

SAN JOAQUIN COUNTY

REGIONAL CONGESTION MANAGEMENT PROGRAM 2021 MONITORING REPORT



Prepared for:
San Joaquin Council of
Governments

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SAN JOAQUIN COUNTY

RCMP 2021 MONITORING REPORT



San Joaquin Council of
Governments

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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 (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 1-3 performance measures.
- Compliance with the SJCOG's Measure K renewal requirements, and
- Compliance with the Federal Congestion Management Process¹.

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)*.

This report provides a snapshot of the "state of congestion" on the county's designated RCMP roadway network as defined in SJCOG's 2021 RCMP. 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 pre-COVID-19 2019-20 data from varied sources. For performance metrics not sensitive to shelter-in-place restrictions, the most recent data was applied (i.e., 2020-21).

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

¹ The federal Congestion Management Process requires an increased multimodal travel demand management (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.

- Travel Demand Management
- Safety
- Asset Management (Pavement Condition)

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 March 2019 to March 2020 (pre-pandemic shelter-in-place restrictions), approximately 95% of all Interstate Highway System (IHS) and 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 the non-IHS NHS segments was much greater (11.5%) during the PM peak hour relative to the IHS segments. Based on the 80th percentile travel time, more than 95% of NHS miles operated reliably during both AM and PM peak hours. Based on the 95th percentile travel time, the percentage of reliable roadway miles were lower but still high at or above 85%. For truck traffic only, the 80th percentile travel time showed that more than 95% of IHS miles were reliable for truck travel during both AM and PM peak hours. Reliable roadway percentages slightly decrease when based on the 95th percentile travel time.

Based on the combined speed-based congestion and reliability results, an initial/preliminary list of deficient corridors were identified and are listed below.

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

This list of deficient corridors above is considered preliminary. It is recommended that at least two rounds of consecutive monitoring be performed to verify roadway performance.

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 linear 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 69% of San Joaquin County's residential households and 67% of San Joaquin County jobs are located within a half-mile walking distance to a transit stop. Only 12% of households are located close to transit stops with peak period service frequency quality of service C or better (15 minute or less headways), but almost 52% more of the residential population are close to transit stops with peak period service frequency quality of service E (60-minute or less headways).

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, 282.5 miles of the envisioned 1,157 miles or 24.4% had been constructed. This includes 83 of 190 envisioned miles of Class I bicycle paths, 114.5 of 256 envisioned miles of Class II bicycle lanes, and 86 of 429 envisioned miles of Class III shared bicycle routes.

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 degree of "Complete Street" quality of service for pedestrians, bicyclists, and transit the Complete Street Quality of Service (CSQOS) methodology (as described in the Highway Capacity Manual 6th Edition) is applied.

Summing all CSQOS results over the 13 multimodal corridors (for both the AM/PM peak hours) indicates that in general pedestrian QOS is "C"; bicyclists QOS is "D" and transit QOS is "E". Given that traffic volumes, transit scheduling, or roadway geometry did not significantly change since the prior RCMP monitoring report, a new analysis to estimate complete street quality of service (CSQOS) was not required for this monitoring report (no discernable performance trend).

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, 33 new vanpools were formed in 2018-19, 60 were added in 2019-20 and 244 were added in 2021. The total number of formalized vanpools has increased from 123 in 2018-19 to 321 in 2020-21. The estimated annual reduction of vehicle miles traveled (VMT) from dibs

vanpools between 2018 and 2021 has remained strong increasing by nearly 160%. On average, approximately 215 VMT is reduced per weekday per van in San Joaquin County. Additionally, San Joaquin County residents logged 6,265 "Smart-Travel" trips. Non-residents logged 19, 431 "Smart-Travel" trips to San Joaquin County employer sites for a total of 25,696 trips logged.

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 pre-COVID-19 2019 Transportation Injury and Mapping System (TIMS) data.

The number of fatalities on San Joaquin County roadways has been increasing since 2012. The serious injury trend has increased 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 that even though the absolute number of fatalities per year hasn't decreased, the rate of fatalities has. Conversely, 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 segments (roadways with fatality rates of 10 or more fatalities per 100 million VMT) were observed in the Stockton and Manteca while high-serious injury segments were mostly observed in the Lodi, Stockton, Manteca, Tracy, and County unincorporated areas. 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. Of the five metrics established to track safety performance, only one is currently being met (rate of fatalities).

ASSET MANAGEMENT

To monitor the state of good repair of the designated RCMP roadway network and infrastructure asset system, Pavement Condition Index (PCI) data was used to determine if the pavement condition is in "Good" "Fair" or "Poor" condition. Results indicate that:

- For interstate highways, 66% of lane- miles were in good condition, 34% in fair condition, and none were found to be in poor condition;
- For non-IHS NHS segments, 33% of lane-miles were in good condition, 62% in fair condition, and 5% were in poor condition;
- For non-NHS segments (i.e., locally owned and maintained roadways), 38% of centerline miles were in good condition, 45% in fair condition, and 17% were in poor condition; and,
- For the NHS bridges within the county, 59% of deck areas are in good condition, 27% in fair condition, and 14% are in poor condition.

Based on the 2019 pavement condition data for IHS and NHS designated roadways, 2020 data for bridge deck conditions, and 2020-21 data for local non-NHS roadways, the state of good repair pavement condition targets adopted by Caltrans and accepted by SJCOG are being met in San Joaquin County for the Interstate Highway System and the Non-IHS National Highway System. Conversely, the state of good repair targets for National Highway System bridges are currently not being met in San Joaquin County.

1.0 INTRODUCTION

1.1 PROGRAM BACKGROUND

This report documents the 2019-21 monitoring results for 2021 SJCOG RCMP Update that implements the federal congestion management process². A federal congestion management process (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 Congestion Management Program requirements in July 2021. The SJCOG 2021 Regional Congestion Management Program specifically addresses the federal congestion management process 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 congestion management process.

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 1-1**. 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 congestion management process³.

² As of July 2021, San Joaquin County formally opted-out of the state CMP requirements. The SJCOG 2021 Regional Congestion Management Program specifically addresses the federal congestion management process requirements.

³ The federal congestion management process requires an increased multimodal travel demand management (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 congestion management process stipulates (*23 CFR 450.320 (d)*) that federal funds may not be programmed for any project that results in a significant increase in the carrying capacity of single occupancy vehicles (i.e., new general purpose lanes with the exception of safety improvements or the elimination of bottlenecks) unless the project is addressed through a federally compliant congestion management process. For SOV capacity increasing projects proposed to be advanced with federal funds, an analysis is required to demonstrate that all reasonable travel demand reduction and operational management strategies have been implemented to the fullest extent possible on the subject roadway (*23 CFR 450.320 (e)*). If the analysis demonstrates that despite these strategies additional SOV capacity is still required, the federal CMP will identify all reasonable strategies to effectively manage the SOV facility in the future.

1.2 RCMP IMPLEMENTATION

SJCOG coordinates with all the local member agencies listed below. **Table 1-1** 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 1-1: SJCOG Congestion Management Process

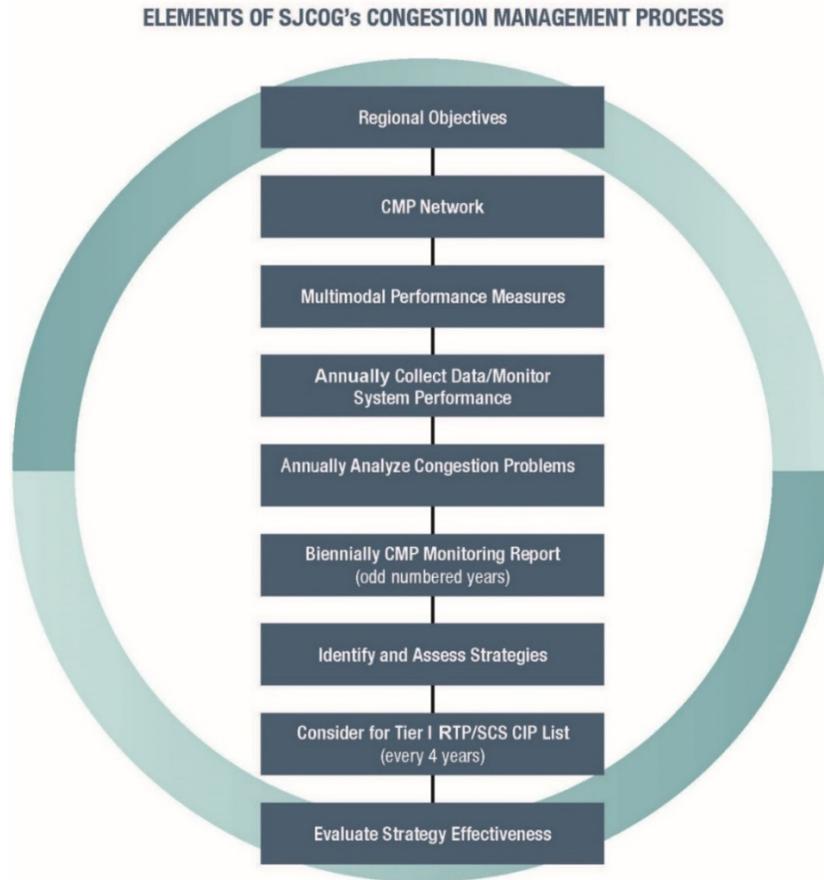


Table 1-1: Agency Responsibilities

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

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

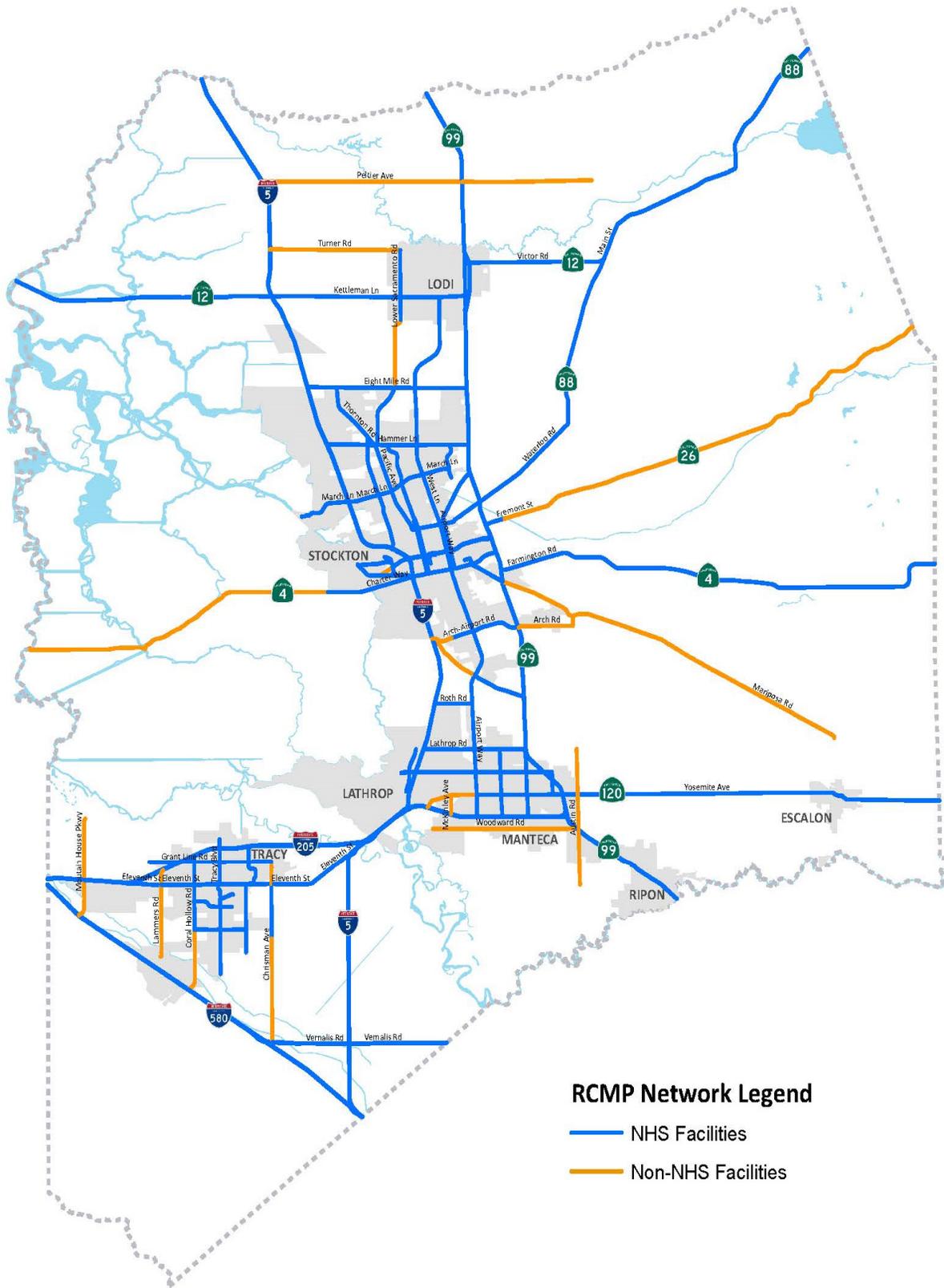
The RCMP network at a minimum reflects all roadways designated as part of the National Highway System (NHS). If the Federal Highway Administration (FHWA) updates the NHS network SJCOG will amend the RCMP network to reflect such changes. In addition to the NHS designated roadways, SJCOG in coordination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

As shown in **Table 2-1**, the RCMP network consists of total 504 centerline miles of which 396 are on NHS designated roadways and 108 are on non-NHS roadways. At this time, continuous monitoring of vehicular speeds by the Federal Highway Administration’s National Performance Monitoring Research Data Set (NPMRDS) is only available on the NHS designated roadways. SJCOG plans to augment the speed monitoring to include the 108 centerline miles of non-NHS roadways for future performance reporting.

Table 2-1: RCMP Network by Centerline Miles

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

Figure 2-1: San Joaquin County RCMP Roadway Segments



Source: SJCOG RCMP Report, 2021

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.

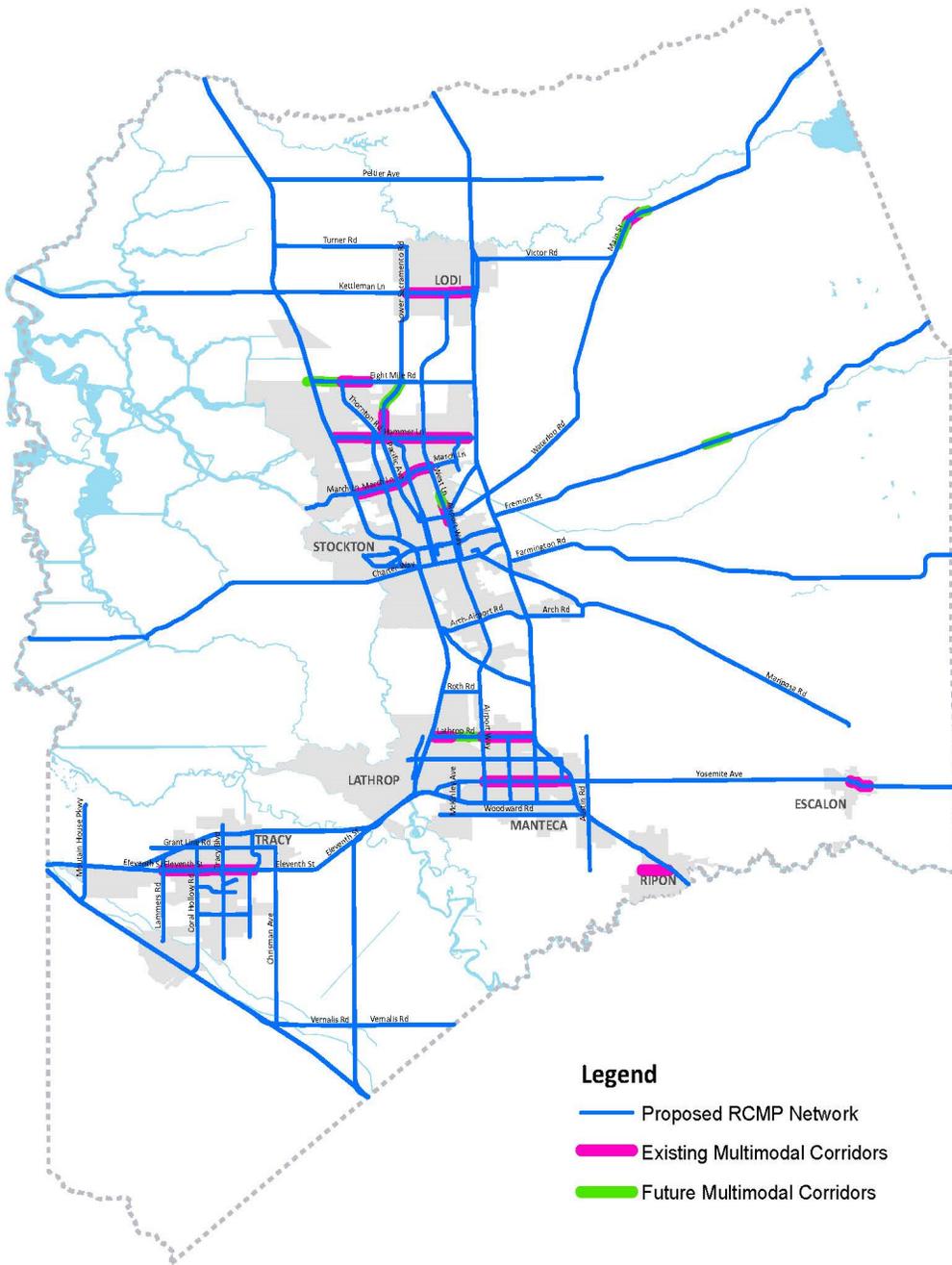
Based on the above guidance, the list of RCMP multimodal corridors is shown in **Figure 2-2** and listed by jurisdiction in **Table 2-2**. Both the table and figure indicate corridors that will be analyzed by SJCOG to establish baseline conditions and future corridors that will be evaluated when development patterns warrant a multimodal analysis. The potential for new multimodal corridors is evaluated during each four-year RCMP update cycle.

Table 2-2: RCMP Multimodal Corridors

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

Source: SJCOG RCMP Report, 2021

Figure 2-2: San Joaquin County RCMP Baseline Multimodal Corridors



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 2-3**. 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.

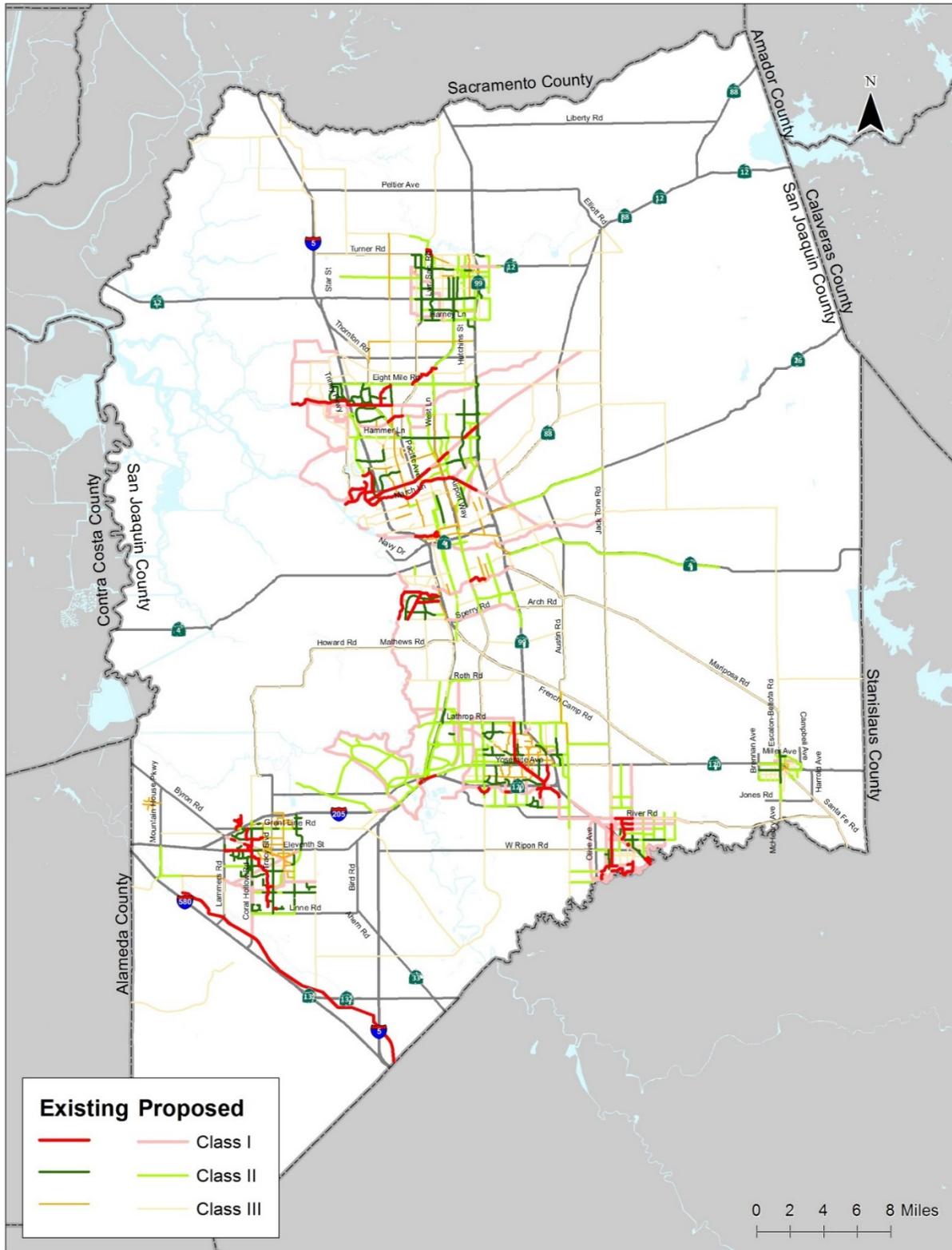
San Joaquin County is served by several local and regional bus transit providers including:

- San Joaquin Regional Transit District provides local bus service for Stockton and regional connections between San Joaquin County, cities, Bay Area Rapid Transit (BART), Alameda County employment centers, and Sacramento;
- Lodi Grapeline provides local bus service for Lodi;
- TRACER provides local bus services for Tracy;
- Manteca Transit provides local bus service for Manteca;
- 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.

Each fixed route provider also offers complementary paratransit services for the elderly and people with disabilities.

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 2-3: San Joaquin County RCMP 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 congestion management process to result in multimodal system performance measures and strategies that can be reflected in the regional planning documents, such as the Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP). As such, SJCOG’s RCMP must include a performance element that includes performance measures to evaluate current and future multimodal system performance for the movement of people and goods. The performance measures should incorporate highway and roadway system performance, 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 3-1**, 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 3-1: RCMP Performance Measure

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 Caltrans: AADT Vehicle Occupancy (Surveys, CHTS)
Operational Efficiency	RCMP	Travel Time Reliability (TTR) Index (80% and 95% travel time) (All vehicles)	Percent of miles (on IHS and non-IHS NHS) that are reliable (TTR)	FHWA: NPMRDS
Operational Efficiency	RCMP	Congestion & TTR (95% travel time)	“Facility Specific” that are congested and/or unreliable. Provides basis for identifying RCMP deficient corridors.	FHWA: NPMRDS
Goods Movement & Operational Efficiency	RCMP	STAA Intersections	Track STAA-compliant intersections listed as part of Interregional Truck Operations on I-5 and SR-99 and STAA Routes Study	SJCOG RCMP
Goods Movement & Operational Efficiency	PM3	Truck Travel Time Reliability Index (80% and 95% travel time)	Percentage of IHS mileage that are reliable (TTTR)	FHWA: NPMRDS
Goods Movement & Operational Efficiency	RCMP	Truck Congestion & TTR (95% travel time)	“Facility Specific” that are congested (congested speed less than 60% of free flow truck speed) and/or unreliable. Provides basis for identifying RCMP deficient corridors.	FHWA: NPMRDS
Transit System	RCMP	Transit Coverage	Population & employment within ½-mile walking distance of a transit stop	Transit Agencies: transit data U.S. Census: population data VMIP2 Land Use Data: household and employment data
Transit System	RCMP	Transit Frequency	Level of service for service frequency of transit vehicles per hour (Transit Capacity and Quality of Service Manual)	Transit Agencies: transit line information
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 th Edition – Quality of Service SJCOG: Infrastructure Improvements, transit service schedules, traffic counts
Travel Demand Management	RCMP	Commuter VMT Reduction	Track San Joaquin County employer and employee participation rates for commute to work mode.	SJCOG - Dibs
Travel Demand Management	RCMP	VMT Per Capita	Land Use Efficiency	VMT: HPMS Population: Department of Finance
Safety	PM1	Fatal Collisions & Rates	Number of fatalities Fatalities per 100 million VMT	Collision/incident data: FARS/SWITRS VMT data: HPMS, SJCOG, local counts
Safety	PM1	Serious Injury Collisions & Rates	Number of serious injuries Serious injuries per 100 million VMT	Collision/incident data: TIMS/SWITRS VMT data: HPMS, SJCOG, local counts
Safety	PM1	Number of Collisions	Number of non-motorized fatalities and non-motorized serious injuries	Collision/incident data: SWITRS
System Management	PM2	PCI / PSI / IRI / Qualitative	PM2 Percentage of pavements of the Interstate System in Good Condition & Poor Condition	Local Agency Pavement Management Systems or Caltrans (for State Highways)
System Management	PM2	PCI / PSI / IRI / Qualitative	Percentage of pavements of the non-Interstate NHS in Good Condition & Poor Condition	Local Agency Pavement Management Systems or Caltrans (for State Highways)
System Management	PM2	PCI / PSI / IRI / Qualitative	Percentage of NHS bridges classified as in Good Condition & Poor Condition	Local Agency Pavement Management Systems or Caltrans (for State Highways)

3.1 OPERATIONAL EFFICIENCY (TRAVEL AND FREIGHT)

Two federal performance measures form the basis for tracking operational efficiency of passenger vehicles and heavy-duty trucks on the RCMP network respectively. They are Congestion and Travel Time Reliability and reflect the stability and variability of travel on a given roadway respectively. Both measures reflect 12 months of continuous National Performance Management Research Data Set (NPMRDS) speed data monitored from March 2019 to March 2020 (i.e., pre-pandemic conditions). Each are described below and in **Table 3-2**.

Congestion

The federal definition from the National Performance Management Measures Rule is used to define congestion for the RCMP. The congestion threshold is triggered if observed peak hour average speed is less than 60 percent of free-flow speed. This congestion metric is applied to both passenger vehicles; passenger vehicle and heavy-duty trucks; and heavy-duty trucks. The following federal reliability performance measures were evaluated in this report:

- Percent of congested centerline miles on Interstate Highway System (IHS)
- Percent of congested centerline miles on the non-IHS National Highway System (NHS)
- Congested centerline miles on RCMP network.

Reliability

The federal guidance has emphasized the use of travel time reliability as a key metric, particularly for congestion management. Travel time reliability is a performance measure that accounts for the variance in travel times associated with motorized travel. The following federal reliability performance measures were evaluated in this report:

- Percent of centerline miles (on IHS and non-IHS NHS) that are reliable
- Percentage of IHS mileage that are reliable for trucks

Table 3-2: Congestion and Reliability Thresholds

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

¹ Buffer Time Index – Measures percentage of travel time devoted to being on time above and beyond average travel time

² Free flow speeds are estimated for each segment based on NPMRDS data during the hours of midnight to 3 AM

Given that the Highway Capacity Manual (HCM) (6th Edition) defines travel time reliability using the 95th percentile travel time, both 80th and 95th percentile travel time reliability metrics are provided.

Table 3-3: lists the percentages of congested miles on IHS and non-IHS NHS segments in the county. Approximately 95% of IHS and NHS segments were not congested during the AM peak hour. Conversely, the percentage of congested miles was much higher (11.5%) on the non-IHS NHS segments during the PM peak hour compared to the IHS segments.

Table 3-4: provides percentages of miles on NHS segments that were reliable. Based on the 80th percentile travel time, more than 95% of NHS miles were reliable during both AM and PM peak hours. The percentages were lower based on the 95th percentile travel time compared to the 80th percentile travel time, however, the percentages were still above 85%.

Table 3-5: shows the percentages of IHS miles that were reliable for truck travel. Based on the 80th percentile travel time, more than 95% of IHS miles were reliable during both AM and PM peak hours. The percentages of reliable IHS miles were slightly lower based on the 95th percentile travel time compared to the 80th percentile travel time.

Table 3-3: Percent of Congested Miles on RCMP Network – All Vehicles (NHS Only)

Facility	Percent of Congested Centerline Miles	
	AM	PM
Interstate Highway System (IHS)	5.52%	1.02%
Non-IHS National Highway System (NHS)	4.79%	11.55%
Non-NHS RCMP Roadways	n/a	n/a

Table 3-4: Percent of Reliable Miles on RCMP Network – All Vehicles (NHS Only)

Facility	Percent of Reliable Centerline Miles			
	80th Percentile Travel Time-Based		95th Percentile Travel Time-Based	
	AM	PM	AM	PM
Interstate Highway System (IHS)	98.30%	100.00%	94.20%	97.59%
Non-IHS National Highway System (NHS)	99.66%	99.79%	87.30%	86.34%
Non-NHS RCMP Roadways	n/a	n/a	n/a	n/a

Table 3-5: Percent of Reliable Miles on RCMP Network – Trucks (IHS Only)

Facility	Percent of Reliable Centerline Miles			
	80th Percentile Travel Time-Based		95th Percentile Travel Time-Based	
	AM	PM	AM	PM
Interstate Highway System (IHS)	98.30%	100.00%	93.78%	97.07%
Non-NHS RCMP Roadways	n/a	n/a	n/a	n/a

n/a – data unavailable. SJCOG will be expanding INRIX data collection to include Non-NHS RCMP roadways in future monitoring cycles

Figures 3-1 through 3-4 provides the detailed segment-based congestion and reliability results combined for the RCMP network during AM or PM peak hour. Overall, there were more congested and unreliable RCMP segments during the PM peak hour than during the AM peak hour for all vehicles or trucks.

Figure 3-1: Congestion/Reliability Map – All Vehicles, AM Peak Hour (March 2019 – March 2020)

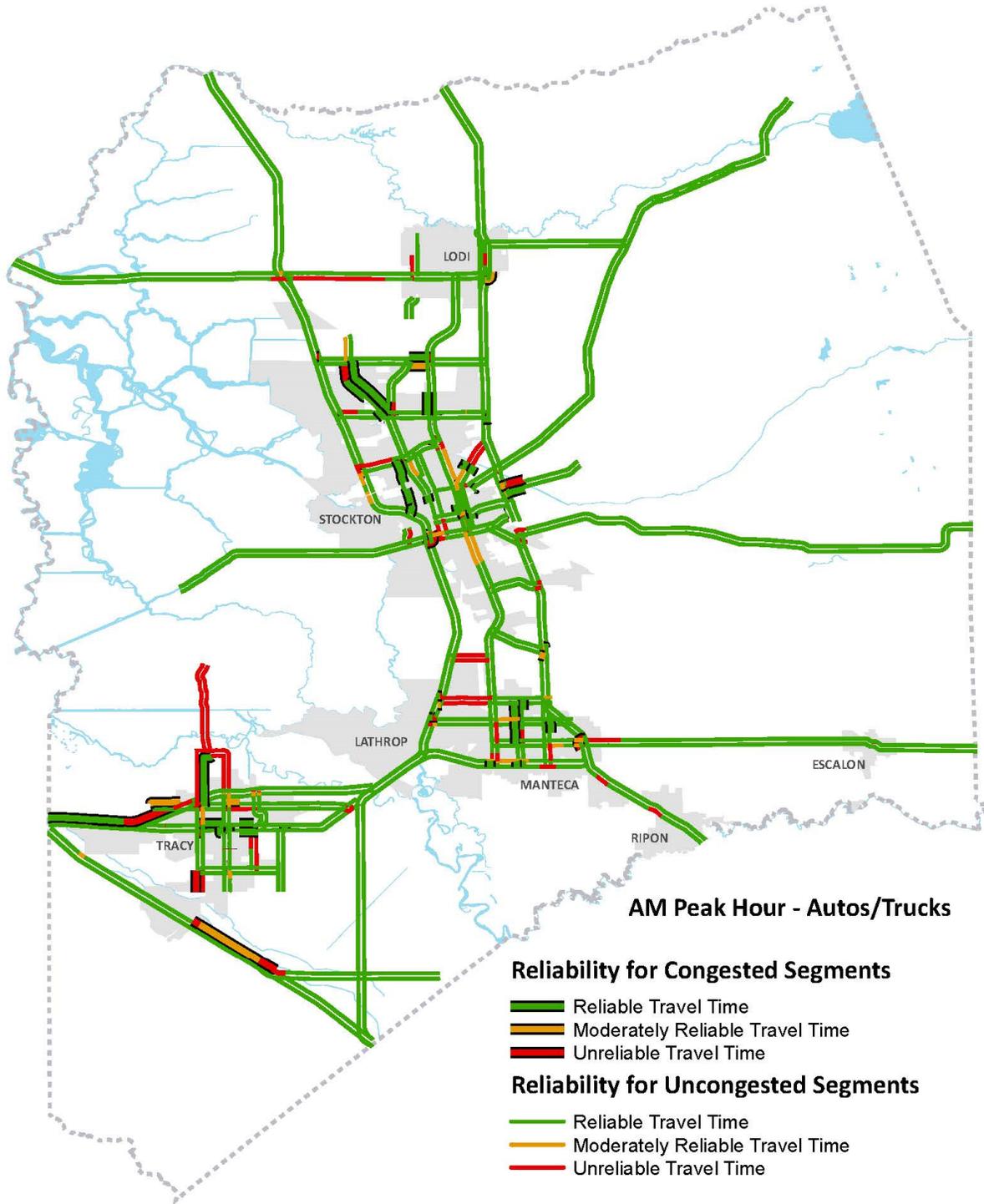


Figure 3-2: Congestion/Reliability Map – All Vehicles, PM Peak Hour (March 2019 – March 2020)

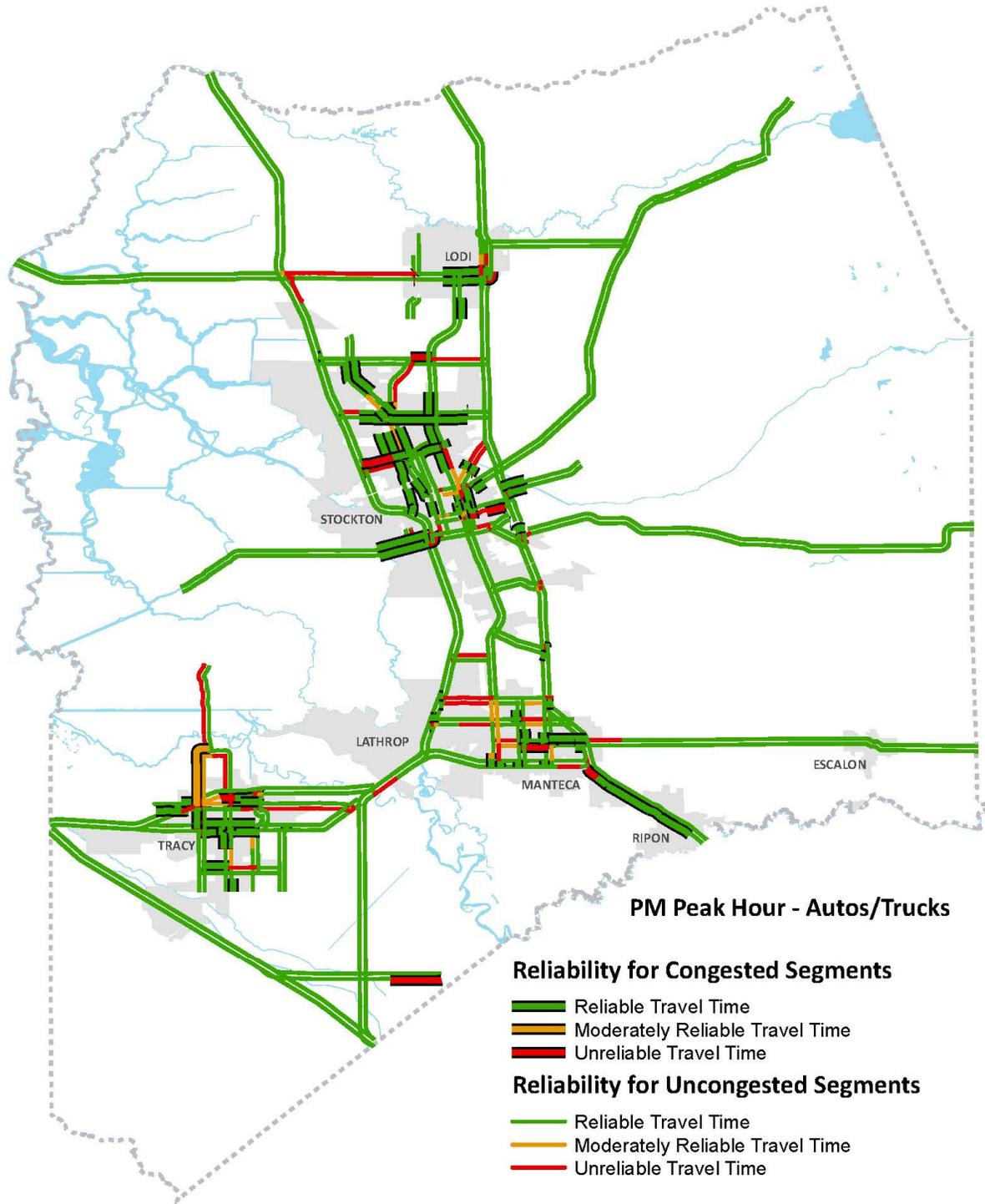


Figure 3-3: Congestion/Reliability Map – Trucks, AM Peak Hour (March 2019 – March 2020)

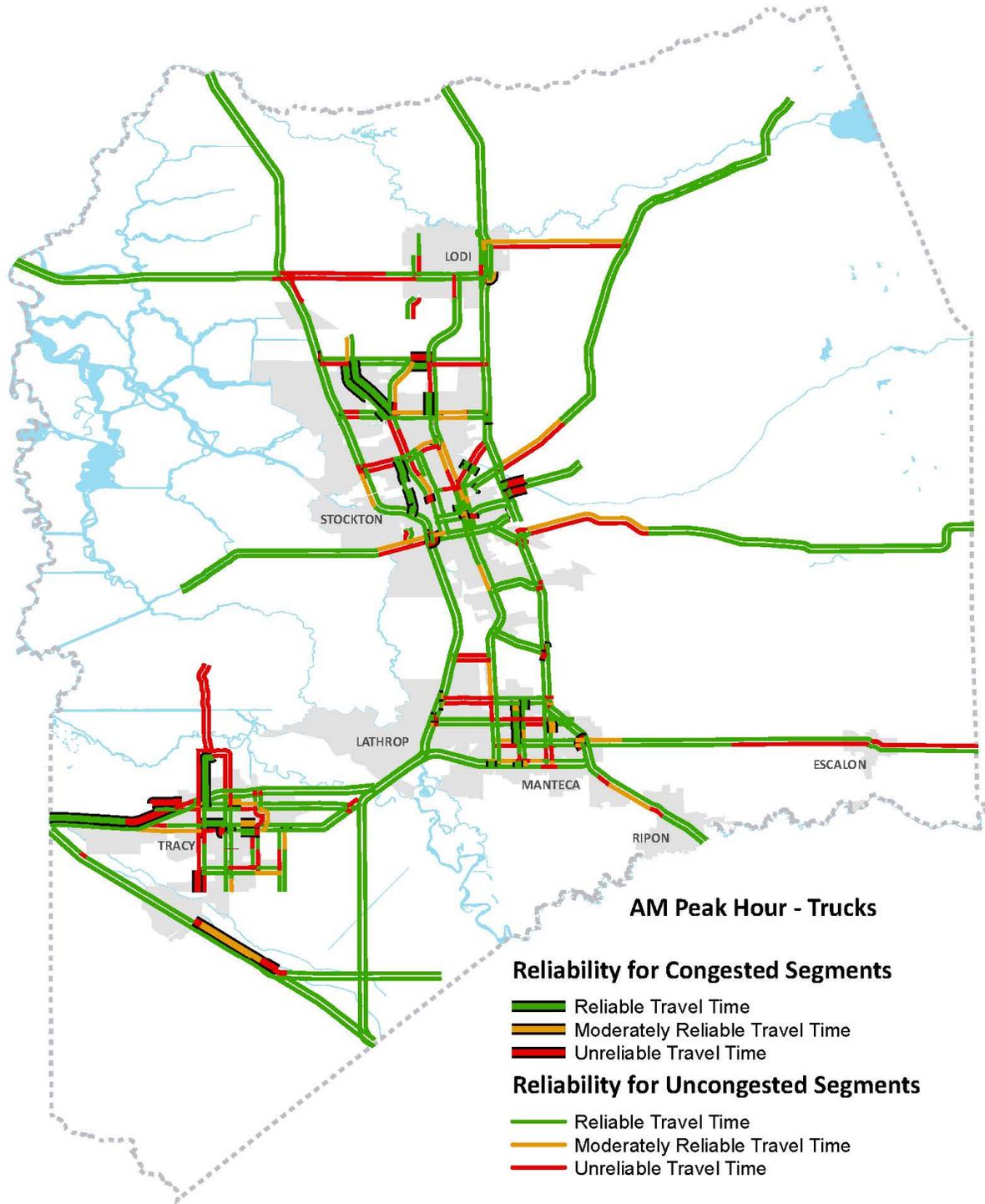
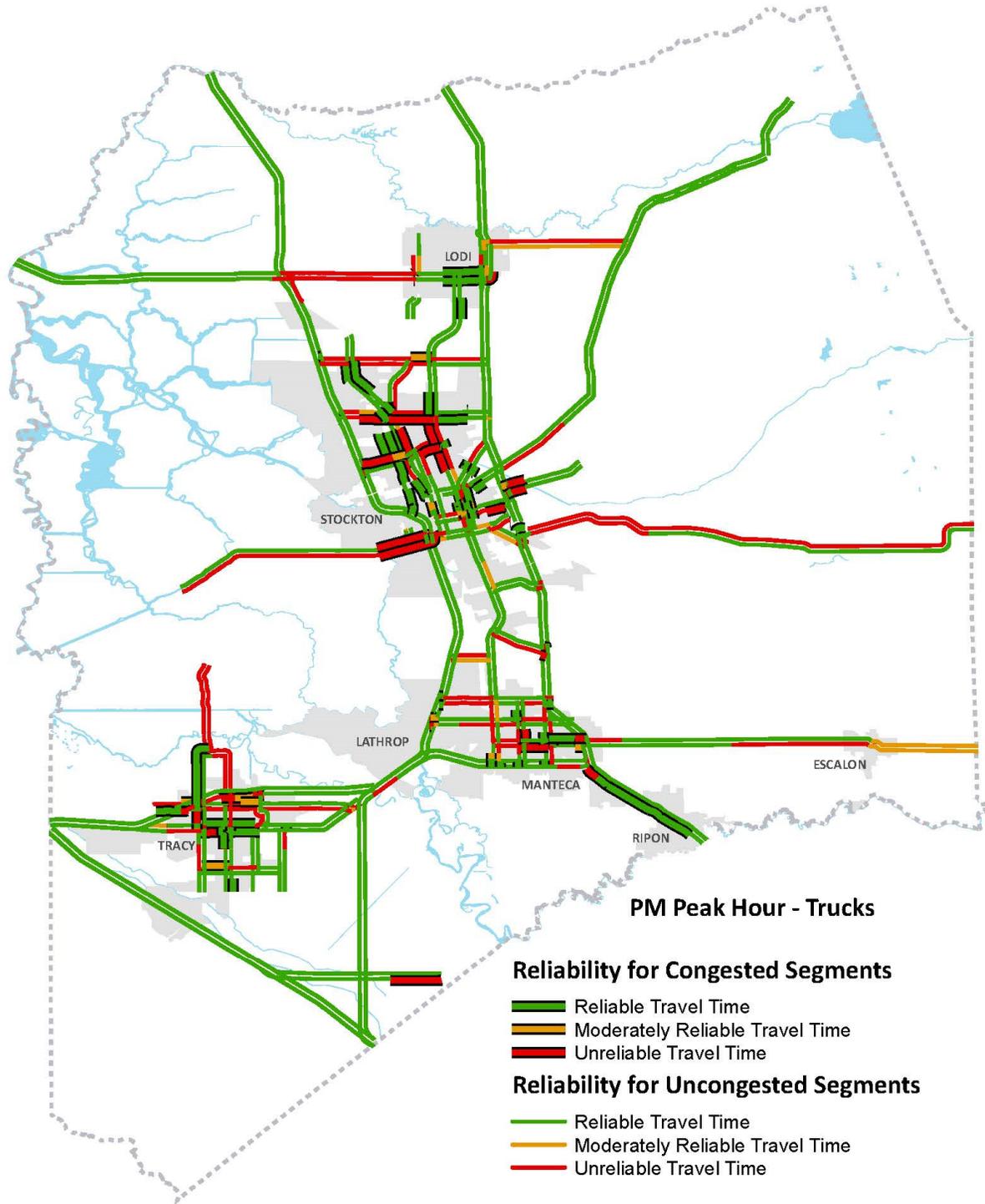


Figure 3-4: Congestion/Reliability Map – Trucks, PM Peak Hour (March 2019 – March 2020)



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

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

Based on the criteria above the initial/preliminary deficient corridors are listed below and mapped in **Figure 3-5**.

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

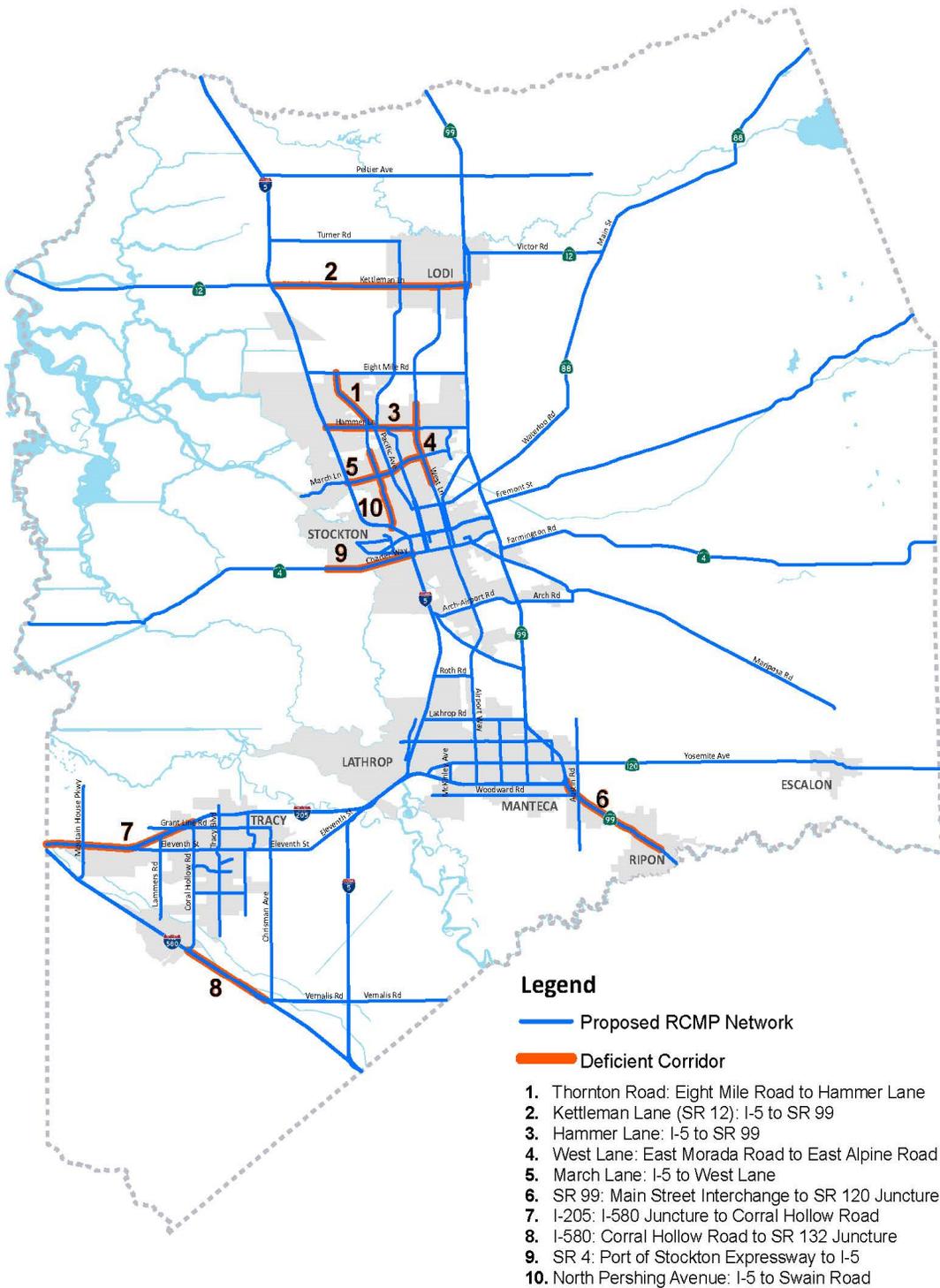
This list of deficient corridors above is considered preliminary. It is recommended that at least two rounds of consecutive monitoring be performed to verify roadway performance. Congestion management strategies to address the congestion and unreliability experience along these corridors is described in the RCMP (SJCOG, 2021).

Although the 2019 monitoring year results provide the formal basis for identifying the preliminary list of RCMP deficient corridors, prior year (2017-2018) congestion and reliability results developed for SJCOG's 2018 RTP/SCS indicate several additional corridors as being deficient. These include:

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

These corridors are listed herein as potential "on the cusp" corridors and future rounds of RCMP monitoring will yield more definitive results.

Figure 3-5: Preliminary RCMP Deficient Corridors (March 2019 – March 2020)



3.2 TRANSIT SYSTEM

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 linear buffers (roadway distances). The goal of evaluating peak period transit frequency is to determine the likelihood that commuter travelers would use transit regularly. For the fixed-route local and deviated fixed-route bus services, peak period transit quality of service may be best described using the thresholds for urban scheduled transit service, as shown in **Table 3** Error! Reference source not found.-6.

Table 3-6: Transit Frequency Quality of Service Thresholds

Quality of Service	Adjusted Service Frequency (veh/hour)	Headway (minutes)	Comments
A	>6.0	<10	Passengers don't need schedules
B	4.01 to 6.0	10 to 14	Frequent service, passengers consult schedules
C	3.0 to 4.0	15 to 20	Maximum desirable time to wait if transit vehicle missed
D	2.0 to 2.99	21 to 30	Service unattractive to choice riders
E	1.0 to 1.99	31 to 60	Service available during hour
F	<1.0	>60	Service unattractive to all riders

Source: FDOT Quality/Level of Service Handbook, 2013

Pre-pandemic transit service schedules relative to 2015 household and job data from SJCOG's travel demand model baseline formed the basis for this analysis. Households or jobs, within half-mile of an equal or better than transit frequency level (e.g., LOS), is accounted for. The numbers of households and jobs in each jurisdiction at transit frequency level are shown in **Table 3-7** and **Table 3-8** respectively.

Currently, approximately 69% of San Joaquin County's residential households and 67% of San Joaquin County jobs are located within a half-mile walking distance to a transit stop. Only 12% of households are located close to transit stops with peak period service frequency quality of service C or better (15 minute or less headways), but almost 52% more of the residential population are close to transit stops with peak period service frequency quality of service E (60 minute or less headways).

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.

Other transit agencies did not make many changes. Escalon's E-Trans and Ripon's Blossom Express reduced their service by up to an hour. Lodi's Grapeline increased their service by 20 minutes. Tracy's TRACER eliminated peak hour service for two of routes. Manteca Transit made no changes. All results reflect pre-pandemic shelter-in-place restrictions.

Table 3-7: Household Proximity to Transit

2015 - Existing Services											
	Rating	QOS F or Better		QOS E or Better		QOS D or Better		QOS C or Better		QOS B	
	Headway	>60 Min.		31 - 60 Min.		21 - 30 Min.		15 - 20 Min.		10 - 14 Min.	
	Tot HH	Served	%	Served	%	Served	%	Served	%	Served	%
San Joaquin County	223,027	190,997	85.6%	149,799	67.2%	49,973	22.4%	37,396	16.8%	25,711	11.5%
Escalon	2,450	1,317	53.7%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Lathrop	5,448	4,235	77.7%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Lodi	22,341	21,190	94.8%	21,014	94.1%	-	0.0%	-	0.0%	-	0.0%
Manteca	25,330	21,401	84.5%	18,181	71.8%	-	0.0%	-	0.0%	-	0.0%
Ripon	5,108	4,372	85.6%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Stockton	109,026	106,551	97.7%	90,704	83.2%	39,512	36.2%	37,366	34.3%	25,711	23.6%
Tracy	24,207	23,743	98.1%	18,944	78.3%	10,424	43.1%	-	0.0%	-	0.0%
Unincorporated	29,117	8,188	28.1%	956	3.3%	36	0.1%	30	0.1%	-	0.0%

Note: Analysis found no transit service meet LOS A threshold.

Table 3-8: Employment Proximity to Transit

2015 - Existing Services											
	Rating	QOS F or Better		QOS E or Better		QOS D or Better		QOS C or Better		LOS B	
	Headway	>60 Min.		31 - 60 Min.		21 - 30 Min.		15 - 20 Min.		10 - 14 Min.	
	Tot EMP	Served	%	Served	%	Served	%	Served	%	Served	%
San Joaquin County	234,983	191,836	81.6%	161,664	68.8%	77,358	32.9%	59,693	25.4%	48,714	20.7%
Escalon	1,819	1,514	83.2%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Lathrop	6,185	4,826	78.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Lodi	23,762	22,693	95.5%	21,950	92.4%	-	0.0%	-	0.0%	-	0.0%
Manteca	16,820	15,901	94.5%	14,921	88.7%	-	0.0%	-	0.0%	-	0.0%
Ripon	3,891	3,272	84.1%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Stockton	126,335	119,118	94.3%	110,093	87.1%	64,906	51.4%	59,626	47.2%	48,714	38.6%
Tracy	20,826	18,105	86.9%	14,326	68.8%	12,379	59.4%	-	0.0%	-	0.0%
Unincorporated	35,344	6,407	18.1%	375	1.1%	72	0.2%	67	0.2%	-	0.0%

Note: Analysis found no transit service meet LOS A threshold.

3.3 BIKEWAY SYSTEM

SJCOG has collected an inventory of existing and planned bicycle facilities throughout San Joaquin County. This inventory is used to observe the incremental progress of building out the desired bicycle system in the County. As facilities are constructed and moved from the planned list to the existing list, the change in bikeway mileage will be calculated. Additionally, as planned facilities are removed when built and added as conceived, the development of the planned system can also be tracked through the number, length, and class of the proposed facilities.

To track the completion of the regional bikeway network in San Joaquin County, the total number of existing regional bikeway miles (as completed by 2021) is compared to the entire network’s mileage by type of bike facility. As regional bikeways are constructed or programmed, SJCOG will track the ratio of completed bikeways relative to the regional network and report the percent completed.

Relative to the previous RCMP monitoring report, construction of a Class II Bike Lane along Hammer Lane from Alexandria Place to Lower Sacramento Road was completed after 2016 (approximately 1.4 miles). Other regional bikeway improvements in the RTP/SCS including Class II bike lanes on March Lane between Da Vinci Lane and Quail Lakes Plaza have yet to be constructed/completed.

As of the last update to the SJCOG bikeway inventory, 282.5 miles of the envisioned 1,157 miles or 24.4% had been constructed. This includes 83 of 190 envisioned miles of Class I bicycle paths, 114.5 of 256 envisioned miles of Class II bicycle lanes, and 86 of 429 envisioned miles of Class III shared bicycle routes.

The total mileage for each class of bicycle lanes is provided in **Table 3-9**.

Table 3-9: RCMP Bicycle Network Mileage Summary

Scenarios	Total Mileage
Existing	283.5
Bike Path (Class I)	83
Bike Lane (Class II)	114.5
Shared Route (Class III)	86
Separated Route (Class IV)	0
Planned	873.5
Bike Path (Class I)	190
Bike Lane (Class II)	254.5
Shared Route (Class III)	429
Separated Route (Class IV)	0
Total	1,157
Total Percent Complete	24.4%

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. Given that none of these conditions have occurred by 2021 relative to the 2016 monitoring cycle, a new analysis for the complete street quality of service (CSQOS) is not required for this monitoring report. **Table 3-10** and **Table 3-11** summarizes the AM and PM 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 QOS is “C”; bicyclists QOS is “D” and transit QOS is “E”.

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 collects data on the usage of smart travel modes for work commuting through its website (dibsmway.com), which currently has 4,890 members originating in San Joaquin County as of July 2019. The number of vanpools formed has increased during the pandemic with 33 new vanpools formed 2018-19, 60 were added in 2019-20 and 244 were added in 2021. Many of the vans destinations are state agencies, federal agencies and private employers such as Tesla. The most significant gain occurred during the years of COVID 19 pandemic when several state, federal and private manufacturing and distribution centers were considered essential businesses.

The estimated annual reduction of vehicle miles traveled (VMT) from dibs vanpools between 2018 and 2021 is provided in **Table 3-12**. The reduction of VMT from vanpools has remained strong over the last

three years (i.e., since 2018-19 the reduction of VMT and number of vans has increased nearly 160%). On average, approximately 215 VMT is reduced per weekday per van in San Joaquin County.

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 3-12: Estimated Annual Reduction of Vehicle Miles Traveled

Year	# of vans	VMT Reduction Vanpools	VMT Reduction Special Events
2018-19	123	6,654,250	450,980
2019-20	164	9,313,153	362,853
2020-21	321	17,270,150	292,576

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

Logged “alternative mode” trips by dibs participants for San Joaquin County residents and non-residents traveling from other areas to San Joaquin County are reported separately and are shown in **Table 3-13** and **Table 3-14** respectively. Combined, the annual reduction in vehicle miles of travel (VMT) was approximately 274,000 in 2018-19. Due to the COVID 19 pandemic, dibs could not coordinate in-person events and many businesses established remote work policies to limit commuting to a physical workplace. Expectedly, this resulted in a decrease of “logged” dib smart trips reducing the VMT reduction benefit to 228,330 in 2019-20 and 137,520 in 2020-21. As businesses transition back to the office and shelter-in-place restrictions are lifted it is anticipated that logged alternative mode trips will begin to increase to 2018-19 levels in the future.

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.

Table 3-15 shows the 2019 VMT per capita for each jurisdiction in San Joaquin County. The VMT source is the HPMS program while estimates of population is from the California Department of Finance. This metric does not account for the portion of a trip’s VMT that occurs outside the county (metrics do not account for the full length of intercounty trips). As shown, all cities, with the exception of Lathrop, have VMT per capita ranging between 10-19 miles per person per day. This is due to many incorporated area vehicle trips being local in nature (i.e., greater land use efficiency). Unincorporated area VMT per capita and the City of Lathrop are approximately 55 vehicle miles per person per day. Take as a whole, the countywide average VMT per capital is just over 26 miles per person per day.

Table 3-10: Complete Street Quality of Service Employment AM Peak Hour

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

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

Table 3-11: Complete Street Quality of Service Employment PM Peak Hour

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

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

Table 3-13: Alternative Trips Logged and Average Distance in Miles (VMT) Saved (Residents)

FY 2018-19			FY 2019-20			FY 2020-21		
	Alternative Trips Logged	Alternative Distance Logged (mi.)		Alternative Trips Logged	Alternative Distance Logged (mi.)		Alternative Trips Logged	Alternative Distance Logged (mi.)
JUL	124	5,407.0	JUL	119	3,528.1	JUL	144	4,969.6
AUG	99	5,199.2	AUG	142	6,482.2	AUG	104	3,452.0
SEP	114	7,432.2	SEP	168	6,432.3	SEP	112	4,432.0
OCT	219	11,866.2	OCT	211	6,836.0	OCT	180	6,121.6
NOV	171	6,775.5	NOV	224	7,832.5	NOV	107	3,864.8
DEC	173	5,355.7	DEC	227	9,359.2	DEC	73	1,548.7
JAN	551	14,918.2	JAN	152	5,655.5	JAN	93	3,861.0
FEB	299	12,426.6	FEB	163	6,976.9	FEB	14	364.0
MAR	199	4,519.0	MAR	135	4,858.3	MAR	42	1,092.0
APR	154	5,111.0	APR	92	3,172.8	APR	84	1,438.3
MAY	622	8,079.9	MAY	379	5,373.6	MAY	158	1,296.9
JUN	190	4,833.8	JUN	154	5,574.1	JUN	73	1,678.4
FY 18-19 Total	2,915	91,924.3	FY 19-20 Total	2,166	72,081.5	FY 20-21 Total	1,184	34,119.3

Table 3-14: Alternative Trips Logged and Average Distance in Miles (VMT) Saved (Non-Residents)

FY 2018-19			FY 2019-20			FY 2020-21		
	Alternative Trips Logged	Alternative Distance Logged (mi.)		Alternative Trips Logged	Alternative Distance Logged (mi.)		Alternative Trips Logged	Alternative Distance Logged (mi.)
JUL	348	7,545.8	JUL	502	11,585.8	JUL	367	7,710.3
AUG	362	10,429.0	AUG	467	12,242.8	AUG	406	8,537.1
SEP	503	15,751.5	SEP	496	14,696.1	SEP	388	9,028.1
OCT	577	14,481.5	OCT	776	19,007.1	OCT	523	13,196.7
NOV	531	14,368.2	NOV	638	21,660.4	NOV	431	10,095.7
DEC	537	11,215.6	DEC	525	16,039.7	DEC	382	9,208.1
JAN	1,267	32,349.9	JAN	396	11,232.5	JAN	307	7,379.3
FEB	804	20,614.5	FEB	432	11,671.4	FEB	284	7,171.3
MAR	564	12,355.9	MAR	340	9,692.0	MAR	299	7,828.5
APR	580	12,054.9	APR	367	8,731.3	APR	443	7,384.2
MAY	1,448	18,938.3	MAY	936	11,639.5	MAY	957	7,510.3
JUN	550	11,973.8	JUN	354	8,050.7	JUN	344	8,347.6
FY 18-19 Total	8,071	182,078.9	FY 19-20 Total	6,229	156,249.3	FY 20-21 Total	5,131	103,397.2

Table 3-15 2019 Vehicle Miles Traveled (VMT) per Capita by Jurisdiction

Jurisdiction	Local Road VMT (1000s)	State Highway VMT (1000s)	Total VMT (1000s)	Population (1/1/2020)	Daily VMT Per Capita
Escalon	32.56	39.83	72.39	7,478	9.68
Lathrop	295.31	1,181.77	1,477.08	26,833	55.05
Lodi	500.14	471.86	972.00	67,930	14.31
Manteca	756.61	841.21	1,597.82	84,800	18.84
Ripon	127.04	429.57	556.61	15,930	34.94
Stockton	2,828.23	2,276.83	5,105.06	318,522	16.03
Tracy	875.39	711.10	1,586.49	95,931	16.54
County (Unincorporated Areas)	3,050.87	5,801.14	8,852.01	156,208	56.67
San Joaquin Total	8,466.15	11,753.31	20,219.46	773,632	26.14

3.6 SAFETY

The Moving Ahead for Progress in the 21st Century Act (MAP-21) included a performance and outcome-based program with the objective to invest in projects that will make progress toward the national goals for transportation. The national transportation goal for safety is to significantly reduce traffic fatalities and serious injuries on all public roads. To assess the relative safety of RCMP roadway segments, the following five federal performance measures were evaluated:

- 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)

Number of fatalities, serious injuries, or non-motorized fatalities and serious injuries are collision frequency measures which is the simplest form of collision data analysis. Rate of fatalities or serious injuries were calculated using the following equation:

$$R = \frac{C \times 100,000,000}{VMT \times 365}$$

where,

R = the rate of fatalities or serious injuries per 100 million vehicle miles.

C = the total number of fatalities or serious injuries.

VMT = vehicle miles traveled.

Using 2019 SWITRS data from the Transportation Injury Mapping System (TIMS), the number of fatalities and serious injuries by network designation and user group is shown in **Table 3-16** and **Table 3-17**. In 2019, there were 120 fatalities and 438 serious injuries involving all users in traffic collisions that occurred on San Joaquin County roads of which 82 (68%) fatalities and 266 (61%) serious injuries occurred on the RCMP network. Non-motorized (e.g., pedestrians, bicyclists) fatalities and serious injuries accounted for 30% and 16% of total fatalities and serious injuries, respectively.

As shown in **Figure 3-6**, 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 since. **Figure 3-7** shows the serious injury trend from 2005 to 2019, 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 peaked at 438 serious injuries in 2019 and has been trending upward since 2013.

Figure 3-8 and **Figure 3-9** show the fatal and injury collision rates (per 100 million VMT) based on the same five-year rolling average. These metrics indicate that even though the absolute number of fatalities per year hasn't decreased, the rate of fatalities has. Conversely, serious injuries countywide is mirrored by the rate of serious injuries.

Table 3-16: 2019 Fatal and Serious Injury Collisions – All Users

Facility	All Users	
	Number of Fatalities	Number of Serious Injuries
San Joaquin County	120	438
RCMP Network	82	266
<i>NHS Network RCMP</i>	74	248
<i>Non-NHS Network RCMP</i>	8	18
<i>Non-RCMP Network</i>	38	172

Table 3-17: 2019 Fatal and Serious Injury Collisions – Non-Motorized Users

Facility	Non-Motorized Fatalities and Serious Injuries	
	Bicyclists	Pedestrians
San Joaquin County	38	66
RCMP Network	28	31
<i>NHS Network RCMP</i>	28	31
<i>Non-NHS Network RCMP</i>	0	0
<i>Non-RCMP Network</i>	8	37

Figure 3-6: Fatality Trend on San Joaquin County Roads (2005-2019)



Figure 3-7: Serious Injury Trend on San Joaquin County Roads (2005-2019)

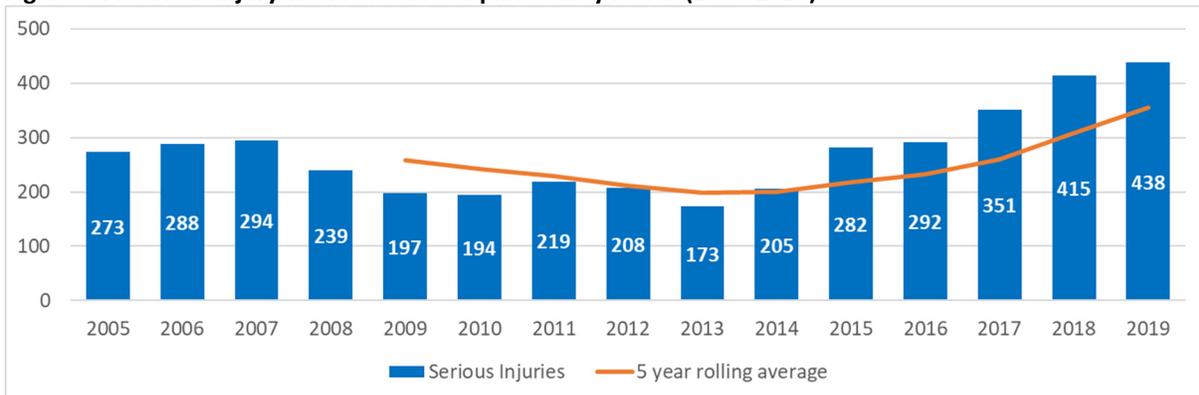


Figure 3-8: Fatal Collision Rate (Fatalities per 100M VMT) on San Joaquin County Roads (2005-2019)

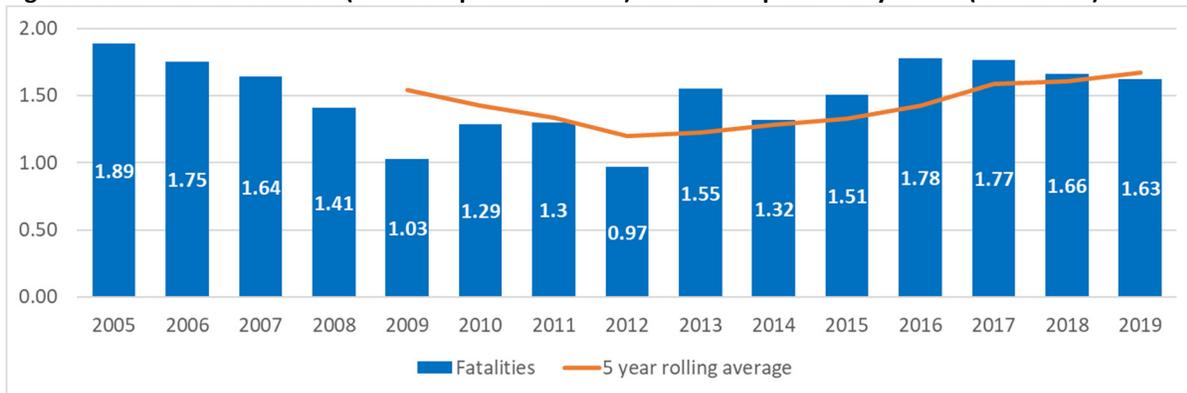


Figure 3-9: Serious Injury Rate (Injuries per 100M VMT) on San Joaquin County Roads (2005-2019)

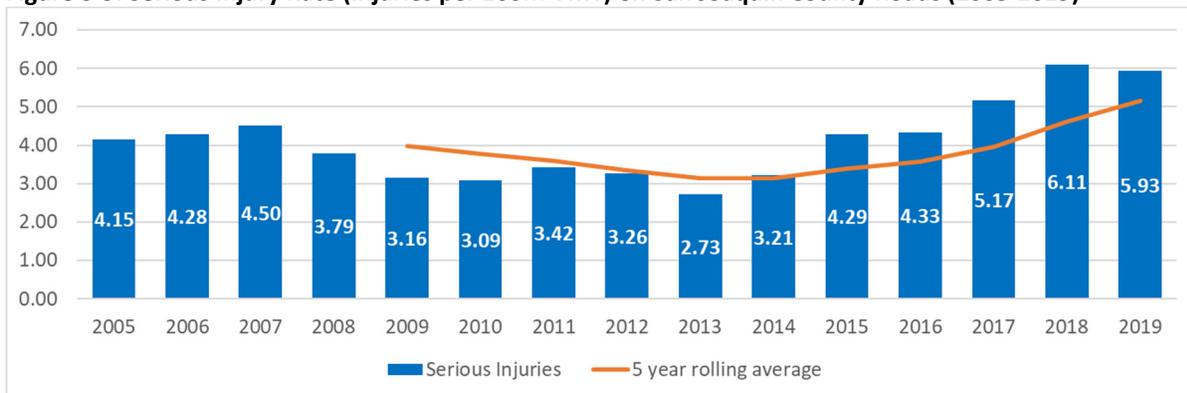


Figure 3-10 shows the absolute number of fatalities and serious injury involving pedestrians and bicyclists between 2009 and 2019. Non-motorized (pedestrian and bicycle) fatality and serious injuries peaked in 2019 at 104 (66 pedestrians and 38 bicyclists).

Figure 3-10: Pedestrian and Bicycle Fatalities and Serious Injuries on San Joaquin County Roads (2009-2019)

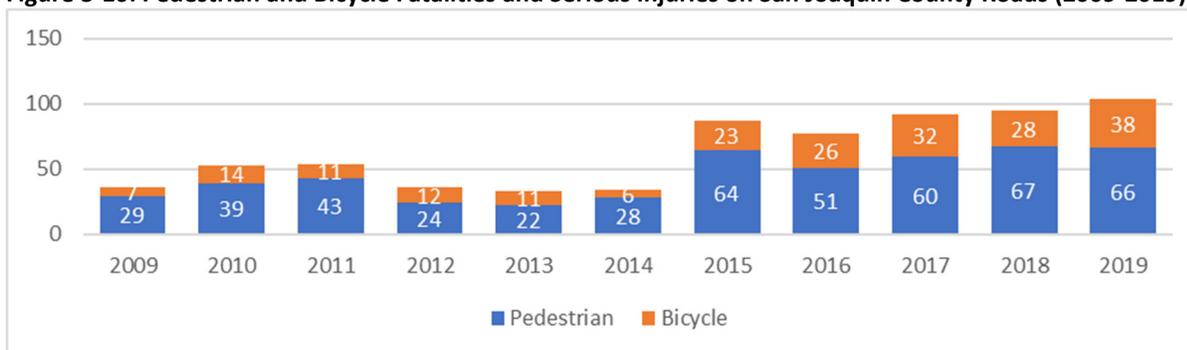


Table 3-18 provides the rate of fatalities on all roadways in San Joaquin County was 1.63 in 2019, which was higher than the statewide fatality rate of 0.83 based on the 2016-2018 collision data⁴. The rate of serious injuries in 2019 was 5.93.

⁴ 2018 Crash Data on California State Highways, California State Transportation Agency Department of Transportation.

Table 3-18: 2019 Collision Rate – All Users⁵

Facility	All Users	
	Rate of Fatalities (Fatalities per 100 MVM)	Rate of Serious Injuries (Serious Injuries per 100 MVM)
San Joaquin County	1.63	5.93

The segment-based fatality rates were mapped in **Figure 3-11** and serious injury rates in **Figure 3-12**. 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 include:

- Stockton: Waterloo Road (East Harding Way to SR 99)
- Stockton: East Harding Way (Waterloo Road to North El Dorado Street)
- Stockton: North Center Street (East Harding Way to Charter Way)
- Manteca: North Main Street (SR 99 to SR 120)

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

- Lodi: South Cherokee Lane (Harney Lane to Turner Road)
- Lodi: Lower Sacramento Road (Harney Lane to Turner Road)
- Lodi/County: SR 12 (Victor Road) (east of SR 99)
- Lodi/County: SR 12 (East Kettleman Lane) (west of SR 99)
- County: SR 88 (east of SR 99)
- County: SR 26 (east of SR 99)
- Stockton/County: Mariposa Road (Charter Way to Escalon-Belota Road)
- Stockton: East Hammer Lane (I-5 to SR-99)
- Stockton: Waterloo Road (East Harding Way to SR 99)
- Stockton: East Harding Way (North El Dorado Street to Waterloo Road)
- Stockton: North Wilson Way (SR 99 to East Harding Way)
- Stockton: North Airport Way (East Harding Way to East Charter Way)
- Stockton: North El Dorado Street (Hammer Lane to East Charter Way)
- Stockton: Center Street (East Harding Way to East Charter Way)
- Manteca: Lathrop Road (I-5 to SR-99)
- Manteca: West Yosemite Avenue (Airport Way to Moffat Road)
- County: SR 132 (Countyline to I-580)
- Tracy: Corral Hollow Road (Valpico Road to I-205)
- Tracy: West Schulte Road (Corral Hollow Road to South Central Avenue)

⁵ Collision rates were calculated using the formula listed above, per 100 million vehicle miles traveled. The VMT used in the calculations was 20,219,460 according to the 2019 HPMS estimate for San Joaquin County.

Figure 3-11: 2019 RCMP Fatality Rate Map

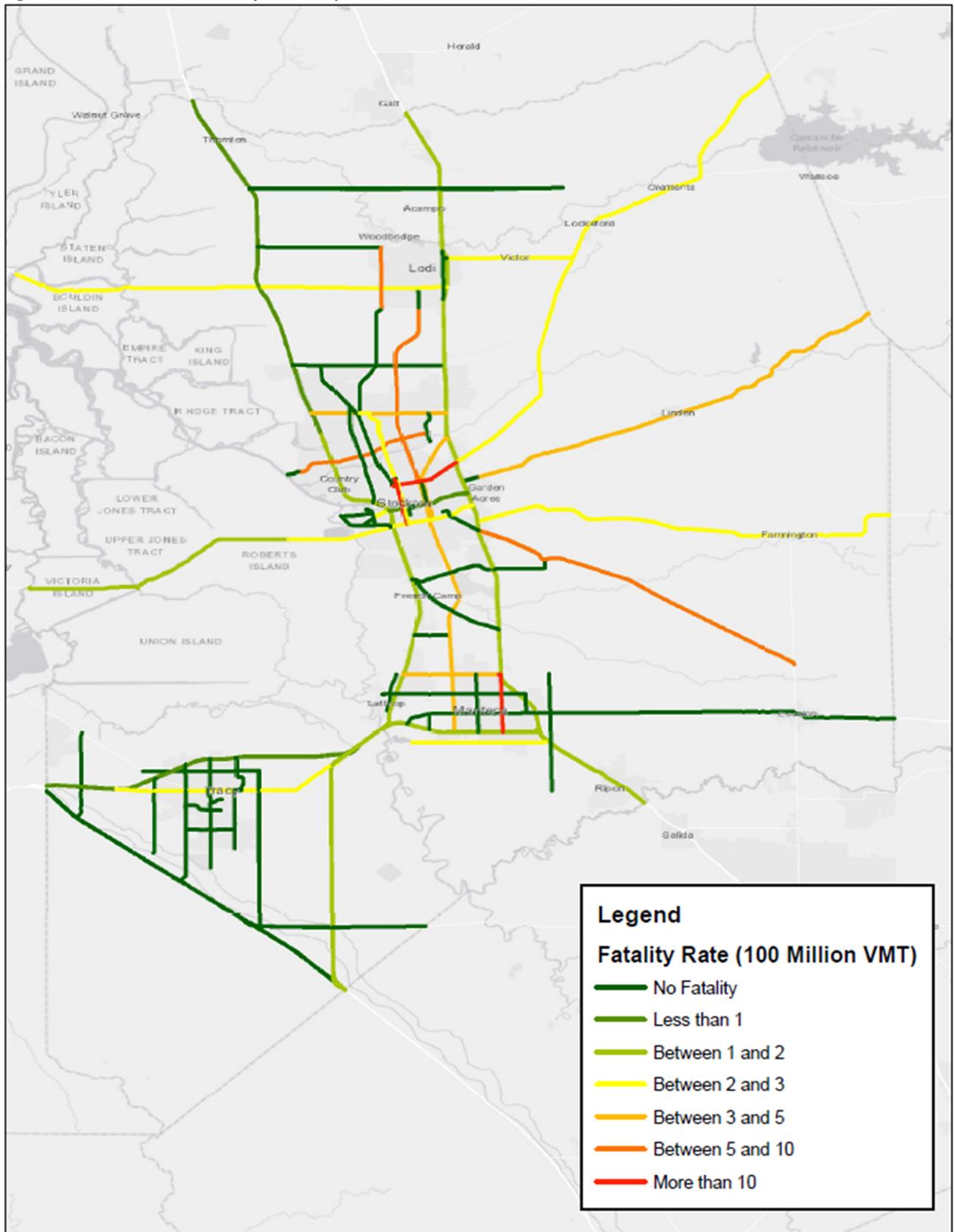
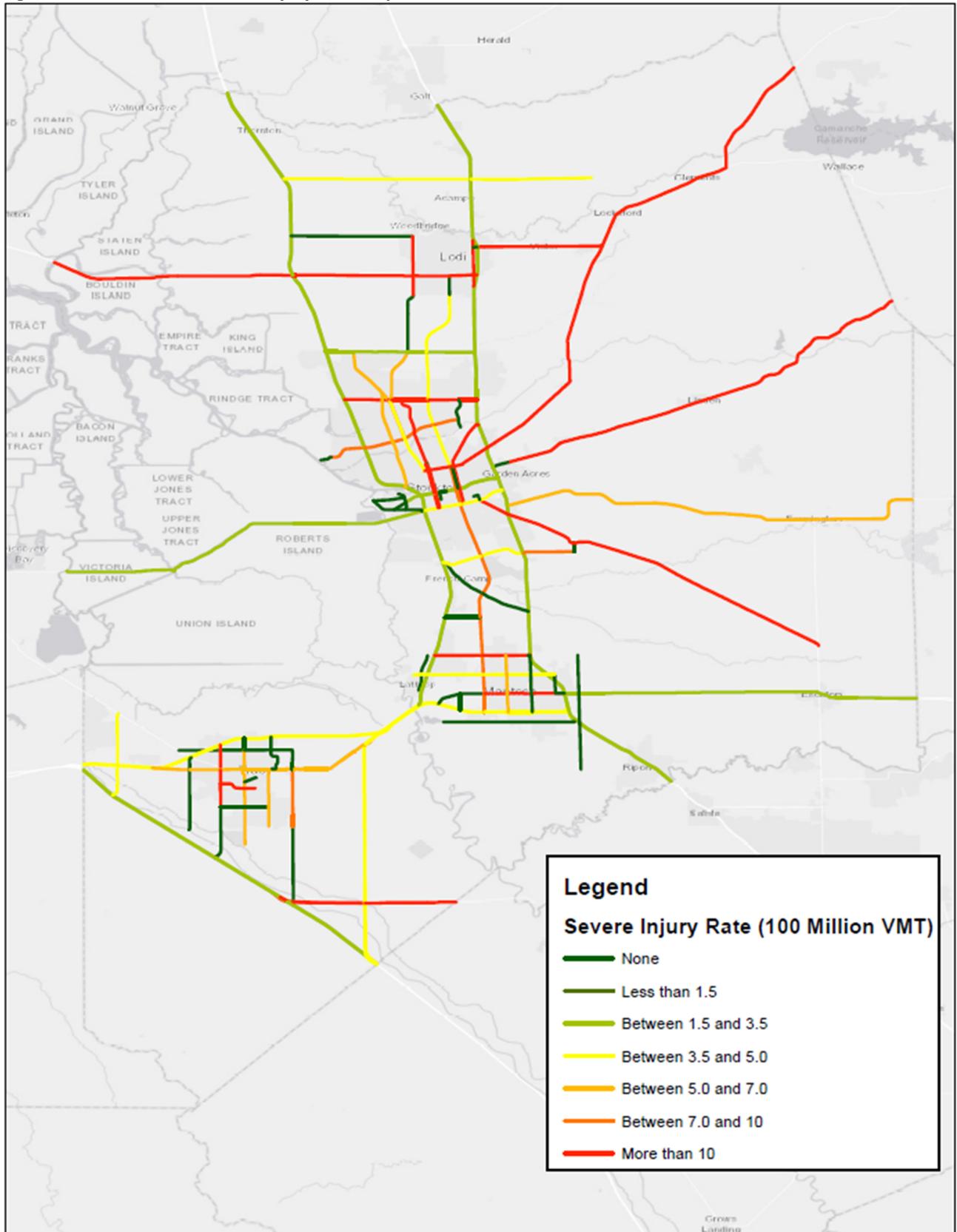


Figure 3-12: 2019 RCMP Serious Injury Rate Map



3.7 TRANSPORTATION ASSET MANAGEMENT

To maintain the RCMP infrastructure asset system in a state of good repair, it is critical to identify pavement maintenance and rehabilitation needs. The following Federal performance measures were evaluated relative to 2019 pavement condition data for IHS and NHS designated roadways, 2020 data for NHS bridge decks, and 2020-21 data for local non-NHS roadways to assess the pavement conditions of the RCMP network:

- 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); and,
- Percent of NHS bridges by deck area in poor condition (NHS only).

Pavement Condition Index (PCI), an American Society for Testing and Materials (ASTM) D6433 standard, is the accepted performance measurement used by the majority (70%) of California local agencies to measure the structural condition of pavement and to make planning and funding decisions. PCI is a readily available metric that measures system preservation on local roads. The data are readily collected and comparable across local, regional, and statewide jurisdictions.

Some jurisdictions may use Overall Condition Index (OCI) to measure roadway pavement conditions. OCI is a rating system developed by the U.S. Army Corps of Engineers (USACE), taking into consideration both PCI and Riding Comfort Index (RCI). RCI ranges from 0 to 100 indicating the roughness of a roadway segment measured by a laser profiler.

Per the federal performance measurement rule, FHWA advocates the use of the International Roughness Index (IRI) as the preferred measure over PCI for local roadways. Although an appropriate performance measure for high-speed highway facilities as a measurement of ride quality or functionality, IRI is not applicable for the 5,500 miles of lower speed NHS roadways in California. As such, SJCOG advocates local flexibility in the choice of pavement condition measurement types. **Table 3-19** provides the thresholds for pavement conditions as applied for San Joaquin County.

Table 3-19: PCI and OCI6 Ranges and Pavement Condition

PCI Range	Pavement Condition	OCI Range	Pavement Condition
71-100	Good	71-100	Good
61-70	At Lower Risk	50-70	Fair
50-60	At Higher Risk		
0-49	Poor	0-49	Failed to Poor

⁶ OCI (Overall Condition Index) is used by the San Joaquin County and is analogous and comparable with PCI measurements.

Caltrans maintains performance data sets to help local agencies in assessing the location and condition of their NHS pavement and bridges. San Joaquin County data sets for 2019 and 2020 were obtained from Caltrans and analyzed to evaluate the NHS roadway pavement conditions and NHS bridge deck pavement conditions respectively. There are 108 centerline miles of the RCMP network that are neither state highways or designated as part of the NHS. For non-NHS segments, 2020-21 PCI data was obtained from local agencies and used to estimate the performance measures.

The performance measure results are provided in **Table 3-20**. The results indicate that:

- For interstate highways, 66% of lane miles were in good condition, 34% in fair condition, and none in poor condition;
- For non-IHS NHS segments, 33% of lane miles were in good condition, 62% in fair condition, and 5% were in poor condition;
- For non-NHS segments, 38% of centerline miles were in good condition, 45% in fair condition, and 17% were in poor condition; and,
- For the NHS bridges (deck area) within the county, 59% of deck areas are in good condition, 27% in fair condition, and 14% are in poor condition.

Table 3-20: Pavement Conditions on RCMP Network

Facility	Pavement Condition		
	Good	Fair	Poor
2019 Interstate Highway System (lane miles)	66%	34%	0%
2019 Non-IHS National Highway System (lane miles)	33%	62%	5%
2020-21 Non-NHS Segments* (centerline miles)	38%	45%	17%
2020 NHS Bridges (deck area)	59%	27%	14%

* The PCIs for the non-NHS segments in the City of Manteca used in the analysis were estimates based on adjustments to the 2013 baseline

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 CO₂ 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 CO2 emissions on NHS compared to 2017 level;
- Annual hours of peak hour excessive delay (PHED) per capita; and,
- Percent of non-single occupancy vehicle (SOV) travel and total emissions reduction.

The latter two PM3 metrics are only required to be reported in the following urbanized areas (UA):

- Sacramento
- San Francisco-Oakland
- San Jose
- Los Angeles-Long Beach -Anaheim
- Riverside-San Bernardino
- San Diego

The RCMP monitors and reports on the federal PM1 safety performance measures and 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 4-1**. As shown, of the five metrics established to track safety performance, only one is currently being met (rate of fatalities). Over the two-year period from 2017 to 2019, three of the five metrics are trending in the wrong direction (serious injuries, serious injury rate and number of non-motorized fatal and serious injuries).

Table 4-1: Caltrans Adopted Safety Performance Targets and SJCOG 2019 Results

Performance Target	Percent Reduction Target From 2017	2019 Percent Change of 2017
Number of Fatalities	-7.69%	0.00%
Rate of Fatalities (per 100M VMT)	-7.69%	- 8.59%
Number of Serious Injuries	-1.5%	+24.79%
Rate of Serious Injuries (per 100M VMT)	-1.5%	+14.70%
Number of Non-Motorized Fatalities and Non- Motorized Serious Injuries	-10%	+13.04%

Table 4-2 shows that of the 104 fatal and serious injuries that involved pedestrian and bicycles in 2019 countywide, 59 occurred on the National Highway System. Of the 59, 44 involved pedestrians and 15 involved bicyclists.

Table 4-2: Pedestrian and Bicycle Fatalities and Serious Injury Collisions on the NHS: 2019 Results

2019 Pedestrian Collisions			
Row Labels	Number of fatalities	Number of serious injuries	Total
NHS	23	21	44
2019 Bicycle Collisions			
Row Labels	Number of fatalities	Number of serious injuries	Total
NHS	5	10	15

The Caltrans targets established for asset management (i.e., pavement condition) are shown in Table 4-3.

Table 4-3: 10 Year Desired State of Repair Targets

Asset (unit of measure)	10-Year Desired State of Repair		
	Good Condition	Fair Condition	Poor Condition
Interstate Pavement (lane miles)	60%	39%	1%
Non-Interstate Pavement (lane miles)	34.2%	60.9%	5.0%
On SHS	57.6%	40.9%	1.5%
Off SHS	7.0%	84.0%	9.0%
NHS Bridge (deck area)	83.5%	15.0%	5.0%
On SHS	83.5%	15.0%	5.0%
Off SHS	83.5%	15.0%	5.0%

Based on the analysis of pavement condition in San Joaquin County (Table 4-4), the state of good repair pavement condition targets adopted by Caltrans and accepted by SJCOG are being met in San Joaquin County for the Interstate Highway System and the Non-IHS National Highway System. Conversely, the state of good repair targets for National Highway System bridges are currently not being met in San Joaquin County.

Table 4-4: San Joaquin County Pavement Conditions

Facility	Pavement Condition		
	Good	Fair	Poor
2019 Interstate Highway System (lane miles)	66%	34%	0%
2019 Non-IHS National Highway System (lane miles)	33%	62%	5%
2020-21 Non-NHS Segments* (centerline miles)	38%	45%	17%
2020 NHS Bridges (deck area)	59%	27%	14%

* The PCIs for the non-NHS segments in the City of Manteca used in the analysis were estimates based on adjustments to the 2013 baseline

5.0 STUDY REFERENCES

San Joaquin Council of Governments (SJCOG)

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