	WB	Solano Ave / Springs Rd / Mariposa St	S	1		Planned
	4	SOL	80	3.42	WB	WB Tennessee St / Mariposa St	L	1		Planned
	4	SOL	80	3.421	WB	EB Tennessee St / Mariposa St	S	1		Planned
●	4	SOL	80	4.317	WB	Redwood St	S	2	M	Operational
●	4	SOL	80	5.567	WB	SR-37	C	3	M	Operational
●	4	SOL	80	5.761	WB	Columbus Pkwy	L	1		Operational
●	4	SOL	80	7.952	WB	American Canyon Rd	S	1		Operational
●	4	SOL	80	11.19	WB	Red Top Rd	S	1		Operational
●	4	SOL	80	12.601	WB	Green Valley Rd / Lopes Rd	S	2	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SOL	80	12.991	WB	I-680	C	2		Planned
●	4	SOL	80	15.45	WB	WB SR-12	C	3		Operational
●	4	SOL	80	16.02	WB	Chadbourne Rd / Abernathy Rd / Suisun Pkwy	S	1		Operational
●	4	SOL	80	17.074	WB	Rockville Rd / W Texas St	H	2	M	Operational
●	4	SOL	80	17.862	WB	EB Travis Blvd	H	1		Operational
●	4	SOL	80	17.94	WB	WB Travis Blvd	L	1		Operational
●	4	SOL	80	18.924	WB	Hilborn Rd / Waterman Blvd / Air Base Pkwy	S	3	M	Operational
●	4	SOL	80	21.016	WB	Manuel Campos Pkwy / Hilborn Rd / Lyon Rd / N Texas St	H	1		Operational
●	4	SOL	80	23.06	WB	Cherry Glen Rd / Lyon Rd / Lagoon Valley Rd	S	1		Operational
●	4	SOL	80	23.729	WB	Cherry Glen Rd / Lincoln Hwy / Rivera Rd	S	1		Operational
●	4	SOL	80	25.12	WB	Merchant St / Alamo Dr	S	2		Operational
●	4	SOL	80	25.83	WB	Hickory Ln / Davis St	S	1		Operational
●	4	SOL	80	26.27	WB	Mason St / Depot St / Elmira Rd	S	1		Operational
●	4	SOL	80	27.3	WB	E Monte Vista Ave / Browns Valley Pkwy	S	2		Operational
●	4	SOL	80	27.54	WB	E Monte Vista Ave / Nut Tree Rd	H	2		Operational
●	4	SOL	80	28.11	WB	I-505	C	2		Operational
	4	SOL	80	29.86	WB	EB Vaca Valley Pkwy / SB Leisure Town Rd	S	1		Part Const
	4	SOL	80	29.924	WB	NB Leisure Town Rd / WB Vaca Valley Pkwy	L	1		Part Const
	4	SOL	80	31.184	WB	N Meridian Rd	S	1		Planned
	4	SOL	80	31.621	WB	Midway Rd / Oday Rd	H	1		Planned
	4	SOL	80	35.505	WB	W Dixon Ave / W A St / Schroeder Rd	L	1		Planned
	4	SOL	80	36.942	WB	Pitt School Rd	H	1		Planned
	4	SOL	80	38.152	WB	Currey Rd / Milk Farm Rd	S	1		Planned
	4	SOL	80	38.286	WB	Currey Rd / NB Lincoln Hwy (SR-113) / Milk Farm Rd	H	1		Planned
	4	SOL	80	39.803	WB	Pedrick Rd / Sievers Rd	L	1		Planned
	4	SOL	80	41.02	WB	Kidwell Rd / Olmo Ln	S	1		Planned
	4	SOL	80	42.53	WB	SB SR-113	C	2		Planned
	4	SOL	80	43.21	WB	Old Davis Rd	S	1		Planned
	4	SOL	505	0.248	NB	Orange Dr / EB I-80	D	1		Planned
	4	SOL	505	0.248	NB	WB I-80	C	1		Planned
	4	SOL	505	1.672	NB	Vaca Valley Pkwy	S	1		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	4	SOL	505	3.221	NB	Midway Rd	S	1		Planned
	4	SOL	505	5.689	NB	Allendale Rd	S	1		Planned
	4	SOL	505	10.434	NB	Gaddini Rd / Putah Creek Rd	H	1		Planned
	4	SOL	505	1.221	SB	Vaca Valley Pkwy	S	1		Planned
	4	SOL	505	2.927	SB	Midway Rd	S	1		Planned
	4	SOL	505	5.466	SB	Allendale Rd	S	1		Planned
	4	SOL	505	10.258	SB	Johnson Rd / Putah Creek Rd	H	1		Planned
	4	SOL	680	1.238	NB	I-780	C	2		Planned
	4	SOL	680	1.46	NB	Industrial Way	S	1		Planned
	4	SOL	680	2.79	NB	Lake Herman Rd / Goodyear Rd	L	1		Planned
	4	SOL	680	5.17	NB	Parish Rd / Goodyear Rd	S	1		Planned
	4	SOL	680	7.43	NB	Marshview Rd / Goodyear Rd	S	1		Planned
	4	SOL	680	10.18	NB	Gold Hill Rd / Ramsey Rd	S	1		Planned
	4	SOL	680	0.83	SB	Bayshore Rd	S	1		Planned
	4	SOL	680	1.238	SB	I-780	C	2		Planned
	4	SOL	680	2.66	SB	Lake Herman Rd / Lopes Rd	S	1		Planned
	4	SOL	680	4.87	SB	Parish Rd / Lopes Rd	S	1		Planned
	4	SOL	680	7.22	SB	Marshview Rd / Lopes Rd	S	1		Planned
	4	SOL	680	9.87	SB	Gold Hill Rd / Lopes Rd	S	1		Planned
	4	SOL	680	13.025	SB	WB I-80	C	2		Planned
	4	SOL	680	13.027	SB	EB SR-12 / I-80	C	1		Planned
	4	SOL	780	1.429	EB	E 5th St	S	1		Planned
	4	SOL	780	1.881	EB	E 2nd St	S	1		Planned
	4	SOL	780	3.06	EB	W 7th St / Southhampton Rd	L	1		Planned
	4	SOL	780	3.655	EB	Southhampton Rd / W Military	S	1		Planned
	4	SOL	780	4.684	EB	Rose Dr / Columbus Pkwy	H	1		Planned
	4	SOL	780	5.915	EB	Glen Cove Rd	S	2		Planned
	4	SOL	780	6.91	EB	Spruce St / Laurel St	H	1		Planned
	4	SOL	780	7.07	EB	EB I-80	C	1		Planned
	4	SOL	780	7.25	EB	WB I-80	C	1		Planned
	4	SOL	780	0.387	WB	NB I-680	C	2		Planned
	4	SOL	780	0.39	WB	SB I-680	C	1		Planned
	4	SOL	780	1.734	WB	E 5th St	S	1		Planned
	4	SOL	780	2.204	WB	E 2nd St	S	1		Planned

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	4	SOL	780	3.064	WB	Southampton Rd / W 7th St	S	1		Planned
	4	SOL	780	4.162	WB	W K St / W Military	S	1		Planned
	4	SOL	780	4.728	WB	Columbus Pkwy	H	1		Planned
	4	SOL	780	6.091	WB	Glen Cove Rd	S	1		Planned
	4	SOL	780	6.966	WB	Cedar St / Reis Ave / Laurel St	H	1		Planned
	4	SOL	780	7.13	WB	EB I-80	C	1		Planned
	4	SOL	780	7.32	WB	WB I-80	C	1		Planned
●	4	SON	101	2.699	NB	Kastania Rd / S Petaluma Blvd	S	2		Non-Op
●	4	SON	101	3.84	NB	Lakeville Hwy / SR-116	S	2		Non-Op
●	4	SON	101	4.7	NB	EB E Washington St	L	1		Part Const
●	4	SON	101	4.885	NB	WB E Washington St	S	2		Non-Op
●	4	SON	101	7.63	NB	NB N Old Redwood Hwy / N Petaluma Blvd	L	1		Non-Op
●	4	SON	101	7.71	NB	SB N Old Redwood Hwy	S	1		Non-Op
●	4	SON	101	12.87	NB	SR-116 / Gravenstein Hwy / Old Redwood Hwy / Commerce Blvd	S	3	M	Operational
●	4	SON	101	13.833	NB	EB Rohnert Park Expy	L	2	M	Operational
●	4	SON	101	14.231	NB	WB Rohnert Park Expy	S	3	M	Operational
●	4	SON	101	14.863	NB	Commerce Blvd / Golf Course Dr / Roberts Lake Rd	S	2		Operational
●	4	SON	101	16.616	NB	Todd Rd / Santa Rose Ave	S	2		Operational
●	4	SON	101	18.498	NB	Yolanda Ave / Santa Rosa Ave / Hearn Ave	S	2	M	Operational
●	4	SON	101	18.981	NB	Santa Rosa Ave / Colgan Ave / Baker Ave	S	1		Operational
●	4	SON	101	19.75	NB	EB SR-12	C	1		Operational
●	4	SON	101	19.76	NB	WB SR-12	C	1		Operational
●	4	SON	101	20.42	NB	6th St / Morgan St	S	1		Operational
●	4	SON	101	20.9	NB	College Ave	S	2		Operational
●	4	SON	101	21.93	NB	Steele Lane / Guerneville Rd	S	3	M	Operational
●	4	SON	101	22.96	NB	Mendocino Ave / Fountaingrove Pkwy / Old Redwood Hwy	H	2	M	Operational
●	4	SON	101	24.77	NB	EB River Rd / Mark West Springs Rd	L	1		Operational
●	4	SON	101	24.9	NB	WB River Rd / Mark West Springs Rd	S	1		Operational
●	4	SON	101	26.388	NB	Airport Blvd	S	3	M	Operational
●	4	SON	101	27.54	NB	EB Shiloh Rd	L	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	4	SON	101	27.65	NB	WB Shiloh Rd	S	1		Operational
	4	SON	101	29.56	NB	Old Redwood Hwy / Lakewood Dr	S	1		Planned
	4	SON	101	33.67	NB	Old Redwood Hwy / Grant Ave / Healdsburg Ave	S	1		Planned
	4	SON	101	35.05	NB	Westside Rd / Mill St	S	1		Planned
	4	SON	101	36.48	NB	Dry Creek Rd	S	1		Planned
	4	SON	101	38.71	NB	Lytton Springs Rd	S	1		Planned
	4	SON	101	40.25	NB	Independence Undps / Souverain Rd / Geyserville Ave	S	1		Planned
	4	SON	101	41.65	NB	Geyserville Ave / Banli Ln	S	1		Planned
	4	SON	101	43.57	NB	Canyon Rd / Geyserville Ave (SR-128)	S	1		Planned
	4	SON	101	48.06	NB	Asti Store Rd / Simmons Rd	S	1		Planned
	4	SON	101	49.22	NB	Theresa Dr / Asti Rd	S	1		Planned
	4	SON	101	50.64	NB	Santana Dr / Asti Rd / S Redwood Hwy	S	1		Planned
	4	SON	101	51.82	NB	Citrus Fair Dr / Asti Rd	S	1		Planned
	4	SON	101	54.441	NB	N Redwood Hwy (SR-128)	S	1		Planned
●	4	SON	101	2.63	SB	Kastania Rd / S Petaluma Blvd	S	2		Non-Op
●	4	SON	101	3.8	SB	Lakeville St / Caulfield Ln / SR-116	H	2		Non-Op
●	4	SON	101	4.708	SB	E Washington St	S	2		Non-Op
●	4	SON	101	7.58	SB	NB N Petaluma Blvd / N Old Redwood Hwy	H	1		Non-Op
●	4	SON	101	7.67	SB	SB N Old Redwood Hwy / N Petaluma Blvd	L	1		Non-Op
●	4	SON	101	8.87	SB	Pepper Rd	S	1		Operational
●	4	SON	101	11.86	SB	W Sierra Ave / W School St	S	2	M	Operational
●	4	SON	101	12.605	SB	SR-116 / Gravenstein Hwy	S	2	M	Operational
●	4	SON	101	13.712	SB	EB Rohnert Park Expy	S	2	M	Operational
●	4	SON	101	13.888	SB	WB Rohnert Park Expy	L	2	M	Operational
●	4	SON	101	14.854	SB	Golf Course Dr / Redwood Dr / Wilfred Ave	S	3	M	Operational
●	4	SON	101	16.557	SB	Todd Rd / S Moorland Ave	S	1		Operational
●	4	SON	101	18.376	SB	Corby Ave / Hearn Ave	S	2		Operational

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●	4	SON	101	18.82	SB	Baker Ave / Corby Ave / Santa Rosa Ave	S	2		Operational
●	4	SON	101	19.592	SB	EB SR-12	C	2		Operational
●	4	SON	101	19.593	SB	WB SR-12	C	2	M	Operational
●	4	SON	101	19.793	SB	3rd St / Davis St	S	1		Operational
●	4	SON	101	20.63	SB	College Ave	S	2		Operational
●	4	SON	101	21.558	SB	Guerneville Rd / Steele Lane	S	2		Operational
●	4	SON	101	22.4	SB	Bicentennial Way / Cleveland Ave	S	3	M	Operational
●	4	SON	101	22.9	SB	Mendocino OC / Cleveland Ave / Industrial Dr	H	1		Operational
●	4	SON	101	23.13	SB	Cleveland Ave / Hopper Ave	L	2	M	Operational
●	4	SON	101	24.82	SB	EB River Rd / Mark West Springs Rd	S	2	M	Operational
●	4	SON	101	24.97	SB	WB River Rd / Mark West Springs Rd	L	2	M	Operational
●	4	SON	101	26.238	SB	EB Airport Blvd	S	3	M	Operational
●	4	SON	101	26.413	SB	WB Airport Blvd	L	2	M	Operational
●	4	SON	101	27.58	SB	EB Shiloh Rd	S	2	M	Operational
●	4	SON	101	27.69	SB	WB Shiloh Rd	L	1		Operational
●	4	SON	101	29.2	SB	Old Redwood Hwy / Conde Ln / Windsor River Rd	S	2	M	Operational
●	4	SON	101	31.086	SB	Arata Lane / Old Redwood Hwy	S	1		Operational
	4	SON	101	33.3	SB	Old Redwood Hwy / Limerick Ln	S	1		Planned
	4	SON	101	34.37	SB	Healdsburg Ave / Exchange Ave	H	1		Planned
	4	SON	101	36.13	SB	Dry Creek Rd	S	1		Planned
	4	SON	101	38.43	SB	Lytton Springs Rd	S	1		Planned
	4	SON	101	39.91	SB	Independence Undps / Souverain Rd / Via Archimedes	S	1		Planned
	4	SON	101	41.24	SB	Geyserville Ave / Geyserville Rd	S	1		Planned
	4	SON	101	43.08	SB	Canyon Rd (SR-128) / Chianti Rd	S	1		Planned
	4	SON	101	47.66	SB	Simmons Rd / Asti Store Rd		1		Planned
	4	SON	101	48.92	SB	Theresa Dr / Dutcher Creek Rd		1		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	4	SON	101	50.23	SB	Santana Dr / S Redwood Hwy / S Cloverdale Blvd		1		Planned
	4	SON	101	51.46	SB	Citrus Fair Dr / N Cloverdale Blvd		1		Planned
	4	SON	101	53.32	SB	N Redwood Hwy (SR-128)		1		Planned

# District 5

Figure 6. District 5 Ramp Metering Map 1

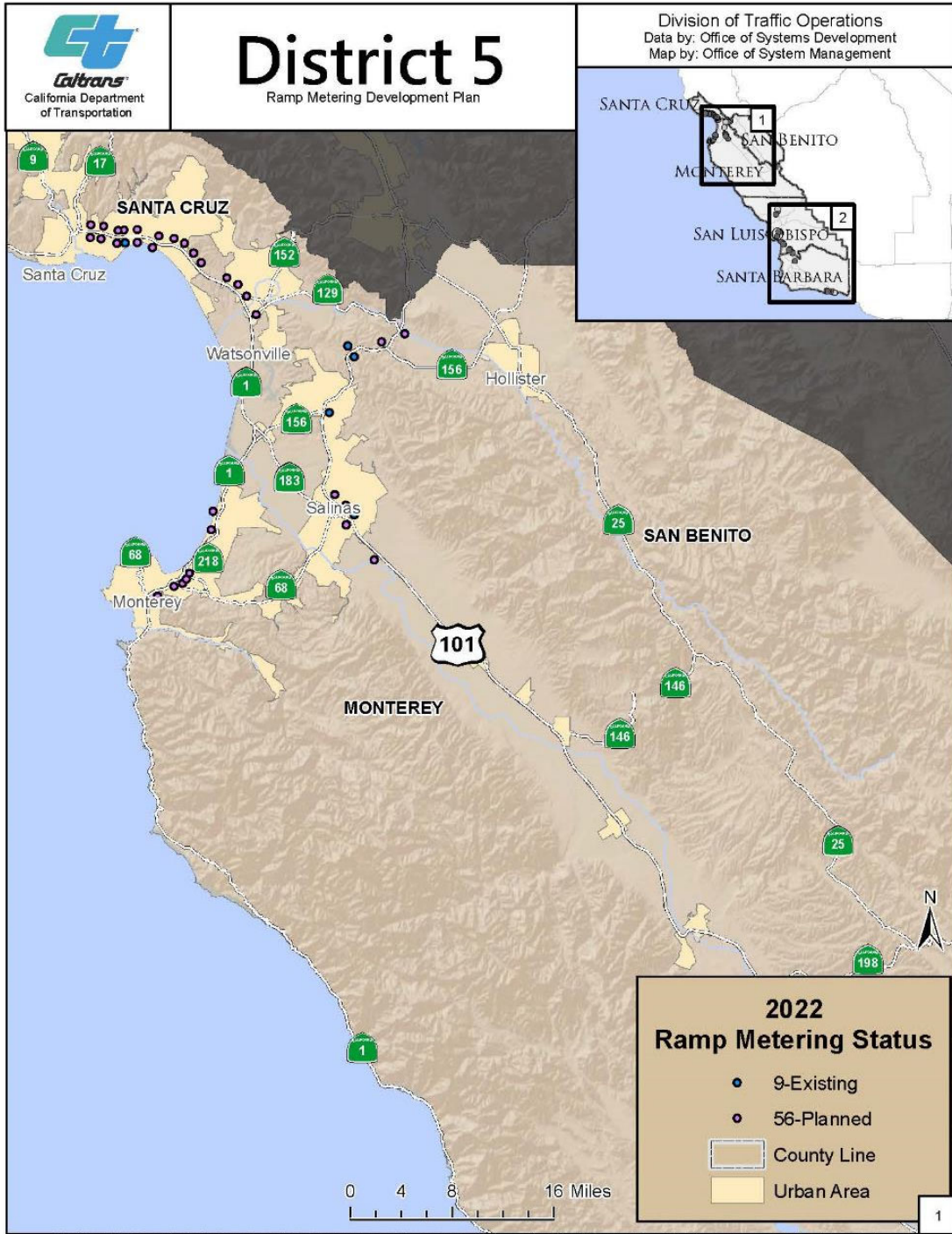
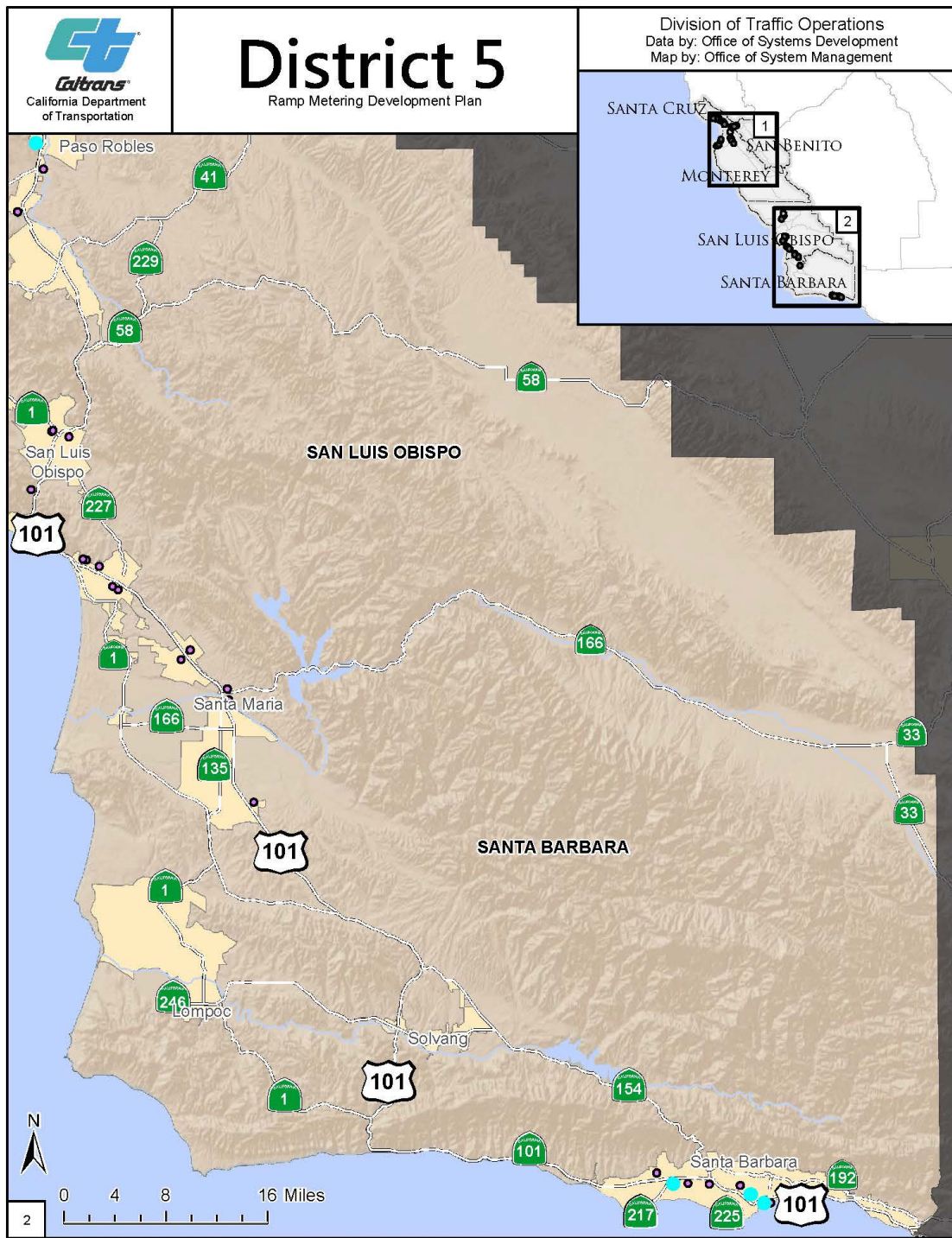


Figure 7. District 5 Ramp Metering Map 2



## **District 5 Ramp Metering Narrative**

Known as the Central Coast, District 5 is composed of mostly rural coastal counties with widely separated small cities and distinct urbanized areas ranging in population between 50,000 and 150,000. The counties include Monterey, San Benito, San Luis Obispo, Santa Barbara, and Santa Cruz. The population is 1,474,179 in 11,199 square miles for a density of 132 people per square mile. Caltrans manages 1,169 centerline miles and 3,219 total lane miles of highway in District 5.

Primary economic industries include agriculture, tourism, government, military, and education. The Central Coast produces \$6.5 billion in agriculture per year, has a \$5 billion tourism industry, supports six military bases and 25,000 military personnel, and sustains approximately 100,000 students enrolled at twelve colleges and universities.

US-101 is the primary coastal route between the Los Angeles Basin and the San Francisco Bay Area, two of the country's most populous metro areas. It is the only north-south interregional route that supports goods movement through the district. US-101 also serves as a Department of Defense strategic highway network corridor, Strategic Interregional Corridor, Priority Interregional Highway, principal arterial on the National Highway System, and state highway extra-legal load route as part of the National Truck Network.

### **Current or Planned Ramp Metering Routes**

The following routes have, or are planned to have, ramp metering: SR-1 and US-101. There are 9 existing and 56 planned ramp meters on these routes for a projected total of 65 ramp meters for the ten-year period covered by the RMDP. Ramp meter locations are illustrated on the district 5 RMDP map.

### **Congestion Challenges**

Most congestion challenges occur in the district's urban areas. Routine congestion occurs in the urbanized areas of Santa Barbara, Arroyo Grande-Pismo Beach, San Luis Obispo, Salinas, Monterey-Seaside, and Santa Cruz. US-101 serves as a detour route connecting the Central Valley and San Francisco Bay Area with the Los Angeles region during closures of the I-5 mountain pass (Grapevine); therefore, there are occasional heavy congestion levels along long portions of the corridor when those road closures occur.

### **District Ramp Metering Strategies**

The district's criteria for selecting ramp metering locations align with the statewide strategies identified in the RMDP. In addition to the statewide strategies, District 5 planners and engineers use the following considerations when evaluating and prioritizing potential ramp metering projects and locations:

1. The project provides an immediate opportunity of operational improvement for the specific ramp or interchange.
2. The project provides corridor-wide benefits within a city, urban area, or region.

3. The project represents a collaborative effort with partner agencies.

The district will also analyze location-specific opportunities necessitated by local development impacts where ramp metering may preserve freeway operations.

**Table 8. District 5 Ramp Metering Development Plan**

High Priority Locations

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
	5	Mon	101	86.04	NB	Fairview Ave	L	1		Operational
	5	Mon	101	95.36	NB	SR-156/Prundale	L	1		Operational
	5	Mon	101	101.3	SB	San Juan Rd SB	S	2		Operational
	5	SB	101	13.51	SB	Garden Street	S	2		Operational
	5	SB	101	R 14.77	NB	Carrillo Street	S	2		Operational
	5	SB	101	21.16	SB	Patterson Ave	S	2		Operational
	5	SB	101	0.07	NB	San Juan Rd NB	L	2		Operational
	5	SLO	101	55.85	SB	Spring Street	S	2		Operational
	5	SCR	1	13.192	SB	Bay Ave/Porter St	S	1		Part Const
	5	SB	101	21.41	SB	SR-217				Planned
	5	SB	101	82.1	NB	Clark Ave				Planned
	5	MON	101	86.12	SB	Sanborn Rd				Planned
	5	SB	101	2.74	SB	SR-156 (San Juan Bautista)				Planned
	5	SCR	1	15.822	SB	Morrissey Blvd				Planned
	5	SCR	1	15.822	NB	Morrissey Blvd				Planned
	5	SCR	1	14.864	SB	Soquel Ave				Planned
	5	SCR	1	14.864	NB	Soquel Ave				Planned
	5	SCR	1	13.62	SB	41st Ave				Planned
	5	SCR	1	13.62	NB	41st Ave				Planned
	5	SCR	1	13.192	NB	Bay Ave/Porter St				Planned
	5	SCR	1	12.088	SB	Park Ave				Planned
	5	SCR	1	12.088	NB	Park Ave				Planned
	5	SCR	1	10.535	NB	State Park Dr				Planned
	5	SCR	1	9.153	NB	Rio Del Mar Blvd				Planned
	5	SCR	1	8.355	NB	Freedom Blvd				Planned
	5	SCR	1	R 7.67	NB	San Andres Blvd/ Larkin Valley Blvd				Planned
	5	SCR	1	R 6.69	NB	Mar Monte Ave				Planned
	5	SCR	1	R 4.07	NB	Buena Vista Dr				Planned
	5	MON	1	R 82.89	SB	Lightfighter Dr				Planned
	5	SLO	101	28.86	SB	Los Osos Valley Rd				Planned
	5	SLO	101	R 23.97	SB	Higuera St				Planned
	5	SCR	1	R 3.181	NB	Airport Blvd				Planned
	5	SCR	1	R 2.269	NB	Harkins Slough Rd				Planned
	5	SCR	1	R 0.716	NB	Riverside Dr				Planned
	5	SLO	101	28.94	SB	Olive St				Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
	5	SLO	101	30.1	NB	Monterey St				Planned
	5	SLO	101	15.76	NB	4th St				Planned
	5	SLO	101	16.02	NB	James Way				Planned
	5	SLO	101	14.613	NB	Oak Park Rd				Planned
	5	SB	101	12.55	SB	Milpas St		2		Planned
	5	SB	101	R 15.77	NB	Mission St				Planned
	5	SB	101	18.34	SB	SR-154				Planned
	5	SB	101	20.03	SB	Turnpike Rd		2		Planned
	5	SB	101	22.45	NB	Fairview Ave				Planned
	5	SB	101	90.86	NB	SR-135 North				Planned
	5	SLO	101	0.83	NB	SR-166				Planned
	5	SLO	101	4.83	SB	Tefft St				Planned
	5	SLO	101	4.86	NB	Tefft St				Planned
	5	SLO	101	12.52	SB	Traffic Wy				Planned
	5	SLO	101	13.15	SB	Grand Ave				Planned
	5	SLO	101	50.56	SB	Vineyard Dr				Planned
	5	SLO	101	54.13	NB	SR-46-West				Planned
	5	MON	1	R 76.04	NB	Soledad Dr				Planned
	5	MON	1	R 77.46	NB	Fremont St				Planned
	5	MON	1	R 78.16	NB	SR-68 East				Planned
	5	MON	1	R 78.49	NB	Casa Verde Wy				Planned
	5	MON	1	R 78.83	NB	Del Monte Ave				Planned
	5	MON	1	R 84.45	SB	Imjin Pkwy				Planned
	5	MON	101	82.42	SB	Abbott St				Planned
	5	MON	101	86.65	NB	John St				Planned
	5	MON	101	87.44	NB	E Market St				Planned
	5	MON	101	R 88.32	NB	SR-183				Planned
	5	SBT	101	R 4.88	NB	SR-129				Planned
	5	SCR	1	10.55	SB	State Park Dr	L			Planned
	5	SCR	1	13.63	SB	41st Ave	L			Planned

# District 6

Figure 8. District 6 Ramp Metering Map 1

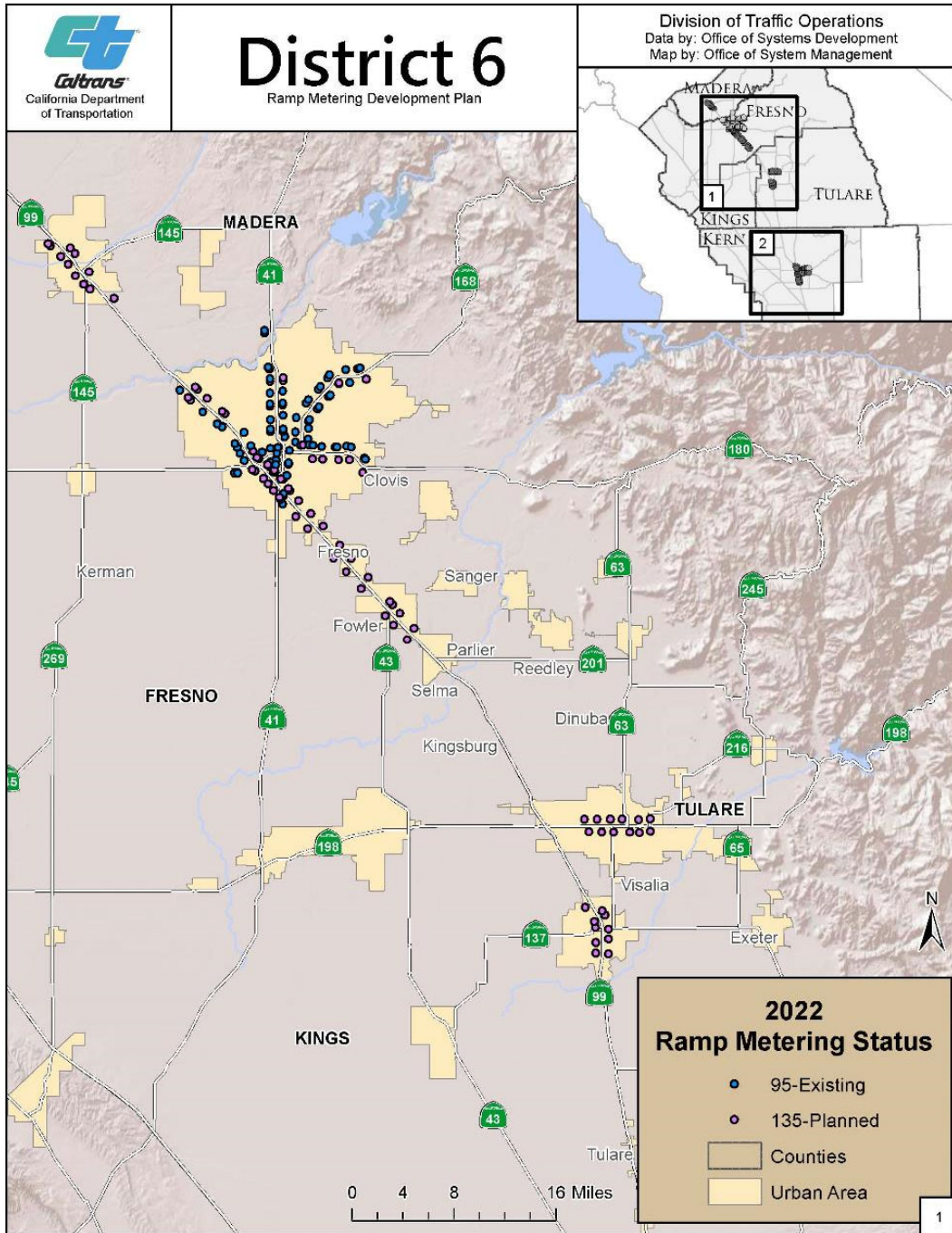
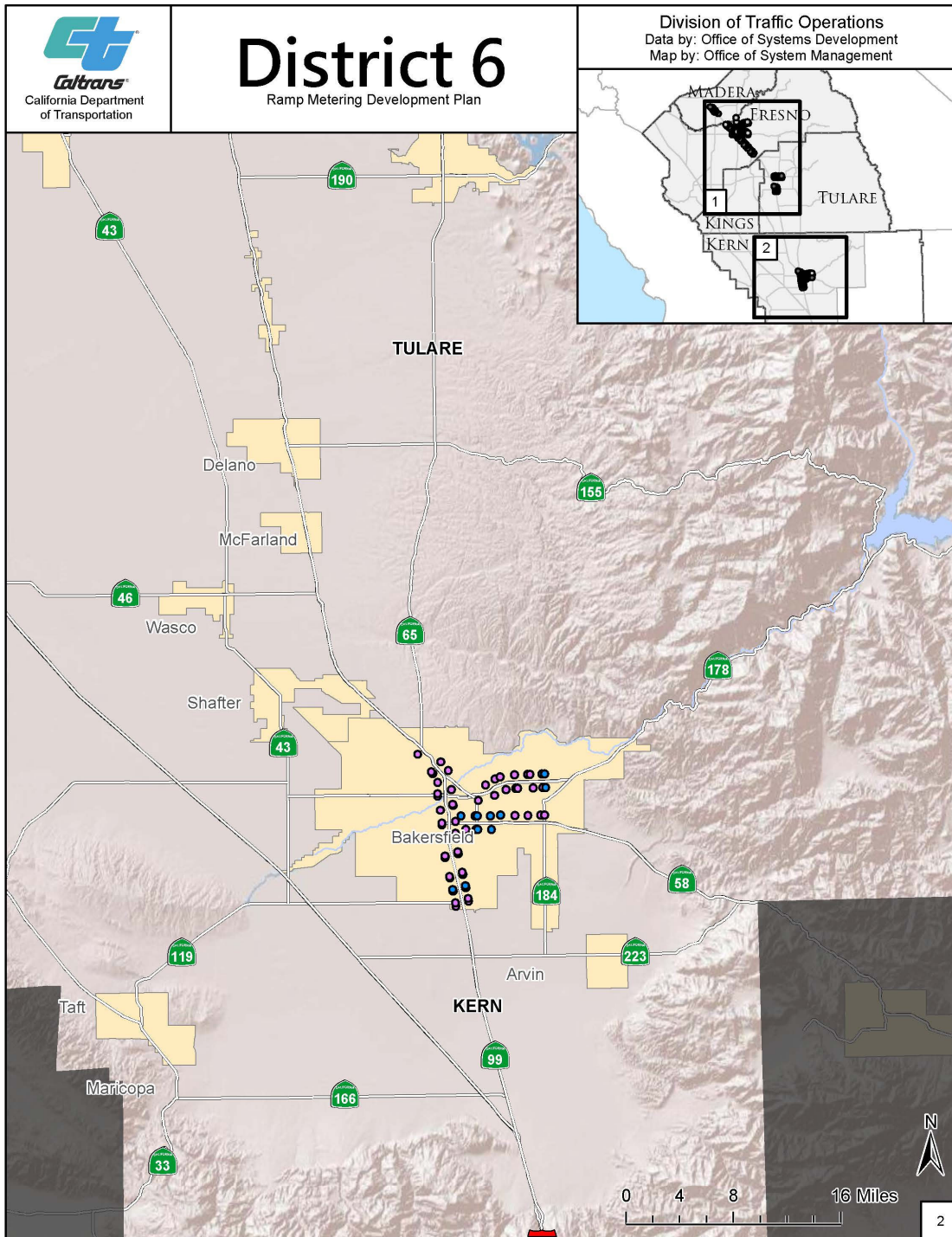


Figure 9. District 6 Ramp Metering Map 2



## **District 6 Ramp Metering Narrative**

District 6 is predominately rural and agricultural, with urbanization focused along the SR-99 corridor. The district includes two of the nine largest cities in California—Fresno and Bakersfield. The five counties in the district are: Fresno, Kern, Kings, Madera, and Tulare. District 6 has a population of 2,629,622 in a land area of 22,457 square miles and a density of 112 people per square mile. Caltrans manages 2,029 centerline miles and 5,770 lane-miles of highway within District 6.

### **Current or Planned Ramp Metering Routes**

The following routes have or are planned to have ramp metering: SR-41, SR-58, SR-99, SR-168, SR-178, SR-180, and SR-198.

District 6 has 95 existing ramp meters (including operational and non-operational) and 135 planned ramp meters for a projected total of 230 ramp meters for the ten-year period covered by the RMDP. Currently there are no proposed high priority locations in District 6. Ramp meter locations are illustrated on the District 6 RMDP map.

### **Congestion Challenges**

District 6 has considerable congestion during traffic incidents and winter fog conditions. The fog causes visibility issues and occasional major accidents which cause traffic delays.

Also, the state highway serves as a “main street” within the city limits of several small communities. This can present occasional congestion issues due to busy city traffic. With increasing population in the valley cities, more extensive congestion issues are anticipated.

### **District Ramp Metering Strategies**

Ramp metering locations are selected by district staff based on criteria established within the district. A freeway onramp (or future onramp) location may be added to the District 6 RMDP for the following reasons:

- The location is within the city limits of the following major cities: Fresno, Clovis, Bakersfield, Madera, Tulare, and Visalia.
- The location has an annual average peak hour volume of at least 2,000 vehicles per hour per mainline lane.
- The location is projected to have an annual average peak hour volume of at least 2,000 vehicles per hour per mainline lane within 10 years from the release date of the RMDP (a standard annual traffic volume growth rate of 3 percent per year is used).
- Engineering observation and judgment determine that ramp metering would be beneficial even though the location does not meet any of the above criteria. Other justifications for adding ramp metering could include gap closure (an un-metered ramp between two metered ramps), seasonal conditions that cause a

location to experience high traffic volumes during a certain time of year, locations with merging issues that could be mitigated in whole or part by ramp metering, or other operational or safety issues that could be mitigated in whole or part by ramp metering.

It should be noted that, as is the case with the *California Manual on Uniform Traffic Control Devices* traffic signal warrants, meeting the above criteria does not automatically mean a location is included in the RMDP. Engineering studies and judgment may preempt the above criteria.

**Table 9. District 6 Ramp Metering Development Plan**

High Priority Locations

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	6	FRE	41	R 20.29	NB	North Ave	S	2	M	Operational
•	6	FRE	41	R 21.07	NB	EB Jensen Ave	L	2		Operational
•	6	FRE	41	R 21.22	NB	WB Jensen Ave	S	2	M	Operational
	6	FRE	41	R 22.57	SB	Broadway Ave	L	1		Planned
	6	FRE	41	R 22.69	SB	M St	S	1		Planned
•	6	FRE	41	R 22.71	NB	Broadway Ave	S	1		Operational
•	6	FRE	41	R 22.99	NB	M St	S	1		Operational
•	6	FRE	41	R 23.57	SB	Tulare Ave/U St	S	1		Operational
•	6	FRE	41	R 23.70	NB	Tulare Ave	L	2		Operational
•	6	FRE	41	R 23.85	NB	Divisadero St	S	3	M	Operational
•	6	FRE	41	R 24.40	SB	EB SR-180	C	2		Operational
•	6	FRE	41	R 24.41	SB	WB SR-180	C	2		Operational
•	6	FRE	41	R 24.69	NB	EB SR-180	C	2		Operational
•	6	FRE	41	R 24.70	NB	WB SR-180	C	2		Operational
•	6	FRE	41	R 25.39	NB	McKinley Ave	S	2	M	Operational
•	6	FRE	41	R 25.41	SB	McKinley Ave	L	2		Operational
•	6	FRE	41	R 26.35	SB	EB Shields Ave	S	2		Operational
•	6	FRE	41	R 26.41	NB	EB Shields Ave	L	2	M	Operational
•	6	FRE	41	R 26.53	SB	WB Shields Ave	L	2		Operational
•	6	FRE	41	R 26.59	NB	WB Shields Ave	S	2	M	Operational
•	6	FRE	41	R 27.38	SB	Ashlan Ave	S	3	M	Operational
•	6	FRE	41	R 27.55	NB	Ashlan Ave	S	3	M	Operational
•	6	FRE	41	R 28.34	SB	EB Shaw Ave	S	2		Operational
•	6	FRE	41	R 28.42	NB	EB Shaw Ave	L	2	M	Operational
•	6	FRE	41	R 28.53	SB	WB Shaw Ave	L	2		Operational
•	6	FRE	41	R 28.57	NB	WB Shaw Ave	S	3	M	Operational
•	6	FRE	41	R 29.38	SB	Bullard Ave	S	3	M	Operational
•	6	FRE	41	R 29.58	NB	Bullard Ave	S	3	M	Operational
•	6	FRE	41	R 30.32	SB	EB Herndon Ave	S	2		Operational
	6	FRE	41	R 30.40	NB	EB Herndon Ave	L	1		Planned
•	6	FRE	41	R 30.53	SB	WB Herndon Ave	L	2		Operational
	6	FRE	41	R 30.59	NB	WB Herndon Ave	S	1		Planned
•	6	FRE	41	R 31.58	SB	EB Friant Rd	S	1		Operational
•	6	FRE	41	R 31.76	SB	WB Friant Rd	L	2		Operational
•	6	FRE	99	R 3.65	SB	E Mountain View Ave	S	1		Planned
•	6	FRE	99	R 3.84	NB	E Mountain View Ave	S	1		Planned
•	6	FRE	99	R 5.20	SB	2nd St	S	1		Planned
•	6	FRE	99	R 5.48	NB	2nd St	S	1		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	6	FRE	99	R 6.19	SB	S Highland Ave	S	1		Planned
•	6	FRE	99	R 6.39	NB	S Highland Ave	L	1		Planned
•	6	FRE	99	R 6.71	NB	Floral Ave	S	1		Planned
	6	FRE	99	9.04	SB	Manning Ave	S	1		Planned
	6	FRE	99	9.29	NB	Manning Ave	S	1		Planned
	6	FRE	99	10.82	SB	Merced St/Fowler Ave	S	1		Planned
	6	FRE	99	11.25	NB	Merced St	S	1		Planned
	6	FRE	99	11.89	NB	Adams Ave	S	1		Planned
	6	FRE	99	12.32	SB	Clovis Ave	S	1		Planned
	6	FRE	99	12.61	NB	Clovis Ave	S	1		Planned
	6	FRE	99	14.61	NB	American Ave	S	1		Planned
	6	FRE	99	15.37	SB	Chestnut Ave	S	1		Planned
	6	FRE	99	15.97	NB	Central Ave	S	1		Planned
	6	FRE	99	16.76	SB	Cedar Ave	S	1		Planned
	6	FRE	99	17.37	NB	North Ave	S	1		Planned
	6	FRE	99	18.46	SB	EB Jensen Ave	S	1		Planned
	6	FRE	99	18.47	NB	EB Jensen Ave	L	1		Planned
	6	FRE	99	18.66	SB	WB Jensen Ave	L	1		Planned
	6	FRE	99	18.68	NB	WB Jensen Ave	S	1		Planned
	6	FRE	99	19.38	SB	SB SR-41	C	2		Planned
	6	FRE	99	19.61	NB	NB SR-41	C	2		Planned
	6	FRE	99	20.06	SB	Ventura St	S	1		Planned
	6	FRE	99	20.33	NB	Ventura St/ Golden State	S	1		Planned
	6	FRE	99	20.65	SB	Fresno St	S	1		Planned
	6	FRE	99	20.89	NB	Fresno St	S	1		Planned
	6	FRE	99	21.13	NB	Stanislaus St	S	1		Planned
	6	FRE	99	21.75	SB	EB SR-180	C	1		Planned
	6	FRE	99	21.76	NB	EB SR-180	C	1		Planned
	6	FRE	99	21.95	SB	WB SR-180	C	1		Planned
	6	FRE	99	22.03	NB	WB SR-180	C	1		Planned
•	6	FRE	99	22.66	SB	Belmont Ave	S	1		Operational
	6	FRE	99	22.78	NB	Belmont Ave	S	1		Planned
•	6	FRE	99	23.23	SB	Olive Ave	S	2		Operational
•	6	FRE	99	23.34	NB	Olive Ave	S	1		Operational
•	6	FRE	99	23.8	SB	McKinley Ave	S	2		Operational
•	6	FRE	99	24.1	SB	Clinton Ave	S	1		Operational
•	6	FRE	99	24.48	NB	Clinton Ave	S	1		Operational
•	6	FRE	99	24.48	NB	Golden State/ Motel Dr	S	1		Operational
•	6	FRE	99	26.01	SB	Golden State/ Motel Dr	S	1		Operational
	6	FRE	99	26.42	NB	EB Ashlan Ave	L	1		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status	
•	6	FRE	99		26.46	SB	Ashlan Ave	S	1		Operational
	6	FRE	99		26.69	NB	WB Ashlan Ave	S	1		Planned
•	6	FRE	99		27.94	SB	Shaw Ave	S	1		Operational
	6	FRE	99		28.27	NB	Shaw Ave	S	1		Planned
	6	FRE	99		29.25	SB	EB Veterans Blvd	S	2		Planned
	6	FRE	99		29.33	NB	EB Veterans Blvd	L	2		Planned
	6	FRE	99		29.52	SB	WB Veterans Blvd	L	2		Planned
	6	FRE	99		29.59	NB	WB Veterans Blvd	S	2		Planned
•	6	FRE	99		30.39	SB	Herndon Ave/ Pkwy Dr/ Grantland Ave	S	2		Operational
•	6	FRE	168	R	1.08	WB	McKinley Ave	L	2	M	Operational
•	6	FRE	168	R	1.29	EB	McKinley Ave	S	3	M	Operational
•	6	FRE	168	R	1.85	WB	Shields Ave	S	3	M	Operational
•	6	FRE	168	R	2.19	EB	Shields Ave	S	3	M	Operational
•	6	FRE	168	R	2.84	WB	Ashlan Ave	S	3	M	Operational
•	6	FRE	168	R	3.02	EB	EB Ashlan Ave	L	2		Operational
•	6	FRE	168	R	3.24	EB	WB Ashlan Ave	S	2	M	Operational
•	6	FRE	168	R	4.04	WB	EB Shaw Ave	S	2	M	Operational
•	6	FRE	168	R	4.25	EB	WB Shaw Ave	L	2		Operational
•	6	FRE	168	R	4.32	WB	EB Shaw Ave	L	2		Operational
•	6	FRE	168	R	4.51	EB	WB Shaw Ave	S	2	M	Operational
•	6	FRE	168	R	5.42	WB	EB Bullard Ave	S	2	M	Operational
•	6	FRE	168	R	5.61	EB	EB Bullard Ave	L	2		Operational
•	6	FRE	168	R	5.65	WB	WB Bullard Ave	L	2		Operational
•	6	FRE	168	R	5.83	EB	WB Bullard Ave	S	2		Operational
•	6	FRE	168	R	6.71	WB	EB Herndon Ave	S	2	M	Operational
	6	FRE	168	R	6.85	EB	EB Herndon Ave	L	2		Planned
•	6	FRE	168	R	6.91	WB	WB Herndon Ave	L	2		Operational
	6	FRE	168	R	7.10	EB	WB Herndon Ave	S	2		Planned
•	6	FRE	168	R	7.90	WB	Fowler Ave	S	3	M	Operational
•	6	FRE	168	R	8.21	EB	Fowler Ave	S	2		Operational
	6	FRE	168	R	8.98	WB	SB Temperance Ave	S	2		Planned
•	6	FRE	168	R	9.23	WB	NB Temperance Ave	L	2		Operational
	6	FRE	168	R	9.32	EB	Temperance Ave	S	2		Planned
•	6	FRE	180	R	54.62	EB	SB Marks Ave	L	2		Operational
•	6	FRE	180	R	54.87	EB	NB Marks Ave	S	3	M	Operational
•	6	FRE	180	R	57.17	WB	Fulton St	S	2	M	Operational
•	6	FRE	180	R	57.45	EB	Van Ness Ave	S	2	M	Operational
•	6	FRE	180	R	57.76	WB	Blackstone Ave	S	2	M	Operational
•	6	FRE	180	R	58.00	EB	Abby Ave	S	2	M	Operational
•	6	FRE	180	R	60.06	WB	Cedar Ave	L	2	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	6	FRE	180	R 60.25	WB	Chestnut Ave/Bypass	S	2		Planned
•	6	FRE	180	R 60.72	WB	SB Chestnut Ave	S	2		Operational
•	6	FRE	180	R 60.93	WB	NB Chestnut Ave	L	2		Operational
	6	FRE	180	R 61.09	EB	Chestnut Ave	S	2		Planned
•	6	FRE	180	R 61.72	WB	Peach Ave	S	3	M	Operational
	6	FRE	180	R 61.80	EB	Peach Ave	L	1		Planned
•	6	FRE	180	R 62.76	WB	SB Clovis Ave	S	2		Operational
•	6	FRE	180	R 62.94	WB	NB Clovis Ave	L	2		Operational
	6	FRE	180	R 63.04	EB	Clovis Ave	S	2		Planned
•	6	FRE	180	R 63.70	WB	SB Fowler Ave	S	2	M	Operational
•	6	FRE	180	R 63.96	WB	NB Fowler Ave	L	2		Operational
	6	FRE	180	R 64.07	EB	Fowler Ave	S	2		Planned
•	6	FRE	180	R 65.06	WB	SB Temperance Ave	S	2	M	Operational
•	6	FRE	180	R 65.35	WB	NB Temperance Ave	L	2		Operational
	6	FRE	180	R 65.57	EB	Temperance Ave	S	2		Planned
•	6	KER	58	R 53.28	WB	H St	S	2		Non-Op
	6	KER	58	R 53.63	EB	Chester Ave	S	1		Planned
•	6	KER	58	R 54.30	WB	SB Union Ave	S	1		Operational
•	6	KER	58	R 54.37	EB	SB Union Ave	L	1		Operational
•	6	KER	58	R 54.47	WB	NB Union Ave/ Brundage Ln	H	1		Operational
•	6	KER	58	R 54.50	EB	NB Union Ave	S	1		Operational
•	6	KER	58	R 55.45	WB	Cottonwood Rd/ Brundage Ln	H	1		Operational
•	6	KER	58	R 55.53	EB	Cottonwood Rd	S	1		Operational
	6	KER	58	R 56.27	WB	Mt Vernon Ave	S	1		Part Const
	6	KER	58	R 57.26	WB	Oswell St	S	1		Planned
	6	KER	58	R 58.28	WB	Fairfax Rd	S	1		Planned
	6	KER	58	R 59.24	WB	SB SR-184	S	1		Planned
	6	KER	58	R 59.48	WB	NB SR-184	L	1		Planned
	6	KER	99	17.35	SB	EB SR-119	S	1		Planned
	6	KER	99	17.44	NB	EB SR-119	L	1		Planned
	6	KER	99	17.57	SB	WB SR-119	L	1		Planned
	6	KER	99	17.64	NB	WB SR-119	S	1		Planned
•	6	KER	99	18.44	SB	EB Hosking Ave	S	2		Non-Op
•	6	KER	99	18.46	NB	EB Hosking Ave	L	2	M	Operational
•	6	KER	99	18.58	SB	WB Hosking Ave	L	2		Non-Op
•	6	KER	99	18.59	NB	WB Hosking Ave	S	3	M	Operational
	6	KER	99	19.44	SB	EB Panama Ln	S	1		Planned
	6	KER	99	19.48	NB	EB Panama Ln	L	1		Planned
	6	KER	99	19.60	SB	WB Panama Ln	L	1		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	6	KER	99	19.63	NB	WB Panama Ln	S	1		Planned
	6	KER	99	21.04	SB	EB White Ln	S	1		Planned
	6	KER	99	21.04	NB	EB White Ln	L	2		Planned
	6	KER	99	21.14	SB	WB White Ln	L	1		Planned
	6	KER	99	21.18	NB	WB White Ln	S	2		Planned
	6	KER	99	22.43	SB	Ming Ave	S	1		Planned
	6	KER	99	22.74	NB	Ming Ave	S	1		Planned
	6	KER	99	23.38	SB	EB SR-58 to SB SR-99	C	1		Planned
	6	KER	99	23.49	SB	WB SR-58 to SB SR-99	C	1		Planned
	6	KER	99	23.6	NB	WB SR-58 to NB SR-99	C	1		Planned
	6	KER	99	24.59	NB	EB California Ave	L	1		Planned
	6	KER	99	24.66	SB	WB California Ave	L	1		Planned
	6	KER	99	24.71	NB	WB California Ave	S	1		Planned
	6	KER	99	25.53	SB	EB Rosedale Hwy/ SR-58	S	1		Planned
	6	KER	99	25.71	SB	WB SR-178	L	1		Planned
	6	KER	99	26	NB	WB SR-178/Buck Owens Blvd	H	2		Planned
	6	KER	99	26.6	SB	SR-204/Airport Dr	S	2		Planned
	6	KER	99	27.15	NB	SR-204/Airport Dr	C	2		Planned
●	6	KER	99	27.79	SB	EB Olive Dr	S	2		Non-Op
	6	KER	99	27.91	NB	Olive Dr/State Rd	H	1		Planned
	6	KER	99	27.95	SB	WB Olive Ave	L	1		Planned
	6	KER	99	R 29.59	SB	SB SR-65	C	2		Planned
	6	KER	178	R 2.60	EB	Union Ave/ Monterey St	S	1		Planned
	6	KER	178	R 3.31	WB	Beale Ave	S	1		Planned
	6	KER	178	R 3.56	EB	Beale Ave/ Owens St	H	1		Planned
	6	KER	178	R 4.15	WB	Haley St/Height St	H	1		Planned
	6	KER	178	R 4.55	WB	Mt Vernon Ave	S	1		Planned
	6	KER	178	R 4.71	EB	Mt Vernon Ave	S	1		Planned
	6	KER	178	R 5.50	WB	Oswell St	S	1		Planned
	6	KER	178	R 5.59	EB	SB Oswell St	L	1		Planned
	6	KER	178	R 5.75	EB	NB Oswell St	S	1		Planned
	6	KER	178	R 6.51	WB	SB Fairfax Rd	S	2		Planned
	6	KER	178	R 6.70	WB	NB Fairfax Rd	L	1		Planned
	6	KER	178	R 6.90	EB	Fairfax Rd	S	2		Planned
●	6	KER	178	R 7.59	WB	SB Morning Dr	S	2		Non-Op
	6	KER	178	R 7.68	EB	SB Morning Dr	L	1		Planned
●	6	KER	178	R 7.80	WB	NB Morning Dr	L	2		Non-Op
●	6	KER	178	R 7.89	EB	NB Morning Dr	S	2		Non-Op
●	6	MAD	41	0.96	SB	EB Valley Childrens Blvd	S	3	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status	
•	6	MAD	41		1.16	SB	WB Valley Childrens Blvd	L	2		Operational
	6	MAD	99	R	7.58	NB	Ave 12	S	2		Planned
	6	MAD	99		9.41	SB	Almond Ave	H	1		Planned
	6	MAD	99		10.16	SB	Madera Ave	S	1		Planned
	6	MAD	99		10.37	NB	Madera Ave	S	1		Planned
	6	MAD	99		10.95	SB	4th St	S	1		Planned
	6	MAD	99		12.04	SB	Cleveland Ave	S	1		Planned
	6	MAD	99		12.2	NB	Cleveland Ave	S	1		Planned
	6	MAD	99		12.8	SB	Ave 16	L	1		Planned
	6	MAD	99		12.86	NB	Gateway Dr	S	1		Planned
	6	MAD	99	R	14.11	SB	EB Avenue 17	S	1		Planned
	6	MAD	99	R	14.30	SB	WB Avenue 17	L	1		Planned
	6	TUL	99		27.58	NB	Paige Ave	L	1		Planned
	6	TUL	99		27.65	SB	Paige Ave	H	1		Planned
	6	TUL	99		28.44	SB	Bardsley Ave	S	1		Planned
	6	TUL	99		28.72	NB	Bardsley Ave	S	1		Planned
	6	TUL	99		29.48	NB	Tulare Ave	H	1		Planned
	6	TUL	99		29.66	SB	Tulare Ave	H	1		Planned
	6	TUL	99		30.36	SB	Merritt Ave	S	1		Planned
	6	TUL	99		30.36	NB	Hillman St	S	1		Planned
	6	TUL	99		30.72	NB	Prosperity Ave	S	1		Planned
	6	TUL	99		31.74	SB	Carmill Ave	S	2		Planned
	6	TUL	198		6.63	WB	Akers St	S	2		Planned
	6	TUL	198		6.95	EB	Akers St	S	1		Planned
	6	TUL	198		7.58	WB	Demaree Rd	S	1		Planned
	6	TUL	198		7.95	EB	Demaree Rd	S	2		Planned
	6	TUL	198	R	8.61	WB	Mooney Blvd/SR-63	S	1		Planned
	6	TUL	198	R	8.92	EB	Mooney Blvd/SR-63	S	1		Planned
	6	TUL	198	R	9.57	WB	Watson St	H	1		Planned
	6	TUL	198	R	10.16	EB	Court St	H	1		Planned
	6	TUL	198	R	10.83	WB	Ben Maddox Way	H	1		Planned
	6	TUL	198	R	10.93	EB	Ben Maddox Way	H	1		Planned
	6	TUL	198	R	11.76	WB	Lovers Ln	H	1		Planned
	6	TUL	198	R	11.88	EB	Lovers Ln	S	1		Planned

# District 7

Figure 10. District 7 Ramp Metering Map 1

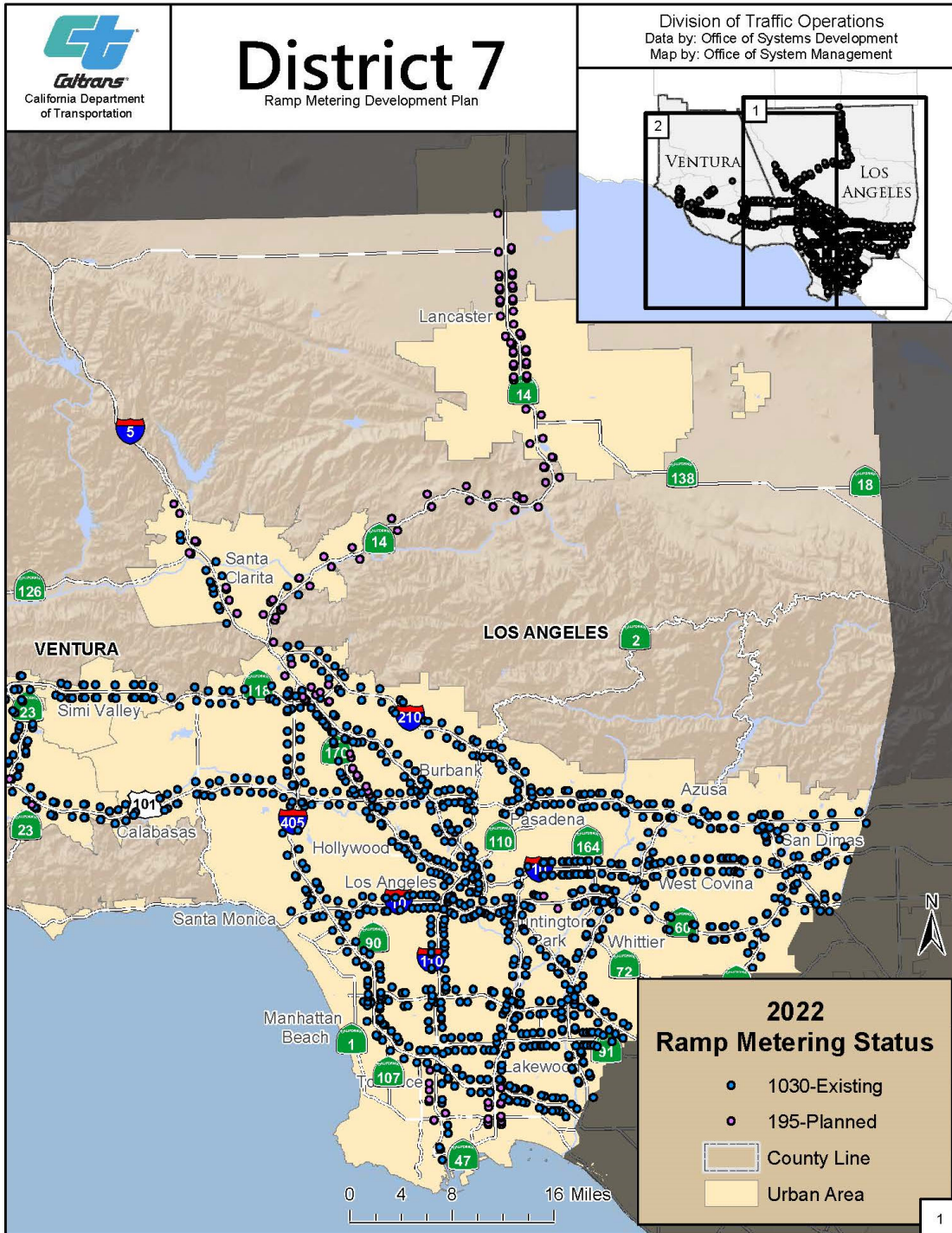
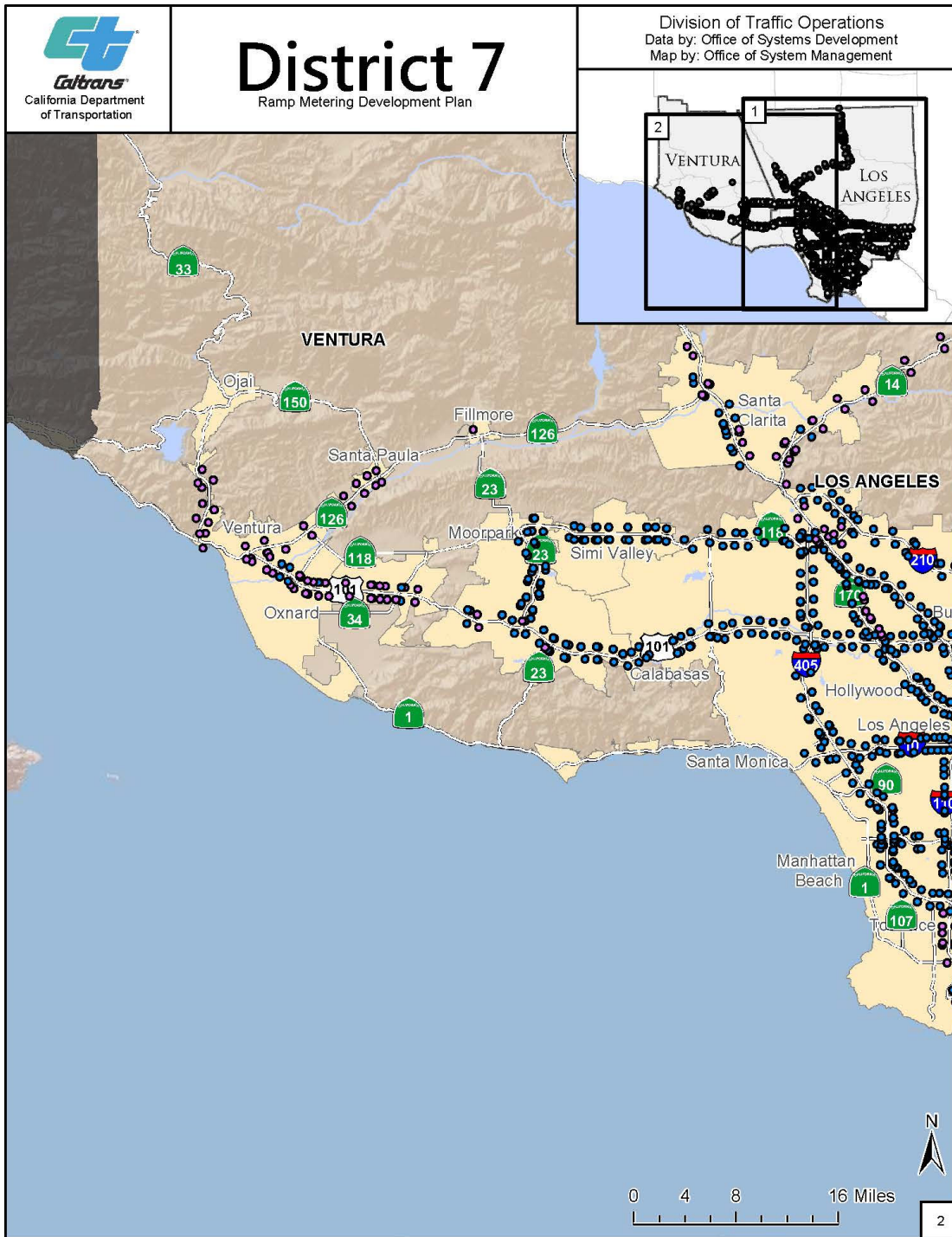


Figure 11. District 7 Ramp Metering Map 2



## **District 7 Ramp Metering Narrative**

District 7 consists of two highly urbanized counties: Los Angeles and Ventura. Los Angeles County with over 10 million people is the most populated county in the state. Furthermore, District 7, has a total population of approximately 11 million spread over 5,906 square miles, for a density exceeding 1,850 people per square mile. On average, 100 million vehicle miles are traveled daily in District 7. The district manages 1,113 centerline miles and 6,627 total lane-miles of highway.

### **Routes with Current or Planned Ramp Metering**

I-5, I-10, I-105, I-110, I-210, I-405, I-605, I-710, US-101, SR-2, SR-14, SR-23, SR-33, SR-57, SR-60, SR-71, SR-90, SR-91, SR-118, SR-126, SR-134, SR-170

District 7 has 1,030 existing ramp meters and 30 existing connector meters. In addition, 185 ramp meters and 10 connector meters are planned, for a total of 1,225 ramp and connector meters, projected for the ten-year period covered by the RMDP.

### **Congestion Challenges**

District 7 employs a variety of strategies to address current congestion challenges including:

- High occupancy vehicle preferential lane HOVPL
- Various ramp metering strategies (platoon, staggered, 24/7, off-peak and weekend).
- Metering of on-ramp HOV preferential lanes.
- Metering installation at freeway-to-freeway interchanges or connectors.
- High occupancy toll (HOT) lanes along I-10 and I-110.
- Dynamic corridor metering with city street traffic signal connectivity (near-future).
- Congestion pricing (future)

### **District Ramp Metering Strategies**

District 7 collects congestion data to manage freeway traffic and identify future ramp meter locations. The district will be developing a protocol for incident response where ramp metering will play an integral part in managing traffic demand upstream of incidents as well as on adjacent freeways.

The district is currently engaged in partnerships with local agencies to develop technology and processes by which ramp meter operation can be coordinated or integrated with local street signal operation.

This effort has been underway along the I-210 Corridor between SR-57 and SR-134, in addition to I-405 between I-10 and US-101.

**Table 10. District 7 Ramp Metering Development Plan**

High Priority Locations

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	2	14.95	WB	Riverside	H	2	NM	Operational
●	7	LA	2	15.92	WB	San Fernando	S	2	NM	Operational
●	7	LA	2	17.04	WB	Verdugo Rd	H	1		Operational
●	7	LA	2	18.23	WB	Colorado	S	2	NM	Operational
●	7	LA	2	18.91	WB	Holly	S	2	NM	Operational
●	7	LA	2	19.83	WB	Mountain	S	2	NM	Operational
●	7	LA	2	22.62	WB	Verdugo Blvd	S	2	NM	Operational
●	7	LA	5	1.06	SB	Valley View	H	1		Operational
●	7	LA	5	1.11	NB	Valley View	H	1		Operational
●	7	LA	5	1.56	NB	Alondra	L	2		Operational
●	7	LA	5	1.67	SB	Alondra & Marquart	H	1		Operational
●	7	LA	5	2.27	SB	Carmenita	H	2	M	Operational
●	7	LA	5	2.51	NB	Carmenita	H	2		Operational
●	7	LA	5	3.28	SB	Rosecrans	H	2	M	Operational
●	7	LA	5	3.28	NB	Rosecrans	L	2		Operational
●	7	LA	5	4.28	SB	Norwalk	S	2	M	Operational
●	7	LA	5	4.36	NB	Norwalk NB	L	1		Operational
●	7	LA	5	4.58	NB	Norwalk SB	H	1		Operational
●	7	LA	5	4.89	SB	Imperial	H	1		Operational
●	7	LA	5	4.96	NB	Imperial	S	2		Operational
●	7	LA	5	6.20	NB	Florence & Orr-day	H	2	NM	Operational
●	7	LA	5	6.50	SB	Florence	H	1		Operational
●	7	LA	5	8.21	SB	Lakewood NB	H	2	NM	Operational
●	7	LA	5	8.27	NB	Lakewood NB	L	2	NM	Operational
●	7	LA	5	8.35	SB	Lakewood SB	L	1		Operational
●	7	LA	5	8.42	NB	Lakewood SB	H	2	NM	Operational
●	7	LA	5	8.92	NB	Paramount	L	2		Operational
●	7	LA	5	8.93	SB	Paramount	H	2	NM	Operational
●	7	LA	5	9.87	SB	Slauson	H	2		Operational
●	7	LA	5	10.76	SB	Garfield/Bandini	H	2		Operational
●	7	LA	5	11.54	SB	Washington	S	2		Operational
●	7	LA	5	12.68	SB	Eastern & Atlantic	H	2	NM	Non-Op
●	7	LA	5	14.35	NB	Downey	H	1		Operational
●	7	LA	5	14.76	SB	Ditman	H	1		Operational
●	7	LA	5	15.77	SB	Concord	H	1		Operational
●	7	LA	5	16.49	SB	Eight	H	1		Operational
●	7	LA	5	16.60	SB	Seven	S	1		Non-Op

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	5	17.44	SB	Fourth	H	2		Operational
●	7	LA	5	17.93	SB	Cesar Chavez	H	2		Operational
●	7	LA	5	18.59	SB	Mission	H	2		Operational
●	7	LA	5	18.77	NB	Marengo	H	2		Operational
●	7	LA	5	19.45	SB	Broadway	H	2	NM	Operational
●	7	LA	5	20.00	NB	Pasadena	H	2	NM	Operational
●	7	LA	5	20.33	SB	Ave 26	H	2	NM	Operational
●	7	LA	5	20.70	SB	Duvall	H	1		Operational
●	7	LA	5	21.10	NB	Riverside	H	2		Operational
●	7	LA	5	21.71	SB	Stadium Way	H	1		Operational
●	7	LA	5	21.80	NB	Stadium Way	H	2	NM	Operational
●	7	LA	5	23.20	NB	Fletcher	S	2		Operational
●	7	LA	5	23.58	SB	Glendale	H	1		Operational
●	7	LA	5	23.86	NB	Glendale	S	1		Operational
●	7	LA	5	24.17	SB	Los Feliz	L	2	NM	Operational
●	7	LA	5	24.36	NB	Los Feliz EB	L	3	NM	Operational
●	7	LA	5	24.50	SB	Griffith Pk	H	1		Operational
●	7	LA	5	24.54	NB	Los Feliz WB	S	1		Operational
●	7	LA	5	25.85	SB	Colorado	L	1		Operational
●	7	LA	5	25.90	NB	Colorado	S	2		Non-Op
●	7	LA	5	26.35	SB	Zoo Dr.	S	1		Operational
●	7	LA	5	27.66	SB	Western EB	S	2	M	Operational
●	7	LA	5	27.70	SB	Western WB	L	2	M	Operational
●	7	LA	5	27.77	NB	Western EB	L	3	M	Operational
●	7	LA	5	27.92	NB	Western WB	S	2	M	Operational
●	7	LA	5	28.20	SB	Alameda EB	S	1		Operational
●	7	LA	5	28.30	SB	Alameda WB	L	1		Operational
●	7	LA	5	28.40	NB	Alameda EB	L	1		Operational
●	7	LA	5	28.45	NB	Alameda WB	S	1		Operational
●	7	LA	5	28.90	SB	Verdugo	H	1		Operational
●	7	LA	5	29.27	NB	Olive	H	2		Operational
●	7	LA	5	29.68	SB	Burbank EB	S	2	NM	Operational
●	7	LA	5	29.89	SB	Burbank WB	L	1		Operational
●	7	LA	5	29.97	NB	Burbank BI	H	1		Operational
●	7	LA	5	31.41	NB	Buena Vista	H	2		Operational
●	7	LA	5	31.41	SB	Buena Vista	H	2		Operational
●	7	LA	5	32.28	SB	Hollywood way	S	2	M	Operational
●	7	LA	5	32.41	NB	Hollywood Way	S	3	M	Operational
●	7	LA	5	33.23	SB	Roscoe	S	2	NM	Operational
●	7	LA	5	33.58	SB	Sunland	S	1		Operational
●	7	LA	5	33.72	NB	Sunland	S	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	5	34.24	SB	Penrose	H	1		Operational
●	7	LA	5	34.78	NB	Tuxford	S	1		Operational
●	7	LA	5	34.88	SB	Tuxford	S	2	M	Operational
●	7	LA	5	35.07	NB	Lankerhim	S	1		Operational
●	7	LA	5	35.07	SB	Lankershim	L	1		Operational
●	7	LA	5	35.84	NB	Sheldon	L	1		Operational
●	7	LA	5	35.84	SB	Sheldon	H	1		Operational
●	7	LA	5	36.75	SB	Brandford	S	2	M	Operational
●	7	LA	5	37.30	SB	Osborne EB	S	2	M	Operational
●	7	LA	5	37.37	NB	Osborne EB	L	1		Operational
●	7	LA	5	37.47	SB	Osborne WB	L	1		Operational
●	7	LA	5	37.55	NB	Osborne WB	S	2		Operational
●	7	LA	5	37.84	SB	Terra Bella	S	1		Operational
●	7	LA	5	38.34	SB	Van Nuys EB	S	2	M	Operational
●	7	LA	5	38.55	SB	Van Nuys WB	L	2	M	Operational
●	7	LA	5	39.14	SB	Paxton St	L	1		Operational
●	7	LA	5	39.31	NB	Paxton St	S	1		Operational
	7	LA	5	39.78	SB	Chatsworth				Planned
	7	LA	5	39.91	SB	Brand				Planned
	7	LA	5	40.05	SB	San Fernando Mission EB				Planned
	7	LA	5	40.31	SB	San Fernando Mission WB				Planned
	7	LA	5	40.44	NB	San Fernando Mission				Planned
	7	LA	5	42.48	SB	Roxford				Planned
	7	LA	5	42.79	NB	Roxford				Planned
●	7	LA	5	48.88	SB	Calgrove	S	1		Operational
	7	LA	5	49.22	NB	Calgrove				Planned
●	7	LA	5	50.18	SB	EB Lyons	S	2		Operational
	7	LA	5	50.43	NB	Lyons				Planned
●	7	LA	5	50.47	SB	WB Lyons/Pico Cyn	L	2		Operational
	7	LA	5	51.42	NB	EB Mc Bean Pkwy				Planned
●	7	LA	5	51.42	SB	Mc Bean Pkwy EB	S	1		Operational
	7	LA	5	51.60	NB	WB Mc Bean Pkwy				Planned
●	7	LA	5	51.78	SB	Mc Bean Pkwy WB	L	1		Operational
●	7	LA	5	52.30	SB	Valencia Blvd EB	S	2		Operational
●	7	LA	5	52.46	NB	Valencia Blvd	L	2		Non-Op
●	7	LA	5	52.46	SB	Valencia Blvd WB	L	2		Operational
●	7	LA	5	53.40	SB	Magic Mtn Pkwy	S	2		Non-Op
●	7	LA	5	53.65	NB	Magic Mtn Pkwy	S	2		Non-Op
	7	LA	5	55.30	SB	EB SR-126				Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	7	LA	5	55.37	NB	EB SR-126				Planned
●	7	LA	5	55.39	SB	Rye Cyn	H	1		Operational
	7	LA	5	55.57	SB	WB SR-126				Planned
	7	LA	5	55.68	NB	WB SR-126				Planned
●	7	LA	5	56.47	SB	Hasley Cyn	S	2		Non-Op
●	7	LA	5	56.70	SB	Sedona way/Hasley Cyn	L	2	NM	Non-Op
	7	LA	5	58.83	SB	Parker Rd				Planned
	7	LA	5	59.70	SB	Lake Hughes				Planned
●	7	LA	10	1.80	EB	4th St	S	2		Operational
●	7	LA	10	2.10	EB	Lincoln	S	2		Operational
●	7	LA	10	2.93	WB	20th St	S	2		Operational
●	7	LA	10	3.49	EB	Cloverfield	S	2		Non-Op
●	7	LA	10	4.12	WB	Centinela	H	2		Operational
●	7	LA	10	4.50	EB	Centinela	S	2		Operational
●	7	LA	10	4.68	EB	Bundy Dr	S	2		Operational
●	7	LA	10	6.46	WB	Overland	H	2		Operational
●	7	LA	10	6.50	EB	Overland	S	2		Operational
●	7	LA	10	7.20	EB	Manning	H	2		Operational
●	7	LA	10	7.80	WB	Robertson	H	2		Operational
●	7	LA	10	7.90	EB	Robertson/National	L	2		Operational
●	7	LA	10	8.70	EB	La Cienega	H	2		Operational
●	7	LA	10	8.70	WB	La Cienega	S	2		Operational
●	7	LA	10	9.01	EB	Venice	S	2		Operational
●	7	LA	10	9.21	WB	Fairfax	S	2		Operational
●	7	LA	10	9.50	EB	Washington	S	2		Operational
●	7	LA	10	10.30	EB	La Brea SB	L	1		Operational
●	7	LA	10	10.40	WB	La Brea SB	S	2		Operational
●	7	LA	10	10.50	EB	La Brea NB	S	2		Operational
●	7	LA	10	10.50	WB	La Brea NB	L	1		Operational
●	7	LA	10	11.20	WB	Crenshaw	S	2		Operational
●	7	LA	10	11.53	EB	Crenshaw	S	2		Operational
●	7	LA	10	12.23	WB	Arlington	S	2		Operational
●	7	LA	10	12.45	EB	Arlington	S	2		Operational
●	7	LA	10	12.60	WB	Western	S	2		Operational
●	7	LA	10	12.95	EB	Western	S	2		Operational
●	7	LA	10	13.21	WB	Normandie	S	2		Operational
●	7	LA	10	13.44	EB	Normandie	S	2		Operational
●	7	LA	10	13.66	WB	Vermont	S	2		Operational
●	7	LA	10	13.95	EB	Vermont	S	2		Operational
●	7	LA	10	14.10	WB	Hoover/20th St	H	2		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	10	14.30	EB	Hoover	H	2		Operational
●	7	LA	10	15.16	WB	Grand Ave (WB I-10)	S	1		Non-Op
●	7	LA	10	15.19	WB	Grand Ave (SR-110)	S	1		Non-Op
●	7	LA	10	15.33	EB	Flower	H	2		Non-Op
●	7	LA	10	15.64	WB	Maple	S	2		Non-Op
●	7	LA	10	15.78	EB	Los Angeles	S	2		Non-Op
●	7	LA	10	16.21	WB	Central	S	1		Non-Op
●	7	LA	10	16.22	EB	San Pedro	S	2		Non-Op
●	7	LA	10	16.84	EB	Central	S	2		Non-Op
●	7	LA	10	17.09	WB	Alameda	H	2		Non-Op
●	7	LA	10	17.10	EB	Alameda	L	2		Non-Op
●	7	LA	10	17.43	EB	Olympic	L	1		Non-Op
●	7	LA	10	17.57	WB	Santa Fe	H	1		Non-Op
●	7	LA	10	17.60	EB	Santa Fe	H	1		Non-Op
●	7	LA	10	20.88	EB	Eastern (I-710 Conn)	H	1		Operational
●	7	LA	10	20.88	EB	Eastern (I-710 Conn)	H	1		Non-Op
●	7	LA	10	21.50	WB	Winthrop (I-710 Conn)	S	1		Non-Op
●	7	LA	10	22.30	WB	Fremont	H	2		Operational
●	7	LA	10	23.28	EB	Atlantic SB	L	1		Operational
●	7	LA	10	23.29	WB	Atlantic SB	S	1		Operational
●	7	LA	10	23.38	EB	Atlantic NB	S	1		Operational
●	7	LA	10	23.38	WB	Atlantic NB	L	1		Operational
●	7	LA	10	23.93	EB	Garfield SB	L	1		Operational
●	7	LA	10	23.96	WB	Garfield SB	S	1		Operational
●	7	LA	10	24.03	EB	Garfield NB	S	1		Operational
●	7	LA	10	24.04	WB	Garfield NB	L	1		Operational
●	7	LA	10	24.77	EB	New SB	L	1		Operational
●	7	LA	10	24.82	WB	New SB	S	1		Operational
●	7	LA	10	24.87	EB	New NB	S	1		Operational
●	7	LA	10	24.89	WB	New NB	L	1		Operational
●	7	LA	10	25.22	WB	Del Mar SB	S	1		Operational
●	7	LA	10	25.26	EB	Del Mar SB	L	1		Operational
●	7	LA	10	25.38	EB	Del Mar NB	S	1		Operational
●	7	LA	10	25.39	WB	Del Mar NB	L	1		Operational
●	7	LA	10	25.77	EB	San Gabriel SB	L	1		Operational
●	7	LA	10	25.80	WB	San Gabriel SB	S	1		Operational
●	7	LA	10	25.89	EB	San Gabriel NB	S	1		Operational
●	7	LA	10	25.90	WB	San Gabriel NB	L	1		Operational
●	7	LA	10	26.29	WB	Walnut Grove	S	1		Operational
●	7	LA	10	26.32	EB	Walnut Grove	S	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	10	26.79	EB	Rosemead SB	L	1		Operational
●	7	LA	10	26.79	WB	Rosemead SB	S	1		Operational
●	7	LA	10	26.92	WB	Rosemead NB	L	1		Operational
●	7	LA	10	26.94	EB	Rosemead NB	S	1		Operational
●	7	LA	10	27.10	EB	Flair	H	2		Non-Op
●	7	LA	10	27.67	WB	Temple City	H	1		Operational
●	7	LA	10	28.09	EB	Baldwin	S	2	NM	Operational
●	7	LA	10	28.56	WB	Santa Anita	S	2	NM	Operational
●	7	LA	10	28.78	EB	Santa Anita	S	2	NM	Operational
●	7	LA	10	29.35	WB	Peck	S	1		Operational
●	7	LA	10	29.51	EB	Valley Blvd	L	1		Operational
●	7	LA	10	29.60	WB	Valley	L	1		Operational
●	7	LA	10	29.98	EB	Stewart	S	1		Operational
●	7	LA	10	30.70	EB	Durfee/Garvey	S	2		Operational
●	7	LA	10	31.72	WB	Frazier	H	2	NM	Operational
●	7	LA	10	32.00	EB	SB I-605	C	1		Operational
●	7	LA	10	32.16	WB	Baldwin Park SB	S	2	NM	Operational
●	7	LA	10	32.31	EB	Baldwin Park	S	1		Operational
●	7	LA	10	32.33	WB	Baldwin Park NB	L	1		Operational
●	7	LA	10	32.78	WB	Francisquito	H	2		Operational
●	7	LA	10	33.46	EB	Puente	H	2		Operational
●	7	LA	10	33.48	WB	Puente	H	2		Operational
●	7	LA	10	34.36	WB	Pacific	H	2	NM	Operational
●	7	LA	10	34.44	EB	West Covina Pkwy	L	2		Operational
●	7	LA	10	35.36	EB	Vincent SB	L	2		Operational
●	7	LA	10	35.36	WB	Vincent SB	S	2	M	Operational
●	7	LA	10	35.45	WB	Vincent NB	L	2		Operational
●	7	LA	10	35.50	EB	Vincent NB	S	2		Operational
●	7	LA	10	36.41	WB	Azusa SB	S	2		Operational
●	7	LA	10	36.46	EB	Azusa SB	L	1		Operational
●	7	LA	10	36.52	WB	Azusa NB	L	2		Operational
●	7	LA	10	36.60	EB	Azusa NB	S	1		Operational
●	7	LA	10	37.43	WB	Citrus SB	S	2		Operational
●	7	LA	10	37.53	WB	Citrus NB	L	2	M	Operational
●	7	LA	10	37.59	EB	Citrus	H	1		Operational
●	7	LA	10	37.92	WB	Barranca SB	S	2		Operational
●	7	LA	10	38.07	WB	Barranca NB	H	2		Operational
●	7	LA	10	38.09	EB	Barranca	H	2		Operational
●	7	LA	10	38.40	WB	Grand	S	1		Operational
●	7	LA	10	38.48	EB	Grand	L	1		Operational
●	7	LA	10	38.89	WB	Holt SB	S	2	NM	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	10	38.95	EB	Holt SB	L	1		Operational
●	7	LA	10	39.05	WB	Holt NB	L	1		Operational
●	7	LA	10	39.14	EB	Holt NB	S	1		Operational
●	7	LA	10	40.35	WB	Via Verde	S	2	M	Operational
●	7	LA	10	40.58	EB	Via Verde	S	2	M	Operational
●	7	LA	10	41.99	WB	Kellogg	S	2		Operational
●	7	LA	10	43.53	WB	Fairplex	S	2		Operational
●	7	LA	10	43.76	EB	Fairplex	S	2		Operational
●	7	LA	10	43.85	WB	Dudley	H	1		Operational
●	7	LA	10	44.13	EB	Dudley	L	1		Operational
●	7	LA	10	45.17	WB	White	S	2	NM	Operational
●	7	LA	10	45.62	WB	Garey	S	2		Operational
●	7	LA	10	46.01	EB	Orange Grove	S	2		Operational
●	7	LA	10	46.23	WB	Towne	S	2		Operational
●	7	LA	10	46.58	EB	Towne	S	2	NM	Operational
●	7	LA	10	47.61	WB	Indian Hill	S	2	NM	Operational
●	7	LA	10	47.87	EB	Indian Hill	S	2	NM	Operational
	7	LA	14	25.10	NB	Sierra Hwy / Foothill				Planned
	7	LA	14	26.89	NB	San Fernando Rd/ Newhall Ave EB				Planned
	7	LA	14	26.89	SB	San Fernando Rd/ Newhall Ave EB				Planned
	7	LA	14	27.19	NB	San Fernando Rd/ Newhall Ave WB				Planned
	7	LA	14	27.88	SB	Placerita Cyn				Planned
	7	LA	14	28.06	NB	Placerita Cyn EB				Planned
	7	LA	14	28.12	SB	Sierra Hwy/Placerita				Planned
	7	LA	14	28.27	NB	Placerita Cyn WB				Planned
●	7	LA	14	29.54	SB	Golden Valley	S	2	M	Operational
●	7	LA	14	29.98	NB	Golden Valley	S	3	M	Operational
	7	LA	14	30.64	SB	Sierra Hwy				Planned
	7	LA	14	30.72	SB	Via Princess Wy				Planned
	7	LA	14	31.12	NB	Via Princess Wy				Planned
	7	LA	14	33.40	SB	Sand Cyn				Planned
	7	LA	14	33.59	NB	Sand Cyn				Planned
	7	LA	14	35.52	SB	Shadow Pines (Soledad Cyn)				Planned
	7	LA	14	36.02	NB	Shadow Pines (Soledad Cyn)				Planned
	7	LA	14	36.02	NB	Shadow Pines (Soledad Cyn)				Planned
	7	LA	14	39.65	SB	Agua Dulce Cyn				Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	7	LA	14	40.07	NB	Agua Dulce Cyn				Planned
	7	LA	14	43.04	NB	Escondido Cyn				Planned
	7	LA	14	43.48	SB	Escondido Cyn				Planned
	7	LA	14	46.54	SB	Red Rover Mine Rd				Planned
	7	LA	14	47.13	NB	Red Rover Mine Rd				Planned
	7	LA	14	48.47	SB	Crown Valley Rd				Planned
	7	LA	14	48.81	NB	Crown Valley Rd				Planned
	7	LA	14	50.62	SB	Santiago Rd				Planned
	7	LA	14	50.94	NB	Santiago Rd				Planned
	7	LA	14	51.22	SB	Sierra Hwy				Planned
	7	LA	14	51.48	SB	Soledad Cyn Rd				Planned
	7	LA	14	52.52	NB	Soledad Cyn Rd				Planned
	7	LA	14	54.25	SB	Pearblossom Hwy				Planned
	7	LA	14	54.91	NB	Pearblossom Hwy				Planned
	7	LA	14	56.14	NB	W Palmdale Blvd EB				Planned
	7	LA	14	56.22	NB	W Palmdale Blvd WB				Planned
	7	LA	14	56.26	SB	W Palmdale Blvd WB				Planned
	7	LA	14	56.34	SB	W Palmdale Blvd EB				Planned
	7	LA	14	58.09	SB	Avenue S				Planned
	7	LA	14	58.40	NB	Avenue S				Planned
	7	LA	14	60.25	NB	10th St				Planned
	7	LA	14	61.27	SB	Rancho Vista Blvd				Planned
	7	LA	14	63.51	SB	Avenue N EB				Planned
	7	LA	14	63.63	NB	Avenue N EB				Planned
	7	LA	14	63.72	SB	Avenue N WB				Planned
	7	LA	14	63.81	NB	Avenue N WB				Planned
	7	LA	14	64.54	SB	Avenue M EB				Planned
	7	LA	14	64.64	NB	Avenue M EB				Planned
	7	LA	14	64.72	SB	Avenue M WB				Planned
	7	LA	14	64.83	NB	Avenue M WB				Planned
	7	LA	14	65.55	SB	Avenue L EB				Planned
	7	LA	14	65.64	NB	Avenue L EB				Planned
	7	LA	14	65.73	SB	Avenue L WB				Planned
	7	LA	14	65.82	NB	Avenue L WB				Planned
	7	LA	14	66.66	SB	Avenue K EB				Planned
	7	LA	14	66.66	NB	Avenue K EB				Planned
	7	LA	14	66.85	SB	Avenue K WB				Planned
	7	LA	14	66.87	NB	Avenue K WB				Planned
	7	LA	14	67.51	SB	Avenue J-8				Planned
	7	LA	14	68.14	NB	Avenue J				Planned
	7	LA	14	68.78	SB	Avenue I				Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	7	LA	14	69.13	NB	Avenue I				Planned
	7	LA	14	69.85	SB	Avenue H EB				Planned
	7	LA	14	69.95	NB	Avenue H EB				Planned
	7	LA	14	70.03	SB	Avenue H WB				Planned
	7	LA	14	70.13	NB	Avenue H WB				Planned
	7	LA	14	70.85	SB	Avenue G EB				Planned
	7	LA	14	70.95	NB	Avenue G EB				Planned
	7	LA	14	71.03	SB	Avenue G WB				Planned
	7	LA	14	71.14	NB	Avenue G WB				Planned
	7	LA	14	71.85	SB	Avenue F EB				Planned
	7	LA	14	71.96	NB	Avenue F EB				Planned
	7	LA	14	72.03	SB	Avenue F WB				Planned
	7	LA	14	72.14	NB	Avenue F WB				Planned
	7	LA	14	73.84	SB	Avenue D (SR-138)				Planned
	7	LA	14	73.96	NB	Avenue D EB				Planned
	7	LA	14	74.15	NB	Avenue D WB				Planned
	7	LA	14	76.84	SB	Avenue A				Planned
●	7	LA	47	0.43	NB	Harbor Blvd	L	2		Operational
●	7	LA	47	0.43	SB	Harbor Blvd	S	2		Operational
●	7	LA	57	1.26	NB	Brea Canyon Rd	S	2	NM	Operational
●	7	LA	57	1.82	SB	Diamond Bar Blvd	S	2		Operational
●	7	LA	57	2.20	NB	Diamond Bar Blvd	S	2	NM	Operational
●	7	LA	57	3.05	SB	Pathfinder Rd	S	2	NM	Operational
●	7	LA	57	3.45	NB	Pathfinder Rd	S	2	NM	Operational
●	7	LA	57	5.04	SB	Sunset Crossing	L	2	NM	Operational
●	7	LA	57	5.27	NB	Sunset Crossing	S	1		Operational
●	7	LA	57	5.97	SB	Temple Ave EB	S	1		Operational
●	7	LA	57	6.16	NB	Temple Ave EB	L	2	NM	Operational
●	7	LA	57	6.28	SB	Temple Ave WB	L	2	NM	Operational
●	7	LA	57	6.35	NB	Temple Ave WB	S	2	NM	Operational
●	7	LA	57	7.30	NB	Campus Dr	S	2	NM	Operational
●	7	LA	57	8.78	SB	Via Verde	H	1		Operational
●	7	LA	57	8.83	NB	Via Verde	S	2	NM	Operational
●	7	LA	57	10.08	SB	Covina	S	2	NM	Operational
●	7	LA	57	10.26	NB	Covina	H	1		Operational
●	7	LA	57	10.70	SB	Arrow Hwy EB	S	2	NM	Operational
●	7	LA	57	10.74	NB	Arrow Hwy	H	2	NM	Operational
●	7	LA	57	10.90	SB	Arrow Hwy WB	L	2	NM	Operational
●	7	LA	57	11.41	SB	Auto Center D	S	2	NM	Operational
●	7	LA	60	0.42	WB	Soto	L	1		Operational
●	7	LA	60	0.64	EB	Soto	H	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	60	1.47	WB	Lorena	L	1		Operational
●	7	LA	60	1.60	EB	Lorena	S	2		Operational
●	7	LA	60	2.05	EB	Indiana	S	1		Operational
●	7	LA	60	2.47	WB	Third St	L	2		Operational
●	7	LA	60	2.50	EB	Third St	H	2		Operational
●	7	LA	60	4.35	EB	Atlantic SB	L	1		Operational
●	7	LA	60	4.35	WB	Atlantic SB	S	2	NM	Operational
●	7	LA	60	4.49	WB	Atlantic NB	L	2	NM	Operational
●	7	LA	60	4.56	EB	Atlantic NB	S	2	NM	Operational
●	7	LA	60	4.94	WB	Findlay	S	2	NM	Operational
	7	LA	60	5.36	WB	Garfield Ave				Planned
	7	LA	60	6.44	EB	Markland				Planned
●	7	LA	60	7.60	WB	Paramount SB	S	2	M	Operational
●	7	LA	60	7.74	EB	Paramount SB	L	2	NM	Operational
●	7	LA	60	7.82	WB	Paramount NB	L	2	NM	Operational
●	7	LA	60	7.94	EB	Paramount NB	S	2	M	Operational
●	7	LA	60	8.52	EB	San Gabriel	L	2		Operational
●	7	LA	60	8.59	WB	San Gabriel	L	1		Operational
●	7	LA	60	9.39	WB	Rosemead SB	S	2	NM	Operational
●	7	LA	60	9.47	EB	Rosemead SB	L	2		Operational
●	7	LA	60	9.54	WB	Rosemead NB	L	1		Operational
●	7	LA	60	9.63	EB	Rosemead NB	S	1		Operational
●	7	LA	60	10.13	EB	Santa Anita SB	L	2	NM	Operational
●	7	LA	60	10.14	WB	Santa Anita SB	S	2	NM	Operational
●	7	LA	60	10.28	EB	Santa Anita NB	S	1		Operational
●	7	LA	60	10.35	WB	Santa Anita NB	H	1		Operational
●	7	LA	60	10.91	WB	Peck SB	S	2	NM	Operational
●	7	LA	60	11.00	EB	Peck/Durfee	H	2	NM	Operational
●	7	LA	60	11.06	WB	Peck NB	L	1		Operational
●	7	LA	60	12.71	EB	Crossroads Pkwy	S	2		Operational
●	7	LA	60	12.86	WB	Crossroads Pkwy	H	1		Operational
●	7	LA	60	14.12	WB	7th Ave	S	1		Non-Op
●	7	LA	60	14.50	EB	7th Ave	S	1		Operational
●	7	LA	60	15.79	WB	Hacienda SB	S	2		Operational
●	7	LA	60	15.91	EB	Hacienda SB	L	2	NM	Operational
●	7	LA	60	15.99	WB	Hacienda NB	L	2		Operational
●	7	LA	60	16.13	EB	Hacienda NB	S	2	NM	Operational
●	7	LA	60	17.77	WB	Azusa SB	S	2		Operational
●	7	LA	60	17.94	EB	Azusa SB	L	2	NM	Operational
●	7	LA	60	18.00	WB	Azusa NB	L	2	NM	Operational
●	7	LA	60	18.15	EB	Azusa NB	S	2	NM	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	60	19.32	WB	Fullerton SB	S	1		Operational
●	7	LA	60	19.44	EB	Fullerton SB	L	1		Operational
●	7	LA	60	19.46	WB	Fullerton NB	L	2		Operational
●	7	LA	60	19.63	EB	Fullerton NB	S	2	NM	Operational
●	7	LA	60	20.34	WB	Nogales SB	S	2	NM	Operational
●	7	LA	60	20.39	EB	Nogales SB	L	2	NM	Operational
●	7	LA	60	20.47	WB	Nogales NB	L	2	NM	Operational
●	7	LA	60	20.53	EB	Nogales NB	S	2	NM	Operational
●	7	LA	60	21.31	WB	Fairway	S	2	NM	Operational
●	7	LA	60	21.46	EB	Fairway SB	L	1		Operational
●	7	LA	60	21.69	EB	Fairway NB	S	2	NM	Operational
●	7	LA	60	22.78	WB	(SR-57/60) to SR-60	S	2		Non-Op
●	7	LA	60	22.80	WB	Brea Cyn	S	2		Operational
●	7	LA	60	22.95	EB	Brea Cyn	H	2		Operational
●	7	LA	60	24.35	WB	Grand	S	2		Operational
●	7	LA	60	24.44	WB	Grand	L	2		Operational
●	7	LA	60	24.45	EB	Grand	S	2		Operational
●	7	LA	60	25.60	EB	Diamond Bar	S	2	NM	Operational
●	7	LA	60	25.87	WB	Diamond Bar	L	2	NM	Operational
●	7	LA	60	27.80	EB	Phillips Ranch SB	L	1		Operational
●	7	LA	60	27.87	WB	Phillips Ranch SB	S	2		Operational
●	7	LA	60	28.00	WB	Phillips Ranch NB	L	2		Operational
●	7	LA	60	28.97	EB	Phillips Ranch NB	S	2	NM	Operational
●	7	LA	60	29.15	WB	Garey	S	2		Operational
●	7	LA	60	29.51	EB	Garey	S	2		Operational
●	7	LA	60	30.19	WB	Reservoir	S	2	NM	Operational
●	7	LA	60	30.59	EB	Reservoir	S	2		Operational
●	7	LA	71	0.80	NB	Ridgeway St	S	2		Non-Op
●	7	LA	71	1.60	NB	Mission Blvd	S	2		Non-Op
●	7	LA	71	1.70	SB	Mission Blvd	S	1		Non-Op
●	7	LA	71	3.74	NB	Rio Rancho Rd	S	2		Non-Op
●	7	LA	71	3.74	SB	Rio Rancho Rd	S	2		Non-Op
●	7	LA	91	6.94	WB	Main St	L	1		Operational
●	7	LA	91	7.16	EB	Main St	H	2		Operational
●	7	LA	91	7.55	WB	Avalon	L	2		Operational
●	7	LA	91	7.81	EB	Avalon	S	1		Operational
●	7	LA	91	8.27	WB	Central	S	1		Operational
●	7	LA	91	8.58	EB	Central	S	3	NM	Operational
●	7	LA	91	9.10	WB	Wilmington	S	1		Operational
●	7	LA	91	9.11	EB	Wilmington	S	3	NM	Operational
●	7	LA	91	9.67	WB	Acacia St	S	2	NM	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	91	10.13	EB	Alameda	L	2		Operational
●	7	LA	91	10.48	EB	Santa Fe	S	2		Operational
●	7	LA	91	11.03	EB	Long Beach	L	1		Operational
●	7	LA	91	11.03	WB	Long Beach	S	2	NM	Operational
●	7	LA	91	11.78	WB	Atlantic	S	2	NM	Operational
●	7	LA	91	12.21	EB	Atlantic	S	1		Operational
●	7	LA	91	13.01	WB	Cherry	S	2	NM	Operational
●	7	LA	91	13.26	EB	Cherry	S	2		Operational
●	7	LA	91	13.51	WB	Paramount	S	2		Operational
●	7	LA	91	13.69	EB	Paramount	S	2		Operational
●	7	LA	91	14.04	WB	Downey	S	2	NM	Operational
●	7	LA	91	14.21	EB	Downey	S	2		Operational
●	7	LA	91	14.55	WB	Lakewood SB	S	2		Operational
●	7	LA	91	14.59	EB	Lakewood SB	L	2	NM	Operational
●	7	LA	91	14.65	WB	Lakewood NB	L	2	NM	Operational
●	7	LA	91	14.80	EB	Lakewood NB	S	2	NM	Operational
●	7	LA	91	15.22	EB	Clark	S	2	NM	Operational
●	7	LA	91	15.54	WB	Bellflower	S	2		Operational
●	7	LA	91	15.76	EB	Bellflower	S	2	NM	Operational
●	7	LA	91	17.37	EB	Studebaker	S	2	NM	Operational
●	7	LA	91	17.96	EB	Pioneer SB	L	1		Operational
●	7	LA	91	17.96	WB	Pioneer SB	S	2	NM	Operational
●	7	LA	91	18.21	EB	Pioneer NB	S	1		Operational
●	7	LA	91	18.21	WB	Pioneer NB	L	1		Operational
●	7	LA	91	18.50	WB	Norwalk SB	S	1		Operational
●	7	LA	91	18.54	EB	Norwalk SB	L	1		Operational
●	7	LA	91	18.70	WB	Norwalk NB	L	1		Operational
●	7	LA	91	18.77	EB	Norwalk NB	S	1		Operational
●	7	LA	91	19.06	WB	Bloomfield	S	2		Operational
●	7	LA	91	19.30	WB	Artesia WB	S	2	NM	Operational
●	7	LA	91	19.40	EB	Shoemaker	H	2		Operational
●	7	LA	91	20.14	WB	183rd/Carmenita	S	2		Operational
●	7	LA	101	0.19	NB	Mission Rd	H	1		Operational
●	7	LA	101	0.48	SB	Garey St	H	2		Operational
●	7	LA	101	0.64	SB	Los Angeles St	H	1		Operational
●	7	LA	101	2.42	NB	Glendale	H	1		Operational
●	7	LA	101	2.54	SB	Glendale	H	1		Operational
●	7	LA	101	2.72	SB	Alvarado	H	2		Operational
●	7	LA	101	2.97	NB	Alvarado	H	2		Operational
●	7	LA	101	3.24	SB	Rampart	H	1		Operational
●	7	LA	101	3.31	NB	Rampart	H	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	101	3.68	SB	Silverlake	H	2	NM	Operational
●	7	LA	101	3.86	NB	Silverlake	H	1		Operational
●	7	LA	101	4.14	SB	Vermont Ave	S	2		Operational
●	7	LA	101	4.53	NB	Vermont	H	2		Operational
●	7	LA	101	4.73	SB	Melrose	H	2	NM	Operational
●	7	LA	101	5.11	NB	Normandie	H	1		Operational
●	7	LA	101	5.45	SB	Santa Monica	H	2	NM	Operational
●	7	LA	101	5.95	NB	Western	H	1		Operational
●	7	LA	101	6.10	SB	Sunset	H	2	NM	Operational
●	7	LA	101	6.38	SB	Hollywood	H	2	NM	Operational
●	7	LA	101	6.58	NB	Hollywood	H	1		Operational
●	7	LA	101	6.99	SB	Argyle Ave	H	2		Operational
●	7	LA	101	7.20	NB	Argyle/Franklin	H	2		Operational
●	7	LA	101	7.27	SB	Cahuenga	H	1		Operational
●	7	LA	101	7.39	NB	Cahuenga	H	1		Operational
●	7	LA	101	7.75	SB	Highland Ave	H	1		Operational
●	7	LA	101	9.30	SB	Barham Blvd	H	1		Non-Op
●	7	LA	101	9.56	SB	Universal Center	S	1		Operational
●	7	LA	101	9.75	NB	Universal Center (EB)	L	2		Operational
●	7	LA	101	9.85	NB	Universal Center (WB)	H	1		Operational
●	7	LA	101	10.44	SB	Lankershim	S	2		Operational
●	7	LA	101	10.48	SB	Ventura	L	1		Operational
●	7	LA	101	10.53	NB	Lankershim	H	2		Operational
●	7	LA	101	11.15	SB	Vineland	L	1		Operational
●	7	LA	101	11.53	NB	Moorpark	H	1		Operational
●	7	LA	101	12.00	NB	Tujunga	S	1		Operational
●	7	LA	101	12.75	SB	Laurel Canyon Blvd	S	2		Operational
●	7	LA	101	12.90	NB	Laurel Canyon Blvd	S	2		Operational
●	7	LA	101	13.80	SB	Coldwater Cyn	S	2	NM	Operational
●	7	LA	101	13.98	NB	Coldwater Cyn	S	1		Operational
●	7	LA	101	14.70	SB	Woodman Ave	S	2	NM	Operational
●	7	LA	101	15.00	NB	Woodman Ave	S	1		Operational
●	7	LA	101	15.81	SB	Van Nuys Blvd	S	2	NM	Operational
●	7	LA	101	16.01	NB	Van Nuys Blvd	S	2		Operational
●	7	LA	101	16.70	SB	Sepulveda Blvd	S	2	NM	Operational
●	7	LA	101	16.80	SB	Sepulveda/ Greenleaf	L	2		Operational
●	7	LA	101	17.59	NB	Haskell	L	1		Operational
●	7	LA	101	18.40	SB	Hayvenhurst	S	2	NM	Operational
●	7	LA	101	19.00	SB	Balboa	S	2	NM	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	101	19.40	NB	Balboa	S	1		Operational
●	7	LA	101	20.15	SB	White Oak	S	2	NM	Operational
●	7	LA	101	20.34	NB	White Oak	S	1		Operational
●	7	LA	101	20.96	SB	Burbank/Reseda	S	2	NM	Operational
●	7	LA	101	21.40	NB	Reseda	S	1		Operational
●	7	LA	101	22.07	SB	Van Alden	H	1		Non-Op
●	7	LA	101	22.36	NB	Tampa	S	1		Operational
●	7	LA	101	23.22	SB	Winnetka	S	2	NM	Operational
●	7	LA	101	23.40	NB	Winnetka	S	1		Operational
●	7	LA	101	24.23	SB	De Soto	S	2		Operational
●	7	LA	101	24.45	NB	De Soto	S	2		Operational
●	7	LA	101	24.76	SB	Canoga	S	2		Operational
●	7	LA	101	25.26	SB	Topanga NB	S	1		Operational
●	7	LA	101	25.39	SB	Topanga SB	L	1		Operational
●	7	LA	101	25.47	NB	Topanga Cyn	H	1		Operational
●	7	LA	101	25.67	SB	Ventura/Shoop	S	2		Operational
●	7	LA	101	26.90	NB	Woodlake	H	1		Operational
●	7	LA	101	27.26	SB	Mulholland	S	2	NM	Operational
●	7	LA	101	27.38	SB	Valley circle	H	2	NM	Operational
●	7	LA	101	27.73	NB	Valley Circle/Long Valley	S	1		Non-Op
●	7	LA	101	28.20	SB	Pkwy Calabasas NB	S	2	NM	Operational
●	7	LA	101	28.40	NB	Calabasas Pkwy EB	L	2		Operational
●	7	LA	101	28.42	SB	Pkwy Calabasas SB	L	2		Operational
●	7	LA	101	28.50	NB	Calabasas Pkwy WB	S	1		Operational
●	7	LA	101	31.02	SB	Los Virgenes EB	S	1		Operational
●	7	LA	101	31.10	NB	Los Virgenes	S	1		Operational
●	7	LA	101	31.25	SB	Los Virgenes WB	L	1		Operational
●	7	LA	101	31.83	SB	Lost Hills Rd	S	2	M	Operational
●	7	LA	101	32.07	NB	Lost Hills Rd	L	2	M	Operational
●	7	LA	101	32.55	SB	Liberty Cyn	S	1		Operational
●	7	LA	101	32.91	NB	Liberty Cyn	S	1		Operational
●	7	LA	101	33.76	SB	Palo Comado Cyn	H	1		Operational
●	7	LA	101	33.80	NB	Palo Comado Cyn	S	1		Operational
●	7	LA	101	34.95	SB	Kanan Rd EB	S	1		Operational
●	7	LA	101	35.03	SB	Kanan Rd WB	L	1		Operational
●	7	LA	101	35.03	NB	Kanan Rd EB	L	1		Operational
●	7	LA	101	35.18	NB	Kanan Rd WB	S	1		Operational
●	7	LA	101	36.07	SB	Reyes Adobe	S	1		Operational
●	7	LA	101	36.30	NB	Reyes Adobe	S	2		Operational
●	7	LA	101	37.35	SB	Lindero Cyn EB	S	1		Operational

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●	7	LA	101	37.50	NB	Lindero Cyn EB	L	1		Operational
●	7	LA	101	37.58	SB	Lindero Cyn WB	L	2		Operational
●	7	LA	101	37.71	NB	Lindero Cyn WB	S	2		Operational
●	7	LA	101	3.76	NB	SB SR-23	C	2		Non-Op
●	7	LA	105	1.23	EB	Douglas St/Nash	H	2		Operational
●	7	LA	105	1.80	EB	Imperial/Aviation	H	3	NM	Operational
●	7	LA	105	2.50	EB	NB I-405	C	2		Operational
●	7	LA	105	2.82	EB	SB I-405	C	2		Operational
●	7	LA	105	3.10	EB	SB Hawthorne Bl	H	2	NM	Operational
●	7	LA	105	3.30	WB	Imperial/Prairie Ave	S	2	NM	Operational
●	7	LA	105	3.60	EB	Imperial/Prairie	H	2	NM	Operational
●	7	LA	105	4.50	WB	Crenshaw Blvd SB	S	2	NM	Operational
●	7	LA	105	4.60	EB	Crenshaw SB/120th	H	2	NM	Operational
●	7	LA	105	4.80	WB	Crenshaw Blvd NB	L	2	NM	Operational
●	7	LA	105	4.90	EB	Crenshaw NB	S	2	NM	Operational
●	7	LA	105	6.50	WB	Vermont Ave	S	2	NM	Operational
●	7	LA	105	6.81	WB	SB I-110	C	2		Operational
●	7	LA	105	7.20	EB	Hoover	S	2	NM	Operational
●	7	LA	105	7.55	EB	SB I-110	C	2		Operational
●	7	LA	105	7.56	EB	NB I-110	C	2		Operational
●	7	LA	105	8.80	WB	Central Ave	S	3	NM	Operational
●	7	LA	105	9.00	EB	Central Ave	S	3	NM	Operational
●	7	LA	105	9.70	EB	Wilmington	H	2	NM	Operational
●	7	LA	105	10.10	WB	Wilmington Ave	H	3	NM	Operational
●	7	LA	105	11.40	WB	Long Beach Blvd SB	H	2	NM	Operational
●	7	LA	105	11.60	WB	Long Beach Blvd NB	L	2	NM	Operational
●	7	LA	105	11.70	EB	Long Beach SB	L	2	NM	Operational
●	7	LA	105	11.90	EB	Long Beach NB	H	2	NM	Operational
●	7	LA	105	13.01	WB	NB I-710	C	2		Non-Op
●	7	LA	105	13.21	WB	SB I-710	C	1		Non-Op
●	7	LA	105	13.80	WB	Garfield Ave	S	2	NM	Operational
●	7	LA	105	13.81	EB	NB I-710	C	2		Non-Op
●	7	LA	105	13.94	EB	SB I-710	C	2		Non-Op
●	7	LA	105	14.10	WB	Garfield Ave (I-710)	S	1		Operational
●	7	LA	105	14.80	EB	Paramount	S	2	NM	Operational
●	7	LA	105	15.60	EB	Lakewood SB	H	2	NM	Operational
●	7	LA	105	15.60	WB	Lakewood	S	2	NM	Operational
●	7	LA	105	15.90	EB	Lakewood NB	S	2	NM	Operational
●	7	LA	105	16.50	WB	Bellflower	S	2	NM	Operational
●	7	LA	105	16.80	EB	Bellflower	S	2	NM	Operational
●	7	LA	105	17.90	WB	Hoxie Ave	S	1		Non-Op

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	7	LA	110	1.58	NB	J Gibson	H	2		Non-Op
•	7	LA	110	2.84	NB	C St	H	2	NM	Non-Op
•	7	LA	110	3.38	NB	Anaheim St	H	2		Non-Op
	7	LA	110	3.97	SB	Pacific Coast Hwy				Planned
•	7	LA	110	4.17	NB	PCH	H	2		Non-Op
	7	LA	110	4.17	NB	Pacific Coast Hwy				Planned
	7	LA	110	5.29	SB	Sepulveda EB				Planned
•	7	LA	110	5.38	NB	Sepulveda EB	L	2		Operational
	7	LA	110	5.49	SB	Sepulveda WB				Planned
•	7	LA	110	5.60	NB	Sepulveda WB	S	2	NM	Operational
	7	LA	110	6.36	SB	223rd St				Planned
•	7	LA	110	6.84	NB	220th St	H	2	NM	Operational
	7	LA	110	6.87	SB	Carson				Planned
	7	LA	110	7.78	SB	Torrance				Planned
•	7	LA	110	7.98	NB	Torrance	H	1		Operational
•	7	LA	110	9.21	NB	190th St	S	2	NM	Operational
•	7	LA	110	11.11	SB	Redondo Beach	S	2	NM	Operational
•	7	LA	110	11.22	NB	Redondo Beach	L	2		Operational
•	7	LA	110	11.73	SB	Rosecrans	S	2		Operational
•	7	LA	110	11.83	NB	Rosecrans EB	L	2	NM	Operational
•	7	LA	110	11.97	NB	Rosecrans WB	S	2	NM	Operational
•	7	LA	110	12.78	SB	El Segundo	S	2		Operational
•	7	LA	110	12.86	NB	El Segundo	L	2		Operational
•	7	LA	110	13.44	SB	WB I-105	C	2		Non-Op
•	7	LA	110	13.45	SB	EB I-105	C	1		Non-Op
•	7	LA	110	13.80	SB	Imperial Hwy	S	2	NM	Operational
•	7	LA	110	14.29	NB	Imperial Hwy	S	2	NM	Operational
•	7	LA	110	14.50	NB	EB/WB I-105	C	3		Operational
•	7	LA	110	15.10	NB	Century	S	2	NM	Operational
•	7	LA	110	15.88	NB	Manchester EB	L	2	NM	Operational
•	7	LA	110	15.88	SB	Manchester EB	S	2	NM	Operational
•	7	LA	110	15.89	NB	Manchester WB	S	2	NM	Operational
•	7	LA	110	16.02	SB	Manchester WB	L	2	NM	Operational
•	7	LA	110	17.13	NB	Florence	S	2	NM	Operational
•	7	LA	110	17.16	SB	Florence/76 <sup>th</sup>	S	2	NM	Operational
•	7	LA	110	17.30	SB	Gage	S	2	NM	Operational
•	7	LA	110	17.68	NB	Gage	S	2	NM	Operational
•	7	LA	110	17.88	SB	Slauson	S	2	NM	Operational
•	7	LA	110	17.97	NB	Slauson	L	2	NM	Operational
•	7	LA	110	18.64	NB	51 <sup>st</sup>	S	1		Operational
•	7	LA	110	18.89	SB	Vernon	S	1		Operational

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●	7	LA	110	19.16	NB	Vernon	S	2	NM	Operational
●	7	LA	110	19.37	SB	M L King Blvd	S	2	NM	Operational
●	7	LA	110	19.47	NB	M L King Blvd	L	2	NM	Operational
●	7	LA	110	19.80	SB	37 <sup>th</sup> /Exposition	S	2	NM	Operational
●	7	LA	110	20.14	NB	Exposition	S	2		Operational
●	7	LA	110	21.36	NB	Washington	H	1		Operational
●	7	LA	110	21.60	SB	11 <sup>th</sup> St	S	2		Operational
●	7	LA	110	21.85	NB	11 <sup>th</sup> St	S	1		Non-Op
●	7	LA	110	22.31	SB	8 <sup>th</sup> St	S	2		Operational
●	7	LA	110	22.39	NB	9 <sup>th</sup> St	S	1		Non-Op
●	7	LA	110	23.05	SB	3 <sup>rd</sup> St	L	1		Non-Op
●	7	LA	110	23.23	NB	3 <sup>rd</sup> St	S	1		Non-Op
●	7	LA	110	24.06	NB	Figueroa	S	1		Non-Op
●	7	LA	110	24.46	SB	Stadium Wy	H	1		Operational
●	7	LA	110	24.56	NB	Hill	S	1		Non-Op
●	7	LA	110	24.76	NB	Stadium Wy	L	1		Non-Op
●	7	LA	110	25.00	SB	Amador	S	1		Operational
●	7	LA	110	25.41	SB	SB I-5	C	2		Non-Op
●	7	LA	118	1.65	WB	Topanga Cyn	S	2		Operational
●	7	LA	118	1.95	EB	Topanga Cyn	S	2	NM	Operational
●	7	LA	118	2.72	WB	Desoto Ave	L	2		Operational
●	7	LA	118	2.86	EB	Desoto Ave	S	2		Operational
●	7	LA	118	3.80	EB	Porter Ranch Dr	S	2	NM	Operational
●	7	LA	118	3.86	WB	Porter Ranch Dr	S	2	NM	Operational
●	7	LA	118	4.46	WB	Tampa Ave	S	2		Operational
●	7	LA	118	4.79	EB	Tampa Ave	S	2		Operational
●	7	LA	118	5.65	WB	Reseda Blvd	H	2		Operational
●	7	LA	118	5.97	EB	Reseda Blvd	S	2		Operational
●	7	LA	118	7.61	EB	Balboa Blvd SB	L	2	NM	Operational
●	7	LA	118	7.80	WB	Balboa Blvd	S	2		Operational
●	7	LA	118	7.99	EB	Balboa Blvd NB	S	2	NM	Operational
●	7	LA	118	8.58	EB	Hayvenhurst Ave	S	2	NM	Operational
●	7	LA	118	8.85	WB	Woodley Ave	S	2		Operational
●	7	LA	118	9.60	EB	Sepulveda	S	2		Operational
●	7	LA	118	9.96	WB	Sepulveda	S	2		Operational
	7	LA	118	11.60	WB	Laurel Canyon Blvd				Planned
	7	LA	118	12.30	WB	San Fernando				Planned
	7	LA	118	12.31	EB	San Fernando				Planned
	7	LA	118	12.40	EB	Paxton				Planned
	7	LA	118	13.17	WB	Glenoaks				Planned
●	7	LA	134	0.49	EB	Vineland	H	1		Operational

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•	7	LA	134	0.95	EB	Cahuenga	S	1		Operational
•	7	LA	134	0.95	WB	Vineland (SR-170 Conn)	L	1		Non-Op
•	7	LA	134	1.90	WB	Alameda 1 SB	H	1		Operational
•	7	LA	134	1.92	WB	Alameda 2 NB	S	1		Operational
•	7	LA	134	2.11	EB	Hollywood Wy	H	1		Operational
•	7	LA	134	2.86	WB	Buena Vista	S	2		Operational
•	7	LA	134	3.04	EB	Buena Vista	S	1		Operational
•	7	LA	134	3.75	WB	Forest Lawn	S	1		Operational
•	7	LA	134	3.87	EB	Forest Lawn	S	1		Operational
•	7	LA	134	4.73	WB	Victory	S	2		Operational
•	7	LA	134	6.00	WB	San Fernando Rd	H	1		Operational
•	7	LA	134	6.10	EB	San Fernando Rd	H	2		Operational
•	7	LA	134	6.50	WB	Pacific	S	1		Operational
•	7	LA	134	6.66	EB	Pacific	S	1		Operational
•	7	LA	134	6.88	WB	Central	S	2		Operational
•	7	LA	134	7.22	EB	Brand	S	2		Operational
•	7	LA	134	7.69	WB	Glendale	H	1		Operational
•	7	LA	134	7.84	EB	Glendale SB	L	2	NM	Operational
•	7	LA	134	7.96	EB	Glendale NB	S	2	NM	Operational
•	7	LA	134	8.58	WB	Harvey	S	2		Operational
•	7	LA	134	9.07	EB	Harvey	S	2	NM	Operational
•	7	LA	134	11.50	WB	Figueroa	H	2		Operational
•	7	LA	134	11.53	EB	Figueroa	H	1		Operational
•	7	LA	134	11.64	EB	Colorado	S	2	NM	Operational
•	7	LA	134	12.27	WB	San Rafael	S	1		Operational
•	7	LA	134	12.45	EB	San Rafael	S	1		Operational
•	7	LA	134	12.78	WB	Orange Grove	H	2	NM	Operational
•	7	LA	134	13.18	EB	Orange Grove	H	1		Operational
	7	LA	170	14.70	NB	Vineland/SR-134				Planned
	7	LA	170	15.03	NB	Tujunga/Riverside				Planned
•	7	LA	170	15.26	SB	Magnolia	S	2	NM	Operational
	7	LA	170	15.50	NB	Magnolia Blvd				Planned
•	7	LA	170	15.96	SB	Burbank Blvd	S	2	NM	Operational
	7	LA	170	16.14	NB	Burbank Blvd				Planned
•	7	LA	170	16.60	SB	Oxnard Blvd	S	2	NM	Operational
	7	LA	170	16.61	NB	Oxnord St				Planned
•	7	LA	170	17.16	SB	Victory Blvd EB	S	2	NM	Non-Op
	7	LA	170	17.19	NB	Victory Blvd EB				Planned
•	7	LA	170	17.30	SB	Victory Blvd WB	L	1		Operational
	7	LA	170	17.42	NB	Victory Blvd WB				Planned

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●	7	LA	170	18.19	SB	Sherman Wy	S	2		Operational
	7	LA	170	18.21	NB	Sherman Wy EB				Planned
	7	LA	170	18.41	NB	Sherman Wy WB				Planned
●	7	LA	170	19.62	SB	Roscoe EB	S	2		Operational
	7	LA	170	19.68	NB	Roscoe Blvd				Planned
●	7	LA	170	19.80	SB	Roscoe WB	L	1		Operational
●	7	LA	170	20.27	SB	Arleta	H	2		Operational
●	7	LA	210	0.87	WB	Yarnell	L	1		Operational
●	7	LA	210	1.04	EB	Yarnell	S	2	M	Operational
●	7	LA	210	1.76	WB	Roxford	S	2	M	Operational
●	7	LA	210	2.14	EB	Roxford	S	2	M	Operational
●	7	LA	210	3.11	WB	Polk	S	2	M	Operational
●	7	LA	210	3.44	EB	Polk	S	2		Operational
●	7	LA	210	3.95	WB	Hubbard	S	2	M	Operational
●	7	LA	210	4.28	EB	Hubbard	S	2		Operational
●	7	LA	210	4.79	WB	Maclay	S	2	M	Operational
●	7	LA	210	5.09	EB	Maclay	S	2		Operational
●	7	LA	210	5.51	WB	SR-118	C	2		Non-Op
●	7	LA	210	5.92	WB	Paxton St	S	2	M	Operational
●	7	LA	210	6.25	EB	Paxton St	S	1		Operational
●	7	LA	210	6.50	EB	SR-118	C	2		Non-Op
●	7	LA	210	7.73	WB	Osborne	S	1		Operational
●	7	LA	210	8.01	EB	Osborne	S	2	M	Operational
●	7	LA	210	9.30	WB	Wheatland	S	2	M	Operational
●	7	LA	210	9.61	EB	Wheatland	S	2	M	Operational
●	7	LA	210	10.93	WB	Sunland SB	S	2	M	Operational
●	7	LA	210	11.06	EB	Sunland SB	L	1		Operational
●	7	LA	210	11.16	WB	Sunland NB	L	1		Operational
●	7	LA	210	11.36	EB	Sunland NB	S	2	M	Operational
●	7	LA	210	14.05	WB	La Tuna Cyn SB	S	1		Operational
●	7	LA	210	14.24	WB	La Tuna Cyn NB	L	1		Operational
●	7	LA	210	14.41	EB	La Tuna Cyn	S	1		Operational
●	7	LA	210	15.31	WB	Honolulu	H	1		Operational
●	7	LA	210	15.89	EB	Lowell/Honolulu	S	2		Operational
●	7	LA	210	16.62	WB	Pennsylvania	S	2	M	Operational
●	7	LA	210	17.00	EB	Pennsylvania	S	2		Operational
●	7	LA	210	17.47	EB	La Crescenta	L	1		Non-Op
●	7	LA	210	17.95	WB	Ocean View	S	1		Operational
●	7	LA	210	18.34	WB	NB SR-2	C	2		Non-Op
●	7	LA	210	18.73	EB	Ocean View	S	2	M	Operational
●	7	LA	210	19.10	EB	NB SR-2	C	2		Non-Op

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	210	19.68	WB	Angeles Crest SB	S	2	M	Operational
●	7	LA	210	19.87	WB	Angeles Crest NB	L	1		Operational
●	7	LA	210	19.89	EB	Angeles Crest SB	L	1		Operational
●	7	LA	210	20.07	EB	Angeles Crest NB	S	1		Operational
●	7	LA	210	20.42	WB	Gould	S	2	M	Operational
●	7	LA	210	21.01	EB	Foothill	S	2		Operational
●	7	LA	210	21.41	WB	Berkshire	S	2	M	Operational
●	7	LA	210	21.65	EB	Berkshire	S	2	M	Operational
●	7	LA	210	22.29	WB	Arroyo	S	1		Operational
●	7	LA	210	22.64	EB	Arroyo	S	2		Operational
●	7	LA	210	23.00	WB	Lincoln	S	1		Operational
●	7	LA	210	23.25	EB	Lincoln	H	2		Operational
●	7	LA	210	23.89	WB	Mountain St	S	2		Operational
●	7	LA	210	24.22	EB	Mountain St	S	2		Operational
●	7	LA	210	24.24	WB	EB SR-134	C	2		Non-Op
●	7	LA	210	24.83	WB	Walnut	S	2	M	Operational
●	7	LA	210	25.42	WB	Fair Oaks (SR-134)	S	2	NM	Operational
●	7	LA	210	25.74	EB	Marengo	S	2		Operational
●	7	LA	210	26.14	WB	Lake	S	2		Operational
●	7	LA	210	26.49	EB	Lake	S	2		Operational
●	7	LA	210	26.82	WB	Hill	S	2		Operational
●	7	LA	210	27.16	EB	Hill	S	2		Operational
●	7	LA	210	27.65	EB	Allen	S	2		Operational
●	7	LA	210	28.05	WB	Altadena	S	2		Operational
●	7	LA	210	28.29	WB	San Gabriel	S	2		Operational
●	7	LA	210	28.70	EB	San Gabriel	S	2		Operational
●	7	LA	210	29.19	WB	Sierra Madre Villa	S	1		Operational
●	7	LA	210	29.46	EB	Madre	S	2	M	Operational
●	7	LA	210	29.59	WB	Rosemead	S	2		Operational
●	7	LA	210	29.72	WB	Foothill - Rosemead	H	2		Operational
●	7	LA	210	29.74	EB	Rosemead	S	2		Operational
●	7	LA	210	29.85	WB	Michillinda	L	2		Operational
●	7	LA	210	30.01	EB	Michillinda	H	2		Operational
●	7	LA	210	30.49	WB	Baldwin - Foothill	H	2		Operational
●	7	LA	210	30.71	WB	Baldwin NB	L	2		Operational
●	7	LA	210	30.95	EB	Baldwin	S	2		Operational
●	7	LA	210	31.73	WB	Santa Anita SB	S	2		Operational
●	7	LA	210	31.91	WB	Santa Anita NB	L	2		Operational
●	7	LA	210	32.06	EB	Santa Anita	S	2		Operational
●	7	LA	210	32.76	WB	Huntington	H	2		Operational
●	7	LA	210	32.86	EB	Huntington WB	L	1		Operational

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●	7	LA	210	33.05	EB	Huntington EB	S	2		Operational
●	7	LA	210	33.76	WB	Myrtle	S	2		Operational
●	7	LA	210	34.15	EB	Myrtle	S	2		Operational
●	7	LA	210	34.58	WB	Mountain	S	2		Operational
●	7	LA	210	34.95	WB	Buena Vista	S	2		Operational
●	7	LA	210	35.20	EB	Mountain	S	2		Operational
●	7	LA	210	35.38	EB	Buena Vista	S	2		Operational
●	7	LA	210	36.00	WB	I-605	C	2		Operational
●	7	LA	210	36.21	WB	Mount Olive	H	2	M	Operational
●	7	LA	210	36.41	EB	Mount Olive	L	2	M	Operational
●	7	LA	210	36.60	EB	I-605	C	2		Operational
●	7	LA	210	37.78	WB	Irwindale SB	S	2		Operational
●	7	LA	210	37.92	WB	Irwindale NB	L	2		Operational
●	7	LA	210	38.01	EB	Irwindale	S	2		Operational
●	7	LA	210	38.87	WB	Vernon	S	2		Operational
●	7	LA	210	39.15	EB	Vernon	S	2		Operational
●	7	LA	210	39.45	WB	Azusa SB	S	1		Operational
●	7	LA	210	39.62	WB	Azusa NB	H	2		Operational
●	7	LA	210	39.70	EB	Azusa SB	L	2		Operational
●	7	LA	210	39.71	EB	Azusa NB	S	2	M	Operational
●	7	LA	210	40.28	WB	Citrus	H	2		Operational
●	7	LA	210	40.56	EB	Citrus SB	L	2	M	Operational
●	7	LA	210	40.74	EB	Citrus NB	S	1		Operational
●	7	LA	210	41.47	WB	Grand	S	2	M	Operational
●	7	LA	210	41.63	WB	Grand - Baseline	H	2		Operational
●	7	LA	210	41.80	EB	Grand	S	2		Operational
●	7	LA	210	43.10	WB	Sunflower	S	2		Operational
●	7	LA	210	43.39	EB	Sunflower	S	2	M	Operational
●	7	LA	210	43.90	WB	SR-57	C	2		Operational
●	7	LA	210	44.10	WB	Lone Hill	S	2	M	Operational
●	7	LA	210	44.20	EB	Lone Hill	S	2	M	Operational
●	7	LA	210	44.60	EB	SR-57	C	2		Operational
●	7	LA	210	45.06	WB	Foothill SB	S	2	M	Operational
●	7	LA	210	45.17	WB	Foothill NB	L	2		Operational
●	7	LA	210	45.31	WB	San Dimas	S	2		Operational
●	7	LA	210	45.66	EB	San Dimas	S	2		Operational
●	7	LA	210	47.00	EB	Foothill	H	2		Operational
●	7	LA	210	48.00	WB	Fruit	S	2		Operational
●	7	LA	210	48.20	EB	Fruit	S	2		Operational
●	7	LA	210	49.40	WB	Towne	S	2		Operational
●	7	LA	210	49.63	EB	Towne	S	2		Operational

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●	7	LA	210	51.85	EB	Baseline	S	2		Operational
●	7	LA	210	51.94	WB	Baseline	L	2		Operational
●	7	LA	405	0.55	NB	Studebaker	S	1		Operational
●	7	LA	405	0.90	SB	Stearns	S	2	NM	Operational
●	7	LA	405	1.10	NB	Palo Verde	L	1		Operational
●	7	LA	405	1.50	SB	Woodruff	S	1		Operational
●	7	LA	405	1.73	NB	Woodruff	S	1		Operational
●	7	LA	405	2.16	NB	Bellflower NB	L	2		Operational
●	7	LA	405	2.19	SB	Bellflower NB	S	1		Operational
●	7	LA	405	2.45	SB	Bellflower SB	L	1		Operational
●	7	LA	405	2.46	NB	Bellflower SB	H	1		Operational
●	7	LA	405	2.97	SB	Willow	H	2	NM	Operational
●	7	LA	405	3.28	NB	Lakewood NB	L	2	NM	Operational
●	7	LA	405	3.44	NB	Lakewood SB	S	2	NM	Operational
●	7	LA	405	3.47	SB	Lakewood SB	L	2	NM	Operational
●	7	LA	405	4.47	SB	Spring	S	2	NM	Operational
●	7	LA	405	4.57	NB	Spring	H	2	NM	Operational
●	7	LA	405	4.81	NB	Cherry NB	L	1		Operational
●	7	LA	405	4.81	SB	Cherry SB	L	1		Operational
●	7	LA	405	4.92	NB	Cherry SB	H	1		Operational
●	7	LA	405	5.38	SB	Orange	L	2	NM	Operational
●	7	LA	405	5.46	NB	Orange	H	1		Operational
●	7	LA	405	5.99	NB	Atlantic NB	L	1		Operational
●	7	LA	405	6.00	SB	Atlantic NB	H	1		Operational
●	7	LA	405	6.15	SB	Atlantic SB	L	1		Operational
●	7	LA	405	6.42	SB	Long Beach	H	2		Operational
●	7	LA	405	6.56	NB	Wardlow	S	2	NM	Operational
●	7	LA	405	7.22	NB	Pacific Pl	H	2	NM	Operational
●	7	LA	405	8.02	NB	Santa Fe	H	2		Operational
●	7	LA	405	8.05	SB	Santa Fe	H	2		Operational
●	7	LA	405	8.63	SB	Alameda	H	2		Operational
●	7	LA	405	8.69	NB	Alameda	L	2		Operational
●	7	LA	405	9.47	NB	Wilmington NB	L	1		Operational
●	7	LA	405	9.47	SB	Wilmington	S	2		Operational
●	7	LA	405	9.50	NB	Wilmington SB	S	1		Operational
●	7	LA	405	10.49	SB	Carson	S	2	NM	Operational
●	7	LA	405	10.66	NB	Carson	S	1		Operational
●	7	LA	405	11.20	SB	Avalon	S	2		Operational
●	7	LA	405	11.32	NB	Avalon	H	2		Operational
●	7	LA	405	11.32	SB	Avalon	L	2		Operational
●	7	LA	405	12.57	SB	Main St	S	2	NM	Operational

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●	7	LA	405	13.31	NB	Vermont	S	2	NM	Operational
●	7	LA	405	13.81	NB	Normandie	H	1		Operational
●	7	LA	405	13.81	SB	Normandie	S	2	NM	Operational
●	7	LA	405	14.34	NB	Western	H	1		Operational
●	7	LA	405	14.52	SB	190th/Western	H	1		Operational
●	7	LA	405	15.43	NB	Crenshaw	H	1		Operational
●	7	LA	405	15.51	SB	Crenshaw	L	1		Operational
●	7	LA	405	16.47	SB	Artesia	S	2		Operational
●	7	LA	405	16.66	NB	Artesia	H	1		Operational
●	7	LA	405	17.01	NB	Redondo Beach	S	1		Operational
●	7	LA	405	17.52	NB	Hawthorne	L	3	NM	Operational
●	7	LA	405	17.64	SB	Hawthorne	L	2	NM	Operational
●	7	LA	405	18.20	NB	Inglewood NB	L	2	NM	Operational
●	7	LA	405	18.20	SB	Inglewood NB	H	2	NM	Operational
●	7	LA	405	18.30	SB	Inglewood SB	L	2	NM	Operational
●	7	LA	405	18.35	NB	Inglewood SB	H	2	NM	Operational
●	7	LA	405	19.16	NB	Rosecrans EB	L	1		Operational
●	7	LA	405	19.16	SB	Rosecrans	H	1		Operational
●	7	LA	405	19.36	NB	Rosecrans WB	S	1		Operational
●	7	LA	405	20.13	NB	El Segundo EB	L	2	NM	Operational
●	7	LA	405	20.30	SB	El Segundo EB	S	2	NM	Operational
●	7	LA	405	20.39	NB	El Segundo WB	H	2	NM	Operational
●	7	LA	405	20.60	SB	El Segundo WB	H	2	NM	Operational
●	7	LA	405	21.08	SB	Imperial Hwy EB	H	2	NM	Operational
●	7	LA	405	21.10	NB	Imperial Hwy EB	L	2	NM	Operational
●	7	LA	405	21.30	SB	Imperial Hwy WB	H	2	NM	Operational
●	7	LA	405	21.39	NB	Imperial Hwy WB	H	2	NM	Operational
●	7	LA	405	22.00	SB	Century Blvd EB	H	2		Operational
●	7	LA	405	22.02	SB	Century Blvd WB/98th	H	2		Operational
●	7	LA	405	22.30	SB	EB/WB I-105	C	2		Operational
●	7	LA	405	22.34	SB	Manchester WB/Olive	H	2		Operational
●	7	LA	405	22.40	NB	WB I-105	C	2		Non-Op
●	7	LA	405	22.68	NB	Century Blvd EB	L	2	NM	Operational
●	7	LA	405	22.70	NB	Century Blvd WB	D	2		Operational
●	7	LA	405	23.36	NB	Manchester Blvd EB	L	2	NM	Operational
●	7	LA	405	23.47	NB	Manchester Blvd WB	D	2		Operational
●	7	LA	405	23.61	SB	La Cienaga Blvd	H	1		Operational
●	7	LA	405	24.25	NB	La Tijera Blvd	D	2	NM	Operational
●	7	LA	405	24.25	SB	La Tijera Blvd	D	2	NM	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	405	24.80	NB	Howard Hughes Pkwy	H	2	NM	Operational
●	7	LA	405	25.00	SB	Howard Hughes Pkwy	H	2		Operational
●	7	LA	405	25.83	SB	Jefferson Blvd	D	3	NM	Operational
●	7	LA	405	26.00	NB	Jefferson Blvd	D	3		Operational
●	7	LA	405	26.84	SB	Braddock Dr	D	1		Operational
●	7	LA	405	27.35	NB	Culver Blvd	D	2	NM	Operational
●	7	LA	405	27.81	NB	Venice Blvd	H	1		Operational
●	7	LA	405	27.81	SB	Venice Blvd	H	1		Operational
●	7	LA	405	29.16	SB	National Blvd	D	2		Operational
●	7	LA	405	30.13	NB	Pico/Olympic Blvd	H	2		Operational
●	7	LA	405	30.80	SB	Santa Monica Blvd	D	3		Operational
●	7	LA	405	30.95	NB	Santa Monica Blvd	D	3		Operational
●	7	LA	405	31.39	SB	Wilshire Blvd EB	H	2		Operational
●	7	LA	405	31.48	NB	Wilshire Blvd EB	L	1		Operational
●	7	LA	405	31.57	NB	Wilshire Blvd WB	H	1		Operational
●	7	LA	405	31.66	SB	Wilshire Blvd WB	L	2		Operational
●	7	LA	405	32.90	SB	Sunset Blvd EB	D	2		Operational
●	7	LA	405	32.96	NB	Sunset Blvd EB	L	2		Operational
●	7	LA	405	33.05	SB	Sunset WB/Church Ln	L	1		Operational
●	7	LA	405	33.42	NB	Moraga Ave	H	2		Operational
●	7	LA	405	34.71	NB	Getty Center Dr	L	1		Operational
●	7	LA	405	34.73	SB	Getty Center Dr	D	2		Operational
●	7	LA	405	36.25	SB	Skirball/Muholland Dr	D	2		Operational
●	7	LA	405	36.93	NB	Skirball/Muholland Dr	H	1		Operational
●	7	LA	405	38.42	SB	Valley Vista Blvd	D	3		Operational
●	7	LA	405	38.74	NB	Ventura Blvd	H	1		Operational
●	7	LA	405	39.09	SB	Ventura Blvd	L	2		Operational
●	7	LA	405	40.08	SB	Burbank Blvd	H	1		Operational
●	7	LA	405	40.42	NB	Burbank Blvd	H	2		Operational
●	7	LA	405	41.31	SB	Victory Blvd EB	L	1		Operational
●	7	LA	405	41.48	SB	Victory Blvd WB	H	2		Operational
●	7	LA	405	41.49	NB	Victory Blvd	H	2		Operational
●	7	LA	405	42.25	SB	Sherman Wy EB	H	2		Operational
●	7	LA	405	42.40	SB	Sherman Wy WB	L	2		Operational
●	7	LA	405	42.59	NB	Sherman Wy	H	2		Operational
●	7	LA	405	43.61	SB	Roscoe Blvd	H	2		Operational
●	7	LA	405	43.93	NB	Roscoe Blvd	S	2		Operational
●	7	LA	405	44.62	SB	Nordoff St	H	2		Operational
●	7	LA	405	44.92	NB	Nordoff St	S	2		Operational

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●	7	LA	405	46.10	SB	Devonshire St EB	S	2		Operational
●	7	LA	405	46.28	SB	Devonshire St WB	H	1		Operational
●	7	LA	405	46.43	NB	Devonshire St WB	H	1		Operational
●	7	LA	405	46.44	NB	Devonshire St EB	L	1		Operational
●	7	LA	405	47.28	SB	San Fernando Mission	L	2		Operational
●	7	LA	405	47.62	SB	Rinaldi St	S	2		Operational
●	7	LA	405	47.94	NB	Rinaldi St	S	2		Operational
●	7	LA	605	0.23	NB	Spring St	L	1		Operational
●	7	LA	605	1.67	SB	Carson EB	L	2		Operational
●	7	LA	605	1.70	NB	Carson EB	L	2		Operational
●	7	LA	605	1.85	SB	Carson WB	L	1		Operational
●	7	LA	605	1.91	NB	Carson WB	S	2	NM	Operational
●	7	LA	605	2.79	SB	Del Amo EB	L	2	NM	Operational
●	7	LA	605	2.81	NB	Del Amo EB	L	2	NM	Operational
●	7	LA	605	2.93	SB	Del Amo WB	L	1		Operational
●	7	LA	605	2.96	NB	Del Amo WB	S	2	NM	Operational
●	7	LA	605	3.68	SB	South EB	L	2	NM	Operational
●	7	LA	605	3.71	NB	South EB	L	1		Operational
●	7	LA	605	3.83	SB	South WB	L	1		Operational
●	7	LA	605	3.86	NB	South WB	S	1		Operational
●	7	LA	605	5.74	SB	Alondra EB	S	2	NM	Operational
●	7	LA	605	5.77	NB	Alondra EB	L	1		Operational
●	7	LA	605	5.85	SB	Alondra WB	L	1		Operational
●	7	LA	605	5.92	NB	Alondra WB	L	2	NM	Operational
●	7	LA	605	6.72	SB	Rosecrans EB	H	2	NM	Operational
●	7	LA	605	6.84	SB	Rosecrans WB	L	2	NM	Operational
●	7	LA	605	6.85	NB	Rosecrans to WB I-105	L	1		Operational
●	7	LA	605	6.93	NB	Rosecrans WB	S	2	NM	Operational
●	7	LA	605	7.20	SB	EB I-105	C	2		Non-Op
●	7	LA	605	7.80	NB	Imperial	H	2	NM	Operational
●	7	LA	605	7.90	SB	Imperial	L	2		Operational
●	7	LA	605	8.20	NB	EB I-105	C	2		Operational
●	7	LA	605	8.50	NB	Firestone	S	2	NM	Operational
●	7	LA	605	9.16	SB	Florence	S	2		Operational
●	7	LA	605	9.30	NB	Florence	H	2		Operational
●	7	LA	605	10.32	SB	Telegraph	L	2		Operational
●	7	LA	605	10.40	NB	Telegraph	S	2	NM	Operational
●	7	LA	605	11.49	SB	Slauson	H	1		Operational
●	7	LA	605	11.96	SB	Washington EB	S	2	NM	Operational

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●	7	LA	605	11.97	SB	Washington WB	L	1		Operational
●	7	LA	605	12.22	NB	Washington EB	H	1		Operational
●	7	LA	605	12.57	NB	Saragosa	S	2	NM	Operational
●	7	LA	605	13.44	SB	Whittier EB	S	2	NM	Operational
●	7	LA	605	13.51	NB	Whittier EB	L	1		Operational
●	7	LA	605	13.61	SB	Whittier WB	L	1		Operational
●	7	LA	605	13.64	NB	Whittier WB	S	2	NM	Operational
●	7	LA	605	14.30	SB	Beverly EB	S	2	NM	Operational
●	7	LA	605	14.31	SB	Beverly WB	L	1		Operational
●	7	LA	605	14.60	NB	Beverly	H	2		Operational
●	7	LA	605	15.45	SB	Rose Hills	H	1		Operational
●	7	LA	605	15.73	NB	Rose Hills	S	1		Operational
●	7	LA	605	16.54	SB	Peck SB	S	2	NM	Operational
●	7	LA	605	16.75	SB	Peck NB	H	1		Operational
●	7	LA	605	16.78	NB	Peck	H	1		Operational
●	7	LA	605	19.29	SB	Valley EB	S	1		Operational
●	7	LA	605	19.30	SB	Valley WB	L	2		Operational
●	7	LA	605	19.36	NB	Valley EB	L	1		Operational
●	7	LA	605	19.50	NB	Valley WB	H	1		Operational
●	7	LA	605	20.88	SB	Ramona	S	2	NM	Operational
●	7	LA	605	21.23	NB	Ramona	S	2	NM	Operational
●	7	LA	605	21.95	SB	Lower Azusa	S	2		Operational
●	7	LA	605	22.37	NB	Lower Azusa	S	1		Operational
●	7	LA	605	23.35	SB	Live Oak	S	2		Operational
●	7	LA	605	23.95	NB	Arrow Hwy EB	L	1		Operational
●	7	LA	605	24.15	NB	Arrow Hwy WB	H	1		Operational
	7	LA	710	6.28	NB	Anaheim St EB				Planned
	7	LA	710	6.28	SB	Anaheim St EB				Planned
	7	LA	710	6.43	SB	Anaheim St WB				Planned
	7	LA	710	6.51	NB	Anaheim St WB				Planned
	7	LA	710	6.80	SB	WB PCH				Planned
	7	LA	710	6.80	SB	EB PCH				Planned
	7	LA	710	6.83	NB	EB PCH				Planned
	7	LA	710	7.01	NB	WB PCH				Planned
	7	LA	710	7.73	SB	EB Willow St				Planned
	7	LA	710	7.81	NB	EB Willow St				Planned
	7	LA	710	7.96	SB	WB Willow St				Planned
	7	LA	710	8.06	NB	WB Willow St				Planned
	7	LA	710	9.16	NB	Wardlow Rd				Planned
●	7	LA	710	9.72	NB	Pacific Pl	H	1		Operational
●	7	LA	710	10.69	NB	Del Amo EB	L	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	LA	710	10.95	SB	Del Amo WB	L	2		Operational
●	7	LA	710	11.00	NB	Del Amo WB	S	1		Operational
●	7	LA	710	11.89	SB	Long Beach	S	2	NM	Operational
●	7	LA	710	12.13	NB	Long Beach	S	2	NM	Operational
●	7	LA	710	12.80	SB	Artesia Blvd	S	1		Operational
●	7	LA	710	13.83	SB	Alondra Blvd	S	1		Operational
●	7	LA	710	14.10	NB	Alondra Blvd	S	2		Operational
●	7	LA	710	14.90	NB	Rosecrans EB	L	2	NM	Operational
●	7	LA	710	14.90	SB	Rosecrans EB	H	2	NM	Operational
●	7	LA	710	15.10	NB	Rosecrans WB	H	2	NM	Operational
●	7	LA	710	15.10	SB	Rosecrans WB	L	2	NM	Operational
●	7	LA	710	15.25	SB	EB/WB I-105	C	3		Non-Op
●	7	LA	710	15.90	SB	King	S	2	NM	Operational
●	7	LA	710	16.10	NB	EB/WB I-105	C	2		Non-Op
●	7	LA	710	16.90	NB	Imperial EB	L	1		Operational
●	7	LA	710	16.92	SB	Imperial EB	S	2	NM	Operational
●	7	LA	710	16.98	SB	Imperial WB	L	1		Operational
●	7	LA	710	17.05	NB	Imperial WB	S	2	NM	Operational
●	7	LA	710	18.42	NB	Firestone EB	L	2	NM	Operational
●	7	LA	710	18.42	SB	Firestone EB	S	2	NM	Operational
●	7	LA	710	18.51	NB	Firestone WB	S	2	NM	Operational
●	7	LA	710	18.51	SB	Firestone WB	L	2	NM	Operational
●	7	LA	710	19.30	SB	Florence EB	S	2	NM	Operational
●	7	LA	710	19.50	NB	Florence EB	L	2	NM	Operational
●	7	LA	710	19.76	NB	Florence WB	S	2	NM	Operational
●	7	LA	710	19.76	SB	Florence WB	L	2	NM	Operational
●	7	LA	710	21.68	SB	Atlantic NB	H	2		Operational
●	7	LA	710	21.95	SB	Atlantic SB	L	1		Non-Op
●	7	LA	710	22.53	SB	Washington Blvd	H	2		Non-Op
●	7	LA	710	22.54	NB	Washington Blvd	S	1		Operational
●	7	LA	710	23.47	SB	Olympic Blvd	H	1		Operational
●	7	LA	710	23.50	NB	Olympic Blvd	S	1		Operational
●	7	LA	710	24.43	NB	Third St	H	1		Operational
●	7	LA	710	24.54	SB	Third St	L	1		Operational
●	7	LA	710	24.89	SB	Cesar Chavez	S	1		Non-Op
●	7	VEN	23	3.93	NB	Hillcrest	S	2		Operational
●	7	VEN	23	4.89	SB	Janss EB	S	1		Operational
●	7	VEN	23	5.05	NB	Janss EB	H	1		Operational
●	7	VEN	23	5.09	SB	Janss WB	H	1		Operational
●	7	VEN	23	5.25	NB	Janss WB	S	1		Operational
●	7	VEN	23	5.87	SB	Los Arboles EB	S	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	7	VEN	23	6.02	NB	Los Arboles EB	H	1		Operational
●	7	VEN	23	6.06	SB	Los Arboles WB	H	1		Operational
●	7	VEN	23	6.22	NB	Los Arboles WB	S	1		Operational
●	7	VEN	23	7.01	SB	Sunset Hills EB	S	1		Operational
●	7	VEN	23	7.14	NB	Sunset Hills EB	H	1		Operational
●	7	VEN	23	7.20	SB	Sunset Hills WB	H	1		Operational
●	7	VEN	23	7.37	NB	Sunset Hills WB	S	1		Operational
●	7	VEN	23	7.90	SB	Olsen EB	S	2		Operational
●	7	VEN	23	8.21	SB	Olsen WB	H	1		Operational
●	7	VEN	23	8.30	NB	Olsen EB	H	1		Operational
●	7	VEN	23	8.51	NB	Olsen WB	S	1		Operational
●	7	VEN	23	9.92	SB	Tierra Rejada EB	S	1		Operational
●	7	VEN	23	10.12	SB	Tierra Rejada WB	H	1		Operational
●	7	VEN	23	10.16	NB	Tierra Rejada EB	H	1		Operational
●	7	VEN	23	10.36	NB	Tierra Rejada WB	S	1		Operational
●	7	VEN	23	11.21	SB	New Los Angeles	S	2		Operational
●	7	VEN	23	11.43	NB	New Los Angeles	L	2		Operational
	7	VEN	33	0.40	NB	Main St				Planned
	7	VEN	33	1.57	SB	Stanley				Planned
	7	VEN	33	1.72	NB	Stanley				Planned
	7	VEN	33	2.71	SB	Shell Rd				Planned
	7	VEN	33	2.82	NB	Shell Rd				Planned
	7	VEN	33	4.33	SB	Canada Larga Rd				Planned
	7	VEN	33	4.65	NB	Canada Larga Rd				Planned
	7	VEN	33	5.47	SB	Casitas Vista				Planned
	7	VEN	33	5.89	NB	Vista Rd				Planned
●	7	VEN	101	0.46	SB	Westlake EB	S	1		Operational
●	7	VEN	101	0.63	SB	Westlake WB	L	2		Operational
●	7	VEN	101	0.68	NB	Westlake EB	L	2		Operational
●	7	VEN	101	0.79	NB	Westlake WB	S	1		Operational
	7	VEN	101	0.94	SB	SB SR-23	C			Planned
●	7	VEN	101	1.49	SB	Hampshire	S	1		Operational
●	7	VEN	101	1.78	NB	Hampshire	S	2		Operational
●	7	VEN	101	3.06	SB	Rancho Rd	S	1		Operational
●	7	VEN	101	3.17	NB	Rancho Rd	S	1		Operational
	7	VEN	101	3.37	NB	SB SR-23	C			Planned
●	7	VEN	101	3.92	SB	Moorpark	S	3		Operational
●	7	VEN	101	4.28	NB	Moorpark	S	2		Operational
●	7	VEN	101	5.17	NB	Lynn Rd	S	2		Non-Op
	7	VEN	101	6.89	SB	Borchard/R Cornejo				Planned
	7	VEN	101	7.23	NB	Borchard				Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	7	VEN	101	7.70	SB	Wendy Dr	S	1		Non-Op
•	7	VEN	101	7.86	NB	Wendy 1	L	1		Non-Op
•	7	VEN	101	8.06	NB	Wendy 2	S	2		Non-Op
	7	VEN	101	12.31	SB	Pleasant Valley				Planned
	7	VEN	101	12.40	NB	Pleasant Valley				Planned
	7	VEN	101	13.23	NB	Flynn Rd				Planned
•	7	VEN	101	13.56	SB	Lewis Rd	S	2		Operational
•	7	VEN	101	13.69	NB	Lewis Rd	S	2		Operational
	7	VEN	101	13.91	SB	Fulton/Somis				Planned
	7	VEN	101	14.66	SB	Carmen				Planned
	7	VEN	101	14.87	NB	Carmen				Planned
	7	VEN	101	15.20	SB	Springville Rd				Planned
	7	VEN	101	15.30	NB	Springville Rd				Planned
	7	VEN	101	15.80	SB	Los Posas WB				Planned
	7	VEN	101	15.86	NB	Las Posas EB				Planned
	7	VEN	101	15.93	SB	Los Posas EB				Planned
	7	VEN	101	15.99	NB	Las Posas WB				Planned
	7	VEN	101	17.59	SB	Central				Planned
	7	VEN	101	17.90	NB	Central				Planned
	7	VEN	101	19.02	SB	Del Norte				Planned
	7	VEN	101	19.32	NB	Del Norte				Planned
•	7	VEN	101	20.03	NB	Rice 1	L	2		Non-Op
•	7	VEN	101	20.03	SB	Rice	S	2		Non-Op
	7	VEN	101	20.03	SB	Rice				Planned
	7	VEN	101	20.05	NB	Rice				Planned
•	7	VEN	101	20.15	NB	Rice 2	S	1		Non-Op
	7	VEN	101	20.54	NB	Rose EB				Planned
	7	VEN	101	20.80	SB	Rose WB				Planned
	7	VEN	101	20.97	SB	Rose EB				Planned
	7	VEN	101	21.06	NB	Rose WB				Planned
	7	VEN	101	21.78	SB	Vineyard WB				Planned
	7	VEN	101	21.97	NB	Vineyard EB				Planned
	7	VEN	101	22.03	SB	Vineyard EB				Planned
	7	VEN	101	22.18	NB	Vineyard WB				Planned
•	7	VEN	101	22.48	SB	Oxnard Blvd	S	2	NM	Non-Op
•	7	VEN	101	22.94	NB	Oxnard Blvd	S	3		Non-Op
•	7	VEN	101	23.46	SB	Johnson Dr	L	1		Non-Op
•	7	VEN	101	23.71	NB	Johnson Dr	H	1		Non-Op
	7	VEN	101	24.01	SB	Victoria EB				Planned
	7	VEN	101	24.51	SB	Victoria WB				Planned
	7	VEN	101	24.80	NB	Victoria Ave				Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	7	VEN	101	25.86	SB	Telephone Rd				Planned
	7	VEN	101	26.60	NB	WB SR-126	C			Planned
	7	VEN	101	26.92	SB	WB SR-126	C			Planned
	7	VEN	101	30.55	SB	SB SR-33	C			Planned
	7	VEN	101	31.00	NB	SB SR-33	C			Planned
●	7	VEN	118	19.60	EB	Princeton Ave	S	2		Operational
●	7	VEN	118	19.75	WB	Princeton Ave	S	2	M	Operational
●	7	VEN	118	19.87	WB	Collins Dr	S	2		Operational
●	7	VEN	118	20.60	EB	Collins Dr	L	2		Operational
●	7	VEN	118	22.86	WB	Madera Rd	S	2	M	Operational
●	7	VEN	118	22.90	EB	Madera Rd SB	L	1		Operational
●	7	VEN	118	23.20	EB	Madera Rd NB	S	2		Operational
●	7	VEN	118	23.63	WB	First St SB	S	2	M	Operational
●	7	VEN	118	23.63	WB	First St NB	L	2	M	Operational
●	7	VEN	118	23.78	EB	First St SB	L	2	M	Operational
●	7	VEN	118	23.97	EB	First St NB	S	2		Operational
●	7	VEN	118	24.78	EB	Erringer Rd SB	L	2	M	Operational
●	7	VEN	118	24.80	WB	Erringer Rd NB	L	2	M	Operational
●	7	VEN	118	24.93	WB	Erringer Rd SB	S	2	M	Operational
●	7	VEN	118	24.97	EB	Erringer Rd NB	S	2	M	Operational
●	7	VEN	118	25.78	EB	Sycamore Dr SB	L	2	M	Operational
●	7	VEN	118	25.83	WB	Sycamore Dr SB	S	2	M	Operational
●	7	VEN	118	25.83	WB	Sycamore Dr NB	L	2	M	Operational
●	7	VEN	118	25.89	EB	Sycamore Dr NB	S	2	M	Operational
●	7	VEN	118	27.20	EB	Tapo Cyn SB	L	2	M	Operational
●	7	VEN	118	27.30	WB	Tapo Cyn SB	S	2	M	Operational
●	7	VEN	118	27.30	WB	Tapo Cyn NB	L	2	M	Operational
●	7	VEN	118	27.40	EB	Tapo Cyn NB	S	2	M	Operational
●	7	VEN	118	28.70	EB	Stearns St SB	L	2	M	Operational
●	7	VEN	118	28.80	WB	Stearns St NB	L	2	M	Operational
●	7	VEN	118	28.86	WB	Stearns St SB	S	2	M	Operational
●	7	VEN	118	28.90	EB	Stearns St NB	S	2	M	Operational
●	7	VEN	118	29.50	WB	Yosemite Ave SB	S	2	M	Operational
●	7	VEN	118	29.50	WB	Yosemite Ave NB	L	2	M	Operational
●	7	VEN	118	29.53	EB	Yosemite Ave SB	L	2	M	Operational
●	7	VEN	118	29.73	EB	Yosemite Ave NB	S	2	M	Operational
●	7	VEN	118	30.38	WB	Kuehner Dr	S	2	M	Operational
●	7	VEN	118	30.82	EB	Kuehner Dr	S	2	M	Operational
●	7	VEN	118	32.48	WB	Rockey Peak Rd	S	2	M	Operational
●	7	VEN	118	32.53	EB	Rockey Peak Rd	S	2	M	Operational
	7	VEN	126	0.00	EB	Main St				Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	7	VEN	126	1.36	WB	SB Victoria				Planned
	7	VEN	126	1.36	WB	NB Victoria				Planned
	7	VEN	126	1.44	EB	SB Victoria				Planned
	7	VEN	126	1.52	EB	NB Victoria				Planned
	7	VEN	126	2.91	EB	Kimball Rd				Planned
	7	VEN	126	4.91	WB	SB Wells Rd				Planned
	7	VEN	126	4.91	WB	NB Wells Rd				Planned
	7	VEN	126	5.08	EB	SB Wells Rd				Planned
	7	VEN	126	5.08	EB	NB Wells Rd				Planned
	7	VEN	126	8.84	WB	Briggs Rd				Planned
	7	VEN	126	8.96	EB	Briggs Rd				Planned
	7	VEN	126	10.27	WB	Peck/Acacia				Planned
	7	VEN	126	10.37	EB	Peck/Acacia				Planned
	7	VEN	126	11.28	WB	Palm Ave				Planned
	7	VEN	126	11.48	EB	Palm Ave				Planned
	7	VEN	126	11.95	WB	10th St (SR-150)				Planned
	7	VEN	126	12.14	EB	10th St (SR-150)				Planned
	7	VEN	126	20.61	WB	Kimball Rd				Planned

# District 8

Figure 12. District 8 Ramp Metering Map 1

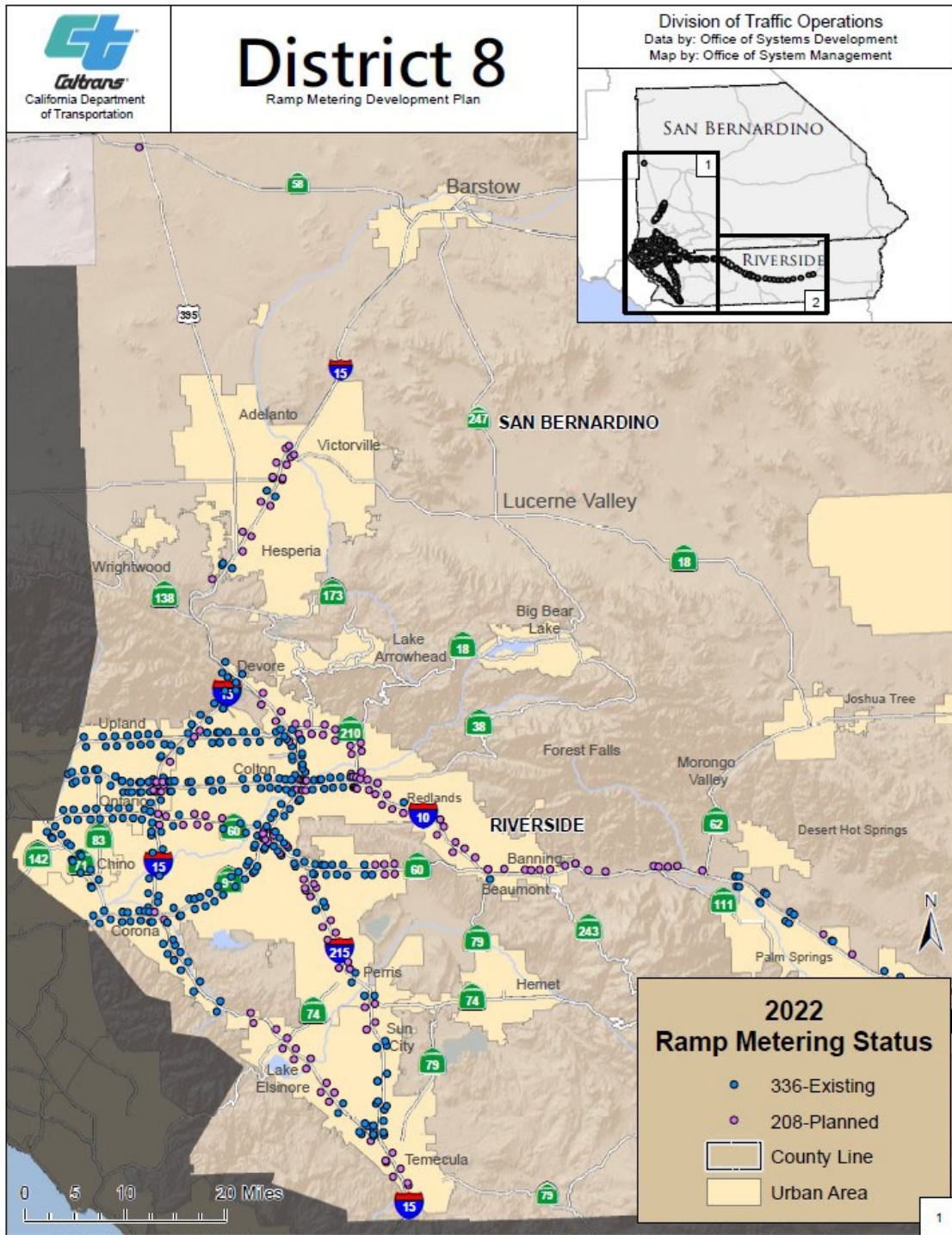
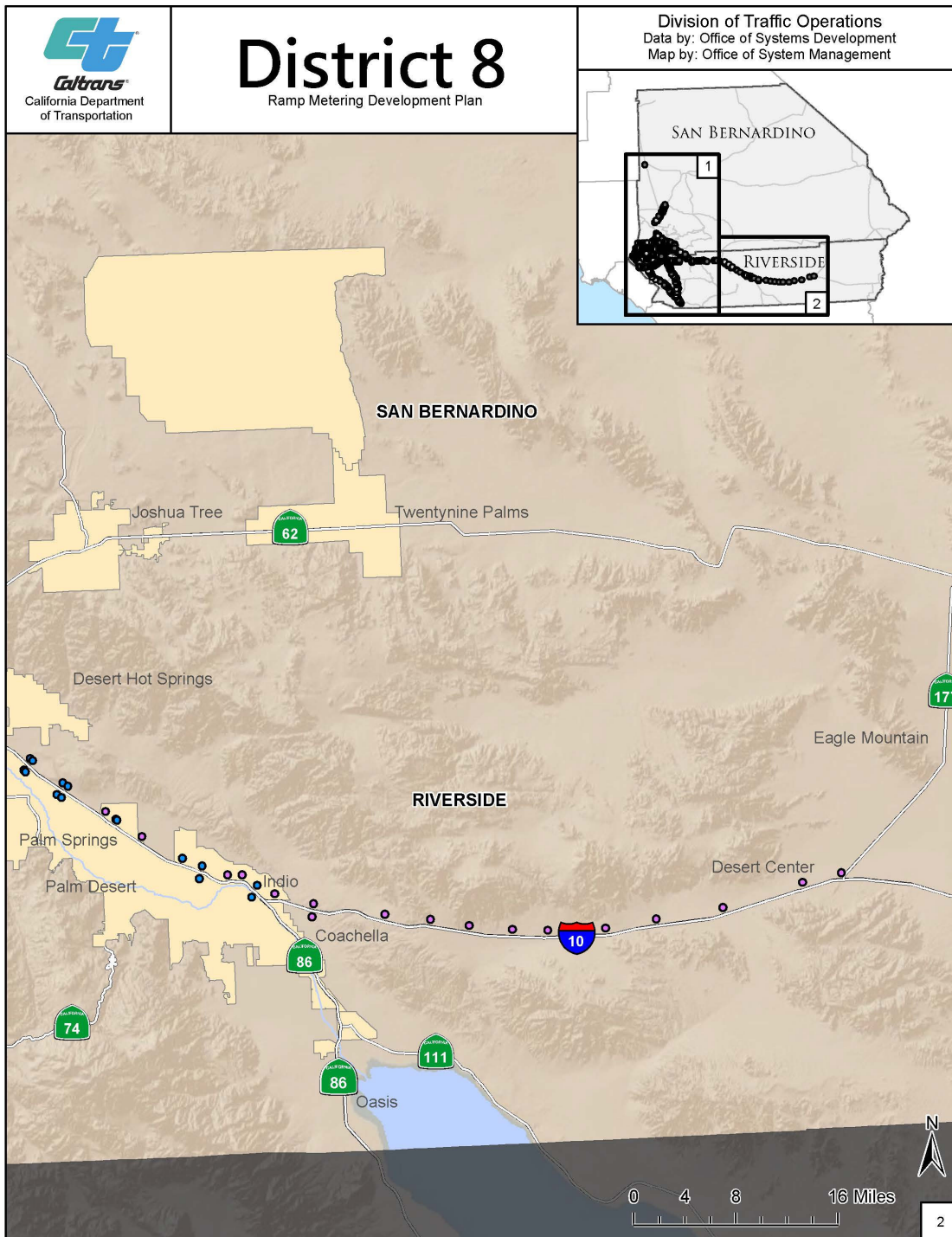


Figure 13. District 8 Ramp Metering Map 2



## **District 8 Ramp Metering Narrative**

District 8, located in Southern California, is comprised of Riverside and San Bernardino Counties, and includes 49 incorporated cities and unincorporated areas. Just east of the Los Angeles Metropolitan Area and Orange County, north of San Diego and Imperial counties, the southwest portion of the district is largely urbanized valleys surrounded by hills and high mountains.

The greater portion of the district is comprised of rural expanses of desert and mountains. The land area of District 8 is the largest of the districts encompassing 28,650 square miles. According to the 2015 American Community Survey, San Bernardino and Riverside have a combined population of approximately 4.4 million and a population density of 153 people per square mile. Of the 4.56 million, 1.7 million commute to work while 77 percent of those commuting drive alone to work. District 8 manages 1,919 centerline miles and 7,200 lane- miles of highway.

### **Current or Planned Ramp Metering Routes**

The following routes have or are planned to have ramp metering:

I-10, I-15, I-215, SR-60, SR-71, SR-91, SR-210, SR-259, and US-395

District 8 has 308 existing metered ramps and 206 planned metered ramps for a projected total of 514 metered ramps for the ten-year period covered by the 2023 RMDP. District 8 has 44 high-priority ramp meter locations. Ramp meter locations are illustrated on the district 8 RMDP map.

The conceptual cost estimate, excluding civil work and right-of-way cost, to install ramp meters at all the district's proposed high-priority locations is \$9,350,000. Actual project cost will be determined during the project development phases when the scope and schedule are finalized.

### **Congestion Challenges**

Highway congestion is a common occurrence in the district due to commute traffic within and in between other urban areas of Southern California. Congestion is further exacerbated by large volumes of goods movement traffic mostly originating from local manufacturing and the ports of Los Angeles and Long Beach. The rural desert areas and the mountain routes, in particular I-15, experience congestion due to seasonal recreational uses and weekend travel to Las Vegas. Additionally, bottleneck analysis reveals I-215, I-10, I-15, I-210, SR-60, SR-71, and SR-91 are the most congested routes within the district.

### **District Ramp Metering Strategies**

District 8 is committed to using ramp metering as a one of the effective traffic management strategies to reduce congestion. To maximize freeway capacity and optimize mobility through the freeway system, ramp meters are operating in traffic-responsive mode to reduce congestion.

Ramp meters automatically turn on when traffic volume or density on mainline lanes reach a specific threshold and turn off when these conditions are no longer present. The variable ramp discharge rate is proportional to:

- Mainline traffic volume.
- Density of mainline traffic (collected using mainline detection).
- Weaving analysis and geometrics of the ramp location.
- Traffic demands at the ramp.

In District 8, the TMC, communication networks, and detection coverage are essential in determining the state of congestion on each corridor. Based on the state of congestion, ramp meters are installed at locations that mitigate congestion issues.

Ramp meters are also added to all new and reconstructed interchanges even in locations that are not yet urbanized. These ramp meters may not activate often if the congestion levels are low. However, the real-time data collected at these locations is transmitted to the central systems, advanced transportation management system, and ramp metering information system for traffic analysis and traveler information.

District 8 works closely with local partners to minimize back-ups on city streets and to maximize coordination with city engineers, traffic signal engineers, and ramp metering engineers on the management of the arterial system.

**Table 11. District 8 Ramp Metering Development Plan**

High Priority Locations

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status	
	8	RIV	10	R	0.71		WB	Calimesa Blvd			Planned	
	8	RIV	10	R	1.03		EB	Calimesa Blvd			Planned	
	8	RIV	10	R	2.90		WB	Cherry Valley Blvd			Planned	
	8	RIV	10	R	3.19		EB	Cherry Valley Blvd			Planned	
	8	RIV	10	R	4.06		WB	Brookside Rd			Planned	
	8	RIV	10	R	5.38		WB	Oak Valley Parkway			Planned	
●	8	RIV	10		7.44		WB	Beaumont Ave	Diamond	1	N	Operational
	8	RIV	10		7.44		WB	Beaumont/SR-79				Planned
●	8	RIV	10		7.7		EB	Beaumont Ave	Diamond	1	N	Operational
	8	RIV	10		9.15		WB	Highland Springs				Planned
	8	RIV	10		11.17		WB	Sunset Ave				Planned
	8	RIV	10	R	11.84		WB	22nd St				Planned
	8	RIV	10		12.73		WB	8th St/SR-243				Planned
	8	RIV	10		13.75		WB	Hargrave St				Planned
	8	RIV	10	R	15.41		WB	N Truck Insp				Planned
	8	RIV	10	R	16.31		WB	Fields				Planned
	8	RIV	10	R	17.50		WB	Apache Trail				Planned
	8	RIV	10	R	19.52		WB	Main St				Planned
	8	RIV	10	R	24.40		WB	Verbenia Ave				Planned
	8	RIV	10	R	24.88		WB	NB SR-111				Planned
	8	RIV	10		25.98		WB	White Water Rd				Planned
	8	RIV	10		27.01		WB	White Water Rd				Planned
	8	RIV	10		29.41		WB	SB SR-62				Planned
	8	RIV	10		32.88		WB	Indian Ave				Planned
●	8	RIV	10		32.91		WB	Indian Canyon Dr	Diamond	1	N	Operational
●	8	RIV	10		32.96		EB	Indian Canyon Dr	L	1	N	Operational
●	8	RIV	10		33.14		WB	Indian Canyon Dr	L	1	N	Operational
●	8	RIV	10		33.34		EB	Indian Canyon Dr	Diamond	1	N	Operational
●	8	RIV	10		35.96		WB	Gene Autry Trail (Diamond)	S	1	N	Operational
●	8	RIV	10		36.1		EB	Gene Autry Trail (Loop)	L	1	N	Operational
●	8	RIV	10		36.2		WB	Gene Autry Trail (Loop)	L	1	N	Operational
●	8	RIV	10		36.29		EB	Gene Autry Trail (Diamond)	S	1	N	Operational
●	8	RIV	10		39.24		WB	Date Palm Dr	T	1	N	Operational
●	8	RIV	10		39.28		EB	Date Palm Dr (L)	L	2	N	Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
•	8	RIV	10		39.7	EB	Date Palm Dr	Diamond	2	N	Operational
•	8	RIV	10		39.71	WB	Date Palm Dr (L)	L	1	N	Operational
	8	RIV	10		43.2	WB	Ramon Rd				Planned
•	8	RIV	10		44.28	WB	Monterey Ave	Diamond	2	N	Operational
•	8	RIV	10		44.5	WB	Monterey Ave	L	2	1	Operational
	8	RIV	10		46.74	WB	SB Cook St				Planned
•	8	RIV	10	R	52.17	WB	Jefferson	T	2	N	Operational
•	8	RIV	10	R	52.17	EB	Jefferson St	L	2	N	Operational
	8	RIV	10	R	54.60	WB	Monroe St				Planned
	8	RIV	10	R	55.62	WB	Jackson St				Planned
	8	RIV	10	R	56.83	WB	Auto Ctr Dr				Planned
•	8	RIV	10	R	56.83	WB	Golf Center Dr	S	1	N	Operational
•	8	RIV	10	R	57.07	EB	Golf Center Dr	S	1	N	Operational
	8	RIV	10	R	58.77	WB	Dillion Rd				Planned
	8	RIV	10	R	62.62	EB	50th Ave				Planned
	8	RIV	10	R	62.62	WB	50th Ave				Planned
	8	RIV	10	R	68.32	WB	Brown Arroyo 56 204				Planned
	8	RIV	10	R	72.03	WB	Cactus City Rd				Planned
	8	RIV	10	R	75.08	WB	Frontage Rd				Planned
	8	RIV	10	R	78.54	WB	Buried Mtn Wash Br				Planned
	8	RIV	10	R	81.39	WB	Cottonwood Springs				Planned
	8	RIV	10	R	85.90	WB	Chiriaco Summit				Planned
	8	RIV	10	R	90.00	WB	Hayfield Rd				Planned
	8	RIV	10	R	95.37	WB	Red Cloud Rd				Planned
	8	RIV	10	R	101.93	WB	Eagle Mtn Rd				Planned
	8	RIV	10	R	104.97	WB	Rice Rd/Rte 177				Planned
	8	RIV	15		3.33	NB	SR-79/Front				Planned
	8	RIV	15		3.58	NB	SR-79/Front				Planned
	8	RIV	15		4.83	SB	Rancho California				Planned
	8	RIV	15		5.13	NB	Rancho California				Planned
	8	RIV	15		6.45	SB	SR-79/Winchester				Planned
	8	RIV	15		6.65	SB	SR-79/Winchester				Planned
	8	RIV	15		6.81	NB	SR-79/Winchester				Planned
	8	RIV	15		9.34	SB	Murrieta Hot Springs				Planned
	8	RIV	15		9.59	NB	Murrieta Hot Springs				Planned
•	8	RIV	15		10.42	NB	California Oaks (Loop)	L	2	N	Operational
•	8	RIV	15		10.44	SB	California Oaks (Loop)	L	2	N	Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
●	8	RIV	15		10.76	SB	California Oaks	s	1	N	Operational
●	8	RIV	15		10.78	NB	California Oaks	s	1	N	Operational
●	8	RIV	15		13.47	SB	Clinton Keith Rd	T	1		Operational
●	8	RIV	15		13.8	NB	Clinton Keith Rd	T	1		Operational
	8	RIV	15		14.9	SB	Baxter Rd				Planned
	8	RIV	15		15.23	NB	Baxter Rd				Planned
	8	RIV	15		16.14	SB	Bundy Cyn				Planned
	8	RIV	15		16.47	NB	Bundy Cyn				Planned
	8	RIV	15		18.93	SB	Railroad Cyn				Planned
	8	RIV	15		19.31	NB	Railroad Cyn				Planned
	8	RIV	15		20.66	SB	Main St				Planned
	8	RIV	15		21.14	NB	Main St				Planned
	8	RIV	15		22.08	SB	SR-74/Central				Planned
	8	RIV	15		22.43	NB	SR-74/Central				Planned
	8	RIV	15		24.04	NB	Nichols Rd				Planned
	8	RIV	15		26.51	SB	Lake St				Planned
	8	RIV	15		26.91	NB	Lake St				Planned
●	8	RIV	15		30.25	SB	Indian Trail Rd	S	1	N	Operational
●	8	RIV	15		30.6	NB	Indian Trail Rd	S	2	N	Operational
●	8	RIV	15		33.09	SB	Temescual Cyn	Diamond	2	N	Operational
●	8	RIV	15		33.54	NB	Temescual Cyn	Diamond	2	N	Operational
●	8	RIV	15		35.5	SB	Weirick Rd	Diamond	2	N	Operational
●	8	RIV	15		35.88	NB	Weirick Rd	Diamond	2	N	Operational
●	8	RIV	15		36.93	SB	Cajalco Rd	L	2	N	Operational
●	8	RIV	15		36.96	NB	Cajalco Rd	T	2	N	Operational
●	8	RIV	15		36.71	NB	Cajalco Rd	L	2	N	Operational
●	8	RIV	15		37.68	SB	El Cerrito Rd	T	1	N	Operational
●	8	RIV	15		38.02	NB	El Cerrito Rd	S	2	N	Operational
●	8	RIV	15		38.56	SB	Ontario Ave	Diamond	1	N	Operational
●	8	RIV	15		38.93	NB	Ontario Ave	Diamond	2	N	Operational
●	8	RIV	15		38.91	NB	Ontario Ave	S	2		Operational
●	8	RIV	15		40.38	NB	Magnolia Ave	S	2		Operational
●	8	RIV	15		40.48	NB	Magnolia Ave	S	2		Operational
●	8	RIV	15		40.161	SB	Magnolia Ave	S	2		Operational
●	8	RIV	15		42.76	SB	Hidden Valley Blvd	S	2		Operational
●	8	RIV	15		43.02	NB	Hidden Valley Blvd	S	2		Operational
●	8	RIV	15		43.77	NB	Second St NB	S	1		Operational
●	8	RIV	15		43.86	SB	Second St SB	S	2		Operational
●	8	RIV	15		45.4	SB	Sixth St	S	1		Operational
●	8	RIV	15		45.71	NB	Sixth St	S	1		Operational
●	8	RIV	15		48.05	SB	Limonite Ave	S	2		Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
•	8	RIV	15		48.37	NB	Limonite Ave	S	1		Operational
•	8	RIV	15		49.8	SB	Cantu Galleano SB	S	2		Operational
•	8	RIV	15		50.1	NB	Cantu Galleano NB	L	3		Operational
•	8	RIV	15		50.2	SB	Cantu Galleano SB	L	2		Operational
	8	RIV	15		TBD	NB	EB SR-60	C			Planned
	8	RIV	15		TBD	NB	WB SR-60	C			Planned
	8	RIV	15		TBD	SB	EB SR-60	C			Planned
	8	RIV	15		TBD	SB	WB SR-60	C			Planned
•	8	RIV	60	R	0.23	EB	Milliken Ave	S	1		Operational
	8	RIV	60	R	0.55	WB	I-15				Planned
	8	RIV	60	R	0.98	EB	I-15				Planned
	8	RIV	60	R	1.56	WB	Van Buren Blvd				Planned
•	8	RIV	60	R	2.22	EB	Etiwanda Ave	S	1		Operational
•	8	RIV	60		TBD	WB	Mission Blvd	H	1		Operational
•	8	RIV	60	R	2.87	WB	Country Village	S	1		Operational
	8	RIV	60	R	3.19	EB	Country Village				Planned
	8	RIV	60	R	4.35	WB	Pedley Rd				Planned
	8	RIV	60	R	4.71	EB	Pedley Rd				Planned
	8	RIV	60	R	5.40	WB	Pyrite St				Planned
	8	RIV	60	R	5.82	EB	Pyrite St				Planned
	8	RIV	60		7.36	WB	Valley Wy				Planned
•	8	RIV	60		7.66	EB	Valley Wy	S	1		Operational
•	8	RIV	60		9.39	WB	Rubidoux Blvd	S	1		Operational
•	8	RIV	60		9.83	EB	Rubidoux Blvd	S	1		Operational
•	8	RIV	60		10.86	WB	Market St	S	1		Operational
•	8	RIV	60		11.28	EB	Market St	S	1		Operational
•	8	RIV	60		11.8	EB	Main St	S	1		Operational
	8	RIV	60		11.94	EB	Orange St				Planned
•	8	RIV	60		13.39	WB	Day St	L	1		Operational
•	8	RIV	60		13.45	EB	Day St	S	2		Operational
•	8	RIV	60		14.17	WB	Pigeon Pass Rd	S	2		Operational
•	8	RIV	60		14.41	WB	Pigeon Pass Rd	L	1		Operational
•	8	RIV	60		14.53	EB	Pigeon Pass Rd/ Fredrick	S	2		Operational
•	8	RIV	60		15.17	WB	Heacock Ave	S	2		Operational
•	8	RIV	60		15.6	EB	Heacock Ave	S	1		Operational
•	8	RIV	60		16.14	WB	Perris Blvd	S	2		Operational
•	8	RIV	60		16.6	EB	Perris Blvd	S	1		Operational
•	8	RIV	60		18.37	WB	Nason St (Loop)	L	2	N	Operational
•	8	RIV	60		18.37	EB	Nason St (T)	T	2	N	Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
●	8	RIV	60		19.12	EB	Moreno Beach(T)	T	2	N	Operational
	8	RIV	60		19.46	WB	Moreno Beach Dr				Planned
	8	RIV	60		20.37	WB	Redlands Blvd				Planned
	8	RIV	60		20.37	EB	Redlands Blvd				Planned
	8	RIV	60		21.37	WB	Theodore St				Planned
	8	RIV	60		21.37	EB	Theodore St				Planned
	8	RIV	60		TBD	EB	NB I-15	C			Planned
	8	RIV	60		TBD	EB	SB I-15	C			Planned
	8	RIV	60		TBD	WB	NB I-15	C			Planned
	8	RIV	60		TBD	WB	SB I-15	C			Planned
●	8	RIV	91	R	1.00	WB	Green River Rd	S	3	M	Operational
●	8	RIV	91	R	1.06	EB	Green River Rd	S	2	M	Operational
●	8	RIV	91	R	1.98	WB	SR-71	S	2		Operational
●	8	RIV	91	R	2.54	EB	SR-71	S	2		Operational
●	8	RIV	91	R	3.69	WB	Serfas Club Dr	S	3	M	Operational
●	8	RIV	91	R	3.73	EB	Serfas Club Dr	S	2	M	Operational
●	8	RIV	91		4.21	WB	Maple St	S	2	M	Operational
●	8	RIV	91		4.35	EB	Paseo Grande	Diamond	2	Y	Operational
●	8	RIV	91		5.3	WB	Lincoln Ave	S	3	M	Operational
●	8	RIV	91		5.5	EB	Lincoln Ave	S	2		Operational
●	8	RIV	91		5.86	WB	W Grand Ave	S	1		Operational
●	8	RIV	91		6.27	WB	Main St	S	2	M	Operational
●	8	RIV	91		6.46	EB	Main St	S	3	M	Operational
●	8	RIV	91		6.62	EB	Main St to I-15 Connector	Diamond	2	N	Operational
	8	RIV	91		7.03	WB	I-15				Planned
	8	RIV	91		7.71	EB	I-15				Planned
●	8	RIV	91		9.02	WB	McKinley Ave	S	3	M	Operational
●	8	RIV	91		9.22	EB	McKinley Ave	L	2	M	Operational
●	8	RIV	91		9.36	EB	McKinley Ave	S	1		Operational
●	8	RIV	91		10.72	WB	Pierce St	S	2	M	Operational
●	8	RIV	91		11.05	WB	Magnolia Ave	S	1		Operational
●	8	RIV	91		11.22	EB	Magnolia Ave	S	1		Operational
●	8	RIV	91		11.93	WB	La Sierra Ave	S	3	M	Operational
●	8	RIV	91		12.17	EB	La Sierra Ave	S	3	M	Operational
●	8	RIV	91		13.01	WB	Tyler St	S	2	M	Operational
●	8	RIV	91		13.06	EB	Tyler St	S	2	M	Operational
●	8	RIV	91		14.07	WB	Van Buren St	S	2	M	Operational
●	8	RIV	91		14.1	EB	Van Buren St	S	2	M	Operational
●	8	RIV	91		14.1	EB	Van Buren St (Loop)	H	2		Operational
●	8	RIV	91		15.57	EB	Adams St	S	2	M	Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
•	8	RIV	91		15.71	WB	Adams St	S	2	M	Operational
•	8	RIV	91		16.59	WB	Madison St	S	2	M	Operational
•	8	RIV	91		16.75	EB	Madison St	S	2	M	Operational
•	8	RIV	91		17.72	WB	Arlington Ave	S	2	M	Operational
•	8	RIV	91		17.75	EB	Jane St	H	3	M	Operational
•	8	RIV	91		17.93	EB	Arlington Ave	S	2		Operational
•	8	RIV	91		18.34	WB	Central Ave	S	2	M	Operational
•	8	RIV	91		18.52	EB	Central Ave	S	1		Operational
•	8	RIV	91		19.83	WB	14th St	S	2		Operational
•	8	RIV	91		20.12	EB	14th St	S	2		Operational
•	8	RIV	91		20.29	WB	10th St	S	2		Operational
•	8	RIV	91		20.6	EB	Mission Inn	S	2		Operational
	8	RIV	91		21.3	EB	La Cadena Dr				Planned
•	8	RIV	91		21.47	WB	Spruce	S	2		Operational
	8	RIV	91		21.51	WB	SR-60				Planned
•	8	RIV	215		9.33	SB	Murrieta Hot Springs	S	1		Operational
•	8	RIV	215		9.46	NB	Murrieta Hot Springs	S	1		Operational
•	8	RIV	215		9.54	SB	Murrieta Hot Springs	S	1		Operational
•	8	RIV	215		9.71	NB	Murrieta Hot Springs	S	1		Operational
•	8	RIV	215		10.45	SB	Los Alamos	S	3	M	Operational
•	8	RIV	215		10.84	NB	Los Alamos	S	3	M	Operational
•	8	RIV	215		12.31	NB	Clinton Keith Rd (L)	L	1	N	Operational
•	8	RIV	215		12.32	SB	Clinton Keith Rd	T	3	Y	Operational
•	8	RIV	215		12.73	NB	Clinton Keith Rd	T	1	N	Operational
•	8	RIV	215		12.77	SB	Clinton Keith Rd (L)	L	3	Y	Operational
•	8	RIV	215		15.7	NB	Scott Rd	T	3	Y	Operational
•	8	RIV	215		15.57	SB	Scott Rd	L	3	Y	Operational
•	8	RIV	215		15.37	SB	Scott Rd	T	1	N	Operational
•	8	RIV	215		18.30	R SB	Newport Rd	T	3	1	Operational
•	8	RIV	215		18.40	R NB	Newport Rd	L	2	Y	Operational
•	8	RIV	215		18.52	R SB	Newport Rd	L	2	N	Operational
•	8	RIV	215		18.70	R NB	Newport Rd	T	2	Y	Operational
	8	RIV	215		20.59	SB	McCall Blvd				Planned
	8	RIV	215		21.07	NB	McCall Blvd				Planned
	8	RIV	215		22.58	SB	Ethanac Rd				Planned
	8	RIV	215		22.94	NB	Ethanac Rd				Planned
•	8	RIV	215		23.72	SB	SR-74	H	1		Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
•	8	RIV	215		23.73	NB	SR-74	S	1		Operational
•	8	RIV	215		26.19	SB	Redlands Ave (Diamond)	S	3	M	Operational
•	8	RIV	215		26.39	NB	Redlands Ave (Diamond)	S	3	M	Operational
•	8	RIV	215		27.38	NB	D St	Diamond	1	Y	Operational
	8	RIV	215		27.38	NB	D St				Planned
	8	RIV	215		27.7	SB	Nuevo Rd				Planned
	8	RIV	215		28.03	NB	Nuevo Rd				Planned
	8	RIV	215	R	30.76	SB	Ramona Expwy				Planned
	8	RIV	215	R	31.08	NB	Ramona Expwy				Planned
	8	RIV	215	R	32.20	SB	Harley Knox				Planned
	8	RIV	215	R	32.49	NB	Harley Knox				Planned
•	8	RIV	215	R	33.99	SB	Van Buren Blvd	Diamond	1	Y	Operational
•	8	RIV	215	R	34.02	NB	Van Buren Blvd (L)	L	3	Y	Operational
•	8	RIV	215	R	34.40	NB	Van Buren Blvd (T)	Diamond	2	N	Operational
	8	RIV	215	R	35.51	SB	Cactus Ave				Planned
	8	RIV	215	R	35.89	NB	Cactus Ave				Planned
	8	RIV	215	R	36.32	SB	Alesandro Blvd				Planned
	8	RIV	215	R	36.47	SB	Alesandro Blvd				Planned
	8	RIV	215	R	36.59	NB	Alesandro Blvd				Planned
	8	RIV	215	R	37.23	SB	Eucalyptus Ave				Planned
•	8	RIV	215	R	37.61	NB	Eucalyptus Ave	S	1		Operational
•	8	RIV	215		38.63	NB	Box Spring	S	1		Operational
•	8	RIV	215		38.77	SB	Sycamore (Box Spring)	S	2		Operational
•	8	RIV	215		39.34	SB	Central	S	3	M	Operational
•	8	RIV	215		39.65	NB	Central	S	2	M	Operational
•	8	RIV	215		40.76	SB	M Luther King	S	2		Operational
•	8	RIV	215		40.93	NB	M Luther King	S	2		Operational
	8	RIV	215		41.11	SB	Pennsylvania Ave				Planned
	8	RIV	215		41.24	NB	Pennsylvania Ave				Planned
•	8	RIV	215		41.45	SB	University Ave	S	2		Operational
•	8	RIV	215		41.56	NB	University Ave	S	2	M	Operational
•	8	RIV	215		42.07	SB	Blaine St	S	2		Operational
•	8	RIV	215		42.25	NB	Blaine St	S	2		Operational
	8	RIV	215		43.14	SB	SR-91				Planned
	8	RIV	215		43.23	NB	SR-60				Planned
	8	RIV	215		43.34	NB	I-215				Planned
	8	RIV	215		43.39	SB	I-215				Planned
	8	RIV	215		43.43	SB	SR-60				Planned
•	8	RIV	215		43.96	SB	Columbia Ave	Diamond	2	N	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
•	8	RIV	215	43.97	NB	Columbia Ave	S	2		Operational
•	8	RIV	215	44.91	SB	Center St	Diamond	2	N	Operational
•	8	SBD	10	0.58	WB	Monte Vista Ave	S	2	M	Operational
•	8	SBD	10	0.81	EB	Monte Vista Ave	S	2		Operational
•	8	SBD	10	1.15	EB	Central Ave	S	2	M	Operational
•	8	SBD	10	1.15	WB	Central Ave	S	2	M	Operational
•	8	SBD	10	2.26	WB	Mountain Ave	S	2	M	Operational
•	8	SBD	10	2.39	EB	Mountain Ave	S	2	M	Operational
•	8	SBD	10	3.34	WB	Euclid Ave	S	1		Operational
•	8	SBD	10	3.55	WB	Euclid Ave	L	1		Operational
•	8	SBD	10	3.6	EB	Euclid Ave	S	1		Operational
•	8	SBD	10	5.21	WB	4th St	S	2		Operational
•	8	SBD	10	5.29	EB	4th St	S	2	M	Operational
•	8	SBD	10	6.04	WB	Vineyard Ave	S	1		Operational
•	8	SBD	10	6.12	WB	Vineyard Ave	L	1		Operational
•	8	SBD	10	6.53	EB	Vineyard Ave	S	2	M	Operational
•	8	SBD	10	6.98	EB	Holt Ave	S	2		Operational
•	8	SBD	10	7.19	WB	Archibald Ave	S	1	M	Operational
•	8	SBD	10	7.29	EB	Archibald Ave	S	3		Operational
•	8	SBD	10	8.08	WB	Haven Ave Wb	S	2	M	Operational
•	8	SBD	10	8.11	EB	Haven Ave Eb	L	2	M	Operational
•	8	SBD	10	8.22	WB	Haven Ave Eb	S	2	M	Operational
•	8	SBD	10	8.23	EB	Haven Ave Wb	L	2	M	Operational
•	8	SBD	10	8.99	WB	Milliken Ave	S	2		Operational
•	8	SBD	10	9.12	EB	Milliken Ave	S	2		Operational
	8	SBD	10	9.56	EB	EB Off to NB I-15	C			Planned
	8	SBD	10	9.58	WB	NB I-15				Planned
	8	SBD	10	9.76	EB	EB Off to SB I-15				Planned
	8	SBD	10	9.77	WB	SB I-15				Planned
	8	SBD	10	10.13	EB	NB I- 15				Planned
	8	SBD	10	10.23	EB	I-15				Planned
	8	SBD	10	10.4	WB	WB Off to I-15				Planned
•	8	SBD	10	11.04	WB	Etiwanda Ave (T)	L	2		Operational
•	8	SBD	10	11.08	EB	Etiwanda Ave (Loop)	S	2		Operational
•	8	SBD	10	11.19	WB	Etiwanda Ave (Loop)	S	2	M	Operational
•	8	SBD	10	11.2	EB	Etiwanda Ave (T)	L	2		Operational
•	8	SBD	10	11.53	WB	Valley Blvd	S	2		Operational
•	8	SBD	10	13.04	WB	Cherry Ave	Diamond	2	N	Operational
•	8	SBD	10	13.23	WB	Cherry Ave	Loop	2	N	Operational
•	8	SBD	10	13.35	EB	Cherry Ave	Diamond	2	N	Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status	
•	8	SBD	10		15.06		WB	Citrus Ave (Loop)	L	2	Y	Operational
•	8	SBD	10		15.2		WB	Citrus Ave (T)	T	2	N	Operational
•	8	SBD	10		15.35		EB	Citrus Ave (T)	T	2	N	Operational
•	8	SBD	10		16.24		WB	Sierra WB On	S	3	M	Operational
•	8	SBD	10		16.34		EB	Sierra EB On	S	3	M	Operational
•	8	SBD	10		18.40	R	WB	Cedar Ave (T)	T	2	N	Operational
•	8	SBD	10		18.66	R	EB	Cedar Ave (T)	T	2	Y	Operational
•	8	SBD	10		19.85		WB	Riverside Ave	S	3	M	Operational
•	8	SBD	10		20.15		EB	Riverside Ave	S	3	M	Operational
•	8	SBD	10		20.88		WB	Pepper Ave	T	2	M	Operational
•	8	SBD	10		21.08		EB	Pepper Ave	T	2	M	Operational
•	8	SBD	10		21.88	R	WB	Rancho Ave (T)	T	2	Y	Operational
•	8	SBD	10		22.05	R	EB	Rancho Ave (T)	T	1	N	Operational
•	8	SBD	10		22.55	R	WB	La Cadena Dr (T)	T	1	N	Operational
•	8	SBD	10		22.77	R	EB	9th St (T)	T	1	N	Operational
•	8	SBD	10		23.19	R	WB	Mt Vernon Ave (T)	T	2	Y	Operational
•	8	SBD	10		23.42	R	EB	Mt Vernon Ave (Loop)	L	2	N	Operational
	8	SBD	10		23.81	R	EB	EB Off To I-215				Planned
	8	SBD	10		24.07	R	WB	SB I-215				Planned
	8	SBD	10		24.31	R	WB	NB I-215				Planned
	8	SBD	10	R	24.31		EB	I-215				Planned
	8	SBD	10		24.42	R	EB	NB I-215				Planned
•	8	SBD	10	R	24.54		WB	Hunts Ln	S	1		Operational
	8	SBD	10		24.62	R	EB	SB I-215				Planned
	8	SBD	10		24.81		WB	WB Off to I-215				Planned
•	8	SBD	10		25.4		EB	Waterman Ave	S	2		Operational
•	8	SBD	10		25.45		WB	Hospitality	S	2		Operational
•	8	SBD	10		26.15		WB	Tippecanoe Ave	S	2		Operational
•	8	SBD	10		26.36		WB	Tippecanoe Ave (Loop)	L	2	Y	Operational
•	8	SBD	10		26.43		EB	Tippecanoe Ave	S	2		Operational
•	8	SBD	10		27.15		WB	Mt View Ave	S	2		Operational
•	8	SBD	10		27.42		EB	Mt View Ave	S	1		Operational
•	8	SBD	10		28.18		WB	California St	S	2		Operational
•	8	SBD	10		28.43		EB	California St	S	1		Operational
•	8	SBD	10		29.16		WB	Alabama	S	2		Operational
	8	SBD	10		29.42		EB	EB Off to WB SR-210				Planned
	8	SBD	10		29.43		WB	SR-210				Planned
	8	SBD	10		29.65		WB	SR-210				Planned
	8	SBD	10		29.83		EB	SR-210				Planned

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
	8	SBD	10		29.94	WB	WB Off to WB SR-210				Planned
	8	SBD	10		29.99	EB	Tennessee St				Planned
	8	SBD	10		30.12	EB	SR-210				Planned
	8	SBD	10		30.92	WB	Orange St				Planned
	8	SBD	10		31.2	EB	Sixth St				Planned
	8	SBD	10		31.76	WB	University Ave				Planned
	8	SBD	10		32.3	EB	Cypress Ave				Planned
	8	SBD	10		32.98	WB	Ford St				Planned
	8	SBD	10		33.39	EB	Redlands Blvd				Planned
	8	SBD	10		34.43	EB	Wabash Ave				Planned
●	8	SBD	10		35.36	WB	Yucaipa Blvd	S	1		Operational
	8	SBD	10		35.61	EB	Yucaipa Blvd				Planned
	8	SBD	10	R	39.04	WB	County Line Rd				Planned
	8	SBD	10		TBD	EB	NB I-15	C			Planned
	8	SBD	10		TBD	EB	NB I-215	C			Planned
	8	SBD	10		TBD	EB	SB I-15	C			Planned
	8	SBD	10		TBD	EB	SB I-215	C			Planned
	8	SBD	10		TBD	WB	NB I-15	C			Planned
	8	SBD	10		TBD	WB	NB I-215	C			Planned
	8	SBD	10		TBD	WB	SB I-15	C			Planned
	8	SBD	10		TBD	WB	SB I-215	C			Planned
●	8	SBD	15		0.77	SB	Jurupa Ave	S	2		Operational
●	8	SBD	15		1.18	NB	Jurupa Ave	S	2		Operational
	8	SBD	15		2.04	SB	I-10				Planned
	8	SBD	15		2.55	NB	I-10				Planned
●	8	SBD	15		3.14	SB	4th St	L	2		Operational
●	8	SBD	15		3.31	NB	4th St	S	2		Operational
●	8	SBD	15		5.09	SB	Foothill Blvd	L	1		Operational
●	8	SBD	15		5.32	SB	Foothill Blvd	S	1		Operational
	8	SBD	15		5.52	NB	Foothill Blvd				Planned
●	8	SBD	15		6.7	SB	Baseline Rd	S	1		Operational
●	8	SBD	15		7.06	NB	Baseline Rd	Diamond	2	N	Operational
	8	SBD	15		8.99	NB	Cherry Ave				Planned
●	8	SBD	15		9.66	SB	Summit Blvd	S	1		Operational
●	8	SBD	15		9.86	NB	Summit Blvd				Planned
●	8	SBD	15		10.92	SB	Duncan Canyon Rd	Diamond	2	M	Operational
●	8	SBD	15		11.18	NB	Duncan Canyon Rd	Diamond	2		Operational
●	8	SBD	15		12.71	SB	Sierra Ave	S	1		Operational
●	8	SBD	15		13.02	NB	Sierra Ave	Diamond	2	N	Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
	8	SBD	15		13.03	NB	Sierra Ave				Planned
•	8	SBD	15		13.03	NB	I-15@Sierra Ave NB on Ramp	Diamond	2	N	Operational
•	8	SBD	15		14.59	SB	Glen Helen Rd	Diamond	2	N	Operational
•	8	SBD	15	R	14.79	SB	Kenwood Ave	Diamond	2	N	Operational
•	8	SBD	15		15.04	NB	Glen Helen Rd	Diamond	2	N	Operational
•	8	SBD	15	R	15.21	NB	Kenwood Ave	Diamond	2	N	Operational
•	8	SBD	15		16.1	SB	NB I-215		2	N	Operational
	8	SBD	15	R	28.46	SB	Oak Hill Rd				Planned
•	8	SBD	15		30.21	SB	Ranchero Rd	Diamond	2	N	Operational
•	8	SBD	15		30.41	SB	Ranchero Rd	L			Operational
•	8	SBD	15		30.54	NB	Ranchero Rd	Diamond	1	N	Operational
	8	SBD	15		32.52	NB	Palm Ave				Planned
	8	SBD	15		34.09	SB	Phelan Rd				Planned
	8	SBD	15		34.23	NB	Phelan Rd				Planned
	8	SBD	15		37.6	SB	Bear Valley Cutoff				Planned
	8	SBD	15		37.85	NB	Bear Valley Cutoff				Planned
•	8	SBD	15		38.79	NB	Nisquali Rd/La Mesa Rd(T)	T	1	N	Operational
•	8	SBD	15		38.91	SB	Nisquali Rd (Loop)	L	1	N	Operational
	8	SBD	15		40.43	SB	Jct SR-18 Palmdale Rd				Planned
	8	SBD	15		40.48	NB	W Jct SR-18				Planned
	8	SBD	15		40.56	SB	W Jct SR-18				Planned
	8	SBD	15		40.68	NB	Jct SR-18 Palmdale Rd				Planned
	8	SBD	15		41.9	SB	Mojave Dr				Planned
	8	SBD	15		42.16	NB	Mojave Dr				Planned
	8	SBD	15		43.28	NB	E Jct SR-18 D St				Planned
	8	SBD	15		43.35	SB	E Jct SR-18 D St				Planned
	8	SBD	15		43.72	NB	E Jct SR-18 E St				Planned
	8	SBD	15		43.75	SB	E Jct SR-18 E St				Planned
	8	SBD	15		TBD	NB	EB I-10	C			Planned
	8	SBD	15		TBD	NB	EB SR-210	C			Planned
	8	SBD	15		TBD	NB	WB I-10	C			Planned
	8	SBD	15		TBD	NB	WB SR-210	C			Planned
	8	SBD	15		TBD	SB	EB I-10	C			Planned
	8	SBD	15		TBD	SB	EB SR-210	C			Planned
	8	SBD	15		TBD	SB	WB I-10	C			Planned
	8	SBD	15		TBD	SB	WB SR-210	C			Planned
•	8	SBD	60	R	1.17	WB	Ramona Ave	S	1		Operational
•	8	SBD	60	R	1.49	EB	Ramona Ave	S	1		Operational
•	8	SBD	60	R	2.17	WB	Central Ave	S	1		Operational

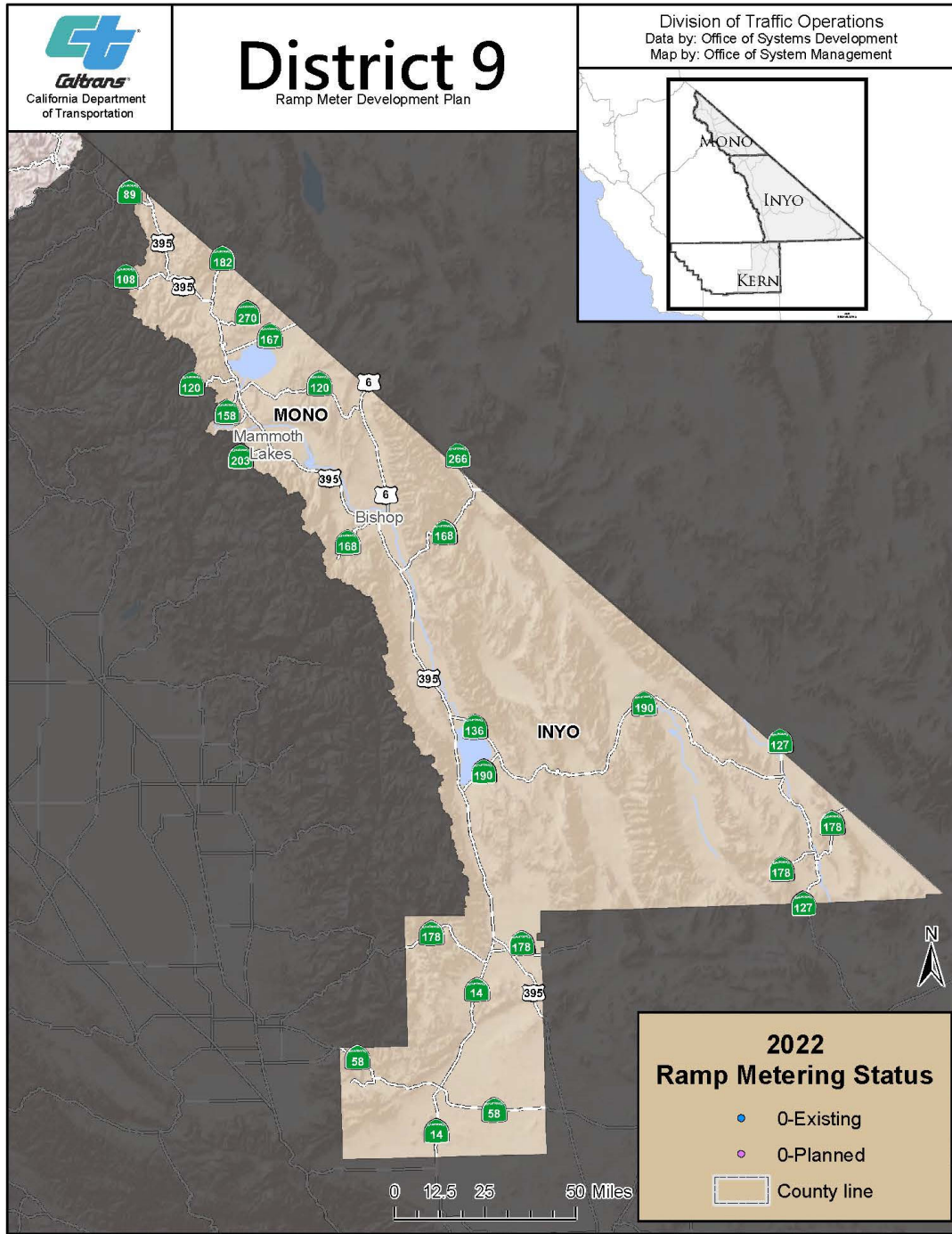
Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
•	8	SBD	60	R	2.55	EB	Central Ave	S	1		Operational
•	8	SBD	60	R	3.42	WB	Mountain Ave	S	1		Operational
•	8	SBD	60	R	3.80	EB	Mountain Ave	S	1		Operational
•	8	SBD	60	R	4.39	WB	Euclid Ave	S	1		Operational
•	8	SBD	60	R	4.79	EB	Euclid Ave	S	1		Operational
•	8	SBD	60	R	5.69	WB	Grove Ave	S	2	M	Operational
•	8	SBD	60	R	6.06	EB	Grove Ave	S	2	M	Operational
•	8	SBD	60	R	6.69	WB	Vineyard Ave	S	1		Operational
•	8	SBD	60	R	7.07	EB	Vineyard Ave	S	1		Operational
•	8	SBD	60	R	7.71	WB	Archibald Ave	S	2	M	Operational
•	8	SBD	60	R	8.08	EB	Archibald Ave	S	2	M	Operational
•	8	SBD	60	R	9.10	EB	Haven Ave	S	1		Operational
•	8	SBD	60	R	9.10	WB	Haven Ave	S	2	M	Operational
•	8	SBD	60	R	9.75	WB	Milliken Ave	S	1		Operational
•	8	SBD	71	R	0.87	NB	Chino Ave	S	3		Operational
•	8	SBD	71	R	1.10	SB	Chino Ave	S	3	M	Operational
•	8	SBD	71	R	1.66	NB	Grand Ave	S	3	M	Operational
•	8	SBD	71	R	1.88	NB	Grand Ave	L	2	M	Operational
•	8	SBD	71	R	2.01	SB	Grand Ave	S	2	M	Operational
•	8	SBD	71	R	3.19	SB	Chino Hill Pkwy	S	2	M	Operational
•	8	SBD	71	R	3.75	SB	Ramona Ave	S	2	M	Operational
•	8	SBD	71	R	4.69	NB	Soquel Cyn	S	2	M	Operational
•	8	SBD	71	R	4.88	NB	Soquel Cyn	L	2	M	Operational
•	8	SBD	71	R	4.90	SB	Soquel Cyn	L	2	M	Operational
•	8	SBD	71	R	5.10	SB	Soquel Cyn	S	2	M	Operational
•	8	SBD	71	R	6.34	NB	Pine Ave	S	2	M	Operational
•	8	SBD	71	R	6.71	SB	Pine Ave	S	2	M	Operational
•	8	SBD	71	R	7.96	NB	Euclid Ave	L	2	M	Operational
•	8	SBD	71	R	8.00	SB	Euclid Ave	L	2	M	Operational
•	8	SBD	71	R	8.23	NB	Euclid Ave	S	2	M	Operational
•	8	SBD	210		1.4	WB	Mountain Ave	S	2		Operational
•	8	SBD	210		1.6	EB	Mountain Ave	S	2		Operational
•	8	SBD	210		3.3	WB	Campus Ave	S	2		Operational
•	8	SBD	210		3.6	EB	Campus Ave	S	2	M	Operational
•	8	SBD	210		4.5	WB	Carnelian	S	2		Operational
•	8	SBD	210		4.7	EB	Carnelian	S	2		Operational
•	8	SBD	210		5.7	WB	Archibald Ave	S	2		Operational
•	8	SBD	210		6	EB	Archibald Ave	S	2		Operational
•	8	SBD	210		6.8	WB	Haven Ave	S	2		Operational
•	8	SBD	210		7	EB	Haven Ave	S	2		Operational
•	8	SBD	210		7.8	WB	Milliken Ave	S	2		Operational

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
•	8	SBD	210		8	EB	Milliken Ave	S	2		Operational
•	8	SBD	210		8.8	WB	Day Creek	S	2		Operational
•	8	SBD	210		9.4	EB	Day Creek	S	2		Operational
•	8	SBD	210		11.77	WB	Cherry Ave	S	1		Operational
•	8	SBD	210		12.11	EB	Cherry Ave	S	1		Operational
•	8	SBD	210		13.66	WB	Citrus Ave	S	2		Operational
•	8	SBD	210		14.15	EB	Citrus Ave	S	2		Operational
•	8	SBD	210		14.7	WB	Sierra Ave SB	S	2		Operational
•	8	SBD	210		14.88	EB	Sierra Ave SB	L	2	M	Operational
•	8	SBD	210		14.9	WB	Sierra Ave NB	S	2		Operational
•	8	SBD	210		14.91	EB	Sierra Ave NB	S	2	M	Operational
•	8	SBD	210	R	15.73	WB	Alder	S	2	M	Operational
•	8	SBD	210	R	16.16	EB	Alder	S	2	M	Operational
•	8	SBD	210	R	17.25	WB	Ayala	S	2	M	Operational
•	8	SBD	210	R	17.68	EB	Ayala	S	2	M	Operational
•	8	SBD	210	R	18.53	WB	Riverside	S	3		Operational
•	8	SBD	210	R	18.88	EB	Riverside	S	2		Operational
•	8	SBD	210	R	20.54	WB	State	S	3		Operational
•	8	SBD	210	R	20.76	EB	State	S	2		Operational
•	8	SBD	210		21.51	WB	NB I-215	S	2		Operational
	8	SBD	210	R	22.77	WB	H St				Planned
	8	SBD	210	R	23.10	EB	H St				Planned
	8	SBD	210	R	23.94	WB	Waterman Ave				Planned
	8	SBD	210	R	24.38	EB	Waterman Ave				Planned
	8	SBD	210	R	25.58	EB	Del Rosa Ave				Planned
	8	SBD	210	R	25.58	WB	Del Rosa Ave				Planned
	8	SBD	210	R	26.64	WB	Highland Ave				Planned
	8	SBD	210	R	27.05	EB	Highland Ave				Planned
	8	SBD	210	R	29.23	WB	Baseline St				Planned
	8	SBD	210	R	29.49	EB	Baseline St				Planned
	8	SBD	210	R	30.12	WB	Fifth St				Planned
	8	SBD	210	R	30.40	EB	Fifth St				Planned
	8	SBD	210	R	32.14	WB	San Bernardino Ave				Planned
	8	SBD	210	R	32.27	EB	San Bernardino Ave				Planned
	8	SBD	210		TBD	EB	NB I-15	C			Planned
•	8	SBD	210		12.353	EB	SB I-15	C	3	N	Operational
•	8	SBD	210		11.438	WB	NB I-15	C	1	N	Operational
•	8	SBD	210		11.05	WB	SB I-15	C	2	N	Operational
•	8	SBD	215		0.06	SB	La Cadena	S	1		Operational
•	8	SBD	215		0.51	NB	Iowa Ave	S	2		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# Of Lanes	HOV PL	Operational Status
•	8	SBD	215	1.17	SB	Barton Rd	S	2		Operational
•	8	SBD	215	1.44	NB	Barton Rd	S	1		Operational
•	8	SBD	215	2.57	SB	Mt Vernon Ave	S	1		Operational
•	8	SBD	215	2.66	NB	Washington Ave (Loop)	S	2		Operational
•	8	SBD	215	2.9	NB	Washington Ave (Hook)	S	2		Operational
•	8	SBD	215	4.85	SB	Orange Show Rd	S	1		Operational
•	8	SBD	215	5.06	SB	Orange Show Rd	L	1		Operational
•	8	SBD	215	5.12	NB	Orange Show Rd	S	2		Operational
•	8	SBD	215	5.43	SB	Inland Center Dr	S	2		Operational
•	8	SBD	215	5.53	NB	Inland Center Dr	S	2		Operational
•	8	SBD	215	6.2	NB	Mill St	S	2		Operational
•	8	SBD	215	6.68	SB	2nd St	S	1		Operational
•	8	SBD	215	7	NB	3rd St	S	1		Operational
•	8	SBD	215	7.1	SB	5th St	T	1	N	Operational
•	8	SBD	215	7.3	NB	5th St	S	2		Operational
•	8	SBD	215	7.98	SB	Baseline Road	T	2	Y	Operational
•	8	SBD	215	8.5	NB	Baseline Road	T	2	N	Operational
	8	SBD	215	9.13	SB	Massachusetts Ave				Planned
•	8	SBD	215	9.42	SB	27th St	S	2		Operational
•	8	SBD	215	9.73	SB	EB SR-210	S	2		Operational
•	8	SBD	215	9.85	NB	27th St	S	2		Operational
	8	SBD	215	11.43	SB	University Pkwy				Planned
	8	SBD	215	11.81	NB	University Pkwy				Planned
	8	SBD	215	13.8	SB	Palm Ave				Planned
	8	SBD	215	14.3	NB	Palm Ave				Planned
•	8	SBD	215	17.1	NB	Devore Rd/Cajon Blvd	T	2	Y	Operational
•	8	SBD	215	17.25	SB	Devore Rd	T	2	Y	Operational
	8	SBD	215	TBD	NB	EB I-10	C			Planned
	8	SBD	215	TBD	NB	WB I-10	C			Planned
	8	SBD	215	TBD	SB	EB I-10	C			Planned
	8	SBD	215	TBD	SB	WB I-10	C			Planned
•	8	SBD	259	L 0.07	NB	Baseline Road	T	1	N	Operational
	8	SBD	395	45.95	SB	SR-58				Planned

# District 9

Figure 14. District 9 Ramp Metering Map



## **District 9 Ramp Metering Narrative**

District 9 is rural district that serves Inyo, Mono, and eastern Kern Counties, and has planning, maintenance, and operations responsibilities in northern San Bernardino County. With a population of 149,920 people and 17,440 square miles, the district is the least populated in the State and has the lowest population density of all Caltrans Districts with 8.5 people per square mile. Recreation and goods movement account for most of the freeway travel within District 9. District 9 manages 964 centerline miles and 2,582 total lane-miles of highway.

Domestic and international tourism is the major economic activity with over 13 million visitor-days generated annually. The following popular destinations are in District 9: Yosemite and Death Valley National Parks; Inyo and Humboldt-Toiyabe National Forests; Red Rock and Bodie State Parks; Mammoth and June Mountain Ski Areas; the Pacific Crest and Ansel Adams Trails, both the highest and lowest points in the continental USA; and Mono Lake Basin National Scenic Area. Three military bases are in the district: Edwards Air Force Base, the Marines Mountain Weapons Training Center, and China Lake Naval Weapons Center.

### **Current or Planned Ramp Metering Routes**

No routes have current or planned ramp metering in District 9 as illustrated on the District's RMDP map.

### **Congestion Challenges**

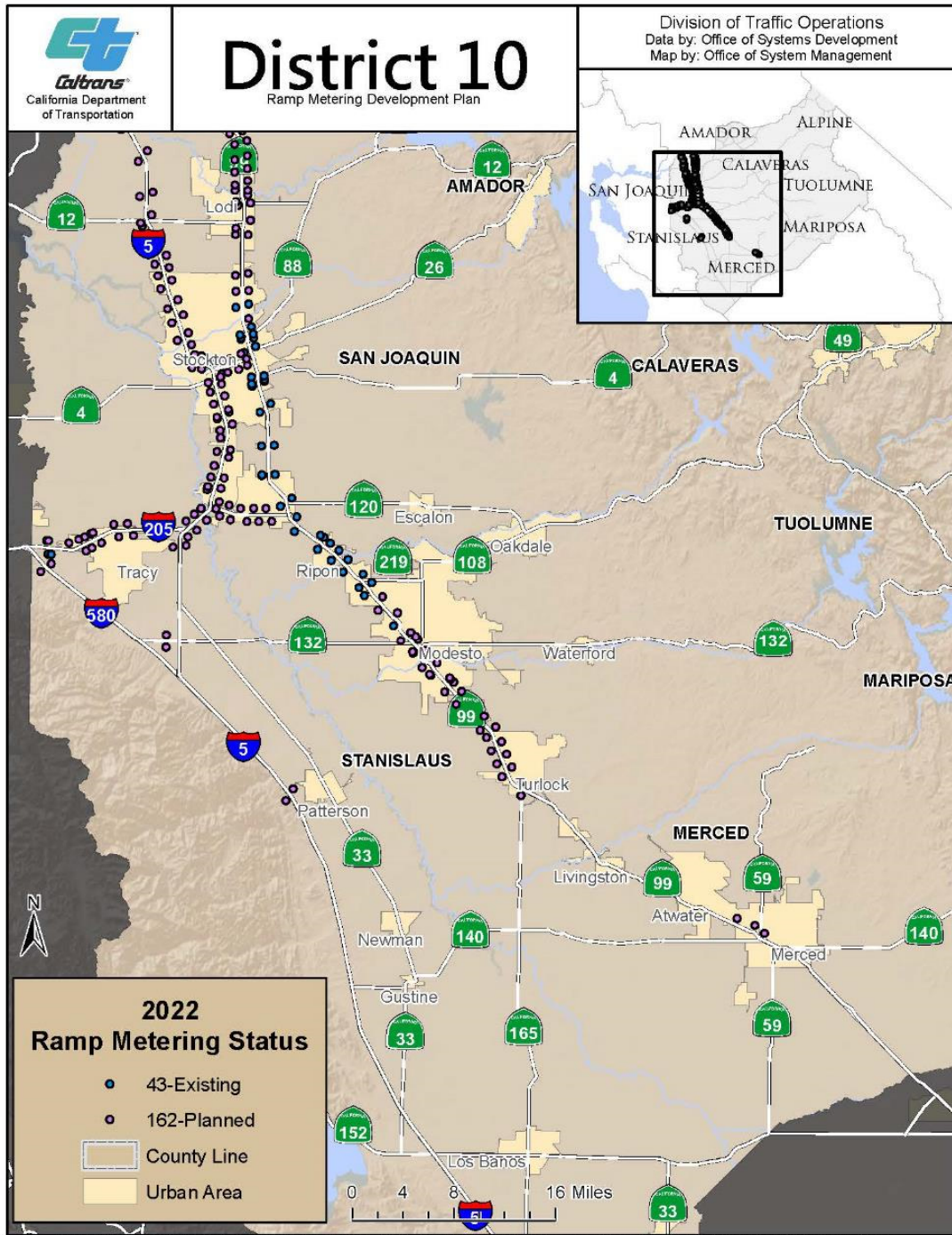
Tourism-related, seasonal congestion and major holiday congestion occurs but does not necessitate ramp metering currently.

### **District Ramp Metering Strategies**

Currently, District 9 has no ramp meters located within its jurisdiction.

# District 10

Figure 15. District 10 Ramp Metering Map



## **District 10 Ramp Metering Narrative**

District 10 is found in the northern end of the San Joaquin Valley and adjoining Sierra Nevada. Much of the urban population (approximately 1.6 million people) reside in the three MPOs located in Merced, San Joaquin, and Stanislaus Counties. Five RTPAs, corresponding to Alpine, Amador, Calaveras, Mariposa, and Tuolumne Counties round out the rest of the district in the Sierra Nevada (a total population of approximate 155,000). Of the 3,670 lane miles of highway in District 10, 261 are freeway centerline miles, with new freeway expansion proposed for the State Routes 132 and 152. The three MPO counties are experiencing the highest rate of population growth in the state due to both in migration from elsewhere in the state and natural increases, while the rural portion of the district is following the national trend for a declining population. One quarter to one half of the workforce in the district engages in an interregional work commute, with the result of extended travel times and high levels of congestion.

### **Current or Planned Ramp Metering Routes**

The following routes have or are planned to have ramp metering: I-5, I-205, I-580, SR-4, SR-99, SR-120, and SR-132.

District 10 has 43 existing ramp meters and 162 planned ramp meters for a projected total of 205 ramp meters for the ten-year period covered by the 2023 RMDP. Currently there are 30 high-priority ramp meter locations in District 10. Ramp meter locations are illustrated on the district 10 RMDP map.

### **Congestion Challenges**

I-5 and I-205 are the most congested routes in the district. They serve as commuter routes to Sacramento and the Bay Area. SR-99, SR-120, SR-132, and SR-4 also have serious congestion. Future projects will upgrade portions of SR-132 to freeway standards and the Los Banos Bypass on SR-152 will be constructed to freeway standards. All six routes are primary targets for ramp metering. Ramp metering is currently used to meet congestion challenges on I-205 at the Mountain House Parkway interchange, SR-99 in San Joaquin County from Main Street to Hammer Lane, and SR-99 in Stanislaus County from Pelandale Avenue to Hammett Road.

### **District Ramp Metering Strategies**

District 10 is committed to using ramp metering as an effective traffic management strategy. In efforts to maximize freeway capacity and optimize mobility through the freeway system, District 10 will utilize best practices and strategies in deploying and managing ramp meters throughout the district. District 10 currently meters traffic Monday through Friday during the congested morning and afternoon commute periods. This is typically from 6:00–9:00 a.m., and 3:00–6:00 p.m. On one of the more congested freeways (I-205), metering can last until 7:00 p.m. or start at 5:00 a.m.

Current population growth projections and housing development patterns are increasing demand on District 10's freeway system. The district will be looking to include future management strategies to mitigate increasing congestion challenges.

Future management strategies include:

- Protocol for incident management where ramp metering will play an integral part in managing traffic demand upstream of incidents as well as on adjacent freeways.
- Technology and processes by which ramp meter operation can be coordinated or integrated with local street signal operation.
- Dynamic corridor metering with city street traffic signal connectivity.
- Metering installation at freeway-to-freeway interchanges or connectors.
- Ramp meter with HOV preferential lane.
- Various ramp metering strategies (platoon, staggered, weekend, and extended metering).
- Use virtual machine servers for the central system, testing, and reporting features.
- Develop dynamic corridor ramp metering with a flexible "harness" to allow the addition of various corridor metering algorithms.
- Develop queue dissipation with mid-ramp detection for unique conditions, such as back up on local streets or being located near railroad tracks.
- 24/7 operation in traffic-responsive mode. Ramp meters automatically turn on when traffic volume or density on mainline lanes reach a specific threshold and turn off when these conditions are no longer present. The variable ramp discharge rate is proportional to:
  - Mainline traffic volume.
  - Density of mainline traffic (collected using mainline detection).
  - Weaving analysis and geometrics of the ramp location.
  - Traffic demands at the ramp.

District 10 is utilizing several types of communication methods to manage the ramp meters, including cellular modems and fiber optics. The district is transitioning to have all future ramp meters to be all on fiber communications. The real-time data collected at these locations is transmitted to the central systems, intelligent roadway information system, and ramp metering information. In addition, all the ramp meters are currently on 2070 controllers.

District 10 works closely with local partners to minimize back-ups on city streets and to maximize coordination with city engineers, traffic signal engineers, and ramp metering engineers on the management of the arterial system.

### **Ramp Metering Priorities**

District 10's previous high-priority ramp metering locations on SR-99 have completed construction and have been metered. The district is now addressing the other ramp metering priority projects on I-205 (Tracy), SR-4 (Stockton Crosstown Freeway), and SR-120 (Yosemite Avenue to South Main Street). These segments were defined as being of high priority because they are projected to experience high traffic demand along with severe congestion. Furthermore, there are several improvement projects currently planned within these segments that provide the opportunity to install metering equipment and implement necessary ramp improvements. The operational and high-priority ramp metering locations are highlighted in District 10's RMDP data.

District 10 ramp metering priorities are based on the approved *Final Report, Northern San Joaquin Valley Regional Ramp Metering and HOV Master Plan*, dated February 27, 2009. This plan was signed by the district 10 Director and the San Joaquin Council of Governments, Stanislaus Council of Governments, and Merced County Association of Governments Executive Directors.

**Table 12. District 10 Ramp Metering Development Plan**

High Priority Locations

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	10	MER	99	15.95	NB	V St	S	2		Planned
	10	MER	99	16.89	NB	16 <sup>th</sup> St	S	2		Planned
	10	MER	99	18.43	NB	Franklin Rd	H	1		Planned
	10	SJ	4	16.21	WB	NB I-5	C	3		Planned
	10	SJ	4	16.48	WB	Center St	S	2		Planned
	10	SJ	4	16.80	EB	El Dorado St	S	2		Planned
	10	SJ	4	17.05	WB	Stansilaus St	S	2		Planned
	10	SJ	4	17.27	EB	Stansilaus St	S	2		Planned
	10	SJ	4	17.59	WB	Wilson Wy	S	2		Planned
	10	SJ	4	17.97	EB	Wilson Wy	S	2		Planned
	10	SJ	4	18.60	WB	Filbert St	S	1		Planned
	10	SJ	4	18.89	EB	Filbert St	S	2		Planned
	10	SJ	4	19.44	EB	NB SR-99	C	2		Planned
	10	SJ	5	10.86	SB	Kasson Rd	S	2		Planned
	10	SJ	5	10.99	NB	Kasson Rd	H	2		Planned
	10	SJ	5	12.19	NB	11 <sup>th</sup> St	S	2		Planned
	10	SJ	5	13.65	SB	Manthey Rd	H	1		Planned
	10	SJ	5	14.18	NB	Mossdale Rd	H	1		Planned
	10	SJ	5	14.34	SB	WB SR-120	C	2		Planned
	10	SJ	5	15.04	NB	WB SR-120	C	1		Planned
	10	SJ	5	16.26	SB	Louise Ave	S	2		Planned
	10	SJ	5	16.50	SB	Louise Ave Loop	L	2		Planned
	10	SJ	5	16.74	NB	Louise Ave	S	3		Planned
	10	SJ	5	17.28	SB	Lathrop Rd	S	2		Planned
	10	SJ	5	17.60	NB	Lathrop Rd Loop	L	2		Planned
	10	SJ	5	18.30	SB	Lathrop Rd Loop	L	2		Planned
	10	SJ	5	19.18	NB	Lathrop Rd	S	3		Planned
	10	SJ	5	19.39	SB	Roth Rd	S	2		Planned
	10	SJ	5	19.81	NB	Roth Rd	S	3		Planned
	10	SJ	5	20.50	SB	El Dorado St	C	2		Planned
	10	SJ	5	21.30	SB	Matthews Rd	S	2		Planned
	10	SJ	5	21.61	NB	Matthews Rd	S	2		Planned
	10	SJ	5	22.34	SB	French Camp Rd	S	2		Planned
	10	SJ	5	22.44	SB	French Camp Rd Loop	L	2		Planned
	10	SJ	5	22.52	NB	French Camp Rd Loop	L	2		Planned
	10	SJ	5	22.72	NB	French Camp Rd	S	2		Planned
	10	SJ	5	23.50	SB	Downing Ave	S	2		Planned
	10	SJ	5	23.86	NB	Downing Ave	S	3		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	10	SJ	5	24.49	SB	Eighth St	S	2		Planned
	10	SJ	5	24.82	NB	Eighth St	S	2		Planned
	10	SJ	5	25.20	SB	Dr MLK Blvd SR-4	S	2		Planned
	10	SJ	5	25.50	NB	Dr MLK Blvd SR-4	S	3		Planned
	10	SJ	5	26.98	SB	Pershing Ave	H	2		Planned
	10	SJ	5	27.22	NB	Pershing Ave	S	2		Planned
	10	SJ	5	27.81	SB	Mt Diablo	S	2		Planned
	10	SJ	5	28.06	NB	Mt Diablo	S	2		Planned
	10	SJ	5	28.42	SB	Country Club Blvd	S	3		Planned
	10	SJ	5	29.18	NB	Alpine Ave	S	1		Planned
	10	SJ	5	29.88	SB	March Ln	S	3		Planned
	10	SJ	5	30.14	NB	March Ln	S	3		Planned
	10	SJ	5	31.32	SB	Ben Holt	S	2		Planned
	10	SJ	5	31.60	NB	Ben Holt	S	2		Planned
	10	SJ	5	32.52	SB	Hammer Ln	S	3		Planned
	10	SJ	5	32.85	NB	Hammer Ln	S	3		Planned
	10	SJ	5	34.10	SB	Otto Dr	S	2		Planned
	10	SJ	5	34.50	NB	Otto Dr	S	2		Planned
	10	SJ	5	35.15	SB	Eight Mile Rd	S	2		Planned
	10	SJ	5	35.51	NB	Eight Mile Rd	S	2		Planned
	10	SJ	5	36.10	SB	North Gateway Blvd	S	2		Planned
	10	SJ	5	36.50	NB	North Gateway Blvd	S	2		Planned
	10	SJ	5	39.36	SB	SR-12	S	2		Planned
	10	SJ	5	39.60	SB	SR-12 Loop	L	2		Planned
	10	SJ	5	39.93	NB	SR-12	S	2		Planned
	10	SJ	5	41.49	SB	Turner Rd	S	2		Planned
	10	SJ	5	41.83	NB	Turner Rd	S	2		Planned
	10	SJ	5	44.55	SB	Peltier Rd	S	2		Planned
	10	SJ	5	44.89	NB	Peltier Rd	S	2		Planned
	10	SJ	5	47.45	SB	Walnut Grove Rd	S	2		Planned
	10	SJ	5	47.78	NB	Walnut Grove Rd	S	2		Planned
●	10	SJ	99	0.74	SB	Main St	S	1		Operational
●	10	SJ	99	0.79	NB	Main St	H	1		Operational
●	10	SJ	99	1.59	NB	Milgeo Ave	H	1		Operational
●	10	SJ	99	2.12	SB	Jack Tone Rd	S	1		Operational
●	10	SJ	99	2.30	NB	Colony Rd	H	1		Operational
●	10	SJ	99	2.50	NB	Jack Tone Rd	S	1		Operational
●	10	SJ	99	4.50	SB	Austin Rd	S	1		Operational
●	10	SJ	99	5.03	NB	Austin Rd	S	1		Operational
●	10	SJ	99	6.49	SB	Yosemite Ave/Rte 120	S	2		Operational
●	10	SJ	99	6.84	NB	Yosemite Ave/Rte 120	S	2		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	10	SJ	99	9.31	SB	Lathrop Rd	S	2	M	Operational
•	10	SJ	99	9.34	SB	Lathrop Rd Loop	L	2	M	Operational
•	10	SJ	99	9.36	NB	Lathrop Rd Loop	L	2	M	Operational
•	10	SJ	99	11.62	SB	French Camp Rd Loop	L	2	M	Operational
•	10	SJ	99	11.66	NB	French Camp Rd	S	2	M	Operational
•	10	SJ	99	14.47	SB	Arch Rd	S	2	M	Operational
•	10	SJ	99	14.76	NB	Arch Rd	S	2	M	Operational
•	10	SJ	99	16.55	SB	Mariposa Rd	S	2	M	Operational
•	10	SJ	99	16.65	SB	Mariposa Rd Loop	L	2	M	Operational
•	10	SJ	99	16.75	NB	Mariposa Rd Loop	L	2	M	Operational
•	10	SJ	99	16.85	NB	Mariposa Rd	S	2	M	Operational
•	10	SJ	99	17.14	SB	Golden Gate Ave Loop	L	2	M	Operational
•	10	SJ	99	17.18	NB	Golden Gate Ave/SR-4	S	2	M	Operational
•	10	SJ	99	19.33	SB	WB Fremont/SR-26 EB Loop	L	1		Operational
•	10	SJ	99	19.45	NB	WB Fremont/SR-26 EB	S	2	NM	Operational
•	10	SJ	99	20.25	SB	EB Waterloo/SR-88	S	1		Operational
•	10	SJ	99	20.31	NB	EB Waterloo/SR-88 Loop	L	1		Operational
•	10	SJ	99	20.36	SB	WB Waterloo/SR-88 Loop	L	2		Operational
•	10	SJ	99	20.47	NB	WB Waterloo/SR-88	S	2	NM	Operational
•	10	SJ	99	20.72	SB	Cherokee Rd	S	2		Operational
•	10	SJ	99	21.03	NB	Cherokee Rd	S	2		Operational
	10	SJ	99	21.72	NB	Wilson Wy	C	1		Planned
•	10	SJ	99	22.77	SB	Hammer Ln	S	2	M	Operational
•	10	SJ	99	23.02	NB	Hammer Ln	S	2	NM	Operational
	10	SJ	99	24.04	SB	Morada Ln	H	2		Planned
	10	SJ	99	24.10	NB	Morada Ln	H	2		Planned
	10	SJ	99	25.30	SB	Eight Mile Rd	H	2		Planned
	10	SJ	99	25.39	NB	Eight Mile Rd	H	2		Planned
	10	SJ	99	28.47	NB	Harney Ln	H	1		Planned
	10	SJ	99	28.50	SB	Harney Ln	H	1		Planned
	10	SJ	99	28.87	SB	Cherokee Ln	S	1		Planned
	10	SJ	99	28.87	SB	Kettleman Ln/SR-12 WB	S	2		Planned
	10	SJ	99	29.68	NB	Kettleman Ln/SR-12 EB	S	2		Planned
	10	SJ	99	30.79	SB	Victor Rd/SR-12 EB	S	1		Planned
	10	SJ	99	30.92	NB	Victor Rd/SR-12 EB	H	1		Planned
	10	SJ	99	31.35	SB	Turner Rd	S	1		Planned
	10	SJ	99	31.57	NB	Turner Rd	H	1		Planned
	10	SJ	99	31.98	NB	Mokelumne River OC	H	1		Planned
	10	SJ	99	32.03	SB	Mokelumne River OC	H	1		Planned
	10	SJ	99	32.41	SB	Woodbridge Rd	H	2		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	10	SJ	99	32.74	NB	Woodbridge Rd	H	2		Planned
	10	SJ	99	33.46	SB	Acampo Rd	S	2		Planned
	10	SJ	99	33.72	NB	Acampo Rd	H	2		Planned
	10	SJ	99	34.42	SB	Peltier Rd	H	2		Planned
	10	SJ	99	34.73	NB	Peltier Rd	H	2		Planned
	10	SJ	99	35.71	SB	Jahant Rd	H	2		Planned
	10	SJ	99	35.76	NB	Jahant Rd	H	2		Planned
	10	SJ	99	36.82	SB	Collier Rd	H	2		Planned
	10	SJ	99	36.52	NB	Collier Rd	H	2		Planned
	10	SJ	99	37.75	NB	Liberty Rd	H	2		Planned
	10	SJ	99	37.77	SB	Liberty Rd	H	2		Planned
	10	SJ	120	1.19	WB	Yosemite Ave	S	2		Planned
	10	SJ	120	1.49	EB	Yosemite Ave	S	2		Planned
	10	SJ	120	2.00	WB	McKinley Ave	S	1		Planned
	10	SJ	120	2.40	EB	McKinley Ave	S	1		Planned
	10	SJ	120	3.08	WB	Airport Wy	S	1		Planned
	10	SJ	120	3.58	EB	Airport Wy	S	1		Planned
	10	SJ	120	4.12	WB	Union Rd	S	1		Planned
	10	SJ	120	4.52	EB	Union Rd	S	1		Planned
	10	SJ	120	5.07	WB	South Main St	S	1		Planned
	10	SJ	120	5.56	EB	South Main St	S	1		Planned
	10	SJ	132	2.24	EB	Bird Rd	S	1		Planned
	10	SJ	132	2.24	WB	Bird Rd	S	1		Planned
•	10	SJ	205	1.17	WB	Mountain House Pkwy	S	2		Operational
	10	SJ	205	1.30	WB	Mountain House Pkwy Loop	L	2		Planned
•	10	SJ	205	1.35	EB	Mountain House Pkwy Loop	L	2		Operational
•	10	SJ	205	1.61	EB	Mountain House Pkwy	S	2	M	Operational
	10	SJ	205	2.92	WB	West 11 <sup>th</sup> St	C	1		Planned
	10	SJ	205	4.00	WB	Lamers Rd	S	2		Planned
	10	SJ	205	4.20	EB	Lamers Rd Loop	L	2		Planned
	10	SJ	205	4.50	WB	Lamers Rd Loop	L	3		Planned
	20	SJ	205	4.70	EB	Lamers Rd	S	2		Planned
	10	SJ	205	5.01	WB	Grant Line Rd	S	2		Planned
	10	SJ	205	5.21	WB	Naglee Rd	S	2		Planned
	10	SJ	205	5.57	EB	Grant Line Rd	S	2		Planned
	10	SJ	205	6.84	WB	Tracy Blvd	S	2		Planned
	10	SJ	205	7.22	EB	Tracy Blvd	S	2		Planned
	10	SJ	205	7.97	WB	McArthur Dr	S	3		Planned
	10	SJ	205	8.29	EB	McArthur Dr	S	2		Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	10	SJ	205	13.10	EB	Paradise Cut	S	2		Planned
	10	SJ	205	13.10	WB	Paradise Cut	S	2		Planned
	10	SJ	205	13.39	EB	Patterson Pass Rd	S	3		Planned
	10	SJ	205	13.65	WB	Patterson Pass RD	S	3		Planned
	10	STA	5	15.71	SB	Sperry Rd	S	2		Planned
	10	STA	5	16.03	NB	Sperry Rd	S	2		Planned
	10	STA	99	1.47	SB	Lander Ave	S	1		Planned
	10	STA	99	1.83	NB	Lander Ave	S	1		Planned
	10	STA	99	3.33	SB	West Main St	S	1		Planned
	10	STA	99	3.63	NB	West Main St	S	1		Planned
	10	STA	99	4.39	SB	Fulkerth Rd	S	1		Planned
	10	STA	99	4.70	NB	Fulkerth Rd	S	1		Planned
	10	STA	99	5.49	SB	Monte Vista	S	1		Planned
	10	STA	99	5.81	NB	Monte Vista	S	1		Planned
	10	STA	99	6.60	SB	Taylor	S	1		Planned
	10	STA	99	6.89	NB	Taylor	S	1		Planned
	10	STA	99	7.59	SB	Keyes Rd	S	1		Planned
	10	STA	99	8.02	NB	Keyes Rd	S	1		Planned
	10	STA	99	9.97	SB	Mitchell Rd	S	1		Planned
	10	STA	99	10.35	NB	Mitchell Rd	S	1		Planned
	10	STA	99	11.38	SB	2nd & North	S	1		Planned
	10	STA	99	11.41	NB	Pine St	H	1		Planned
	10	STA	99	11.70	NB	Whitmore Ave Loop	L	2		Planned
	10	STA	99	11.82	NB	Whitmore Ave	S	2		Planned
	10	STA	99	13.03	SB	9th St	S	2		Planned
	10	STA	99	13.16	SB	Hatch Rd	S	1		Planned
	10	STA	99	13.39	NB	Hatch Rd	H	1		Planned
	10	STA	99	14.31	SB	Crows Landing	S	1		Planned
	10	STA	99	14.47	NB	Crows Landing Loop	L	1		Planned
	10	STA	99	15.21	SB	Tuolumne Blvd Loop	L	1		Planned
	10	STA	99	15.21	NB	Tuolumne Blvd	H	1		Planned
	10	STA	99	15.45	SB	5th & G St	S	1		Planned
	10	STA	99	15.63	SB	5th & H St	S	1		Planned
	10	STA	99	15.97	NB	6th & I St	S	2		Planned
	10	STA	99	16.26	NB	6th & L St	S	2		Planned
	10	STA	99	16.75	NB	Kansas Ave	H	1		Planned
	10	STA	99	16.93	SB	Kansas Ave Loop	L	1		Planned
●	10	STA	99	18.36	SB	Carpenter/Briggsmore	S	1		Operational
	10	STA	99	18.65	NB	Carpenter/Briggsmore	S	1		Planned
	10	STA	99	20.03	SB	Beckwith Rd	S	1		Planned
	10	STA	99	20.46	NB	Beckwith Rd	S	1		Planned

Status	District	County	Route	Postmile		Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	10	STA	99		21.55	SB	Pelandale Ave	L	3	NM	Part Const
•	10	STA	99		21.93	NB	Palendale Ave	H	3	NM	Operational
•	10	STA	99		22.38	SB	Kiernan Ave/SR-219	S	3	M	Operational
•	10	STA	99		22.74	NB	Kiernan Ave/SR-219	S	3	M	Operational
•	10	STA	99		24.07	SB	Hammett Rd	S	2		Operational
•	10	STA	99		24.43	NB	Hammett Rd	S	2		Operational

# District 11

Figure 16. District 11 Ramp Metering Map 1

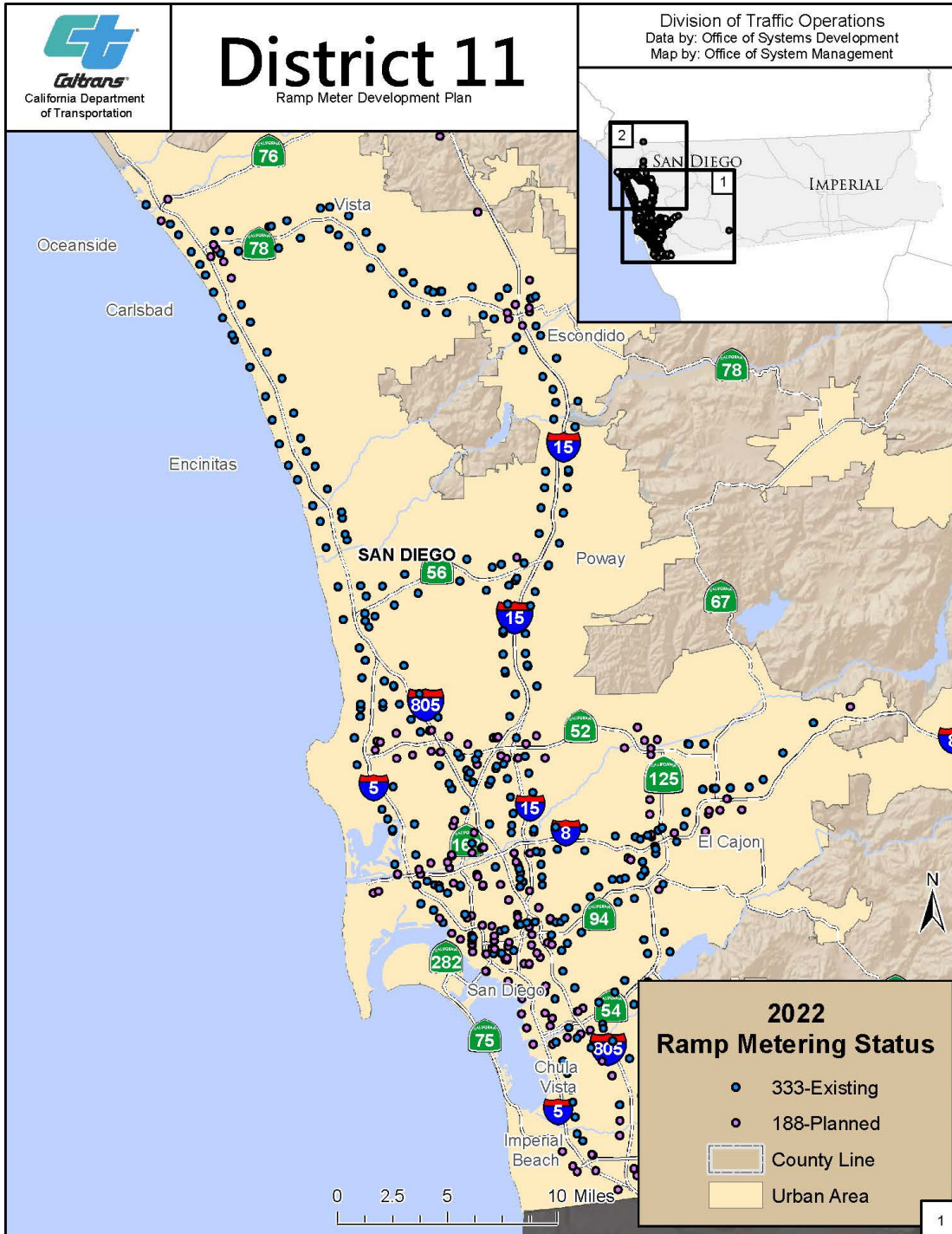
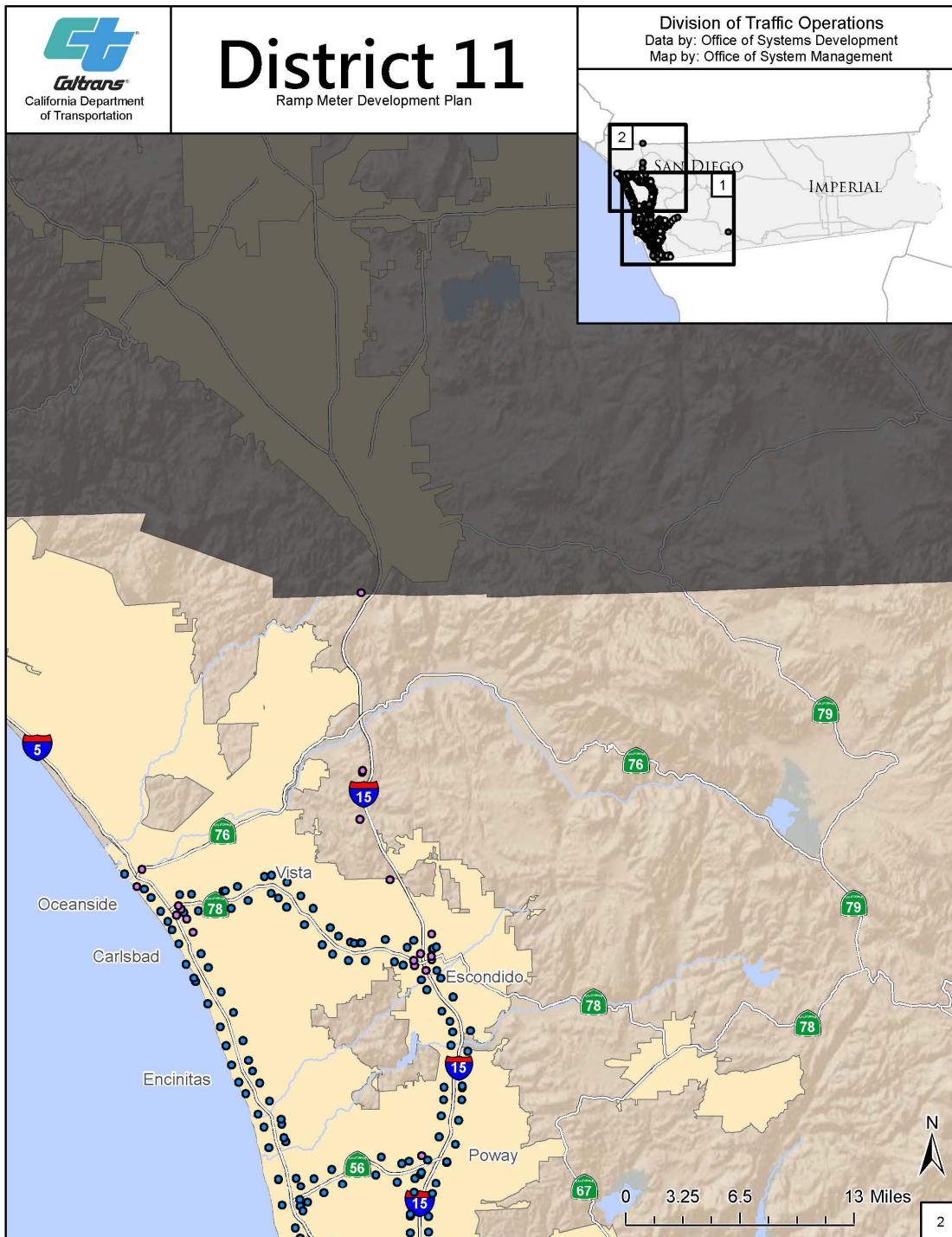


Figure 17. District 11 Ramp Metering Map 2



## **District 11 Ramp Metering Narrative**

District 11 is the southernmost district and includes San Diego and Imperial Counties. District 11 has a population of 3,299,000 in a land area of 8,379 square miles, with a density of 783 people per square mile. District 11 manages approximately 1,100 centerline miles and 4,200 total lane-miles of highway.

The district is unique in that it borders another country, an ocean, a state, and is among the most varied geographical regions of the state. The district spans the entire California-Mexico border from the coastal cliffs and beaches of the Pacific to mountain ranges and arid deserts next to Arizona, and then reaching north to Orange and Riverside Counties. San Diego County's urban character consists of 25 incorporated cities and ranks as the 17th largest metropolitan area in the country (2020 Census). Beyond the metropolitan area, the rural character of San Diego County includes the Cleveland National Forest, the Anza-Borrego Desert State Park, and several smaller rural communities, and has the highest concentration of Native American tribes in the nation.

Imperial County has seven incorporated cities. It is mostly rural with a rich agricultural heritage, which includes the production of half of our nation's winter vegetables, an extensive number of renewable resources, including geothermal, wind, and solar, and several points of interest, such as the Imperial Sand Dunes Recreation Area and the Salton Sea.

### **Current or Planned Ramp Metering Routes**

The following routes have or are planned to have ramp metering:

I-5, I-8, SR-11, I-15, SR-52, SR-54, SR-56, SR-78, SR-94, SR-125, SR-163, I-805, and SR-905.

District 11 currently has 333 existing ramp meters. There are 51 high-priority locations as shown in the following District 11's priority metering location section that currently need further study before proceeding. An additional 188 urban on-ramps or connectors are candidates for the ten-year period covered by the RMDP, for a total of 521 projected ramp meters if funding is available and regional priorities and needs coincide.

The conceptual ramp meter infrastructure cost estimate to install the ramp meters at all the district's proposed high-priority locations, excluding civil work, is approximately \$8,500,000. Currently, the conceptual cost estimate does not account for right-of-way costs. Actual project cost estimates will be determined during the project development phases when the scope and schedules are finalized.

### **Congestion Challenges**

Several San Diego metropolitan area freeways experience consistent and recurrent congestion during the morning and afternoon peak-period travel times. I-5, SR-78, and I-805 experience over 4,000 average daily vehicle hours of delay during these peak periods. TMS elements, HOV lanes, and variable toll pricing have been or will be implemented to add efficiencies to the system. Highway improvements such as

managed lanes, as well as additional multi-modal and operational improvements, may further improve mobility in the San Diego region.

### **District Ramp Metering Strategies**

District 11 coordinates with local and regional partner agencies regarding strategies to deploy future ramp metering. District 11 currently meters traffic Monday through Friday during the congested morning and afternoon commute periods. These periods are typically from 5:30-9:30 a.m., and 3:00-7:00 p.m. On more congested freeways including I-5 and SR-78, metering can last until 11:00 a.m. or start at 2:00 p.m.

Metering strategies to consider include extended hours and eventually a migration to 24/7 metering throughout the district. San Diego County meters most of its urban ramps that include nine freeway-to-freeway connector meters. Most of these entrance ramps contain an HOV preferential lane that is metered. The metered on-ramps with more than one lane operate with a staggered discharge. Over half of the meters operate as two cars per green and approximately 40 percent operate as one car per green. Imperial County does not currently warrant ramp meters.

District 11 utilizes several communication methods to manage the ramp meters including wireless cell modems, telephone lease lines, Digital Subscriber Lines, and fiber optics. The district is transitioning to state-owned fiber communication on new projects. In addition, the 170 controllers will be converted to 2070 controllers at various locations where fiber optics have been installed.

The first 4-lane meter was deployed in San Diego in the fall of 2013 at Mira Mesa Blvd to SB I-805 and consists of three single-Occupancy vehicle, and one transit (bus) only lane.

### **Future Strategies Hardware**

Continue deployment of 2070 controller implementation where fiber or high bandwidth communication is available.

Use virtual machine servers for the central system, testing, and reporting features software.

Develop dynamic corridor ramp metering with a flexible “harness” to allow the addition of various corridor metering algorithms.

### **Priority Metering Locations**

District 11 has developed a prioritized list of proposed ramp meter locations. These locations are on-ramps and connectors in heavily congested morning commute segments where overcapacity of the freeway mainline during the morning commute period between 6:00 - 9:00 a.m. is observed. The connectors shown in the list of priority ramp meter locations are major contributors to the congestion with significant traffic volumes. Ramp metering is recommended and considered a low-cost solution to improve the traffic flow and reduce congestion. If funding is received, further analysis by the district should include metering with auxiliary lanes or ramp widening.

**Table 13. District 11 Ramp Metering Development Plan**

High Priority Locations

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	11	SD	5	2.99	NB	EB SR-905	C			Planned
	11	SD	5	3.14	SB	Tocayo Ave/EB SR-905	C			Planned
	11	SD	5	3.16	NB	WB SR-905	C			Planned
	11	SD	5	3.36	SB	WB SR-905	C			Planned
●	11	SD	5	3.96	NB	Coronado Ave	L	2	NM	Operational
	11	SD	5	4.26	SB	Palm EB/SR-75	C			Planned
●	11	SD	5	4.66	NB	Palm Ave/SR-75	C	2	M	Operational
●	11	SD	5	5.40	NB	Main St	S	2	M	Operational
●	11	SD	5	6.10	NB	Palomar St	S	2	M	Operational
●	11	SD	5	6.68	NB	Industrial Blvd/L St	H	2	M	Operational
●	11	SD	5	7.32	NB	J St	S	2	M	Operational
●	11	SD	5	7.91	NB	H St	S	3	M	Operational
●	11	SD	5	8.87	NB	E St	S	2	NM	Operational
	11	SD	5	9.16	SB	WB SR-54	C			Planned
	11	SD	5	9.60	NB	WB SR-54	C			Planned
	11	SD	5	9.96	SB	24th St				Planned
	11	SD	5	10.24	NB	24th St				Planned
	11	SD	5	10.60	SB	Harbor Dr				Planned
	11	SD	5	10.96	SB	8th St				Planned
	11	SD	5	11.34	NB	7th St/8th St				Planned
	11	SD	5	11.61	SB	National Blvd				Planned
	11	SD	5	12.01	SB	SB SR-15	C			Planned
	11	SD	5	12.61	NB	SB SR-15	C			Planned
	11	SD	5	13.11	SB	29th St/Boston Ave				Planned
	11	SD	5	13.19	NB	28th St NB				Planned
	11	SD	5	13.43	NB	National Ave WB				Planned
	11	SD	5	13.90	SB	NB SR-75	C			Planned
	11	SD	5	13.94	SB	Crosby/Logan Ave				Planned
	11	SD	5	14.28	NB	NB SR-75	C			Planned
	11	SD	5	14.60	SB	17th/J St				Planned
	11	SD	5	14.72	NB	Imperial Ave/19th St				Planned
	11	SD	5	14.90	SB	16th and E St				Planned
	11	SD	5	14.96	SB	17th/E St				Planned
	11	SD	5	15.06	NB	SR-94	C			Planned
	11	SD	5	15.08	NB	21st/F St				Planned
	11	SD	5	15.11	SB	C St				Planned
	11	SD	5	15.15	SB	Pershing St				Planned
	11	SD	5	15.30	NB	B St				Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	11	SD	5	15.54	NB	Pershing Dr				Planned
	11	SD	5	15.60	SB	Park Ave				Planned
	11	SD	5	16.08	NB	SR-163	C			Planned
•	11	SD	5	16.11	SB	5th Ave	S	2	M	Operational
	11	SD	5	16.52	SB	First Ave				Planned
	11	SD	5	16.74	SB	Hawthorne/Grape St				Planned
	11	SD	5	16.75	NB	First Ave				Planned
•	11	SD	5	16.94	NB	Hawthorn St	H	2	NM	Operational
•	11	SD	5	17.34	SB	Kettner Blvd	H	1	NM	Operational
	11	SD	5	17.59	SB	Pacific Hwy				Planned
•	11	SD	5	18.13	NB	India St	H	2	NM	Operational
•	11	SD	5	18.16	SB	Hancock St/Washington St	H	2	NM	Operational
•	11	SD	5	18.41	NB	Washington/San Diego Ave	H	2	M	Operational
•	11	SD	5	18.93	SB	Old Town Ave	S	1	NM	Operational
•	11	SD	5	19.26	NB	Old Town Ave/Moore St	S	2	NM	Operational
	11	SD	5	19.97	NB	Rosecrans				Planned
	11	SD	5	20.19	NB	WB I-8	C			Planned
	11	SD	5	20.25	SB	EB I-8	C			Planned
	11	SD	5	20.26	SB	WB I-8	C			Planned
•	11	SD	5	20.72	SB	Sea World Dr	S	2	M	Operational
•	11	SD	5	20.87	NB	Sea World Dr	S	2	NM	Operational
•	11	SD	5	22.08	SB	Clairemont Dr EB	S	1	NM	Operational
•	11	SD	5	22.32	SB	Clairemont Dr WB	L	2	M	Operational
•	11	SD	5	22.32	NB	Clairemont Dr	S	2	M	Operational
•	11	SD	4	22.96	SB	Mission Bay Dr/Grand Ave	S	3	M	Operational
•	11	SD	5	23.58	SB	Balboa Ave	L	2	M	Operational
•	11	SD	5	24.06	NB	Missional Bay Dr	S	2	NM	Operational
•	11	SD	5	25.85	SB	La Jolla Pkwy	S	1	NM	Operational
	11	SD	5	26.11	NB	SR-52	C			Planned
•	11	SD	5	26.73	SB	Gilman Dr	S	3	M	Operational
	11	SD	5	27.05	NB	Gilman Dr				Planned
•	11	SD	5	27.90	SB	Nobel Dr	S	3	M	Operational
•	11	SD	5	28.26	SB	La Jolla Village Dr EB	H	2	M	Operational
•	11	SD	5	28.39	NB	La Jolla Village Dr EB	L	2	M	Operational
•	11	SD	5	28.46	SB	La Jolla Village Dr WB	L	2	NM	Operational
•	11	SD	5	28.56	NB	La Jolla Village Dr WB	S	1	NM	Operational
•	11	SD	5	29.64	SB	Genesee Ave	S	3	NM	Operational
•	11	SD	5	29.57	NB	Genesee Ave	S	3	M	Operational
•	11	SD	5	30.32	SB	Roselle St	S	3	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	11	SD	5	31.66	SB	Carmel Mountain Rd	S	3	M	Operational
•	11	SD	5	31.91	NB	Carmel Mountain Rd	S	3	M	Operational
•	11	SD	5	32.79	SB	Carmel Valley Rd	S	2	NM	Operational
•	11	SD	5	32.90	NB	Carmel Valley Rd	S	2	M	Operational
•	11	SD	5	34.14	NB	Del Mar Heights Rd	S	2	NM	Operational
•	11	SD	5	34.30	SB	Del Mar Heights Rd EB	H	2	M	Operational
•	11	SD	5	34.31	SB	Del Mar Heights Rd WB	L	2	NM	Operational
•	11	SD	5	36.23	NB	Via de la Valle EB	L	2	NM	Operational
•	11	SD	5	36.28	SB	Via de la Valle EB	H	2	M	Operational
•	11	SD	5	36.28	SB	Via de la Valle WB	L	2	NM	Operational
•	11	SD	5	36.50	NB	Via de la Valle WB	H	2	M	Operational
•	11	SD	5	37.37	NB	Lomas Santa Fe Dr EB	S	2	M	Operational
•	11	SD	5	37.40	SB	Lomas Santa Fe Dr WB	L	2	M	Operational
•	11	SD	5	37.40	SB	Lomas Santa Fe Dr EB	S	2	M	Operational
•	11	SD	5	37.64	NB	Lomas Santa e Dr WB	S	2	M	Operational
•	11	SD	5	38.56	NB	Manchester Ave	S	1	NM	Operational
•	11	SD	5	38.58	SB	Manchester Ave	L	2	NM	Operational
•	11	SD	5	39.83	SB	Birmingham Dr	S	2	NM	Operational
•	11	SD	5	39.90	NB	Birmingham Dr	S	2	M	Operational
•	11	SD	5	40.63	SB	Santa Fe Rd	S	2	M	Operational
•	11	SD	5	40.69	NB	Santa Fe Dr	S	1	NM	Operational
•	11	SD	5	41.53	SB	Encinitas Blvd	S	2	M	Operational
•	11	SD	5	41.50	NB	Encinitas Blvd	S	2	M	Operational
•	11	SD	5	42.68	NB	Leucadia Blvd	H	2	M	Operational
•	11	SD	5	42.69	SB	Leucadia Blvd	S	3	M	Operational
•	11	SD	5	43.79	Sb	La Costa Ave	S	3	M	Operational
•	11	SD	5	44.21	NB	La Costa Ave	S	2	M	Operational
•	11	SD	5	45.44	SB	Poinsettia Ln	S	3	M	Operational
•	11	SD	5	45.58	NB	Poinsettia Ln	S	2	M	Operational
•	11	SD	5	46.87	SB	Palomar Airport Rd EB	S	2	M	Operational
•	11	SD	5	47.10	SB	Palomar Airport Rd WB	L	2	M	Operational
•	11	SD	5	47.17	NB	Palomar Airport Rd	S	3	M	Operational
•	11	SD	5	47.97	SB	Cannon Rd	S	3	M	Operational
•	11	SD	5	48.10	NB	Cannon Rd	S	3	M	Operational
•	11	SD	5	49.25	SB	Tamarack Ave	S	2	M	Operational
	11	SD	5	49.38	NB	Tamarack Ave				Planned
•	11	SD	5	50.09	SB	Carlsbad Village Dr	S	1	NM	Operational
	11	SD	5	50.24	NB	Carlsbad Village Dr				Planned
•	11	SD	5	50.71	SB	Las Flores Dr	S	1	NM	Operational
	11	SD	5	50.81	NB	Las Flores Dr				Planned
	11	SD	5	51.05	NB	SR-78	C			Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	11	SD	5	51.44	SB	Cassidy St	S	1	NM	Operational
•	11	SD	5	52.41	SB	Oceanside Blvd	L	2	M	Operational
•	11	SD	5	53.30	SB	Mission Ave WB	L	2	M	Operational
•	11	SD	5	53.30	SB	Missional EB	S	1	NM	Operational
	11	SD	5	53.74	SB	Hill St				Planned
	11	SD	5	53.90	NB	SR-76	C			Planned
•	11	SD	5	54.43	SB	Harbor Dr	L	3	M	Operational
•	11	SD	8	0.28	EB	Rosecrans St	S	3	M	Operational
	11	SD	8	0.49	EB	Morena Blvd				Planned
	11	SD	8	0.86	EB	Taylor St				Planned
	11	SD	8	0.99	WB	Taylor St				Planned
•	11	SD	8	1.22	EB	West Mission Bay Dr	L	2	NM	Operational
•	11	SD	8	1.41	EB	Sports Arena Blvd	S	3	M	Operational
	11	SD	8	1.91	WB	Hotel Cir				Planned
	11	SD	8	1.96	EB	Hotel Cir S				Planned
	11	SD	8	3.09	EB	Mission Center Rd				Planned
	11	SD	8	3.12	WB	Mission Center Rd				Planned
	11	SD	8	3.68	WB	Texas St				Planned
	11	SD	8	3.75	WB	Qualcomm Wy				Planned
•	11	SD	8	3.99	EB	Texas St NB	S	1	NM	Operational
•	11	SD	8	3.99	EB	Texas St SB	L	2	M	Operational
	11	SD	8	5.81	EB	NB SR-15	C			Planned
	11	SD	8	5.82	Eb	SB I-15	C			Planned
•	11	SD	8	6.28	EB	Fairmount Ave NB(/SB)	H	1	NM	Operational
•	11	SD	8	6.28	EB	Fairmount Ave (NB/) SB	H	1	NM	Operational
•	11	SD	8	7.08	WB	Waring Rd	S	2	M	Operational
•	11	SD	8	7.07	EB	Waring Rd	S	2	M	Operational
•	11	SD	8	8.34	WB	College Ave (SB/NB)	S	2	NM	Operational
•	11	SD	8	8.34	WB	College Ave (SB/NB)	S	2	NM	Operational
•	11	SD	8	8.34	EB	College Ave (NB/SB)	L	1	NM	Operational
•	11	SD	8	8.34	EB	College Ave (NB/SB)	L	1	NM	Operational
•	11	SD	8	9.59	WB	Lake Murray Blvd (/70th St)	S	2	M	Operational
•	11	SD	8	9.59	WB	(Lake Murray Blvd/) 70th St	L	1	NM	Operational
•	11	SD	8	10.57	WB	Fletcher Pkwy	S	3	M	Operational
	11	SD	8	10.63	EB	La Mesa Blvd				Planned
	11	SD	8	10.78	Eb	Severin Dr				Planned
•	11	SD	8	11.01	WB	Spring St/Center St	H	2	NM	Operational
•	11	SD	8	11.08	Eb	El Cajon Blvd/Spring St	S	1	NM	Operational
•	11	SD	8	11.08	EB	El Cajon Blvd/Spring St	S	1	NM	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	11	SD	8	11.59	WB	Jackson Dr	H	2	M	Operational
•	11	SD	8	12.16	WB	La mesa Blvd	S	2	M	Operational
•	11	SD	8	12.13	WB	SB SR-125	C	2	M	Operational
•	11	SD	8	12.38	WB	NB SR-125	C	1	NM	Operational
•	11	SD	8	12.38	WB	Severin/Murray Dr	S	2	M	Operational
•	11	SD	8	13.47	WB	El Cajon Blvd	S	3	M	Operational
	11	SD	8	14.00	EB	Magnolia Ave				Planned
	11	SD	8	14.01	EB	Fletcher Pkwy				Planned
•	11	SD	8	14.57	WB	West Main St	S	2	NM	Operational
	11	SD	8	14.60	EB	Mollison Ave				Planned
•	11	SD	8	15.31	WB	Johnson Ave	S	2	M	Operational
	11	SD	8	15.48	EB	2nd St				Planned
•	11	SD	8	15.71	WB	Magnolia Ave NB	L	1	NM	Operational
•	11	SD	8	15.80	WB	Broadway/Fletcher Pkwy	S	3	M	Operational
•	11	SD	8	15.81	WB	SR-67	C	3	NM	Operational
	11	SD	8	15.99	EB	East Main				Planned
•	11	SD	8	16.47	WB	Mollison Ave	S	2	M	Operational
	11	SD	8	16.96	EB	Greenfield Dr				Planned
•	11	SD	8	17.35	WB	2nd St	S	2	NM	Operational
•	11	SD	8	18.72	WB	Greenfield Dr	S	2	NM	Operational
•	11	SD	8	20.04	WB	Los Coches Rd	S	3	M	Operational
•	11	SD	8	21.82	WB	Lake Jennings Rd SB	H	2	NM	Operational
•	11	SD	8	21.82	WB	Lakes Jennings Rd NB	L	2	M	Operational
	11	SD	8	23.51	WB	Dumbar Ln				Planned
	11	SD	8	58.21	WB	Tavern Rd				Planned
•	11	SD	11	0.90	WB	Enrico Fermi	S	2	NM	Operational
	11	SD	15	0.32	NB	SB I-5	C			Planned
	11	SD	15	0.40	NB	NB I-5	C			Planned
	11	SD	15	0.67	SB	Oceanview Blvd				Planned
	11	SD	15	1.63	SB	Imperial Ave				Planned
	11	SD	15	1.76	SB	Market St				Planned
	11	SD	15	2.50	NB	EB SR-94	C			Planned
	11	SD	15	3.21	SB	SB I-805	C			Planned
	11	SD	15	3.46	NB	NB I-805	C			Planned
•	11	SD	15	4.64	SB	University Ave	S	2	M	Operational
•	11	SD	15	4.68	NB	University Ave	S	2	M	Operational
•	11	SD	15	5.01	SB	El Cajon Blvd	S	2	M	Operational
•	11	SD	15	5.06	NB	El Cajon Blvd	S	3	M	Operational
•	11	SD	15	5.55	SB	Adams Ave	H	2	NM	Operational
•	11	SD	15	5.61	NB	Adams Ave	H	2	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	11	SD	15	6.03	SB	Camino del Rio Sur				Planned
	11	Sd	15	6.08	NB	Camino del Rio Sur				Planned
	11	SD	15	6.10	NB	EB I-8	C			Planned
●	11	SD	15	6.20	NB	Fairmont Ave	S	2	NM	Operational
	11	SD	15	6.21	SB	Fairmont Ave				Planned
	11	SD	15	6.62	NB	WB I-8	C			Planned
●	11	SD	15	6.63	SB	Friars Rd	L	1	NM	Operational
●	11	SD	15	6.79	SB	Friars Rd/I-8	S	1	NM	Operational
●	11	SD	15	6.90	NB	Friars Rd	S	3	M	Operational
●	11	SD	15	7.57	SB	Murphy Canyon Rd	S	2	M	Operational
●	11	SD	15	8.34	SB	Aero Dr	S	3	M	Operational
●	11	SD	15	8.36	NB	Aero Dr	S	2	M	Operational
●	11	SD	15	9.24	SB	Balboa Ave EB	S	3	M	Operational
●	11	SD	15	9.24	SB	Balboa Ave WB	L	2	M	Operational
●	11	SD	15	9.26	NB	Balboa Ave EB	L	1	NM	Operational
●	11	SD	15	9.26	NB	Balboa Ave WB	H	1	NM	Operational
●	11	SD	15	9.96	NB	Clairemont Mesa Blvd	S	2	NM	Operational
●	11	SD	15	9.99	SB	Clairemont Mesa Blvd	S	3	M	Operational
	11	SD	15	10.31	SB	SR-52	C			Planned
	11	SD	15	11.00	NB	SR-52	C			Planned
●	11	SD	15	13.19	SB	Miramar Wy	S	2	M	Operational
●	11	SD	15	13.25	NB	Miramar Wy	L	1	NM	Operational
●	11	SD	15	14.28	SB	Miramar Rd	S	3	M	Operational
●	11	SD	15	14.22	NB	Miramar Rd	L	2	NM	Operational
●	11	SD	15	14.29	NB	Pomerado Rd	S	1	NM	Operational
●	11	SD	15	14.37	SB	Pomerado Rd	L	2	NM	Operational
●	11	SD	15	14.99	SB	Carroll Canyon Rd	S	2	NM	Operational
●	11	SD	15	15.02	NB	Carroll Canyon Rd	S	2	M	Operational
●	11	SD	15	15.86	SB	Mira Mesa Blvd EB	S	3	M	Operational
●	11	SD	15	15.92	NB	Mira Mesa Blvd EB	L	1	NM	Operational
●	11	SD	15	15.96	NB	Mira Mesa Blvd WB	S	2	M	Operational
●	11	SD	15	15.99	SB	Mira Mesa Blvd WB	L	2	M	Operational
●	11	SD	14	17.14	SB	Mercy Rd	S	3	M	Operational
●	11	SD	15	17.34	NB	Mercy Rd	S	3	M	Operational
●	11	SD	15	18.16	SB	Rancho Penasquitos	S	2	NM	Operational
●	11	SD	15	18.17	NB	Poway Rd	S	1	NM	Operational
●	11	SD	15	18.17	NB	Rancho Penasquitos	L	1	NM	Operational
●	11	SD	15	18.21	SB	Poway Rd	L	2	NM	Operational
●	11	SD	15	19.02	SB	Ted Williams Pkwy	S	2	M	Operational
●	11	SD	15	19.45	NB	SR-56	L	2	M	Operational
●	11	SD	15	19.51	NB	Ted Williams Pkwy	S	2	NM	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	11	SD	15	20.54	SB	Carmel Mountain Rd	S	3	M	Operational
•	11	SD	15	20.62	NB	Carmel Mountain Rd	S	3	M	Operational
•	11	SD	15	21.92	SB	Camino del Norte	S	3	M	Operational
•	11	SD	15	21.94	NB	Camino del Norte	S	3	M	Operational
•	11	SD	15	22.92	SB	Bernardo Center Dr	S	2	NM	Operational
•	11	SD	15	22.98	NB	Bernardo Center Dr	S	2	NM	Operational
•	11	SD	15	23.65	NB	Rancho Bernardo Rd EB	L	2	M	Operational
•	11	SD	15	23.69	SB	Rancho Bernardo Rd EB	H	3	M	Operational
•	11	SD	15	23.77	NB	Rancho Bernardo Rd WB	H	2	M	Operational
•	11	SD	15	23.69	SB	Rancho Bernardo Rd WB	L	2	M	Operational
•	11	SD	15	25.96	SB	W Bernardo Dr	S	1	NM	Operational
•	11	SD	15	25.97	NB	W Bernardo Dr/Pomerado	H	2	M	Operational
•	11	SD	15	26.88	NB	Via Rancho Pkwy	L	2	NM	Operational
•	11	Sd	15	26.99	SB	Via Rancho Pkwy	S	3	M	Operational
•	11	SD	15	27.78	SB	Centre City Pkwy	S	3	M	Operational
•	11	SD	15	28.68	SB	Citracado Pkwy	S	2	NM	Operational
•	11	SD	15	28.78	NB	Citracado Pkwy	S	1	NM	Operational
•	11	SD	15	30.06	SB	Auto Park Wy/9th Ave	S	2	M	Operational
•	11	SD	15	30.19	NB	Auto Park Wy/9th Ave	S	2	NM	Operational
•	11	SD	15	30.70	SB	Valley Pkwy	L	1	NM	Operational
•	11	SD	15	30.69	NB	Valley Pkwy	S	2	NM	Operational
	11	SD	15	31.47	SB	EB SR-78	C			Planned
	11	SD	15	31.50	NB	EB SR-78	C			Planned
	11	SD	15	31.67	SB	WB SR-78	C			Planned
	11	SD	15	31.88	NB	WB SR-78	C			Planned
•	11	SD	15	32.73	SB	El Norte Pkwy	S	2	M	Operational
	11	SD	15	33.11	NB	El Norte Pkwy				Planned
	11	SD	15	36.82	SB	Deer Spring Rd				Planned
	11	SD	15	40.62	SB	Gopher Canyon Rd				Planned
	11	SD	15	42.99	SB	Old 395/Escondido Hwy				Planned
	11	SD	15	42.99	SB	SR-76/Pala Rd				Planned
	11	SD	15	43.19	SB	Old 395/Escondido Hwy	C			Planned
	11	SD	15	53.80	SB	Rainbow Valley Rd				Planned
	11	SD	52	1.21	WB	Regents Rd				Planned
	11	SD	52	1.56	EB	Regents Rd				Planned
	11	SD	52	2.01	WB	Genesee Ave				Planned
	11	SD	52	2.65	EB	Genesee Ave				Planned
	11	SD	52	3.45	WB	SB I-805	C			Planned
	11	SD	52	3.56	WB	NB I-805	C			Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	11	SD	52	3.93	EB	SB I-805	C			Planned
	11	SD	52	3.94	EB	NB I-805	C			Planned
	11	SD	52	5.29	WB	Convoy St				Planned
	11	SD	52	5.63	EB	Convoy St				Planned
	11	SD	52	6.58	WB	NB SR-163	C			Planned
	11	SD	52	6.59	WB	SB SR-163	C			Planned
	11	SD	52	6.73	WB	SB I-15	C			Planned
	11	SD	52	6.74	WB	NB I-15	C			Planned
	11	SD	52	6.80	WB	Kearny Villa Rd				Planned
	11	SD	52	7.08	EB	Ruffin/Kearny Villa Rd				Planned
	11	SD	52	7.61	EB	SB I-15	C			Planned
	11	SD	52	7.62	EB	NB I-15	C			Planned
	11	SD	52	8.48	WB	Santo Rd				Planned
	11	SD	52	8.82	EB	Santo Rd				Planned
	11	SD	52	13.10	WB	Mast Blvd				Planned
	11	SD	52	13.46	EB	Mast Blvd				Planned
	11	SD	52	14.03	WB	Mission Gorge Rd				Planned
	11	SD	52	14.77	WB	NB SR-125	C			Planned
●	11	SD	52	15.98	WB	Cuyamaca St SB	S	2	M	Operational
●	11	SD	52	16.26	WB	Cuyamaca St NB	L	2	M	Operational
●	11	SD	52	16.91	WB	Magnolia Ave	S	2	M	Operational
●	11	SD	52	16.94	WB	SB SR-67	S	2	NM	Operational
	11	SD	54	0.35	EB	National City Blvd				Planned
	11	SD	54	0.81	WB	Highland Ave/4th Ave				Planned
	11	SD	54	1.00	EB	Highland Ave/4th St				Planned
	11	SD	52	1.83	WB	SB I-805	C			Planned
	11	SD	52	1.89	EB	SB I-805	C			Planned
	11	SD	52	1.93	WB	NB I-805	C			Planned
	11	SD	52	2.15	EB	NB I-805	C			Planned
●	11	SD	52	2.95	EB	Reo Dr	S	2	M	Operational
●	11	SD	54	2.97	WB	Reo Dr	S	2	M	Operational
●	11	SD	52	4.04	WB	Woodman St	S	2	M	Operational
●	11	SD	52	4.29	EB	Woodman St	S	2	M	Operational
●	11	SD	52	4.77	WB	Briarwood Rd	S	2	M	Operational
●	11	SD	52	5.07	EB	Briarwood Rd	S	2	M	Operational
●	11	SD	56	0.42	EB	El Camino Real	S	2	NM	Operational
●	11	SD	56	0.87	WB	Carmel Creek Rd	L	2	M	Operational
●	11	SD	56	0.97	EB	Carmel Creek Rd	S	2	M	Operational
●	11	SD	56	1.86	WB	Carmel Country Rd	L	2	NM	Operational
●	11	SD	56	1.89	EB	Carmel Country Rd	S	2	NM	Operational
●	11	SD	56	2.91	WB	Carmel Valley Rd	S	3	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	11	SD	56	3.19	EB	Carmel Valley Rd	S	3	M	Operational
•	11	SD	56	5.95	WB	Camino Del Sur	S	3	M	Operational
•	11	SD	56	6.17	EB	Camino Del Sur	S	3	M	Operational
•	11	SD	56	7.55	WB	Black Mountain Rd	S	3	M	Operational
•	11	SD	56	7.16	EB	Black Mountain Rd	S	3	M	Operational
•	11	SD	56	8.06	EB	Rancho Penasquitos Blvd	H	1	NM	Operational
•	11	SD	56	8.06	WB	Rancho Penasquitos Blvd	S	1	NM	Operational
	11	SD	56	8.85	WB	SB I-15	C			Planned
	11	SD	67	0.05	NB	EB I-8	C			Planned
	11	SD	67	0.06	NB	WB I-8	C			Planned
	11	SD	78	0.10	EB	NB I-5	C			Planned
•	11	SD	78	0.65	WB	Jefferson St	S	3	M	Operational
•	11	SD	78	0.86	EB	Jefferson St	S	3	M	Operational
•	11	SD	78	1.39	WB	El Camino Real	S	2	NM	Operational
•	11	SD	78	1.59	EB	El Camino Real	S	2	NM	Operational
•	11	SD	78	3.25	WB	College Blvd SB	S	3	M	Operational
•	11	SD	78	3.33	WB	College Blvd NB	H	2	NM	Operational
•	11	SD	78	3.59	EB	Plaza Dr	H	2	NM	Operational
•	11	SD	78	4.29	WB	Emerald Dr	S	2	NM	Operational
•	11	SD	78	4.47	EB	Emerald Dr	S	2	NM	Operational
•	11	SD	78	5.80	WB	Melrose/West Vista Wy	H	2	NM	Operational
•	11	SD	78	6.14	WB	Vista Village Dr	H	2	M	Operational
•	11	SD	78	6.32	EB	Vista Village Dr	S	3	M	Operational
•	11	SD	78	6.86	WB	Civic Center Dr	S	2	M	Operational
•	11	SD	78	6.89	EB	Civic Center Dr	L	2	NM	Operational
•	11	SD	78	7.76	WB	Mar Vista Dr	L	2	NM	Operational
•	11	SD	78	7.80	EB	Mar Vista Dr	S	2	M	Operational
•	11	SD	78	8.97	WB	Sycamore Ave	S	3	M	Operational
•	11	SD	78	9.22	EB	Sycamore Ave	S	3	M	Operational
•	11	SD	78	10.44	WB	Rancho Santa Fe Rd	S	2	M	Operational
•	11	SD	78	10.68	EB	Rancho Santa Fe Rd	S	2	M	Operational
•	11	SD	78	11.10	WB	Las Posas Rd	S	2	M	Operational
•	11	SD	78	11.36	EB	Las Posas/Grand Ave	H	2	M	Operational
•	11	SD	78	12.04	WB	San Marcos Blvd SB	S	2	M	Operational
•	11	SD	78	12.27	WB	San Marcos Blvd NB	L	1	NM	Operational
•	11	SD	78	12.27	EB	San Marcos Blvd	S	3	M	Operational
•	11	SD	78	12.81	WB	Twin Oaks SB	H	2	M	Operational
•	11	SD	78	12.88	WB	Twin Oaks NB	L	2	M	Operational
•	11	SD	78	13.02	EB	Twin Oaks Valley Rd	S	3	M	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	11	SD	78	14.14	WB	Barham/Woodland	H	2	M	Operational
•	11	SD	78	14.86	EB	Barham/Woodland	H	2	M	Operational
•	11	SD	78	15.37	WB	Nordahl Rd	S	2	NM	Operational
•	11	SD	78	15.50	EB	Nordahl Rd	S	2	NM	Operational
	11	SD	78	16.27	WB	NB I-15	C			Planned
	11	SD	78	16.54	EB	NB I-15	C			Planned
•	11	SD	78	17.28	WB	Centre City Pkwy SB	S	2	M	Operational
•	11	SD	78	17.34	WB	Centre City Pkwy NB	L	2	M	Operational
•	11	SD	78	17.62	WB	Broadway/Lincoln Ave	M	3	M	Operational
•	11	SD	94	1.44	EB	19th St	H	1	NM	Operational
•	11	SD	94	1.44	EB	G St	S	3	NM	Operational
	11	SD	94	1.48	EB	SB I-5	C			Planned
•	11	SD	94	1.87	EB	25th St	S	2	NM	Operational
•	11	SD	94	2.23	WB	28th St	H	1	NM	Operational
•	11	SD	94	2.24	EB	28th St	S	1	NM	Operational
•	11	SD	94	2.61	WB	32nd St	H	1	NM	Operational
•	11	SD	94	2.63	EB	32nd St	H	1	NM	Operational
•	11	SD	94	3.14	WB	SB SR-15	C	2	M	Operational
•	11	SD	94	3.26	WB	NB SR-15	C	1	NM	Operational
	11	SD	94	3.53	EB	NB SR-15	C			Planned
•	111	SD	94	3.55	WB	Home Ave	H	1	NM	Operational
•	11	SD	94	3.98	WB	NB I-805	C	2	M	Operational
	11	SD	94	4.40	EB	I-805	C			Planned
	11	SD	94	4.70	EB	47th St				Planned
•	11	SD	94	4.83	WB	49th St	H	1	M	Operational
•	11	SD	94	5.16	WB	Euclid Ave SB	S	1	NM	Operational
•	11	SD	94	5.16	WB	Euclid Ave NB	S	1	NM	Operational
•	11	SD	94	5.16	EB	Euclid Ave	S	1	NM	Operational
•	11	SD	94	5.61	WB	Kelton Rd	S	2	M	Operational
•	11	SD	94	5.80	EB	Kelton Rd	S	1	NM	Operational
•	11	SD	94	6.21	WB	Federal Blvd	S	1	NM	Operational
•	11	SD	94	7.24	WB	College Grove Wy	H	2	M	Operational
•	11	SD	94	7.75	WB	College Ave	S	1	NM	Operational
•	11	SD	94	7.76	WB	Broadway	H	1	NM	Operational
•	11	SD	94	8.14	WB	Massachusetts Ave	S	2	M	Operational
•	11	SD	94	8.36	EB	Massachusetts Ave	S	1	NM	Operational
•	11	SD	94	8.55	WB	Waite Dr	H	1	NM	Operational
•	11	SD	94	8.87	WB	Lemon Grove Ave	S	1	NM	Operational
•	11	SD	94	9.01	EB	Lemon Grove Ave	S	1	NM	Operational
•	11	SD	94	9.62	WB	NB SR-125	C	2	NM	Operational
	11	SD	94	10.03	EB	NB SR-125	C			Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	11	SD	94	10.11	WB	WB SR-94 Connector to WB SR-94	M	3	M	Operational
•	11	SD	94	10.13	WB	Spring St	S	2	M	Operational
	11	SD	125	15.55	NB	EB I-8	C			Planned
	11	SD	125	15.55	NB	WB I-8	C			Planned
	11	SD	125	15.25	SB	EB I-8	C			Planned
	11	SD	125	15.25	SB	WB I-8	C			Planned
	11	SD	125	8.8	SB	WB SR-54	C			Planned
•	11	SD	125	9.66	SB	Paradise Valley Rd	H	3	M	Operational
•	11	SD	125	9.84	NB	Elkelton Pl	H	2	M	Operational
•	11	SD	125	10.59	SB	Jamacha Rd	S	3	M	Operational
•	11	SD	125	10.65	NB	Jamacha Rd	S	3	M	Operational
•	11	SD	125	13.25	SB	Spring St	S	1	NM	Operational
•	11	SD	125	13.53	NB	Campo Rd	H	2	M	Operational
•	11	SD	125	14.73	SB	Lemon Ave	S	2	NM	Operational
•	11	SD	125	15.12	SB	Grossmont Blvd	S	2	M	Operational
•	11	SD	125	15.10	NB	Grossmont Blvd	S	2	NM	Operational
•	11	SD	125	15.12	SB	EB I-8	C	1	NM	Operational
•	11	SD	125	18.29	SB	SB SR-125 Connector to SB SR-125	M	3	M	Operational
	11	SD	125	18.44	SB	Amaya Dr				Planned
	11	SD	125	19.11	SB	Navajo Rd				Planned
	11	SD	125	19.86	SB	Grossmont College Dr				Planned
	11	SD	125	21.97	SB	EB SR-52	C			Planned
	11	SD	125	22.26	SB	WB SR-52	C			Planned
	11	SD	163	0.05	NB	A St/11th St				Planned
	11	SD	163	1.19	NB	Park Blvd				Planned
	11	SD	163	2.60	SB	Robinson Ave				Planned
•	11	SD	163	2.67	SB	Washington St	H	2	M	Operational
	11	SD	163	2.75	NB	University Ave				Planned
	11	SD	163	2.76	NB	Washington St				Planned
	11	SD	163	3.13	NB	6th St				Planned
	11	SD	163	3.79	SB	WB I-8	C			Planned
	11	SD	163	4.22	SB	Friars Rd EB				Planned
	11	SD	163	4.27	SB	Friars Rd WB				Planned
•	11	SD	163	4.67	NB	Friars Rd	S	2	NM	Operational
	11	SD	163	5.60	NB	Genesee Ave				Planned
	11	SD	163	5.60	SB	Genesee Ave EB				Planned
	11	SD	163	5.83	SB	Genesee Ave WB				Planned
•	11	SD	163	7.83	SB	Mercury/Armour	H	2	NM	Operational
•	11	SD	163	7.97	NB	Balboa Ave	L	2	NM	Operational

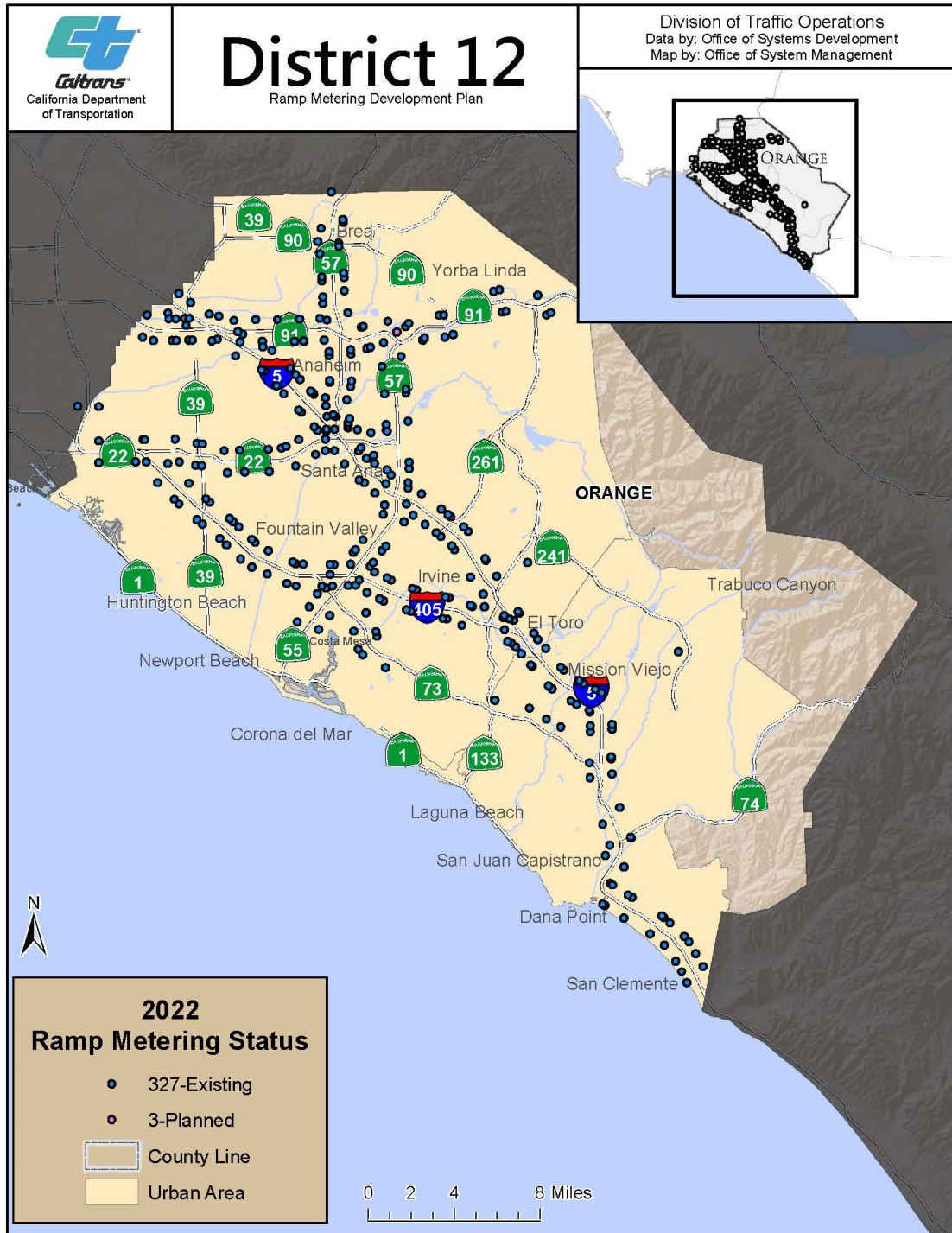
Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	11	SD	163	8.05	SB	Balboa Ave/Mercury	H	3	M	Operational
•	11	SD	163	8.16	NB	Century Park Ct	H	2	M	Operational
•	11	SD	163	8.71	SB	Clairemont Mesa Blvd EB	H	2	NM	Operational
•	11	SD	163	8.75	NB	Clairemont Mesa Blvd EB	L	2	NM	Operational
•	11	SD	163	8.91	SB	Clairemont Mesa Blvd WB	L	2	NM	Operational
•	11	SD	163	8.93	NB	Clairemont Mesa Blvd WB	H	2	M	Operational
•	11	SD	163	10.81	NB	Kearny Villa Rd	H	1	NM	Operational
•	11	SD	163	10.90	SB	Kearny Villa Rd	S	3	M	Operational
	11	SD	805	0.51	SB	San Ysidro Blvd				Planned
	11	SD	805	0.87	NB	San Ysidro Blvd				Planned
	11	SD	805	2.73	SB	Palm Ave				Planned
	11	SD	805	3.13	NB	Palm Ave				Planned
	11	SD	805	3.52	SB	Otay Valley Rd				Planned
•	11	SD	805	3.85	NB	Main St	S	3	M	Operational
	11	SD	805	4.23	SB	Orange St				Planned
•	11	SD	805	4.23	SB	Olympic Pkwy/Orange Ave	S	3	M	Operational
•	11	SD	805	4.59	NB	Olympic Pkwy/Orange Ave	S	3	M	Operational
	11	SD	805	5.84	SB	Telegraph Canyon Rd				Planned
•	11	SD	805	6.21	NB	Telegraph Canyon Rd	S	2	M	Operational
	11	SD	805	7.00	SB	H St				Planned
•	11	SD	805	7.03	NB	H St EB	L	2	M	Operational
•	11	SD	805	7.08	NB	H St WB	H	2	NM	Operational
•	11	SD	805	7.74	SB	Bonita Rd	S	2	NM	Operational
•	11	SD	805	7.76	NB	Bonita Rd	S	2	NM	Operational
•	11	SD	805	8.44	SB	WB SR-54	C	2	NM	Operational
•	11	SD	805	9.01	SB	Sweetwater Rd/30th St	S	2	M	Operational
	11	SD	805	9.41	NB	EB SR-54	C			Planned
	11	SD	805	9.42	NB	WB SR-54	C			Planned
•	11	SD	805	10.36	NB	Plaza Blvd	S	2	M	Operational
•	11	SD	805	10.36	SB	Plaza Blvd	S	3	M	Operational
	11	SD	805	11.18	SB	47th St				Planned
•	11	SD	805	11.44	NB	43rd St	C	2	M	Operational
•	11	SD	805	11.44	NB	47th St	S	2	NM	Operational
	11	SD	805	12.22	SB	Imperial Ave				Planned
•	11	SD	805	12.35	NB	Imperial Ave	S	2	NM	Operational
	11	SD	805	12.85	SB	Market St				Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	11	SD	805	13.21	NB	Market St	S	1	NM	Operational
	11	SD	805	13.81	SB	Home Ave				Planned
•	11	SD	805	13.87	NB	Home Ave	L	2	M	Operational
	11	SD	805	13.91	NB	WB SR-94	C			Planned
	11	SD	805	13.91	SB	WB SR-94	C			Planned
	11	SD	805	13.92	SB	EB SR-94	C			Planned
	11	SD	805	14.77	SB	SB SR-15	C			Planned
	11	SD	805	15.38	NB	NB SR-15	C			Planned
	11	SD	805	15.73	SB	University/Boundary St				Planned
•	11	SD	805	15.94	NB	University Ave	L	2	NM	Operational
	11	SD	805	16.29	SB	El Cajon Blvd				Planned
•	11	SD	805	16.50	NB	El Cajon Blvd	S	2	NM	Operational
	11	SD	805	16.93	NB	Adams Ave				Planned
•	11	SD	805	18.49	SB	Murray Ridge Rd	S	2	M	Operational
•	11	SD	805	19.00	NB	Murray Ridge Rd	S	1	NM	Operational
•	11	SD	805	20.16	SB	Mesa College Dr	S	2	M	Operational
•	11	SD	805	21.15	NB	Balboa Ave EB	L	2	M	Operational
•	11	SD	805	21.82	NB	Balboa Ave WB	H	2	M	Operational
•	11	SD	805	21.47	SB	Balboa Ave EB	H	2	M	Operational
•	11	SD	805	21.72	SB	Balboa Ave WB	L	1	NM	Operational
•	11	SD	805	22.46	NB	Clairemont Mesa Blvd EB	L	2	M	Operational
•	11	SD	805	22.66	SB	Clairemont Mesa Blvd WB	L	2	NM	Operational
•	11	SD	805	22.68	SB	Clairemont Mesa Blvd EB	H	2	M	Operational
•	11	SD	805	22.68	NB	Clairemont Mesa Blvd WB	H	2	M	Operational
	11	SD	805	23.40	SB	WB SR-52	C			Planned
	11	SD	805	23.55	NB	EB SR-52	C			Planned
	11	SD	805	23.56	NB	WB SR-52	C			Planned
•	11	SD	805	24.43	SB	Governor Dr	S	1	NM	Operational
•	11	SD	805	24.53	NB	Governor Dr	S	2	M	Operational
•	11	SD	805	25.25	SB	Nobel Dr	S	3	M	Operational
•	11	SD	805	25.94	SB	Miramar Rd WB	L	2	NM	Operational
•	11	SD	805	25.94	SB	La Jolla Village Dr	H	3	M	Operational
•	11	SD	805	26.02	NB	La Jolla Village Dr	L	2	M	Operational
•	11	SD	805	26.03	NB	Miramar Rd	L	2	M	Operational
•	11	SD	805	26.95	SB	Sorrento Valley Rd	H	3	M	Operational
•	11	SD	805	27.14	SB	Mira Mesa Blvd	H	4	NM	Operational
•	11	SD	805	27.16	NB	Vista Sorrento Pkwy	H	3	M	Operational
	11	SD	905	3.5	EB	SB I-5	C			Planned

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
	11	SD	905	3.5	EB	NB I-5	C			Planned
	11	SD	905	5.45	EB	I-805	C			Planned
•	11	SD	905	6.55	WB	Caliente Ave	S	2	M	Operational
•	11	SD	905	6.91	EB	Caliente Ave	S	2	M	Operational
•	11	SD	905	8.65	WB	Britannia Blvd	S	3	M	Operational
•	11	SD	905	8.88	EB	Britannia Blvd	S	2	NM	Operational
•	11	SD	905	9.65	WB	La Media Rd	S	2	M	Operational
•	11	SD	905	9.73	EB	La Media Rd	S	2	M	Operational
•	11	SD	905	9.89	WB	La Media Rd NB	H	2	M	Operational
•	11	SD	905	11.36	WB	Siempre Viva Rd	S	3	NM	Operational

# District 12

Figure 18. District 12 Ramp Metering Map



## **District 12 Ramp Metering Narrative**

District 12 maintains and operates 259 centerline miles and 2,066 total lane miles of highway. The district and its transportation partners have been able to improve traffic operations through delivery of local measure projects and capital outlay projects.

### **Current or Planned Ramp Meter Routes**

The following routes have, or are planned to have, ramp metering:

I-5, I-405, I-605, SR-22, SR-55, SR-57, SR-73, SR-91, SR-133, and SR-241. District 12 currently has 330 metered ramps. Ramp meters are illustrated on the District 12 RMDP map.

### **Congestion Challenges**

Orange County is a major employment center, where people from Los Angeles, Riverside, and San Bernardino Counties commute to work. I-405 is one of the major routes that has been affected by the Orange and Los Angeles County traffic. Possible solutions are congestion pricing, auxiliary lanes, freeway expansions, and the enhancement of the multimodal transportation network. The expansion approach should be considered after careful analysis and after all other viable options are exhausted.

### **District Ramp Metering Strategies**

District 12 has been successful in using ramp metering as a traffic management strategy during the AM and PM peak periods to maintain the efficiency of the freeway system by reducing freeway congestion and facilitating the mainline traffic throughput. However, instead of managing freeway traffic by metering only during AM and PM peak periods, District 12 will be moving forward with on-demand metering to maintain traffic flow on the freeway system. This concept is in relation to the HQ goal of using traffic-adaptive ramp metering 24 hours a day as part of "Statewide standardization of Caltrans' ramp meter operation that will alleviate both recurrent and non-recurrent congestion on the State Highway System." During ramp metering only, an identified number of vehicles per minute can merge into mainline flow; this in turn allows for smoother and safer transportation operations. Some ramp metering locations have an HOV lane that allows carpoolers, buses, and motorcyclists to bypass the ramp queue. There have been many improvements to the on ramps throughout Orange County. All ramp meters within District 12 have been upgraded to 2070 controllers. This update was accomplished in June 2018. Moreover, District 12 has upgraded the controllers within the ICM project (I-5, SR-57, and SR-91 triangle, Adaptive Ramp Metering project) to 2070 LX, to be compatible with active ITS or CATMS. District 12 is planning to upgrade the rest of the controllers to 2070 LX. In addition, District 12 currently has several ramp metering improvement projects in development. The Project Proposals initiated, or in process of being initiated, by District 12, includes but are not limited to:

- Converting all multilane ramp meter from simultaneous release to staggered release, which is now in the design phase.

- Upgrading all Meter-On signs in accordance with Federal Guidelines, which is in the design phase.
- Upgrading all the remaining onramps with non-pan, tilt, and zoom cameras. There would be two cameras, one to monitor the queue on the arterial lane and one facing the merge point on the mainline.
- Adding pan, tilt, and zoom cameras to onramps to allow remote surveillance at locations where the mainline CCTV cameras don't provide a clear line of sight to the onramp.
- Converting all remaining Legacy communication for ramp metering cabinets to fiber optic communications.

**Table 14. District 12 Ramp Metering Development Plan**

High Priority Locations

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	12	ORA	5	0.9	SB	Calafia	H	1		Non-Op
•	12	ORA	5	1.26	NB	Avenida Magdalena	H	1		Operational
•	12	ORA	5	1.49	SB	El Camino Real	S	2		Non-Op
•	12	ORA	5	1.83	NB	El Camino Real	S	2		Operational
•	12	ORA	5	2.14	SB	Avenida Presidio	S	1		Non-Op
•	12	ORA	5	2.47	NB	Avenida Presidio	S	2		Operational
•	12	ORA	5	2.8	NB	Palizada	S	2		Operational
•	12	ORA	5	3.23	SB	Avenida Pico 1	S	2		Non-Op
•	12	ORA	5	3.56	NB	Avenida Pico 2	S	2		Non-Op
•	12	ORA	5	4.02	NB	Hermosa 1	L	2		Operational
•	12	ORA	5	4.1	NB	Hermosa 2	H	2		Operational
•	12	ORA	5	4.1	SB	Hermosa 2	L	1		Non-Op
•	12	ORA	5	5.59	SB	Estrella	S	2		Non-Op
•	12	ORA	5	5.73	NB	Camino De Estrella 1 (EB)	L	1		Operational
•	12	ORA	5	5.89	NB	Camino De Estrella 2 (WB)	S	2		Operational
•	12	ORA	5	6.6	SB	Rte. 1	H	1		Non-Op
•	12	ORA	5	6.82	SB	Las Ramblas	L	1		Non-Op
•	12	ORA	5	6.91	NB	Las Ramblas	L	2		Operational
•	12	ORA	5	7.46	NB	Capistrano	S	2		Operational
•	12	ORA	5	8.6	SB	San Juan Creek	H	2		Non-Op
•	12	ORA	5	8.64	NB	San Juan Creek	H	2		Operational
•	12	ORA	5	9.4	SB	Ortega Hwy 1	S	2		Non-Op
•	12	ORA	5	9.67	NB	Ortega Hwy 1	S	3		Non-Op
•	12	ORA	5	9.69	NB	Ortega Hwy 2	S	2		Operational
•	12	ORA	5	10.7	SB	Junipero Serra	S	2	NM	Operational
•	12	ORA	5	11.06	NB	Junipero Serra	S	2	NM	Operational
•	12	ORA	5	12.8	SB	Avery Pkwy 1	S	2	NM	Operational
•	12	ORA	5	13.06	NB	Avery Pkwy 2	S	2		Operational
•	12	ORA	5	13.6	SB	Crown Valley Pkwy 1	S	2		Operational
•	12	ORA	5	13.71	NB	Crown Valley Pkwy 1	H	2		Operational
•	12	ORA	5	13.88	NB	Crown Valley Pkwy 2	L	2		Operational
•	12	ORA	5	15.03	SB	Oso Pkwy 1	H	2		Operational
•	12	ORA	5	15.14	NB	Oso Pkwy 1	L	2		Operational
•	12	ORA	5	15.3	SB	Oso Pkwy 2	L	2	NM	Operational
•	12	ORA	5	15.36	NB	Oso Pkwy 2	H	2		Operational
•	12	ORA	5	16.3	SB	La Paz 1	S	2	NM	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	12	ORA	5	16.5	SB	La Paz 2	L	2	NM	Operational
●	12	ORA	5	16.52	NB	La Paz 1	L	2	NM	Operational
●	12	ORA	5	16.7	NB	La Paz 2	S	2		Operational
●	12	ORA	5	17.26	SB	Alicia Pkwy 1	H	2	NM	Operational
●	12	ORA	5	17.44	NB	Alicia Pkwy 1	L	2		Operational
●	12	ORA	5	17.49	SB	Alicia Pkwy 2	L	2		Operational
●	12	ORA	5	17.64	NB	Alicai 2	H	2		Operational
●	12	ORA	5	18.5	SB	El Toro 1	S	2	NM	Operational
●	12	ORA	5	18.62	NB	El Toro 1	L	2		Operational
●	12	ORA	5	18.7	SB	El Toro 2	H	2		Operational
●	12	ORA	5	18.83	NB	El Toro 2	H	2		Operational
●	12	ORA	5	19.8	SB	Lake Forest 2	L	2	NM	Operational
●	12	ORA	5	19.9	SB	Lake Forest 1	S	2		Operational
●	12	ORA	5	20	NB	Lake Forest 2	L	2		Operational
●	12	ORA	5	20.59	NB	Bake Pkwy 1	L	2		Operational
●	12	ORA	5	20.59	SB	Bake Pkwy 1	H	2		Operational
●	12	ORA	5	20.94	NB	Bake Pkwy 2	H	2		Operational
●	12	ORA	5	20.95	SB	Bake Pkwy 2	L	2	NM	Operational
●	12	ORA	5	21.92	SB	Alton Pkwy 1	H	2		Operational
●	12	ORA	5	22.1	NB	Alton Pkwy 2	L	2		Operational
●	12	ORA	5	22.2	NB	Alton Pkwy 3	S	2		Operational
●	12	ORA	5	R 23.69	SB	Sand Canyon 1	S	2		Operational
●	12	ORA	5	R 24.05	NB	Sand Canyon 2	S	2		Operational
●	12	ORA	5	R 24.84	SB	Jeffrey 1	L	2	NM	Operational
●	12	ORA	5	R 25.08	NB	Jeffrey 1	H	2		Operational
●	12	ORA	5	R 25.15	NB	Jeffrey 2	L	2	NM	Operational
●	12	ORA	5	R 26.35	SB	Culver 1	H	1		Operational
●	12	ORA	5	R 26.56	NB	Culver 1	L	2		Operational
●	12	ORA	5	R 26.66	SB	Culver 2	L	1		Operational
●	12	ORA	5	R 26.81	NB	Culver 2	H	1		Operational
●	12	ORA	5	27.43	SB	Jamboree 1	H	2		Operational
●	12	ORA	5	27.55	NB	Jamboree 1	L	2	NM	Operational
●	12	ORA	5	27.7	NB	Jamboree 2	H	2	NM	Operational
●	12	ORA	5	27.7	SB	Jamboree 2	L	2	NM	Operational
●	12	ORA	5	28.1	NB	Tustin Ranch	H	2		Operational
●	12	ORA	5	28.35	SB	Tustin Ranch	L	2		Operational
●	12	ORA	5	29.02	SB	Red Hill	S	2		Operational
●	12	ORA	5	29.24	NB	Red Hill	S	2		Operational
●	12	ORA	5	29.783	NB	Newport Coast	S	2		Operational
●	12	ORA	5	30.9	SB	1st	S	2		Operational
●	12	ORA	5	31.23	NB	4th/Mabury	S	2		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	12	ORA	5	31.9	NB	Grand 2	L	2		Operational
●	12	ORA	5	32	SB	Grand 2	L	2		Operational
●	12	ORA	5	32.25	SB	17th 1	H	2		Operational
●	12	ORA	5	32.5	NB	17th 2	L	2		Operational
●	12	ORA	5	32.6	NB	17th 3	S	2		Operational
●	12	ORA	5	33	SB	Main 1	H	2		Operational
●	12	ORA	5	33.2	NB	Main 2	H	2		Operational
●	12	ORA	5	34.6	SB	Chapman 1	S	2		Operational
●	12	ORA	5	35	NB	Chapman 2	S	1		Operational
●	12	ORA	5	35.1	NB	State College	L	2		Operational
●	12	ORA	5	35.2	SB	State College	L	2		Operational
●	12	ORA	5	35.4	SB	Orangewood 1	S	2		Operational
●	12	ORA	5	36.31	SB	Katella	H	2		Operational
●	12	ORA	5	36.4	NB	Orangewood 2	S	2		Operational
●	12	ORA	5	36.48	NB	Katella	S	1		Operational
●	12	ORA	5	36.48	SB	Anaheim 1	S	2		Operational
●	12	ORA	5	36.6	NB	Anaheim 2	S	2		Non-Op
●	12	ORA	5	37.38	NB	Harbor	L	1		Operational
●	12	ORA	5	37.48	SB	Harbor	L	2		Operational
●	12	ORA	5	37.7	NB	Ball	S	2		Operational
●	12	ORA	5	38	SB	South 1/Disneyland	H	1		Operational
●	12	ORA	5	38.1	NB	South 2/Disneyland	H	2		Operational
●	12	ORA	5	39	SB	Lincoln	H	2		Operational
●	12	ORA	5	39.09	NB	Lincoln	L	2		Operational
●	12	ORA	5	39.3	SB	Euclid 1	H	2		Operational
●	12	ORA	5	39.6	NB	Euclid 2	S	2		Operational
●	12	ORA	5	40.5	SB	Brookhurst 1	S	2		Operational
●	12	ORA	5	40.7	NB	Brookhurst 2	L	2		Operational
●	12	ORA	5	40.98	NB	La Palma	S	2		Operational
●	12	ORA	5	41.8	SB	Magnolia	S	2		Operational
●	12	ORA	5	42.52	NB	Orange Thorpe 2	S	1		Operational
●	12	ORA	5	43.3	SB	Beach 1	S	2		Operational
●	12	ORA	5	43.6	NB	Beach 2	S	2		Operational
●	12	ORA	5	44.2	SB	Artesia 1	S	2		Operational
●	12	ORA	5	44.35	NB	Artesia 2	L	2		Operational
●	12	ORA	22	R 0.88	WB	Valley View 1	L	1		Operational
●	12	ORA	22	R 0.99	WB	Valley View 2	S	1		Operational
●	12	ORA	22	R 1.08	EB	Valley View 2	H	2		Operational
●	12	ORA	22	R 2.49	WB	Knott 1	S	2		Operational
●	12	ORA	22	R 2.88	EB	Knott 2	S	2		Operational
●	12	ORA	22	R 3.44	EB	Beach 1	L	2		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	12	ORA	22	R	3.45	WB	Beach 1	H	2	Operational
●	12	ORA	22	R	3.73	EB	Beach 2	H	2	Operational
●	12	ORA	22	R	3.73	WB	Beach 2	L	2	Operational
●	12	ORA	22	R	4.6	WB	Magnolia 1	S	2	Operational
●	12	ORA	22	R	4.99	EB	Magnolia 2	S	2	Operational
●	12	ORA	22	R	5.57	WB	Brookhurst 1	L	2	Operational
●	12	ORA	22	R	5.77	EB	Brookhurst 2	H	2	Operational
●	12	ORA	22	R	6.94	EB	Euclid	S	2	Operational
●	12	ORA	22	R	6.94	WB	Euclid	L	2	Operational
●	12	ORA	22	R	7.72	WB	Harbor 1	S	2	Operational
●	12	ORA	22	R	7.93	WB	Harbor 2	L	2	Operational
●	12	ORA	22	R	8.02	EB	Harbor 2	S	2	Operational
●	12	ORA	22	R	8.68	WB	Garden Grove 1	S	2	Operational
●	12	ORA	22	R	9.04	EB	Garden Grove 2	S	2	Operational
●	12	ORA	22	R	9.7	EB	The City Dr	L	2	Operational
●	12	ORA	22	R	9.784	WB	The City Dr	S	2	Operational
●	12	ORA	22	R	10.13	EB	Bristol	S	2	Operational
●	12	ORA	22	R	10.14	WB	Bristol	L	2	Operational
●	12	ORA	22	R	11.23	WB	Main	H	2	Operational
●	12	ORA	22	R	11.25	EB	Main	H	2	Operational
●	12	ORA	22	R	11.68	WB	Glassell 1	S	2	Operational
●	12	ORA	22	R	12.01	EB	Glassell 2	S	2	Operational
●	12	ORA	22	R	12.7	WB	Tustin	S	2	Operational
●	12	ORA	55	R	2.7	SB	Victoria 1	S	1	Operational
●	12	ORA	55	R	3.11	NB	Victoria 2	S	2	Non-Op
●	12	ORA	55	R	3.6	SB	Fair Dr 1	S	1	Operational
●	12	ORA	55	R	3.96	NB	Fair Dr 2	S	2	Non-Op
●	12	ORA	55	R	4.7	SB	Baker 1	S	1	Operational
●	12	ORA	55	R	5.8	NB	Paularino 2	S	1	Operational
●	12	ORA	55		6.1	NB	At Airport	S	1	Non-Op
●	12	ORA	55	R	6.88	SB	Macarthur 1	S	1	Operational
●	12	ORA	55	R	6.94	NB	Macarthur 1	L	1	Operational
●	12	ORA	55	R	7.03	SB	Macarthur 2	S	2	Operational
●	12	ORA	55	R	7.16	NB	Macarthur 2	L	1	Operational
●	12	ORA	55	R	7.62	SB	Dyer1	S	2	Operational
●	12	ORA	55	R	7.85	NB	Dyer 1	L	1	Operational
●	12	ORA	55	R	8.12	NB	Dyer 2	S	2	Operational
●	12	ORA	55	R	9.19	SB	Edinger 1	S	2	Operational
●	12	ORA	55	R	9.41	NB	Edinger 2	H	2	Operational
●	12	ORA	55	R	10	NB	McFadden	H	2	Operational
●	12	ORA	55	R	10	SB	McFadden	S	2	Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	12	ORA	55	10.84	SB	Fourth 1	S	1		Operational
●	12	ORA	55	11.1	NB	Fourth 2	S	2		Operational
●	12	ORA	55	11.62	SB	17th 1	S	2		Operational
●	12	ORA	55	11.74	NB	17th 1	L	2		Operational
●	12	ORA	55	12	NB	17th 2	S	2		Operational
●	12	ORA	55	13.51	SB	Chapman 1	S	2		Operational
●	12	ORA	55	13.75	SB	Chapman 2	L	2		Operational
●	12	ORA	55	13.9	NB	Chapman 2	H	3		Operational
●	12	ORA	55	15.22	NB	Katella 1	L	2		Operational
●	12	ORA	55	15.22	SB	Katella 1	S	3		Operational
●	12	ORA	55	15.4	NB	Katella 2	S	1		Operational
●	12	ORA	55	16.71	SB	Lincoln 1	S	2		Operational
●	12	ORA	55	17.12	NB	Lincoln 2	L	3		Operational
	12	ORA	55	17.87	SB	Lakeview 1				Planned
●	12	ORA	57	11.08	SB	Chapman 1	S	1		Operational
●	12	ORA	57	11.2	NB	Chapman 1	L	1		Operational
●	12	ORA	57	11.3	NB	Chapman 2	S	1		Operational
●	12	ORA	57	11.55	SB	Orangewood	H	1		Operational
●	12	ORA	57	11.68	NB	Orangewood 1	L	1		Operational
●	12	ORA	57	11.78	NB	Orangewood 2	S	1		Operational
●	12	ORA	57	12.4	SB	Katella 1	L	1		Operational
●	12	ORA	57	12.5	NB	Katella 1	L	1		Operational
●	12	ORA	57	12.58	SB	Katella 2	S	2		Operational
●	12	ORA	57	12.7	NB	Katella 2	S	1		Operational
●	12	ORA	57	13.27	SB	Ball 1	L	1		Operational
●	12	ORA	57	13.3	NB	Ball 1	L	1		Operational
●	12	ORA	57	13.45	SB	Ball 2	S	2		Operational
●	12	ORA	57	13.5	NB	Ball 2	S	1		Operational
●	12	ORA	57	14.65	SB	Lincoln 1	L	1		Operational
●	12	ORA	57	14.7	NB	Lincoln 1	L	1		Operational
●	12	ORA	57	14.83	SB	Lincoln 2	L	1		Operational
●	12	ORA	57	14.9	NB	Lincoln 2	S	2		Operational
●	12	ORA	57	16.46	SB	Orange Thorpe	S	2		Operational
●	12	ORA	57	16.5	NB	Orange Thorpe	S	1		Operational
●	12	ORA	57	17.18	SB	Chapman 3	S	1		Operational
●	12	ORA	57	17.41	SB	Nutwood	L	2		Operational
●	12	ORA	57	17.7	NB	Nutwood	S	2		Operational
●	12	ORA	57	18.18	SB	Yorba Linda 1	L	2		Operational
●	12	ORA	57	18.3	NB	Yorba Linda 1	L	1		Operational
●	12	ORA	57	18.37	SB	Yorba Linda 2	S	2		Operational
●	12	ORA	57	18.5	NB	Yorba Linda 2	S	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	12	ORA	57	19.73	SB	Imperial 1	L	1		Operational
●	12	ORA	57	19.8	NB	Imperial 1	L	1		Operational
●	12	ORA	57	19.94	SB	Imperial 2	L	1		Operational
●	12	ORA	57	20	NB	Imperial 2	S	2		Operational
●	12	ORA	57	20.7	SB	Lambert	S	2		Part Const
	12	ORA	57	20.93	NB	Lambert	L			Planned
●	12	ORA	57	21.1	NB	Lambert	L	2		Part Const
●	12	ORA	57	22.063	SB	Tonner Canyon	S	1		Operational
●	12	ORA	73	13.512	NB	La Paz 1	L	2		Non-Op
●	12	ORA	73	14.376	NB	Aliso Creek 3	L	2		Non-Op
●	12	ORA	73	15.162	NB	Glenwood 2	L	2		Non-Op
●	12	ORA	73	16.98	NB	SR-133 3	L	1		Non-Op
●	12	ORA	73	22.5	SB	Bonita Canyon1	H	2		Non-Op
●	12	ORA	73	23.5	SB	Bison 1	S	2		Non-Op
●	12	ORA	73	23.7	SB	Macarthur 1	H	2		Non-Op
●	12	ORA	73	23.9	NB	Bison 2	S	1		Non-Op
●	12	ORA	73	24.1	NB	Macarthur 2	L	2		Non-Op
●	12	ORA	73	24.72	SB	Jamboree 1	S	2		Operational
●	12	ORA	73	24.78	NB	Jamboree 2	L	2		Operational
●	12	ORA	73	R 0.7	NB	Campus	S	2		Non-Op
●	12	ORA	73	27.153	SB	Bear 1	S	2		Non-Op
●	12	ORA	73	27.4	NB	Bear 2	S	2		Non-Op
●	12	ORA	91	R 0.4	WB	Orange Thorpe	S	2		Operational
●	12	ORA	91	0.45	EB	Magnolia	S	2		Operational
●	12	ORA	91	R 0.6	EB	Orange Thorpe	S	2	NM	Operational
●	12	ORA	91	R 1	EB	Valley View	S	2		Operational
●	12	ORA	91	1.12	WB	Brookhurst	S	2		Operational
●	12	ORA	91	1.37	EB	Brookhurst	S	2		Operational
●	12	ORA	91	R 1.69	WB	Knott 1	S	1		Operational
●	12	ORA	91	R 1.81	EB	Knott 1	L	2		Operational
●	12	ORA	91	R 1.99	EB	Knott 2	L	1		Operational
●	12	ORA	91	R 1.99	WB	Knott 2	L	1		Operational
●	12	ORA	91	2.11	WB	Euclid	S	2		Operational
●	12	ORA	91	2.4	EB	Euclid	S	2		Operational
●	12	ORA	91	R 2.4	WB	Beach 1	S	2		Operational
●	12	ORA	91	R 2.58	EB	Beach 1	L	2	NM	Operational
●	12	ORA	91	R 2.6	WB	Beach 2	L	2		Operational
●	12	ORA	91	R 2.76	EB	Beach 2	S	2		Operational
●	12	ORA	91	3.13	WB	Harbor 1	S	2		Operational
●	12	ORA	91	R 3.87	WB	Magnolia	S	2		Operational
●	12	ORA	91	3.91	EB	Lemon	S	2		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	12	ORA	91	4.18	WB	East	S	2		Operational
●	12	ORA	91	4.35	EB	East	S	2		Operational
●	12	ORA	91	5.14	WB	State College	S	2		Operational
●	12	ORA	91	5.35	EB	State College	S	2		Operational
●	12	ORA	91	7.3	EB	Glassell 1	L	2	NM	Operational
●	12	ORA	91	7.31	WB	Kraemer 1	S	2		Operational
●	12	ORA	91	7.4	WB	Kraemer 2	L	2	NM	Operational
●	12	ORA	91	7.48	EB	Glassell 2	S	2	NM	Operational
●	12	ORA	91	8.36	EB	Tustin	S	2		Operational
●	12	ORA	91	8.36	WB	Tustin	L	2		Operational
●	12	ORA	91	R9.9	WB	Lakeview 1	S	1		Operational
●	12	ORA	91	R 10.08	EB	Lakeview 1	L	2	NM	Operational
●	12	ORA	91	R 10.1	WB	Lakeview 2	S	2		Operational
●	12	ORA	91	R 10.27	EB	Lakeview 2	S	2		Operational
●	12	ORA	91	R 11.3	WB	Imperial 1	S	2		Operational
●	12	ORA	91	R 11.5	EB	Imperial 1	L	2	NM	Operational
●	12	ORA	91	R 11.6	WB	Imperial 2	S	2	NM	Operational
●	12	ORA	91	R 11.7	EB	Imperial 2	S	2		Operational
●	12	ORA	91	R 14.2	WB	Weir Canyon 1	S	2		Operational
●	12	ORA	91	R 14.4	EB	Weir Canyon 1	L	2		Operational
●	12	ORA	91	R 14.5	WB	Weir Canyon 2	L	2		Operational
●	12	ORA	91	R 14.6	EB	Weir Canyon 2	S	2		Operational
●	12	ORA	91	16.244	WB	Gypsum Canyon 1	L	2		Operational
●	12	ORA	91	R 16.434	EB	Gypsum Canyon 1	L	2		Operational
●	12	ORA	91	R 16.632	EB	Gypsum Canyon 2	S	2		Operational
●	12	ORA	133	9	NB	Barranca 1	S	2	NM	Non-Op
●	12	ORA	133	9	SB	Barranca 2	L	2	NM	Non-Op
●	12	ORA	133	9.1	NB	Barranca 2	H	1		Non-Op
●	12	ORA	133	12.05	NB	Irvine Blvd 3	H	2		Non-Op
●	12	ORA	241	17.3	SB	Antonio 1	S	2		Non-Op
	12	ORA	241		NB	NB SR-241 to EB SR-91 Conn. (controlled by others)	C			Planned
●	12	ORA	405	0.54	SB	Irvine Center Dr 1	H	1		Non-Op
●	12	ORA	405	0.7	NB	Irvine Center Dr 1	H	2		Non-Op
●	12	ORA	405	0.73	SB	Irvine Center Dr 2	L	1		Operational
●	12	ORA	405	0.88	NB	Irvine Center Dr 2	H	2		Operational
●	12	ORA	405	2.88	SB	Sand Canyon	L	2		Operational
●	12	ORA	405	2.89	NB	Sand Canyon 1	L	2		Operational
●	12	ORA	405	2.99	NB	Sand Canyon 2	H	2		Operational
●	12	ORA	405	3.84	SB	Jeffrey 1	H	2		Operational
●	12	ORA	405	3.86	NB	Jeffrey 1	L	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
●	12	ORA	405	4.03	NB	Jeffrey 2	H	2		Operational
●	12	ORA	405	4.03	SB	Jeffrey 2	L	1		Operational
●	12	ORA	405	5.5	SB	Culver 1	S	2		Operational
●	12	ORA	405	5.55	NB	Culver 1	H	2		Operational
●	12	ORA	405	5.69	SB	Culver 2	L	1		Operational
●	12	ORA	405	5.74	NB	Culver 2	H	2		Operational
●	12	ORA	405	6.8	SB	Jamboree 1	H	3		Operational
●	12	ORA	405	6.85	NB	Jamboree 1	L	2		Operational
●	12	ORA	405	7.01	SB	Jamboree 2	L	2		Operational
●	12	ORA	405	7.07	NB	Jamboree 2	L	3		Operational
●	12	ORA	405	7.69	SB	Macarthur 1	H	3		Operational
●	12	ORA	405	7.73	NB	Macarthur 1	L	2		Operational
●	12	ORA	405	8.7	NB	Anton	H	2		Operational
●	12	ORA	405	8.798	SB	Paularino 1	S	1		Operational
●	12	ORA	405	9.46	NB	Bristol 1	L	1		Operational
●	12	ORA	405	9.54	SB	Bristol 2	L	2		Operational
●	12	ORA	405	9.65	NB	Bristol 2	H	2		Operational
●	12	ORA	405	10.07	SB	Fairview	S	1		Operational
●	12	ORA	405	10.9	NB	Fairview	S	2		Operational
●	12	ORA	405	11.2	SB	Harbor 1	H	2		Operational
●	12	ORA	405	11.4	NB	Harbor 1	L	2		Operational
●	12	ORA	405	11.5	SB	Harbor 2	L	2		Operational
●	12	ORA	405	11.6	NB	Hyland	S	2		Operational
●	12	ORA	405	12.5	SB	Euclid	H	2		Operational
●	12	ORA	405	12.85	NB	Euclid	S	2	NM	Operational
●	12	ORA	405	13.3	SB	Talbert	S	2		Operational
●	12	ORA	405	13.74	NB	Brookhurst 1	L	1		Operational
●	12	ORA	405	13.81	SB	Brookhurst 2	L	1		Operational
●	12	ORA	405	13.97	NB	Brookhurst 2	H	2	NM	Operational
●	12	ORA	405	14.72	SB	Warner	S	2		Operational
●	12	ORA	405	14.82	NB	Warner	H	2	NM	Operational
●	12	ORA	405	15.16	SB	Magnolia 1	L	1		Operational
●	12	ORA	405	15.17	NB	Magnolia 1	L	1		Operational
●	12	ORA	405	15.39	NB	Magnolia 2	L	2	NM	Operational
●	12	ORA	405	16.26	SB	Edinger	S	2		Operational
●	12	ORA	405	16.52	NB	Beach 1	L	1		Operational
●	12	ORA	405	16.6	SB	Beach 1	H	2		Operational
●	12	ORA	405	16.76	NB	Beach 2	S	2	NM	Operational
●	12	ORA	405	17.66	SB	Bolsa	L	1		Operational
●	12	ORA	405	17.92	NB	Golden West	L	1		Operational
●	12	ORA	405	17.98	SB	Golden West	L	1		Operational

Status	District	County	Route	Postmile	Direction	Location	Ramp Type	# of Lanes	HOV PL	Operational Status
•	12	ORA	405	19.05	SB	Westminster	H	2	NM	Operational
•	12	ORA	405	19.24	NB	Westminster	H	2		Operational
•	12	ORA	405	20.69	SB	Bolsa Chica	L	1		Operational
•	12	ORA	405	22.54	SB	Seal Beach 1	S	2		Operational
•	12	ORA	405	22.55	NB	Seal beach 1	L	2		Operational
•	12	ORA	605	R 1.22	SB	Katella 1	S	1		Operational
•	12	ORA	605	R 1.221	SB	Katella 2	L	1		Operational
•	12	ORA	605	R 1.553	NB	Katella 2	S	2	NM	Operational

## Appendices

### Appendix A. Abbreviations

Abbreviations	Description
ALINEA	Linear ramp metering control (Asservissement linéaire d'entrée autoroutière)
ATMS	Active Traffic Management Systems
C	Freeway-to-freeway Connector or Flyover
Caltrans	California Department of Transportation
CAPTI	Climate Action Plan for Transportation Infrastructure
CATMS	California Advanced Transportation Management System
CAV	Connected and Automated Vehicles
CCTV	Closed-Circuit Television Cameras
CEQA	California Environmental Quality Act
CHP	California Highway Patrol
CRM	Coordinated Ramp Metering
CSIS	Caltrans System Investment Strategy
CSMP	Corridor System Management Plans
D	Collector/Distributor/Angle
DP	Director Policy
DD	Deputy Directive
DPHD	Daily Person Hours of Delay
DRISI	Division of Research, Innovation and System Information
DSMP	District System Management Plans
DSMP-PL	District System Management Plans-Project List
EB	Eastbound
H	Hook
HDM	Highway Design Manual
HOT	High Occupancy Toll
HOV	High Occupancy Vehicle
HOVPL	High Occupancy Vehicle Preferential Lane
I	Interstate
ITS	Intelligent Transportation System
L	Loop
LDR	Local Development Review
M	Metered HOVPL
MGS	Midwest Guardrail System
MLSP	Managed Lanes System Plans
MOU	Memorandum of Understanding

<b>Abbreviations</b>	<b>Description</b>
MPH	Miles Per Hour
MPO	Metropolitan Planning Organization
MPR	Mobility Performance Report
MTC	Metropolitan Transportation Commission
MVP	Maintenance Vehicle Pullout
NB	Northbound
NM	Non-metered HOVPL
Non-OP	Non-Operational
OCRMS	Orange Country Ramp Metering System
Part Const	Partially Constructed
PATH	California Partners for Advanced Transportation Technology
PeMS	Performance Measurement System
PID	Project Initiation Document
REV8	San Diego Ramp Metering System Revision 8
RMDM	Ramp Metering Design Manual
RMDP	Ramp Meter Development Plan
RTPA	Regional Transportation Planning Agency
S	Slip or diagonal
SATMS	Semi-Automatic Traffic Management System
SB	Southbound
SB1	Senate Bill 1
SCCP	Solutions for Congested Corridors Program
SHOPP	State Highway Operation and Protection Program
SHS	State Highway System
SHSMP	State Highway System Management Plan
SR	State Route
SSA	Safe Systems Approach
TCR	Transportation Concept Reports
TMC	Transportation Management Center
TMS	Transportation Management System
TOS	Traffic Operations System
TSMO	Traffic Systems Management and Operations
URMS	Universal Ramp Metering Software
UC	University of California
US	United States
V2X	Vehicle-to-Everything
VHD	Vehicle Hours of Delay
VMT	Vehicles Miles Travelled
WB	Westbound

## **Appendix B. Acknowledgements**

The 2023 Ramp Metering Development Plan was prepared by a joint effort of the Division of Traffic Operations and the Division of Transportation Planning, led by Victor Lin and Tim Hart. Assistance from the 2023 RMDP Statewide Taskforce is recognized and acknowledged.

## Appendix C. County Abbreviations

County	County Abbreviation
Alameda	ALA
Alpine	ALP
Amador	AMA
But	BUT
Calaveras	CAL
Colusa	COL
Contra Costa	CC
Del Norte	DN
El Dorado	ED
Fresno	FRE
Glenn	GLE
Humboldt	HUM
Imperial	IMP
Inyo	INY
Kern	KER
Kings	KIN
Lake	LAK
Lassen	LAS
Los Angeles	LA
Madera	MAD
Marin	MRN
Mariposa	MPA
Mendocino	MEN
Merced	MER
Modoc	MOD
Mono	MNO
Monterey	MON
Napa	NAP
Nevada	NEV

County	County Abbreviation
Orange	ORA
Placer	PLA
Plumas	PLU
Riverside	RIV
Sacramento	SAC
San Benito	SBT
San Bernardino	SBD
San Diego	SD
San Francisco	SF
San Joaquin	SJ
San Luis Obispo	SLO
San Mateo	SM
Santa Barbara	SB
Santa Clara	SCL
Santa Cruz	SCR
Shasta	SHA
Sierra	SIE
Siskiyou	SIS
Solano	SOL
Sonoma	SON
Stanislaus	STA
Sutter	SUT
Tehama	TEH
Trinity	TRI
Tulare	TUL
Tuolumne	TUO
Ventura	VEN
Yolo	YOL
Yuba	YUB

Use the above list for the correct abbreviation of each county. Use upper- and lower-case lettering as shown.

## **Appendix D. Deputy Directive DD-35-R1**

# Deputy Directive

*Number:* DD-35-R1  
*Refer to  
Director's Policy:* 08-Freeway System  
Management  
*Effective Date:* January 6, 2011  
*Supersedes:* DD-35 (1-3-95)

*TITLE* Ramp Metering

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*POLICY*

The California Department of Transportation (Department) is committed to using ramp metering as an effective traffic management strategy to maintain an efficient freeway system, and protect the investment made in constructing freeways by keeping them operating at or near capacity.

Each district that currently operates, or expects to operate, ramp meters within the next ten years, shall prepare a Ramp Metering Development Plan (RMDP). RMDP shall contain a list of each ramp meter location that is currently in operation or planned for operation within the next ten years. Each district shall update its RMDP biennially and ensure that future ramp meter locations are included in the local Congestion Management Plans.

Provisions for ramp metering shall be included in any project that proposes additional capacity, modification of an existing interchange, or construction of a new interchange, within the freeway corridors identified in the RMDP, regardless of funding source. These provisions, at each onramp, may include procurement of additional right of way, changes to ramp geometry to accommodate queue storage, installation of High Occupancy Vehicle (HOV) preferential lanes, deployment of electrical and communication systems, and construction of California Highway Patrol (CHP) enforcement areas and maintenance vehicle pullouts.

The guidelines, policies and procedures, and standards contained in the Ramp Metering Design Manual (RMDM), together with the design criteria in the Highway Design Manual (HDM), shall be applied when planning and designing ramp meters.

HOV preferential lanes shall be provided wherever ramp meters are installed, and each HOV preferential lane should be metered. Each district shall provide justification for deviation from the HOV preferential lane installation policy and obtain concurrence from the Headquarters Traffic Operations District Liaison.

### *DEFINITION/BACKGROUND*

Ramp metering is a traffic management strategy that utilizes a system of traffic signals at freeway entrance, and connector ramps to regulate the volume of traffic entering a freeway corridor in order to maximize the efficiency of the freeway, and thereby minimize the total delay in the transportation corridor.

Ramp metering has been an effective tool in reducing congestion and overall travel time on California freeways and local streets since the late 1960s. The added benefits include the reduction of both congestion-related collisions and air pollution.

The Department has installed over 2,200 ramp meters throughout the State. Installation of ramp meters on all urban freeway entrance ramps, including freeway-to-freeway connectors will be considered as a Departmental best practice, where ramp metering will maintain or improve effective operations along freeway corridors.

RMDM is a comprehensive document containing ramp meter design standards, design procedural requirements, and operational policies adopted statewide. RMDM is used to guide the Department's designers, as well as consulting engineers, and city/county engineers performing design work on freeways.

### *RESPONSIBILITIES*

#### Chief, Division of Traffic Operations:

- Develops, implements, and maintains statewide policies, manuals, and guidelines for ramp metering.
- Provides direction and assistance to district staff on ramp metering activities, as well as resources for training district staff.
- Ensures and supports the inclusion of ramp meters in projects within freeway segments containing any of the locations listed in RMDP.
- Ensures consistency among different districts on the development and implementation of ramp metering projects.
- Provides direction, training and assistance to district Traffic Operations staff on the development of the RMDP in partnership with the Division of Transportation Planning.
- Leads the development of statewide RMDP.
- Maintains a statewide inventory of planned, programmed, and constructed ramp meters.

#### Chief, Division of Transportation Planning:

- Works collaboratively with Chief, Division of Traffic Operations in the development of statewide RMDP.

- Ensures consistency among different districts on the development of their respective RMDP.
- Provides direction, training, and assistance to district Planning staff on the development of the RMDP in partnership with the Division of Traffic Operations.
- Work collaboratively with the Division of Traffic Operations in the development, implementation, and maintenance of statewide policies, manuals, and guidelines for ramp metering.

Chiefs, Divisions of Design and Construction:

- Ensure that Division policies and manuals support the current ramp metering policies. These policies include making provisions for ramp meters in project development, accommodating HOV at onramps, and construction of CHP enforcement areas and maintenance vehicle pullouts at ramp meters.
- Ensure that staff and practices support ramp metering policies.

Chief, Divisions of Maintenance:

- Leads the development of acceptance procedures to hand-off ramp meter systems to the Division of Maintenance.

District Directors:

- Ensure the provision of resources for the entire life cycle of ramp metering activities. These activities include ramp metering planning, design, construction, operations, and maintenance.
- Establish local agency support for ramp metering.
- Assign lead responsibility for development, maintenance, and implementation of RMDP in the District.

Deputy District Directors, Planning:

- In coordination with District Traffic Operations, develop and maintain the district RMDP, program funding and implement ramp metering projects with the affected local and regional transportation stakeholders.
- Submits all future ramp metering locations contained in the RMDP for inclusion in local Congestion Management Plans, Regional Transportation Plans, Department System Planning documents and other applicable planning documents developed by other agencies or the Department.
- Ensures consistency of ramp metering plans with neighboring Districts' ramp metering plans.
- Provides traffic forecasting for development of RMDP in coordination with Traffic Operations.

Deputy District Directors, Construction, Design, and Project Management:

- Ensure that provisions for ramp metering are included in all projects involving interchange modification and freeway improvements at locations identified in RMDP.

- Ensure that each existing ramp meter affected by construction projects remains operational throughout the construction period.

Deputy District Directors, Operations:

- In coordination with District Planning, develop and maintain the district RMDP.
- Develop an inventory of planned, programmed and constructed ramp meters.
- Assist Deputy District Directors, Planning to coordinate with local and regional transportation stakeholders, on the implementation of ramp metering projects and document the efforts made toward coordination and record any concurrence obtained.
- Provide district personnel with technical assistance and support on the design and operation of ramp metering systems.
- Coordinate with CHP regarding enforcement issues at ramp meters.
- Implement ramp metering policies and procedures.
- Provide justification for deviation from established ramp metering policies. Ensure consistency of ramp metering practices with neighboring Districts.

Deputy District Directors, Maintenance:

- Ensure that each ramp meter is operational.
- Ensure regular inspection of each ramp meter.
- Ensure the minimization of traffic delay when repairing existing ramp meters.

District Project Managers:

- Ensure that ramp meters are included in the earliest stage of project development and are not eliminated during the project delivery process.
- Identify necessary project resources for the installation of ramp meters.
- Work closely with district Traffic Operations to ensure that ramp metering requirements are satisfied.
- Ensure the approval of Fact Sheet for exception to ramp metering policies.

District Ramp Metering Staff:

- Support the development and maintenance of the district RMDP.
- Review ramp metering plans and specifications, and coordinate with Design, Construction and Maintenance to design, construct, operate, and maintain ramp meters.
- Work with District Construction to ensure that each existing ramp meter affected by construction projects remains operational throughout the construction period.
- Prepare, review, and implement ramp metering rates that will maintain effective operations along freeway corridors.

District Design Engineers and Office Engineers:


- In coordination with district Traffic Operations, identify and incorporate the need for ramp meters and HOV preferential lanes in the Project Study Report, Project Report, and Environmental Documents.
- Provide Standard Special Provisions and Contract Plans for ramp metering elements, including system integration needs such as communications, and compatibility of software.
- Provide Fact Sheet for exception to ramp metering policies.

District Construction Engineers (Electrical and Civil), Resident Engineers, and Encroachment Permit Inspectors:

- Ensure that ramp metering elements are installed according to the Standard Special Provisions, Standard Specifications, and Contract Plans.
- Ensure that each ramp meter affected by construction projects remains operational throughout the construction period unless otherwise specified in the contract documents.
- Immediately notify district Traffic Operations personnel of any change in status of each ramp meter affected by construction projects.
- Ensure that each ramp meter affected is fully reviewed, tested, and operational prior to accepting a contract and closing the project ID number.

*APPLICABILITY*

All Department employees involved with ramp metering activities.

  
MALCOLM DOUGHERTY  
Chief Deputy Director, Interim

  
Date Signed

**Appendix E. Director's Policy DP-37**

# Director's Policy

Number: DP-37

Effective Date: December 7, 2021

Supersedes: DD-64-R2 (10/16/2014)

Responsible

Programs: Finance  
Maintenance & Operations  
Planning and Modal Programs  
Project Delivery  
Safety Programs  
Sustainability

**Title** Complete Streets

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## **Policy**

The California Department of Transportation (Caltrans) recognizes that walking, biking, transit, and passenger rail are integral to our vision of delivering a brighter future for all through a world-class transportation network. Additionally, Caltrans recognizes that streets are not only used for transportation but are also valuable community spaces.

Accordingly, in locations with current and/or future pedestrian, bicycle, or transit needs, **all transportation projects funded or overseen by Caltrans will provide comfortable, convenient, and connected complete streets facilities for people walking, biking, and taking transit or passenger rail unless an exception is documented and approved.**

When decisions are made not to include complete streets elements in capital and maintenance projects, the justification will be documented with final approval by the responsible District Director.

Opportunities for complete streets exist in all phases of project development from planning and design to construction, operations, and maintenance. Complete streets projects should prioritize underserved communities that have been historically harmed and segmented by the transportation network and should serve people of all ages and abilities. Furthermore, Caltrans commits to removing unnecessary policy and procedural barriers and partnering with communities and agencies to ensure projects on local and state transportation systems improve the connectivity to existing and planned pedestrian, bicycle, and transit facilities, and accessibility to existing and planned destinations, where possible.

### ***Intended Results***

This policy establishes Caltrans' organizational priority to encourage and maximize walking, biking, transit, and passenger rail as a strategy to not only meet state climate, health, equity, and environmental goals but also to foster socially and economically vibrant, thriving, and resilient communities. To achieve this vision, Caltrans will maximize the use of design flexibility to provide context-sensitive solutions and networks for travelers of all ages and abilities.

### ***Definitions***

#### *Complete Street*

A complete street is a transportation facility that is planned, designed, constructed, operated, and maintained to provide comfortable and convenient mobility, and improve accessibility and connectivity to essential community destinations for all users, regardless of whether they are travelling as pedestrians, bicyclists, public transportation riders, or drivers. Complete streets are especially attuned to the needs of people walking, using assistive mobility devices, rolling, biking, and riding transit. Complete streets also maximize the use of the existing right-of-way by prioritizing space-efficient forms of mobility, such as walking and biking, while also facilitating goods movement in a manner with the least environmental and social impacts. Complete streets shift the focus of transportation planning and project development from vehicle movement as the primary goal to the movement of people and goods.

#### *All Ages and Abilities*

The "all ages and abilities" concept strives to serve all users—regardless of age, gender, race, or ability and inclusive of the mobility needs of children, older adults, and people with disabilities—by embodying national and international best practices related to traffic calming, speed reduction, universal design, and roadway design to increase user safety and comfort, as well as accessibility for people with disabilities. This approach also includes the use of traffic calming elements or facilities separated from motor vehicle traffic, both of which can offer a greater feeling of security and appeal to a wider spectrum of the public.

#### *Design Flexibility*

Caltrans policy supports designers in their application of guidance to achieve our goals of developing complete facilities to serve all members of the community.

Design flexibility refers to the ability to develop a design suited to its users and context, and to employ professional judgment and experience to interpret, apply, and adapt appropriate design standards and guidance. Flexibility in design is essential to achieving Caltrans' goals of putting safety first, enhancing and connecting the multimodal network, leading on climate action, and advancing equity and livability in all communities. Design flexibility includes consideration of diverse user needs, assessment of risk, review of applicable guidance, and documentation of design decisions.

#### *Underserved Community*

Underserved communities include low-income, frontline environmental justice, and vulnerable communities, including but not limited to Black and Indigenous peoples, communities of color, people experiencing homelessness, people with disabilities, older adults, and youth. Refer to guidance from the Caltrans Office of Race and Equity for the most current definition.

#### *Accessibility (Access to Destinations)*

Accessibility is the ease by which travelers can reach – or access – desired destinations such as work, shopping and other retail, school, health care, and recreation. Accessibility reflects the number and proximity of destinations, as well as the directness and condition of walking, biking, and transit facilities. This is distinct from accessibility in the context of the Americans with Disabilities Act (ADA); refer to Deputy Directive 42 for more information on ADA and State Disability Laws.

#### *Connectivity*

A connected multimodal network allows people to travel by whichever mode they choose and provides convenient, accessible connections between different modes.

#### *State Transportation Network (STN)*

Refers to the State Highway System (SHS) and all other multimodal facilities, including parallel and intersecting paths, frontage roads, and other facilities not directly on the SHS mainline.

### **Responsibilities**

All employees in the following functional groups have specific responsibilities related to implementation of this policy in their program areas:

#### **Director's Office – Headquarters Sustainability**

- Lead, coordinate, and facilitate development of implementation plan for this policy in coordination with appropriate functional groups.
- Facilitate alignment of policy, guidance, and training to meet state's climate, health, equity, walking, biking, transit, and passenger rail goals.
- Facilitate coordination, information sharing, and collaboration among Divisions and Districts on topics related to complete streets.
- Track, monitor, report, and communicate Caltrans' progress toward meeting its policy and strategic goals related to walking, biking, transit, and passenger rail.
- Establish and facilitate internal/external advisory committees to provide technical input, strategic direction, and implementation guidance to Caltrans policies related to complete streets.

### **Planning and Modal Programs**

#### *Headquarters*

- Develop, maintain, and update state plans, training, and resources to assist in the identification and prioritization of pedestrian, bicycle, transit, and passenger rail needs and recommended improvements on or across the SHS.
- Develop guidance for integrating pedestrian, bicycle, transit, and passenger rail needs from the corridor planning process into future complete streets projects.
- Identify best practices for increased and meaningful engagement with partners, stakeholders, and communities during the development of plans and projects that facilitate the inclusion of complete streets elements as appropriate.
- Work with local and regional transit and rail partners to identify and implement first mile/last mile solutions, both on and off the STN.
- Provide technical support and guidance to internal and external stakeholders on enhancing rail and transit reliability and operations related to complete streets within and adjacent to the STN.
- Promote Caltrans policies related to complete streets in rail and transit planning documents and grant program guidelines.

#### *Districts*

- Develop, maintain, and update plans, tools, and other planning documents to identify and prioritize pedestrian, bicycle, and transit needs and recommended improvements on or across the SHS.
- Verify that proposed projects are in alignment with local, regional, and state planning documents detailing pedestrian, bicycle, transit, and passenger rail needs on or across the SHS.
- Integrate pedestrian, bicycle, transit, and passenger rail improvements from the corridor planning process into projects.
- Include complete streets elements in projects during the pre-Project Initiation Document (pre-PID) and PID phases.
- Participate in Project Development Teams (PDTs) to assist in delivering complete streets elements identified in PID phase.
- Develop and implement strategy for meaningful engagement with partners, stakeholders, and communities during the development of plans and projects that facilitate the inclusion of complete streets elements as appropriate.
- Identify and pursue partnerships and funding opportunities with local, regional, and state agencies.
- Work with local and regional transit and rail partners to identify and implement first mile/last mile solutions, both on and off the STN.
- Promote pedestrian, bicycle, and transit improvements and land uses supportive of these modes in local projects through the Local Development-Intergovernmental Review process.

### **Project Delivery**

#### *Headquarters*

- Develop, maintain, and update policy, procedures, guidance, and standards pertaining to the design and construction of complete streets facilities in alignment with Caltrans and state walking, biking, transit, and passenger rail goals, including but not limited to temporary access during construction.
- Provide training and guidance to promote the use of “world-class” design best practices related to complete streets throughout Caltrans, including the adoption of design flexibility guidance, contextual guidance, and others.
- Cultivate subject-matter expertise for design excellence of complete streets facilities in projects on or across the STN.
- Designate a complete streets asset manager to track and monitor progress of complete streets statewide as an asset in the State Highway System Management Plan (SHSMP) and develop funding and performance targets for complete streets in the State Highway Operation and Protection Program (SHOPP).
- Establish and oversee processes for documenting decisions related to complete streets elements.

#### *Districts*

- Implement project delivery strategies and best practices to further enhance the delivery of complete streets, including coordination of community engagement efforts.
- Implement "world-class" design best practices related to complete streets.
- Cultivate subject-matter expertise for design excellence of complete streets facilities in projects on or across the STN.
- Promote and exercise design flexibility throughout project development process.
- Document decisions related to complete streets elements.
- Implement and oversee use of standard plans and specifications, as well as best practices, for temporary pedestrian, bicycle, and transit access routes during construction.

### **Maintenance**

#### *Headquarters*

- Develop, maintain, and update policy, procedures, guidance, manuals, training and standards pertaining to the maintenance of complete streets facilities.
- Work with Districts to determine equipment needs for maintenance of current and future complete streets facilities, including application-specific equipment such as sweepers for sidewalks and bikeways where standard maintenance equipment cannot be used.
- Coordinate with Division of Equipment to procure complete streets maintenance equipment.
- Develop and provide training to Maintenance staff on maintenance best practices for complete street facilities.
- Facilitate collection and maintenance of active transportation facility inventory and condition data to inform maintenance decisions.
- Develop, maintain, and update maintenance agreement templates for complete streets facilities.

#### *Districts*

- Maintain complete streets facilities on the SHS in accordance with maintenance policy, procedures, guidance, manuals, and standards.
- Develop, execute, and update, as needed, maintenance agreements with local agencies for complete street facilities that are mutually beneficial to both entities and protect the investments made in new infrastructure.
- Collaborate with Headquarters Divisions of Maintenance and Equipment to purchase or lease equipment necessary to maintain current and future complete streets facilities, including application-specific equipment such as sweepers for sidewalks and bikeways where standard maintenance equipment cannot be utilized.
- Maintain and use active transportation facility inventory and condition data to inform maintenance decisions.

- Collaborate with Planning, Safety, and Complete Streets Coordinators to identify opportunities for complete streets improvements in Highway Maintenance projects.

### **Traffic Operations**

#### *Headquarters*

- Develop, maintain, and update policy, procedures, guidance, and standards pertaining to the operations of facilities to improve access to destinations by walking, biking, transit, and passenger rail, including but not limited to temporary access during construction.
- Develop policy and framework for collecting and maintaining current pedestrian and bicycle count data.
- Develop, maintain, and update training, guidance, and procedures to improve encroachment permit application process for local agency-sponsored complete streets projects that are on or cross the SHS.
- Identify and develop proposals to address policy and procedural barriers to implementing locally-sponsored complete streets projects on and across the SHS.

#### *Districts*

- Collect and maintain current pedestrian and bicycle count data.
- Identify opportunities to leverage traffic control devices, where needed, to better facilitate the throughput of people walking, biking, and taking transit.
- Implement standard plans and specifications for temporary pedestrian, bicycle, and transit access routes during construction.
- Support the delivery of complete streets improvements in capital projects.
- Identify strategies to streamline the approval process for complete streets projects seeking encroachment permits.

### **Safety Programs**

#### *Headquarters*

- Develop, maintain, and update policy, procedures, guidance, plans, documents, and technical assistance to proactively or responsively identify pedestrian and bicycle safety needs on the SHS.
- Develop and administer programs to investigate locations and provide recommendations for improvements at locations with pedestrian and bicycle safety needs.
- Identify opportunities to leverage traffic control devices, where needed, to better facilitate the throughput of people walking, biking, and taking transit.

#### *Districts*

- Develop and implement innovative, context-sensitive solutions to address the safety of vulnerable roadway users.

- Investigate and implement countermeasures at locations with pedestrian and/or bicycle safety concerns/needs.
- Engage with internal functions and seek input from external stakeholders on pedestrian and bicycle safety needs during investigations.

### **Equipment**

- Procure and provide training on equipment needed to maintain current and future complete streets facilities.
- Track and share with districts the national state of the practice for equipment used to maintain pedestrian, bicycle, and transit features.

### **Asset Management**

#### *Headquarters*

- Track, monitor, and report on progress of complete streets as an asset in the SHSMP.
- Finalize funding and SHSMP performance targets for complete streets in the SHOPP.
- Support Districts in tracking and reporting on complete streets assets.

#### *Districts*

- Compile identified complete streets needs into SHOPP projects to support Districts in meeting performance targets.
- Regularly update Asset Management Tool with complete streets assets identified in all projects.
- Track and monitor progress of complete streets as an asset in the SHSMP and report progress to Headquarters Asset Management and Complete Streets Program Manager.

### **Local Assistance**

#### *Headquarters*

- Provide support and technical assistance to local and regional agencies and Caltrans Districts applying for state or federal active transportation funding.
- Provide tools, training, and resources to support the successful delivery of local and regional active transportation projects on time, in scope, and within budget.

#### *Districts*

- Provide support and technical assistance to local and regional agencies and Caltrans Districts applying for state or federal active transportation funding.
- Provide tools, training, and resources to support the successful delivery of local and regional active transportation projects on time, in scope, and within budget.

**Legal**

- Provide counsel and support on legal issues pertaining to complete streets policies, procedures, and projects.

**District-Designated Complete Streets Coordinator(s)**

- District Directors will designate complete streets coordinator(s).
- Work with PDTs to maximize opportunities for inclusion of complete streets in all project phases by actively participating in the pre-scoping, project initiation, and project development phases.
- Support the asset manager in tracking and monitoring complete streets assets.
- Assist with identifying project-specific complete streets needs throughout project planning, development, and delivery.
- Review and provide concurrence to decision documents related to complete streets.
- Work with other functions to provide technical assistance to local agency sponsored projects that are on or cross the SHS to incorporate complete streets elements.
- Collaborate with local and regional partners, advocacy and community groups, and District engineers to identify pedestrian, bicycle, and transit gaps to incorporate into planning documents and projects.
- Provide recommendations for partnerships and funding opportunities with local, regional, and state agencies.

**Applicability**

This policy applies to all Caltrans employees.



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Toks Omishakin  
Director

12/07/2021

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Date Signed