

SAN JOAQUIN COUNTY

# REGIONAL CONGESTION MANAGEMENT PROGRAM

July 2021



*Prepared for:*  
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Governments

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## Background and Legislative Framework

### 0.1 PROGRAM HISTORY

Between 1991 and 2021, the San Joaquin County Association of Governments (SJCOG) implemented a Congestion Management Program that followed the State legislative requirements (California Government Code 65088-65089.10). In 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), required metropolitan areas with population exceeding 200,000, such as San Joaquin County, to implement a Federal Congestion Management Process (23 U.S.C. 134 and 49 U.S.C. 5303). Passage of the Metropolitan Transportation Planning Final Rule including the implementation of a Federal Congestion Management Process occurred in 2007 (23 CFR 450.320). Concurrent with these Federal legislative changes, the Measure K Renewal Ordinance, approved by San Joaquin County voters in November 2006, required SJCOG to fully implement a regional congestion management program by January 1, 2008 - referred hereafter as the Regional Congestion Management Program (RCMP).

By 2012, SJCOG had tailored its' State compliant RCMP to meet the Federal Congestion Management Process (CMP) legislative requirements (pursuant to 23 CFR 450.320 (f)). The 2012 RCMP established methods and guidelines to meet the federal requirements and to better integrate the RCMP process with SJCOG's other regional transportation planning and programming functions. As part of the 2013 Federal Metropolitan Planning Organization certification review process, the Federal Highway Administration (FHWA) found SJCOG's 2012 RCMP compliant with Federal regulations (see **Appendix A**). Subsequent RCMP updates in 2016 and 2018 expanded the RCMP performance measures, RCMP monitoring, and aligned the RCMP with SJCOG's Regional Transportation Impact Fee (RTIF) program.

To reduce State and Federal legislative redundancy and improve program efficiency, SJCOG and its member agencies moved to "opt out" of the State Congestion Management Program requirements in 2019/20. California Government Code 65088.3 provides State designated Congestion Management Agencies the option to opt-out of the State requirements governing congestion management if a majority of jurisdictions that account for the majority of the population of a given County pass resolutions in support of opting out. In December 2019, SJCOG's Board of Directors passed Resolution R-20-16 authorizing the SJCOG Executive Director to start the process of opting out of State Congestion Management Program requirements.

There are eight jurisdictions in San Joaquin County including Cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy and San Joaquin County. As of August 2020, all jurisdictions except San Joaquin County had passed resolutions to opt-out of the State requirements – effectively meeting the opt-out requirement (see **Appendix B** for a listing of approved "opt-out" resolutions). As such, this update specifically describes SJCOG's Regional Congestion Management Program pursuant to the Federal Congestion Management Process.

### 0.2 FEDERAL CMP LEGISLATIVE BACKGROUND

The Federal transportation legislation, America's Transportation Infrastructure Act, continues the congestion management process established by SAFETEA-LU<sup>1</sup>. A federal Congestion Management Process (CMP) is required in metropolitan areas with population exceeding 200,000, known as Transportation Management Areas (TMAs) (23 CFR Section 450.320 (a)). Federal requirements also state that in all TMAs, the CMP shall be developed and

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<sup>1</sup> Prior to the America's Transportation Infrastructure Act, the Fixing America's Surface Transportation (FAST) Act and the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21) continued the congestion management process established by SAFETEA-LU.

implemented as an integrated part of the metropolitan transportation planning process (23 CFR Section 450.320 (b)). Given that SJCOG is a designated TMA within a federal air quality non-attainment area; the federal requirements for implementing the federal CMP apply in San Joaquin County.

A key focus of the Federal CMP aims to reduce single-occupant-vehicle (SOV) travel while minimizing the need for increasing SOV roadway capacity. It also provides additional resources for the development and deployment of new congestion management technologies. For areas designated as non-attainment of Federal air quality standards such as San Joaquin County, the Federal Congestion Management Process stipulates (23 CFR 450.320 (d)) that Federal funds may not be programmed for any project that results in a significant increase in the carrying capacity of single occupancy vehicles (i.e., new general purpose lanes with the exception of safety improvements or the elimination of bottlenecks) unless the project is addressed through a federally compliant congestion management process. For SOV capacity increasing projects proposed to be advanced with Federal funds, an analysis is required to demonstrate that all reasonable travel demand reduction and operational management strategies have been implemented to the fullest extent possible on the subject roadway (23 CFR 450.320 (e)). If the analysis demonstrates that despite these strategies additional SOV capacity is still required, the Federal CMP will identify all reasonable strategies to effectively manage the SOV facility in the future.

*The Congestion Management Process Guidebook (Federal Highway Administration, 2013)* states the following regarding single occupant vehicle (SOV) capacity increasing projects and requirements to incorporate demand and system management strategies if such a project is ultimately warranted:

*“In TMAs that are designated as non-attainment or maintenance areas for ozone or carbon monoxide federal regulations require certification that any project resulting in a significant increase in single occupant vehicle carrying capacity (with the exception of safety improvements and bottleneck elimination projects) be identified or addressed through the CMP. In these areas, the CMP must provide an appropriate analysis of reasonable travel demand reduction and operational management strategies.*

*Additionally, the identified need for additional SOV capacity does not obviate the need for operational and demand management improvements to address congestion. In TMAs that are designated as non-attainment or maintenance areas for ozone or carbon monoxide, federal regulations require that in cases where additional SOV capacity is warranted, the CMP must identify all reasonable strategies to manage the SOV facility safely and effectively and identify travel demand reduction and operational management strategies appropriate for the corridor.”*

The federal CMP is intended to serve as a systematic process that provides for safe and effective integrated management and operation of the multimodal transportation system.

Federal requirements stipulate that Metropolitan Planning Organization (MPO) Regional Transportation Plans (RTPs) and CMPs must be revisited periodically and updated to ensure consistency. It is important for MPOs (such as SJCOG) to have a procedure in place to ensure that all FTIP projects comply with the Federal CMP. It is also recommended for MPOs to define “safety” and “bottleneck” projects in advance so there is less confusion about which projects may be exempt from the requirement for SOV analysis. Identification and quantification of enhanced opportunities for more aggressive employer-based travel demand management implementation or application of system management strategies within a given corridor is required by the federal CMP. Hence, as part of future updates, SJCOG’s RCMP may entail development of additional objectives and performance measures beyond those described herein.

In addition to the Federal mandates for implementing a federal CMP, elements of the following State planning mandates have been integrated into the RCMP:

- Assembly Bill 1358 (California Government Code 65040.2, 65302) for addressing multimodal “complete streets” concepts in city/county general plan circulation elements.
- Senate Bill 375 – The Sustainable Communities and Climate Protection Act of 2008 requires Metropolitan Planning Organizations to develop “Sustainable Communities Strategies” (SCSs) to achieve quantifiable targets for reducing greenhouse gas emissions through more efficient land use development and better coordination between land use and transportation. SB 375 streamlines the environmental review process for certain new development projects located near transit stations.
- Senate Bill 743 - Removes Level of Service (LOS) standards for identifying California Environmental Quality Act (CEQA) impacts for land use developments and most transportation projects and replaces it with vehicle miles traveled (VMT).

Consistent with the implementation of SB 743 CEQA streamlining legislation, the RCMP discontinues the use of LOS for the evaluation of RCMP congestion deficiencies.

### 0.3 SJCOG RCMP AND FEDERAL CONGESTION MANAGEMENT PROCESS

In recognition that metropolitan areas face unique travel congestion conditions and have different visions on how to address traffic congestion, Federal guidelines allow MPOs flexibility to design their own structured processes for addressing the Federal congestion management requirements (Congestion Management Process: A Guidebook, 2011). The Federal statutes/requirements are provided in **Appendix C**.

As defined in the *Congestion Management Process Guidebook (Federal Highway Administration, 2013)*, the congestion management process is comprised of the following eight steps. These steps flow directly from the Federal legislative requirements (23 CFR 450.323 (a) and 450.323 (b)).

1. Develop Regional Objectives
2. Define CMP Network
3. Develop Multimodal Performance Measures
4. Collect Data/Monitor System Performance
5. Analyze Congestion Problems and Needs
6. Identify and Assess Strategies
7. Program and Implement Strategies
8. Evaluate Strategy Effectiveness

The SJCOG RCMP process is illustrated in **Figure E-1**. These elements are described in the following eight chapters described below.

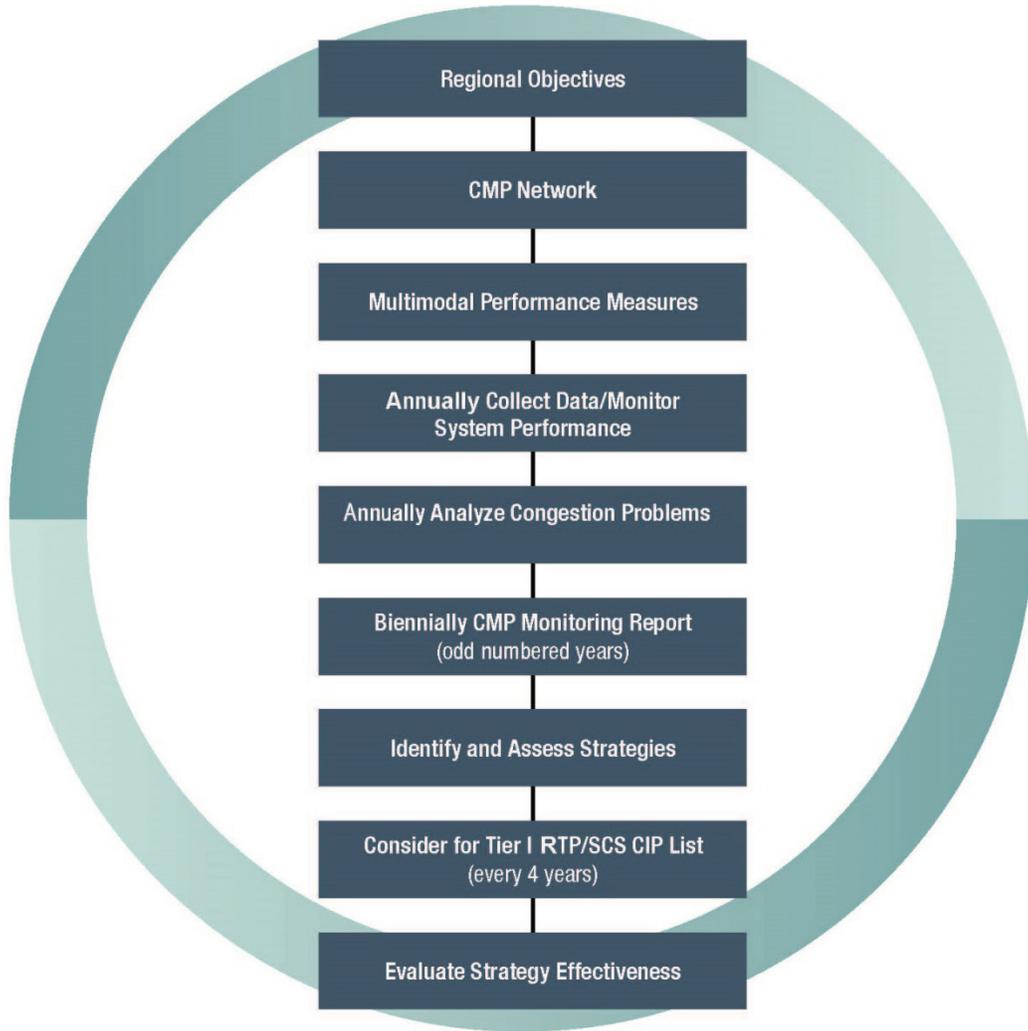
- **RCMP Objectives** (Chapter 1). Describes the role of SJCOG’s RCMP Steering Committee and describes the RCMP objectives (23 CFR 450.323 (c)(2)).
- **Define RCMP Network** (Chapter 2). SJCOG has designated a RCMP network of regional roadways as the basis for complying with the Federal CMP requirements. The RCMP network defines the geographic boundaries/network and area of application (23 CFR 450.323 (c)(3)). This not only clearly defines where the federal regulations apply, but better ensures that their application is appropriately focused only on

transportation facilities of regional significance. A Regional Bikeway Network and Multimodal Corridor Network are also defined to allow more refined multimodal operational assessments.

- **RCMP Performance Measures** (Chapter 3). Defines selected performance measures to track multimodal performance on the RCMP network. Performance measures provide the metric to gauge system performance and track progress achieving the congestion management objectives. As program implementation continues, refinement of these measures and/or additional performance measures can be established as part of future RCMP updates. In addition to meeting the requirement for a “performance measurement element” in the RCMP, these measures create a framework for measuring the effectiveness of congestion relief projects and strategies including the effectiveness of non-capacity increasing alternatives to single occupant vehicle capacity (23 CFR 450.323 (b) and 450.323 (c)(2)).
- **RCMP Monitoring Program** (Chapter 4). Describes the comprehensive data monitoring program that will systematically provide requisite information to monitor regional congestion within San Joaquin County. Data and methodologies to quantify RCMP performance measures under multiple analysis scales (i.e., countywide, corridor, segment, intersection) are described. The RCMP Monitoring Program is administered by SJCOG. All traffic information collected as part of the SJCOG RCMP data monitoring program is made available to member and partner agencies upon request (23 CFR 450.323 (c)(3)).
- **Analyze Congestion Problems and Needs** (Chapter 5). Describes the application of the congestion and reliability metrics to map and identify RCMP deficient corridors (23 CFR 450.323 (c)(4)).
- **Identify and Assess Strategies** (Chapter 6). Describes the identification and prioritization of congestion reduction strategies for addressing RCMP deficient corridors. This establishes the framework for funding and implementation of projects that maintain or improve the transportation performance thresholds of the RCMP (23 CFR 450.323 (c)(4)). It also establishes the process for determining when new single occupancy vehicle capacity is warranted.
- **Program Implementation** (Chapter 7). Describes the initial set of currently planned improvements that address the RCMP deficient corridors and how the RCMP integrates with SJCOG’s other planning and programming processes. It also describes the FHWA MPO Certification Process and review of RCMP consistency with federal requirements (23 CFR 450.323 (c)(5)).
- **Evaluate Strategy Effectiveness** (Chapter 8). Describes how the program effectively meets federal requirements and how program effectiveness is to be tracked over time (23 CFR 450.323 (c)(6)).

Figure E-1: SJCOG RCMP Process

**ELEMENTS OF SJCOG's CONGESTION MANAGEMENT PROCESS**



## Chapter 1 RCMP Objectives

### 1.1 RCMP STEERING COMMITTEE

*The Congestion Management Process Guidebook (Federal Highway Administration, 2013)* recommends when developing a Federal CMP, the MPO should establish a broad working team or steering committee that is comprised of the MPO's member agencies, State Department of Transportation and public transportation providers.

Consistent with past updates of the RCMP, SJCOG created a RCMP Steering Committee composed of representatives from its' member agencies. In addition, Caltrans and the Federal Highway Administration (FHWA) were also solicited to participate in the RCMP Steering Committee. RCMP Steering Committee members are transportation professionals with expertise and local knowledge of their respective jurisdictions' transportation systems and congestion-related challenges. SJCOG met with the RCMP Steering Committee at key junctures during development of the RCMP to provide direction and review interim materials. The RCMP Steering Committee played an integral part in the development of SJCOG's RCMP network definition and performance metrics used to identify deficient corridors and inform SJCOG's performance-based planning/programming process. The RCMP Steering Committee will continue to periodically convene to provide input during future RCMP updates and RCMP monitoring reporting.

### 1.2 RCMP OBJECTIVES

To align the RCMP with the SJCOG's Regional Transportation Plan (RTP), RCMP objectives were developed to support RTP Policies. The RCMP objectives include:

- Improve **Operational Efficiency**
- Facilitate **Goods Movement**
- Increase use and mode shift to the **Transit System**
- Increase use and mode shift to the **Bike System**
- Support investment in and development of **Complete Streets**
- Improve **Safety**
- Support proactive **System Management**
- Support proactive **Travel Demand Management**

Pursuant to the National Performance Management Measures Final Rule (23 CFR Part 490), recipients of Federal-aid highway funds, such as SJCOG, must also track progress toward the following national goals:

- **Congestion Reduction:** to achieve a significant reduction in congestion on the National Highway System.
- **System Reliability:** to improve the efficiency on the National Highway System.
- **Freight Movement and Economic Vitality:** to improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental Sustainability:** to enhance the performance of the transportation system while protecting and enhancing the natural environment.

### 1.3 RCMP OBJECTIVES AND PERFORMANCE MEASUREMENT

Given that no single performance measure can adequately address all objectives related to system performance, the RCMP monitors multiple performance measures to gauge progress towards meeting RCMP objectives. The following guidance was used to determine the most effective choices for performance measurement selection:

- **Applicability** – The performance measures are consistent with Federal requirements.
- **Ease of Use** – The required data should be readily available as part of an established monitoring process and easily applied at a countywide, sub-regional, or corridor-based scale.
- **Sensitivity** – The performance measures must be sensitive to changes in the RCMP system.
- **Comprehensible** – The performance measures must be easy to understand.

The RCMP performance measures are used to:

1. Track progress toward meeting RCMP objectives;
2. Track progress towards meeting Federal goals described in the National Performance Management Measures Final Rule (23 CFR Part 490);
3. Track congestion reduction strategies and projects on RCMP deficient corridors;
4. Update SJCOG's Regional Transportation Plan (RTP) and aid SJCOG in project prioritization;
5. Identify State and Federal Transportation Improvement Program (STIP/FTIP) projects; and,
6. Inform Regional Transportation Improvement Fee (RTIF) funding decisions.

*Figure 1-1* maps the RCMP performance measure objectives with the RTP Goals.

Figure 1-1: Mapping RCMP Objectives and Performance Measures with RTP Goals and Objectives

RCMP Performance Measure Descriptions	RCMP Objective	RCMP Objective	RCMP Objective	RCMP Objectives Support of RTP Goals		RCMP Objective	RCMP Objective	RCMP Objective
	Operational Efficiency	Goods Movement	Transit System	Bike System	Complete Streets	Safety	System Management	Travel Demand Management
	Objective is to prioritize operational and demand management strategies over adding roadway capacity to address congestion. RCMP monitors and measures the operational efficiency (congestion and reliability) of the regional transportation system.	Objective is to promote economic development in San Joaquin County by reinforcing compliance with STAA design criteria on the RCMP network. RCMP monitors and measures STAA-compliant inventory of intersections and supports STAA retrofit improvements to accommodate STAA rated truck movements.	Objective is to provide equitable access to public transit services and promote transit to accommodate future demand. RCMP monitors and measures the transit system's ability to serve a percentage of the overall population.	Objective is to promote mode shift to active transportation through the development of a Regional Bikeway Network. RCMP establishes a RCMP Bikeway Network and monitors the ratio of completed to total regional bikeway miles.	Objective is to develop and implement a systemic methodology to strengthen the prioritization process for multimodal (pedestrian/bike/transit) projects during discretionary funding cycles. RCMP monitors Multimodal Quality of Service for existing conditions on designated RCMP multimodal corridors.	Objective is to systemically improve the safe movement of people and goods to reduce fatal and serious injury collisions by reinforcing the prioritization process for safety related projects during competitive grant and discretionary funding cycles. RCMP monitors the Federal PM1 Safety metrics for existing conditions on designated RCMP roadways and countywide.	Objective is to maintain the RCMP network infrastructure pavement in good or fair condition by prioritizing rehabilitation and maintenance projects through State and Local (Measure K) formula funding. RCMP monitors the Federal PM2 Pavement Condition metrics for existing conditions on designated RCMP roadways.	Objective is to improve operations on the regional transportation network through implementation of employer-based TDM strategies. RCMP measures and monitors TDM benefits (trip and VMT reductions) through the number of employers/employees who participate in the eTRIP and Dibs programs.
<b>Correlation of RCMP PM Support to RTP Goals/Objectives</b>								
<b>RTP Goal A</b>								
Enhance the Environment for Existing and Future Generations and Conserve Energy	← Supports Goal		← Supports Goal	← Supports Goal	← Supports Goal			← Supports Goal
<b>RTP Goal B</b>								
Maximize Mobility & Accessibility	← Supports Goal	← Supports Goal	← Supports Goal	← Supports Goal	← Supports Goal		← Supports Goal	← Supports Goal
<b>RTP Goal C</b>								
Increase Safety & Security	← Supports Goal	← Supports Goal			← Supports Goal	← Supports Goal	← Supports Goal	
<b>RTP Goal D</b>								
Preserve the Efficiency of the Existing Transportation System	← Supports Goal						← Supports Goal	← Supports Goal
<b>RTP Goal E</b>								
Support Economic Viability	← Supports Goal	← Supports Goal					← Supports Goal	
<b>RTP Goal F</b>								
Promote Interagency Coordination & Public Participation for Transportation Decision-Makers & Planning Efforts	← Supports Goal	← Supports Goal	← Supports Goal	← Supports Goal	← Supports Goal	← Supports Goal	← Supports Goal	← Supports Goal
<b>RTP Goal G</b>								
Maximize Cost Effectiveness	← Supports Goal						← Supports Goal	← Supports Goal
<b>RTP Goal H</b>								
Improve the Quality of Life for Residents	← Supports Goal		← Supports Goal	← Supports Goal	← Supports Goal	← Supports Goal	← Supports Goal	← Supports Goal

## Chapter 2 RCMP Network Definition

### 2.1 INTRODUCTION

The purpose of the Regional Congestion Management Program (RCMP) is to monitor congestion, identify congestion problems, and establish a programming mechanism aimed at reducing congestion. Designation of a regional transportation system supports RCMP monitoring activities and focuses the implementation of the RCMP on a core network of key transportation facilities that facilitate regional travel within San Joaquin County.

### 2.2 RCMP ROADWAY NETWORK

The RCMP network at a minimum reflects all roadways designated as part of the National Highway System (NHS). If the Federal Highway Administration (FHWA) updates the NHS network, SJCOG will amend the RCMP network to reflect such changes. In addition to the NHS designated roadways, SJCOG in coordination with the RCMP Steering Committee selected several non-NHS roadways for inclusion in the RCMP network. The RCMP roadway network is shown in *Figure 2-1*.

As shown in *Table 2-1*, the RCMP network consists of a total 504 centerline miles of which 396 miles are on NHS designated roadways and 108 on non-NHS roadways. RCMP facilities are summarized in tabular form in **Appendix D**.

**Table 2-1: RCMP Network by Centerline Miles**

Jurisdiction	RCMP NHS Centerline Miles	RCMP Non-NHS Centerline Miles	Total RCMP Network Centerline Miles
Escalon	0	0	0
Lathrop	11	1	12
Lodi	7	0	7
Manteca	24	8	32
Ripon	0	0	0
Stockton	75	3	78
Tracy	31	5	36
County	28	55	83
State Highway	220	36	256
<b>TOTAL</b>	<b>396</b>	<b>108</b>	<b>504</b>

SJCOG and its member agencies can consider modifying the RCMP network during normal RCMP update cycles. The following guidelines should be considered when adding non-NHS roadways to amend the RCMP network:

- Roadway is included on the Regional Transportation Impact Fee (RTIF) network;
- Roadway functions as a principal arterial, as described by the FHWA’s Functional Classification Guidelines;
- Roadway is reclassified as a major arterial in a jurisdiction’s general plan; or
- An existing RCMP roadway is significantly extended or realigned.

Given that the RCMP is a monitoring program, planned/future roadways that meet one or more of the criteria above should not be amended into the RCMP until constructed and open to traffic. As noted above, all newly designated NHS roadways will be amended into the RCMP network.

## 2.3 RCMP BICYCLE NETWORK

The provision of bicycling facilities is an important component of the SJCOG's program to encourage multimodal transportation. SJCOG has developed the Bicycle, Pedestrian, and Safe Routes to School Plan. A key deliverable of this plan is the formal designation of a regional bikeway network. This regional bikeway network includes existing and future Class I Multi-use trails, Class II Bike Lanes, Class III Bike Route, and Class IV Protected Bike Path facilities that will comprise a continuous uninterrupted network of facilities across the entire county. The regional bikeway network (*Figure 2-2*) provides a mechanism for tracking performance and ultimate completion of the bikeway network.

The regional bikeway network will help guide future bicycle performance measure development and infrastructure improvements needs. The designated bicycle network may change over time depending on the presence, quality, or connectivity of existing or planned infrastructure (as defined during periodic updates of the regional bikeway network).





## 2.4 RCMP MULTIMODAL CORRIDORS

Federal mandates require the consideration of all major modes of travel as part of a Congestion Management Process. Additionally, the California Complete Streets Act (AB 1358) requires counties and cities to include policies that take all roadway users into consideration (bicyclists, pedestrians, transit riders, motorists, children, senior citizens, mobility impaired, and freight movers) as part of their general plan updates. In recognition of these legislative mandates, SJCOG, in coordination with its member agencies, has identified a sub-set of the RCMP network to be designated as RCMP multimodal corridors. RCMP multimodal corridors are defined as sections of the RCMP roadway network where pedestrian, bicyclist, transit passenger, and motorist quality of service are analyzed. The concepts and method to compute multimodal quality of service are documented in the Highway Capacity Manual (HCM).

The multimodal quality of service as applied specifically to RCMP multimodal corridors allows a more meaningful and focused RCMP multimodal performance measure tracking mechanism. It will also provide greater flexibility to local agencies for identifying improvement strategies. It will be particularly applicable to corridors where lane capacity improvements to improve vehicular operations may be infeasible or undesirable due to high costs, limited right-of-way, lack of political support, and/or institutional constraints.

The selection of multimodal corridors is limited to roadways identified as part of the RCMP network and do not operate as limited access facilities, such as freeways or expressways. The following criteria was also used to select multimodal corridors:

- Roadway is a state highway that serves as a city's or community's main street;
- Roadway possesses "Complete Streets" characteristics, meaning they have limited additional right-of-way and the existing right-of-way is shared by many types of users (motorists, pedestrians, bicyclists, and transit passengers); and,
- Roadway traverses areas with existing or future urbanized development patterns.

Based on the above criteria, 13 RCMP roadways were designated as RCMP multimodal corridors. These are shown in *Figure 2-3* and listed by jurisdiction in *Table 2-2*. Both the table and figure indicate existing baseline and future corridors. Future RCMP multimodal corridors will be evaluated when development patterns warrant a multimodal analysis. The potential for new multimodal corridors is evaluated during each 4-year RCMP update cycle.



**Table 2-2: RCMP Multimodal Corridors**

#	Roadway	Analysis Extent	Analysis Scenario	Jurisdiction	Length (miles)
1	SR-88	Locke Rd to North Sierra Dr	Baseline	County (Lockeford Area)	0.8
		Brandt Rd to eastern town limit of Lockeford	Future	County (Lockeford Area)	2.0
2	SR-120	McHenry Ave-Escalon Bellota Rd to David Dr	Baseline	Escalon	0.8
3	Lathrop Rd	Crestwood Ave to S Airport Wy	Baseline	Lathrop	0.6
		S Harlan Rd to 7th St	Baseline	Manteca	1.8
		S Harlan Rd to Crestwood Ave	Future	Lathrop/ County/ Manteca	3.6
4	SR-12/Kettleman Ln	Lower Sacramento Rd to Cherokee Ln	Baseline	Lodi	2.5
5	Yosemite Ave	Airport Wy to Northwoods Ave-Commerce Ave	Baseline	Manteca	3.2
6	Main St	Jack Tone Rd to Stockton Ave	Baseline	Ripon	1.0
7	March Ln	Da Vinci Dr-Quail Lakes Dr to West Ln	Baseline	Stockton	3.0
8	Eight Mile Rd	Thornton Rd to Davis Rd	Baseline	Stockton/ County	1.0
		Trinity Pkwy to Davis Rd	Future	Stockton/ County	2.4
9	Hammer Ln	Kelley Dr to Maranatha Dr	Baseline	Stockton	5.0
10	Lower Sacramento Rd	Royal Oaks Dr to Hammer Ln	Baseline	Stockton	1.1
		Eight Mile Rd to Hammer Ln	Future	Stockton	2.8
11	West Ln-Airport Wy	El Pinal Dr to Roosevelt St	Baseline	Stockton	0.8
		E Alpine Ave to E Roosevelt St	Future	Stockton	1.2
12	11th St	Lammers Rd to N MacArthur Dr (west)	Baseline	Tracy	3.3
13	SR-26	N Granada Ln to N Market St	Future	County (Linden)	0.9

## Chapter 3 RCMP Performance Measures

### 3.1 INTRODUCTION

Congestion management is the application of strategies to improve transportation system performance and reliability by reducing the adverse impacts of congestion on the movement of people and goods. A congestion management process, or CMP, is a systematic and regionally accepted approach for managing congestion that provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management that meet state and local needs.

A performance measure is “an analytical planning tool that is used to quantitatively evaluate transportation improvements and to assist in determining effective implementation actions, considering all modes and strategies.” Performance measures provide the basis for evaluating the operating conditions of the regional transportation system, identifying the location and severity of congestion, identifying gaps in transit service, indicating insufficient pedestrian or bicycle access, or indicating unsafe facilities or areas.

### 3.2 STATUTORY REQUIREMENTS

Establishment of multimodal performance measures is a Federal CMP requirement. Federal directives outlined in 23 CRR 450.320 (b) require the congestion management process to result in multimodal system performance measures and strategies that can be reflected in the regional planning documents, such as the Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP). As such, SJCOG’s RCMP must include a performance element that includes performance measures to evaluate current and future multimodal system performance for the movement of people and goods. The performance measures should incorporate highway and roadway system performance, and measures established for the frequency and routing of public transit, and for the coordination of transit service provided by separate operators. These performance measures shall support mobility, air quality, land use, and economic objectives, and shall be used in the development of the capital improvement program (Chapter 6).

With the passage of the Federal Performance Management Rule in 2018 (23 CFR Part 490), state Departments of Transportation (DOTs) and Metropolitan Transportation Organizations (MPOs) are required to implement the Federal performance measures. Under the final performance rule, state DOTs (e.g., Caltrans) are responsible to submit performance targets and periodic reports on progress to those targets to Federal agencies on an annual basis. MPOs, such as SJCOG, are required to establish targets for the same performance measures on all public roads in the MPO planning area. SJCOG elected to support the statewide targets selected by Caltrans.

State transportation planning guidance is consistent with these Federal initiatives. In February 2010, Caltrans released *Smart Mobility 2010: A Call to Action for the New Decade*. This document provides a broad planning framework to help guide multimodal and sustainable transportation planning and development along with providing tools and techniques to assess how plans, programs, and projects meet ‘smart mobility’ goals throughout the state. The fundamental premise of the Smart Mobility Framework (SMF) is to ensure that planning or programming decisions for transportation improvements are performance based (i.e., quantitative), transparent, and address sustainable outcomes and objectives.

Consistent with the SMF, new guidance has been published by the State to inform the development of transportation plans/studies. These include:

- Corridor Planning Guidebook (Caltrans, 2019);

- Comprehensive Multimodal Corridor Plan Guidelines (California Transportation Commission, 2019);
- SB-1 Accountability and Transparency Guidelines (California Transportation Commission, 2019); and,
- Health in Transportation Corridor Planning Framework (2019).

These State planning guidance documents reinforce performance-based planning and programming. The latter being informed by the application of performance metrics that allow for the selection and prioritization of improvement projects in a transparent and understandable way to both the public and decision makers.

Both federal and state transportation funding programs, particularly competitive programs, are currently driven by performance-based criteria. Funding for multimodal transportation improvements is now greatly influenced by federal/state objectives related to air quality/climate change, environmental justice, social equity and return on investment (benefit-cost criteria). To be competitive for procuring limited discretionary transportation funding, SJCOG and its member agencies must now document to a much greater degree how the recommended capital improvements address these important objectives/initiatives.

### **3.3 PURPOSE OF TRANSPORTATION PERFORMANCE MEASURES**

The purpose of RCMP transportation performance measures is to monitor how well the regional transportation system is meeting the goals and objectives of the RCMP, RTP and the Federal Performance Rule. While goals and objectives establish benchmarks for the intended operation of the transportation system, performance measures and data are used to track progress in reaching these benchmarks. Goals define the overall transportation aims of the region: e.g., “provide a transportation system that is safe, reliable, and efficient.” Objectives are measurable embodiment of the goals: e.g., “reduce the total cost of accidents in the region.”

Performance measures are the “yardsticks” by which SJCOG determines how well the objectives are being met: e.g., “number of accidents by severity”, “total cost of accidents”. Data collection is determined by the performance measures and provides the information for these measures.

### **3.4 MONITORING-BASED PERFORMANCE MEASURES**

There are two classifications of performance measures typically used by transportation agencies: monitoring-based and model-based. Monitoring-based performance measures are determined empirically by direct measurement in the field (e.g., traffic volumes, accidents by type). They allow agencies to track success in achieving goals and objectives based on real outcomes. Model-based performance measures are estimated by analytical tools or models (e.g., land use allocation models and travel demand models). They are typically used to evaluate various alternative scenarios under future year conditions (e.g., as part of Sustainable Community Strategies its SJCOG evaluates future plan alternatives) and are not based on real outcomes.

The RCMP exclusively addresses monitoring-based performance measures for the following reasons:

- Model-based performance measures depend on the capabilities of the model being used and the assumptions that go into building the model. Only partial validation is possible (e.g., comparing ground counts to model results at the screenline level).
- Monitoring-based performance measures provide “ground-truth” data for tracking the accuracy of measures that have been projected using models. They are used to answer, “Are we trending in the right direction to achieve our goals and objectives?”

- Monitoring-based performance measures can be directly traced to valid data sources that can be tracked and compared over time. They are used to answer, “What is actually happening as we implement our goals and objectives?”.

### 3.5 PERFORMANCE MEASURE SELECTION CRITERIA

The following principles for selecting among different possible performance measures were exercised as part of this study.

- Performance measures must reflect the goals and objectives of the agency. Performance measures are the yardsticks for measuring how well a particular transportation alternative meets the goals and objectives of the agency. Hence, any suggested performance measure must be capable of being tied to one or more agency goals or objectives.
- The purpose of performance measures is to inform decisions. Performance measures are useful only to the extent that they can inform policy, planning, programming, budgeting, or management decisions.
- Performance measures should enable decision makers to identify tradeoffs between potentially conflicting goals or objectives. Consider a hypothetical case of trying to “maximize mobility at the minimum cost.” It is impossible to simultaneously optimize over more than one measure. In this case, it would require performance measures for both cost and mobility to enable decision makers to identify the tradeoffs among alternatives between cost and mobility; (i.e., answering the question “how much mobility are we buying at what cost?”).

These principles in turn suggest several others:

- Performance measures should ideally be as commensurate as possible. Metrics that are measurable across all regions and/or applicable to differing scales of analysis allows for an "apples-to-apples" comparison and makes for better statewide or regional decision making (for funding or comparing progress). When a number of performance measures are used to evaluate transportation alternatives, decision makers should make tradeoffs between these measures in a consistent manner. This is the main rationale for benefit-cost analysis, where market values are used to identify tradeoffs between measures such as cost, travel time, reliability, safety, and environmental effects.
- Performance measures should be easily understood by decision makers and the general public. Concepts such as cost and accident totals are easily communicated to decision makers and the general public, whereas technical concepts such as “buffer index”, as a measure of travel time reliability, may require detailed explanation to be fully understood.
- The number of performance measures should be as few in number as possible. A common maxim among political scientists who study policymaking is that a decision maker can simultaneously consider only seven “plus or minus” factors at one time. Hence, too many performance measures will confuse rather than inform.

Based on the aforementioned principles, the following criteria were used to select performance monitoring measures for the RCMP:

1. Performance measures should align with Federal transportation goals and objectives.
2. Performance measures should continue to inform current goals and objectives of the RCMP.
3. Performance measures should be applicable to both rural and urban areas of San Joaquin County.

4. Performance measures should be capable of being linked to specific decisions on transportation investments.
5. Performance measures should not impose substantial resource requirements on SJCOG or its member agencies.
6. Performance measures for should be normalized to provide equitable comparisons among all sub-areas of the County if desired.

Federal and State legislation also influenced the selection of RCMP performance measures. These are described below.

### **Integration with Federal Performance Based Planning Framework**

The Moving Ahead for Progress in the 21st Century Act (MAP-21) included the establishment of a performance- and outcome-based program, known as “Performance Based Planning,” with the objective to invest in projects that will make progress toward the achievement of the national goals for the transportation. This framework has been carried forward in subsequent Federal transportation funding bills including the America’s Transportation Infrastructure Act legislation. Passage of the Federal Performance Management Rule required state Departments of Transportation (DOTs) and Metropolitan Transportation Organizations (MPOs) to implement the Federal performance measures by 2018.

FHWA is required to establish performance measures to assess performance in 12 areas. Three measures are established for assessing the performance of the NHS under the National Highway Performance Program (NHPP). Two measures assess reliability: (1) Percent of Person-Miles Traveled on the Interstate System That Are Reliable (the Interstate Travel Time Reliability measure); and, (2) Percent of Person-Miles Traveled on the Non-Interstate NHS That Are Reliable (the Non-Interstate NHS Travel Time Reliability measure). Both of these measures assess Level of Travel Time Reliability (LOTTR), defined as the ratio of the 80th percentile travel time to a “normal” travel time (50th percentile). Data are derived from the travel time data set using either the National Performance Management Research Data Set (NPMRDS) or equivalent. A third measure, Percent Change in Tailpipe CO<sub>2</sub> Emissions on the NHS from the Calendar Year 2017, assesses environmental performance. This measure is calculated using data on fuel use and VMT.

The performance measure to assess freight movement on the Interstate is: Percentage of the Interstate System Mileage providing for Reliable Truck Travel Times (i.e., Truck Travel Time Reliability (TTTR) Index). This measure also uses the Travel Time Data Set of NPRMDS, but unlike the LOTTR which uses a threshold to determine reliability, TTTR Index is expressed as an average for the entire applicable area.

Three measures are established under the CMAQ program including two measures for traffic congestion: (1) Annual Hours of Peak-Hour Excessive Delay Per Capita; and, (2) Percent of Non-Single Occupant Vehicle (SOV) Travel. Data for these two measures are derived from the travel time data set of NPMRDS. The second measure was developed to recognize the role of lower-emissions modes in meeting air quality goals. The third measure under the CMAQ program is Total Emissions Reduction. This measure uses data from the CMAQ Public Access System to calculate total emission reductions for applicable criteria pollutants or precursors.

The Federal performance measures were thematically split into the three groupings under the rubric of “Performance Management” (PM) as shown below. Depending on the performance measure, different geographic and network representations apply (e.g., all roadways, Interstate Highway System (IHS) only, Non-IHS National Highway System, National Highway System). These are noted after each measure. Given that the

RCMP is specific to the RCMP network that reflects a mix of IHS, NHS and Non-NHS roadways, not all metrics are directly applicable to RCMP reporting. Additionally, some metrics, such as those that pertain to vehicular emissions, are outside the scope of the RCMP and are more appropriately addressed as part of other planning efforts (e.g., air quality conformity requirements during RTP/SCS updates) or will be addressed by Caltrans or Caltrans data analysis tools. The Federal performance measures that will not be monitored at this time as part of the RCMP are listed with an “\*” below.

- PM1: Safety
  - Number of Fatalities (all roadways)
  - Rate of Fatalities (per 100 million VMT) (all roadways)
  - Number of Serious Injuries (all roadways)
  - Rate of Serious Injuries (per 100 million VMT) (all roadways)
  - Number of Non-Motorized Fatalities and Serious Injuries (all roadways)
- PM2: Transportation Asset Management
  - Percent of Interstate Highway System (IHS) pavement in Good condition (IHS only)
  - Percent of IHS pavement in Poor condition (IHS only)
  - Percent of non-IHS National Highway System (NHS) pavement in Good condition (Non-IHS NHS)
  - Percent of non-IHS NHS pavement in Poor condition (Non-IHS NHS)
  - Percent of NHS bridges by deck area in Good condition (NHS only)
  - Percent of NHS bridges by deck area in Poor condition (NHS only)
- PM3: System Reliability, Freight, Congestion, and Air Quality
  - Percent of person-miles traveled on the IHS that are reliable (IHS only)
  - Percent of person-miles traveled on the non-IHS NHS that are reliable (Non-IHS NHS)
  - Percent change in tailpipe CO2 emissions on NHS compared to 2017 level (NHS only)\*
  - Truck Travel Time Reliability (TTTR) Index (IHS only)
  - Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita (NHS only in urbanized TMAs in federal non-attainment areas)\*
  - Percent of Non-Single Occupancy Vehicle (SOV) Travel\*
  - Total Emissions Reduction (all Projects)\*

State DOTs (e.g. Caltrans) are directly responsible to submit performance targets and periodic reports on progress to those targets to Federal agencies on an annual basis. MPOs, such as SJCOG, are required to establish targets specific to their planning area, or support the statewide targets, and report on progress on an annual basis. SJCOG accepted the statewide targets and per agreement with Caltrans, SJCOG began this reporting requirement in 2019.

To more efficiently complete the required reporting tasks for both SJCOG’s Federal CMP and the Federal Performance Management Rule, SJCOG has integrated many of the PM1-3 Federal performance measures as RCMP performance measures. See also section 3.15 for a description of those PM1-3 measures not reported by the RCMP.

### SB 743 and Vehicle Miles Travelled

Senate Bill (SB) 743 was signed into law in 2013, with the intent to better align California Environmental Quality Act (CEQA) practices with statewide sustainability goals related to efficient land use, greater multi-modal choices, and greenhouse gas reductions. The provisions of SB 743 become effective Statewide on July 1, 2020. Under SB 743, automobile delay, traditionally measured as level of service (LOS) will no longer be considered an environmental impact under CEQA. Instead, impacts will be determined by changes to VMT.

Given the shift to vehicle miles of travel (VMT) for CEQA purposes, there has been greater interest on the part of transportation agencies to incorporate VMT into other planning processes. Although VMT is a general but robust measure of vehicle activity, it is not a good indicator for identifying congestion, bottlenecks or high delay “hotspot” locations. As such, it has limited utility as a primary metric for congestion management. However, VMT is a primary input for regional air quality analyses and for developing VMT rates for safety analysis. Also, when applied on a per household or per capita basis, VMT can also be an indicator of land use efficiency (i.e., land use patterns that facilitate less vehicle trips and/or shorter vehicle trip lengths). VMT is computed by multiplying traffic volume by segment length and can be applied to any scale (region, sub-region, corridor).

VMT estimates by jurisdiction are published by Caltrans on an annual basis (publications typically lag by approximately two years). VMT data is developed as part of the Federal Highway Performance Monitoring System (HPMS). The HPMS program uses a sample-based method that combines traffic counts stratified by functional classification of roadways and volume group to produce sample based geographic estimates of VMT. HPMS VMT estimates are considered “ground truth” by the 1990 Federal Clean Act Amendments (November 15, 1990). HPMS VMT estimates can be used to validate baseline travel demand models and to track modeled VMT forecasts over time. HPMS VMT estimates are reported for each county by local jurisdiction, state highway use, and other state/federal land roadways e.g., State Parks, US Bureau of Land Management, US Forest Service, US Fish and Wildlife Service.

Due to being a federal non-attainment area, San Joaquin County’s HPMS sampling requirements achieve the desired 90/10 confidence level for VMT estimation. However, the statistical veracity of the San Joaquin County’s HPMS sample diminishes at the sub-county scale (i.e., Cities).

**Table 3-1** lists the RCMP performance measures including source, measure of effectiveness, and data source for each metric.

RCMP performance measures will be monitored using analysis tools and software procedures developed to streamline their quantification and reduce costs. As RCMP program implementation continues, refinement of these measures and/or the development additional performance measures is anticipated.

**Table 3-1: RCMP Performance Measures**

<b>Category of Objectives</b>	<b>Source</b>	<b>Measure of Effectiveness</b>	<b>Performance Measure</b>	<b>Data Sources</b>
Operational Efficiency	RCMP	Congestion (congested speeds)	Percent of miles (on IHS and non-IHS NHS and RCMP network) that are congested (when congested speed is less than 60% of free flow speed).	FHWA: NPMRDS
Operational Efficiency	PM3	Travel Time Reliability (TTR) Index (80% and 95% travel time) (All vehicles)	Percent of Person-miles of travel (on IHS and non-IHS NHS) that are reliable (TTR)	FHWA: NPMRDS Caltrans: AADT Vehicle Occupancy (Surveys, CHTS)
Operational Efficiency	RCMP	Travel Time Reliability (TTR) Index (80% and 95% travel time) (All vehicles)	Percent of miles (on IHS and non-IHS NHS) that are reliable (TTR)	FHWA: NPMRDS
Operational Efficiency	RCMP	Congestion & TTR (95% travel time)	“Facility Specific” that are congested and/or unreliable. Provides basis for identifying RCMP deficient corridors.	FHWA: NPMRDS
Goods Movement & Operational Efficiency	RCMP	STAA Intersections	Track STAA-compliant intersections listed as part of Interregional Truck Operations on I-5 and SR-99 and STAA Routes Study	SJCOG RCMP
Goods Movement & Operational Efficiency	PM3	Truck Travel Time Reliability Index (80% and 95% travel time)	Percentage of IHS mileage that are reliable (TTTR)	FHWA: NPMRDS
Goods Movement & Operational Efficiency	RCMP	Truck Congestion & TTR (95% travel time)	“Facility Specific” that are congested (congested speed less than 60% of free flow truck speed) and/or unreliable. Provides basis for identifying RCMP deficient corridors.	FHWA: NPMRDS
Transit System	RCMP	Transit Coverage	Population & employment within ½-mile walking distance of a transit stop	Transit Agencies: transit data U.S. Census: population data VMIP2 Land Use Data: household and employment data
Transit System	RCMP	Transit Frequency	Level of service for service frequency of transit vehicles per hour (Transit Capacity and Quality of Service Manual)	Transit Agencies: transit line information

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<b>Category of Objectives</b>	<b>Source</b>	<b>Measure of Effectiveness</b>	<b>Performance Measure</b>	<b>Data Sources</b>
Regional Bikeway Network	RCMP	Percent Completed of Regional Bikeway Network	Ratio of completed to total Regional Bikeway Network miles, listed by jurisdiction.	SJCOG: bike network completion
Complete Streets	RCMP	RCMP Multimodal Corridor Quality of Service (transit, bike, pedestrian)	Multimodal quality of service for existing conditions on designated corridors (transit, bike, pedestrian).	HCM 6 <sup>th</sup> Edition – Quality of Service SJCOG: Infrastructure Improvements, transit service schedules, traffic counts
Travel Demand Management	RCMP	Commuter VMT Reduction	Track San Joaquin County employer and employee participation rates for commute to work mode.	SJCOG - Dibs
Travel Demand Management	RCMP	VMT Per Capita	Land Use Efficiency	VMT: HPMS Population: Department of Finance
Safety	PM1	Fatal Collisions & Rates	Number of fatalities Fatalities per 100 million VMT	Collision/incident data: FARS/SWITRS VMT data: HPMS, SJCOG, local counts
Safety	PM1	Serious Injury Collisions & Rates	Number of serious injuries Serious injuries per 100 million VMT	Collision/incident data: TIMS/SWITRS VMT data: HPMS, SJCOG, local counts
Safety	PM1	Number of Collisions	Number of non-motorized fatalities and non-motorized serious injuries	Collision/incident data: SWITRS
System Management	PM2	PCI / PSI / IRI / Qualitative	PM2 Percentage of pavements of the Interstate System in Good Condition & Poor Condition	Local Agency Pavement Management Systems or Caltrans (for State Highways)
System Management	PM2	PCI / PSI / IRI / Qualitative	Percentage of pavements of the non-Interstate NHS in Good Condition & Poor Condition	Local Agency Pavement Management Systems or Caltrans (for State Highways)
System Management	PM2	PCI / PSI / IRI / Qualitative	Percentage of NHS bridges classified as in Good Condition & Poor Condition	Local Agency Pavement Management Systems or Caltrans (for State Highways)

### 3.7 OPERATIONAL EFFICIENCY

Two Federal performance measures form the basis for tracking operational efficiency of passenger vehicles and heavy-duty trucks on the RCMP network respectively. Both measures rely on NPMRDS speed data from FHWA (see section 3.1 Vehicle Speed Data Source for a description of the NPMRDS). The two measures are Congestion and Travel Time Reliability and are described below.

#### **Congestion**

The Federal definition from the National Performance Management Measures Rule is used to define congestion for the RCMP. The congestion threshold is triggered if observed peak hour average speed is less than 60 percent of free-flow speed. This metric is scalable and can be reported as a percentage of a defined network of roadways including: 1) percent of congested centerline miles on Interstate Highway System; 2) percent of congested centerline miles on the National Highway System; and, 3) percent of congested centerline miles on the RCMP network. In addition, the congestion metric can also be applied on a segment-by-segment basis (i.e., facility specific). This finer granularity provides the basis for identifying RCMP deficient corridors for which congestion relief project and strategies can be identified for inclusion in the RCMP CIP (see Chapter 5). The congestion metrics will be applied to all vehicles and just heavy-duty trucks. The latter applications will address the Goods Movement RCMP objectives.

#### **Travel Time Reliability**

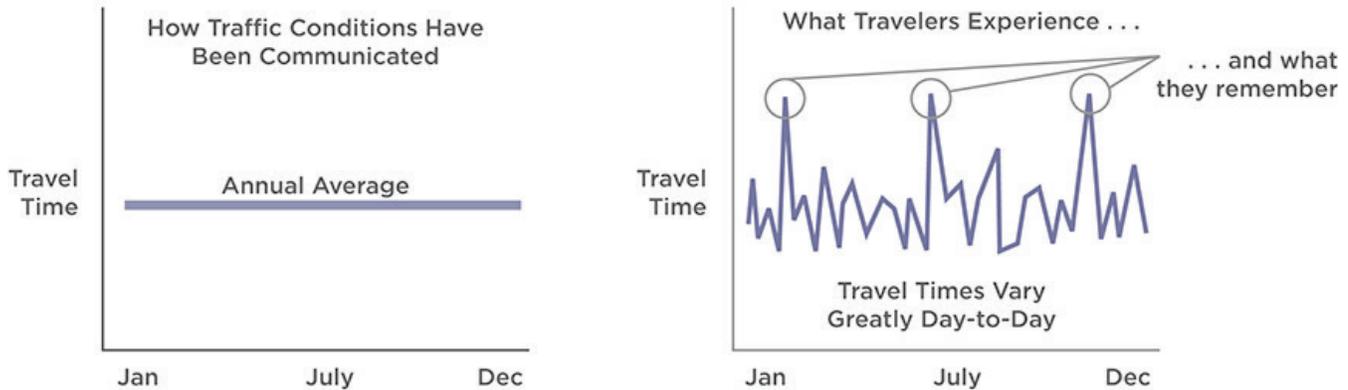
Travel time reliability accounts for the variance in travel times associated with motorized travel. FHWA and Federal Guidance have emphasized the use of travel time reliability as a key metric – particularly for congestion management. In 2015, FHWA published *Incorporating Travel-Time Reliability into the Congestion Management Process: A Primer*. Consistent with this guidance and the desire to include the Federal performance measures within the RCMP, SJCOG has incorporated reliability into the RCMP.

The Federal definition from the National Performance Management Measures Rule is used to define reliability for the RCMP. The thresholds for identifying unreliable road segments (with an 80th percentile travel time more than 1.5 times longer than the average travel time (Level of Travel Time Reliability or LOTTR). Given that the Highway Capacity Manual (6<sup>th</sup> Edition) defines travel time reliability using the 95th percentile travel time, both the 80<sup>th</sup> and 95<sup>th</sup> percentile travel time reliability metrics will be monitored.

The amount of extra time a person needs to account for above the average travel time to ensure being on time 95% of the time (approximately one day late per month). If a commute trip usually takes 30 minutes, but there are periodic issues with weather or traffic incidents that can cause the commute to take 45 minutes, the buffer time would be 15 minutes, causing the commuter to be 15 minutes early on an average day, and late only occasionally. The BTI normalizes buffer time by controlling for distance. The BTI is simply the ratio of Buffer Time against the average travel time and can expressed as a percentage. The percentage shows the amount of buffer time relative to average travel time.

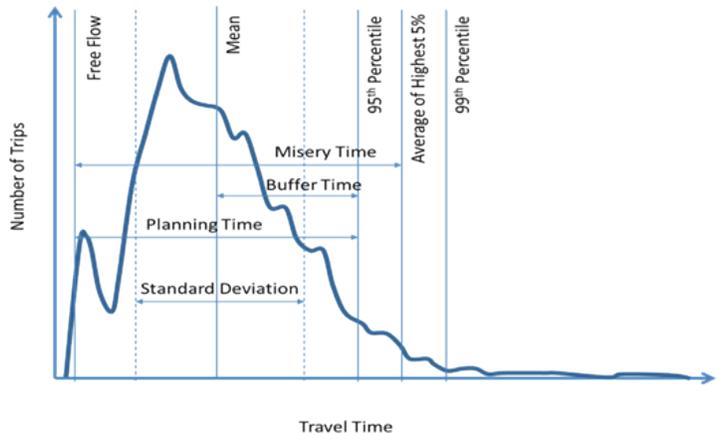
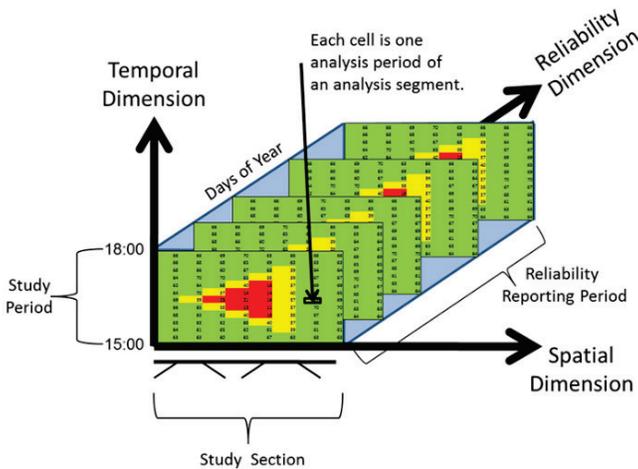
The relationship between travel time reliability indices is shown in *Figure 3-2*. A key factor to remember when reviewing travel time reliability results is that they are not the same as congestion or delay. A highly congested trip that is always or nearly always congested will likely have a very good reliability rating because it is predictable. Both congestion and reliability measures can be translated to percent of person-miles of travel by applying a vehicle occupancy factor (potential sources include the California Household Travel Survey) to the VMT estimate and recomputing the percentage.

Figure 3-2: Travel Time Reliability



Source: Travel-Time Reliability: Making it There On-Time, All the Time, Federal Highway Administration, FHWA-HOP-06-070

Source: Highway Capacity Manual, Chapter 37



### 3.8 GOODS MOVEMENT MEASURES

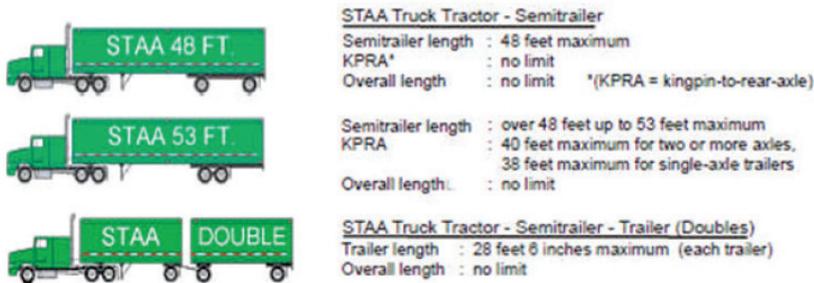
The movement of goods throughout San Joaquin County is critical to the economic health of the region. Freight traverses the county using many modes, including trucks, rail, and ship. Trucks, however, are the predominant mode of goods transport in the county, and the focus of a performance measures for goods movement as detailed below.

#### STAA Compliance

The Surface Transportation Assistance Act (STAA) was passed in 1982 by the federal government to govern the movement of trucks and trailers. STAA vehicles are large commercial trucks that meet federal size regulations (48 to 53 feet from kingpin to rear-axle). In California, the STAA network consists of the National Network (generally, interstate freeways and approved state highways) and Terminal Access (state highways). Roadways that are part of the STAA network must be designed to accommodate the STAA-sized trucks.

A diagram of STAA sized vehicles is provided in *Figure 3-3*. *Figure 3-4* provides a map of the STAA network in San Joaquin County.

Figure 3-3: Diagram of STAA-sized trucks



Roadways that are part of the STAA network are designated based on the general adherence to the following:

- The route is a geometrically typical component of the Interstate system, serving to link principal cities and densely developed portions of the states;
- The route is a high-volume route utilized extensively by large vehicles for interstate commerce;
- The route does not have any restrictions precluding use by conventional combination vehicles;
- The route has adequate geometrics to support safe operations, considering sight distance, severity and length of grades, pavement width, horizontal curvature, shoulder width, bridge clearances and load limits, traffic volumes and vehicle mix, and intersection geometry;
- The route consists of lanes designed to be a width of 12 feet or more or is otherwise consistent with highway safety;
- The route does not have any unusual characteristics causing current or anticipated safety problems.

SJCOG tracks STAA related improvements by coordinating with local agency STAA applications. Given the priority of enhancing Terminal Access connectivity to the STAA National Network, the STAA turn radius compliance of I-5, SR 99 and I-580 ramp intersections is tracked. The inventory and STAA compliance status of these ramp intersections is provided in **Appendix E**.

### STAA Truck Operations

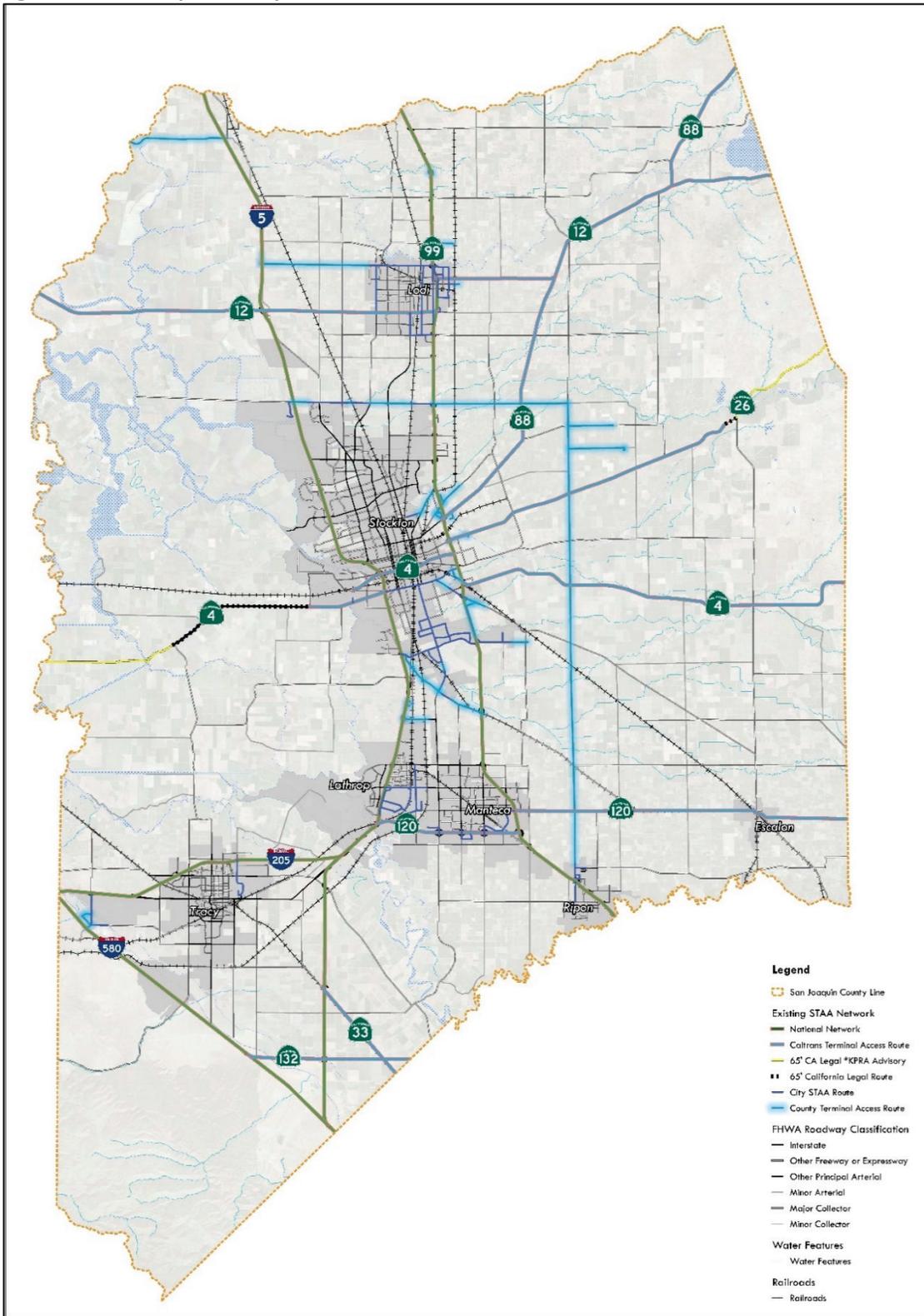
The congestion and reliability metrics discussed previously will also applied to exclusively to just heavy-duty trucks. Given that the heavy-duty truck population is reported separately by the NPMRDS, the congestion and reliability thresholds can be developed specifically for the truck fleet and operations in isolation.

## 3.9 TRANSIT SYSTEM MEASURES

San Joaquin County is diverse with respect to transit service and land use types. While Stockton is the most urbanized area in the county, many areas of Stockton and other cities in the county are predominantly suburban while much of the unincorporated areas of the county are rural. As such, transit providers must tailor their services to balance residents’ needs with funding constraints.

The RCMP contains two performance measures for transit system measures: 1) coverage and 2) frequency, as detailed below. These measures do not differentiate between urban and rural areas. It is acknowledged that the transit target objectives may not be reasonable for rural areas of the County.

Figure 3-4: San Joaquin County STAA Network



Map Source: San Joaquin County, created by GHD

## Coverage

Transit service coverage is assessed using a ½ mile distance from transit stops countywide based on linear buffers (roadway distances). Circle buffers (airline radius) may be used where linear roadway information is unavailable.

Circle buffers are the easiest way to calculate a service area. All points within a given range of a facility, in this case a ½ mile from a bus stop, are considered to be within its service area. The method does not take into account barriers or network gaps that might prevent all locations within that circle from being as easily accessible.

Linear buffers evaluate the service area from the network point of view. All points accessible via roadways or other features included in the network data within a ½ mile are included in the service area. The Service Area tool in the ArcGIS Network Analyst extension will assign a given buffer around network features to generate a service area polygon. The buffer tapers to a point where the network distance reaches the analysis distance of ½ mile. In places where the accessible network forms a closed block, the block will be filled regardless of the network buffer and is considered to be completely accessible.

In *Figure 3-5*, the bold lines are portions of the network that are within ½ mile of the bus stop. The red circle is the airline radius ½ mile buffer. The green polygon is the linear buffer service area. These two examples are somewhat simplified. In the top example, note that in the lower left quadrant, the large blocks have more than 600' grid separation, but are still filled when completely surrounded by accessible streets. The upper quadrants are missing a connection to the street along the primary x axis and are therefore deemed mostly inaccessible within the ½ mile parameter. The bottom example is an actual location within San Joaquin County and demonstrates how freeways (I-5 running north-south on the west) and natural features (river/canal running east-west on the north) can also serve as barriers to transit accessibility.

Figure 3-5: Examples of Transit Coverage Analysis - Circle Versus Linear Distances



Currently, about 69% of San Joaquin County's residential households and 67% of San Joaquin County jobs are located within a ½ mile walking distance to a transit stop. Just less than 12% of households are located close to transit stops with peak period service frequency quality of service C or better (15 minute or less headways), but almost 52% more of the residential population are close to transit stops with peak period service frequency quality of service E (60 minute or less headways). *Table 3-2* shows the transit frequencies in relation to the County's residential population and employment.

**Table 3-2: Residential Households and Jobs located within ½ Mile of Transit Stops**

Transit Headway	2015 Existing Conditions		2015 Existing Conditions	
	1/2 Mile Walking Distance to Transit Stop <sup>1</sup>		1/2 Mile Walking Distance to Transit Stop <sup>1</sup>	
	Household	Percent	Employees	Percent
≤ 15 minutes	25,711	11.5%	48,714	20.7%
≤ 30 minutes	49,790	22.3%	77,358	32.9%
≤ 60 minutes	149,799	67.2%	161,664	68.8%
All transit service	190,997	85.6%	191,386	81.6%
<b>Total</b>	<b>223,027</b>	<b>100.0%</b>	<b>234,983</b>	<b>100.0%</b>

<sup>1</sup> Distance determined using ArcView GIS Spatial Analyst Linear Buffer tool

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### Frequency

The goal of evaluating peak period transit frequency is to determine the likelihood that travelers could utilize transit regularly. Generally speaking, higher frequencies allow travelers more flexibility to take transit when they need to, as opposed to being reliant on the few scheduled occasions that service operates. All transit agencies strive to offer high frequencies within the limits of their funding. However, this goal may run at odds with providing coverage throughout the agency’s service area if resources are reallocated to higher frequency routes.

For the fixed-route local and deviated fixed-route bus services, peak period transit quality of service in San Joaquin County may be best described using the thresholds for urban scheduled transit service, as shown in **Table 3-3**. It defines quality of service in terms of headways (time between transit vehicles) and is often evaluated using published schedules. Quality of service is better for more frequent transit service and the measures can be applied to buses, trains, and ferries. This performance measure will be analyzed using published transit schedules for fixed route service.

**Table 3-3: Countywide Transit Service Quality of Service Criteria**

Quality of Service	Vehicles per Hour	Headway (minutes)	Comments
A	> 6	< 10	Passengers don't need schedules
B	5 to 6	10 to 14	Frequent service, passengers consult schedules
C	3 to 4	15 to 20	Maximum desirable time to wait if transit vehicle missed
D	2	21 to 30	Service unattractive to choice riders
E	1	31 to 60	Service available during hour
F	< 1	> 60	Service unattractive to all riders

Source: *Transit Capacity and Quality of Service Manual (TCQSM)*, Transportation Research Board, Washington, DC, 1999, Part 5.

### 3.10 BIKEWAY SYSTEM MEASURES

SJCOG has developed a regional bikeway network as part of the Bicycle, Pedestrian, and Safe Routes to School Plan. The network establishes routes of regional significance for bicyclists. There are many other elements that create a supportive environment for bicycling, including bikeway types, parking, shower and locker facilities, and wayfinding signage which are best addressed in the Regional Transportation Plan. The RCMP performance measure will focus on the bikeway network's completion.

#### **Bikeway Network Completion**

The total number of existing regional bikeway miles will be compared to the entire network's mileage to establish baseline conditions by jurisdiction. As regional bikeways are constructed or programmed, SJCOG will track the ratio of completed bikeways compared to regional network and report the percent completed by jurisdiction.

### 3.11 COMPLETE STREETS MEASURES

In order to provide viable choices to Single-Occupant Vehicles (SOVs) and to support the intent of Federal legislation, SJCOG monitors bicycling, walking, and transit performance along Multimodal Corridors (as identified in Chapter 2) with the intent of identifying opportunities to improve alternatives to driving alone. These measures evaluate:

- Presence and geometrics of bikeway facilities;
- Presence and geometrics of pedestrian walkways; and
- Transit passenger, bicyclist, and pedestrian quality of service.

SJCOG has established Multimodal Corridors as detailed in Chapter 2. These corridors are generally located in areas that are characterized by a predominance of shared roadway users (pedestrians, bicyclists, transit passengers, and motorists) and where roadway widening is infeasible or undesirable. These corridors are not the only roadways on the RCMP that need to accommodate multiple user types. All RCMP roadways with adjacent land uses need to provide access for all user types. However, these designated Multimodal Corridors will receive the benefit of a quality of service analysis for all travel modes, which will independently and objectively evaluate how well that segment serves pedestrians, bicyclists, transit users, and drivers, allowing jurisdictions to balance their mitigation efforts across modes.

#### **Multimodal Corridors**

SJCOG established a baseline quality of service analysis for all four major modes of travel (walking, biking, taking transit, and driving) on designated Multimodal Corridors using the Highway Capacity Manual's Urban Streets Facilities methodology. This method interactively compares the quality of service of a corridor between the different modes of travel. A number of factors are accounted for in order to assess the quality of service for each mode of travel. These factors are summarized below by each mode of travel.

#### **Factors Affecting Pedestrian Quality of Service**

- Pedestrian density (only under crowded conditions)
- Sidewalk presence and clear width
- Vehicle volume and speed in adjacent travel lane
- Bicycle lane, shoulder, and outside vehicle lane widths

- Buffer presence and width
- On-street parking utilization
- Permitted left turn, right-turn-on-red volumes
- Cross-street motor vehicle volumes and speeds
- Crossing length
- Average pedestrian delay
- Right-turn channelizing island presence

#### **Factors Affecting Bicyclist Quality of Service**

- Vehicle volume and speed in outside travel lane
- Heavy vehicle percentage
- Pavement condition
- Bicycle lane presence
- Bicycle lane, shoulder, and outside vehicle lane widths
- On-street parking utilization
- Number of access points on right side
- Cross-street width

#### **Factors Affecting Transit Passenger Quality of Service**

- Access to transit (pedestrian link Quality of Service)
- Wait for transit (frequency)
- Excess wait time due to late bus/train arrival
- Actual bus travel speed
- Bus stop amenities
- On-board crowding

#### **Factors Affecting Motorist Quality of Service**

- Posted versus actual speed
- Intersection delay

The most recent baseline multimodal quality of service was established with the 2016 RCMP Monitoring Report update. The analysis included the collection of infrastructure and time-of-day data, such as counts, on-street parking occupancies, and transit schedules for existing conditions. The AM and PM peak-hours were summarized by segment and direction. Future updates should be performed if traffic volumes significantly change, major transit scheduling changes occur, or major roadway treatments and improvements are implemented.

A summary of the bicyclist and transit passenger quality of service criteria is shown in *Table 3-4*. A summary of the pedestrian quality of service criteria, which compares the pedestrian quality of service on urban streets to walkway crowding, is shown in *Table 3-5*. A summary of the motorist quality of service criteria is shown in *Table 3-6*.

**Table 3-4: Bicyclist and Transit Passenger Quality of Service Criteria for Urban Streets**

Quality of Service Grade	Score
A	≤ 2.00
B	> 2.00 and ≤ 2.75
C	> 2.75 and ≤ 3.50
D	> 3.50 and ≤ 4.25
E	> 4.25 and ≤ 5.00
F	> 5.00

Source: *Highway Capacity Manual (HCM)* 6<sup>th</sup> Edition, Transportation Research Board, Washington, DC, 2016.

**Table 3-5: Pedestrian Quality of Service Criteria (Quality of Service on Urban Streets Compared to Crowding)**

Pedestrian QOS Score	Quality of Service by Average Pedestrian Space (square feet per person)					
	> 60	> 40 and ≤ 60	> 24 and ≤ 40	> 15 and ≤ 24	> 8 and ≤ 15 <sup>1</sup>	≤ 8 <sup>1</sup>
≤ 2.00	A	B	C	D	E	F
> 2.00 and ≤ 2.75	B	B	C	D	E	F
> 2.75 and ≤ 3.50	C	C	C	D	E	F
> 3.50 and ≤ 4.25	D	D	D	D	E	F
> 4.25 and ≤ 5.00	E	E	E	E	E	F
> 5.00	F	F	F	F	F	F

<sup>1</sup> In cross-flow situations, the LOS E-F threshold in 13 square feet per person.

Source: *Highway Capacity Manual (HCM)* 6<sup>th</sup> Edition, Transportation Research Board, Washington, DC, 2016.

**Table 3-6: Motorist Quality of Service Criteria for Urban Streets**

Travel Speed as a Percentage of Base Free-Flow Speed	Quality of Service Grade by Critical Volume-to-Capacity Ratio <sup>1</sup>	
	≤ 1.0	> 1.0
> 85%	A	F
> 67% and ≤ 85%	B	F
> 50% and ≤ 67%	C	F
> 40% and ≤ 50%	D	F
> 30% and ≤ 40%	E	F
≤ 30%	F	F

<sup>1</sup> The critical volume-to-capacity (v/c) ratio is based on consideration of the through movement v/c ratio at each boundary intersection in the subject direction of travel. The critical v/C is the largest ratio of those considered.

Source: *Highway Capacity Manual (HCM)* 6<sup>th</sup> Edition, Transportation Research Board, Washington, DC, 2016.

### 3.11 TRAVEL DEMAND MANAGEMENT MEASURES

SJCOG has established countywide programs to address travel demand management (TDM), implemented through SJCOG's Dibs program (<https://www.dibsmysway.com/>). The main purpose of the demand management program is to reduce the number of single-occupant vehicles during peak demand times by providing incentives for carpooling, taking transit, walking, biking, or traveling off-peak. San Joaquin County is also part of the San Joaquin Valley Air Pollution Control District (SJVAPCD), which has a Federally mandated employer-based trip reduction program (Rule 9410 or eTrip) for businesses that employ 100 or more full time employees.

Through its' Dibs program, SJCOG tracks the San Joaquin County employer and employee participation rates for commute to work mode. Based on this information, VMT reduction benefits of employees who shift from single occupant vehicles to non-single occupant vehicles (non-SOV) or alternative modes (transit) will be estimated.

### 3.12 VEHICLE MILES TRAVELED

Given the shift to vehicle miles of travel (VMT) under CEQA pursuant to SB 743, there has been greater interest to incorporate VMT into other local and regional transportation planning processes. Although VMT is a robust measure of vehicle activity, it is not a good indicator for identifying bottlenecks or high delay "hotspot" locations. As such, it has limited utility as a metric for identifying congestion. Conversely, VMT does provide an indication of overall system utilization and is a direct indicator of land use efficiency and on-road mobile source emissions.

VMT data is readily available and is annually reported by Caltrans as part of the Federal Highway Performance Monitoring Program (HPMS). The HPMS program uses a sample-based method that combines traffic counts stratified by roadway functional classification and volume group to produce estimates of VMT. HPMS VMT estimates are considered "ground truth" by the 1990 Federal Clean Act Amendment (November 15, 1990). HPMS VMT estimates are reported for each county by local jurisdiction, state highway use, and other state/federal land roadways. Given San Joaquin County's "severe" federal air quality non-attainment designation, HPMS sampling requirements meet the 90/10 confidence level for VMT estimation. The statistical veracity of the San Joaquin County's HPMS sample diminishes however at the sub-county scale.

The RCMP reports a VMT per capita performance metric. *Table 3-7* shows the 2019 VMT per capita for each jurisdiction in San Joaquin County. The VMT source is the HPMS program while estimates of population are from the Department of Finance. Given that the state highway HPMS VMT estimate reflects a countywide total, state highway VMT within each jurisdiction was calculated by multiplying Caltrans published annual average daily traffic by segment length of state highway within each jurisdiction. It should be noted that this RCMP VMT/capita metric does not to inform SB 743 related project-level CEQA analyses. HPMS VMT estimates are boundary-based (i.e., VMT conforms to the jurisdictional boundaries) and do not reflect the portion of a trip that occurs outside a given jurisdiction as required under SB 743.

**Table 3-7: 2019 Vehicle Miles Traveled (VMT) per Capita by Jurisdiction:**

Jurisdiction	Local Road VMT (1000s)	State Highway VMT (1000s)	Total VMT (1000s)	Population (1/1/2020)	Daily VMT Per Capita
Escalon	26.64	39.60	66.24	7,478	8.86
Lathrop	241.47	1,175.07	1,416.54	26,833	52.79
Lodi	408.95	469.18	878.13	67,930	12.93
Manteca	618.69	836.43	1,455.12	84,800	17.16
Ripon	103.90	427.13	531.03	15,930	33.34
Stockton	2,312.74	2,263.92	4,576.66	318,522	4.37
Tracy	715.80	707.07	422.87	95,931	14.83
County (Unincorporated Areas)	2,494.74	5768.24	8,262.98	156,208	52.90
San Joaquin Total	6,922.93	11,686.66	18,609.58	773,632	24.05

### 3.13 SAFETY MEASURES

In order to assess the relative safety of RCMP roadway segments, collision rates can be used to compare the frequency of collisions with the amount of traffic present on a given facility segment. Key metrics include fatal collision rate, serious injury collision rate, and the total collision rate by collisions per million vehicle miles for RCMP designated roadways. The following equation is used to calculate collision rates for a given segment:

$$R = \frac{C \times 1,000,000}{V \times 365 \times N \times L}$$

where:

R = the collision rate in collisions per million vehicle miles

C = the total number of collisions

V = daily traffic volume of the highway segment

N = the number of years of data

L = the length of the highway segment

Three sources of collision data for estimating collision rates include the Fatality Analysis Reporting System (FARS), Transportation Injury Mapping System (TIMS) or the Statewide Integrated Traffic Records System (SWITRS). The source of the traffic volume needed to compute VMT is published Caltrans data for the state highway system. Count sources for non-state highway traffic volumes include SJCOG RTIF, local agency traffic fee programs, and local traffic studies.

### 3.14 SYSTEM MANAGEMENT MEASURES

System management measures apply directly to the Federal PM2 performance measures. These are:

- Percentage of pavements of the Interstate System in Good Condition & Poor Condition
- Percentage of pavements of the non-Interstate NHS in Good Condition & Poor Condition
- Percentage of NHS bridges classified as in Good Condition & Poor Condition

Pavement management systems are encouraged by FHWA and Caltrans. Additionally, agencies with projects programmed in the State Transportation Improvement Program (STIP) must certify that they have a pavement management system in place with every allocation request sent to the California Transportation Commission (LAPG Section 23.2; Exhibit 23-L).

Pavement condition can be determined using either the Pavement Condition Index (PCI), Pavement Serviceability Index (PSI) or the International Roughness Index (IRI) depending on what is reported by the local agency or Caltrans. Pavement Condition Index (PCI), an ASTM D6433 standard, is the most accepted performance measurement used by many California local agencies to measure the structural condition of pavement and to make planning and funding decisions. PCI data is readily collected, resource light to collect, and is comparable across local, regional and statewide jurisdictions. Currently, PCI is used as a performance measure by the majority (70%) of rural areas of the state. Pavement Serviceability Index (PSI) is based on the AASHTO Road Test's present serviceability rating (PSR) is based on a 5-point rating system but goes beyond a simple assessment of ride quality. Per the Federal Performance Measurement Rule, FHWA advocates the use of the International Roughness Index (IRI) as the preferred measure over PCI for local roadways. Although an appropriate performance measure for high speed highway facilities as a measurement of ride quality or functionality, IRI is not applicable for the 5,500 miles of lower speed NHS roadways in California. Unreliable IRI data collection technology as applied to low speed facilities, prohibitive cost/training for IRI data collection technology, and the lack of clarification on measurement units for certain types of distressed pavements, are several issues with IRI applications.

Given the varied use of these pavement condition metrics, SJCOG advocates local flexibility in the choice of pavement condition measurement types.

### **3.15 FEDERAL MEASURES NOT TRACKED BY THE RCMP**

Given that a countywide baseline on-road mobile source emissions analysis is performed every four years as part of SJCOG RTP/SCS updates (required as part of the Federal Transportation Conformity Rule), and that vehicle emissions are not an integral component of the Federal Congestion Management Process, the RCMP will not monitor or report the Federal PM3 emissions performance measures. Reporting of these measures will be deferred to RTP/SCS updates. Similarly, the RCMP will only monitor and report the Federal PM2 safety performance measure for the RCMP network. Given that the Federal PM2 safety metrics apply to all roadways, countywide reporting may be deferred to Caltrans/SJCOG.

These include:

- Percent change in tailpipe CO2 emissions on NHS compared to 2017 level;
- Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita; and,
- Percent of Non-Single Occupancy Vehicle (SOV) Travel; and, Total Emissions Reduction.

## Chapter 4 RCMP Monitoring Program

### 4.1 INTRODUCTION

Measuring regional congestion and related RCMP performance measures requires an ongoing systematic monitoring program. It is also a required element of a Federal CMP (CFR 23 450.320 (c)(3)). This chapter describes the RCMP Monitoring Program and provides information on what, where, how, and when data collection occurs.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) is the Federal transportation funding bill signed into law in 2012 that first established a performance- and outcome-based program known as “Performance Based Planning”. The objective of performance-based planning is to establish a transparent and performance-based framework for the identification of projects that will make progress toward the achievement of the national goals for transportation. Selection of these projects for funding also referred to as performance-based programming is the key step towards implementation. Subsequent Federal funding bills (i.e., Fixing America’s Surface Transportation (FAST) Act of 2016 and America’s Transportation Infrastructure Act of 2019) have carried forward the same performance management framework.

To assist in these efforts, the National Performance Management Measures Final Rule (23 CFR Part 490) was passed in 2018. As part of performance management, recipients of Federal-aid highway funds, such as SJCOG, would make transportation investments to achieve performance targets that make progress toward the following national goals:

- **Congestion Reduction:** to achieve a significant reduction in congestion on the NHS.
- **System Reliability:** to improve the efficiency on the NHS.
- **Freight Movement and Economic Vitality:** to improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental Sustainability:** to enhance the performance of the transportation system while protecting and enhancing the natural environment.

As described in Chapter 1 and Chapter 3, the RCMP integrates these goals into its objectives and performance measures respectively.

Descriptions of the monitoring needs to inform and quantify the RCMP performance measures are described in the following sections. Although monitoring is continuous, the processing of monitoring data to inform certain performance measures is performed on a staggered (i.e., every other year) basis. For instance, biennial reporting (every odd numbered year) is required of the Federal PM1-3 performance metrics. The staggering of performance measure processing serves to reduce annual RCMP workload requirements in recognition that on an annual basis dramatic shifts in the metrics typically do not occur.

## 4.2 VEHICLE SPEED DATA SOURCE

Pursuant to the National Performance Management Measures Final Rule, the preferred data for complying with the National Highway Performance Program (NHPP) is the National Performance Management Research Data Set (NPMRDS) from FHWA. The NPMRDS provides average speed data (five-minute averaging time) for federally defined roadway segments designated as part of the National Highway System (NHS). A map of the designated NHS in San Joaquin County is provided in Chapter 2. The FHWA NPMRDS speed data is provided at no cost for state DOTs and MPOs. However, it only covers roadways that are on the NHS. Since the NPMRDS does not cover non-NHS arterial roadways, speed data for any/all non-NHS arterial roadways on SJCOG’s CMP network must be purchased or obtained from alternative sources.

NPMRDS data for the previous year (January-December 12-months) will be retrieved from the NPMRDS web-portal. Data will be filtered to isolate average peak hour conditions (see Data Collection Times) for both passenger vehicles and heavy-duty trucks respectively. The only data “cleansing” applied will be to filter/remove extreme high-speed outliers (e.g., 90+ mph). All data will be processed and summarized based on NPMRDS segmentation.

## 4.3 SPEED DATA COLLECTION TIMES

Given the desire to reflect annual average weekday conditions, 12 consecutive months of NPMRDS data must be filtered to isolate average weekday conditions: Tues-Thursday AM/PM peak periods for passenger vehicles and heavy-duty truck vehicles separately. To identify the AM/PM peak hour, the peak periods between 6:00 AM to 9:00 AM and 4:00 PM and 7:00 PM are to be used to identify the most congested continuous 60-minute span for both passenger vehicles and trucks respectively. Given that free flow speed (i.e., prevailing average speed as vehicle density expressed as passenger vehicles per lane per mile approaches zero) is a key variable for calculating congestion, free flow segment speed can be estimated using NPMRDS data recorded between the hours of midnight and 3 AM.

## 4.4 SEGMENT TRAFFIC COUNTS

To develop collision rates vehicle miles traveled (VMT) estimates are required. For holistic countywide collision rates, HPMS VMT estimates will be used. To determine segment specific collision rates, VMT is estimated by multiplying segment length by a given segment’s annual average daily traffic (AADT) volume. Caltrans annually publishes AADT traffic volumes for the state highway system. There is not a systematic data collection source for non-state highway traffic counts in San Joaquin County. New data collection for traffic counts will not be required as part of the RCMP. SJCOG will rely on its member agencies and Caltrans to share available count data as necessary. If traffic count data is not available, SJCOG will use baseline travel demand model volumes in lieu of counts for segment VMT estimation.

## 4.5 MULTIMODAL QUALITY OF SERVICE CORRIDORS DATABASE

RCMP multimodal corridors are defined as sections of the RCMP roadway network where pedestrian, bicyclist, transit passenger, and motorist quality of service are to be analyzed. The concepts and method to compute multimodal quality of service is documented in the Highway Capacity Manual (see Chapter 2 for a map of RCMP Multimodal Corridors). For designated RCMP multimodal Corridors, the following baseline inputs were used to operationalize the HCM multimodal quality of service procedure.

- Infrastructure Characteristics

- Crosswalk Widths
- Segment Lengths
- Number of Lanes
- Speed Limits
- Number of Bus Stops on Each Segment
- Presence of Right Turn Islands
- Median Type
- Traffic and signal information
  - Cycle Length
  - Whether Signal System is Coordinated
  - Peak Hour 2-way volumes
  - Directional Volume Distribution
  - Number of Large Barrier Objects
  - Cross Sectional Widths
  - Number of left/right access points along the segment
  - Bus Stop Amenities
  - Pavement Condition
  - Presence of Left Turn Pockets
  - Green time to cycle length ratio (g/c) for through movement
  - Walk Phase Timing
  - PHF
  - “K” Factor
- Transit System information
  - Frequency
  - Load Factor
  - Rider Trip Length
  - Bus On-Time Performance
  - Scheduled Speed

Many of these quality of service inputs are infrastructure based as opposed to demand based. As such, much of this data can be collected outside the typical commute hours (7:00 to 9:00 AM and 4:00 to 6:00 PM). Absent streetscape alterations, infrastructure characteristics do not vary significantly over time. Transit system information can also be readily collected and updated from information provided on transit agency websites or published transit schedules. SJCOG will be responsible for updating the quality of service traffic demand information inputs using count data or baseline model volumes. Local agencies will be relied on to inform SJCOG of any streetscape alterations that require modification of the quality of service inputs. SJCOG is responsible for updating all non-infrastructure quality of service inputs which are mostly related to traffic counts, transit services (frequency and routing) and posted speed limits.

#### 4.6 NON-NHS SPEED DATA FUNDING

SJCOG is responsible for funding the RCMP Monitoring Program. This includes purchase of speed data for non-NHS roadways designated as part of the RCMP network (i.e., NPMRDS speed data for the NHS is available for free).

#### 4.7 COLLISION DATA

There are several sources for collision data. Either the Fatality Analysis Reporting System (FARS), Transportation Injury Mapping System (TIMS) or the Statewide Integrated Traffic Records System (SWITRS) data sources can be used for processing safety related metrics. FARS is free to access and is limited to just fatality data. TIMS is free to access and is limited to just fatality and injury data. SWITRS data is free and is the “raw” source data that informs both the FARS and TIMS databases. SWITRS data reports both fatality, injury, as well as property damage only collisions. SWITRS requires processing to map. All three collision databases can be sourced for past years upon request. In addition, Caltrans is developing a web-based Crash Data Dashboard that can provide PM1 specific metrics automatically.

#### 4.8 PAVEMENT CONDITION

Pavement condition will be determined using either the Pavement Condition Index (PCI), Pavement Serviceability Index (PSI) or the International Roughness Index (IRI) depending on what is reported by the local agency or Caltrans. Caltrans reports on all the Federal PM2 pavement condition performance measures on the Interstate Highway System (IHS) and the National Highway System (NHS). For portions of the RCMP network that are not designated as part of the NHS, SJCOG and its member agencies will be responsible for collecting pavement condition data. This data will be submitted by to SJCOG on a biennial basis.

#### 4.9 VEHICLE MILES TRAVELED PER CAPITA

Countywide VMT will be based on published estimates from the Highway Performance Monitoring System (HPMS). Population estimates by jurisdiction will be based on Department of Finance.

#### 4.10 DATA SHARING

SJCOG can share RCMP performance measure data with its jurisdictions and the public, upon request upon request.

## Chapter 5 Analyze Congestion Problems and Needs

### 5.1 ROADWAY PERFORMANCE (COMBINED METRIC)

The RCMP combines congestion and reliability measures to diagnose and assess roadway performance issues. These combined metrics serve as the primary basis for determining deficient corridors on RCMP network. Congestion reduction strategies and resulting improvement projects that aim to reduce or solve diagnosed roadway performance problems are described in Chapter 6 and Chapter 7.

**Table 5-1** describes each combination of congestion and reliability thresholds. The threshold for heavy congestion is triggered when observed average peak hour speed is less than 60 percent of the free-flow speed. The threshold for unreliable road segments is triggered when the 95th percentile peak hour travel time is more than 1.5 times longer than the 50th percentile peak hour travel time (i.e., average). Both these metrics are based on thresholds for congestion delay and reliability established in the MAP-21 rule.

**Table 5-1: Congestion and Reliability Thresholds**

	Reliable	Moderately Reliable	Unreliable
Performance Metric	BTI <sup>1</sup> < 1.25	BTI <sup>1</sup> >= 1.25	BTI <sup>1</sup> >= 1.5
Uncongested <sup>2</sup> (>= 60 % of free-flow)	Predictable and efficient	Not always predictable, but usually efficient	Unpredictable, but not often congested
Congested <sup>2</sup> (< 60% of free-flow)	Predictable and often congested	Not always predictable, but often congested	Unpredictable, but often congested

<sup>1</sup>. Buffer Time Index – Measures percentage of travel time devoted to being on time above and beyond average travel time

<sup>2</sup>. Free flow speeds was estimated for each segment based on NPMRDS data during the hours of midnight and 3 AM

**Figure 5-1** and **Figure 5-2** show congestion and reliability reflecting all vehicles (i.e., passenger vehicles and trucks combined) during the AM and PM peak hours respectively. **Figure 5-3** and **Figure 5-4** show congestion and reliability reflecting just trucks during the AM and PM peak hours respectively.

While line thickness denotes congestion intensity, line color represents reliability level. As an example, if a road segment’s travel speed is more than 65 percent of the free-flow speed and its 95th percentile travel time is less than 1.35 times the 50th percentile travel time, then that segment is both reliable and has low congestion and is indicated by a thin green line.

Figure 5-1: AM Peak Hour Congestion and Reliability (March 2019 – March 2020)

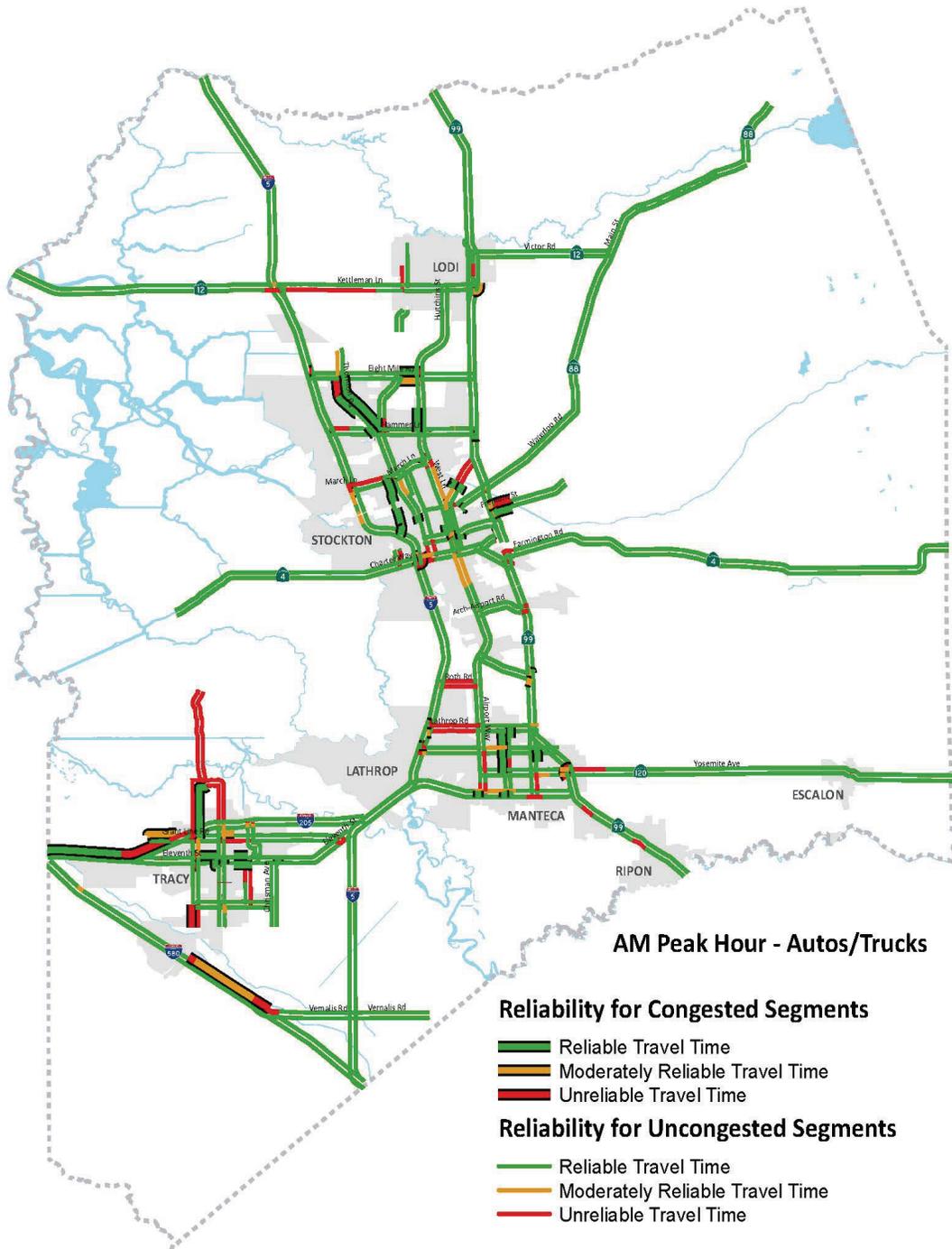


Figure 5-2: PM Peak Hour Congestion and Reliability (March 2019 – March 2020)

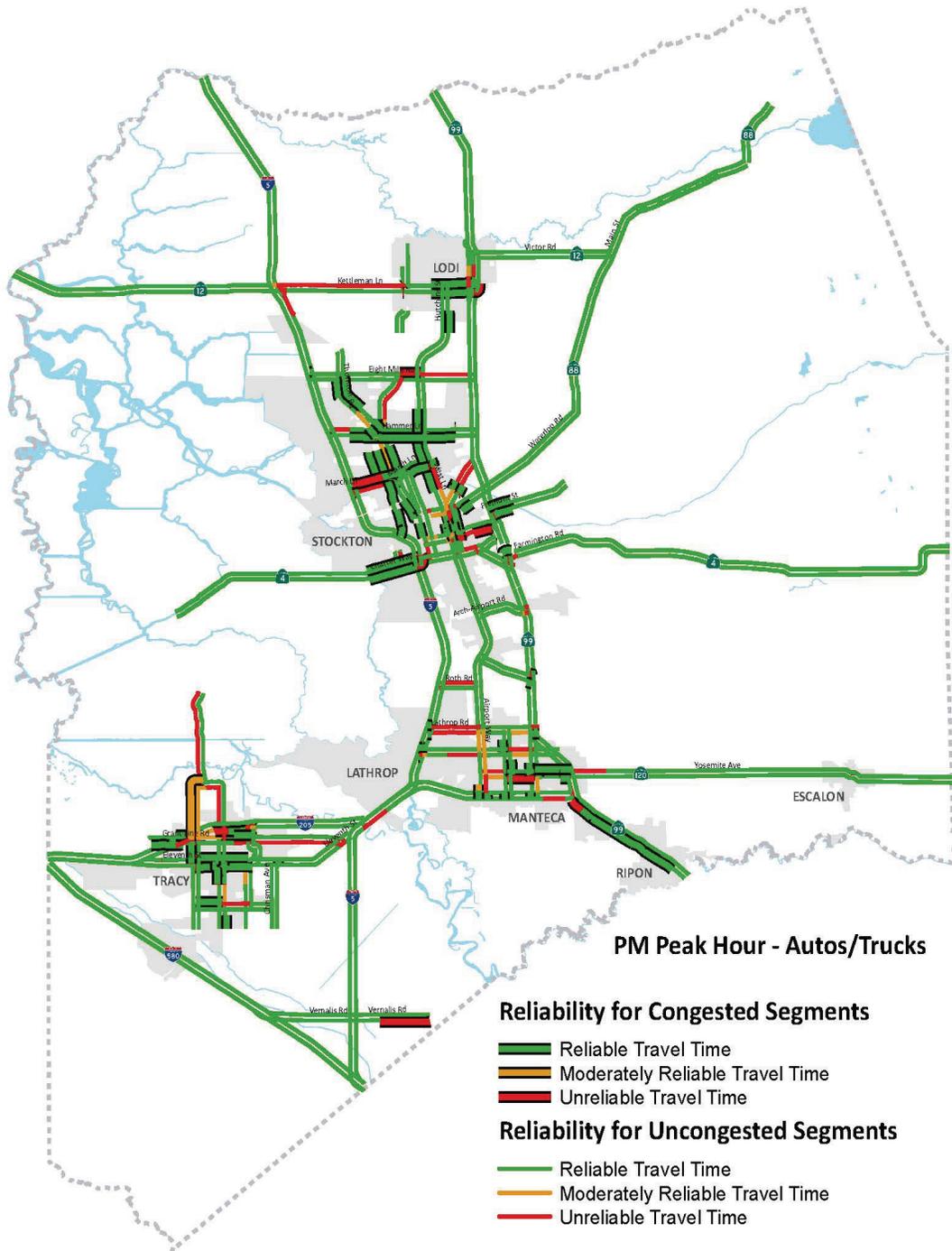


Figure 5-3: AM Peak Hour Truck Congestion and Reliability (March 2019 – March 2020)

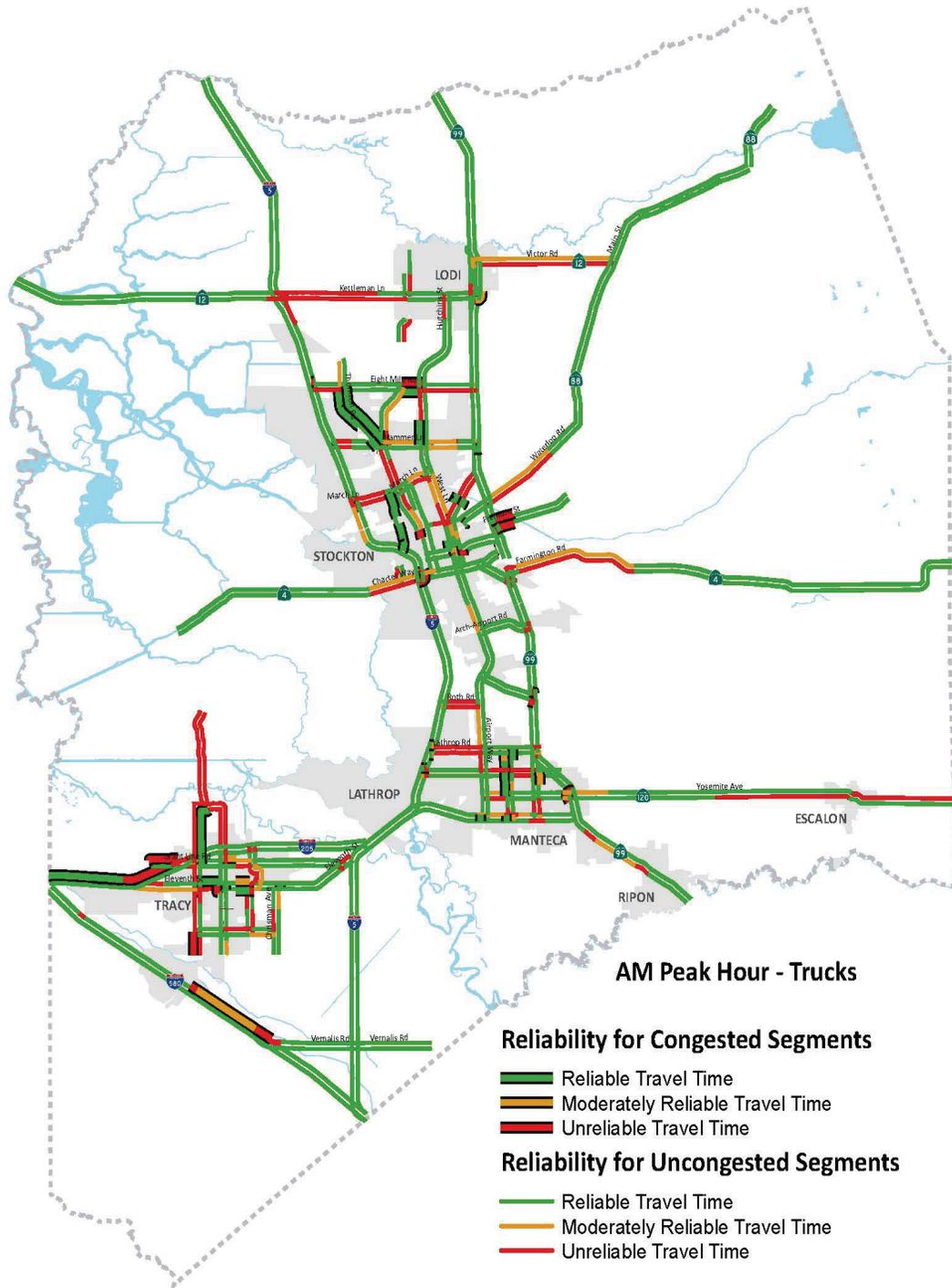
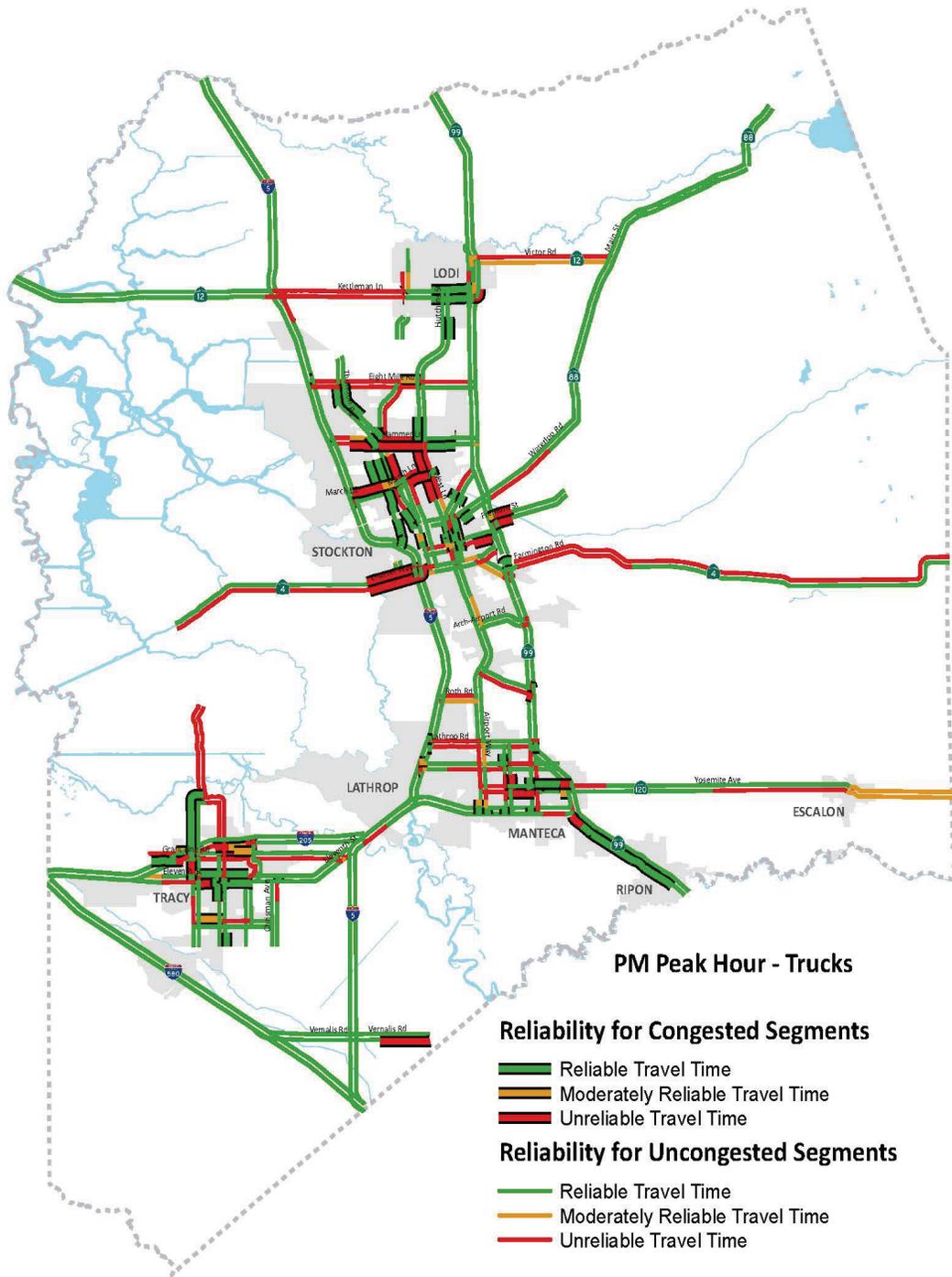


Figure 5-4: PM Peak Hour Truck Congestion and Reliability (March 2019 – March 2020)



## 5.2 PRELIMINARY DEFICIENT CORRIDOR SELECTION

To identify deficient RCMP corridors based on the combined speed-based congestion and reliability metrics, the following criteria is applied:

- Corridor contains segments that experience high congestion during the AM or PM peak period over three miles in length for either total traffic or heavy trucks over multiple consecutive monitoring cycles;
- Corridor contains multiple continuous or semi-continuous segments that experience both high congestion and have very unreliable travel times during the AM or PM peak period for either total traffic or heavy trucks over multiple consecutive monitoring cycles.

Based on the criteria above the initial/preliminary deficient corridors are listed below and mapped out in *Figure 5-5*.

1. Thornton Road: Eight Mile Road to Hammer Lane
2. Kettlemen Lane (SR 12): I-5 to SR 99
3. Hammer Lane: I-5 to SR 99
4. West Lane: East Morada Road to East Alpine Road
5. March Lane: I-5 to West Lane
6. SR 99: Main Street Interchange to SR 120 Juncture
7. I-205: I-580 Juncture to Corral Hollow Road
8. I-580: Corral Hollow Road to SR 132 Juncture
9. SR 4: Port of Stockton Expressway to I-5
10. North Pershing Avenue: I-5 to Swain Road.

This list of deficient corridors above is considered **preliminary**. As described in the criteria, it is recommended that at least two rounds of consecutive biennial monitoring be performed to verify the roadway performance by SJCOG and the RCMP Steering Committee. Congestion management strategies to address the congestion and unreliability experience along these corridors is described in the following section.

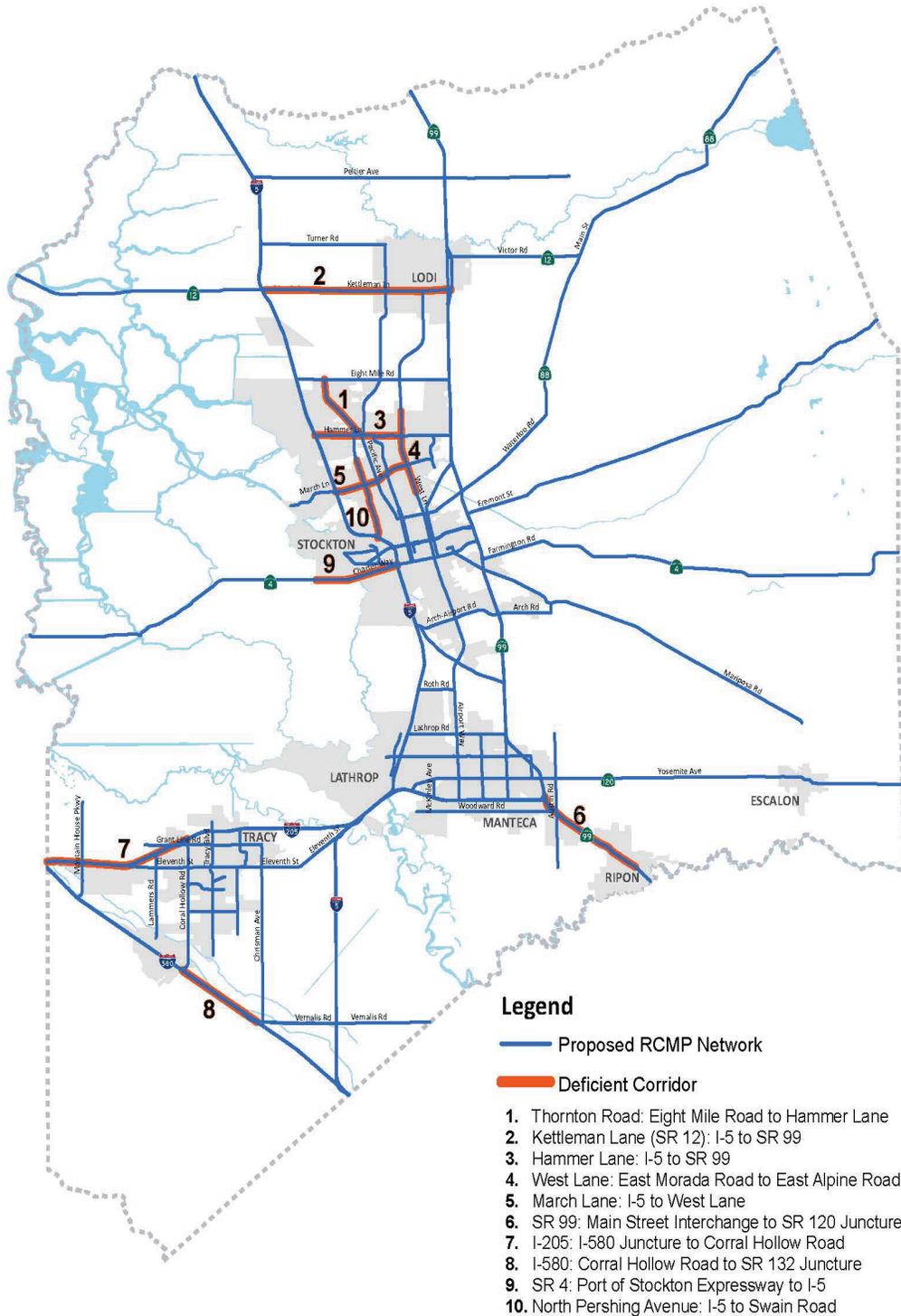
## 5.3 ADDITIONAL CORRIDORS OF INTEREST

Although not reported under the RCMP, the same speed-based congestion and reliability performance metrics were computed for the San Joaquin County NHS in 2017 (6 months of NPMRDS data) and in 2018 (12 months of NPMRDS data). Maps of these combined congestion and reliability results are provided in **Appendix H**. Although the 2019-20 monitoring year results provide the formal basis for identifying the preliminary list RCMP deficient corridors, the 2017-2018 congestion and reliability results do reveal several additional roadway segments/corridors as potentially experiencing deficient conditions. These include:

1. SR-88: Juncture with SR 12 (west) to Juncture of SR 12 (east)
2. I-5: SR 12 to Sacramento County Line
3. SR 120: Jack Tone Road to French Camp Road
4. SR 132: From I-580 to I-5

Although these corridors have at one time recorded levels of congestion and unreliability worthy of deficiency status, they have not consistently done so. As such, they are listed herein as potential “on the cusp” corridors that future rounds of RCMP monitoring will yield more definitive results.

Figure 5-5: Preliminary RCMP Deficient Corridors (March 2019 – March 2020)



## Chapter 6 Identify and Assess Strategies

### 6.1 CONGESTION REDUCTION STRATEGIES

The *Congestion Management Process Guidebook (Federal Highway Administration, 2013)* lists applicable CMP congestion reduction strategies to address CMP deficiencies. These strategies are provided below.

***Demand Management Strategies.*** *Travel Demand Management (TDM), nonautomotive travel modes, and land use management can all help to provide travelers with more options and reduce the number of vehicles or trips during congested periods. These include strategies that substitute communication for travel or encourage regional cooperation to change development patterns and/or reduce sprawl.*

#### *Promoting Alternatives*

- *Programs that encourage transit use and ridesharing, such as marketing/outreach for transit and travel demand management (TDM) services*
- *Pedestrian and bicycle improvements and other strategies that promote nonmotorized travel*

#### *Managing and Pricing Assets*

- *Congestion pricing strategies, including high occupancy toll (HOT) lanes*
- *Parking management*
- *Pricing fees for parking spaces by the number of persons in the vehicle and the time of day or location*
- *Pricing fees for the use of travel lanes by the number of persons in the vehicle and the time of day*
- *Increasing intercity freight rail or port capacity to reduce truck use of highways*

#### *Work Patterns*

- *Flexible work hour programs*
- *Telecommuting programs*

#### *Land Uses*

- *Land use controls or zoning to support/encourage mixed use development and TDM friendly neighborhoods*
- *Growth management restrictions such as urban growth boundaries*
- *Development policies that support transit-oriented designs for corridors and communities involving homes, jobsites, and shops*
- *Incentives for high-density development, such as tax incentives*

***Traffic Operations Strategies.*** *These strategies focus on getting more out of what we have. Rather than building new infrastructure, many transportation agencies have embraced strategies that deal with operation of the existing network of roads. Many of these operations-based strategies are supported by the use of enhanced technologies or Intelligent Transportation Systems (ITS).*

#### *Highway/Freeway Operations*

- *Metering traffic onto freeways*

- *Reversible commuter lanes*
- *Access management*
- *Movable median barriers to add capacity during peak periods*
- *Automated toll collection improvements*
- *Conversion of HOV lanes to High Occupancy Toll (HOT) lanes*
- *Bus-only shoulder lanes*

#### *Arterial and Local Roads Operations*

- *Optimizing the timing of traffic signals*
- *Restricting turns at key intersections*
- *Geometric improvements to roads and intersections*
- *Converting streets to one-way operations*
- *Transit signal priority*
- *Access management*
- *Traffic calming*
- *Road diets (narrowing or removing of travel lanes, often on undivided multilane facilities – e.g. converting from a 4-lane cross-section to a 3-lane cross-section)*

#### *Other Operations Strategies*

- *Faster and anticipatory responses to traffic incidents (incident management)*
- *Traveler information systems*
- *Improved management of work zones*
- *Identifying weather and road surface problems and rapidly targeting responses*
- *Anticipating and addressing special events, including emergency evacuations, that cause surges in traffic*
- *Better freight management, especially reducing delays at border crossings*

**Public Transportation Strategies.** *Improving transit operations, improving access to transit, and expanding transit service can help reduce the number of vehicles on the road by making transit more attractive or accessible. These strategies may be closely linked to strategies in the previous two categories (demand management and traffic operations). As with traffic operations, transit operations are often enhanced by ITS.*

#### *Operations Strategies*

- *Realigned transit service schedules and stop locations.*
- *Providing real-time information on transit schedules and arrivals using vehicle location data*
- *Providing travelers with information on travel conditions as well as alternative routes and modes*
- *Monitoring the security of transit patrons, stations, and vehicles*
- *Enhanced transit amenities and safety*
- *Universal farecards for regions with multiple transit agencies*
- *Transit signal priority*
- *Bus rapid transit*

#### *Capacity Strategies*

- *Reserved travel lanes or rights-of-way for transit operators, including use of shoulders during peak periods.*
- *More frequent transit or expanded hours of service.*
- *Expanding the transit network through new bus and rail services*

#### *Accessibility Strategies*

- *Improvements to bicycle and pedestrian facilities that provide access to transit stops.*
- *Provisions for bicycles on transit vehicles and at transit stops (bikes on trains and buses, secure bicycle parking at stops)*

**Road Capacity Strategies.** *This category of strategies addresses adding more base capacity to the road network, such as adding additional lanes and building new highways, as well as redesigning specific bottlenecks (such as interchanges and intersections) to increase their capacity. Given the expense and possible adverse environmental impacts of new single-occupant vehicle capacity, management and operations strategies should be given due consideration before additional capacity is considered.*

- *Constructing new HOV or HOT lanes*
- *Removing bottlenecks*
- *Intersection improvements*
- *Center turn lanes*
- *Overpasses or underpasses at congested intersections*
- *Closing gaps in the street network*
- *Add travel lanes on major freeways and streets (including truck climbing lanes on grades)*

Based on the above guidance, a toolbox of RCMP congestion reduction strategies was developed and is provided in **Table 6-1**. The RCMP Strategy Toolbox includes a Strategy ID that will be used to cross reference congestion relief improvements that are either currently planned within the ten preliminary RCMP deficient corridors or will be planned in the future. It also provides an indication of the applicability of a given strategy to local arterial operations or access-controlled freeway operations.

## 6.2 CONGESTION REDUCTION STRATEGY PRIORTIES

While the individual congestion reduction strategies generally follow the Federal guidance, the strategies are listed in priority order by facility type (i.e., local arterial and freeway) based on greatest applicability.

### **Local Arterial Priority Congestion Reduction Strategies**

1. Transportation Demand Management (SJCOG Dibs Program)
2. Traffic Operations (signal timing, synchronization, adaptive signal control, control type change (i.e., converting to roundabout))
3. Intelligent Transportation Systems
4. Transit (New or enhanced frequency of service)
5. Active Transportation (Pedestrian/Bike facilities and treatments)
6. Single Occupant Vehicle Widening (roadway / intersection widening)

### Freeways Priority Congestion Reduction Strategies

1. Transportation Demand Management
2. Transportation System Management (e.g., Park and Ride Lots, Ramp Metering)
3. Integrated Corridor Management (ITS)
4. Managed Lanes (e.g., HOV/HOT lanes, Part-Time Use of Shoulder, Toll Lanes, Truck Climbing Lanes)
5. Interchange/Ramp Improvements (e.g., non-SOV capacity increasing)
6. Regional Transit (New or enhanced frequency of service).
7. Passenger Rail Service (New or enhanced frequency of service).
8. Add Single Occupant Vehicle Widening (General Purpose Lane, Auxiliary Lanes over a mile in length, Ramp or Interchange Widening)

*Table 6-2* provides an overview of the general strategy types as applied to each preliminary RCMP deficient corridor. Strategies are identified as either High / Medium / Low emphasis ranking. The ranking denotes the degree of relevance a selected strategy is anticipated to have on a given corridor. The latter was primarily based on the existing infrastructure characteristics of the corridors (freeway versus local arterial, number of signalized intersections, existing transit service lines, freeway parallel capacity potential, north-south or east-west orientation etc.). For strategies that currently include programmed/planned improvements (see Chapter 7), these strategies were identified as “High” emphasis as these strategies already have planning traction which indicates there is support for implementation.

## 6.3 CAPACITY INCREASING PROJECTS

When single occupant vehicle (SOV) capacity increasing projects are programmed/planned on the RCMP network, the Federal CMP requires that SJCOG demonstrate that all reasonable travel demand reduction and operational management strategies appropriate for the corridor have been considered prior to adding SOV capacity. This assessment is not required if it can be demonstrated the need for additional SOV capacity addresses a safety or bottleneck condition (23 CFR 450.320 (d)). If SOV capacity is implemented, the Federal CMP requires (23 CFR 450.320 (e)) that SJCOG identify all reasonable strategies to manage the SOV facility safely and effectively in the future.

Capacity bottlenecks are typically characterized by non-continuous provision in the number of general purpose thru-lanes resulting in recurring congestion. Safety issues on a given roadway or corridor are typically characterized by collision rates. To facilitate the determination of whether a safety issue exists on a given RCMP roadway segment, mapped roadway collision rates can be examined. RCMP network fatality collision and serious injury rate maps are provided in *Figure 6-1* and *Figure 6-2* respectively. Both maps reflect 12 continuous months of collision data (March 2019 – March 2020).

To address these Federal requirements, SJCOG will examine each SOV capacity increasing improvement using its Congestion Management Process Evaluation of RTP Regional Roadway SOV Capacity Increasing Projects process. This process is performed as part of each RTP/SCS update (See **Appendix G**). The RCMP Congestion Management Process Evaluation of RTP Regional Roadway SOV Capacity Increasing Projects process applies to only those SOV capacity increasing projects on the RCMP network.

Table 6-1: RCMP Strategy Tool-Box

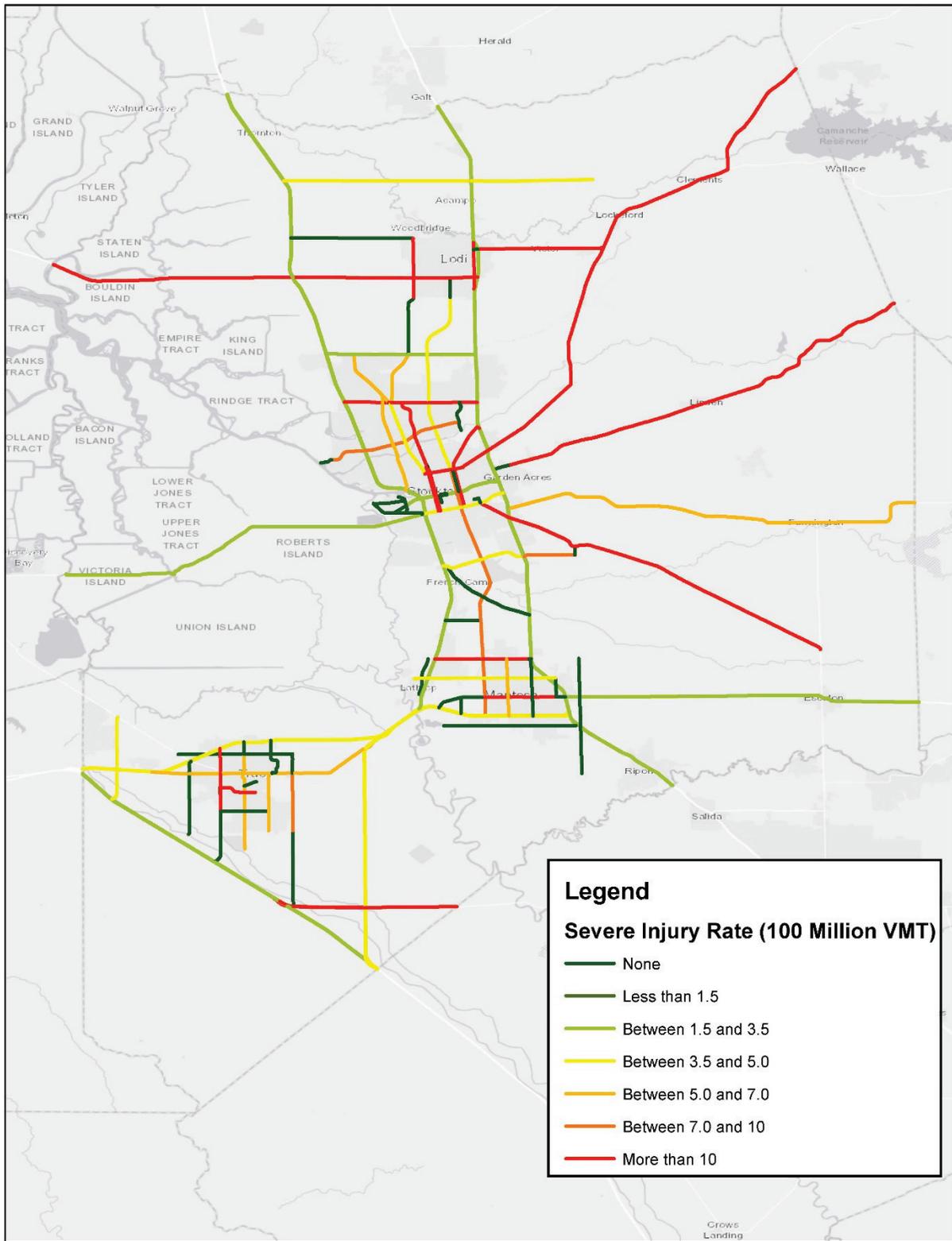
STRATEGY TOOL BOX			
Strategy ID	Strategy Type	Applicability	Strategy Improvement Options
A	<b>Demand Management Strategies</b>	Arterials/Freeways	Employer-based Outreach and SOV Trip Reduction Options, Commuter Benefit Options, Regional Rideshare, Trip Planning; Vanpool Formation; Transit Pricing/Fare Incentives; Bik/Ped Programs and Subsidies; Shuttle Services; Electric Vehicle subsidies; Employee Surveys/Planning. See SJCOG Dibs Program
B	<b>Arterial Operational Strategies</b>	Arterials	Intersection Channelization (provision of turn lanes, raised medians, etc), Intersection Control Evaluations, Signal Coordination (includes detection systems); Signal Timing; Signal Priority; One-way/Two-way conversions; Road Diet; Traffic Calming; Access Management (Turn Restrictions; reducing/consolidating driveway access; raised medians/turn channelization).
C	<b>Managed Lanes Strategies</b>	Freeways	Auxiliary Lanes, Ramp Metering, HOV/HOT Lanes, HOV Bypass; Part Time Use of Shoulder; Reversible Lanes; Transition Lanes;
D	<b>Land Use/Growth Management Strategies</b>	Arterials/Freeways	TOD; Incentives for Densification; Land Use Controls; Zoning; Urban Growth Boundaries;
E.1	<b>Rubber Tire Public Transit Strategies</b>	Arterials/Freeways	New Service Lines, Increased Service Frequencies, Realigned Bus Schedules; Bus Rapid Transit,
E.2	<b>Passenger Rail Public Transit Strategies</b>	Arterials/Freeways	Light Rail Expansion; Increased Frequency of Service; Realigned Schedules for Commuters
F	<b>Active Transportation Strategies</b>	Arterials	Sidewalk or Class II/III bikeway gap closures. Converting Class II bikeways to Class IV (buffered); Ped/bike facilities near transit stations/stops; Provisions for bicycles on transit vehicles (bus or rail) and transit stops; Access to Transit; Intersection bulb-outs; mid-block planter islands; pedestrian enhancements, widening sidewalks, a planted buffer; Rectangular rapid flash beacon treatments;
G.1	<b>ITS Strategies</b>	Arterials	Adaptive Signal Control; Traffic sensors/traffic detection; Traffic signal controllers; Fiber Optic or wireless communication system at the intersections; Vehicle detector stations;
G.2	<b>ITS Strategies (Integrated Corridor Management)</b>	Arterials/Freeways	See: C; G.1; Adaptive Signal Control at Ramps +1 Service Street Intersection; Integrated Corridor Management (ICM) Communications equipment to connect all the field devices in the corridor including parallel routes; Video and data information to City/County/Caltrans TMC; Network equipment and software upgrades in local agency TMC to receive the data.
G.3	<b>ITS Strategies (Traveler Information Systems)</b>	Arterials/Freeways	Real Time Transit Vehicle Arrival Information; Variable Message Signs;
H	<b>TSM Strategies</b>	Arterials/Freeways	Park-and-Ride Lots; Expansion of Existing P&R Lots; P&R Amenities; Fringe Lots; Parking Management/Pricing;
I	<b>Incident Management Strategies</b>	Arterials/Freeways	Service Patrols; Part-Time Use of Shoulder
J.1	<b>Safety Improvement Strategies (Rural)</b>	Arterials	Systemic Safety Assessments; HSM Counter Measures for Rural Roadways and Curves
J.2	<b>Safety Improvement Strategies (Urban)</b>	Arterials	Systemic Safety Assessments; HSM Counter Measures for Intersections and Mid-Block - Focus on Ped/Bike
K	<b>SOV Roadway Capacity</b>	Arterials/Freeways	Intersections/Interchanges; Remove Bottlenecks; Lanes; Center Turn Lanes; Gap Closures; Roadway Extensions.

**Table 6-2: Preliminary RCMP Deficient Corridor Strategy**

Strategy ID	Strategy Type	Applicability	1. Thornton Rd.	2. Kettleman Ln.	3. Hammer Ln.	4. West Ln.	5. March Ln.	6. SR 99	7. I-205	8. I-580	9. SR 4	10. N Pershing Ave.
A	<b>Demand Management Strategies</b>	Arterials/Freeways	H	H	H	H	H	H	H	H	H	H
B	<b>Arterial Operational Strategies</b>	Arterials	H	M	H	H	H				M	H
C	<b>Managed Lanes Strategies</b>	Freeways						H	H	M		
D	<b>Land Use/Growth Management Strategies</b>	Arterials/Freeways	<del>H/L</del>	<del>H/L</del>	<del>H/L</del>	<del>H/L</del>	<del>H/L</del>	L/TBD	L/TBD	L/TBD	L/TBD	<del>H/L</del>
E.1	<b>Rubber Tire Public Transit Strategies</b>	Arterials/Freeways	H	H	H	H	H	M	M	M	L	H
E.2	<b>Passenger Rail Public Transit Strategies</b>	Arterials/Freeways	L	L	L	L	L	M	M	M	L	L
F	<b>Active Transportation Strategies</b>	Arterials	H	H	H	H	H				L	H
G.1	<b>ITS Strategies</b>	Arterials	M	M	M	M	M				M	M
G.2	<b>ITS Strategies (Integrated Corridor Management)</b>	Arterials/Freeways	M	L	L	M	L	H	H	H	L	M
G.3	<b>ITS Strategies (Traveler Information Systems)</b>	Arterials/Freeways	M	M	M	M	M	H	H	H	H	M
H	<b>TSM Strategies</b>	Arterials/Freeways	L	L	L	L	L	H	H	H	M	L
I	<b>Incident Management Strategies</b>	Arterials/Freeways	L	L	L	L	L	H	H	H	M	L
J.1	<b>Safety Improvement Strategies (Rural)</b>	Arterials									L	
J.2	<b>Safety Improvement Strategies (Urban)</b>	Arterials	H	H	H	H	H				M	H
K	<b>SOV Roadway Capacity</b>	Arterials/Freeways		H				H	H			
<b>Degree of Relevance to a Specific Corridor.</b>												
High Relevance												
Medium Relevance												
Low Relevance												
Mix of High / Low Relevance - see Corridor Information Sheet												
Low/To Be Determine												



Figure 6-2: RCMP Network Serious Injury Collision Rates (March 2019 – March 2020)



## Chapter 7 Program Implementation

### 7.1 INTRODUCTION

The RCMP provides a framework for the funding and implementation of projects that aim to achieve the objectives of RCMP as measured through monitoring of the RCMP transportation performance measures and identification of the preliminary deficient corridors.

### 7.2 PROJECTS IDENTIFIED BY THE RCMP

The purpose of a Federal CMP is to identify actual projects, programs, and strategies to address identified congestion issues. An obvious starting point for RCMP strategy development and prioritization is SJCOG's RTP/SCS financially constrained Tier 1 project list. *Table 7-1* shows projects that are currently listed in SJCOG's RTP Tier I improvements that specifically aim to address congestion on one or more of the ten preliminary RCMP deficient corridors. For each project the RTP Project ID and RCMP Strategy ID is provided including a short description. For each preliminary deficient corridor, the projects are ordered by RCMP Strategy priority as defined in Chapter 6. Some projects/programs are listed under more than one deficient corridor as appropriate. During future RCMP updates, additional projects addressing the preliminary RCMP deficient corridors should be considered for inclusion and prioritization for incorporation into the RTP Tier 1 list of improvements. These include:

- Capital projects intended to reduce congestion on RCMP deficient corridors/roadways regardless of project funding source. This may include projects funded by Measure K funds, Local Transportation Funds, federal funds or developer fees.
- TDM programs that reduce SOV travel or encourage the use of alternates to the SOV.
- Transit related projects designed to increase transit utilization or reduce SOV use.
- Active transportation projects that promote the mode shift from SOV use.
- Projects funded by the Regional Traffic Impact Fee (RTIF).
- Multimodal improvement projects that are not on the RCMP designated network but will improve RCMP network operations or reduce SOV trips (improvements that parallel facilities RCMP deficient corridors).

The RCMP Congestion Management Process Evaluation of RTP Regional Roadway SOV Capacity Increasing Projects process (described in Chapter 6) should be applied to those improvements that increase single-occupant-vehicle (SOV) capacity. These are projects denoted by RCMP Strategy "K". Note that this is considered the last priority strategy to consider for addressing congestion on the RCMP network. The RCMP Regional Roadway Project Review and Formation Process will be documented as part of each RTP/SCS update

### 7.3 RCMP INTEGRATION

RCMP implementation focusses on integrating the RCMP into SJCOG's other regional transportation planning and planning/programming functions. How the RCMP integrates with SJCOG's regional planning process is shown in *Figure 7-1*. *Figure 7-2* illustrates in greater detail this relationship. Integration of the RCMP in SJCOG's RTP CIP Tier I selection process serves to influence and inform state/federal programming decisions (i.e., RTIP/FTIP) consistent with federal performance-based planning/programming initiatives.

Table 7-1: Improvement Projects and Preliminary RCMP Deficient Corridors

1. Thornton Road: Eight Mile Road to Hammer Lane				
Improvement Type	2018 RTP MPO ID	Project Name	RCMP Strategy ID	Project Description
Traffic Operations	SJ14-CM05	Thornton Rd at Hammer Ln. and Lower Sac Left Turn Lanes	B	Add SBL on Thornton(at Hammer), add WBL on Lower Sac(Thornton/Pacific). Retime both signals, as well as adjacent signal (Hammer/Lower Sac). EVP at Pacific/Lower Sac to be upgrade.
Transit	SJ14-5016	BRT Project: March Lane Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
Transit	SJ14-5019	BRT Project: Eight Mile Road Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
Active Transportation	SJ14-8017	Bear Creek and Pixley Slough Bicycle and Pedestrian Path	F	Install new bicycle facilities and upgrade various existing bicycle facilities.
2. Kettleman Lane (SR 12): I-5 to SR 99				
Improvement Type	2018 RTP MPO ID	Project Name	RCMP Strategy ID	Project Description
Active Transportation	SJ14-8018	Citywide Bicycle Facilities Detection Improvement Project	F	Install video detection of bicyclists at and green painted bicycle lanes at signalized intersections
Interchange/Ramp Improvements	SJ11-2015	SR-99 at SR-12 West (Kettleman Lane)	K	Reconstruct interchange and widen to free flowing interchange
3. Hammer Lane: I-5 to SR 99				
Improvement Type	2018 RTP MPO ID	Project Name	RCMP Strategy ID	Project Description
Single Occupant Vehicle Widening	SJ14-CM05	Thornton Rd at Hammer Ln. and Lower Sac Left Turn Lanes	B	Add SBL on Thornton(at Hammer), add WBL on Lower Sac(Thornton/Pacific). Retime both signals, as well as adjacent signal (Hammer/Lower Sac). EVP at
Interchange/Ramp Improvements	SJ11-2004	I-5 at Hammer Lane	C / K	Interchange Modification and auxiliary lanes (PM 32.6)
Transit	SJ14-5021	Hammer Triangle Transfer Station	E.1	Hammer Triangle Transfer Station
Transit	SJ14-5016	BRT Project: March Lane Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
Transit	SJ14-5019	BRT Project: Eight Mile Road Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
4. West Lane: East Morada Road to East Alpine Road				
Improvement Type	2018 RTP MPO ID	Project Name	RCMP Strategy ID	Project Description
Single Occupant Vehicle Widening	SJ14-9007	Left-Turn Lanes Additions at Various Intersections	B	Install left turn lanes - West Lane and Bianchi Road
Transit	SJ14-5016	BRT Project: March Lane Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
Transit	SJ14-5019	BRT Project: Eight Mile Road Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
Active Transportation	SJ14-8015	March Lane/EBMUD Bike/Ped Path Connectivity Improvements	F	Reconstruct, widen, and improve existing pathway to Class I Bicycle and Pedestrian Path standards. Install intersection and midblock improvements, high visibility crosswalks, striping, gap closures, upgrade of ADA ramps, flashing beacons, and wayfinding signage
ITS	SJ14-CM15	West Lane Traffic Responsiveness Signal Control System	G.1 / B	Install new traffic responsiveness signal control system on West Lane between Harding Way and Enterprise Street.
5. March Lane: I-5 to West Lane				
Improvement Type	2018 RTP MPO ID	Project Name	RCMP Strategy ID	Project Description
Traffic Operations	SJ14-9006	Pacific Avenue and March Lane Intersection Modification	B	Install southbound right turn lane and retime traffic signal
Traffic Operations	SJ11-CM16	March Lane Adaptive Traffic Control	B	Install adaptive traffic control system along March Lane between Feather River drive and Montauban Ave to improve safety and traffic operations
Transit	SJ14-5016	BRT Project: March Lane Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
Transit	SJ14-5016	BRT Project: March Lane Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
Transit	SJ14-5019	BRT Project: Eight Mile Road Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
Active Transportation	SJ14-8015	March Lane/EBMUD Bike/Ped Path Connectivity Improvements	F	Reconstruct, widen, and improve existing pathway to Class I Bicycle and Pedestrian Path standards. Install intersection and midblock improvements, high visibility crosswalks, striping, gap closures, upgrade of ADA ramps, flashing beacons, and wayfinding signage
ITS	SJ11-CM16	March Lane Adaptive Traffic Control	G.1 / B	Install adaptive traffic control system along March Lane between Feather River drive and Montauban Ave to improve safety and traffic operations
6. SR 99: Main Street Interchange to SR 120 Juncture				
Improvement Type	2018 RTP MPO ID	Project Name	RCMP Strategy ID	Project Description
Ridesharing and Vanpool Programs	SJ07-9001	TDM	A	Trip Reduction Coordination, Guaranteed Ride Home, Vanpool Enhancement, Match lists, TDM marketing, etc.
Traffic Operations	SJ14-9001	Colony/Hoff Traffic Signal	B	Install traffic signal
Managed Lanes	SJ18-1001	SR-99 HOV	C / F	Widen from 6 to 8 lanes (inside/outside), including reconstruction of SR-99/Main Street and SR-99/Wilma Avenue interchanges and pedestrian overcrossing
Interchange/Ramp Improvements	SJ18-1002	SR 99/120 Connector Project Phase 1B	C / K	Widen the northbound SR 99 to westbound SR 120 connector ramp from one-lane to two-lanes; Add an auxiliary lane in the existing median of westbound SR 120 from Main Street to SR 99; Convert the existing 99/120 separation structure to two lanes and construct a new separation structure to serve the eastbound 120 to northbound 99 connector ramp.)
Interchange/Ramp Improvements	SJ18-1003	SR 99/120 Connector Project Phase 1C	C / K	Add braided off ramps from SR 99 and SR 120 to Austin Road; Add loop on ramp from Austin Road to northbound SR 99 and to westbound SR 120; Add auxiliary lane on eastbound SR 120 from Main Street to SR 99; Add an auxiliary lane in each direction on SR 99 from SR 120 to approximately 1.7 mile south of Austin Road and relocate the frontage road.
Passenger Rail	SJ07-6018	Phase II Implementation Plan for the Central Valley Rail Service	E.2	Commuter rail service
ITS	N/A	SR-120 TMS Upgrade/Repairs	G.1 / B	Upgrade existing communication infrastructure between field elements and District 10 TMC
Park and Ride Lots	SJ07-9002	Park and Ride Lots	H	Construct Park and Ride Lots Various Locations
Interchange/Ramp Improvements	SJ14-1004	SR 99/120 Connector Project Phase 1A	K	(Widen the eastbound SR 120 to southbound SR 99 connector ramp from one-lane to two-lanes; Remove the Austin Road overcrossing and replace with a new 4 lane structure spanning SR 99 and UPRR; Add a new connecting road from Austin Road to Woodward Ave and Moffat Blvd and modify the existing UPRR gated crossing at Woodward Ave;Temporarily close the Austin Road northbound entrance and southbound exit ramps, resulting in a partial interchange.)
Interchange/Ramp Improvements	SJ14-2001	SR-99 at Raymus Expressway	K	Construction of new interchange - ENVIRONMENTAL ONLY
7. I-205: I-580 Juncture to Corral Hollow Road				
Improvement Type	2018 RTP MPO ID	Project Name	RCMP Strategy ID	Project Description
Ridesharing and Vanpool Programs	SJ07-9001	TDM	A	Trip Reduction Coordination, Guaranteed Ride Home, Vanpool Enhancement, Match lists, TDM marketing, etc.
Managed Lanes	SJ07-1003	I-205 Managed Lanes	C	Widen from 6 to 8 lanes (inside/outside)
Passenger Rail	SJ07-6016	ACE Service Extensions	E.2	Enhance/extend rail to benefit residents; integrate ACE with the State intercity rail service; extend ACE service
Passenger Rail	SJ18-6011	Tri-Valley / SJV	E.2	Altamont Pass Corridor
Park and Ride Lots	SJ07-9002	Park and Ride Lots	H	Construct Park and Ride Lots Various Locations
Interchange/Ramp Improvements	SJ11-2010	I-205/Lammers Rd/Eleventh St	K	Construct interchange I-205 at Eleventh street realign and widen Eleventh Street to 6-lanes north of Grant Line to Byron Road. Construct Aux lane Hansen to Eleventh; in WB I-205 Eleventh Street to Grant Line Road
Interchange/Ramp Improvements	SJ14-2003	I-205 at Mountain House/International Pkwy	K	Reconstruct interchange
Interchange/Ramp Improvements	SJ11-2011	I-205 at Grant Line Road	K	Modification of existing interchange
8. I-580: Corral Hollow Road to SR 132 Juncture				
Improvement Type	2018 RTP MPO ID	Project Name	RCMP Strategy ID	Project Description
Ridesharing and Vanpool Programs	SJ07-9001	TDM	A	Trip Reduction Coordination, Guaranteed Ride Home, Vanpool Enhancement, Match lists, TDM marketing, etc.
Interchange/Ramp Improvements	SJ11-2031	I-580 at Corral Hollow Road	C	Modification of existing interchange - ENVIRONMENTAL ONLY
9. SR 4: Port of Stockton Expressway to I-5				
Improvement Type	2018 RTP MPO ID	Project Name	RCMP Strategy ID	Project Description
Ridesharing and Vanpool Programs	SJ07-9001	TDM	A	Trip Reduction Coordination, Guaranteed Ride Home, Vanpool Enhancement, Match lists, TDM marketing, etc.
Transit	SJ14-5016	BRT Project: March Lane Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
Transit	SJ14-5018	BRT Project: Arch Road/Sperry Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
10. North Pershing Avenue: I-5 to Swain Road				
Improvement Type	2018 RTP MPO ID	Project Name	RCMP Strategy ID	Project Description
Transit	SJ14-5016	BRT Project: March Lane Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements
Transit	SJ14-5019	BRT Project: Eight Mile Road Corridor	E.1	Implementation of the BRT service along the corridor including traffic signal upgrades, bus stop amenities and access enhancements

Figure 7-1: SJCOG RCMP Integration with Regional Planning Process

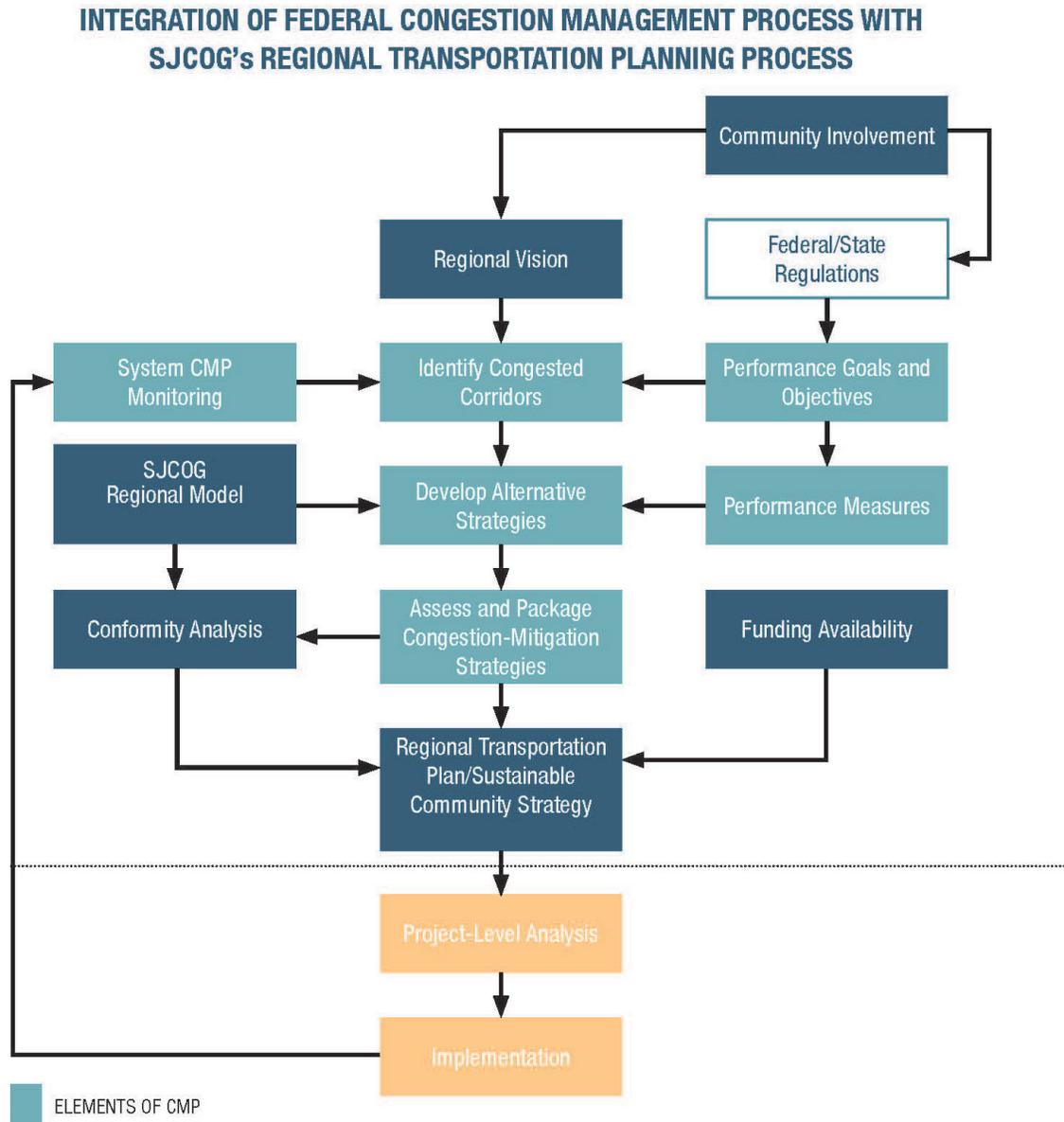
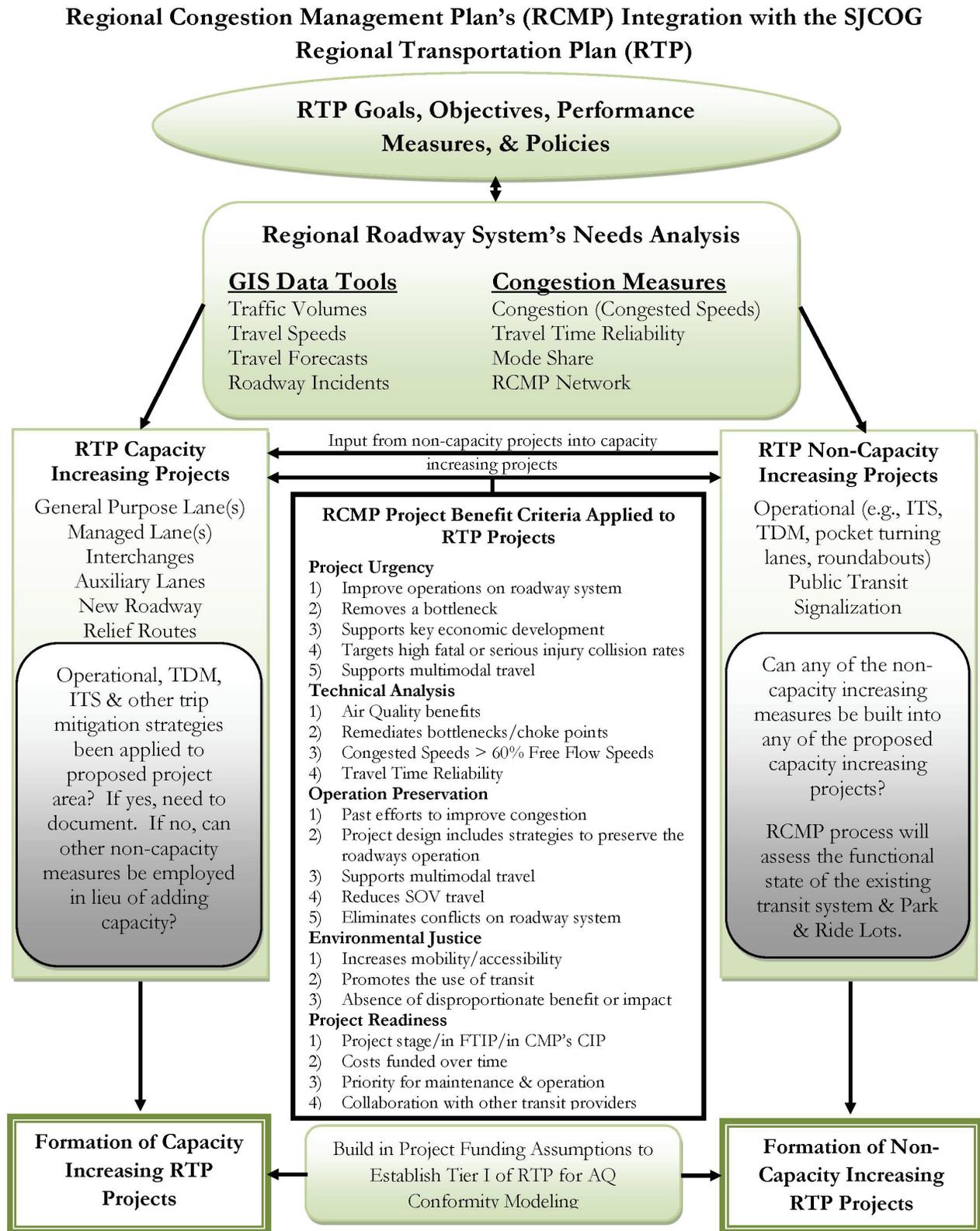


Figure 7-2: RCMP Integration with the RTP



## 7.4 RCMP IMPLEMENTATION

Key process tasks performed by SJCOG to implement the RCMP include:

- RCMP Monitoring Schedule – Annual (but staggered every other year for certain metrics)
- RCMP Performance Report Schedule – Biennial (every odd numbered year) – to coincide with Federal Reporting Requirements (National Performance Rule)
- Evaluation/Identification of RCMP Deficiencies (every odd numbered year – to be informed by completion of the RCMP Performance Report).
- RCMP Program Update (every four years – even numbered year). The RCMP update will provide SJCOG its' RCMP Steering Committee the opportunity to revisit all the elements of SJCOG's RCMP (e.g., network, monitoring, performance metrics, deficient corridors, improvement strategies, etc.) to determine what is working and what elements need improvement and to consider modifications as appropriate. Any new legislation affecting the RCMP will also be reflected during the four-year cycle update.

In addition, to facilitate SJCOG's RCMP integration the following documents should be considered.

### **SJCOG Overall Work Program**

The OWP should specifically call out the RCMP process scheduled to occur in the coming fiscal year (Monitoring and/or Reporting). It should also indicate the information flow into the development of the impending update to SJCOG's RTP/SCS. During every fourth and even numbered year – the OWP should specifically call out the RCMP update task.

### **SJCOG RTP/SCS Tier I CIP List**

SJCOG's Project Selection Criteria used to select projects during discretionary transportation funding cycles (state and federal) must specifically recognize (and provide added points or weight) to projects identified through the RCMP. This includes the criteria used to evaluate projects nominated for SJCOG's call-for-projects that explicitly address regional goals and priorities including those included in the RCMP. This will incentivize SJCOG's member agencies to recognize and use the RCMP as a resource. This will also make state/federal competitive grant applications (SB-1, ATP, HSIP etc.) submitted by SJCOG or its member agencies ostensibly more competitive.

### **Relationship to RTP and RTIP/FTIP**

Annual RCMP monitoring is a key mechanism that feeds into the regional transportation planning and programming process during SJCOG's RTP and FTIP updates. Operational issues and related improvements identified through the RCMP monitoring process should be addressed as part of state/federal programming cycles. To better promote performance-based programming, proposed improvements that flow from the RCMP are given greater funding priority by SJCOG during discretionary fund programming cycles.

SJCOG's member agencies have a vested interest in implementing the RCMP given that projects that flow from the program are given greater weight (funding priority) during discretionary state/federal program cycles and would more fully meet the performance-based scoring criteria of many state/federal competitive grant funding programs. It is anticipated that local agency sponsorship of improvements that address RCMP deficient corridors would improve their competitiveness (be "scored" more favorably) for selection by SJCOG. Potentially applicable local/state/federal funding sources listed in **Table 7-2**. For a complete list of federal funding sources see the most recently approved SJCOG Federal Transportation Improvement Program.

Table 7-2: Potential RCMP Funding Sources

<b>Funding Sources</b>	
<b>Local Sources</b>	<b>Use of Funds</b>
Measure K	Flexible
HUTA/Gas Tax Subvention Funds	Roadway
Prop 42	Roadway/Complete Streets/Transit Capital
Regional / Local Development Impact Fees (DIF)	Primarily Roadway Capital
General Fund	Flexible
Transit Fares	Transit Operations
Local Transportation Funds (LTF)	Transit Operations
Local Transportation Funds (LTF Non Motorized)	Active Transportation and Complete Streets
<b>State Funding Sources</b>	<b>Use of Funds</b>
SB-1 Grant: Congested Corridors Program (CCP)	Roadway/Active/Complete Streets
SB-1 Grant: Sustainable Communities (SC)	Active/Complete Streets/Roadway
SB-1 Grant: Local Partnership Program (LPP)	Roadway/Active/Complete Streets
SB-1 Grant: Trade Corridor Enhancement Program (TCEP)	Roadway
SB-1 Transit and Intercity Rail Capital Program (TIRCP)	Transit/Rail Capital
SB-1 State of Good Repair Program (SGR)	Transit Capital
State Transit Assistance (STA)+SB-1 Augment	Transit Operations
State Highway Operations and Protection Program (SHOPP) - SB-1 Augment	Roadway
STIP: RIP	Roadway/Active/Complete Streets
STIP: IIP	Roadway
Public Transportation Account (PTA)	Transit/Rail Operations
Highway Maintenance (HM)	Roadway
ATP (Competitive)	
Statewide Call	Active Transportation and Complete Streets
MPO Call	Active Transportation and Complete Streets
Prop 1A and Prop 1B (when they are appropriate)	Flexible
Cap and Trade Funding	
Low Carbon Transit Operations Program (LCTOP)	Transit/Rail Capital/Operations
ATP	Active Transportation and Complete Streets
Affordable Housing and Sustainable Communities	Transit/Rail Capital/Active
Transit and Intercity Rail Capital Project (TICRP)	Transit/Rail Capital
Low Carbon Transit Operations Program	Transit/Rail Capital/Operations
Zero Emission Truck and Bus Pilot Projects	Transit Capital
Enhanced Fleet Modernization Program Plus-Up	Rail Capital
Transportation Development Act (TDA) funds	Transit Capital/Operations
<b>Federal Funding Sources</b>	<b>Use of Funds</b>
Federal Transit Formula (FTA) (5307, 5311, 5339 Combined)	Transit Capital/Operating
Federal Transit Formula (FTA) 5310	Transit Capital/Operating
Surface Transportation Block Grant Program (STBGP) (formally RSTP)	Roadway
Highway Safety Improvement Program (HSIP)	Roadway
Highway Bridge Replacement and Rehabilitation Program (HBRRP)	Roadway Bridge
Rail/Highway Grade Crossing Protection (USC Section 130)	Rail Capital
High Priority Projects and Demo	Rail Capital
BUILD (previously TIGER)	Rail Capital
Federal Rail Assistance (FRA) (grants for safety)	Rail Capital
Consolidated Rail Infrastructure and Safety Improvement (CRISI)	Rail Capital
Community Development Block Grant (CDBG)	Active Transportation and Complete Streets
Federal Lands Access Program (FLAP)	Roadway/Active/Complete Streets on or adjacent to Federal Lands
National Scenic Byways Program (SBP)	Roadway

## 7.5 FHWA MPO CERTIFICATION REVIEW

On a four-year cycle, FHWA performs a MPO Certification Review. The MPO Certification Review documents SJCOG’s planning/programming process over the previous four years and determines if it complies with all federal transportation planning requirements. As part of this review, SJCOG’s compliance with the Federal Congestion Management Process requirements is determined. The following SJCOG RCMP requirements are typically reviewed:

- Compliance with the Federal RCMP Performance Measurement responsibilities including the Federal PM1-3 reporting requirements (see Chapter 3)
- Compliance with the Federal RCMP Monitoring Program responsibilities (see Chapter 4)
- Compliance with RCMP integration with SJCOG’s RTP Tier I CIP selection process for addressing RCMP deficient corridors (see Chapter 6 and 7)
- Compliance with programmed/planned single occupant vehicle (SOV) capacity increasing projects (i.e., RCMP Regional Roadway Project Review and Formation Process (see Chapter 6 and 7).

As part of SJCOG’s administration of the Measure K Program, SJCOG must make annual findings that the RCMP is being implemented.

## 7.6 IMPLEMENTATION RESPONSIBILITIES

As the designated TMA and MPO for San Joaquin County, SJCOG is required to implement a Federal CMP (Title 23 U.S.C Sec. 450.320). In addition, SJCOG must annually determine compliance with the Measure K Renewal Ordinance. SJCOG works collaboratively with its member agencies to address its federal/state/regional transportation planning and programming needs. SJCOG’s RCMP process is legislatively integrated with its’ state and federal planning/programming processes. RCMP implementation responsibilities for each agency in San Joaquin County are summarized in *Table 7-3* and the participating agencies are listed in *Table 7-4*.

**Table 7-3: RCMP Implementation Responsibilities**

RCMP Task	SJCOG	Jurisdictions	Caltrans D-10	Public
Prepare Plan/Updates	Lead Agency	Technical Support/Concurrence	Concurrence	Input
Define RCMP Network	Lead Agency	Input	Input	Input
Performance Measure Development	Lead Agency	Input	Input	Input
Monitoring / Data Collection	Lead Agency	Input	Input	Input
Analyze Congestion Problems	Lead Agency	Concurrence	Input	Input
Identify and Assess Improvement Strategies	Lead Agency	Technical Support/Concurrence	Concurrence	Input
Program and Implement Strategies	Lead Agency	Technical Support/Concurrence	Technical Support/Concurrence	Input
Evaluate Strategy Effectiveness	Lead Agency	Technical Support	Concurrence	Input

**Table 7-4: SJCOG Member and Partner Agencies**

Participating Agencies	Participating Transit Providers
California Department of Transportation	Ripon Blossom Express
County of San Joaquin	Altamont Commuter Express
City of Stockton	San Joaquin Regional Transit District
City of Lodi	Lodi Grapeline
City of Manteca	Tracy Tracer
City of Tracy	Manteca Transit
City of Ripon	San Joaquin Valley Air Pollution Control District
City of Escalon	Escalon E-Trans
City of Lathrop	

## Chapter 8 Evaluate Strategy Effectiveness

### 8.1 INTRODUCTION

The federal CMP is intended to serve as a systematic process that provides for safe and effective integrated management and operation of the multimodal transportation system. As described in the introduction, the congestion management process includes the following eight steps:

1. Develop Regional Objectives
2. Define CMP Network
3. Develop Multimodal Performance Measures
4. Collect Data/Monitor System Performance
5. Analyze Congestion Problems and Needs
6. Identify and Assess Strategies
7. Program and Implement Strategies
8. Evaluate Strategy Effectiveness

Implementation of each of these steps are described herein in successive order as chapters. The key federal legislative drivers and guidance documents that guided the development of this RCMP update include:

#### **Federal Legislative Framework:**

- Federal MPO Planning Regulations (23 U.S.C. 134 and 49 U.S.C. 5303) and (23 CFR 450.320)
- National Performance Management Measures; Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program (23 CFR 490)

#### **Federal Guidance Documents:**

- *Advancing Metropolitan Planning for Operations – An Objective-Driven Performance-Based Approach: A Guidebook* (FHWA, February 2010)
- *Congestion Management Process: A Guidebook* (FHWA, April 2011)
- *Incorporating Reliability into the Congestion Management Process: A Primer* (FHWA, August 2014).

### 8.2 STRATEGY EFFECTIVENESS

To adequately assess the effectiveness of the RCMP strategies, SJCOG will continuously monitor the effectiveness of all strategies and projects in the RCMP that are implemented between RCMP updates (4-year cycle). Biennial RCMP Monitoring Reports will quantify and continually update the RCMP performance measures to inform this process. The deficient corridor identification process described in Chapter 6-7 includes a variety of planned/programmed transportation improvement projects. This includes investment in modes other than single occupant vehicle capacity such as public transit, active transportation, operations, system management and demand management programs (i.e., dibs). These RCMP deficient corridor related strategies and projects will be tracked and effectiveness monitored through the quantification of the RCMP performance measures.

The RCMP embraces the 3C Process: Continuing, Comprehensive, and Cooperative. The 8-Step framework is an on-going (Continuing) process that will be implemented on an annual basis. The management and evaluation of RCMP network congestion encompasses all modes of travel throughout San Joaquin County (Comprehensive) with assistance of numerous agencies including all of SJCOG's member agencies, public transportation providers and Caltrans (Cooperative).



APPENDIX A:  
FHWA CERTIFICATION REVIEW

## Appendix A: FHWA Certification Review

### FHWA Resource Center Comments on San Joaquin Council of Governments Congestion Management Process and Travel Demand Forecasting

#### Congestion Management Process

##### REGULATORY BASIS

Federal legislation and regulations require that TMAs...

"...shall address congestion management through a process that provides for safe and effective integrated management and operation of multimodal transportation system, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing transportation facilities eligible for funding under title 23 USC and title 49 USC, Chapter 53 through the use of travel demand reduction and operational management strategies."

Federal legislation allows that State laws, rules, or regulations pertaining to congestion management systems or programs may constitute the congestion management process, if the FHWA and the FTA find that the State laws, rules, or regulations are consistent with, and fulfill the intent of the purposes of 23 USC 134 and 49 USC 5303. (23 CFR 450.320(f))

##### BACKGROUND

During the 1990's, in a coordinated review with FTA, FHWA determined that the existing Congestion Management Program process in California could form the foundation of California's federally mandated Congestion Management System (CMS). FHWA received a significant number of letters from various regional and local agencies throughout California supporting the State's request that the State CMP be accepted.

As the designated Congestion Management Agency for San Joaquin County, the SJCOG is required to maintain the state-mandated CMP for the county. Implementation of the state mandated CMP meets many of the requirements for the federal CMP, but not all. Those components of the federal CMP frame the discussion for the certification review.

## **FINDINGS**

### Components

The SJCOG implements a State and Federally-mandated congestion management process as documented in the 2012 update of the Regional Congestion Management Program (RCMP). The SJCOG should be complimented for the level of documentation and recent production of this document. The RCMP seeks to monitor congestion, identify congestion problems and establish a programming mechanism aimed at reducing congestion. The RCMP focusses on a core network of key transportation facilities within San Joaquin County. It also attempts to ensure that new land uses are developed in tandem with the necessary transportation improvements by coordinating the land use, air quality and transportation planning processes.

The RCMP document has good maps illustrating the relevant roadway network and specific intersections subject to appropriate analyses. The RCMP is multimodal in nature and identifies thirteen corridors applicable to a method to compute multimodal level of service (MMLOS).

The system monitoring program seems to be well documented as to how, when and where data collection activities are performed.

Per State statutes, the RCMP establishes level of service (LOS) standards to provide a measurement against which the RCMP system can be evaluated. The CMP sets in motion requirements for each jurisdiction to monitor the LOS status of its CMP intersections and segments. If operating at LOS E or lower, the county or city must prepare a deficiency plan. A regular monitoring program is required for the local jurisdictions and Caltrans to assess LOS on the CMP network. LOS data is displayed in a number of tables in Section 4 of the RCMP document.

SJCOG appears to have done a good job in developing a range of performance measures related to operational efficiency, intersection flows, goods movement, transit performance and employer trip reduction programs. They are multimodal in nature which is an important federal requirement. There was some discussion of the staff considering a measure to monitor the impacts of non-recurring congestion, such as incident clearance time. A land use impact analysis program is an important component of the RCMP.

Once a corridor has been identified as deficient for the LOS standard, then a major evaluation ensues of a variety of strategies for addressing the congestion issues. SJCOG examines a wide variety of strategies, including car and vanpooling, bus, rail and bike improvements, as well as, incident response, traveler information systems, park & ride lots, land use analysis and other TDM strategies (see TDM Action Plan).

The integration of the RCMP with long range planning activities occurs within the context of the Regional Transportation Plan's (RTP) goals, objectives, performance measures and stated policies. Projects examined through the RCMP process exhibit benefit criteria for inclusion in the RTP, such as, project urgency, air quality benefits and SOV travel reduction to name a few. Figure 7 in the 2012 RCMP documentation is a creditable effort to diagram the relationships.

There seems to be an adequate level of interaction from Caltrans and other planning partners in conducting the RCMP analyses and selection of mitigation strategies. For SOV projects, SJCOG and partner agency staff is part of the Project Development Team process led by Caltrans.

#### Effectiveness Evaluation of implemented Strategies

Under 23 CFR 450.320(c)(6), all TMAs are expected to have a process for periodically evaluating the effectiveness of implemented congestion relief strategies. The purpose is to direct federal funding at the strategies that are giving us the greatest benefits for the dollars spent. There may be an opportunity to expand the documentation on this item – perhaps some “before and after” studies of selected implemented strategies and projects to gauge their effectiveness.

#### Analysis of Single Occupant Vehicle (SOV) Improvements

There is an analysis requirement for non-attainment areas for ozone and or carbon monoxide under 23 CFR 450.320(e) which applies to the San Joaquin region. Under 23 CFR 450.320(a), where general purpose lanes are determined to be an appropriate strategy to reduce congestion, then explicit consideration should be given to travel demand management and operational strategies could be complementary to the SOV project as a way of stretching that investment for as long as possible. While SJCOG does analyze TDM and operational improvements, there may be an opportunity to improve documentation of the TDM and operational strategies selected to be implemented in tandem with capacity increasing projects.

The SJCOG staff provided an example (Roth Road) of a proposed SOV project with the desk audit materials. The project formation process uses quantifiable measures to tie back the project strategies to the RTP’s goals, objectives and performance measures. For this particular project a number of operational strategies were offered to bridge the gap between the current condition and the project completion. The Federal Team encourages the SJCOG staff, working with its partners, to continue consideration of appropriate TDM and other complementary strategies to implement in tandem with capacity expansion. There may be an opportunity to enhance this analysis in the Corridor Systems Management Plan phase of activities, obviously with the cooperation of Caltrans.

The federal review team found SJCOG’s CMP to be in compliance with Federal regulations.



APPENDIX B:  
STATE CMP REQUIREMENT LOCAL  
AGENCY OPT-OUT RESOLUTIONS

**RESOLUTION NO. 02-20**

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ESCALON,  
CALIFORNIA, EXEMPTING THE CITY OF ESCALON FROM THE STATE-  
MANDATED CONGESTION MANAGEMENT PROGRAM**

**WHEREAS**, in 1990 the voters of California passed Proposition 111 and the requirement that urbanized counties develop and implement a Congestion Management Program; and

**WHEREAS**, the legislature and governor established the specific requirements of the Congestion Management Program by passage of legislation which was a companion to Proposition 111 and is encoded in California Government Code Section 65088 to 65089.10; and

**WHEREAS**, the San Joaquin Council of Governments (SJCOG) has been designated as the Congestion Management Agency responsible for San Joaquin County's Congestion Management Program; and

**WHEREAS**, California Government Code Section 65088.3 allows urbanized counties to be exempt from the Congestion Management Program based on resolutions passed by local jurisdictions representing a majority of a county's jurisdictions with a majority of the county's population; and

**WHEREAS**, the Congestion Management Program is outdated and increasingly out of step with current regional, State, and federal planning processes and requirements, including new State requirements for transportation performance measures related to greenhouse gas reduction; and

**WHEREAS**, on December 5, 2019, the SJCOG Board of Directors took action to direct SJCOG staff to work with local jurisdictions to prepare the necessary resolutions to exempt San Joaquin County from the Congestion Management Program.

**NOW, THEREFORE, BE IT RESOLVED**, that the City Council of the City of Escalon hereby resolves, declares, determines, and orders as follows:

1. That the above recitations are true and correct.
2. That the City of Escalon hereby elects to be exempt from the Congestion Management Program as described in California Government Code Section 65088 to 65089.10.

**PASSED, APPROVED, AND ADOPTED** this 18<sup>th</sup> day of February 2020, by the following vote:

AYES: Councilmembers KRUMEICH, MURKEN, ALVES, and Mayor SWIFT  
NOES:  
ABSTAIN:  
ABSENT: Councilmember LAUGERO



ROBERT SWIFT, Mayor

ATTEST:



JAMIE PIRES, Deputy City Clerk

## **RESOLUTION NO. 20-4764**

### **A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LATHROP ELECTING TO BE EXEMPT FROM THE STATE MANDATED CONGESTION MANAGEMENT PROGRAM**

**WHEREAS**, in 1990 the voters of California passed Proposition 111 and the requirement that urbanized counties develop and implement a Congestion Management Program; and

**WHEREAS**, the San Joaquin Council of Governments (SJCOG) has been designated as the Congestion Management Agency responsible for San Joaquin County's Congestion Management Program; and

**WHEREAS**, the San Joaquin Council of Governments (SJCOG) Regional Congestion Management Program (RCMP) is required to abide by the State Congestion Management Program (SCMP); and

**WHEREAS**, California Government Code Section 65088.3 allows urbanized counties to be exempt from the State Congestion Management Program based on resolutions passed by local jurisdictions representing a majority of a county's jurisdictions with a majority of the county's population; and

**WHEREAS**, the State Congestion Management Program is outdated and increasingly out of step with current regional, State, and federal planning processes and requirements, including new State requirements for transportation performance measures related to greenhouse gas reduction; and

**WHEREAS**, on December 5, 2019, the SJCOG Board of Directors adopted Resolution R-20-16 to direct SJCOG staff to work with local jurisdictions to prepare the necessary resolutions to exempt San Joaquin County from the State Congestion Management Program; and

**WHEREAS**, the City Council finds that the proposed action to opt out of the State Congestion Management Program is exempt according to the California Environmental Quality Act (CEQA) Article 5 §15061 by the "Common Sense Exemption" that CEQA applies only to projects that have a potential for causing a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.

**NOW, THEREFORE, BE IT RESOLVED**, that the City Council of the City of Lathrop based on substantial evidence in the administrative record of proceedings and pursuant to its independent review and consideration, declares and elects the City of Lathrop to be exempt from the State Congestion Management Program in accordance with California Government Code §65088.3.

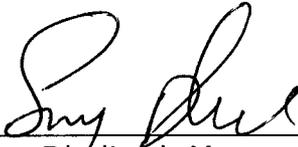
The foregoing resolution was passed and adopted this 10<sup>th</sup> day of August 2020, by the following vote of the City Council, to wit:

AYES: Akinjo, Lazard, Salcedo, Torres-O'Callaghan, and Dhaliwal

NOES: None

ABSENT: None

ABSTAIN: None

  
\_\_\_\_\_  
Sonny Dhaliwal, Mayor

**ATTEST:**

  
\_\_\_\_\_  
Teresa Vargas, City Clerk

**APPROVED AS TO FORM:**

  
\_\_\_\_\_  
Salvador Navarrete, City Attorney

RESOLUTION NO. 2020-113

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF  
LODI, CALIFORNIA, ELECTING TO BE EXEMPT FROM THE  
CONGESTION MANAGEMENT PROGRAM

=====

WHEREAS, the San Joaquin Council of Governments (SJCOG) Regional Congestion Management Program (RCMP) is required to abide by State Congestion Management Plan (SCMP); and

WHEREAS, pursuant to California Government Code §65088.3, an exemption clause allows a county to "opt out" of the SCMP if the majority of jurisdictions that represent the majority of the county's population adopt resolutions "opting out" of the SCMP; and

WHEREAS, in December 2019, SJCOG's Board of Directors passed and adopted Resolution R-20-16 authorizing SJCOG's Executive Director to start the process of "opting out" of the SCMP; and

WHEREAS, staff recommends exempting City of Lodi from State-mandated Congestion Management Program in conjunction with San Joaquin Council of Governments' effort to achieve County-wide exemption in accordance with California Government Code §65088.3.

NOW, THEREFORE, BE IT RESOLVED that the Lodi City Council does hereby elect to be exempt from State-mandated Congestion Management Program in conjunction with San Joaquin Council of Governments' effort to achieve County-wide exemption in accordance with California Government Code §65088.3.

Dated: June 3, 2020

=====

I hereby certify that Resolution No. 2020-113 was passed and adopted by the City Council of the City of Lodi in a regular meeting held June 3, 2020, by the following vote:

- AYES: COUNCIL MEMBERS – Chandler, Mounce, Nakanishi, and Mayor Kuehne
- NOES: COUNCIL MEMBERS – None
- ABSENT: COUNCIL MEMBERS – None
- ABSTAIN: COUNCIL MEMBERS – None

*Pamela M. Farris*  
PAMELA M. FARRIS  
Assistant City Clerk

The foregoing document is certified to be a correct copy of the original on file in the City Clerk's Office.  
Pamela M. Farris  
Assistant City Clerk, City of Lodi

2020-113

By: *Pamela M. Farris*  
Dated: *6/8/2020*

RESOLUTION R2020-29

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF  
MANTECA, STATE OF CALIFORNIA, ELECTING TO BE  
EXEMPT FROM THE STATE CONGESTION  
MANAGEMENT PLAN PURSUANT TO SECTION 65088.3  
OF THE CALIFORNIA GOVERNMENT CODE

WHEREAS, General Plan Air Quality Element Policy AQ-P-1 is to, "Cooperate with other agencies to develop a consistent and coordinated approach to reduction of air pollution and management of hazardous air pollutants"; and

WHEREAS, General Plan Land Use Element Implementation Measure LU-I-7 states that, "The City will continue to cooperate with planning efforts among local jurisdictions to minimize the impacts of growth to Manteca and in the south San Joaquin County area"; and

WHEREAS, General Plan Circulation Element Policy C-P-1 directs that, "The City shall strive to balance levels of service (LOS) for all modes (vehicle, transit, bicycle, and pedestrian) to maintain a high level of access and mobility, while developing a complete and efficient circulation system"; and

WHEREAS, General Plan Circulation Element Policy C-P-19 directs that, "The City shall coordinate with neighboring jurisdictions, including Caltrans, San Joaquin Council of Governments (SJCOG), San Joaquin County, the City of Lathrop, and the City of Ripon to pursue funding"; and

WHEREAS, General Plan Circulation Element Implementation Measure C-I-8 states that, "The City will coordinate with Caltrans and SJCOG to make sure that projects in the City's Circulation Element and Major Street Master Plan are included in long range planning documents, including the Caltrans Long Range Plan, the SJCOG Regional Transportation Plan, and the San Joaquin County Congestion Management Program."; and

WHEREAS, in 1990 the voters of California passed Proposition 111 and the requirement that urbanized counties develop and implement a Congestion Management Program; and

WHEREAS, the legislature and governor established the specific requirements of the Congestion Management Program by passage of legislation which was a companion to Proposition 111 and is encoded in California Government Code Section 65088 to 65089.10; and

WHEREAS, the San Joaquin Council of Governments (SJCOG) has been designated as the Congestion Management Agency responsible for San Joaquin County's Congestion Management Program; and

WHEREAS, California Government Code Section 65088.3 allows urbanized counties to be exempt from the Congestion Management Program based on resolutions passed by local jurisdictions representing a majority of a county's jurisdictions with a majority of the county's population; and

WHEREAS, the Congestion Management Program is outdated and increasingly out of step with current regional, State, and federal planning processes and requirements, including new State requirements for transportation performance measures related to greenhouse gas reduction; and

WHEREAS, on December 5, 2019, the SJCOG Board of Directors took action to direct SJCOG staff to work with local jurisdictions to prepare the necessary resolutions to exempt San Joaquin County from the Congestion Management Program; and

WHEREAS, the State Code of Regulations, California Environmental Quality Act, Section 15061(b)(3), Review for Exemption, states that a project is exempt from CEQA if electing to be exempt from the State Congestion Management Plan is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. It can be seen with certainty that there is no possibility that electing to be exempt from the State Congestion Management Plan may have a significant effect on the environment, said election is not subject to CEQA; and

WHEREAS, the City Council has considered all information related to this matter, as presented at the public meetings of the City Council identified herein, including any supporting reports by City Staff, and any information provided during public meetings.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Manteca, as follows:

1. The City Council hereby finds that the facts set forth in the recitals to this Resolution are true and correct, and establish the factual basis for the City Council's adoption of this Resolution.
2. The City Council hereby finds that electing be exempt from the State Congestion Management Plan (SCMP) with other jurisdictions within San Joaquin County is exempt from CEQA. It can be seen with certainty that there is no possibility that electing to be exempt from the SCMP may have a significant effect on the environment. CEQA applies only to projects that have the potential for causing a significant effect on the environment. Electing to be exempt from the SCMP pursuant to Section 65088.3 of the California Government Code is exempt under Section 15061(b)(3) of the CEQA Guidelines, "common-sense" exemption because the CMP is an obsolete performance-based planning program that is not consistent with current transportation metrics used for CEQA analysis. Furthermore, other similar, applicable regional, state, and Federal transportation planning processes and

requirements have weakened and supplanted the SCMP. Thus, electing to be exempt from the SCMP has no potential significant impact on the environment.

3. Electing to be exempt from the State Congestion Management Plan is consistent with the goals, policies and implementation measures of the adopted General Plan.
4. The City of Manteca elects to be exempt from the State Congestion Management Program as described in California Government Code Section 65088 to 65089.10.
5. This Resolution shall take effect immediately upon its adoption.

I HEREBY CERTIFY that the foregoing Resolution was duly adopted by the City Council of the City of Manteca at a public meeting of said City Council held on the 18<sup>th</sup> day of February, 2020, by the following vote:

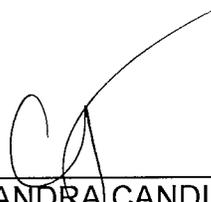
AYES: Breitenbucher, Moorhead, Nuño, Singh, Cantu

NOES: None

ABSENT: None

ABSTAIN: None

MAYOR:   
BENJAMIN J. CANTU  
Mayor

ATTEST:   
CASSANDRA CANDINI-TILTON  
Acting City Clerk

RESOLUTION NO. 20-10

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF  
RIPON EXEMPTING THE CITY OF RIPON FROM THE  
STATE-MANDATED CONGESTION MANAGEMENT  
PROGRAM (SCMP)

WHEREAS, in 1990 the voters of California passed Proposition 111 and the requirement that urbanized counties develop and implement a Congestion Management Program; and

WHEREAS, the legislature and governor established the specific requirements of the Congestion Management Program by passage of legislation which was a companion to Proposition 111 and is encoded in California Government Code Section 65088 to 65089.10; and

WHEREAS, the San Joaquin Council of Governments (SJCOG) has been designated as the Congestion Management Agency responsible for San Joaquin County's Congestion Management Program; and

WHEREAS, California Government Code Section 65088.3 allows urbanized counties to be exempt from the Congestion Management Program based on resolutions passed by local jurisdictions representing a majority of a county's jurisdictions with a majority of the county's population; and

WHEREAS, the Congestion Management Program is outdated and increasingly out of step with current regional, State, and federal planning processes and requirements, including new State requirements for transportation performance measures related to greenhouse gas reduction; and

WHEREAS, on December 5, 2019, the SJCOG Board of Directors took action to direct SJCOG staff to work with local jurisdictions to prepare the necessary resolutions to exempt San Joaquin County from the Congestion Management Program.

NOW, THEREFORE, BE IT RESOLVED, That the City Council of the City of Ripon hereby resolves, declares, determines, and orders as follows:

1. That the above recitations are true and correct.
2. That the City of Ripon hereby elects to be exempt from the Congestion Management Program as described in California Government Code Section 65088 to 65089.10.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of Ripon this 10th day of March, 2020, by the following vote:

**RESULT:** ADOPTED BY CONSENT VOTE [UNANIMOUS]  
**MOVER:** Leo Zuber, Council Member  
**SECONDER:** Michael Restuccia, Council Member  
**AYES:** Restuccia, Uecker, Parks, de Graaf, Zuber

**THE CITY OF RIPON,  
A Municipal Corporation**

By  \_\_\_\_\_  
JACOB PARKS, Mayor

ATTEST:

By:  \_\_\_\_\_  
LISA ROOS, City Clerk



## SAN JOAQUIN COUNCIL OF GOVERNMENTS

555 E. Weber Avenue • Stockton, California 95202 • P 209.235.0600 • F 209.235.0438 • [www.sjco.org](http://www.sjco.org)

12/30/19

Dear Representative of San Joaquin County,

SJCOG started the “Opt Out” process with the goal of significantly reducing the administrative burden passed upon jurisdiction staff and saving SJCOG money on tasks to meet California Congestion Management Program (CMP) statutes. More specifically, “Opting Out” of State CMP:

- Removes the need to submit project referral applications and environmental documentation for land use review
- Removes the follow up from jurisdictions about project and mitigation measure updates
- Eliminates the chance of losing State and Federal funding due to non-compliance with the LOS threshold, and
- Eliminates the need to submit updates to complete seven-year capital improvement program.

On December 5, 2019, SJCOG’s Board of Directors’ unanimously approved Resolution R-20-16 (Attachment A) and authorized the San Joaquin Council of Governments (SJCOG) Executive Director to start the process of “Opting Out” of State CMP.

### So What Are the Next Steps?

After receiving SJCOG Board’s approval, SJCOG must ask for your assistance in passing resolutions by your Board of Supervisors/City Council by **June 30, 2020**. Without your help, SJCOG cannot move forward “Opting Out” of State CMP.

As SJCOG is not the first Congestion Management Agency to “Opt Out” of State CMP, SJCOG can refer jurisdiction(s) to previously generated staff reports, resolutions, and/or supporting documentation. Attached are two examples from Los Angeles County and City of San Gabriel. SJCOG recommends jurisdiction(s) duplicate or reference these staff report(s) in preparation of your own staff report. In terms of a resolution, SJCOG had previously generated a sample resolution that is within December 2019’s Board staff report.

Staff feels comfortable jurisdiction(s) will be able to generate a staff report and resolution with these examples. In addition, SJCOG will be available over the phone or in-person to answer any questions throughout a jurisdiction’s “opt out” process. If you wish to meet in-person, please feel to email me a list of dates and times. Staff will be in contact periodically to see how your process is going and plans to be in attendance of your Board of Supervisors/City Council at the time of approval.

Thank you and do not hesitate to contact me at [Yokoyama@SJCOG.ORG](mailto:Yokoyama@SJCOG.ORG).

Sincerely,

Travis Yokoyama

ATTACHMENT A - Opt Out of State RCMP Requirements - Dec 2019 Board  
ATTACHMENT B - Example (County of Los Angeles)  
ATTACHMENT C - Example (City of San Gabriel)

*Doug Kuehne*  
CHAIR

*Jesus Andrade*  
VICE CHAIR

*Andrew T. Chesley*  
EXECUTIVE DIRECTOR

*Member Agencies*  
CITIES OF ESCALON,  
LATHROP, LODI,  
MANTECA, RIPON,  
STOCKTON, TRACY,  
AND THE COUNTY OF  
SAN JOAQUIN

December 2019  
SJCOG Board

## STAFF REPORT

- SUBJECT:** California Congestion Management Program (CMP) Opt-Out
- RECOMMENDED ACTION:** Approve Resolution R-20-16 and Authorize SJCOG Executive Director to Start the Process of Opting Out of State CMP
- DISCUSSION:**
- SUMMARY:**

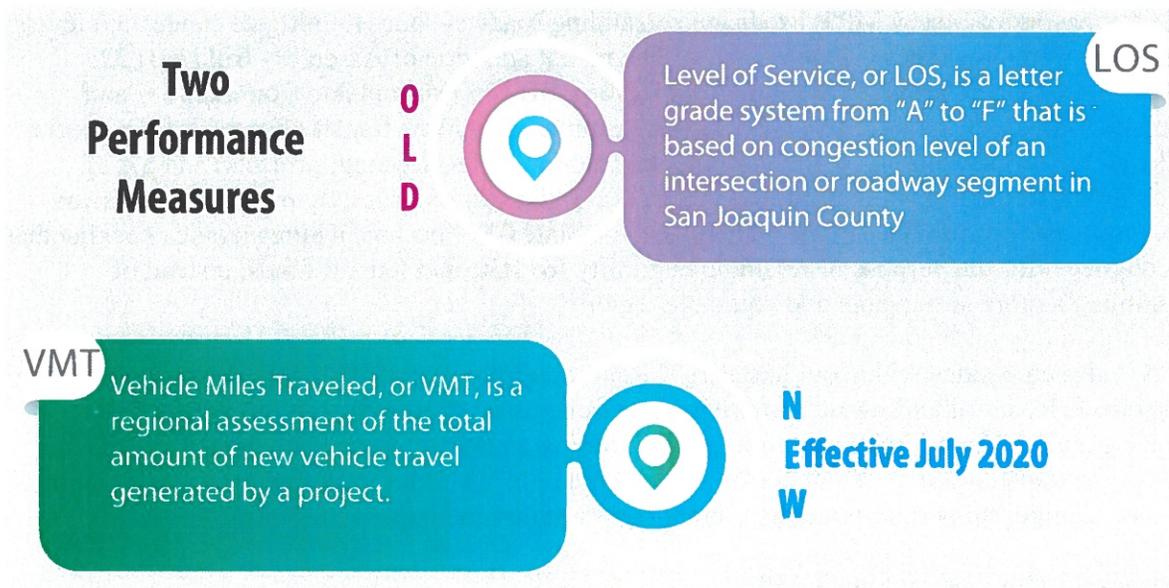
State law allows SJCOG to “Opt Out” of State CMP with no loss of gas tax revenues as long as a majority of local agencies representing a majority of the county’s population pass resolutions in support. SJCOG staff is seeking support from all local agencies to “opt out” thereby reducing the administrative burden to comply with outdated level-of-service requirements.

Like other Congestion Management Agencies (CMA) in California, San Joaquin Council of Governments (SJCOG) is at a “crossroads” on the issue of “Opting Out” of California’s Congestion Management Program (CMP). “Opting Out” of CMP does the following:

- Removes the need to submit project referral applications and environmental documentation for land use review
- Removes the follow up from jurisdictions about project and mitigation measure updates
- Eliminates the chance of losing State and Federal funding due to non-compliance with the LOS threshold, and
- Eliminates the need to submit updates to complete seven-year capital improvement program.

Staff concludes these benefits, along with the chance of building a new CMP that fulfills our Federal CMP requirements and better fit the needs of our stakeholders, should be strongly considered by SJCOG’s Board. By state law, SJCOG is required to prepare and update a CMP biennially for San Joaquin County. Initiated by the passage of Proposition 111 of 1990 (Increasing the state gas tax from 9 to 18 cents), the State CMP was later supported by adoption of San Joaquin County Local Measure K on 2006. The intent of the CMP process tied new tax revenue source to a coordinated process to review land use development and transportation programs with the intent to reduce traffic congestion.

The state CMP requires the transportation system to be measured using Level of Service (LOS), a letter grade system from “A” to “F” based on congestion level. To date, the CMP LOS analysis “piggybacks” on the transportation impact analysis to meet California Environmental Quality Act (CEQA) requirements for a project (i.e., Mitigated Negative Declaration, Environmental Impact Report, etc.) – local agencies usually use the same analysis for both purposes. However, per Senate Bill 743 (Steinberg 2013) all jurisdictions will be required to use Vehicle Miles Traveled (VMT) rather than LOS in CEQA documents starting in July 2020. At that point, the CMP LOS analysis would be an additional requirement on jurisdictions that would potentially conflict with the impacts and mitigation measures found in CEQA. “Opting out” eliminates this conflict.



**RECOMMENDATION:**

SJCOG staff recommends the SJCOG Board of Directors approve Resolution R-20-16 (Appendix B) and authorize the Executive Director to start the process of opting out of California CMP, in accordance with State CMP statute.

**FISCAL IMPACT:**

Opting out of State CMP eliminates the need to staff activities for state CMP compliance. For this current fiscal year, SJCOG staff anticipates the Board adopted, budgeted resources for the Congestion Management Program (Work Element # 801.04) will be reduced by approximately 25%, a reduction of \$45,000. These savings would come from a combination of funding sources including Measure K and FHWA Planning. In addition to an annual savings, every two years, SJCOG spends \$150,000 for consultant services related to state CMP updates which would no longer be necessary. Any savings can be reallocated to other eligible work items in SJCOG’s OWP. State gas tax revenue will continue to flow to local jurisdictions. Local jurisdictions will also experience savings in their own activities related to state CMP compliance.

## BACKGROUND:

For SJCOG and jurisdictions alike, the continued administration of the State CMP may not have the value it once had in improving the region's transportation system.

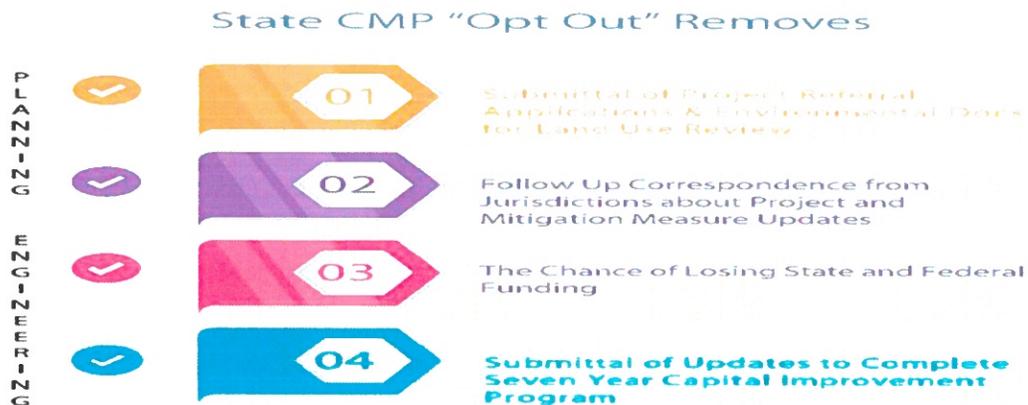
Seven incorporated cities, the County of San Joaquin, and SJCOG share various State CMP statutory responsibilities; including monitoring traffic count locations on select arterials, implementing transportation improvements, adoption of travel demand management and land use ordinances, and mitigating congestion impacts.

The framework of State CMP is predicated on adding roadway lanes to mitigate congestion levels, with LOS as the main performance metric. The recent adoption of Assembly Bill (AB) 32: California Global Warming Solutions Act of 2006), SB 375 (Sustainable Communities and Climate Protection Act of 2008), SB 743 (Environmental quality: transit oriented infill projects, judicial review streamlining for environmental leadership development projects) and SB 32 (California Global Warming Solutions Act of 2006) directly or indirectly moved CEQA away from LOS as a performance metric. Therefore, the State CMP became a bureaucratic checklist that is completed for the purpose of retaining eligibility for state and federal funds; instead of promoting a more sustainable and equitable region.

LOS is also embedded within our Measure K Renewal Ordinance of 2006 as a performance metric. Measure K Renewal Ordinance and programs will be updated after the opt out is completed. "Opting out" of State CMP is the first task in building a platform to consider new ways of measuring transportation system performance along with VMT that complement efforts to combat climate change, support sustainable, vibrant communities and improve mobility.

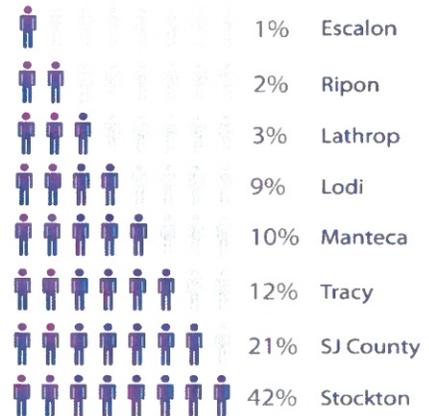
### Reasons to "Opt Out" of State CMP

SJCOG has listed the reasons for "Opting Out" of State CMP on next page. In short, our current outdated form of measuring performance along our regional roadway system has been costly and tedious with little to no benefit to either jurisdiction nor SJCOG.



## “Opt Out” Process

Pursuant to California Government Code §65088.3, counties may “Opt Out” of the CMP requirement with no loss of gas tax revenues if the majority of jurisdictions that represent the majority of the county’s population pass resolutions that request to “Opt Out” of California CMP. SJCOG needs a minimum of 5 jurisdictions approve resolutions by City Council/Board of Supervisors; of which one must be City of Stockton or the County. Based on American Factfinder, City of Stockton accounts for 42% of total population in San Joaquin County.



Should the “Opt Out” occur, SJCOG staff anticipates immediate implementation. Planning and Engineering staff will no longer have to perform duties related to the state CMP.

## Examples

SJCOG will not be the first to “Opt Out” of State CMP in California and even in San Joaquin Valley. The following agencies have either already opted out, are currently in the process, or passed a resolution that recommends “Opt Out” of State CMP.

### “Opted Out”

- Fresno Council of Governments (Fresno County) – 1997
- Sacramento Transportation Authority (Sacramento County) – 1996
- San Diego Association of Governments (San Diego County) – 2009
- San Luis Obispo Council of Governments (San Luis Obispo County) – 1997
- Santa Cruz County Regional Transportation Commission (Santa Cruz County) – 2000
- Sonoma County Transportation Authority (Sonoma County) – 2000s

### In the Process of “Opting Out”

- Los Angeles Metro (Los Angeles County) – Board passed a resolution initiating process in June 2018. City of Los Angeles and 45 other member jurisdictions passed resolutions to “Opt Out” by June 2019.

Passed a Resolution (3000 Revised) that encourages their counties to “Opt Out”

- Metropolitan Transportation Commission (Member Counties with CMAs include Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano)

## Alternative Considered

SJCOG can continue to fulfill the requirements as required by State CMP and move forward with updating the current CMP. We do not recommend this alternative as SJCOG has examined multiple ways of adapting the state legislative requirements to better fit the needs of our stakeholders and found little benefit of preserving State CMP. Opting out of the CMP gives SJCOG the flexibility to implement mobility improvements through the programs and projects in

the Long Range Transportation Plan adopted by the Board, while furthering improvements to transportation capacity, choice and cost-effectiveness.

### Determination

CMP LOS analysis was originally a pioneering effort in coordinated transportation planning, but now will become a burdensome and duplicative requirement for local agencies that is out of step with statewide transportation goals and greenhouse gas emission targets. To reiterate the reasons to “Opt Out” of State CMP, the following requirements would be removed:

- Submittal of project referral application & environmental documents for land use review;
- Follow up correspondence from jurisdictions about project & mitigation measure updates;
- The chance of losing State & Federal funding; And
- Submittal of updates to complete seven-year capital improvement program.

SJCOG staff sees merit in “opting out” of the State CMP and does recommend jurisdictions start the “Opt Out” process that results in the adoption of resolutions by City Councils/Board of Supervisors. SJCOG staff prefers all jurisdictions adopt resolutions to “Opt Out” State CMP; however, the minimum requirement of 5 jurisdictions that includes City of Stockton or San Joaquin County is acceptable.

### **Impact to Measure K Program**

There is a linkage between Measure K projects and the CMP. The Measure K Program, in Section 7 of the Ordinance, identifies requirements of Measure K Projects to the adopted Congestion Management Program. It further goes into technical detail about state CMP requirements, which identified earlier in this staff report, are now antiquated. If and when this region “Opts Out” of State CMP, the Measure K ordinance will require an amendment to remove these outdated references.

This can occur during the annual Call for Amendments to the Measure K Ordinance conducted by SJCOG Board. Appendix E is an excerpt from the Measure K Ordinance and illustrates the strikeover (deleted) text and new text that would be submitted for the proposed Measure K amendment. Ultimately, updates of SJCOG’s CMP will achieve the goal of meeting Federal CMP requirements while adding policies, information, and/or action items that better supports the needs of jurisdictions within San Joaquin County.

### Jurisdiction Review

This staff report was distributed on 10/31/19 to primarily Planning staff for review with comments and questions due at 5:00 PM on 11/21/19. SJCOG felt Planning staff would be the most incentivized for “Opting Out” of State CMP due to the current staff time needed to receive and respond to SJCOG letters and provide updates to projects and associated mitigation measures.

As of 11/21/19, no comments were received from Planning Staff. On 11/22/19, San Joaquin County left a voicemail to request clarity on possibly whom would be right department to take

forth a recommendation to their Board of Supervisors. On 11/25/19, SJCOG emailed San Joaquin County to provide clarification and availability to discuss “Opting Out” of State CMP more in detail, if needed.

#### **COMMITTEE ACTIONS:**

- **Technical Advisory Committee** – Unanimously approved on 11/14/19.
  - City of Lodi was provided a recommended implementation deadline of July 1, 2020.
  - City of Ripon received assurance that there are no drawbacks by SJCOG “Opting Out” of State CMP.
  - City of Tracy was provided clarity on minimum participation requirement of jurisdictions to “Opt Out” of State CMP.
- **Management & Finance Committee** – Unanimously approved on 11/20/19.
  - Cities of Tracy and Ripon asked similar questions as Cities of Lodi and Ripon at TAC.
  - City of Stockton asked why SJCOG did not “Opt Out” earlier. SJCOG noted SB 743 implementation in 2020 was the main factor to “Opt Out.”
- **Citizens Advisory Committee** – Unanimously approved on 11/20/19.
  - Sierra Club was provided clarification on SB 743 and received assurance that there are no drawbacks by SJCOG “Opting Out” of State CMP.
- **Executive Committee** - Unanimously approved on 11/22/19.
  - City of Lodi was provided clarity on VMT.
  - City of Ripon was provided clarity that staff currently follow s both federal and state CMP statutes. This request will opt SJCOG out of state CMP statutes.

#### **NEXT STEPS:**

Staff will move forward with the follow steps:

- Monitor and provide information/advise while jurisdictions move forward with the resolution process with their City Councils/Board of Supervisors;
- Work with our jurisdictions while amending CMP to fulfill federal CMP statutes and better fit the needs of jurisdictions in San Joaquin County;
- Plan to amend San Joaquin County’s Measure K in 2020 and replace State CMP requirements with reference that Measure K will comply with Federal CMP requirements;  
And
- Update other SJCOG documents, like SJCOG’s Overall Work Program, to reflect the removal of State CMP statutes.

#### **ATTACHMENTS:**

- A. SJCOG Resolution R-20-16
- B. Sample Resolution for City / County
- C. State Statutes Related to Congestion Management Programs

- D. List of Current & Past CMAs and Sources
- E. Draft Measure K Renewal Ordinance of 2006 Amended
- F. Draft SJCOG Overall Work Program Updated

*Prepared by: Travis Yokoyama, Associate Regional Planner*



**RESOLUTION  
SAN JOAQUIN COUNCIL OF GOVERNMENTS**

R-20-16

**RESOLUTION RECOMMENDING OUR JURISDICTIONS ADOPT RESOLUTIONS TO  
OPT OUT OF STATE CONGESTION MANAGEMENT PROGRAM (CMP)**

WHEREAS, the San Joaquin Council of Governments (SJCOG) serves as the Congestion Management Agency (CMA) for San Joaquin County; and

WHEREAS, pursuant to the passage of Proposition 111 of 1990 and Measure K of 2006, SJCOG must follow guidelines set forth by California Government Code 65088; and

WHEREAS, SJCOG must prepare and update a CMP biennially for San Joaquin County that includes an element defining the CMP system, an element establishing level of service (LOS) standards, a system-wide multimodal performance element, a program for analyzing the impact of land use decisions, and a seven-year capital improvement program; and

WHEREAS, SJCOG must monitor the regional roadway network set forth by the policies of most recent CMP update; and

WHEREAS, jurisdictions can be held accountable for deficient roadways/intersections; and

WHEREAS, adoptions of Assembly Bill (AB) 32 California Global Warming Solutions Act of 2006), SB 375 (Sustainable Communities and Climate Protection Act of 2008), SB 743 (Environmental quality: transit oriented infill projects, judicial review streamlining for environmental leadership development projects) and SB 32 (California Global Warming Solutions Act of 2006) directly or indirectly moved CEQA away from LOS as a performance metric; and

WHEREAS, fulfilling State CMP requirements has become burdensome and duplicative requirement for local agencies that is out of step with statewide transportation goals and greenhouse gas emission targets; and

WHEREAS, pursuant to California Government Code 65088.3, SJCOG can opt out of State CMP requirements if the majority of local governments, collectively comprised of the city councils and the county board of supervisors, which in total also represent a majority of the population in the county, each adopt resolutions electing to be exempt from the congestion management program; and

WHEREAS, the option of “Opting Out” of State CMP has been reviewed by our jurisdictions

and approved by the San Joaquin Council of Governments' Board on December 5, 2019.

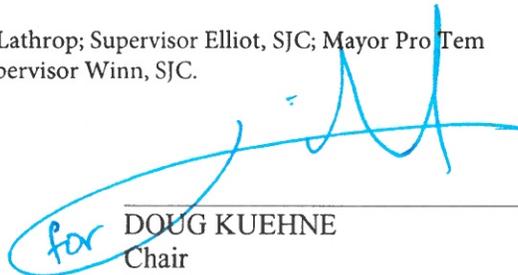
NOW, THEREFORE BE IT RESOLVED that staff of the eight jurisdictions in San Joaquin County are recommended to submit a resolution to city council that opts a jurisdiction out of responsibilities of State CMP set forth by California Government Code 65088.

PASSED AND ADOPTED this 5<sup>th</sup> day of December 2019 by the following vote of the San Joaquin Council of Governments, to wit;

Councilmember Andrade, Stockton; Councilmember Jobrack, Stockton; Supervisor Miller, SJC;  
AYES: Councilmember Murken, Escalon; Mayor Rickman, Tracy; Councilmember Singh, Manteca;  
Vice Mayor Wright, Stockton; Mayor Zuber, Ripon.

NOES: None.

ABSENT: Mayor Dhaliwal, Lathrop; Supervisor Elliot, SJC; Mayor Pro Tem  
Kuehne, Lodi; Supervisor Winn, SJC.

  
for DOUG KUEHNE  
Chair

Resolution No. **2020-08-11-1103**

## **STOCKTON CITY COUNCIL**

---

### **RESOLUTION EXEMPTING THE CITY OF STOCKTON, FROM THE STATE-MANDATED CONGESTION MANAGEMENT PROGRAM**

In 1990, the voters of California passed Proposition 111 and the requirement that urbanized counties develop and implement a Congestion Management Program; and

The legislature and governor established the specific requirements of the Congestion Management Program by the passage of legislation which was a companion to Proposition 111 and is encoded in California Government Code sections 65088 to 65089.10; and

The San Joaquin Council of Governments (SJCOG) has been designated as the Congestion Management Agency responsible for San Joaquin County's Congestion Management Program; and

California Government Code section 65088.3 allows urbanized counties to be exempt from the State Congestion Management Program based on resolutions passed by local jurisdictions representing a majority of a county's jurisdictions with a majority of the county's population; and

The State Congestion Management Program is outdated and increasingly out of step with current regional, State, and federal planning processes and requirements, including new State requirements for transportation performance measures related to greenhouse gas reduction; and

On December 5, 2019, the SJCOG Board of Directors took action to direct SJCOG staff to work with local jurisdictions to prepare the necessary resolutions to exempt San Joaquin County from the State Congestion Management Program; now, therefore,

**BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF STOCKTON, AS FOLLOWS:**

1. The City Council finds the facts set forth in the recitals to this Resolution are true and correct and establish the factual basis for the City Council's adoption of this Resolution.

2. The City Council finds that the proposed action of electing to be exempt from the State Congestion Management Plan falls under the exemption under section 15061 (b) (3) [the common sense exemption ] of the California Environmental Quality Act (CEQA), because CEQA applies only to projects which have the potential for causing a significant effect on the environment. The action will remove the City's administrative and reporting obligations for the State Congestion Management Plan and therefore, has no potential for causing a significant effect on the environment.

3. The City Council elects to exempt the City of Stockton from the State Congestion Management Program pursuant to California Government Code section 65088.3, as that program is described in California Government Code sections 65088 to 65089.10.

4. The City Manager is hereby authorized to take whatever actions are necessary and appropriate to carry out the purpose and intent of this Resolution.

PASSED, APPROVED, and ADOPTED August 11, 2020.

*Sam R. Wight*  
for MICHAEL D. TUBBS  
Mayor of the City of Stockton

ATTEST:

*Eliza R. G...*  
ELIZA R. G...  
City Clerk of the City of Stockton



RESOLUTION 2020-127

EXEMPTING THE CITY OF TRACY FROM THE STATE-MANDATED CONGESTION MANAGEMENT PROGRAM IN CONJUNCTION WITH SAN JOAQUIN COUNCIL OF GOVERNMENTS' (SJCOG) EFFORT TO ACHIEVE COUNTYWIDE EXEMPTION ONCE A MAJORITY OF THE SAN JOAQUIN COUNTY'S LOCAL GOVERNMENTS HAD ADOPTED SIMILAR RESOLUTIONS

WHEREAS, Following the passage of Proposition 111 in 1990, one of the SJCOG's programs (i.e. SJCOG's Regional Congestion Management Program (RCMP)) is required to abide by SCMP and pursuant to California Government Code 65088.3, an exemption clause allows a county to "opt out" of SCMP after the majority of the jurisdictions that account for the majority of the county's population adopt resolutions that exempts them from the SCMP, and

WHEREAS, SJCOG took notice of this exemption clause as Senate Bill (SB) 743 implementation nears and level of service (LOS) as the primary performance metric is replaced by vehicle miles traveled (VMT), and SJCOG is currently collaborating with jurisdictions in San Joaquin County to "opt out" of SCMP, and

WHEREAS, In December 2019, SJCOG's Board of Directors passed Resolution R-20-16 and authorized SJCOG's Executive Director to start the process of "opting out" of SCMP, and

WHEREAS, SJCOG's December 2019 Board Staff Report, Resolution R-20-16 references the administrative benefits and cost savings of exempting from SCMP, and

WHEREAS, If SJCOG is successful in "opting out" of SCMP, SJCOG can rebuild their RCMP to fulfill federal CMP requirements along with considering the incorporation of data that meets the information demands of jurisdictions, and

WHEREAS, If SJCOG successfully "opts out" of the SCMP, the City provided its support given the following elements are included in subsequent updates to the region's Congestion Management Program (CMP):

- 1) SJCOG should ensure that the current proportion of the CMP funding to the City is preserved, and
- 2) SJCOG should ensure traffic operations are taken into account by providing funding to help Tracy maintain operations at acceptable level, and
- 3) The CMP should accommodate funding projects that addresses the cut-through traffic in the City, and

WHEREAS, The proposed action is exempt from CEQA per section 15061 (b) (3), the General Rule and the General Rule can be applied when it can be seen with certainty that the activity will not have a significant effect on the environment;

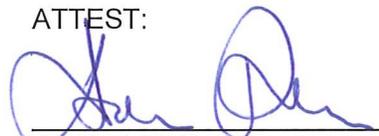
NOW, THEREFORE, BE IT RESOLVED, That the City Council of the City of Tracy hereby elects for the City of Tracy to be exempt from the Congestion Management Program as described in the California Government Code Section 65088 et seq.

\*\*\*\*\*

The foregoing Resolution 2020-127 was passed and adopted by the Tracy City Council on the 21<sup>st</sup> day of July, 2020, by the following vote:

AYES: COUNCIL MEMBERS: ARRIOLA, RANSOM, VARGAS, YOUNG, RICKMAN  
NOES: COUNCIL MEMBERS: NONE  
ABSENT: COUNCIL MEMBERS: NONE  
ABSTAIN: COUNCIL MEMBERS: NONE

  
MAYOR

ATTEST:  
  
CITY CLERK

APPENDIX C:  
FEDERAL STATUTES: CONGESTION  
MANAGEMENT PROCESS

## Appendix C: Federal Statutes: Congestion Management Process

### 23 CFR § 450.322<sup>1</sup> Congestion Management Process in Transportation Management Areas

- (a) The transportation planning process in a TMA shall address congestion management through a process that provides for safe and effective integrated management and operation of the multimodal transportation system, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing transportation facilities eligible for funding under title 23 U.S.C. and title 49 U.S.C. Chapter 53 through the use of travel demand reduction (including intercity bus operators, employer-based commuting programs such as a carpool program, vanpool program, transit benefit program, parking cash-out program, shuttle program, or telework program), job access projects, and operational management strategies.
- (b) The development of a congestion management process should result in multimodal system performance measures and strategies that can be reflected in the metropolitan transportation plan and the TIP.
- (c) The level of system performance deemed acceptable by State and local transportation officials may vary by type of transportation facility, geographic location (metropolitan area or subarea), and/or time of day. In addition, consideration should be given to strategies that manage demand, reduce single occupant vehicle (SOV) travel, improve transportation system management and operations, and improve efficient service integration within and across modes, including highway, transit, passenger and freight rail operations, and non-motorized transport. Where the addition of general purpose lanes is determined to be an appropriate congestion management strategy, explicit consideration is to be given to the incorporation of appropriate features into the SOV project to facilitate future demand management strategies and operational improvements that will maintain the functional integrity and safety of those lanes.
- (d) The congestion management process shall be developed, established, and implemented as part of the metropolitan transportation planning process that includes coordination with transportation system management and operations activities. The congestion management process shall include:
  - (1) Methods to monitor and evaluate the performance of the multimodal transportation system, identify the underlying causes of recurring and non-recurring congestion, identify and evaluate alternative strategies, provide information supporting the implementation of actions, and evaluate the effectiveness of implemented actions;
  - (2) Definition of congestion management objectives and appropriate performance measures to assess the extent of congestion and support the evaluation of the effectiveness of congestion reduction and mobility enhancement strategies for the movement of people and goods. Since levels of acceptable system performance may vary among local communities, performance measures should be tailored to the specific needs of the area and established cooperatively by the State(s), affected MPO(s), and local officials in consultation with the operators of major modes of transportation in the coverage area, including providers of public transportation;
  - (3) Establishment of a coordinated program for data collection and system performance monitoring to define the extent and duration of congestion, to contribute in determining the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions. To the extent possible, this data collection program should be coordinated with existing data sources (including archived operational/ITS data) and coordinated with operations managers in the metropolitan area;
  - (4) Identification and evaluation of the anticipated performance and expected benefits of appropriate congestion management strategies that will contribute to the more effective use and improved safety of existing and future transportation systems based on the established performance measures. The following categories of strategies, or combinations of strategies, are examples of what should be appropriately considered for each area:
    - (i) Demand management measures, including growth management, and congestion pricing;
    - (ii) Traffic operational improvements;

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<sup>1</sup> Code of Federal Regulations, 23 CFR § 450.322 - Congestion management process in transportation management areas.  
<https://www.law.cornell.edu/cfr/text/23/450.322>

- (iii) Public transportation improvements;
  - (iv) ITS technologies as related to the regional ITS architecture; and
  - (v) Where necessary, additional system capacity.
- (5) Identification of an implementation schedule, implementation responsibilities, and possible funding sources for each strategy (or combination of strategies) proposed for implementation; and
  - (6) Implementation of a process for periodic assessment of the effectiveness of implemented strategies, in terms of the area's established performance measures. The results of this evaluation shall be provided to decision makers and the public to provide guidance on selection of effective strategies for future implementation.
- (e) In a TMA designated as nonattainment area for ozone or carbon monoxide pursuant to the Clean Air Act, Federal funds may not be programmed for any project that will result in a significant increase in the carrying capacity for SOVs (i.e., a new general purpose highway on a new location or adding general purpose lanes, with the exception of safety improvements or the elimination of bottlenecks), unless the project is addressed through a congestion management process meeting the requirements of this section.
  - (f) In TMAs designated as nonattainment for ozone or carbon monoxide, the congestion management process shall provide an appropriate analysis of reasonable (including multimodal) travel demand reduction and operational management strategies for the corridor in which a project that will result in a significant increase in capacity for SOVs (as described in paragraph (d) of this section) is proposed to be advanced with Federal funds. If the analysis demonstrates that travel demand reduction and operational management strategies cannot fully satisfy the need for additional capacity in the corridor and additional SOV capacity is warranted, then the congestion management process shall identify all reasonable strategies to manage the SOV facility safely and effectively (or to facilitate its management in the future). Other travel demand reduction and operational management strategies appropriate for the corridor, but not appropriate for incorporation into the SOV facility itself, shall also be identified through the congestion management process. All identified reasonable travel demand reduction and operational management strategies shall be incorporated into the SOV project or committed to by the State and MPO for implementation.
  - (g) State laws, rules, or regulations pertaining to congestion management systems or programs may constitute the congestion management process, if the FHWA and the FTA find that the State laws, rules, or regulations are consistent with, and fulfill the intent of, the purposes of 23 U.S.C. 134 and 49 U.S.C. 5303.
  - (h) Congestion management plan. A MPO serving a TMA may develop a plan that includes projects and strategies that will be considered in the TIP of such MPO.
    - (1) Such plan shall:
      - (i) Develop regional goals to reduce vehicle miles traveled during peak commuting hours and improve transportation connections between areas with high job concentration and areas with high concentrations of low-income households;
      - (ii) Identify existing public transportation services, employer-based commuter programs, and other existing transportation services that support access to jobs in the region; and
      - (iii) Identify proposed projects and programs to reduce congestion and increase job access opportunities.
    - (2) In developing the congestion management plan, an MPO shall consult with employers, private and nonprofit providers of public transportation, transportation management organizations, and organizations that provide job access reverse commute projects or job-related services to low-income individuals.

**23 CFR § 500.109<sup>2</sup> CMS**

- (a) For purposes of this part, congestion means the level at which transportation system performance is unacceptable due to excessive travel times and delays. Congestion management means the application of

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<sup>2</sup> Code of Federal Regulations, 23 CFR § 500.109 – CMS. <https://www.law.cornell.edu/cfr/text/23/500.109>

strategies to improve system performance and reliability by reducing the adverse impacts of congestion on the movement of people and goods in a region. A congestion management system or process is a systematic and regionally accepted approach for managing congestion that provides accurate, up-to-date information on transportation system operations and performance and assesses alternative strategies for congestion management that meet State and local needs.

- (b) The development of a congestion management system or process should result in performance measures and strategies that can be integrated into transportation plans and programs. The level of system performance deemed acceptable by State and local officials may vary by type of transportation facility, geographic location (metropolitan area or subarea and/or non-metropolitan area), and/or time of day. In both metropolitan and non-metropolitan areas, consideration needs to be given to strategies that manage demand, reduce SOV travel, and improve transportation system management and operations. Where the addition of general purpose lanes is determined to be an appropriate congestion management strategy, explicit consideration is to be given to the incorporation of appropriate features into the SOV project to facilitate future demand management strategies and operational improvements that will maintain the functional integrity of those lanes.

APPENDIX D:  
RCMP NETWORK LIST OF ROADWAYS

## Appendix D: RCMP Network List of Roadways

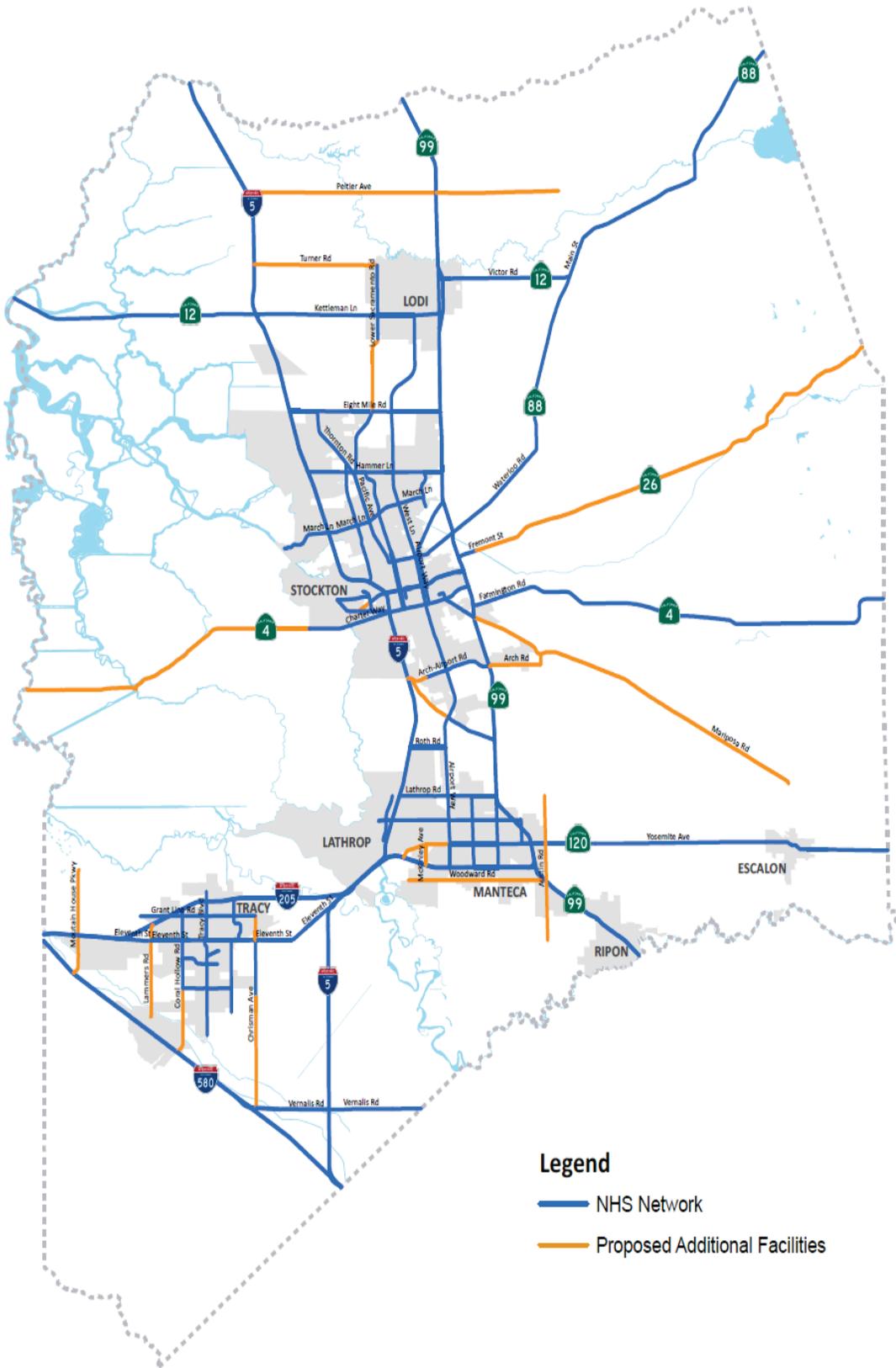
### RCMP Roadways:

(Light yellow shaded rows are Non-HNS Roadways added By SJCOG Steering Committee)

Roadway	From	To	Jurisdiction
Austin Rd	Arch Rd	Mariposa Rd	County
Eight Mile Rd	I-5	SR-99	County
Grant Line Rd	Byron Rd	Tracy Blvd	County
Lower Sacramento Rd	Harney Ln	Eight Mile Rd	County
Peltier Rd	I-5	Elliot Rd	County
SR-132	I-580	SJ/Stanislaus Co Line	County
SR-26	Cardinal Ave	SJ/Calaveras Co Line	County
SR-26	SR-99	Cardinal Ave	County
SR-4	Alameda/SJ Co Line	Maybeck Rd	County
SR-88	Wilcox Rd	SJ/Amador Co Line	County
Golden Valley Pkwy	Lathrop Rd	Brookhurst Blvd	Lathrop
Roth Rd	I-5	Airport Way	Lathrop
Lathrop Rd	I-5	SR-99	Lathrop/Manteca
Hutchins St	Harney Ln	Kettleman Ln	Lodi
Lower Sacramento Rd	Turner Rd	Harney Ln	Lodi
SR-12	Sacramento/SJ Co Ln	SR-88	Lodi/County
Turner Rd	I-5	Lower Sacramento Rd	Lodi/County
Yosemite Ave	Airport Way	Fremont St	Manteca
SR-120	I-5	SJ/Stanislaus Co Line	Manteca/Esaclon/County
SR-99	SJ/Stanislaus Co Line	Sacramento/SJ Co Line	Multiple/County
Arch Rd	SR-99	Austin Rd	Stockton
Arch-Airport Rd	French Camp Rd	SR-99	Stockton
E Lafayette St	S Sutter St	S Stanislaus St	Stockton
E Washington St	N Stanislaus St	N Sutter St	Stockton
Hammer Ln	I-5	SR-99	Stockton
Lower Sacramento Rd	Eight Mile Rd	Hammer Ln	Stockton
March Ln	Buckley Cove Way	Holman Rd	Stockton
Navy Dr	Washington St	SR-4	Stockton
Pacific Ave	March Ln	Hammer Ln	Stockton
French Camp Rd	Airport Way	SR-99	Stockton/County
French Camp Rd	I-5	Airport Way	Stockton/County
Mariposa Rd.	SR-99	Escalon-Bellota Rd	Stockton/County
SR-4	Maybeck Rd & Navy Dr	SJ/Stanislaus Co Line	Stockton/County
Thornton Rd	Eight Mile Rd	Hammer Ln	Stockton/County
West Ln	Harney Ln	Harding Way	Stockton/County
I-5	SJ/Stanislaus Co Line	Sacramento/SJ Co Line	Stockton/Lathrop/County

Airport Way	Harding Rd	SR-120	Stockton/Manteca/County
Chrisman Rd	11 <sup>th</sup> St	Linne Rd	Tracy
Corral Hollow Rd	I-205	Schulte Rd	Tracy
Tracy Blvd	I-205	Grant Line Rd	Tracy
Eleventh St	I-205	I-5	Tracy/County
I-205	Alameda/SJ Co Line	SJ/Stanislaus Co Line	Tracy/County
I-580	Alameda/SJ Co Line	I-5	Tracy/County
Cherokee Ln	SR 99 (North)	SR 99 (South)	Lodi
Victor Rd	Cherokee Ln	SR 99	Lodi
Cottage Ave	Louise Ave	Yosemite Ave	Manteca
Louise Ave	McKee Blvd	Cottage Ave	Manteca
Main St	SR 99	SR 120	Manteca
Union Rd	Lathrop Rd	SR 120	Manteca
Yosemite Ave	Cottage Ave	SR 120	Manteca
Buckley Cove Way	Western Terminus	March Ln	Stockton
Center St	E Cleveland St	Charter Way	Stockton
Charter Way	I-5	SR 99	Stockton
Diamond St	E Anderson St	Charter Way	Stockton
E Anderson St	S B St	Diamond St	Stockton
E Cleveland St	Center St	El Dorado St	Stockton
E Mariposa Rd	Charter Way	SR 99	Stockton
El Dorado St	Hammer Ln	Charter Way	Stockton
Holman Rd	Hammer Ln	E McAllen Rd	Stockton
Navy Dr	SR 4	W Charter Way	Stockton
Pacific Ave	Hammer Ln	Harding Way	Stockton
Pershing Ave	Hammer Ln	I-5	Stockton
S Fresno Ave	Harbor St	Navy Dr	Stockton
S San Joaquin St	SR 4	E Taylor St	Stockton
Sierra Nevada St	Harding Way	SR 4	Stockton
W Washington St	Navy Dr	S Fresno Ave	Stockton
Harding Way	Pacific Ave	SR 99	Stockton/County
Wilson Way	SR 99	Charter Way	Stockton/County
Grant Line Rd	Tracy Blvd	N Chrisman Rd	Tracy
MacArthur Dr	E 11 <sup>th</sup> St	Linne Rd	Tracy
MacArthur Dr	I-205	E 11 <sup>th</sup> St	Tracy
Tracy Blvd	Grant Line Blvd	Linne Rd (South of)	Tracy
Valprico Rd	Coral Hollow Rd	MacArthur Dr	Tracy
W 4 <sup>th</sup> St	Tracy Blvd	D St	Tracy
W Schulte Rd	Coral Hollow Rd	Central Ave	Tracy
Chrisman Ave	Linne Rd	I-580	County
Yosemite Ave	SR-120	Airport Way	Lathrop

McKinley Ave	Yosemite Ave	SR-120	Manteca
Austin Rd	Lathrop Rd	SR-99	Manteca/County
Woodward Rd	West Terminus	SR-99	Manteca/County
Chrisman Ave	Grant Line Rd	11 <sup>th</sup> St	Tracy
Coral Hollow Rd	Schulte Rd	I-580	Tracy/County
Lammers Rd	I-205	Southern Terminus	Tracy/County
Mountain Parkway	Byron Rd	I-580	Tracy/County







## Appendix E: STAA – List of Ramp Intersections

### STAA ROUTE RAMP TERMINI INVENTORY IN SAN JOAQUIN COUNTY

The movement of goods throughout San Joaquin County is a crucial to the economic health of the region and the convenient access for residents and businesses alike. Trucks are the predominant mode of goods transport in the county. As such, a key RCMP performance measure (RCMP Chapter 5) is to achieve compliance with Surface Transportation Assistance Act<sup>3</sup> (STAA) criteria throughout the RCMP network.

An STAA intersection compliance inventory was initially developed for I-5 and SR 99 as part of the *Interregional Truck Operations on I-5 and SR-99 and STAA Routes Improvement Study (June 2012, The Tioga Group)*. Updates to this inventory have occurred incrementally over time as ramp termini improvements have been constructed. Both I-5 and SR 99 are STAA approved routes and are the major north-south goods movement corridors in California. STAA sized vehicles (48 to 53 feet from kingpin to rear-axle) are approved on these routes in their entirety given that they are designated as part of the National Network. Although the operation of STAA sized vehicles have been approved for operation on the main line, not all ramps serving as connectors to the intersection and paralleling roadways have been. This appendix documents the status of STAA compliant ramp intersections/termini at interchanges on I-5 and SR 99 in San Joaquin County.



In California these routes, once approved are supposed to be signed. Signboards have white letters on a blue background (informational) with either a letter T or S in a circle in the middle of the sign (Exhibit 5). “T” is a Terminal Access route; “S” is a Service Access route. STAA trucks may travel on State Highways that exhibit a “T” sign. STAA sized trucks may travel up to one road mile from the off-ramp to obtain services (fuel, food, lodging, repairs), provided the route displays the “S” sign.

Routes are listed with east-west routes following I-5 and SR 99. If an interchange was under construction at the time of this inventory, the status indicated is deemed accurate but not physically verified due to the “T” and/or “S” signs having been removed because of the construction. “No” means that the ramp(s) is not authorized even if the cross street at the end of the ramp is signed. Also, ramps from STAA freeways to another STAA freeway are usually not signed but are authorized.

This is intended to be an inventory of interchanges up to STAA standards so that they can be presumed to be qualified when an application is received for approval of a new STAA route that connects to the National Network. If an interchange or ramp(s) is not yet up to STAA design standards, it is necessary for an applicant for approval and the jurisdiction handing the approval request to involve the applicable Caltrans District 10.

SJCOG also tracks the STAA process through its participation in the San Joaquin County Goods Movement Task Force.

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<sup>3</sup> The Surface Transportation Assistance Act (STAA) was passed in 1982 by the federal government to govern the movement of trucks and trailers. STAA vehicles are large commercial trucks that meet federal size regulations. In California, the STAA network consists of the National Network (generally, interstate freeways and approved state highways) and Terminal Access (state highways). Roadways that part of the STAA network must be designed to accommodate the minimum truck sizes.

## East-West Routes

### Eastbound I-205 from I-580: Authorized Ramp (S, T, No)

#### CC/SJ county line

1. Mountain House	T
2. West 11th Street	No
3. Grant Line Road	No
4. Tracy Blvd	No
5. MacArthur Drive	T
6. I-5 Northbound	T

### Westbound I-205 from I-5 SB: Authorized Ramp (S, T, No)

1. MacArthur	T
2. Tracy Blvd.	No
3. Grant Line Road	No
4. Mountain House	T

#### SJ/CC county line

### Eastbound SR 120 from I-5: Authorized Ramp (S, T, No)

1. Guthmiller/Yosemite	No
2. Airport Way	No
3. Union Road	No
4. Main Street	T
5. SR 99 –northbound/southbound	T

### Westbound SR 120 from SR 99: Authorized Ramp (S, T, No)

1. Main Street	T
2. Union Road	No
3. Airport Way	No
4. Guthmiller/Yosemite	No
5. Southbound I-5	T

### Eastbound SR 4 Fresno to SR 99: Authorized Ramp (S, T, No)

1. Fresno St on ramp	No
2. I-5 southbound	T
3. I-5 northbound	T
4. Lincoln	No
5. El Dorado/Center	No
6. Stanislaus (66)	No
7. Wilson Way (67)	No
8. Filbert Street	No
9. SR 99 –southbound	T
10. SR 99 –northbound	T

**Westbound SR 4 SR 99 to Fresno: Authorized Ramp (S, T, No)**

1. Filbert	No
2. Wilson	No
3. Stanislaus	No
4. El Dorado/Center	No
5. I-5 northbound	T
6. I-5 southbound	T
7. Fresno Street	No

**North-South Routes**

**SR 99 Northbound: Authorized Ramp (S, T, No)**

**Sacramento County Line - Stanislaus County line**

1. 2nd Street/Main Street	No
2. Milgeo Road	T and S
3. Jack Tone/Colony Road	T
4. Austin Road	No
5. SR 120 west	T
6. Yosemite (SR 120 east)	T
7. Lathrop Road	No
8. French Camp Road	No
9. Frontage Exit	No
10. Arch Road	T
11. Clark	No
12. Mariposa Road	T
13. Farmington Road	T
13. Golden Gate Avenue	T
14. MLK/Main Street	No
15. SR 4	T
16. Fremont, first exit (SR26)	T
17. Fremont, second exit (SR26)	T
18. Waterloo Road (SR88)	T
19. Cherokee Road	T
20. Hammer Lane	No
21. Morada	No
22. 8 Mile Road	No
23. Armstrong	No
24. Harney	No
25. Cherokee Lane	No
26. Kettleman (SR 12 West)	T
27. Victor (SR 12 East)	No
28. Turner Road	No
29. Acampo Road	No
30. Woodbridge	T

31. Acampo	No
32. Peltier	No
33. Jahant	T
34. Collier	No
35. Liberty	No

**SR 99 Southbound: Authorized Ramp (S, T, No)**

**Sacramento County Line – Stanislaus County line**

1. Liberty	No
2. Collier	No
3. Jahant	T
4. Peltier	No
5. Frontage Road	No
6. Woodbridge	T
7. Turner Road	T
8. Victor (SR 12 East)	T
9. Kettleman (SR 12 West)	T
10. Harney	No
11. Armstrong	No
12. 8 Mile Road	No
13. Morada	No
14. Hammer Lane	No
15. North Wilson Way (SB only)	T
16. Cherokee Road	T
17. Waterloo Road	T
18. Fremont (SR 26)	T
19. SR 4 westbound	T
20. MLK (SR 26)	T
21. Golden Gate Avenue	T
22. Mariposa Road	No
23. Arch Road	T
24. Exit to Frontage Road	No
25. French Camp Road	No
26. Lathrop Road	No
27. Main Street	No
28. Yosemite (SR 120 east)	T
29. SR 120 westbound	T
30. Austin/Moffatt Road	No
31. Jack Tone Road	T
32. 2nd Street	No

**I-5 Northbound: Authorized Ramp (S, T, No)**

**Sacramento County Line - Stanislaus County Line**

1. I-580 NB	No
2. SR 132	T

3. Lehman/Ahern SR 33	No
4. Kasson	No
5. Mossdale Road (460)	No
6. SR 120 eastbound (461)	T
7. Louise (462)	T
8. Lathrop Road (463)	T
9. Roth Road (465)	T
10. El Dorado (467A)	No
11. Matthews (467B)	No
12. French Camp Road (468)	T
13. Downing (469)	No
14. 8th Street (470)	No
15. Charter Way/MLK Blvd. (471)	T
16. SR 4 –eastbound (472 NM)	T
17. SR 4 –westbound (NM)	T
18. Pershing	No
19. Monte/Diablo	No
20. Country Club Blvd/Alpine	No
21. March Lane	No
22. Benjamin Holt Drive	No
23. Hammer Lane	No
24. 8 Mile Road	T and S
25. SR 12	T
26. Turner Road	No
27. Peltier Road (J12)	No
28. Walnut Grove	T
29. Twin Cities Road	No

**I-5 Southbound: Authorized Ramp (S, T, No)**

**Sacramento County Line - Stanislaus County Line**

1. Walnut Grove Road (J11/8)	T
2. Peltier Road (J12)	No
3. Turner Road	No
4. SR 12	T and S
5. 8 Mile Road	T
6. Hammer Lane	No
7. Benjamin Holt Drive	No
8. March Lane	No
9. Alpine Avenue	No
10. Country Club Blvd.	No
11. Monte/Diablo	No
12. Pershing	No
13. Charter Way	T
14. 8th Street	No
15. Downing	No
16. French Camp (J9)	T
17. Mathews Road	No

18. Roth	T
19. Lathrop	No
20. Louise	T
21. SR 120 eastbound	T Note #1
22. Manthey Road	No
23. I-205 westbound	T
24. West 1st Street	No
25. Kasson Road	No
26. Lehman/Ahern Road (SR 33)	No
27. Vernalis/Ohm Road (SR132)	T

**San Joaquin/Stanislaus county line**

**I-580 North and Southbound:** The section of this highway from the San Joaquin-Stanislaus county line just south of the junction of I-580 and I-5 (Exit 446) to the San Joaquin-Contra Costa county line just south of the junction of I-580 and I-205 (Exit 60) is excluded given that the STAA truck traffic on this section of roadway is not materially related to the RCMP.



## Appendix F: Complete Street Quality of Service

State and federal mandates require the consideration of all major modes of travel as part of a Congestion Management Program (CMP). Additionally, the California Complete Streets Act (AB 1358) requires counties and cities to include policies that take all roadway users into consideration (bicyclists, pedestrians, transit riders, motorists, children, senior citizens, mobility impaired, and freight movers) as part of their general plan updates. This places greater emphasis on the shared right of way environment within these communities that have a state highway serving as “Main Street”. Congestion on state routes that pass through developed communities is a focus issue in San Joaquin County. In recognition of these legislative mandates, SJCOG, in coordination with its member agencies, has identified a sub-set of the RCMP network to be designated as RCMP multimodal corridors. RCMP multimodal corridors are defined as sections of the RCMP roadway network where pedestrian, bicyclist, transit passenger, and motorist levels of service are analyzed. The concepts and method to compute multimodal quality of service (MMQOS) is documented in the Highway Capacity Manual 6<sup>th</sup> Edition. This procedure is described in greater detail below.

### Multimodal QOS Evaluation Methodology

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The phrase, “Complete Streets” in present-day planning and policy lexicons introduces confusion about the meaning of the phrase. Streets considered complete are those which meet the transportation needs for all users, such as pedestrians, bicyclists, transit riders, children, older adults, differently abled people, freight vehicle drivers, and taxis. However, many roadways do not serve all of these user types, nor are all roadways intended for use by everyone. For example, most freeways prohibit access by pedestrians and bicyclists. Most trails prohibit access by motorized vehicles. However, if a roadway provides access to some type of land use, such as a retail store, civic building, school, residence, or employment, it can be expected that a variety of people will use that roadway. The degree to which a street is considered complete depends on several factors, including who are the likely and the desired users.

#### Urban Streets Methodology (HCM 6<sup>th</sup> Edition)

The HCM 6<sup>th</sup> Edition Urban Streets is an integrated methodology that evaluates multimodal quality of service (QOS). QOS is analyzed for each of the four primary roadway users: pedestrians, bicyclists, motorists, and transit passengers. The multimodal QOS methodology utilizes a number of factors, most of which are infrastructure-related, to assess a qualitative QOS score based on user perception. Roadways are analyzed for each mode in one-hour increments for each direction of travel.

There is no single QOS score in the Urban Streets methodology that combines results for all travel modes. Combining the scores into an overall roadway score has the potential to mask important deficiencies for a certain mode because of weighting. To illustrate, a roadway with large volumes of vehicles and a favorable QOS for motorists may subsume QOS deficiencies for other roadway users if a singular multimodal QOS score were analyzed for the corridor.

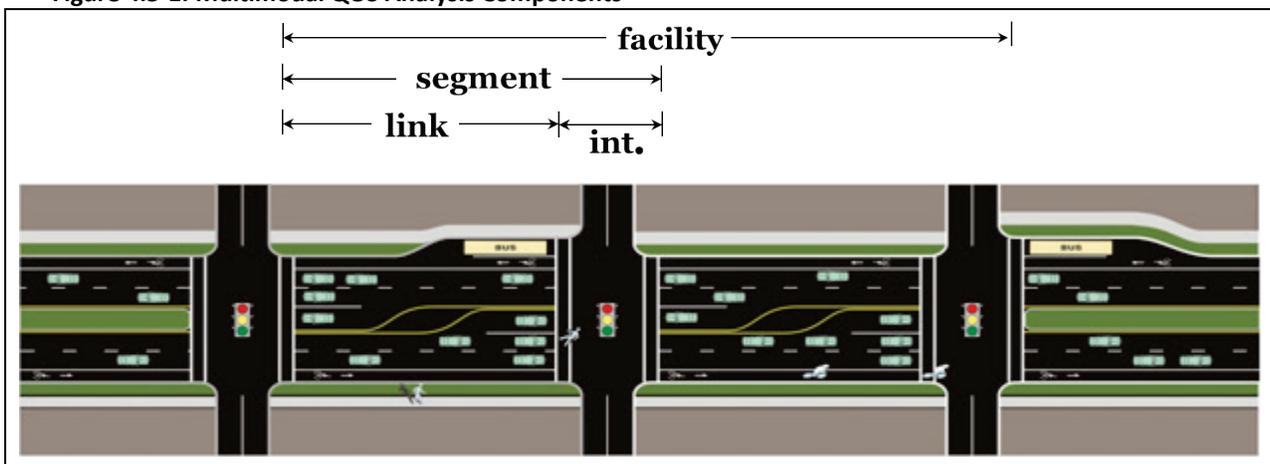
The QOS for each mode is analyzed individually, although input factors can affect the analysis for more than one travel mode. For example, the percent of occupied on-street parking is a factor for both the bicyclist and pedestrian QOS. Generating QOS scores for each roadway user type allows the comparison of the quality of service amongst the different modes. Furthermore, the individual scores facilitate quantification and examination of tradeoffs between modes for a given streetscape design feature or strategy, which assist with the analysis of

project alternatives and prioritization of pedestrian, bicyclist, motorist, and transit passenger facility improvements.

This methodology can also enable local jurisdictions to adopt a street classification system that is multimodal and identifies priority users for which QOS thresholds can be established. Traditional street classification systems (Freeway, Arterial, Collector, Local) tend to be derived from a motorist's perspective. As such, thresholds are established for motorist QOS, but have not been established for other modes. A multimodal classification system may expand or redefine the streets to include transit, pedestrian, or bicyclist priority. Thus, QOS thresholds could be established for the priority mode by the street classification. As an example, central business district roadways could have QOS thresholds for pedestrian and transit access but no thresholds for motorist or bicyclist access.

As illustrated in Figure 4.5-1, the methodology analyzes and provides the directional QOS results for a facility, which is a combination of two or more segments (roadway link with a downstream intersection that is typically signalized). Additionally, pedestrian and bicyclist QOS analysis and results further divide each segment into the links and downstream intersections. When reviewing QOS results, it's suggested that attention is paid to the component results, as the facility scores have the potential to mask deficiencies.

**Figure 4.5-1. Multimodal QOS Analysis Components**



Factors included in the evaluation of QOS for each mode are based on the roadway user's perspective, as described below, for pedestrians, bicyclists, and transit passengers.

### **Pedestrian QOS Factors**

The following factors lead to a superior level of service for pedestrians on an urban street:

- Providing a walkway on both sides of the roadway with ample width that allows side-by-side walking
- Distancing the walkway away from vehicular traffic using bike lanes, shoulders, on-street parking, buffers, trees, and landscaping
- Reducing vehicle volumes and speeds, particularly those closest to the walkway
- Limiting delay for pedestrians at signalized intersections
- Providing raised medians that can serve as pedestrian refuges at both signalized and unsignalized locations
- Removing permitted left turn movements by vehicles at signalized intersections
- Prohibiting right turn movements on red by vehicles

- Narrowing the crossing distances at intersections

A pedestrian density QOS can override the pedestrian quality of service calculations if sidewalk crowding is an issue. This may be the case in dense urban areas or near stadiums or concert halls before or after major events.

### **Bicyclist QOS Factors**

The following factors lead to a superior level of service for bicyclists on an urban street:

- Providing bike lanes on both sides of the roadway with ample width
- Excellent pavement condition that is free of potholes, damage, and debris
- Distancing or buffering the bike lane away from vehicular traffic as much as possible
- Reducing vehicle volumes and speeds, particularly those closest to the bike lane
- Reducing the number of trucks, particularly those closest to the bike lane
- Removing or reducing on-street parking
- Narrowing the crossing distances at intersections
- Providing bike lanes through intersections
- Limiting the number of commercial driveways or driveways serving high-density residential buildings along the street
- Limiting or reducing the number of unsignalized intersections along the street

### **Transit Passenger QOS Factors**

Transit passenger quality of service can be derived for buses, streetcars, and light rail operating on surface streets. The following factors lead to a superior quality of service for transit passengers on an urban street:

- Reliable transit service with frequencies of 15 minutes or less
- Higher transit travel speeds
- High quality walkways leading to the transit stops (derived from the pedestrian QOS score)
- Numerous transit stop locations with benches and shelters
- On-board crowding less than 80%, meaning passengers can have a choice of seats

### **Safety Factors**

The methodology does not include collisions as a factor. However, perceived safety is incorporated into the methodology by way of vehicle volumes and speeds along the corridor links as well as the number of conflicting vehicle movements at intersections.

### **Study Facilities**

With input from its member local agencies, twelve RCMP Multi-Modal corridors were designated as RCMP Multi-Modal corridors by SJCOG to establish baseline Multi-Modal QOS information. These Multi-Modal corridors are as follows:

#	Roadway	Analysis Extent	Analysis Scenario	Jurisdiction	Length (miles)
1	SR-88	Locke Rd to North Sierra Dr	Baseline	County (Lockeford Area)	0.8
		Brandt Rd to eastern town limit of Lockeford	Future	County (Lockeford Area)	2.0
2	SR-120	McHenry Ave-Escalon Bellota Rd to David Dr	Baseline	Escalon	0.8
3	Lathrop Rd	Crestwood Ave to S Airport Wy	Baseline	Lathrop	0.6
		S Harlan Rd to 7th St	Baseline	Manteca	1.8
		S Harlan Rd to Crestwood Ave	Future	Lathrop/ County/ Manteca	3.6
4	SR-12/Kettleman Ln	Lower Sacramento Rd to Cherokee Ln	Baseline	Lodi	2.5
5	Yosemite Ave	Airport Wy to Northwoods Ave-Commerce Ave	Baseline	Manteca	3.2
6	Main St	Jack Tone Rd to Stockton Ave	Baseline	Ripon	1.0
7	March Ln	Da Vinci Dr-Quail Lakes Dr to West Ln	Baseline	Stockton	3.0
8	Eight Mile Rd	Thornton Rd to Davis Rd	Baseline	Stockton/ County	1.0
		Trinity Pkwy to Davis Rd	Future	Stockton/ County	2.4
9	Hammer Ln	Kelley Dr to Maranatha Dr	Baseline	Stockton	5.0
10	Lower Sacramento Rd	Royal Oaks Dr to Hammer Ln	Baseline	Stockton	1.1
		Eight Mile Rd to Hammer Ln	Future	Stockton	2.8
11	West Ln-Airport Wy	El Pinal Dr to Roosevelt St	Baseline	Stockton	0.8
		E Alpine Ave to E Roosevelt St	Future	Stockton	1.2
12	11th St	Lammers Rd to N MacArthur Dr (west)	Baseline	Tracy	3.3
13	SR-26	N Granada Ln to N Market St	Future	County (Linden)	0.9

These corridors serve multiple users and modes and are characterized by constrained right-of-way making future widenings potentially cost prohibitive. The MMQOS information contained in this appendix can be used as an analysis resource to help the local agencies select and quantify the MMQOS benefits of non-capacity increasing improvement strategies.

**Table 1** and **Table 2** provide the 2016 baseline RCMP Multi-Modal corridor AM/PM peak hour MMQOS results (pedestrian, bicycle, and transit) for each direction of travel at the facility scale of analysis. These baseline condition are considered to be representative of 2021 conditions given that significant modifications in the infrastructure characteristics (i.e., provision of new pedestrian or bike facilities) have not occurred within these corridors, nor have peak hour transit service frequencies, traffic volumes or truck traffic significantly changed since the 2016 baseline condition measurements.

To help elucidate what conditions each MMQOS grade reflects, Table 3-5 provide picture examples (taken in San Luis Obispo County) of the various LOS grades for pedestrians, bicycle and transit respectively.

**Note:** Multimodal Quality of Service is based on the user’s perspective of a given mode’s quality of service. Quality of Service is based on multiple factors including the physical features within the shared right-of-way environment as well as traffic operations and service provisions.

**Table 1. 2016 Multi-Modal Facility AM Peak Hour Complete Street QOS Results (Pedestrian, Bike, Transit)**

ID	Roadway	From	To	Jurisdiction	AM Peak Hour											
					Pedestrian				Bike				Transit			
					NB/EB		SB/WB		NB/EB		SB/WB		NB/EB		SB/WB	
					CSQOS	QOS	CSQOS	QOS	CSQOS	QOS	CSQOS	QOS	CSQOS	QOS	CSQOS	QOS
1	SR 88	Locke Road	N Sierra Drive	County	2.93	C	2.91	C	4.06	D	3.97	D	6.32	F	6.24	F
2	SR 120	McHenry Avenue- Escalon Bellota Road	David Drive	Escalon	3.31	C	4.34	E	4.02	D	4.34	E	6.4	F	5.14	F
3-1	Lathrop Road	Airport Way	Crestwood Avenue	Lathrop	3.59	D	3.8	D	3.61	D	3.08	C	6.44	F	6.51	F
3-2	Lathrop Road	Harlan Road	7th Street	Lathrop	3.35	C	3.61	D	3.87	D	3.94	D	6.35	F	6.4	F
4	SR 12	Lower Sac. Road.	Cherokee Lane	Lodi	3.03	C	2.98	C	2.75	B	2.97	C	4.04	D	3.73	D
5	Yosemite Avenue	Airport Way	Northwoods Avenue-Commerce Avenue	Manteca	3.19	C	3.29	C	4.57	E	3.96	D	4.54	E	4.29	E
6	W Ripon Road (Main Street)	Jack Tone Road	N Stockton Avenue	County/Ripon	2.31	B	2.33	B	4.48	E	4.2	D	6.36	F	6.32	F
7	March Lane	Da Vinci Drive-Quail Lakes Drive	West Lane	Stockton	3.42	C	3.69	D	3.99	D	4.37	E	3.44	C	3.56	D
8	Eight Mile Road	Thornton Road	Davis Road	County	3.83	D	4.14	D	3.84	D	3.67	D	6.53	F	6.67	F
9	Hammer Lane	Kelley Drive	Maranatha Drive	Stockton	3.72	D	3.69	D	3.97	D	3.89	D	3.22	C	3.59	D
10	Lower Sac. Road	Royal Oaks Drive	Hammer Lane	Stockton	3.51	D	3.93	D	3.49	C	4.51	E	5.01	F	5.07	F
11	West Lane - Airport Way	El Pinal Drive	Roosevelt Street	Stockton	3.43	C	3.47	C	3.99	D	4.13	D	6.45	F	6.44	F
12	Eleventh Street	Lammers Road	MacArthur Drive	Tracy	3.67	D	3.6	D	4.07	D	4.08	D	6.41	F	6.41	F

**Table 2. Multi-Modal Facility PM Peak Hour Complete Street QOS Results (Pedestrian, Bike, Transit)**

ID	Roadway	From	To	Jurisdiction	PM Peak Hour											
					Pedestrian				Bike				Transit			
					NB/EB		SB/WB		NB/EB		SB/WB		NB/EB		SB/WB	
					CSQOS	QOS	CSQOS	QOS	CSQOS	QOS	CSQOS	QOS	CSQOS	QOS	CSQOS	QOS
1	SR 88	Locke Road	N Sierra Drive	County	3.1	C	3.15	C	4.09	D	4.15	D	6.38	F	6.38	F
2	SR 120	McHenry Avenue- Escalon Bellota Road	David Drive	Escalon	3.49	C	4.27	E	4.03	D	4.27	E	6.47	F	5.11	F
3-1	Lathrop Road	Airport Way	Crestwood Avenue	Lathrop	3.69	D	3.65	D	3.65	D	3.03	C	6.47	F	6.45	F
3-2	Lathrop Road	Harlan Road	7th Street	Lathrop	3.65	D	3.54	D	4.06	D	3.83	D	6.46	F	6.37	F
4	SR 12	Lower Sac. Road.	Cherokee Lane	Lodi	3	C	2.99	C	2.75	C	3.02	C	4.05	D	3.77	D
5	Yosemite Avenue	Airport Way	Northwoods Avenue-Commerce Avenue	Manteca	3.41	C	3.3	C	4.57	E	3.96	D	4.55	E	4.27	E
6	W Ripon Road (Main Street)	Jack Tone Road	N Stockton Avenue	County/Ripon	2.31	B	2.32	B	4.48	E	4.18	D	6.36	F	6.34	F
7	March Lane	Da Vinci Drive-Quail Lakes Drive	West Lane	Stockton	3.88	D	3.88	D	4.16	D	4.57	E	3.52	D	3.63	D
8	Eight Mile Road	Thornton Road	Davis Road	County	3.89	D	4.17	D	3.89	D	3.68	D	6.56	F	6.69	F
9	Hammer Lane	Kelley Drive	Maranatha Drive	Stockton	3.72	D	3.81	D	4.01	D	4.04	D	3.23	C	3.63	D
10	Lower Sac. Road	Royal Oaks Drive	Hammer Lane	Stockton	3.59	D	3.9	D	3.52	D	4.41	E	5.03	F	5.05	F
11	West Lane - Airport Way	El Pinal Drive	Roosevelt Street	Stockton	3.42	C	3.44	C	3.98	D	4.1	D	6.45	F	6.43	F
12	Eleventh Street	Lammers Road	MacArthur Drive	Tracy	3.61	D	3.63	D	4.03	D	4.13	D	6.43	F	6.43	F

- Signal timing data was optimized. This assumption was carried forward into the CSQOS analysis.
- Urban Street Class and Progression Arrival Type were assumed based on the context of the roadway and posted speed limit.
- Facilities with transit MMQOS results of “F” typically had no transit service or were served by one transit route with hourly headways.

**Table 3. Pedestrian Link Quality of Service (QOS) Summary**

QOS	Sample Description	Photo
<p><b>A</b></p> <p><b>Superior Quality of Service</b></p>	<ul style="list-style-type: none"><li>• Walkway with ample width that allows side-by-side walking</li><li>• Walkway is buffered from vehicular traffic using bike lanes, shoulders, on-street parking, buffers, trees, and landscaping</li><li>• Vehicle volumes and speeds are minimized, particularly those closest to the walkway</li></ul>	 <p><i>Image source: Google Maps Street View</i> Location: Monterey Street between Morro and Chorro</p>
<p><b>B</b></p> <p><b>Very Good Quality of Service</b></p>	<p><i>Compared to QOS A results:</i></p> <ul style="list-style-type: none"><li>• Higher vehicle volumes and speeds due to one-way street system</li><li>• Less of a buffer between the sidewalk and due lower percentage of parked vehicles</li></ul>	 <p><i>Image source: Google Maps Street View</i> Location: Marsh Street between Broad and Garden</p>

QOS

Sample Description

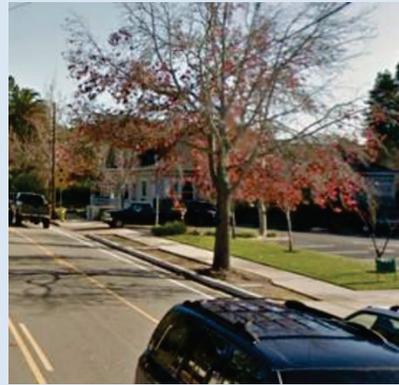
Photo

**C**

**Good Quality of Service**

*Compared to QOS B results:*

- Less distance between traffic and sidewalk
- Higher volumes of traffic in the lane closest to sidewalk



*Image source: Google Maps Street View*  
Location: Johnson Avenue between Marsh and San Luis

**D**

**Fair Quality of Service**

*Compared to QOS C results:*

- Higher vehicle volumes and speeds



*Image source: Google Maps Street View*  
Location: Foothill Boulevard Santa Rosa and Chorro

**QOS**

**Sample Description**

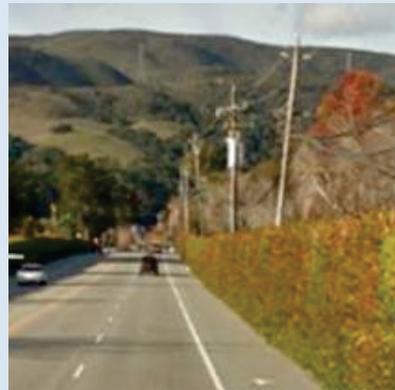
**Photo**

**E**

**Poor Quality of Service**

*Compared to QOS D results:*

- No sidewalk
- Bike lane serves as a shoulder
- Higher vehicle volumes

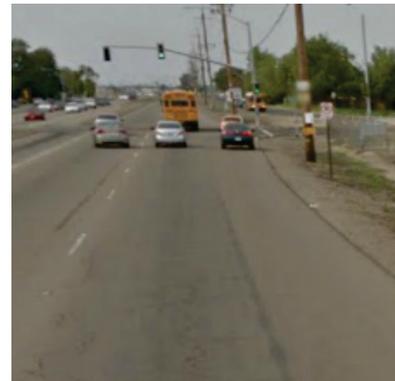


*Image source: Google Maps Street View*  
Location: Madonna Road between Oceannaire and Los Osos Valley

**F**

**Very Poor Quality of Service**

- No walkway or shoulder
- No buffered area between where pedestrians walk and traveling vehicles
- Vehicle volumes and speeds are high



*Image source: Google Maps Street View*  
Location: West Lane between West Lane Frontage and Pyrenees in Stockton, CA

**Table 4. Bicyclist Link Quality of Service (QOS) Summary**

QOS	Sample Description	Photo
<p><b>A</b></p> <p><b>Superior Quality of Service</b></p>	<ul style="list-style-type: none"> <li>• Bike lane with ample width (buffered bike lane is shown here)</li> <li>• Excellent pavement condition that is free of potholes, damage, and debris</li> <li>• Bike lane positioned away from vehicular traffic</li> <li>• Vehicle volumes and speeds are minimized, particularly those closest to the bike lane</li> <li>• The percentage of heavy trucks is minimal, particularly in the travel lane closest to the bike lane</li> <li>• On-street parking is prohibited</li> </ul>	 <p><i>Image source: City of Bloomington buffered bike lane</i></p> <p>Location: East 3<sup>rd</sup> Street between Jordan and Bryan, Bloomington, IN</p>
<p><b>B</b></p> <p><b>Very Good Quality of Service</b></p>	<p><i>Compared to QOS A results:</i></p> <ul style="list-style-type: none"> <li>• Narrower bike lane width</li> <li>• On-street parking allowed</li> </ul>	 <p><i>Image source: Google Maps Street View</i></p> <p>Location: Johnson Avenue between Monterey and Marsh</p>

QOS	Sample Description	Photo
<p><b>C</b></p> <p><b>Good Quality of Service</b></p>	<p><i>Compared to QOS B results:</i></p> <ul style="list-style-type: none"> <li>• Higher vehicle volumes and speeds in lane closest to bike lane</li> </ul>	 <p><i>Image source: Google Maps Street View</i> Location: Foothill Boulevard between Broad and Tassajara</p>
<p><b>D</b></p> <p><b>Fair Quality of Service</b></p>	<p><i>Compared to QOS C results:</i></p> <ul style="list-style-type: none"> <li>• Higher vehicle volumes and speeds in lane closest to bike lane</li> <li>• Higher percent of heavy vehicles</li> </ul>	 <p><i>Image source: Google Maps Street View</i> Location: Johnson Avenue between Laurel and Bishop</p>

QOS	Sample Description	Photo
<p><b>E</b></p> <p><b>Poor Quality of Service</b></p>	<p><i>Compared to QOS D results:</i></p> <ul style="list-style-type: none"> <li>• No bike lane</li> <li>• Shoulder width narrow</li> </ul>	 <p><i>Image source: Google Maps Street View</i> Location: Osos Street between Pismo and Marsh</p>
<p><b>F</b></p> <p><b>Very Poor Quality of Service</b></p>	<ul style="list-style-type: none"> <li>• No bike lane</li> <li>• Poor pavement condition</li> <li>• High vehicle volumes and speeds</li> <li>• High percent of on-street parking</li> <li>• Higher percent of heavy vehicles</li> </ul>	 <p><i>Image source: Google Maps Street View</i> Location: Osos Street between Pismo and Marsh</p>

**Table 5. Transit Passenger Segment Quality of Service (QOS) Summary**

QOS	Sample Description	Photo
<p><b>A</b></p> <p><b>Superior Quality of Service</b></p>	<ul style="list-style-type: none"><li>• Reliable transit service with frequencies of 15 minutes or less</li><li>• Higher transit travel speeds</li><li>• High quality walkways leading to the transit stops</li><li>• Numerous transit stop locations with benches and shelters</li><li>• Passengers can easily find seats on-board</li></ul>	 <p><i>Image source: Google Maps Street View</i> Location: Foothill Boulevard between Chorro and Santa Rosa</p>
<p><b>B</b></p> <p><b>Very Good Quality of Service</b></p>	<p><i>Compared to QOS A results:</i></p> <ul style="list-style-type: none"><li>• Fewer transit stop amenities</li><li>• Narrower sidewalk that is closer to the vehicle travel lanes</li></ul>	 <p><i>Image source: Google Maps Street View</i> Location: Marsh Street between Broad and Garden</p>

**QOS**

**Sample Description**

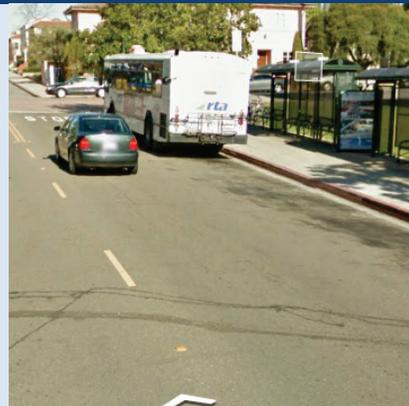
**Photo**

**C**

**Good Quality of Service**

*Compared to QOS B results:*

- Transit service not as frequent or reliable
- Bus speeds lower



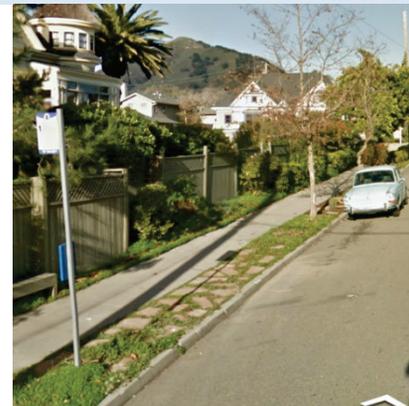
*Image source: Google Maps Street View*  
Location: Osos Street between Palm and Monterey

**D**

**Fair Quality of Service**

*Compared to QOS C results:*

- Transit service not as frequent or reliable
- Bus speeds lower
- Fewer transit stop amenities



*Image source: Google Maps Street View*  
Location: Broad Street between High and Buchon

**QOS**

**Sample Description**

**Photo**

**E**

**Poor Quality of Service**

*Compared to QOS D results:*

- Transit service not as frequent or reliable



*Image source: Google Maps Street View*  
Location: Johnson Avenue between Lizzie and Ella

**F**

**Very Poor Quality of Service**

- No transit service



*Image source: Google Maps Street View*  
Location: Osos Street between Pismo and Marsh





<b>Congestion Management Process</b> <b>Evaluation of RTP Regional Roadway</b> <b>SOV Capacity Increasing Projects</b>					<b>Project Needs: Bottleneck and/or Safety Conditions</b>		<b>Maintenance</b>	<b>Goods Movement</b>		<b>TDM/TSM Strategies<sup>1</sup></b>														<b>Programs</b>						
					RCMP Deficiency	Congestion & Reliability	Injuries & Fatalities		PCI/PSI/IRI	STAA National and Terminal Access		A	B	C	D	E.1	E.2	F	G.1	G.2	G.3	H	I	J.1	J.2	TIPs (Federal, State, Regional)	RTIF	Measure K	Local Transportation Fund	
<b>Regional Transportation Plan Capacity Increasing Projects on RCMP Network</b>					Addresses RCMP Deficient Corridor	Addresses Congested or Unreliable Segment	Addresses Segment with Fatality Rate >2 per 100 Million VMT	Addresses Segment with Injury Rate >3.5 per 100 Million VMT	Improve pavement condition along NHS	Part of STAA network	Link to Multimodal Goods Movement Hubs	Demand Management	Arterial Operation	Managed Lanes	Land Use/Growth Management	Rubber Tire Public Transit	Passenger Rail Public Transit	Active Transportation	ITS Strategies for Arterial Segments (to improve traffic operations)	ITS Strategies for Freeway Segments (i.e., Integrated Corridor Management)	ITS (Traveler Information Systems)	Transportation System Management (Park-n-Ride Lots)	Incident Management	Safety Improvement (Rural)	Safety Improvement (Urban)	TIPs (Federal, State, Regional)	RTIF	Measure K	Local Transportation Fund	
<b>RTPID</b>	Project Sponsor	Facility Name/Route	Project Description	Project Boundaries	Year Open to Traffic																									
1		Project 1				o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
2		Project 2				o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
3		Project 3				o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
4		Project 4				o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
5		Project 5				o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
6		Project 6				o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
		-				o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
		-				o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
		-				o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
X		Project X				o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o

<sup>1</sup> A description of each TDM/TSM Strategy is provided in Table 6-1 RCMP Tool-Bc

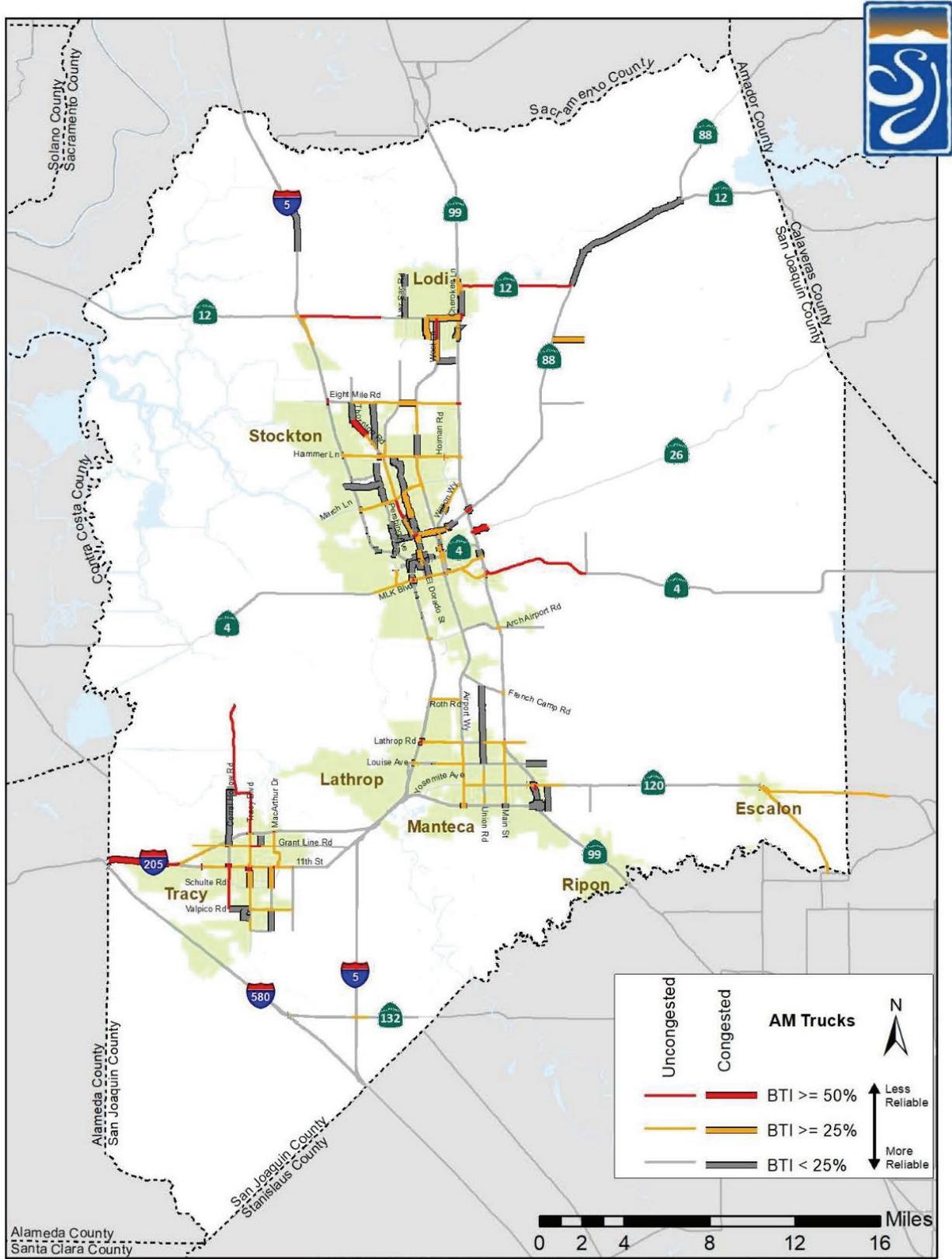


APPENDIX H:  
2017-2018 COMBINED CONGESTION  
AND RELIABILITY METRIC RESULTS



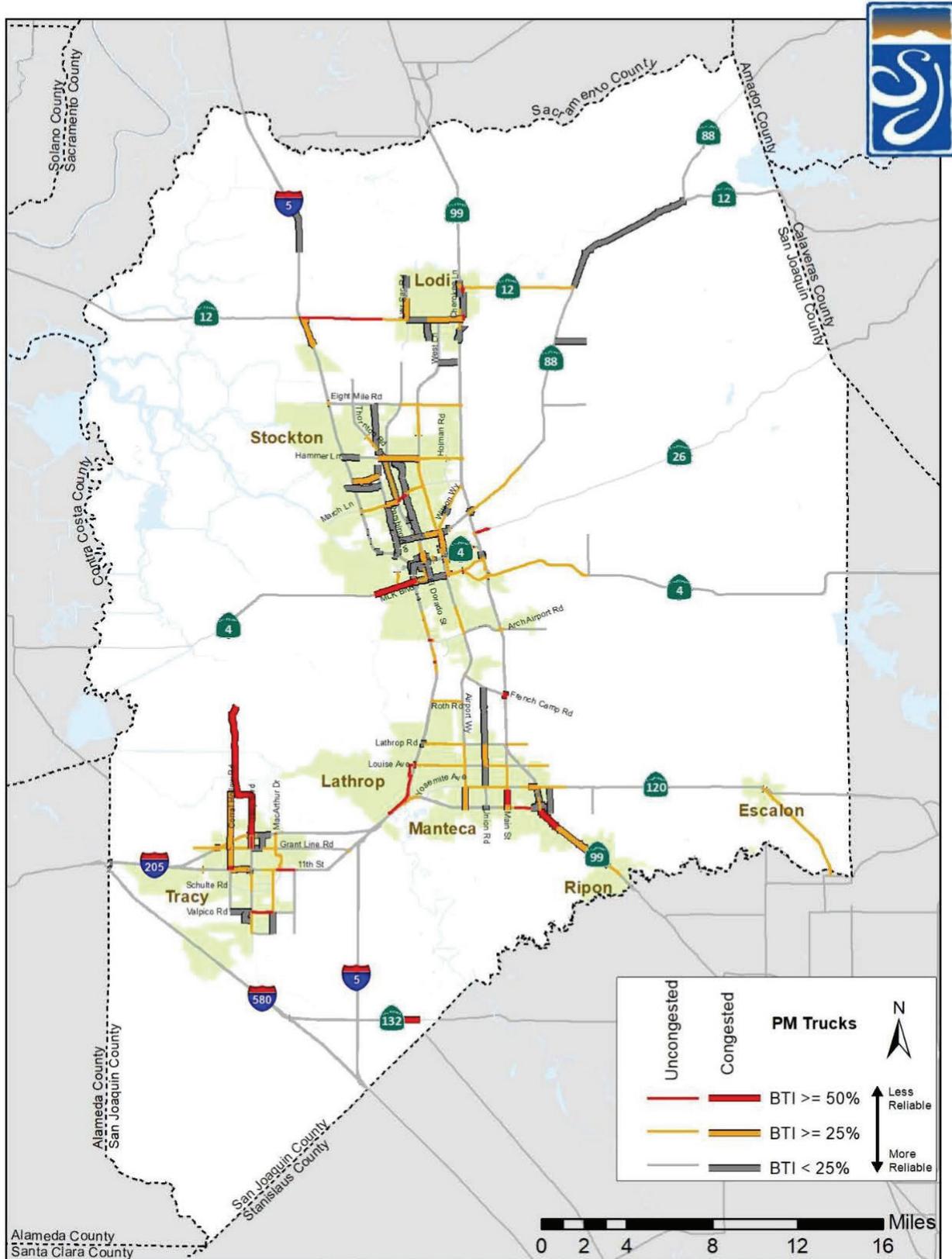


FIGURE 3. 2017 Truck Congestion and Travel Time Reliability, AM Peak Hour



BTI: Buffer Time Index - The percent of additional travel time over the average trip needed to ensure on time arrival.  
 Congested: Average speed is less than 60% of free flow speed

FIGURE 4. 2017 Truck Congestion and Travel Time Reliability, PM Peak Hour



BTI: Buffer Time Index - The percent of additional travel time over the average trip needed to ensure on time arrival.  
 Congested: Average speed is less than 60% of free flow speed

**Figure 5. 2018 AM Peak Hour Passenger Vehicle Results**

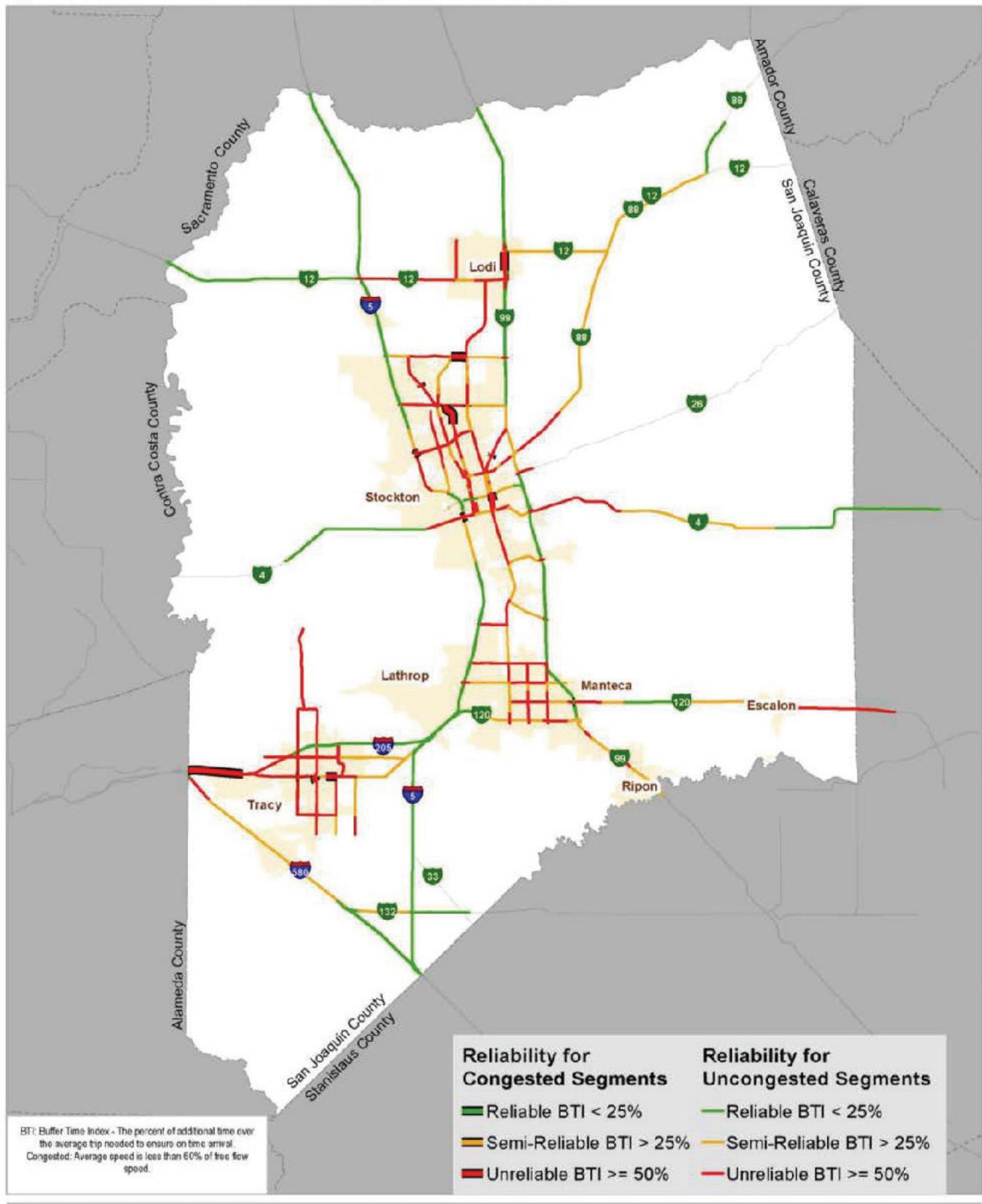


Figure 6. 2018 PM Peak Hour Passenger Vehicle Results

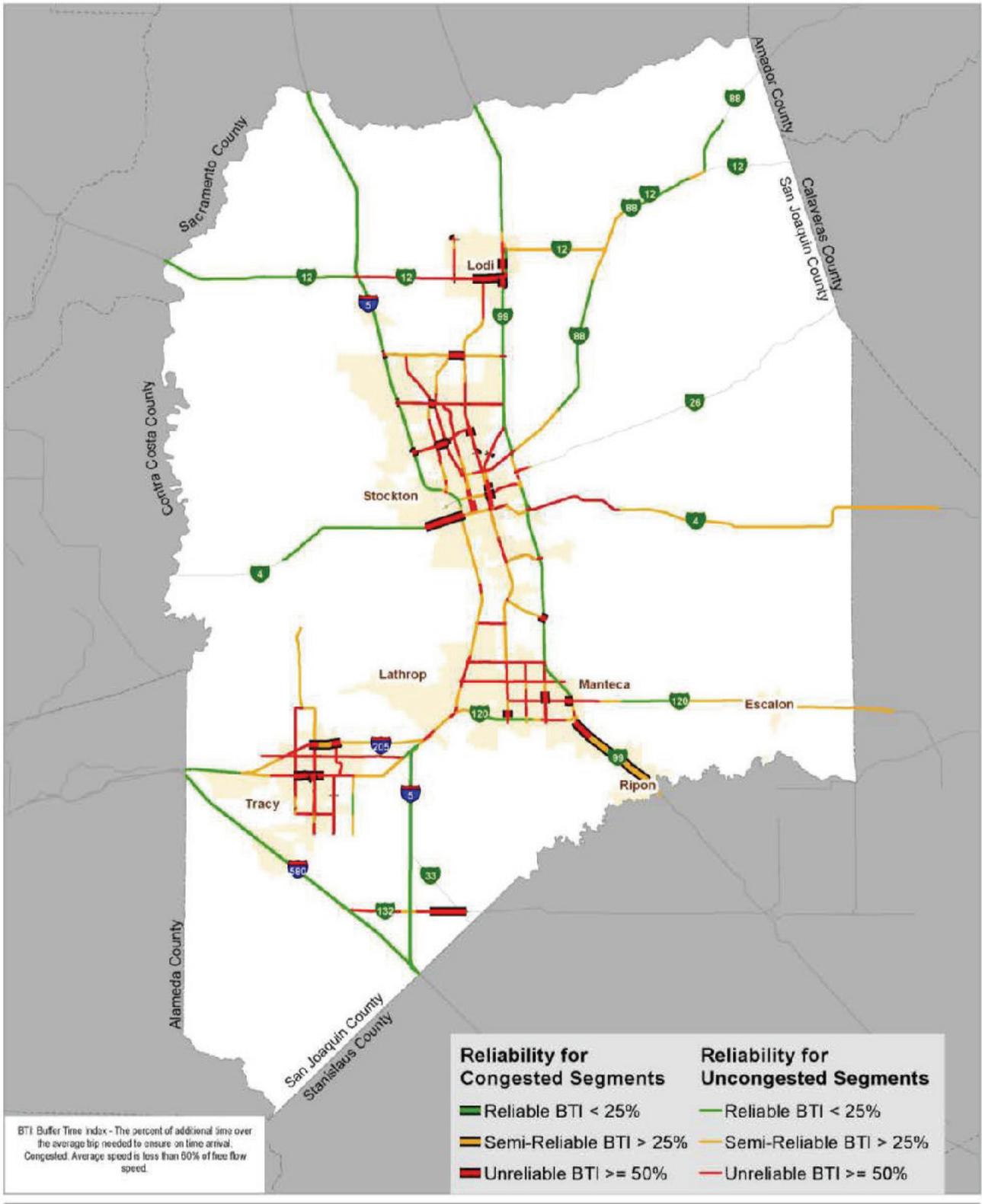
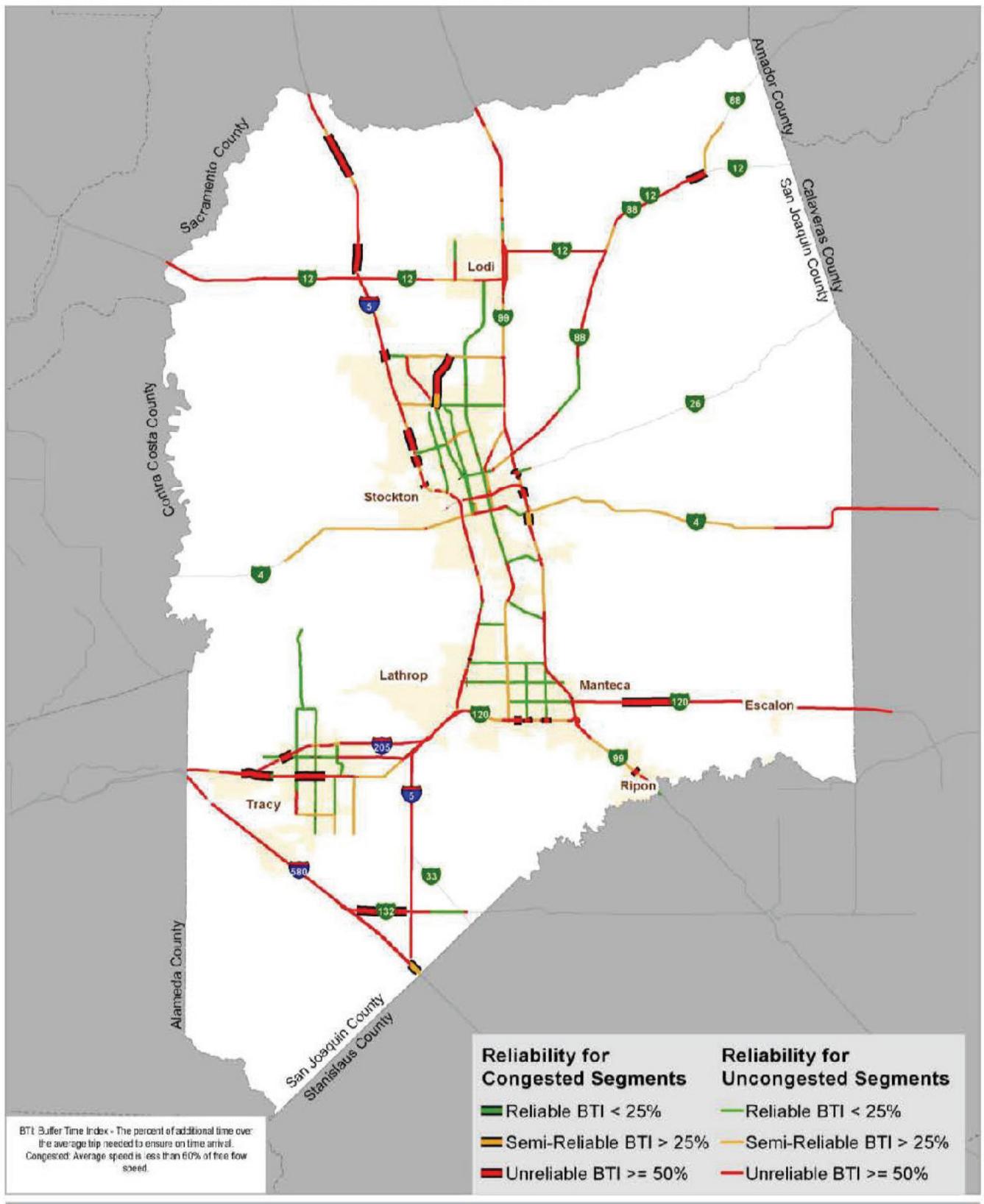
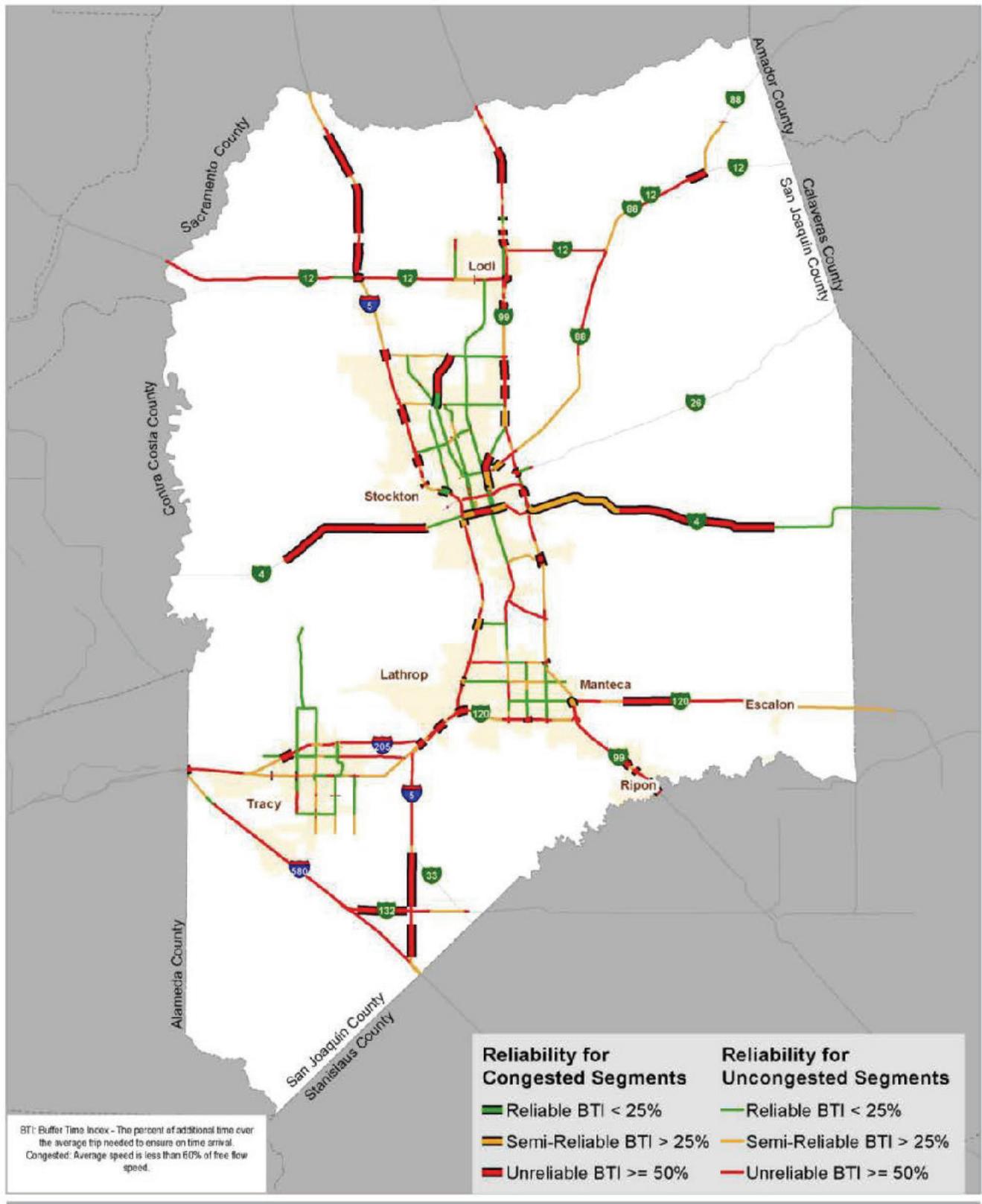


Figure 7. 2018 AM Peak Hour Heavy-Duty Truck Results



**Figure 8. 2018 PM Peak Hour Heavy-Duty Truck Results**



APPENDIX I:  
(LIST OF TERMS AND ACRONYMS)

## Appendix I: List of Terms/Acronyms

- ACE**  
Altamont Corridor Express
- AADT**  
Annual Average Daily Traffic. AADT normalizes for seasonal fluctuation in ADT.
- ADT**  
Average Daily Traffic
- America's Transportation Infrastructure Act**  
The Federal Transportation Infrastructure Act promulgated in 2019 that amended Title 23, United States Code, to authorize funds for Federal-aid highways and highway safety construction programs, and for other purposes.
- Amtrak**  
A federal governmental agency that provides intercity railroad passenger service Amtrak also provides commuter rail passenger service by contract.
- Annual Service Miles**  
The number of miles that all transit vehicles travel each year in scheduled transit service operations, or when carrying passengers in door-to-door (or demand responsive) transit service.
- Auto TURN**  
A CAD based software tool that helps traffic engineers estimate truck turning radii.
- Bikeway Classifications**  
As defined by the Caltrans Highway Design Manual:
- Class I Bike Path: A paved path within an exclusive right-of-way.
  - Class II Bike Lane: Signed and striped lanes within a street right-of-way.
  - Class III Bike Route: Preferred routes on existing streets identified by signs only.
  - Class IV Bike Route: A bikeway for the exclusive use of bicycles with a (required) physical separation between the bikeway and the through vehicular traffic.
- BRT**  
Bus Rapid Transit - typically a travel corridor that allows buses to operate at higher speeds in their own right-of way minimizing conflicts with automobiles
- BTI**  
Buffer Time Index. Expresses the amount of extra "buffer" time needed to be on-time 95 percent of the time (late one day per month).
- Caltrans**  
California Department of Transportation
- CARB**  
California Air Resources Board
- Carpool**  
Two or more people sharing the use and cost of privately owned automobiles.
- CEQA**  
California Environmental Quality Act.
- CIP**  
Capital Improvement Plan. A community planning and fiscal management tool used to coordinate the location, timing and financing of capital improvements over a multi-year period — usually 4-6 years.

**Class I Multiuse Trail**

This is a facility that provides mobility for bicycles, pedestrians, and sometimes equestrian users that is completely separated from automobile traffic. They may parallel a roadway or may be an off-road trail.

**Class II Bike Lane**

These are marked bicycle lanes that give bicycles dedicated space in the roadway separate from vehicular traffic and parked vehicles.

**Class III Bike Route**

These are typically marked bicycle routes that are shared between bicycles and cars. Routes can be signed or marked with arrows indicating that bicycles share right-of-way in the travel lanes.

**Class IV Bike Route**

These are typically bikeways for the exclusive use of bicycles with a (required) physical separation between the bikeway and the through vehicular traffic.

**CMAQ**

Congestion Mitigation and Air Quality Program. A category of funds contained in federal funding legislation for projects and activities that reduce congestion and improve air quality in regions not yet attaining federal air quality standards.

**CMP**

Federal Congestion Management Process. A systematic approach for managing congestion that provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management. Required in Metropolitan Planning Organization areas that are designated Transportation Management Areas. Includes additional requirements if also a Federal Non-attainment area.

**Commuter Rail**

Conventional rail passenger service within a metropolitan area, usually operating over existing, inter-city railroad tracks.

**Complete Streets**

Complete Streets is a transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation.

**Congestion**

Congestion is defined when traffic's average peak hour travel speed traveling less than 60% of free flow speed.

**Corridor**

A broad geographical band that follows a general directional flow connecting major trip origins and destinations. A corridor may contain a number of streets, highways and transit route alignments.

**CTC**

California Transportation Commission

**Deficient Corridor**

As used in the CMP, a portion of the CMP network where average peak hour travel speed is less than 60% of free flow speed and/or the variability in travel time exceeds a Buffer Time Index of 1.5.

**Dibs**

Dibs is a program established by the San Joaquin Council of Governments (SJCOG) and is funded by three MPOs (SJCOG, Stanislaus Council of Governments and Merced County Association of Governments) to provide various transportation demand management services and information to the three counties of Merced, Stanislaus and San Joaquin. It was established to enhance air quality and help reduce congestion through Transportation Demand Strategies such as carpooling, vanpooling, riding transit and biking and walking.

**DOF**

Department of Finance

**DOT**

Department of Transportation

**EIR**

Environmental Impact Report. A detailed statement prepared under the California Environmental Quality Act (CEQA) describing and analyzing the significant environmental effects of a project and discussing ways to mitigate or avoid the effects.

**Environmental Justice (EJ)**

The fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws and policies.

**Expressway**

Similar to a freeway but with signal-controlled intersections.

**FAA**

Federal Aviation Administration.

**Farebox Recovery Ratio**

Measure of the proportion of operating expenses covered by passenger fares. The ratio divides the farebox revenue by the total operating expenses.

**Farebox Revenue**

Value of cash, tickets, and pass receipts given by passengers for payment for rides on public transit.

**FAST Act**

On December 4, 2015, President Obama signed into law the Fixing America's Surface Transportation Act, or "FAST Act" - the first Federal law in over ten years to provide long-term funding certainty for surface transportation. The FAST Act authorizes \$305 billion over fiscal years 2016 through 2020 for the Department's highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology and statistics programs. With its enactment, States and local governments may now move forward with critical transportation projects, like new highways and transit lines, with the confidence that they will have a Federal partner over the long term.

**FHWA**

Federal Highway Administration.

**Fixed-Route Service**

Service provided on a regular, fixed-schedule basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations.

**Freeway**

Multilane divided roadway, grade separated from other roadways, with fully controlled access and egress.

**FTA**

Federal Transit Administration.

**FY**

Fiscal Year. For local public agencies, this is typically July 1 through June 30 of each year.

**FFY**

Federal Fiscal Year. Typically October 1 through September 30 of each year.

**General Plan**

A policy document required of cities and counties by state law which describes a jurisdiction's future development in text and map form. All land use decisions must derive from the GP. The General Plan must contain seven mandatory elements: Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety.

**GHG**

Greenhouse gas. Gases that effect global climate change. They include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

**GIS**

Geographic Information System.

**Grade Separation**

A vertical separation between intersecting roads and or railway tracks.

**GRH**

Guaranteed Ride Home Program which provides a free taxicab ride or 24-hour car rental to those who carpool, vanpool, use premium bus service or bike to work.

**HCM**

Highway Capacity Manual

**HOV**

High Occupancy Vehicle that carries more than one passenger. Examples include carpools, vanpools, shuttles, and buses.

**HOV Lane**

Exclusive road or traffic lane limited to HOVs that typically has a higher operating speed and lower traffic volumes than a general purpose or mixed flow lane.

**HSR**

High-Speed Rail is railroad passenger service that, as defined by California state law, operates at maximum speeds of over 200 miles per hour.

**Intermodal**

Passenger or freight transportation services which involve or use more than one type of transportation facility (or mode).

**IHS**

Interstate Highway System. A network of controlled-access highways that forms part of the National Highway System in the United States. Construction of the system was authorized by the Federal Aid Highway Act of 1956. The system extends throughout the contiguous United States and has routes in Hawaii, Alaska, and Puerto Rico.

**ITS**

Intelligent Transportation Systems use transportation technologies, management tools, and electronic services to improve operational efficiencies.

**Local Jurisdiction**

A city or county.

**MAP-21**

Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), was signed into law by President Obama on July 6, 2012. Funding surface transportation programs at over \$105 billion for fiscal years (FY) 2013 and 2014, MAP-21 is the first long-term highway authorization enacted since 2005. By transforming the policy and programmatic framework for investments to guide the system's growth and development, MAP-21 creates a streamlined and performance-based surface transportation program and builds on many of the highway, transit, bike, and pedestrian programs and policies established in 1991.

**Managed Lane**

A type of highway lane that is operated with a management scheme, such as lane use restrictions or variable tolling, to optimize traffic flow, vehicle throughput, or both. Definitions and goals vary among transport agencies, but managed lanes are generally implemented to achieve an improved operational condition on a highway, such as improving traffic speed and throughput, reducing air pollution, and improving safety.

**Mixed-Use**

The combining of commercial, office, and residential land uses to provide easy pedestrian access and reduce the public's dependence on the automobile.

**MMQOS**

Multimodal Quality of Service – procedure documented in the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition that computes quality of service for all modes within the shared right-of-way including vehicles, transit service, bicyclists and pedestrians.

**Mode**

One of various forms of transportation, including automobile, transit, bicycle, and walking.

**Mode Split**

The percent of trips that use each of the various travel modes.

**MPO**

Metropolitan Planning Organization is the federally-designated agency that is responsible for regional transportation planning in each metropolitan area. SJCOG is the MPO for the San Joaquin region.

**NHS**

National Highway System. A network of strategic highways within the United States, including the Interstate Highway System and other roads serving major airports, ports, military bases, rail or truck terminals, railway stations, pipeline terminals and other strategic transport facilities.

**Multimodal Corridor**

Defined roadways in the RCMP network that have been analyzed using the HCM Multimodal Quality of Service procedure.

**Non-attainment Area**

A geographic area identified by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB) as not meeting either the national or California Ambient Air Quality Standards for a given pollutant.

**Park and Ride**

A travel option where commuters park their personal vehicles in a publicly provided lot or other location, and continue their trip via carpool, vanpool, or transit.

**Performance Measure**

An analytical planning tool that is used to quantitatively evaluate transportation improvements and to assist in determining effective implementation actions, considering all modes and strategies.

**PM1-3**

FHWA mandated performance measures required by the Federal Performance Management Measures Rule (2017).

- PM1 Performance Measure Rule 1 (Safety)
- PM2 Performance Measure Rule 2 (Pavement and Bridge Condition)
- PM3 Performance Measure Rule 3 (System Performance, Freight, and CMAQ)

**Public Transportation**

Travel by bus, rail, or other vehicle, either publicly or privately owned, which provides general or specialized service on a regular or continuing basis.

**ROW**

Right-of-Way. The land required for the construction and operation of a transportation facility.

**RTIF Development Impact Fee**

A fee charged to private developers, usually on a per dwelling unit or per square foot basis, to help fund infrastructure improvements needed to accommodate future development relative to established operational thresholds.

**RTIP**

Regional Transportation Improvement Program (RTIP). A listing of major highway and transit projects including project costs, funding sources, and development schedules.

**RTP**

Regional Transportation Plan. A minimum 20-year plan that is required by state and federal law to guide the development of the region's transportation system.

**RTPA**

Regional Transportation Planning Agency. A state-designated agency responsible for preparing the RTP and the RTIP and administering state transportation funds. SJCOG is the RTPA in the San Joaquin region.

**Rule 9410**

Also known as eTRIP - Employer Based Trip Reduction Programs adopted by the San Joaquin Valley Air Pollution Control District (SJVAPCD) in December 2009. Rule 9410 requires large employers (those with 100+ employees) located in the San Joaquin Valley – such as San Joaquin County - to establish employee trip reduction programs.

**Safe Routes to School**

A state and federal program which funds education, encouragement campaigns, and infrastructure improvements to help reduce the amount of traffic congestion around schools.

**SAFETEA-LU**

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. Federal legislation signed into law on August 10, 2005 authorizing \$244.1 billion for Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009.

**SB-1**

Senate Bill 1. Commonly referred to as the Road Repair and Accountability Act of 2017 increased the California state fuel tax to provide \$54 billion over the next decade to fix roads, freeways and bridges in communities across California and puts more dollars toward transit and safety. These funds are split equally between state and local investments.

**SB 45**

Senate Bill 45. Commonly referred to as the STIP Reform Bill. This bill created the procedures for administering local grant projects in the State Transportation Improvement Program (STIP) and responsibilities of Regional Transportation Planning Agencies (RTPAs)

**SB 375**

Senate Bill 375. California senate legislation that helps implement the requirements of Assembly Bill 32, by addressing the greenhouse gas emissions produced by cars and light trucks—which account for nearly 40% of the state's total emissions.

**SCS**

Sustainable Communities Strategy. A SCS is an enhanced land use element, developed as part of each Regional Transportation Plan (RTP) update, that sets forth a growth strategy for the region which combined with the transportation plan strives towards achieving GHG emissions reductions.

**Sharrow**

A painted pavement marking indicating shared use of a travel lane for vehicles and bicycles.

**SIP**

State Implementation Plan. A document that shows the steps planned to meet federal air quality standards.

**SJCOG**

San Joaquin Council of Governments

**SJV**

San Joaquin Valley

**SJVAPCD**

San Joaquin Valley Air Pollution Control District

**Smart Growth**

A compact, efficient, and environmentally-sensitive pattern of development that provides people with additional travel, housing, and employment choices by focusing future growth away from rural areas and closer to existing and planned job centers and public facilities, while preserving open space and natural resources.

**Smart Mobility Framework**

A planning process described in *Smart Mobility 2010: A Call to Action for the New Decade* (Caltrans, February 2010). The fundamental premise of the Smart Mobility Framework (SMF) is to ensure that planning or programming decisions for transportation improvements are performance based (i.e., quantitative), transparent, and address sustainable outcomes and objectives.

**SOV**

Single occupant vehicle

**SR**

State Route, as in State Route 99 (SR-99)

**STAA**

The Surface Transportation Assistance Act regulates the size of trucks and the roadways large trucks can be operated on.

**STIP**

State Transportation Improvement Program. A multi-year program of major transportation projects to be funded by the state. The CTC adopts the STIP every two years based on projects proposed in RTIPs and from Caltrans.

**TAZ**

Traffic Analysis Zone

**TCQSM**

Transit Capacity and Quality of Service Manual.

**TDM**

Transportation Demand Management. Programs to reduce demand by automobiles on the transportation system, such as telecommuting, flextime, bicycling, walking, transit use, staggered work hours, and ridesharing.

**TMA**

Transportation Management Association. An administrative body designed to manage the transportation needs of a particular venue, district, or community. In most cases, TMAs are non-profit organizations, and they are usually controlled by members.

**TSM**

Transportation System Management. Strategies that maximize the number of persons traveling in a corridor or facility. These strategies include traffic flow improvements, ramp metering, and park-and-ride lots.

**TTR**

Travel Time Reliability – measurement of the variability in travel times on a given roadway typically measured over a continuous 12-month period.

**Urbanized Area**

Has the same meaning as is defined in the 1990 federal census for urbanized areas of more than 50,000 population.

**U.S. EPA**

United States Environmental Protection Agency

**Vanpool**

A vehicle operating as a ridesharing arrangement, providing transportation to a group of individuals traveling directly between their homes and a regular destination within the same geographic area.

**VMT**

Vehicle Miles Traveled. The total number of miles traveled on all roadways by all vehicles within a defined area or jurisdiction.

**VMT per Capita**

Vehicle miles traveled (VMT) per capita is calculated as the total annual miles of vehicle travel divided by the total population in a state or in an urbanized area. VMT per capita can be computed at multiple scales (project-level, area, city, county, region, state).