

San Joaquin County

# Regional Congestion Management Program 2023 Monitoring Report

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**Prepared for:**

San Joaquin Council of Governments

**Prepared by:**

**Kimley»»Horn**

555 Capitol Mall, Suite 300  
Sacramento, California 95814

Phone: (916) 858-5800

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## EXECUTIVE SUMMARY

The San Joaquin Council of Governments (SJCOG) is responsible for updating the San Joaquin County's Regional Congestion Management Program (RCMP) and monitoring its implementation. Monitoring congestion is required pursuant to the Federal Congestion Management Process (CMP) (CFR 23 450.320 (c)(3)). Measuring regional congestion and related RCMP multimodal performance measures requires an ongoing systematic monitoring program. The SJCOG RCMP Monitoring Program provides this mechanism by establishing the methodologies, requisite data, and multimodal performance monitoring on a continuous basis (i.e., biennial) basis. All traffic information collected as part of the SJCOG RCMP data monitoring program is made available to member and partner agencies (upon request).

This RCMP Monitoring Report serves to address the following requirements:

- Monitoring of SJCOG's RCMP performance measures.
- Monitoring of the Federal PM 1, PM2, and 3 performance measures.
- Compliance with the SJCOG's Measure K renewal requirements, and
- Compliance with the Federal CMP<sup>1</sup>.

The RCMP Monitoring Program tracks multimodal performance on the RCMP network. Performance measures serve to gauge system performance and track progress achieving the congestion management objectives. These metrics create a framework for measuring the effectiveness of congestion reduction strategies and projects and the adequacy of alternatives to the Single Occupant Vehicle (SOV) and Transportation Demand Management (TDM) implementation pursuant to Federal requirements: *23 CFR 450.323 (b) and 450.323 (c)(2)*.

The purpose of the San Joaquin's 2023 CMP is to update the county's congestion management report by collecting data/monitoring system performance, with the goal of including roadway users (bicyclists, pedestrians, transit riders, motorists) into consideration within the county. This report provides a snapshot of the "state of congestion" on the county's designated RCMP roadway network. This includes roadway segments, multi-modal corridors, bicycle, and transit networks. To best ensure a representative performance assessment, operational and safety metrics were informed by post-COVID-19 2020-2022 data from varied sources where available as needed.

## SUMMARY OF FINDINGS

RCMP multimodal performance measures address the following key areas:

- Operational Efficiency (Motorist Travel and Freight)
- Transit System Performance
- Bikeway Network Completion
- Multimodal Corridor Performance

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<sup>1</sup> The federal CMP requires an increased multimodal travel demand management

- Travel Demand Management (TDM)
- Safety

A summary of the RCMP multimodal performance measure monitoring results for San Joaquin County is provided below.

### **OPERATIONAL EFFICIENCY (MOTORIST TRAVEL AND FREIGHT)**

Roadway operations for motorists and freight is based speed data from the National Performance Monitoring Research Data Set (NPMRDS) from FHWA. The NPMRDS speed data for vehicles and trucks is used to measure congestion levels and the degree of travel time reliability in combination on the RCMP network.

Based on 12 months of passenger vehicle and truck speed data collected between October 2022 to October 2023, 94% of all Interstate Highway System (IHS) and 60% of National Highway System (NHS) RCMP roadway segments operated without congestion during the weekday AM peak commute hour. During the weekday PM peak commute hour, the percentage of congested miles on IHS segments was lower (2%), while non-IHS NHS segments was greater (42%). Based on the 80th percentile travel time, about 90% of NHS miles operated reliably during both AM and PM peak hours. For truck traffic only, the 95th percentile travel time showed that 88% and 91% of IHS miles were reliable for truck travel during AM and PM peak hours.

The increase in identified deficient segments compared to previous years is attributed to the expanded availability of truck and passenger NPMRDS data. This enhancement in the data set has allowed for a more comprehensive and detailed analysis, leading to the identification of a greater number of segments.

Based on the combined speed-based congestion and reliability results, a list of deficient corridors was identified and are listed below.

1. I-205: County Limit to Grant Line Road
2. I-580: Corral Hollow Road to S Chrisman Road
3. SR-99: County Limit to SR-120
4. Main St: County Limit to Escalon Avenue/McHenry Avenue
5. S Airport Way: Arch-Airport Road to E Charter Way
6. E Charter Way: Mariposa Road/Diamond Street to S Roberts Road
7. W Eight Mile Road: I-5 to SR-99
8. SR-12: I-5 to S Cherokee Lane
9. SR-12: SR-99 to N SR-88

### **TRANSIT SYSTEM PERFORMANCE**

The San Joaquin County RCMP contains two transit system performance measures: 1) coverage and 2) frequency. Countywide transit service coverage is evaluated using a half-mile distance from transit stops based on network buffers (roadway distances). The goal of evaluating peak period transit frequency is to determine the likelihood that commuter travelers would use transit regularly.

Currently, about 66% of San Joaquin County's residential households and 56% of San Joaquin County jobs are located within a half-mile walking distance to a transit stop with quality-of-service E (less than one hour headway).

### **BIKEWAY SYSTEM**

As regional bikeways are constructed, SJCOG tracks the ratio of completed bikeways relative to the regional network. For each monitoring cycle a "percent complete" is computed that measures the total number of existing regional bikeway miles relative to the entire network's mileage by type of bike facility.

As of the last update to the SJCOG bikeway inventory includes 125.73 miles of Class I bicycle paths, 152.35 miles of Class II bicycle lanes, and 63.18 miles of Class III shared bicycle routes, with a total of 378.51 miles.

### **MULTIMODAL CORRIDORS**

There are 13 designated RCMP Multimodal Corridors in San Joaquin County. These designated RCMP Multimodal 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 either infeasible or undesirable. To determine the quality of service for pedestrians, bicyclists, and transit the Complete Street Quality of Service (CSQOS) methodology (as described in the Highway Capacity Manual) is applied.

Summing all LOS results over the 13 multimodal corridors (for both the AM/PM peak hours) indicates that in general pedestrian CSQOS is "C"; bicyclists CSQOS is "D" and transit CSQOS is "F".

### **TRAVEL DEMAND MANAGEMENT**

Travel demand management (TDM) strategies are those that attempt to reduce the number of vehicle miles traveled on the roadway network. SJCOG implements the dibs program to facilitate travel choices and alternatives to driving alone. Estimates of vehicle miles traveled (VMT) reduction by participants of the program that either live or work in San Joaquin County is tracked.

Based on data from SJCOG's dibs program, 164 new vanpools were formed in 2018-19, 60 were added in 2021-22 and 109 were added in 2022-23. The total number of formalized vanpools has increased from 417 in 2021-22 to 446 in 2022-23. San Joaquin experienced about a 7% increase of vanpool from prior year and has contributed to 40 million vehicle miles reduced, and 416,454 vehicles off the road.

### **SAFETY**

Safety metrics relate to the national goal to significantly reduce traffic fatalities and serious injuries on all public roads. These are expressed in absolute terms (i.e., number of fatal and/or injury collisions) and as rates (i.e., collisions per 100 Million VMT). All safety metrics are based on 2021 and 2022 Transportation Injury and Mapping System (TIMS) data.

The number of fatalities on San Joaquin County roadways has been increasing since 2013. The rate of increase for serious injury has grown to a larger extent relative to fatalities. The five-year rolling average for serious injuries has been trending upward since 2013. Fatal collision rates (per 100 million VMT) indicate an increase upward since 2013 with slight variation in 2018 and 2019. Similarly, serious injuries on county roadways is trending up both in absolute and rate terms. Non-motorized (pedestrian and bicycle) fatality and serious injuries peaked in 2019 at 104 (66 pedestrians and 38 bicyclists). High-fatality and high-serious injury segments (roadways with fatality rates or serious injury rates of 10 or more fatalities or serious injuries per 100 million VMT) were observed in Stockton, Tracy, Manteca, and unincorporated areas in the county. Based on the fatality and serious injury collision reduction targets adopted by Caltrans and accepted by SJCOG, San Joaquin County collision data is not tracking on target.

### **ASSET MANAGEMENT**

The Pavement Condition Index (PCI) system is used to report the quality of roadway surfaces in San Joaquin County. Information on Pavement Conditions on the RCMP network was provided from two primary sources: City databases and the National Highway System Performance and Financial Data, provided by Caltrans. City databases provided PCI scores for segments of locally-owned roads. These databases provided raw PCI values for each of the segments, which were then categorized into an ordinal scale (such as excellent, good, poor). Each City with the exception of Escalante maintains an inventory of pavement conditions throughout the City. These files did not contain information on Caltrans facilities through these cities. The National Highway System Performance and Financial Data presented scores for Caltrans segments, but these values were only available for segments in unincorporated areas. Raw PCI scores were not included in this dataset. Instead, pavement conditions were provided on an ordinal scale: poor, fair, or good. Bridge conditions were also provided throughout San Joaquin County.

## 1.0 INTRODUCTION

### 1.1 PROGRAM BACKGROUND

This report documents the 2021 to 2023 monitoring results for 2021 SJCOG RCMP Update that implements the federal CMP<sup>2</sup>. A CMP is required in metropolitan areas such as San Joaquin County that have 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 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.

To reduce state and federal legislative redundancy and improve program efficiency, SJCOG and its member agencies formally opted out of the state CMP requirements in July 2021. The SJCOG 2021 RCMP specifically addresses the federal CMP requirements and is comprised of the eight steps listed below. These steps flow directly from the federal legislative requirements (*23 CFR 450.323 (a)* and *450.323 (b)*). This 2021 RCMP Monitoring Report specifically addresses Step 4 of the CMP.

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 1.0-1**. This RCMP Monitoring Report serves to address the following requirements:

- Monitoring of SJCOG’s RCMP performance measures;
- Monitoring of the federal PM 1-3 performance measures;
- Compliance with the SJCOG’s Measure K renewal requirements; and,
- Compliance with the federal CMP<sup>3</sup>

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<sup>2</sup> As of July 2021, San Joaquin County formally opted-out of the state CMP requirements. The SJCOG 2021 RCMP specifically addresses the federal CMP requirements.

<sup>3</sup> The federal CMP requires an increased multimodal TDM and system management emphasis at both the local and regional level to comply. Noncompliance with any of these directives can have local and regional funding implications.

The RCMP Monitoring Program tracks multimodal performance on the RCMP network. Performance measures serves to gauge system performance and track progress achieving the congestion management objectives. These metrics create a framework for measuring the effectiveness of congestion reduction strategies and projects and the adequacy of alternatives to the SOV and TDM implementation pursuant to Federal requirements: *23 CFR 450.323 (b) and 450.323 (c)(2)*.

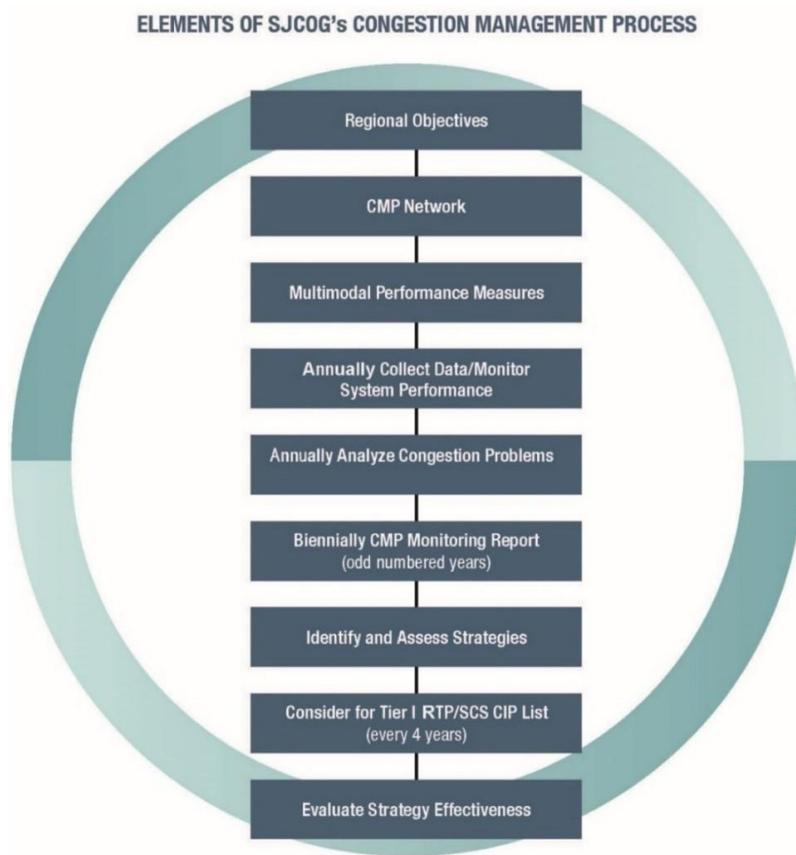
A key focus of the federal CMP aims to reduce single-occupant-vehicle (SOV) travel while minimizing the need for increasing SOV roadway capacity. It also provides additional resources for the development and deployment of new congestion management technologies. For areas designated as non-attainment of federal air quality standards such as San Joaquin County, the federal CMP 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 CMP. 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.

## 1.2 RCMP IMPLEMENTATION

SJCOG coordinates with all the local member agencies listed below.

**Table 1.0-1** lists the role each agency plays in the RCMP Monitoring Program. SJCOG works collaboratively with its member agencies to address its local, state, and federal transportation planning and programming needs. SJCOG’s RCMP process is legislatively integrated with its state and federal planning and programming processes.

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



**Figure 1.0-1: SJCOG CMP (Source: SJCOG CMP Report 2021)**

**Table 1.0-1: Agency Responsibilities (Source: SJCOG CMP Report 2021)**

| 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  |

## 2.0 REGIONAL TRANSPORTATION SYSTEM

The purpose of the RCMP is to monitor congestion, identify congestion problems, and facilitate programming 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 and through San Joaquin County.

### 2.1 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 chose several non-NHS roadways for inclusion in the RCMP network. The RCMP roadway network is built based on SJCOG RCMP Report (2021) and NPMRDS (2022) and shown in **Figure 2.0-1**.

As shown in **Table 2.0-1**, the RCMP network consists of total 504 centerline miles of which 396 are on NHS designated roadways and 108 are on non-NHS roadways. Continuous monitoring of vehicular speeds by the Federal Highway Administration’s National Performance Monitoring Research Data Set (NPMRDS) is available on the NHS and Non-NHS designated roadways.

**Table 2.0-1: RCMP Network by Centerline Miles**

| Jurisdiction  | RCMP NHS<br>Centerline Miles | RCMP Non-NHS<br>Centerline Miles | Total RCMP Network<br>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>                             |

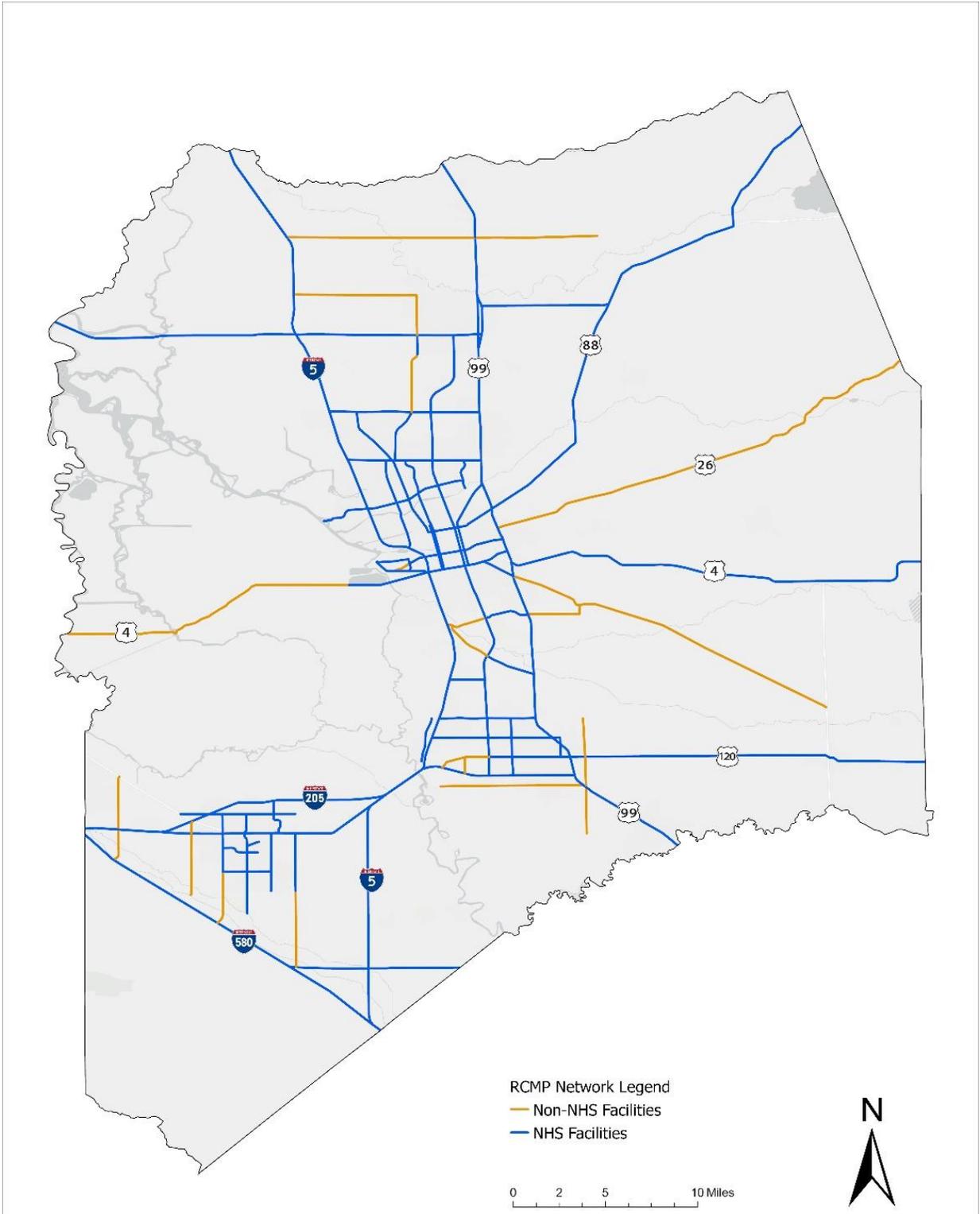


Figure 2.0-1: San Joaquin County CMP Roadway Segments

## 2.2 RCMP MULTIMODAL CORRIDORS

The Federal CMP requires consideration of all major modes of travel as part of a RCMP. Additionally, the California Complete Streets Act (AB 1358) requires counties and cities to include policies that take all roadway users (bicyclists, pedestrians, transit riders, motorists) into consideration 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 levels of service are analyzed. This designation also allows for the use of an expanded toolbox of options to address congestion-related deficiencies that do not rely on increasing vehicular capacity. In addition to the baseline segments that are currently designated, the RCMP also identifies future segments that have a high likelihood of meeting multimodal corridor criteria as they develop. Selection of the multimodal corridors was guided using the following criteria:

- Roadway is a part of the regional network and serves as a city’s or community’s main street;
- Roadway possess “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 guidance, the list of RCMP multimodal corridors is shown in **Figure 2.0-2** and listed by jurisdiction in **Table 2.0-2**. Both the table and figure indicate corridors that will be analyzed by SJCOG to establish baseline conditions and future corridors that will be evaluated when development patterns warrant a multimodal analysis. The potential for new multimodal corridors is evaluated during each four-year RCMP update cycle.

**Table 2.0-2: RCMP Multimodal Corridors** (Source: SJCOG RCMP Report, 2021)

| ID | Roadway             | Multimodal Segment                           | Status   | Jurisdiction             |
|----|---------------------|--|----------|--------------------------|
| 1  | SR-88               | Locke Rd to North Sierra Dr                  | Baseline | County                   |
|    |                     | Brandt Rd to eastern town limit of Lockeford | Future   | County                   |
| 2  | SR-120              | McHenry Ave-Escalon Bellota Rd to David Dr   | Baseline | Escalon                  |
| 3  | Lathrop Rd          | Crestwood Ave to S Airport Wy                | Baseline | Manteca                  |
|    |                     | S Harlan Rd to 7th St                        | Baseline | Lathrop                  |
|    |                     | S Harlan Rd to Crestwood Ave                 | Future   | Lathrop/ County/ Manteca |
| 4  | SR-12/Kettleman Ln  | Lower Sacramento Rd to Cherokee Ln           | Baseline | Lodi                     |
| 5  | Yosemite Ave        | Airport Wy to Northwoods Ave-Commerce Ave    | Baseline | Manteca                  |
| 6  | Main St             | Jack Tone Rd to Stockton Ave                 | Baseline | Ripon                    |
| 7  | March Ln            | Da Vinci Dr-Quail Lakes Dr to West Ln        | Baseline | Stockton                 |
| 8  | Eight Mile Rd       | Thornton Rd to Davis Rd                      | Baseline | Stockton                 |
|    |                     | Trinity Pkwy to Davis Rd                     | Future   | Stockton                 |
| 9  | Hammer Ln           | Kelley Dr to Maranatha Dr                    | Baseline | Stockton                 |
| 10 | Lower Sacramento Rd | Royal Oaks Dr to Hammer Ln                   | Baseline | Stockton                 |
|    |                     | Eight Mile Rd to Hammer Ln                   | Future   | Stockton                 |
| 11 | West Ln-Airport Wy  | El Pinal Dr to Roosevelt St                  | Baseline | Stockton                 |
|    |                     | E Alpine Ave to E Roosevelt St               | Future   | Stockton                 |
| 12 | 11th St             | Lammers Rd to N MacArthur Dr (west)          | Baseline | Tracy                    |
| 13 | SR-26               | N Granada Ln to N Market St                  | Future   | County                   |

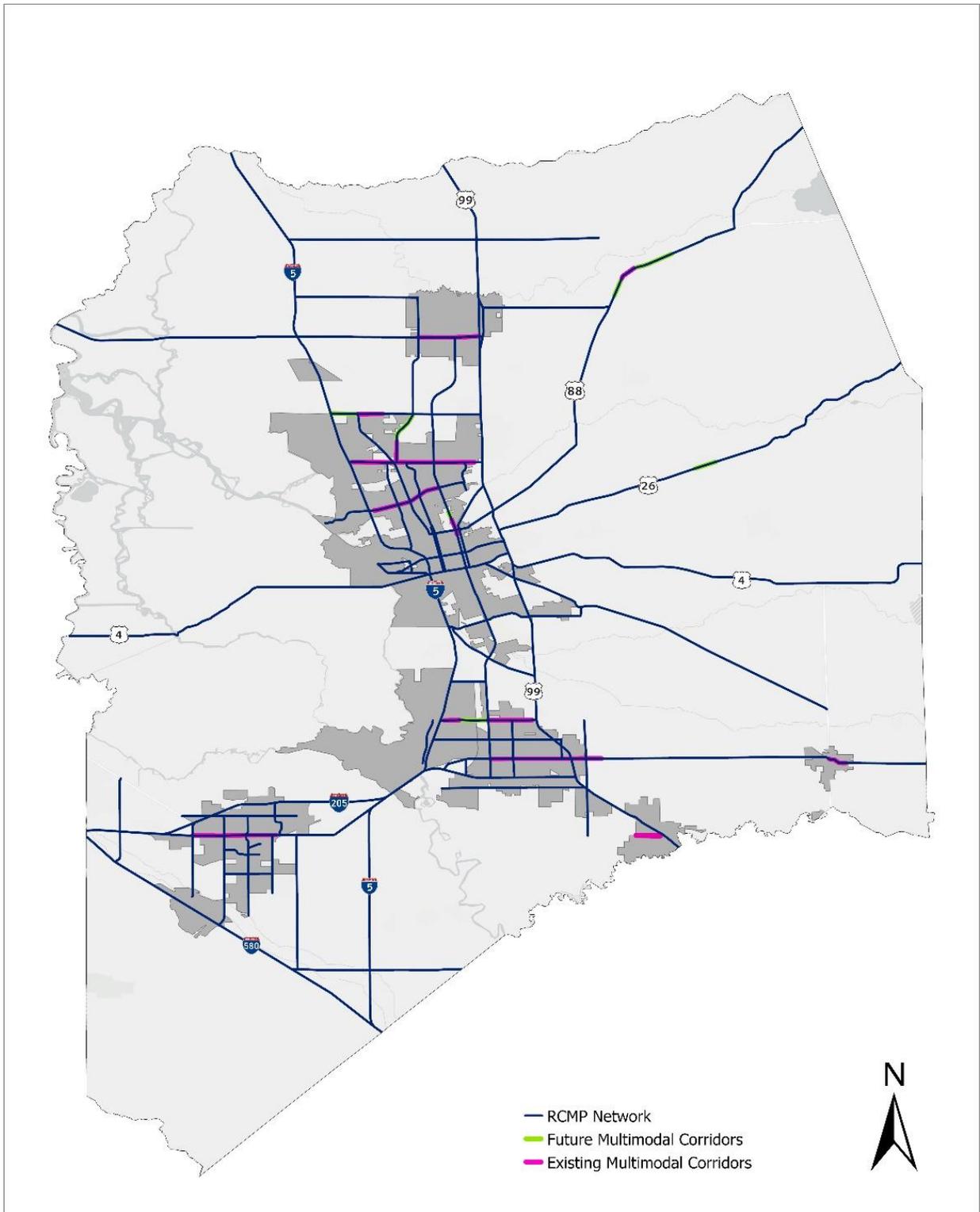


Figure 2.0-2: San Joaquin County RCMP Baseline Multimodal Corridors (Source: SJCOG RCMP Report, 2021)

## 2.3 RCMP BICYCLE NETWORK

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 facilities, parking, shower and locker facilities, and wayfinding signage that are best addressed in the Regional Transportation Plan. The RCMP performance measure will focus on the bikeway network's completion.

The San Joaquin County RCMP Bikeways Network is shown in **Figure 2.0-3**. This includes both the existing and planned future networks.

## 2.4 RCMP TRANSIT NETWORK

San Joaquin County is diverse with respect to types of transit service offered 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, and much of the unincorporated areas of the county are rural. As such, transit providers must tailor their services to balance the diverse needs of residents while managing funding constraints. San Joaquin County is served by several local and regional bus transit providers including:

- San Joaquin Regional Transit District provides fast and frequent service with Bus Rapid Transit (BRT) Express within the Stockton Area, Metro Hopper which is a deviated fixed-route service serving popular destinations in Stockton city, Commuter line which connects San Joaquin to Sacramento and Dublin BART, local fixed-route service within the Stockton Metropolitan Area (SMA) connecting RTD's Express, Hopper, and Commuter services. On demand rideshare services, Van Go! and Dial-A-Ride, are also available to provide safe, convenient, and flexible travel experience for regular passengers and those who qualify under the Americans with Disabilities Act (ADA).
- Lodi Grapeline provides local bus service for Lodi;
- Tracy TRACER provides local bus services for Tracy;
- Manteca Transit provides local bus service for Manteca;
- Escalon eTrans provides service between Escalon and Modesto's Vintage Faire Mall;
- Ripon Blossom Express Transit Services provides local bus service for Ripon and service to Modesto;
- Modesto Area Express provides commuter connections between Modesto and the Lathrop-Manteca ACE train station; and,
- South County Transit provides a connection between Lodi and Galt.

Rail services in San Joaquin County are provided by the Altamont Corridor Express (ACE) commuter rail service and the Amtrak San Joaquin passenger rail service. ACE service has stations in Stockton, Tracy, and Lathrop, and extends to Santa Clara County via Alameda County. The Amtrak San Joaquin provides intercity rail services from Oakland and Sacramento to Bakersfield via San Joaquin County, with two stations in Stockton and one in Lodi, and bus connections to the Lathrop-Manteca ACE Station and Tracy.

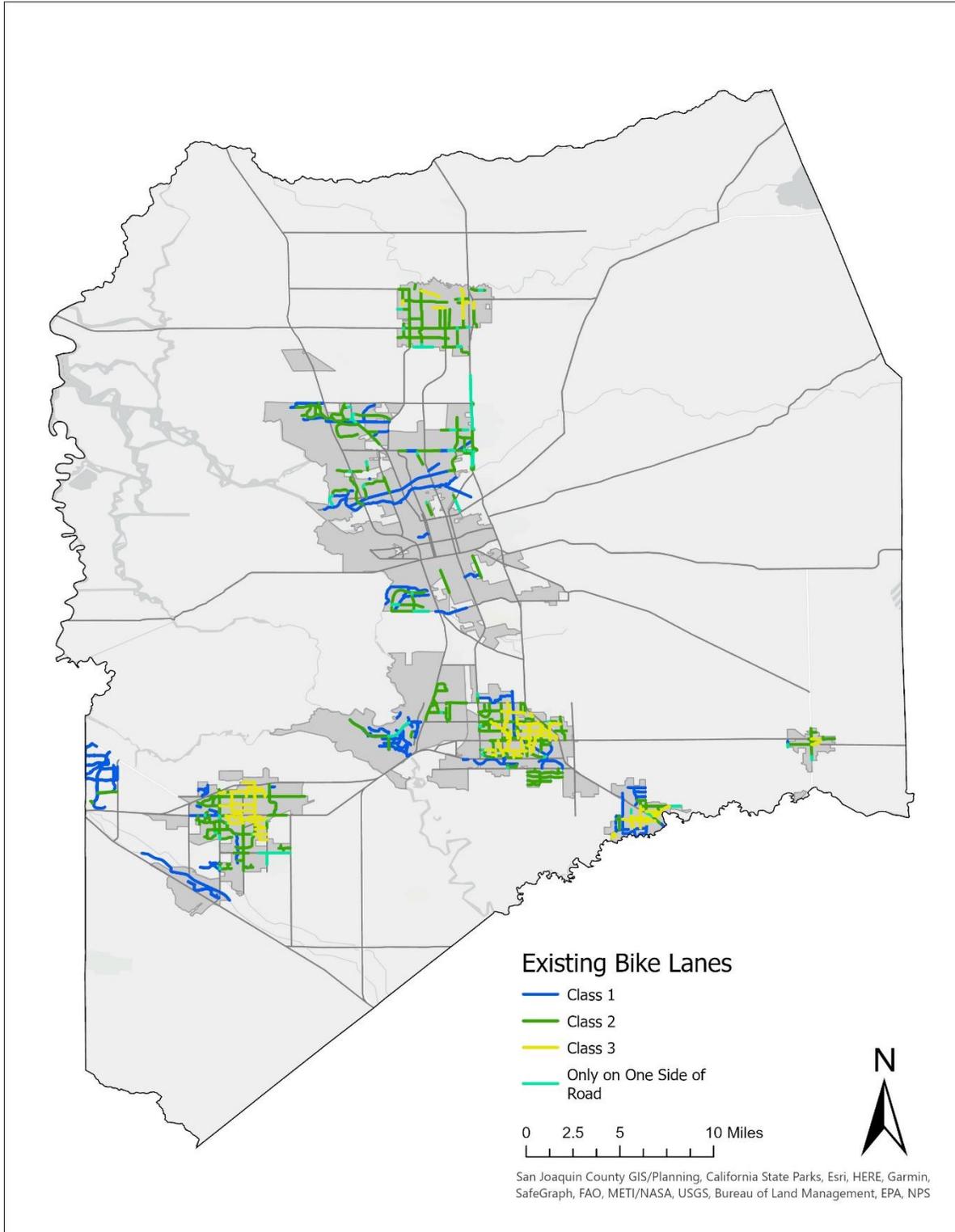


Figure 2.0-3: San Joaquin County RCMP Existing Bikeways Network

### 3.0 PERFORMANCE MEASUREMENT

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.

Establishment of multimodal performance measures is a federal CMP requirement. Federal directives outlined in 23 CRR 450.320 (b) require the CMP 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, measures established for the frequency and routing of public transit, and 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.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) established a performance- and outcome-based program, known as “Performance Based Planning,” with the objective to invest in projects that will make progress toward 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. State DOTs (e.g., Caltrans) are directly responsible for submitting performance targets and annual progress reports on those targets to federal agencies. MPOs, such as SJCOG, are required to establish targets specific to their planning area, or support the statewide targets, and report annually on progress. SJCOG accepted the statewide targets and per agreement with Caltrans, SJCOG began this reporting in 2019.

To complete the required reporting tasks more efficiently for the federal CMP and the federal performance management rule, SJCOG has integrated many of the federal performance measures as RCMP performance measures. The identified RCMP performance measures, shown in **Table 3.0-1**, will be monitored using analysis tools and software developed to streamline quantification and tracking. As RCMP program implementation continues, refinement of these measures and/or additional performance measures can be established as part of future updates.

**Table 3.0-1: RCMP Performance Measure** (Source: SJCOG RCMP Report, 2021)

| Category of Objectives                  | Source | Measure of Effectiveness   | Performance Measure   | Data Sources   |
|---|--------|--|---|--|
| 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<br>Caltrans: AADT<br>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<br>U.S. Census: population data<br>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   |
| 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   |

| Category of Objectives   | Source | Measure of Effectiveness  | Performance Measure  | Data Sources  |
|--------------------------|--------|---|--|---|
| 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<br>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<br>Population: Department of Finance  |
| Safety                   | PM1    | Fatal Collisions & Rates  | Number of fatalities<br>Fatalities per 100 million VMT   | Collision/incident data: FARS/SWITRS<br>VMT data: HPMS, SJCOG, local counts   |
| Safety                   | PM1    | Serious Injury Collisions & Rates                                       | Number of serious injuries<br>Serious injuries per 100 million VMT   | Collision/incident data: TIMS/SWITRS<br>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)   |

### 3.1 OPERATIONAL EFFICIENCY (TRAVEL AND FREIGHT)

Operational efficiency refers to the level of efficiency by which individual passenger cars and trucks are transported in the system. Operational efficiency plays a critical role in maintaining a safe, robust, and effective transportation system. This further affects the quality of life, sustainability, accessibility, and livability of society.

From a traffic operation perspective, operational efficiency management is concerned with congestion mitigation, traffic flow improvement, and capacity of the transportation system. According to the federal highway, congestion and reliability are two interrelated performance measures to monitor the level of efficiency on the roads.

Traffic congestion is one of the largest threats to America's economy and quality of life which costs about \$200 billion a year. Congestion is a major problem in metropolitan areas in general, and for commuters in particular, whilst it is extending beyond the urban boundaries in location and the rush hours in time. Congestion harms efficiency in freight delivery by an increase in the driver payment, decrease in fuel efficiency, and increase the vehicle maintenance cost as consequences of stop-and-go driving in congestion. This along with environmental pollution and diminished accessibility lead to social costs in the community (FHWA).

Travel time reliability refers to the extent of unexpected delay caused by daily congestion and measures the robustness or dependability of travel times. Travel time reliability is critical to all mode users as it significantly affects their travel plan, particularly during rush hours (FHWA).

In this section, we extracted travel time and speed data to measure the operational efficiency of passenger vehicles and heavy-duty trucks in the RCMP network. The rest of this section presents the details for data collection, describes the congestion and reliability measurement methods, and illustrates the results.

#### **Data collection**

National Performance Management Research Data Set (NPMRDS) is an online database containing field-observed travel time and speed data collected from a fleet of passenger cars and trucks equipped with mobile devices. The data is aggregated in 5-minute, 10-minute and 15-minute intervals per traffic message channel (TMC) location on National Highway System (NHS). Each TMC is a directional roadway segment featuring a length range from 0.5 mile to 10 mile depending on the context (e.g., rural, suburban, urban, etc.).

We extracted the peak hour<sup>1</sup> travel time, and speed data for passenger cars and heavy-duty trucks from NPMRDS for the RCMP network. Truck data was filtered to TMCs classified as a Surface Transportation Assistance Act (STAA) truck route. The data is monitored from October 2022 to October 2023 (i.e., post-pandemic conditions). Each data record includes items per segment such as speed<sup>2</sup>, reference speed<sup>3</sup>,

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<sup>1</sup> AM Peak is from 6:00 to 10:00 and PM Peak is from 16:00 to 20:00

<sup>2</sup> Harmonic average speed for all reporting vehicles on the segment

<sup>3</sup> An approximation of free-flow speed for the segment

and travel time<sup>4</sup>. In addition, each TMC segment is identified by associated metadata describing its geographic location, traffic volume, centerline miles, and facility type.

## Methodology

### *Congestion*

Following federal highway recommendations, congested TMC segments are identified as those with a peak-hour average speed of less than 60 percent of free-flow speed on the same segment. The results are displayed as percent of congested centerline miles on IHS and non-IHS National Highway System (NHS) RCMP network.

### *Reliability*

For a given TMC, the passenger car travel time reliability is calculated using a cumulative distribution of travel time observations for one year on weekdays and weekends. On weekdays and weekends, the following periods (6:00 to 10:00; 10:00 to 16:00; 16:00 to 20:00) are used to generate travel time observation. Then the level of travel time reliability (LOTTR) is calculated for each period (Equation 1)<sup>5</sup>:

$$\text{TMC LOTTR (passenger car)} = \frac{80^{\text{th}} \text{ percentile travel time}_i}{50^{\text{th}} \text{ percentile travel time}_i} \quad (1)$$

where  $i$  is the TMC segment. Then the maximum LOTTR of all periods is used to determine if the TMC is reliable or unreliable. According to NPMRDS, if the LOTTR exceeds the threshold of 1.5, it is deemed unreliable; TMC is moderately reliable if LOTTR is between 1.25 and 1.5; and it is reliable if LOTTR is less than 1.25. For the heavy-duty trucks, a similar approach to what is described above is followed except that 80th percentile travel time is replaced by 95th nominator (see Equation 2)<sup>6</sup>:

$$\text{TMC LOTTR (heavy – duty truck)} = \frac{95^{\text{th}} \text{ percentile travel time}_i}{50^{\text{th}} \text{ percentile travel time}_i} \quad (2)$$

## Results

In this section, the congestion and reliability results are presented as percent of congested centerline miles on IHS and non-IHS National Highway System (NHS) RCMP network in 2023.

**Table 3.0-2** lists the percentages of congested miles on IHS and non-IHS NHS segments in the county. More than 92% and 98% of IHS segments were not congested during the AM and PM peak hour, respectively. Conversely, more than 39% of non-IHS NHS segments were congested during the same period. This percentage was about 3% higher during the PM peak hours.

**Table 3.0-3** and **Table 3.0-4** provide percentages of miles on NHS segments that were reliable. Based on the

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<sup>4</sup> Ratio between the segment length and the harmonic average speed for all reporting vehicles on the segment

<sup>5</sup> U.S. Government Publishing Office. (2012). *Moving Ahead for Progress in the 21st Century Act*, Public Law 112 - 141, U.S. Government Publishing Office, Washington, DC. Available online: <https://www.gpo.gov/fdsys/pkg/PLAW-112publ141/content-detail.html>, last accessed August 24, 2018.

<sup>6</sup> National Archives. (2017). "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," *Federal Register*, 82(11), pp. 5,970–6,052, National Archives, Washington, DC. Available online: <https://www.federalregister.gov/documents/2017/01/18/2017-00681/national-performance-management-measures-assessing-performance-of-the-national-highway-system>, last accessed March 6, 2019.

80th percentile travel time for passenger cars, more than 97% of IHS and 91% of non-IHS NHS miles were reliable during both AM peak hours. The percentages of reliable segments for PM peak hours for IHS and non-IHS NHS were lower, standing at about 97% and 90%, respectively. In the same year, more than 88% and 91% of truck mileage were reliable on the IHS network during AM and PM. Truck routes were only considered if it was in both the RCMP network and San Joaquin County STAA routes.

**Table 3.0-2: Percent of congested miles on RCMP network – All vehicles**

| Facility                                     | Percent of Congested Centerline Miles |        |
|--|---------------------------------------|--------|
|  | AM                                    | PM     |
| <i>IHS</i>                                   | 6.01%                                 | 1.61%  |
| <i>Non-IHS National Highway System (NHS)</i> | 39.97%                                | 42.83% |

**Table 3.0-3: Percent of reliable miles on RCMP network – All vehicles**

| Facility                                     | Percent of Reliable Centerline Miles<br>(80th percentile travel time) |        |
|--|---|--------|
|  | AM  | PM     |
| <i>IHS</i>                                   | 97.80%  | 97.60% |
| <i>Non-IHS National Highway System (NHS)</i> | 91.01%  | 90.74% |

**Table 3.0-4: Percent of reliable miles on RCMP network – Trucks**

| Facility   | Percent of Reliable Centerline Miles<br>(95th percentile travel time) |        |
|------------|---|--------|
|            | AM  | PM     |
| <i>IHS</i> | 88.62%  | 91.52% |

Figure 3.0-1 through 3.0-4 provide the detailed segment-based congestion and reliability results combined for the RCMP network during AM or PM peak hour.

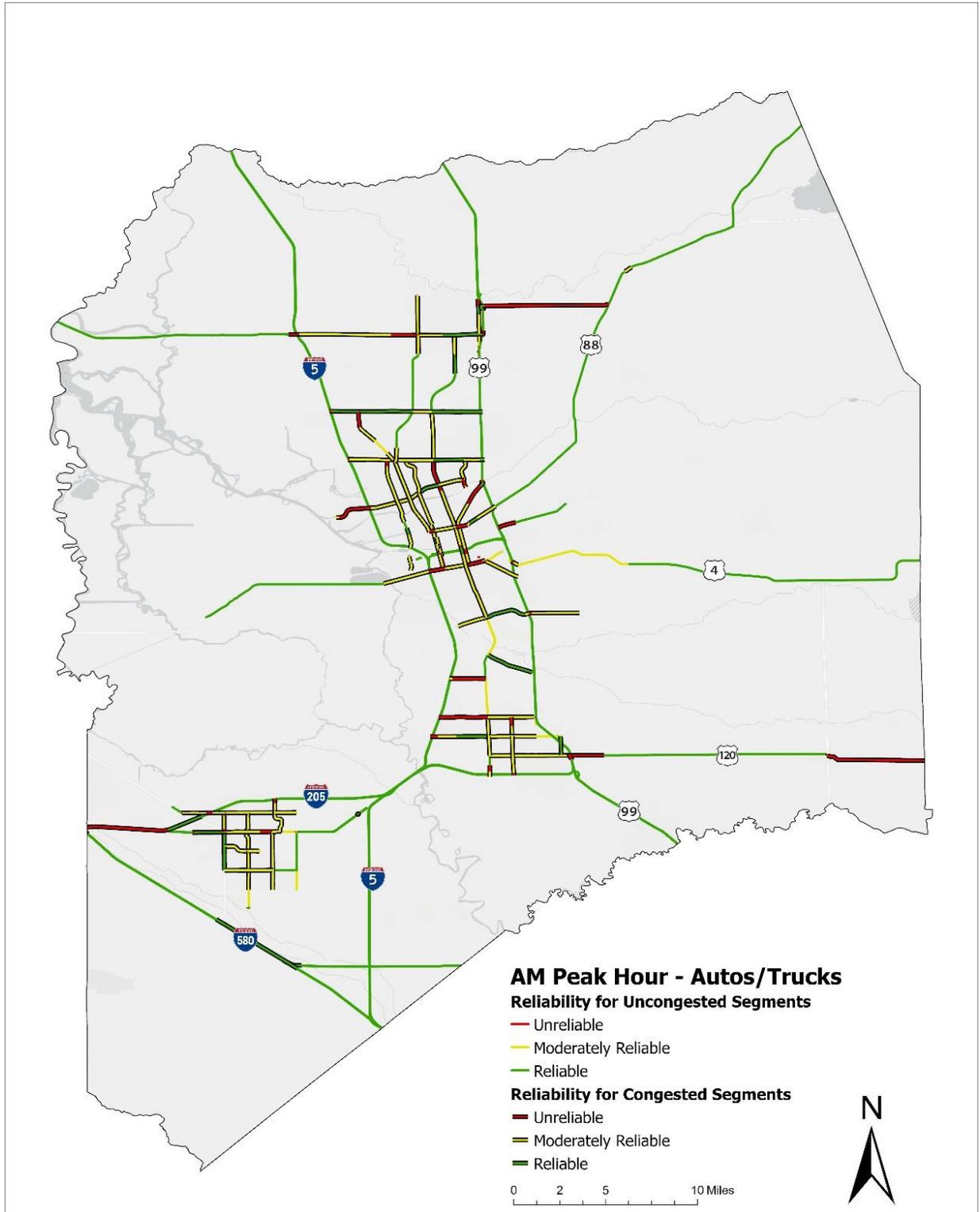


Figure 3.0-1 : Congestion/Reliability Map – All Vehicles, AM Peak Hour

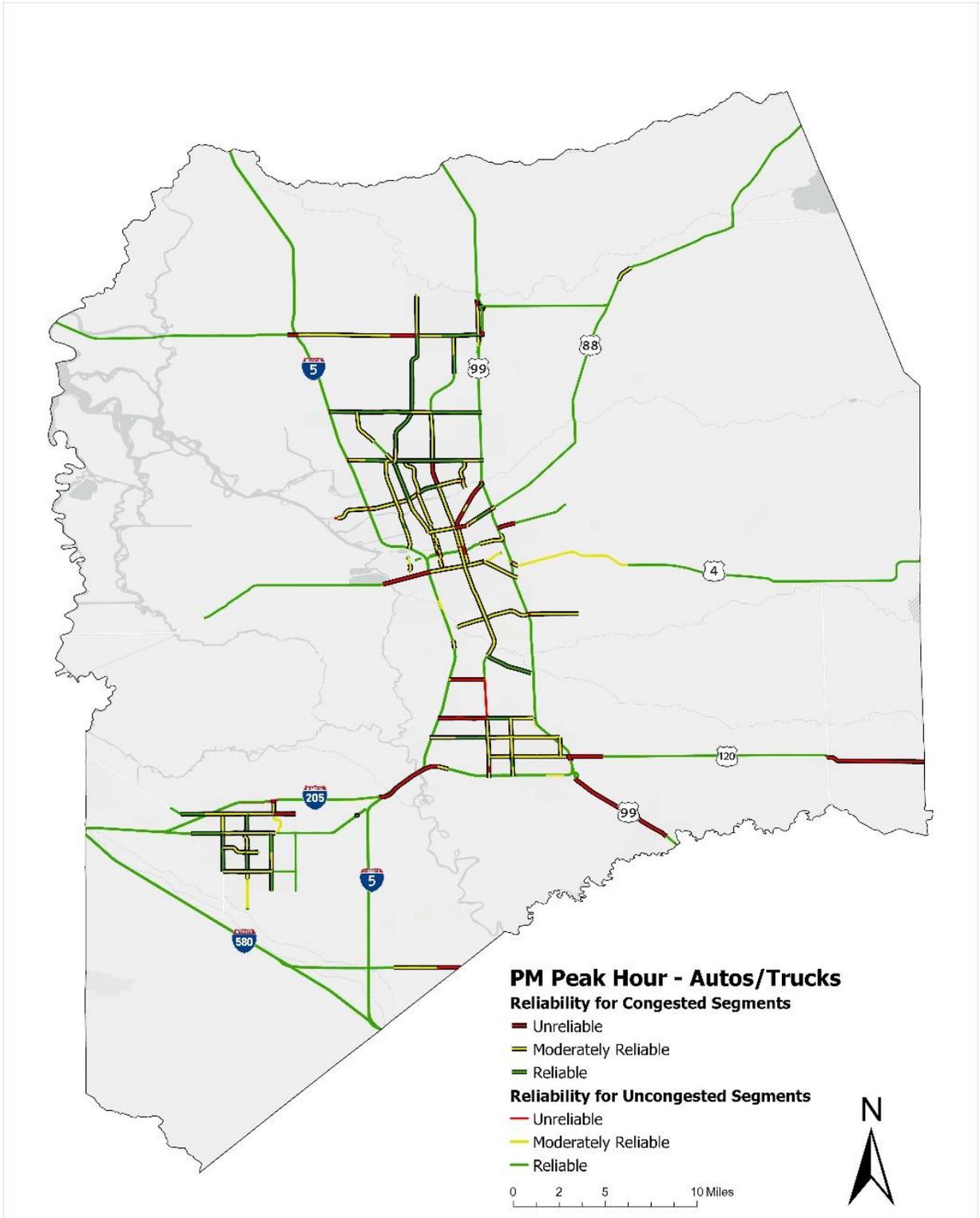


Figure 3.0-2 Congestion/Reliability Map – All Vehicles, PM Peak Hour

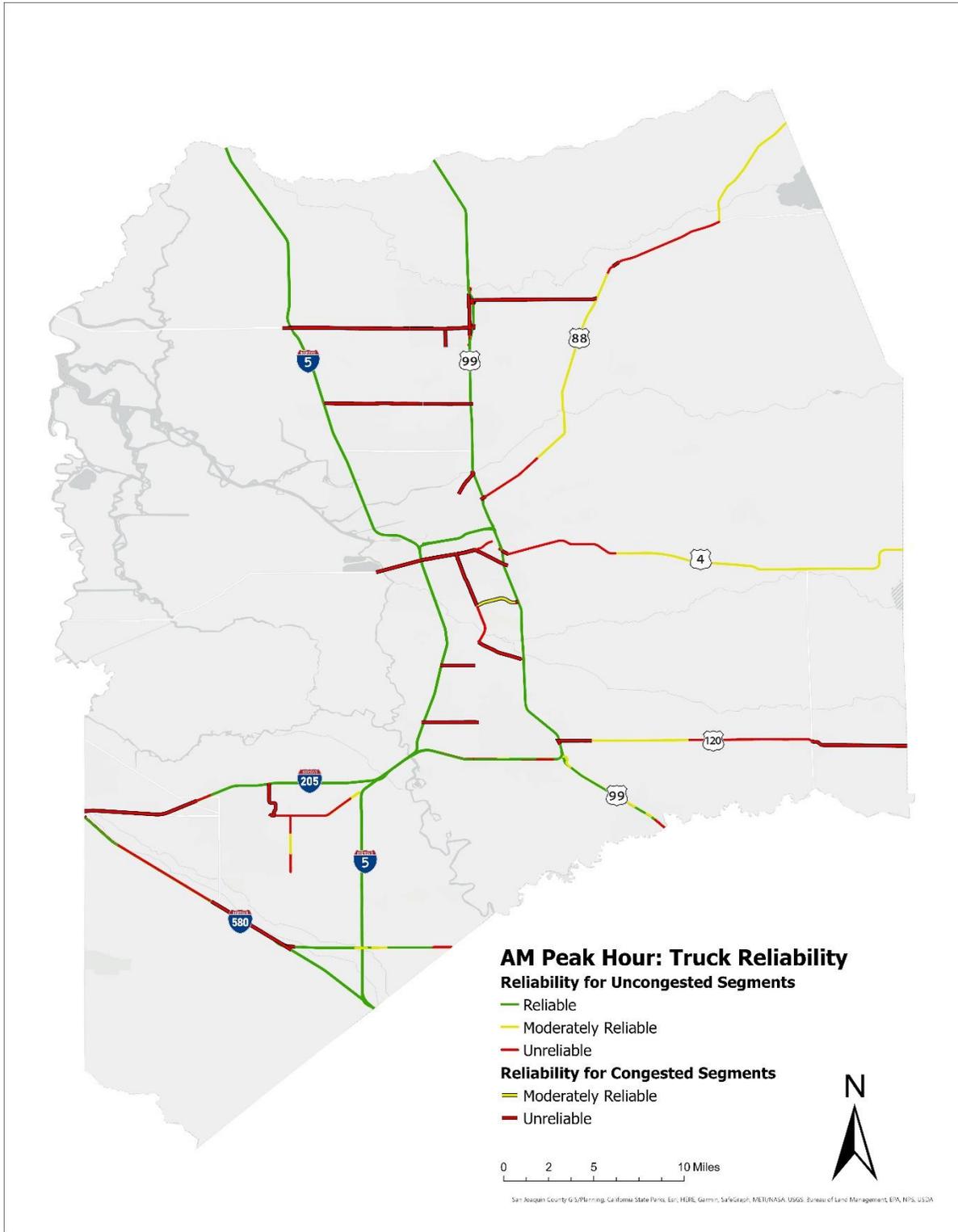


Figure 3.0-3 Congestion/Reliability Map – Trucks, AM Peak Hour

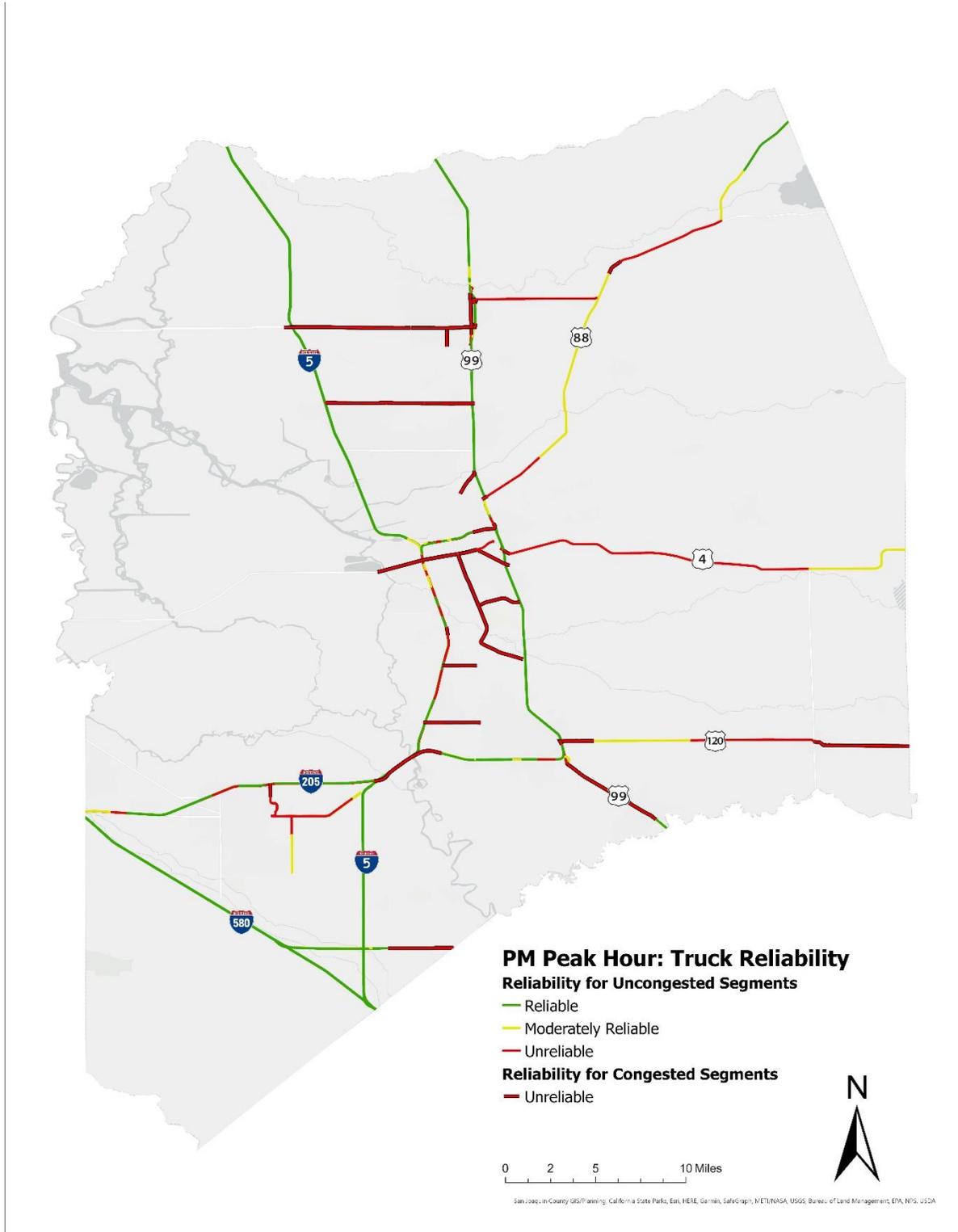


Figure 3.0-4 Congestion/Reliability Map – Trucks, PM Peak Hour

The congestion and reliability results were further used to identify deficient corridors on the RCMP network. For this purpose, two criteria are considered to identify the deficient road segments:

- Criteria 1. Segments with congestion during the AM or PM peak period over three miles in length for either total traffic or heavy trucks; and,
- Criteria 2. Segments with congestion and unreliable travel time during the AM or PM peak period for either passenger car traffic or heavy-duty trucks

The increase in identified deficient segments compared to previous years is attributed to the expanded availability of truck and passenger NPMRDS data. This enhancement in the data set has allowed for a more comprehensive and detailed analysis, leading to the identification of a greater number of segments.

Figure 3.0-5 shows the deficient road segments according to criterion 1 and criterion 2. Furthermore, road segments that met both criteria were identified as deficient corridors (see Figure 3.0-6). Table 3.0-5 identifies the congested periods and the unreliability for each deficient corridor.

**Table 3.0-5: Deficient Corridor Criteria Results**

| Deficient Corridor                                     | Criteria 1    |               | Criteria 2               |                          |                      |                      |
|--|---------------|---------------|--------------------------|--------------------------|----------------------|----------------------|
|  | AM Congestion | PM Congestion | AM Passenger Reliability | PM Passenger Reliability | AM Truck Reliability | PM Truck Reliability |
| 1 I-205: County Limit to Grant Line Rd Exit            | X             |               | X                        |                          | X                    |                      |
| 2 I-580: Corral Hollow Rd to S Chrisman Rd             | X             |               |                          |                          | X                    |                      |
| 3 SR-99: County Limit to SR-120                        |               | X             |                          | X                        |                      | X                    |
| 4 Main St: County Limit to Escalon Ave/McHenry Ave     | X             | X             | X                        | X                        | X                    | X                    |
| 5 S Airport Way: Arch-Airport Rd to E Charter Way      | X             | X             |                          |                          | X                    | X                    |
| 6 E Charter Wy: Mariposa Rd/Diamond St to S Roberts Rd | X             | X             | X                        | X                        | X                    | X                    |
| 7 W Eight Mile Rd: I-5 to SR-99                        | X             | X             |                          |                          | X                    | X                    |
| 8 SR-12: I-5 to S Cherokee Ln                          | X             | X             |                          | X                        | X                    | X                    |
| 9 SR-12: SR-99 to N Highway 88                         | X             |               | X                        |                          | X                    | X                    |

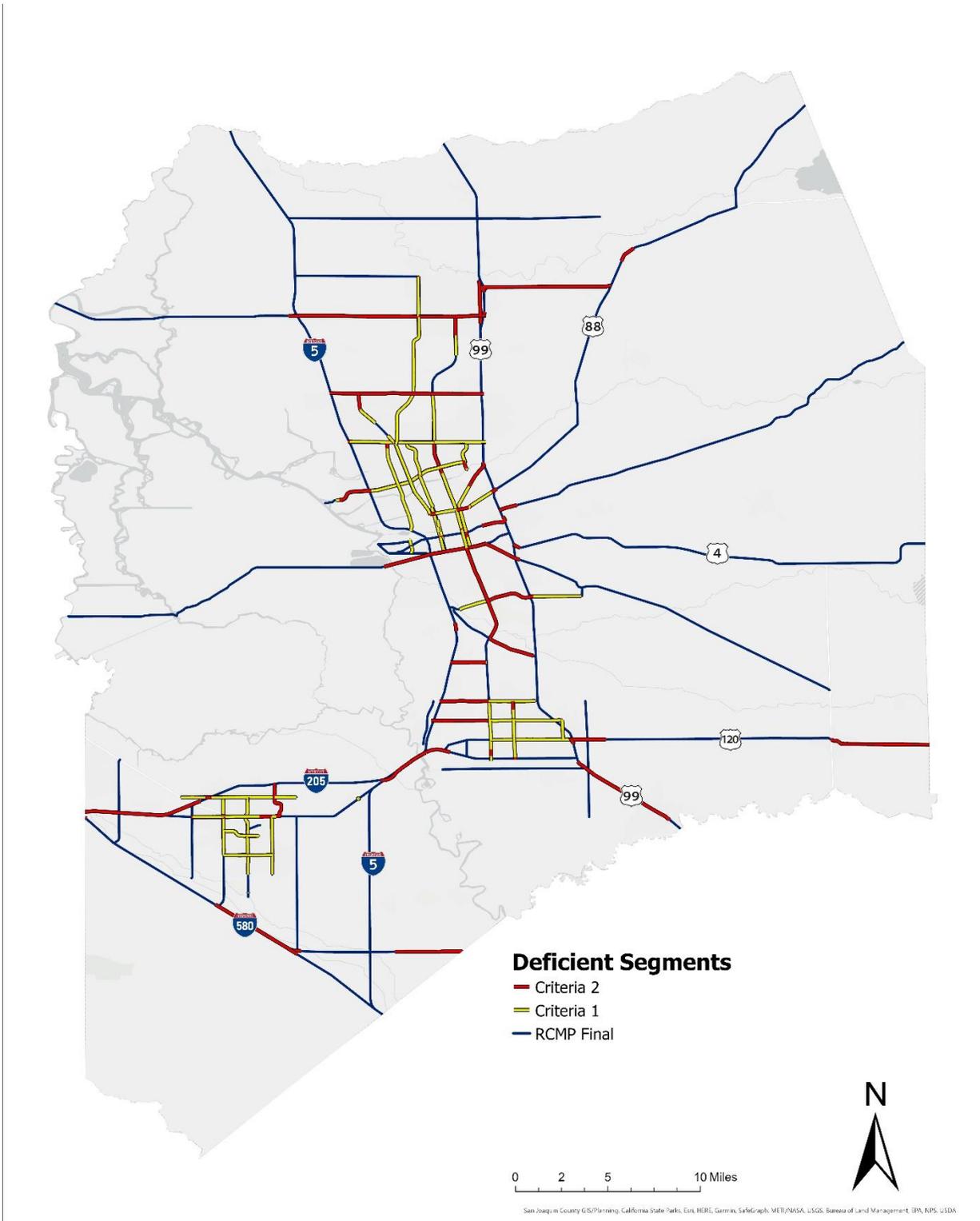


Figure 3.0-5 Deficient Road Segments

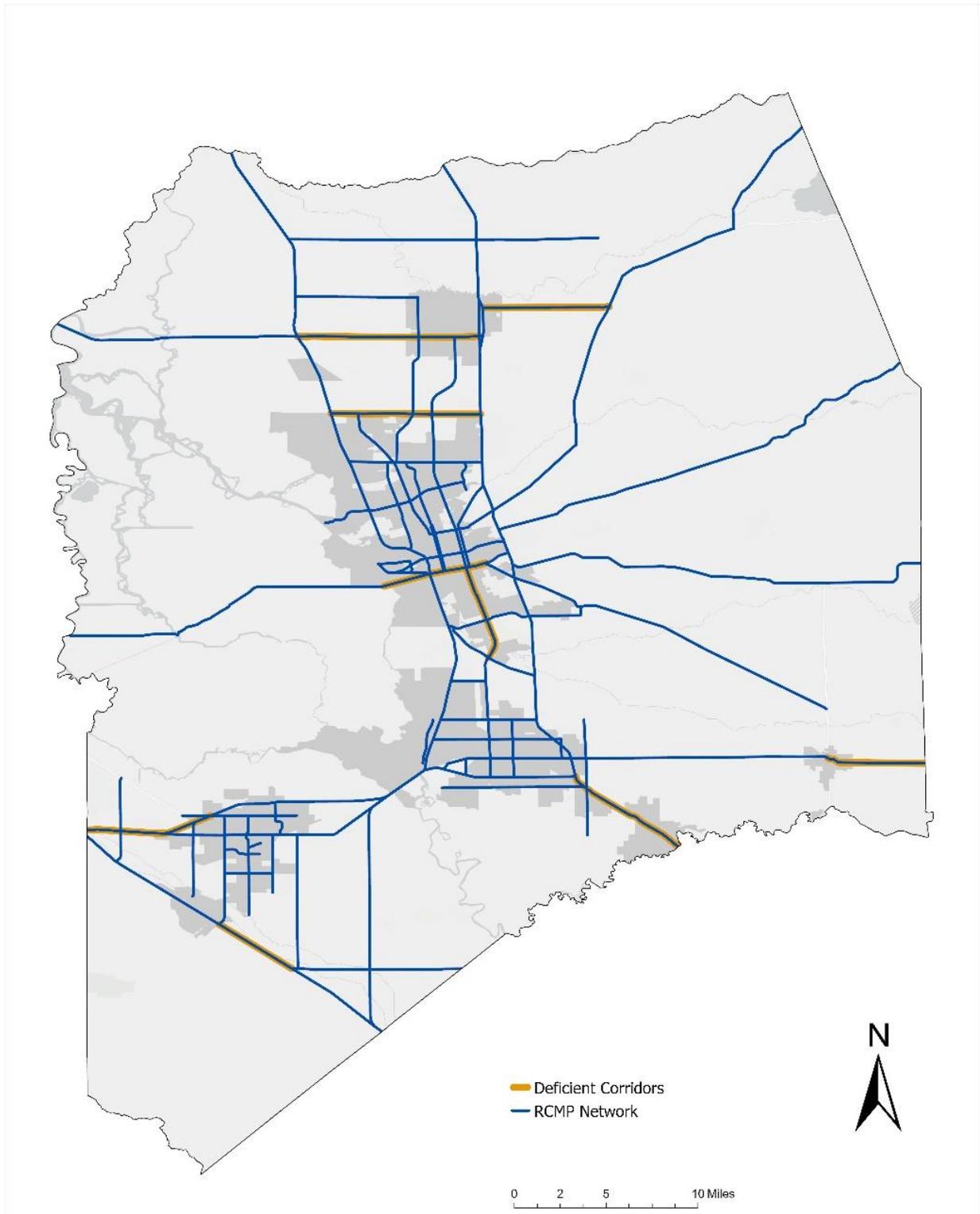


Figure 3.0-6 Deficient Corridors

### 3.2 TRANSIT SYSTEM

The San Joaquin County considers two performance measures to evaluate transit: 1) service coverage and 2) service frequency. The former uses half mile distance from the bus stops to define coverage for the transit service countywide. While this coverage was identified drawing linear buffers around bus stops, here, network distance service areas were used instead for better accuracy. The latter is based on the number of transit service trips (considering all existing transit lines) per hour at each stop during peak hours in a day. The goal of evaluating peak period transit frequency is to determine the likelihood that commuter travelers would use transit regularly. The peak period transit quality of service assessment may be best described using the thresholds for urban scheduled transit service, as shown in **Table 3.0-6**.

**Table 3.0-6: Transit Frequency Quality of Service Thresholds** (Source: FDOT Quality/Level of Service Handbook, 2013)

| Level of Service | Adjusted service frequency (vehicles/hour) | Headway (minutes) |
|------------------|--|-------------------|
| A                | >6   | <10               |
| B                | >4   | <15               |
| C                | >=3  | <=20              |
| D                | >=2  | <=30              |
| E                | >=1  | <=60              |
| F                | <1   | >60               |

#### Data Collection

We collected the most recent 2022 transit data and service schedules from SJCOG, San Joaquin Regional Transit District, Altamont Corridor Express, and City Councils. The 2021 population and 2019 job data were collected from census.

#### Results

The numbers of population in each jurisdiction at transit frequency level are shown in

**Table 3.0-7** and **Table 3.0-8** respectively. Currently, significant portion of San Joaquin County’s residential households and 61% of San Joaquin County jobs are located within a half-mile walking distance to a transit stop with QoS F or better. Only 6% of population are located close to transit stops with peak period service frequency quality of service C or better (20 minute or less headways), but 66% more of the residential population are close to transit stops with peak period service frequency quality of service E (60 minute or less headways).

Bus transit accessibility can change from revisions to bus service. The Regional Transit District (RTD) primarily serves Stockton and San Joaquin County, with additional stops in most of the other cities in San Joaquin County and at transit and job centers outside of San Joaquin County. RTD added one service route in Stockton and removed five commuter routes that travel outside of San Joaquin County. In addition, one route reduced its frequency from 10 to approximately 15 minutes during the AM peak commute period. Most importantly, RTD partnered with ride sharing services to connect bus riders to transit centers within San Joaquin County at half the ride sharing fare.

**Table 3.0-7: Population Proximity to Transit**

|                  | Rating  | QoS F or better |     | QoS E or better |     | QoS D or better |     | QoS C or better |     | QoS B or better |    | QoS A or better |    |
|------------------|---------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|----|-----------------|----|
|                  | Total   | Served          | %   | Served          | %   | Served          | %   | Served          | %   | Served          | %  | Served          | %  |
| <b>SJ County</b> | 771,406 | 759,989         | 99% | 511,659         | 66% | 117,755         | 15% | 48,337          | 6%  | 32,602          | 4% | 12,803          | 2% |
| Escalon          | 4,196   | 2,921           | 70% | -               | 0%  | -               | 0%  | -               | 0%  | -               | 0% | -               | 0% |
| Lathrop          | 24,763  | 5,298           | 21% | 5,298           | 21% | -               | 0%  | -               | 0%  | -               | 0% | -               | 0% |
| Lodi             | 62,236  | 57,863          | 93% | 57,841          | 93% | 28,725          | 46% | -               | 0%  | -               | 0% | -               | 0% |
| Manteca          | 74,507  | 55,464          | 74% | 55,416          | 74% | -               | 0%  | -               | 0%  | -               | 0% | -               | 0% |
| Ripon            | 11,917  | 7,307           | 61% | 6,497           | 55% | -               | 0%  | -               | 0%  | -               | 0% | -               | 0% |
| Stockton         | 310,353 | 276,204         | 89% | 230,579         | 74% | 48,368          | 16% | 40,586          | 13% | 27,984          | 9% | 8,185           | 3% |
| Tracy            | 87,815  | 78,712          | 90% | 68,753          | 78% | 28,558          | 33% | -               | 0%  | -               | 0% | -               | 0% |
| Unincorporated   | 195,620 | 7,795           | 4%  | 10,580          | 5%  | 5,166           | 3%  | 4,618           | 2%  | 4,618           | 2% | 4,618           | 2% |

**Table 3.0-8: Employment Proximity to Transit**

|                  | Rating  | QoS F or better |     | QoS E or better |     | QoS D or better |     | QoS C or better |     | QoS B or better |    | QoS A or better |    |
|------------------|---------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|----|-----------------|----|
|                  | Total   | Served          | %   | Served          | %   | Served          | %   | Served          | %   | Served          | %  | Served          | %  |
| <b>SJ County</b> | 249,722 | 151,419         | 61% | 139,304         | 56% | 53,506          | 21% | 13,707          | 5%  | 8,540           | 3% | 1,239           | 0% |
| Escalon          | 2,107   | 1,918           | 91% | -               | 0%  | -               | 0%  | -               | 0%  | -               | 0% | -               | 0% |
| Lathrop          | 10,358  | 2,203           | 21% | 2,203           | 21% | -               | 0%  | -               | 0%  | -               | 0% | -               | 0% |
| Lodi             | 24,239  | 20,608          | 85% | 20,608          | 85% | 9,559           | 39% | -               | 0%  | -               | 0% | -               | 0% |
| Manteca          | 18,604  | 11,065          | 59% | 11,065          | 59% | -               | 0%  | -               | 0%  | -               | 0% | -               | 0% |
| Ripon            | 4,399   | 3,158           | 72% | 2,853           | 65% | -               | 0%  | -               | 0%  | -               | 0% | -               | 0% |
| Stockton         | 105,869 | 80,533          | 76% | 73,213          | 69% | 27,452          | 26% | 11,364          | 11% | 6,808           | 6% | 523             | 0% |
| Tracy            | 35,644  | 21,515          | 60% | 20,522          | 58% | 13,536          | 38% | -               | 0%  | -               | 0% | -               | 0% |
| Unincorporated   | 48,502  | 10,419          | 21% | 8,840           | 18% | 2,959           | 6%  | 2,343           | 5%  | 1,732           | 4% | 716             | 1% |

### 3.3 BIKEWAY SYSTEM

San Joaquin county has provided the most up to date existing bikeway maps for cities of Tracy, Lathrop, Ripon, Stockton, Manteca, Lodi, and Escalon in the county. The bikeways are categorized into four types: class I, class II, class III and class IV (or on the other side of the road). The total existing mileage for each class of bicycle lanes and the city is provided per existing and planned scenarios in **Table 3.0-9**. The San Joaquin County existing and planned bikeways network are shown in **Figure 2.0-3**.

**Table 3.0-9: Existing Bicycle Network Mileage Summary**

| City           | Lane Type | Mileage (Existing) | Total  |
|----------------|-----------|--------------------|--------|
| Tracy          | Class 1   | 22.37              | 72.52  |
|                | Class 2   | 31.06              |        |
|                | Class 3   | 16.62              |        |
|                | Other     | 2.47               |        |
| Lathrop        | Class 1   | 20.75              | 32.08  |
|                | Class 2   | 10.11              |        |
|                | Class 3   | 0                  |        |
|                | Other     | 1.22               |        |
| Manteca        | Class 1   | 12.12              | 61.20  |
|                | Class 2   | 30.04              |        |
|                | Class 3   | 18.53              |        |
|                | Other     | 0.5                |        |
| Lodi           | Class 1   | 0.1                | 30.31  |
|                | Class 2   | 24.89              |        |
|                | Class 3   | 3.69               |        |
|                | Other     | 1.63               |        |
| Ripon          | Class 1   | 9.15               | 44.72  |
|                | Class 2   | 5.88               |        |
|                | Class 3   | 6.87               |        |
|                | Other     | 22.82              |        |
| Escalon        | Class 1   | 0.38               | 5.74   |
|                | Class 2   | 3.98               |        |
|                | Class 3   | 1.04               |        |
|                | Other     | 0.34               |        |
| Stockton       | Class 1   | 36.56              | 90.21  |
|                | Class 2   | 45.39              |        |
|                | Class 3   | 0                  |        |
|                | Other     | 8.26               |        |
| Unincorporated | Class 1   | 24.30              | 41.73  |
|                | Class 2   | 1.00               |        |
|                | Class 3   | 16.43              |        |
|                | Other     | 0                  |        |
| Total          | Class 1   | 125.73             | 378.51 |
|                | Class 2   | 152.35             |        |
|                | Class 3   | 63.18              |        |
|                | Other     | 37.25              |        |

### 3.4 MULTIMODAL CORRIDORS

There are 13 designated RCMP Multimodal Corridors in San Joaquin County. Future updates should be performed if traffic volumes significantly change, major transit scheduling changes occur, or major roadway treatments and improvements are implemented. Although none of these conditions have occurred by 2023 relative to the 2016 monitoring cycle, a new analysis CSQOS is conducted for this monitoring report, given the eight years gap. **Table 3.0-10** and summarizes the peak hour analysis results respectively from the previous monitoring cycle. Summing all CSQOS results over the 13 multimodal corridors (for both the AM/PM peak hours) indicates that in general pedestrian CSQOS is “C”; bicyclists CSQOS is “D” and transit CSQOS is “F”.

**Table 3.0-10: Complete Street Quality of Service Employment Peak Hour**

| ID  | Roadway                    | From                                 | To                                 | Jurisdiction | Pedestrian |         | Bike      |         | Transit   |         |
|-----|----------------------------|--------------------------------------|------------------------------------|--------------|------------|---------|-----------|---------|-----------|---------|
|     |                            |                                      |                                    |              | HCS* Score | HCS LOS | HCS Score | HCS LOS | HCS Score | HCS LOS |
| 1   | SR 88                      | Locke Road                           | N Sierra Drive                     | County       | 3.44       | C       | 5.38      | F       | 0         | F       |
| 2   | SR 120                     | McHenry Avenue- Escalon Bellota Road | David Drive                        | Escalon      | 3.06       | C       | 3.77      | D       | 0         | F       |
| 3-1 | Lathrop Road               | Airport Way                          | Crestwood Avenue                   | Lathrop      | 4.79       | E       | 4.9       | E       | 0         | F       |
| 3-2 | Lathrop Road               | Harlan Road                          | 7th Street                         | Lathrop      | 2.81       | C       | 3.9       | D       | 0         | F       |
| 4   | SR 12                      | Lower Sac. Road.                     | Cherokee Lane                      | Lodi         | 2.14       | B       | 1.61      | A       | 0.78      | F       |
| 5   | Yosemite Avenue            | Airport Way                          | Northwoods Avenue- Commerce Avenue | Manteca      | 3.49       | C       | 3.53      | D       | 0.79      | F       |
| 6   | W Ripon Road (Main Street) | Jack Tone Road                       | N Stockton Avenue                  | County/Ripon | 2.07       | B       | 2.45      | D       | 0         | F       |
| 7   | March Lane                 | Da Vinci Drive- Quail Lakes Drive    | West Lane                          | Stockton     | 4.02       | D       | 4.59      | E       | 2.1       | D       |
| 8   | Eight Mile Road            | Thornton Road                        | Davis Road                         | County       | 5.91       | F       | 5.55      | F       | 0         | F       |
| 9   | Hammer Lane                | Kelley Drive                         | Maranatha Drive                    | Stockton     | 2.42       | B       | 3.59      | D       | 2.2       | D       |
| 10  | Lower Sac. Road            | Royal Oaks Drive                     | Hammer Lane                        | Stockton     | 4.02       | D       | 4.59      | E       | 2.1       | D       |
| 11  | West Lane - Airport Way    | El Pinal Drive                       | Roosevelt Street                   | Stockton     | 3.02       | C       | 3.82      | D       | 1.77      | E       |
| 12  | Eleventh Street            | Lammers Road                         | MacArthur Drive                    | Tracy        | 3.4        | C       | 4.63      | E       | 0.17      | F       |

\*Highway Capacity Software (HCS)

Note: Facilities with transit MMLoS results of “F” typically had no transit service or were served by one transit route with hourly headways.

### 3.5 TRAVEL DEMAND MANAGEMENT

Travel demand Management (TDM) strategies are those that attempt to reduce the number of vehicle miles traveled on the RCMP network. These can include strategies to group trips such as carpool/vanpooling, removing trips by encouraging telecommuting or reducing trip lengths by developing land uses that allow trips to be made by walking, bicycling, or shorter drives.

All of the counties in the San Joaquin Valley are designated as “severe” to “extreme” non-attainment for the federal health-based pollutants by the EPA and are therefore required to take extra steps to improve air quality, with employer-based travel demand management as a key strategy. San Joaquin Valley Air Pollution Control District (SJVAPD) Rule 9410 (eTrip) requires major employers (with 100 or more employees) in the region to develop and implement TDM strategies. These strategies can include employee shuttles, staggered work hours, telecommute options, transit subsidies, carpool/vanpool programs, and many other strategies.

SJCOG’s dibs Program offers information and several programs to support TDM in the county, as well as supporting Stanislaus and Merced counties. This inter-county collaboration is highly supportive of regional travel demand management. Programs include employer assistance in developing trip reduction plans, trip planning, emergency ride home, rideshare matching, vanpool formation/subsidies, and community events. It also provides information on benefits and tax credits, connections to other helpful resources, and educational links to traveler information services.

The ‘dibs’ program collect data on the usage of smart travel modes for work commuting through its website (dibsmymway.com), which currently has 12,487 members originating in San Joaquin County as of 2022. The number of vanpools formed during the fiscal year 2022-23, with 109 new vanpools, and a total of 446 vanpools. San Joaquin experienced about a 7% increase of vanpool from prior year and has contributed to 40 million vehicle miles reduced, and 416,454 vehicles off the road. Many of the vanpools commuting destination are composed of employer locations which include Tesla and Defense Distribution Center.

The estimated annual reduction of vehicle miles traveled (VMT) from ‘dibs’ vanpools between 2018 and 2023 is provided in **Table 3.0-11**. The reduction of VMT from vanpools has remained strong over the last four years (for example, in 2021 carpool and vanpool usage increased by 22%).

Also shown is the estimated VMT reductions from trip logging from all smart travel modes during special events each year. The ‘dibs’ program coordinates annual events such as Rideshare Week and Bike Month to encourage commuters to utilize smart travel options such as carpool, vanpool, transit and biking or walking to work as well as telecommuting. During these events, trips are logged by participants in the dibs trip planning system that allows estimate of vehicle miles reduced to be calculated. This differs from the vanpool data since vanpool information is based on actual activity from vanpools.

**Table 3.0-11: Estimated Annual Reduction of Vehicle Miles Traveled**

| Year    | # of Vans | VMT Reduction Vanpool | VMT Reduction Special Event |
|---------|-----------|-----------------------|-----------------------------|
| 2018-19 | 123       | 6,654,250             | 450,980                     |
| 2019-20 | 164       | 9,313,153             | 362,853                     |
| 2020-21 | 321       | 17,270,150            | 292,576                     |
| 2021-22 | 417       | 31,000,000            | -                           |
| 2022-23 | 446       | 40,000,000            | -                           |

Annual VMT reduction based on actual annual vanpools data reported the National Transit Database (NTD)

Special Event VMT reduction based on trip logging for all smart travel modes (carpool, vanpool, transit, bike, walk, telecommute) from dibs trip planning system

Given the shift to vehicle miles of travel (VMT) under CEQA pursuant to Senate Bill 743, there has been greater interest to incorporate VMT into other local and regional transportation planning processes. VMT provides an indication of overall system utilization and is a direct indicator of land use efficiency and on-

road mobile source emissions.

The VMT data was sourced from Replica while estimates of population from the California Department of Finance. The Highway Monitoring System (HPMS) program data is only available through 2021. Due to lack of this data, Replica is used as the source for this report. Replica is a data aggregation service that compiles roadway user information by mode, origin/destination, demographics, and trip purpose using mobile source data such as cell phones and connected vehicles. Replica features a shapefile containing each segment of the county's roadway network and an average daily traffic (ADT) value associated with it.

Table 3.0-12 shows the 2022 VMT per capita for each jurisdiction in San Joaquin County VMT was estimated by multiply the ADT by the length of the road segment. This method was applied to all roadways in each jurisdiction in San Joaquin County, which resulted in an estimate for each jurisdiction's VMT for 2022. As shown, all incorporated cities have VMT per capita ranging between 14-81 miles per person per day. This is due to many incorporated area vehicle trips being local in nature (due to greater land use efficiency). Unincorporated cities have VMT per capita values of approximately 100 vehicle miles per person per day. Take as a whole, the county average VMT per capita is just about 45 miles per person per day.

**Table 3.0-12: 2022 Vehicle Miles Traveled (VMT) per Capita by Jurisdiction**

| Jurisdiction 2022            | Local Road VMT (1,000) | State Highway VMT (1,000) | Total VMT (1,000) | Population (1/1/2022) | Daily VMT Per Capita |
|------------------------------|------------------------|---------------------------|-------------------|-----------------------|----------------------|
| Escalon                      | 61.54                  | 47.03                     | 108.58            | 7,472                 | 14.53                |
| Lathrop                      | 951.02                 | 1,350.13                  | 2,301.14          | 28,701                | 80.18                |
| Lodi                         | 1,091.24               | 587.55                    | 1,678.79          | 66,348                | 25.30                |
| Manteca                      | 1,727.64               | 784.17                    | 2,511.81          | 83,498                | 30.08                |
| Ripon                        | 576.30                 | 723.38                    | 1,299.68          | 16,013                | 81.16                |
| Stockton                     | 3,656.85               | 3,855.05                  | 7,511.90          | 320,804               | 23.42                |
| Tracy                        | 2,204.15               | 941.76                    | 3,145.91          | 93,000                | 33.83                |
| County (Unincorporated Area) | 7,974.97               | 9,735.14                  | 17,710.11         | 163,397               | 108.39               |
| San Joaquin Total            | 18,243.71              | 18,024.21                 | 36,267.92         | 779,233               | 46.54                |

### 3.6 SAFETY

Transportation safety is a key step in transportation planning, seeking to reduce the fatalities and injuries on the roads. Vision Zero aims to ensure that safety is prioritized over other aspects of the transportation system, such as mobility, and to reduce roadway fatalities and serious injuries to zero. A data-driven safety processing approach helps identify safety issues and address them.

Safety Performance Management is a part of the Federal Highway Administration (FHWA) developed Transportation Performance Management (TPM) program to make informed investment and policy decisions. Toward this, Highway Safety Improvement Program (HSIP) needs to regularly assess the state of safety on the roads concerning federal performance measures:

- Number of fatalities (all roadways)
- Rate of fatalities (per 100m VMT) (all roadways)
- Number of serious Injuries (all roadways)
- Rate of serious Injuries (per 100m VMT) (all roadways)
- Number of non-motorized fatalities and serious injuries (all roadways)

Items 1 and 2 refer to crash frequency data analysis to measure the number of crashes per severity type for all users. Item 5 is similar to items 1 and 2 except that it is for the subset of crashes being involved with non-motorized modes (bicyclists and pedestrians). The rate of fatalities and serious injuries for crash type  $i$  is displayed by  $R_i$  per 100 million vehicle miles and is calculated using the equation below (Equation 3):

$$R_i = \frac{C_i \times 100,000,000}{VMT \times 365} \quad (3)$$

where  $C_i$  is the total number of fatalities or serious injuries for crashes of type  $i$ ; VMT refers to vehicle miles traveled.

#### Data collection

The Statewide Integrated Traffic Records System (SWITRS) contains all crash data collected and reported to California Highway Patrol (CHP) by local and governmental agencies. SWITRS data consists of detailed crash summaries by year, geography, and crash type. We collected 2021 and 2022 SWITRS crash data for the case study and reported the results by crash severity type and user groups in Tables below.

#### Results

In 2021, there were 136 fatalities and 607 serious injuries involving all users in traffic collisions that occurred on San Joaquin County roads of which 60 (44%) fatalities and 264 (43%) serious injuries occurred on the RCMP network. In 2022, the numbers increased in all cases except for the number of serious injuries and fatalities that occurred on the RCMP network. Fatalities and serious injuries decreased to 135 (0.7% decrease from 2021) and 590 (2.8% decrease from 2021), respectively.

**Table 3.0-13: 2021 Fatal and Serious Injury Collisions – All Users**

| Facility         | All Users (2021) |                      |                        |                            |
|------------------|------------------|----------------------|------------------------|----------------------------|
|                  | Fatal Crashes    | Number of fatalities | Serious Injury Crashes | Number of serious injuries |
| SJ county        | 121              | 136                  | 375                    | 607                        |
| RCMP Network     |                  |                      |                        |                            |
| NHS              | 49               | 57                   | 138                    | 251                        |
| Non-NHS          | 3                | 3                    | 7                      | 13                         |
| Non-RCMP Network | 69               | 76                   | 230                    | 343                        |

**Table 3.0-14: 2022 Fatal and Serious Injury Collisions – All Users**

| Facility         | All Users (2022) |                      |                        |                            |
|------------------|------------------|----------------------|------------------------|----------------------------|
|                  | Fatal Crashes    | Number of fatalities | Serious Injury Crashes | Number of serious injuries |
| SJ county        | 128              | 135                  | 383                    | 590                        |
| RCMP Network     |                  |                      |                        |                            |
| NHS              | 60               | 63                   | 189                    | 310                        |
| Non-NHS          | 15               | 16                   | 32                     | 52                         |
| Non-RCMP Network | 53               | 56                   | 162                    | 228                        |

In 2021, non-motorized (e.g., pedestrians, bicyclists) fatalities and serious injuries accounted for 19% and 10% of total fatalities and serious injuries, respectively. In 2022, the share of non-motorized fatalities shrank to 16%, while the share of serious injuries rose to 13%.

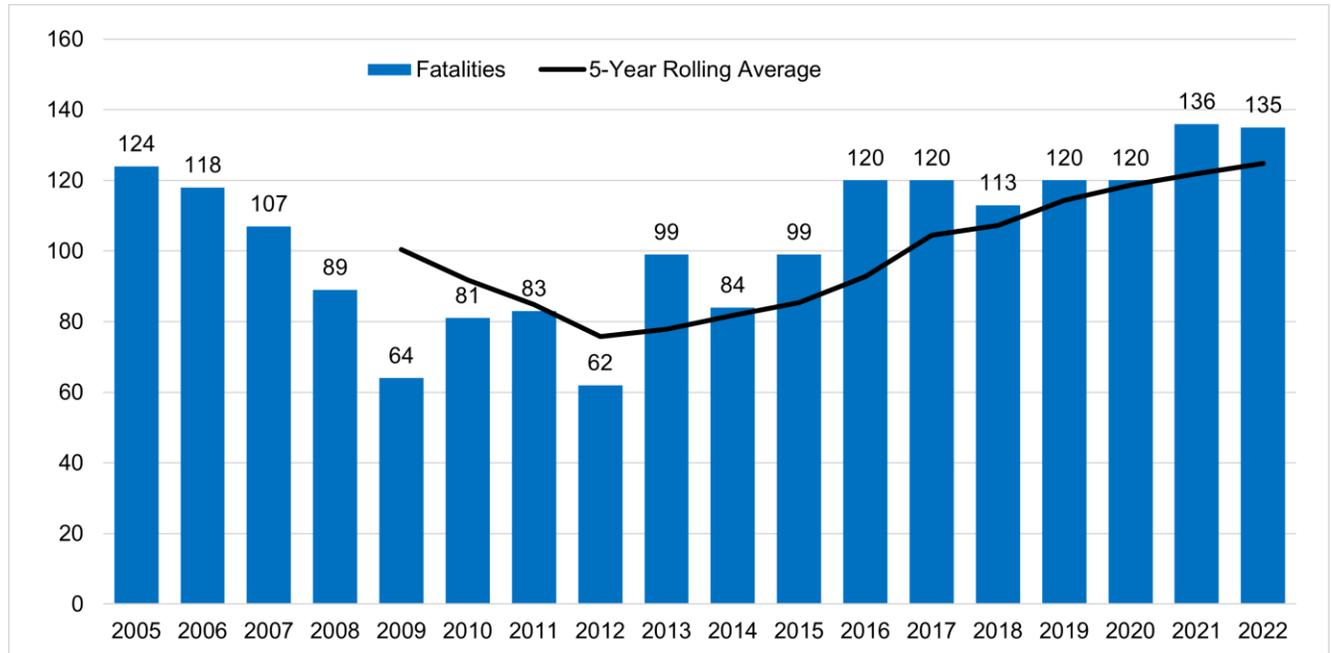
**Table 3.0-15: 2021 Fatal and Serious Injury Collisions – Non-motorized**

| Facility         | Non-motorized (2021) |                      |                        |                            |               |                      |                        |                            |
|------------------|----------------------|----------------------|------------------------|----------------------------|---------------|----------------------|------------------------|----------------------------|
|                  | Bicycle              |                      |                        |                            | Pedestrian    |                      |                        |                            |
|                  | Fatal Crashes        | Number of fatalities | Serious Injury Crashes | Number of serious injuries | Fatal Crashes | Number of fatalities | Serious Injury Crashes | Number of serious injuries |
| SJ county        | 3                    | 3                    | 18                     | 19                         | 23            | 23                   | 37                     | 43                         |
| RCMP Network     |                      |                      |                        |                            |               |                      |                        |                            |
| NHS              | 2                    | 2                    | 4                      | 4                          | 12            | 12                   | 11                     | 13                         |
| Non-NHS          | 0                    | 0                    | 0                      | 0                          | 0             | 0                    | 1                      | 1                          |
| Non-RCMP Network | 1                    | 1                    | 14                     | 15                         | 11            | 11                   | 25                     | 29                         |

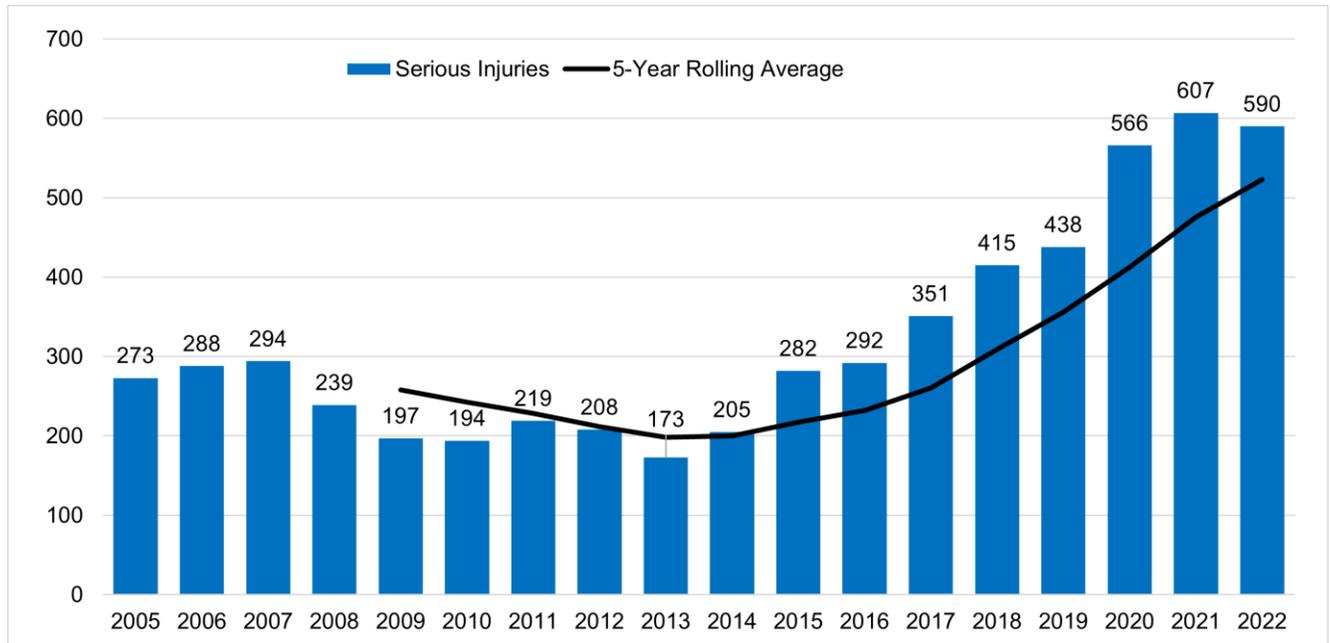
**Table 3.0-16: 2022 Fatal and Serious Injury Collisions – Non-motorized**

| Facility         | Non-motorized (2022) |                      |                        |                            |               |                      |                        |                            |
|------------------|----------------------|----------------------|------------------------|----------------------------|---------------|----------------------|------------------------|----------------------------|
|                  | Bicycle              |                      |                        |                            | Pedestrian    |                      |                        |                            |
|                  | Fatal Crashes        | Number of fatalities | Serious Injury Crashes | Number of serious injuries | Fatal Crashes | Number of fatalities | Serious Injury Crashes | Number of serious injuries |
| SJ county        | 2                    | 2                    | 26                     | 27                         | 20            | 20                   | 46                     | 48                         |
| RCMP Network     |                      |                      |                        |                            |               |                      |                        |                            |
| NHS              | 1                    | 1                    | 11                     | 12                         | 15            | 15                   | 23                     | 25                         |
| Non-NHS          | 0                    | 0                    | 1                      | 1                          | 1             | 1                    | 3                      | 3                          |
| Non-RCMP Network | 1                    | 1                    | 14                     | 14                         | 4             | 4                    | 20                     | 20                         |

As shown in **Figure 3.0-7**, the number of fatalities steadily decreased from 2005 to 2009 but has been trending upward since 2012. The five-year rolling average peaked at 120 fatalities in 2016 and has held relatively stable till 2021 when fatalities grow by 13%. **Figure 3.0-8** shows the serious injury trend from 2005 to 2022, which is similar to the fatality trend except that the number of serious injuries increased to a larger extent relative to fatalities. The five-year rolling average has been trending upward since 2013.

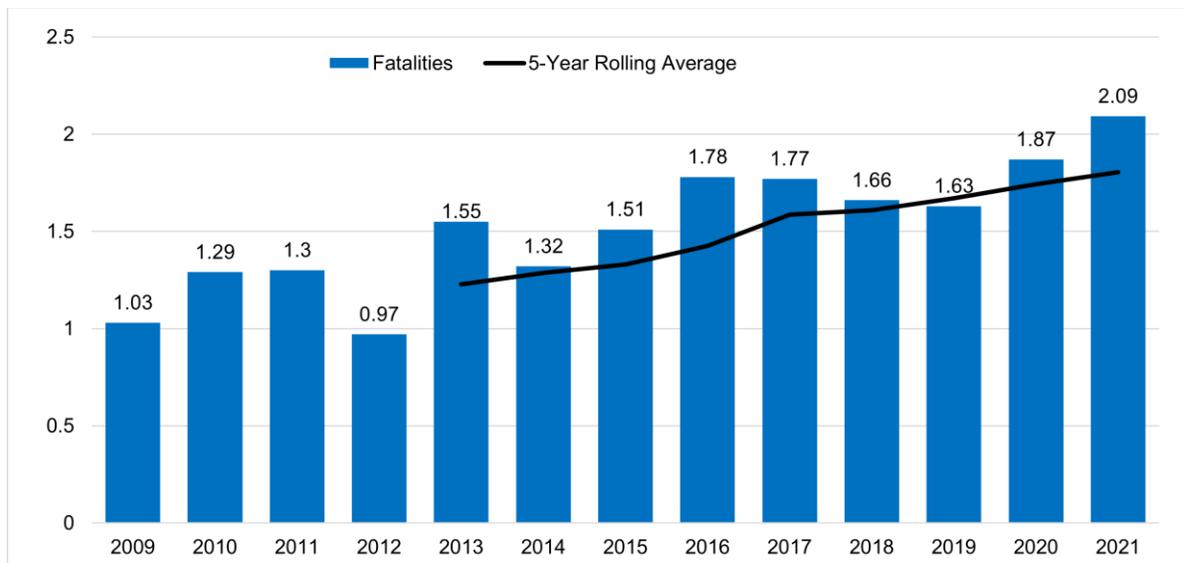


**Figure 3.0-7: Fatality Trend on San Joaquin County Roads (2005-2022)**



**Figure 3.0-8: Serious Injury Trend on San Joaquin County Roads (2005-2022)**

Figure 3.0-9 and Figure 3.0-10 show the fatal and injury collision rates (per 100 million VMT) based on the same five-year rolling average. These metrics indicate that similar to the absolute numbers, the rates of fatalities and serious injuries per year have increased, peaking in 2021 at 2.09. This is significant since the annual average daily vehicle miles of travel has decreased by 13% from 2019 to 2020 and increased by 1.2% from 2020 to 2021. We were unable to generate similar rates for 2022 since the daily vehicle miles of travel is not yet available for this year from Caltrans Highway Performance Monitoring System (HPMS).



**Figure 3.0-9: Fatal Collision Rate (Fatalities per 100M VMT) on San Joaquin County Roads (2009-2021)**

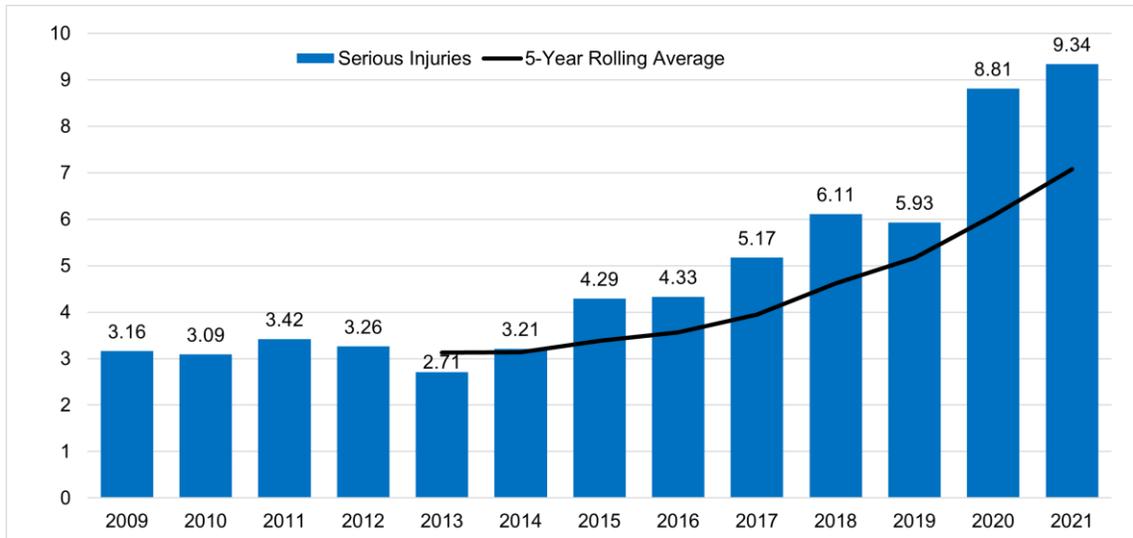


Figure 3.0-10: Serious Injury Rate (Injuries per 100M VMT) on San Joaquin County Roads (2009-2021)

Figure 3.0-11 shows the absolute number of fatalities and serious injury involving pedestrians and bicyclists between 2009 and 2022. Bicycle fatality and serious injuries peaked in 2019 at 38, while the number of fatalities and serious injury involving pedestrians stay stable till 2022.

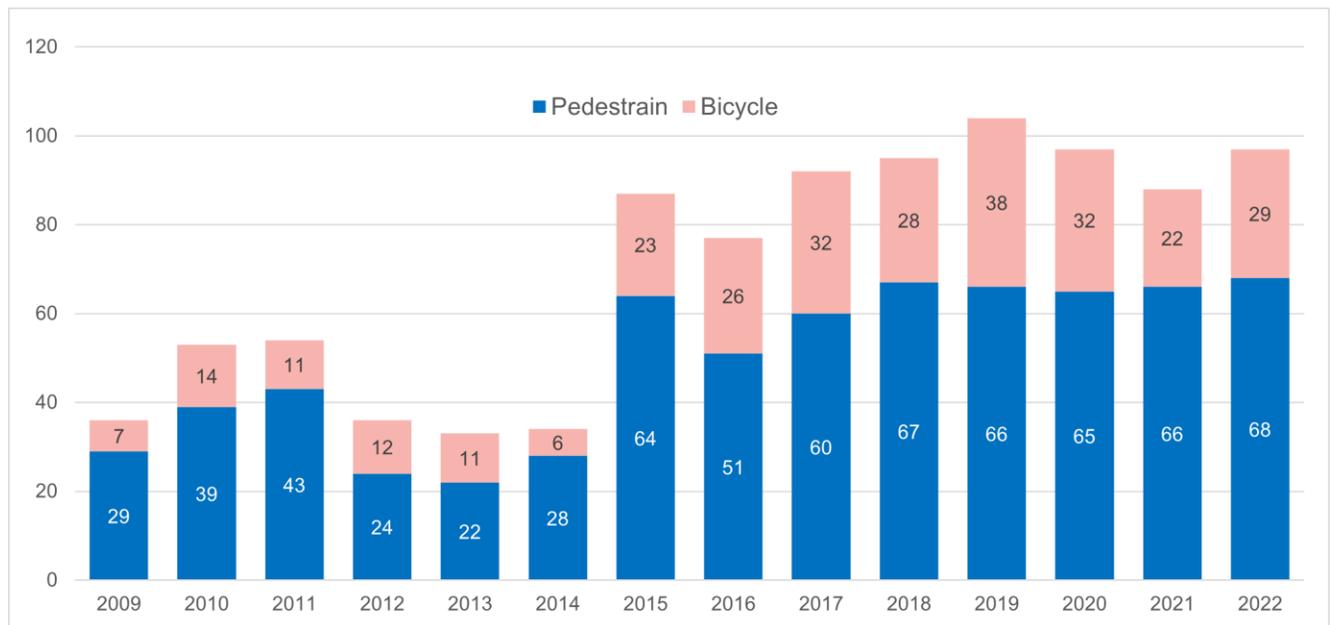


Figure 3.0-11: Pedestrian and Bicycle Fatalities and Serious Injuries on San Joaquin County Roads (2009-2022)

The segment-based fatality rates were mapped in Figure 3.0-12 and Figure 3.0-13. The high-fatality segments (roadways with fatality rates of 10 or more fatalities per 100 million VMT) were observed in the Stockton and Manteca. Specific high-fatality segments in 2022 include:

- Unincorporated: I-580: W Patterson Pass Rd to Tracy City Limit
- Unincorporated: W Peltier Rd: I-5 to SR-99
- Unincorporated: W Lathrop Rd: Airport to Lathrop City limit
- Unincorporated: Mariposa Rd: Escalon-Bellota Rd to S Austin Rd

- Tracy: Corral Hollow Rd: W Schulte Rd to Eleventh St
- Tracy: Eleventh St: Corral Hollow Rd to S MacArthur Dr
- Tracy: Tracy Blvd: W Schulte Rd to Valpico Rd
- Manteca: SR-99: Austin Rd to SR-120 Junction
- Manteca: Woodward Ave: Main St to Moffat Blvd
- Manteca: SR-99: Yosemite Ave to Louise Ave
- Stockton: E Charter Way: S Airport Way to I-5
- Stockton: El Dorado St: March Ln to Hammer Ln
- Stockton: Eight Mile Rd: Davis Rd to Marlette Rd

Severe injury segments (roadways with a severe injury rate of 10 or more per 100 million VMT) were mostly observed in the Stockton, Manteca, Tracy and County unincorporated areas. The top high-risk segments, present in 2022, were observed at the following locations:

- Unincorporated: S Lammers Rd: Capital Park Dr to W Schulte Rd
  - Unincorporated: Mariposa Rd: Escalon-Bellota Rd to E Charter Way
  - Unincorporated: S Chrisman Rd: Eleventh St to W Schulte Rd
  - Tracy: Tracy Blvd: W Schulte Rd to Valpico Rd
  - Tracy: Tracy Rd: W 6th St to Grant Line Rd
  - Tracy: Eleventh St: Corral Hollow Rd to N MacArthur Dr
  - Tracy: Corral Hollow Rd: Eleventh St to Grant Line Rd
  - Tracy: Grant Line Rd: Corral Hollow Rd to Tracy Blvd
  - Manteca: Woodward Ave: Woodward Ave to Airport Way
  - Manteca: Woodward Ave: Main St to Moffat Blvd
  - Manteca: Austin Rd: SR-99 to W Ripon Rd
  - Manteca: Yosemite Ave: Union Rd to SR-99
  - Manteca: E Louise Ave: SR-99 to 7<sup>th</sup> St
  - Manteca: I-5: E Louise Ave to Spartan Way
  - Manteca: Lathrop Rd: Union Rd to Crestwood Ave
  - Stockton: S Airport Way: Stimson St to E Charter Way
  - Stockton: S Wilson Way: E Charter Way to SR-4
  - Stockton: W Harding Way: N Pershing Ave to N California St
  - Stockton: Sperry Rd: Airport Way to S McKinley Ave
  - Stockton: E Charter Way: El Dorado St to S Airport Way
  - Stockton: SR-4: El Dorado St to I-5
  - Stockton: Airport Way: Arch Airport Rd to El Pinal Dr
  - Stockton: N Wilson Way: Bradford St to SR-99
  - Stockton: E March Ln: Holman Rd to El Dorado St
  - Stockton: El Dorado St: E March Ln to Hammer Ln
  - Stockton: Pacific Ave: E March Ln to Hammer Ln
  - Stockton: Hammer Ln: West Ln to Holman Rd
- (segments smaller than 0.2 miles are not listed)

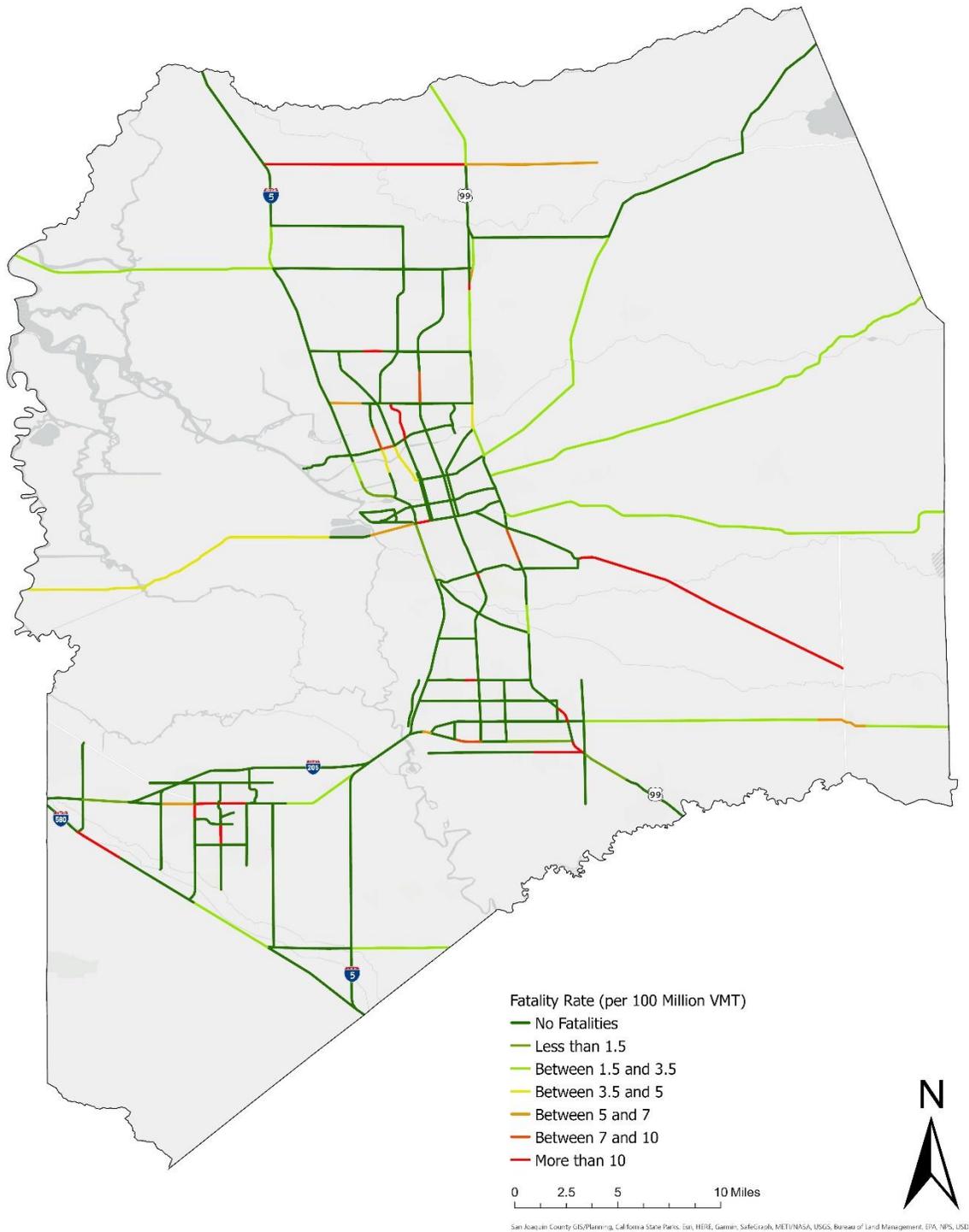


Figure 3.0-12: 2022 Fatality Rate Map

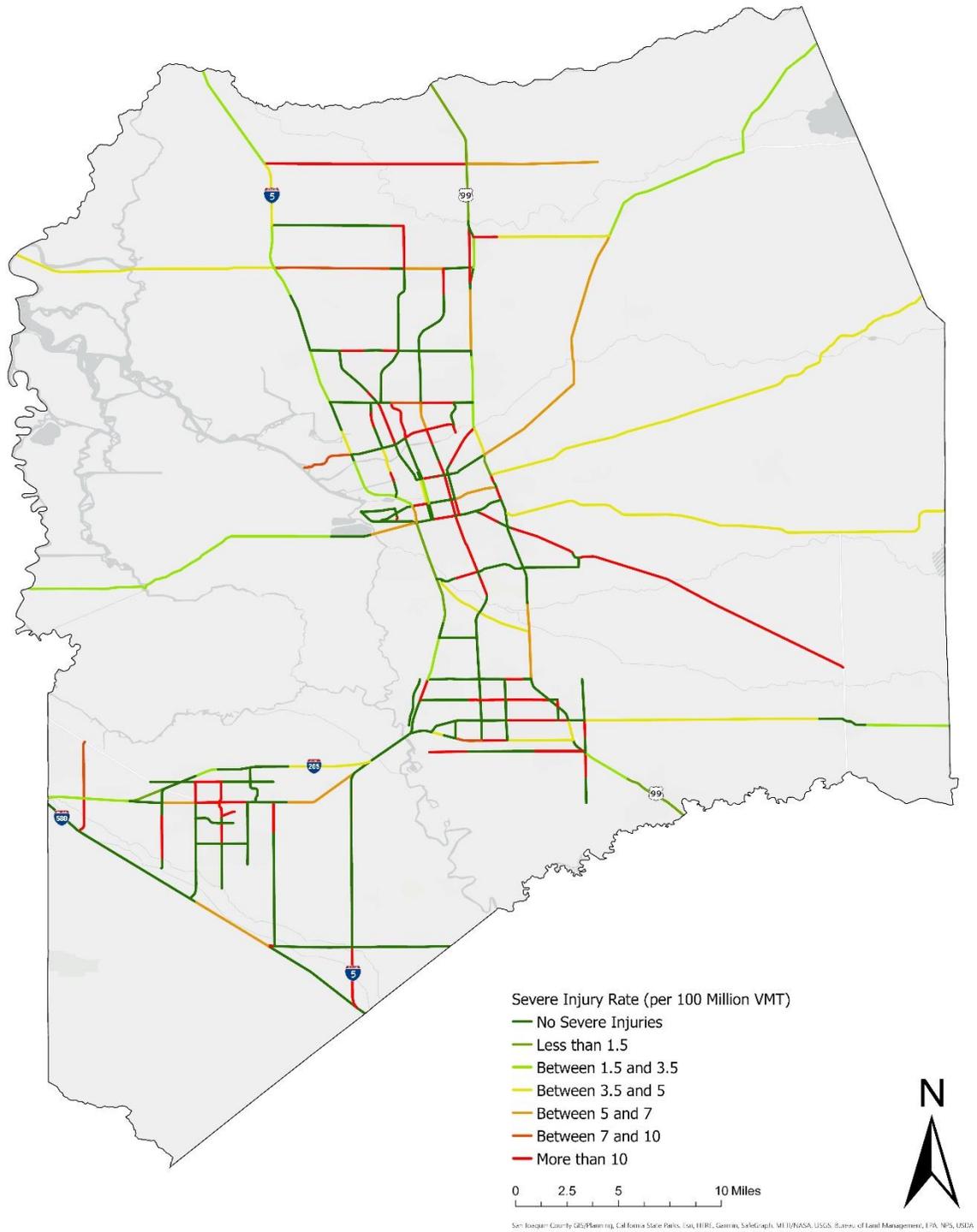


Figure 3.0-13 2022 Severe Injury Rate Map

### 3.7 TRANSPORTATION ASSET MANAGEMENT

Information on Pavement Conditions on the RCMP network was provided from two primary sources: City databases and the National Highway System Performance and Financial Data, provided by Caltrans. The latter source also provided bridge conditions throughout San Joaquin County. Each City with the exception of Escalon maintains an inventory of pavement conditions throughout the City. Most cities provided Pavement Condition Index (PCI) values for locally-owned roads either in shapefile or tabular formats, while Manteca provided a recent Pavement Conditions Report from which values were extracted. These shapefiles or tables features PCI values for each of the roadways in the city, with the exception of any Caltrans facilities that run through each city. Each of these values was symbolized according to the scale below:

- Very Poor: 0 to 29
- Poor: 30 to 45
- Fair: 46 to 59
- Good: 60 to 69
- Very Good 70 to 89
- Excellent: 90 to 100

The resulting map is displayed in **Figure 3.0-14**.

PCI values for RCMP roads throughout the County's unincorporated areas was provided by the cities, however, state highways were not included, leading to gaps in the coverage. The National Highway System Performance and Financial Data, provided by Caltrans, provided more extensive coverage of the aforementioned state highway network in the County's unincorporated areas. However, Federal Code of Regulation Section 490.307 National performance management measures for assessing pavement condition in "Good", "Fair", or "Poor" conditions. Raw PCI values were not provided, but instead each segment of the roadway was classified as "Good", "Fair", or "Poor. Therefore, this was placed on a separate map from the city pavement condition information. These classifications are shown in **Figure 3.0-15**.

Bridge conditions were also collected from the National Highway System Performance and Financial Data for the entirety of San Joaquin County. These are rated on the same "Good", "Fair" and "Poor" rating scheme. These classifications are shown in **Figure 3.0-16: Pavement Condition Index: Bridges**.

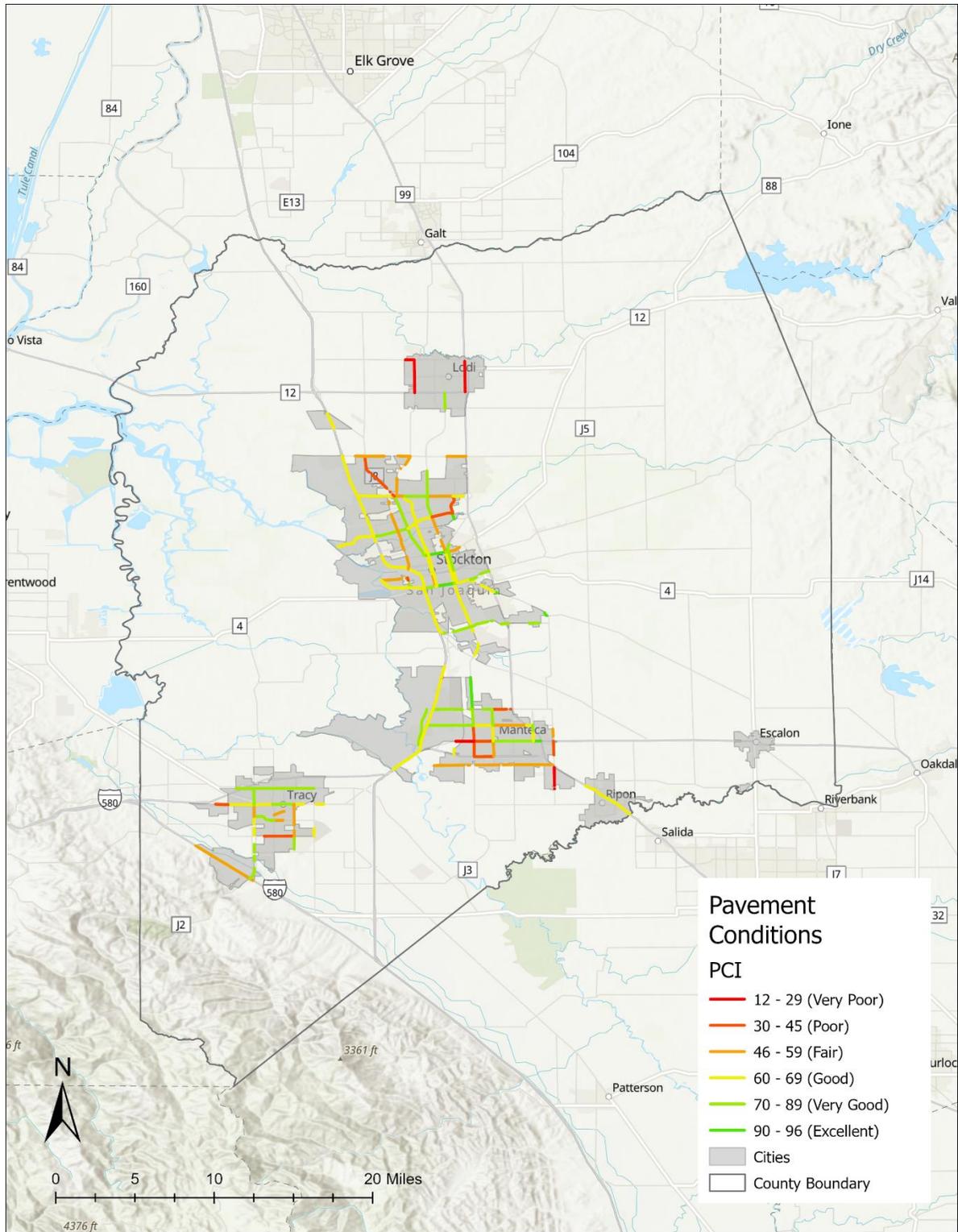


Figure 3.0-14: Pavement Condition Index: Cities

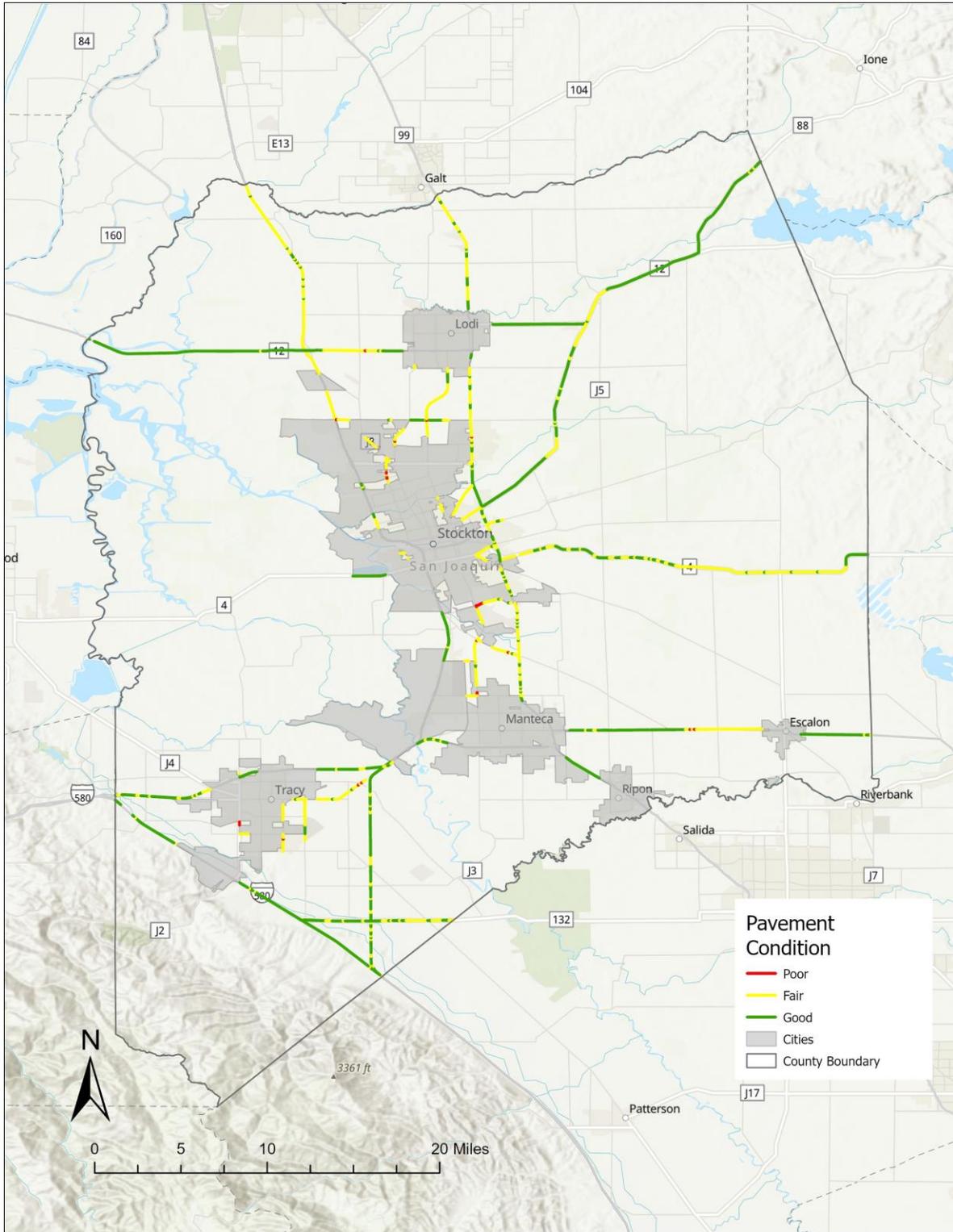


Figure 3.0-15: Pavement Condition Index: Unincorporated

San Joaquin Council of Governments  
Regional Congestion Management Program

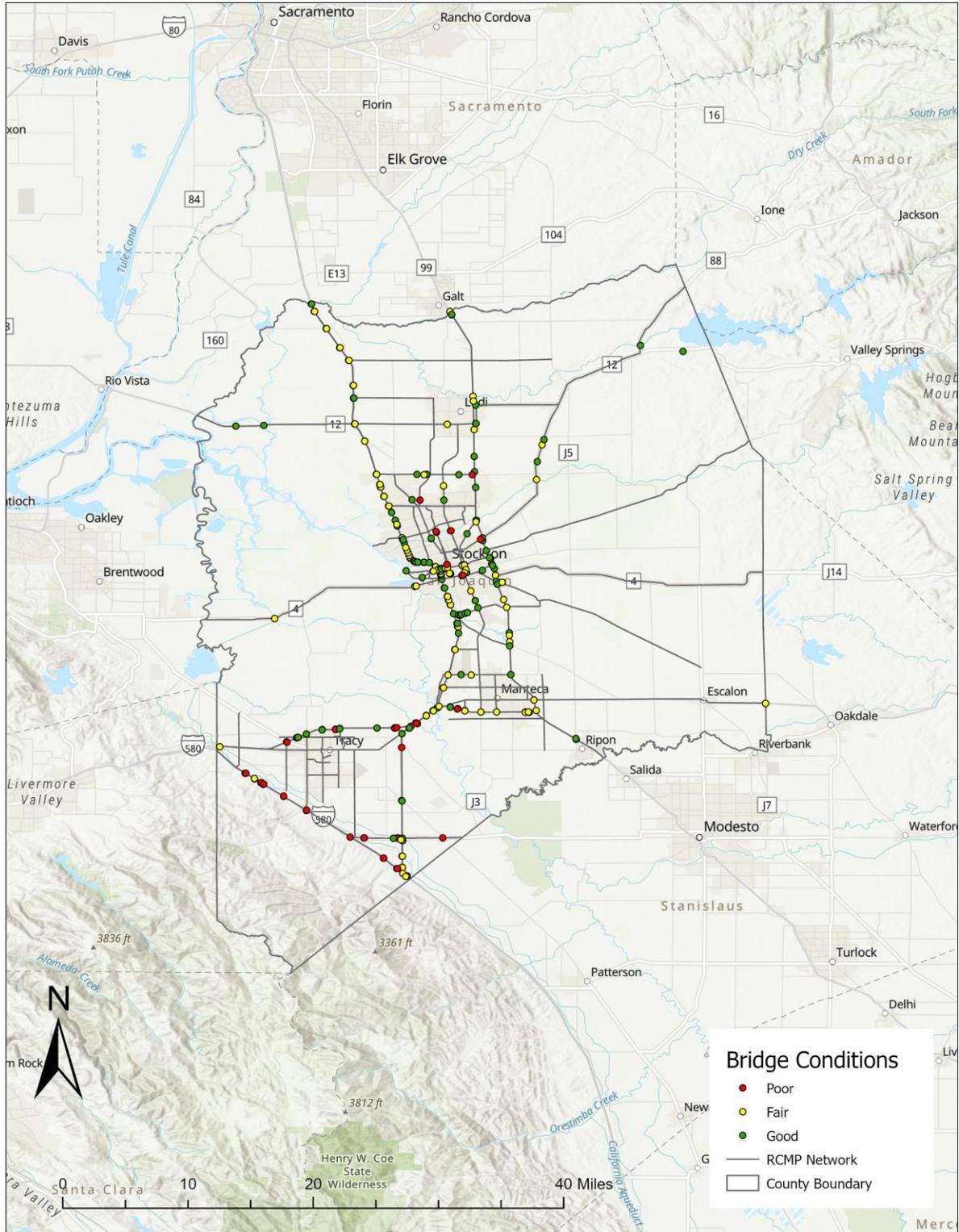


Figure 3.0-16: Pavement Condition Index: Bridges

## 4.0 FEDERAL PERFORMANCE MANAGEMENT RULE

### 4.1 INTEGRATION WITH FEDERAL PERFORMANCE MEASURES

The federal performance management rule required state departments of transportation (DOTs) and metropolitan transportation organizations (MPOs) to implement the federal performance measures by 2018. The federal performance measures were thematically split into the three groupings under the rubric of “performance management” (PM). 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., during RTP/SCS updates) or will be addressed by Caltrans or Caltrans data analysis tools.

The federal performance measures are as follows:

- **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 CO<sub>2</sub> emissions on NHS compared to 2017 level (NHS)
  - 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 for submitting performance targets and annual progress reports on those targets to federal agencies. To complete the required reporting tasks more efficiently for both federal CMP and the federal performance management rule, SJCOG has integrated many of the PM1-3 federal performance measures as RCMP performance measures.

The RCMP does not report the federal PM3 emissions performance measures These include:

- Percent change in tailpipe CO<sub>2</sub> emissions on NHS;
- Annual hours of peak hour excessive delay (PHED) per capita; and,
- Percent of non-single occupancy vehicle (SOV) travel and total emissions reduction.

Integration of these performance measures may be considered during the next RCMP update.

The RCMP monitors and reports on the federal PM1 safety performance measures as well as the federal PM2 asset management metrics (reporting of the IHS and non-IHS NHS system is deferred to Caltrans). SJCOG works with its local agencies to report the PM3 non-NHS system roadways identified in the RCMP. MPOs, such as SJCOG, are required to establish targets specific to their planning area, or support the statewide targets, and annually submit progress reports. SJCOG accepted the statewide targets and per agreement with Caltrans, SJCOG began this reporting requirement in 2019. The Caltrans/SJCOG targets established for safety are shown in **Table 4.0-1**. As shown, of the five metrics established to track safety performance, none currently being met. Over the two-year period from 2019 to 2021, all five metrics are trending in the wrong direction (serious injuries, serious injury rate and number of non-motorized fatal and serious injuries).

**Table 4.0-1: Caltrans Adopted Safety Performance Targets and SJCOG 2021 Results**

| Performance Target  | Percent Reduction Target From 2019 | 2021 Percent Change of 2019 |
|---|------------------------------------|-----------------------------|
| Number of Fatalities  | +5.2%                              | +15.2%                      |
| Rate of Fatalities (per 100M VMT)                                     | +4.9%                              | +26.6%                      |
| Number of Serious Injuries  | +21.5%                             | +9.0%                       |
| Rate of Serious Injuries (per 100M VMT)                               | +20.8%                             | +19.7%                      |
| Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries | +9.9%                              | +0.4%                       |

## 5.0 STUDY REFERENCES

### San Joaquin Council of Governments (SJCOG)

|                 |                         |
|-----------------|-------------------------|
| Travis Yokoyama | Senior Regional Planner |
| Joel Campos     | Senior Regional Planner |
| Ty Phimmasone   | Senior Regional Planner |

### Consultant Team

|                       |                                |
|-----------------------|--------------------------------|
| Darryl DePencier      | Consultant Project Manager     |
| Ayberk Kocatepe, Ph.D | Consultant Engineering Analyst |
| Zander Dally          | Consultant Engineering Analyst |
| Atticus Washington    | Consultant Engineering Analyst |
| Mike Schmitt          | Consultant Principal Planner   |