STATE ROUTE 99

COMPREHENSIVE MULTIMODAL CORRIDOR PLAN

State Route 99 Comprehensive Multimodal Corridor Plan

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Prepared by Jacobs for Caltrans

Caltrans®

APPROVED BY:

Sergio Aceves (Oct 28, 2025 16:32:09 PDT)

10/28/2025

SERGIO ACEVES
District 3 Director
California Department of Transportation

Date

APPROVED BY:

10/28/2025

MICHAEL NAVARRO
District 6 Director
California Department of Transportation

Date

APPROVED BY:

10/30/2025

GRACE MAGSAYO
District 10 Director
California Department of Transportation

Date

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AADT	annual average daily traffic
ACE	Altamont Corridor Express
ACS	American Community Survey
ADA	Americans with Disabilities Act
Caltrans	California Department of Transportation
CalSTA	California State Transportation Agency
CAPTI	Climate Action Plan for Transportation Infrastructure
CBO	Community-Based Organization
CFMP	California Freight Mobility Plan
CHP	California Highway Patrol
CHSR	California High Speed Rail
CHSRA	California High Speed Rail Authority
CMCP	Comprehensive Multimodal Corridor Plan
COG	Council of Governments
CSIS	Caltrans System Investment Strategy
CSTDM	California Statewide Travel Demand Model
CTC	California Transportation Commission
CTP	California Transportation Plan
EO	Executive Order
EOS	Early Operating Segment
EQI	Transportation Equity Index

Acronym/Abbreviation	Definition
EV	electric vehicle
FAF5	Freight Analysis Framework 5
Fresno COG	Fresno Council of Governments
FLM	first/last mile
GHG	greenhouse gas
GIS	Geographic Information System
HOV	high-occupancy vehicle
I-5	Interstate 5
KART	Kings Area Regional Transit
KernCOG	Kern County Council of Governments
MCAG	Merced County Association of Governments
MCC	Madera County Connection
MCTC	Madera County Transportation Commission
ML	managed lane
MPO	Metropolitan Planning Organization
OEHHA	California Office of Environmental Health Hazard Assessment
PeMS	Performance Measurement System
RTP	Regional Transportation Plan
SACOG	Sacramento Area Council of Governments
SacRT	Sacramento Regional Transit
SB	Senate Bill

Acronym/Abbreviation	Definition
SCCP	Solutions for Congested Corridors Program
SCS	Sustainable Communities Strategy
SHS	State Highway System
SJCOG	San Joaquin Council of Governments
SJRTD	San Joaquin Regional Transit District
SME	Subject Matter Expert
SMF	Smart Mobility Framework
SR 99	State Route 99
StanCOG	Stanislaus Council of Governments
StanRTA	Stanislaus Regional Transit Authority
TAC	Technical Advisory Committee
TCAG	Tulare County Association of Governments
TCRTA	Tulare County Regional Transit Agency
TMC	Traffic Management Center
TSN	Transportation System Network
US	United States
VMT	vehicle miles traveled
ZEV	zero-emission vehicle

Executive Summary

The California Department of Transportation (Caltrans), in collaboration with regional and local partners, has developed a Comprehensive Multimodal Corridor Plan (CMCP) for the State Route 99 (SR 99) Corridor. This corridor spans nearly 300 miles from Interstate 5 (I-5) in southern Kern County to U.S. Highway 50 (US 50) in Sacramento. Historically SR 99 was part of US Route 99, which served as the main north-south route between Mexico, the US, and Canada on the West Coast until the construction of I-5. SR 99 remains a critical north–south transportation spine for the San Joaquin Valley, connecting cities such as Bakersfield, Delano, Visalia, Tulare, Fresno, Madera, Merced, Turlock, Modesto, Manteca, Stockton, and Sacramento.

The SR 99 CMCP was crafted in collaboration with local and regional agencies and partners as well as through engagement with the public. This document builds upon statewide, regional, and local efforts, along with the coordinated efforts of Caltrans Districts 3, 6, and 10, to create a comprehensive strategy that sets a foundation to enhance multimodal connectivity and accessibility for the communities of the SR 99 corridor.

Purpose. This SR 99 CMCP builds on decades of planning at the local, regional, and state levels to provide an integrated multimodal transportation system that addresses the current and future needs for those traveling on or along the SR 99 corridor. Inclusion in the CMCP is prerequisite for eligibility for certain sources of state funding, including the Solutions for Congested Corridors Program under Senate Bill (SB) 1. The California Transportation Commission awards these program funds to projects designed to achieve a balanced set of transportation, environmental, and community access improvements within highly congested travel corridors throughout the state. CMCP inclusion also enhances competitiveness for the Trade Corridor Enhancement Program, which will be a critical funding source for freight-related improvements along SR 99.

Goals. The goals for the SR 99 CMCP shown in Figure ES-1 are drawn from local, regional, and statewide planning documents, as well as Caltrans' vision, mission, core values, and goals, to address the complex needs of the corridor users, including residents, workers, and visitors. The goals call for a balanced multimodal transportation system that improves safety, air quality, and affordability while supporting the communities of the southern Sacramento and San Joaquin Valleys.

Figure ES-1. SR 99 CMCP Study Goals

Planning Process. The SR 99 CMCP was developed through a planning process illustrated in Figure ES-2. This collaborative, data-driven process involved public agencies, community stakeholders, and technical experts working together to define a vision for the corridor. It uses a multimodal approach to create a balanced, equitable transportation system that integrates mobility options such as driving, biking, walking, transit, and micromobility to move people and goods within the designated corridor and beyond. The CMCP also includes critical strategies to enhance infrastructure resiliency and enhance local quality of life for residents, workers, and travelers along the corridor.

Figure ES-2. SR 99 CMCP Study Process Overview

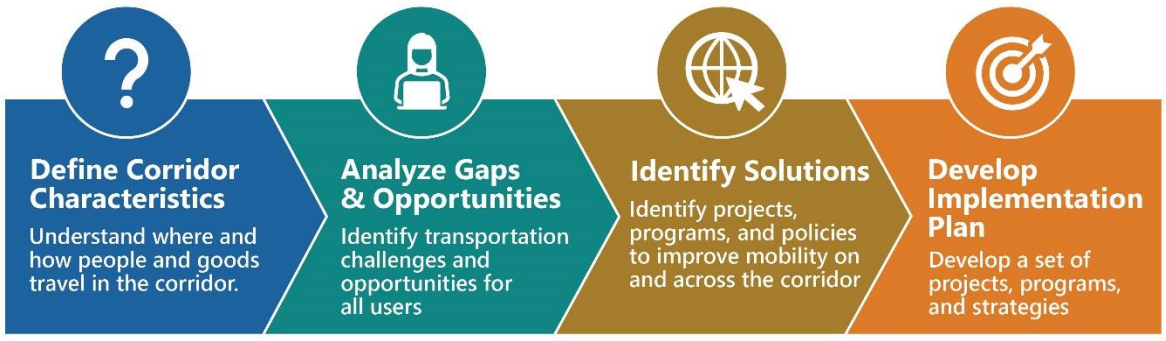


Figure ES-3. CMCP Counties and Caltrans Districts

Study Area. The SR 99 CMCP extends from its intersection with I-5 near the foot of the Grapevine in Kern County to its intersection with US 50 in downtown Sacramento nearly 300 miles to the north as shown in Figure ES-3. The SR 99 corridor traverses nine counties and dozens of diverse communities, agricultural lands, and recreational areas and is critical for the daily movement of people, goods, and wildlife along the corridor and throughout the state. Major employers, multiple colleges and universities, the largest population centers of the Central Valley, and the existing and planned rail network are all along the SR 99 corridor. These routes are often the only direct links between the communities of SR 99, making the freeway even more important to current and future generations.

Corridor Context. The SR 99 CMCP team evaluated the existing conditions of the corridor, including transportation infrastructure, current transit service, economic conditions, population characteristics, and future economic and population characteristics. The SR 99 CMCP team was also careful to document social equity characteristics and conditions in the corridor to better understand the varied issues facing SR 99 communities.

The nearly 300-mile study corridor has very diverse conditions and contexts connecting rural, urban, and suburban communities throughout. It also serves as the gateway to the Sierra Nevada Mountain range, including Yosemite, Kings Canyon, and Sequoia National Parks. It is uniquely defined by its sensitive landscapes and prime agricultural lands; the corridor is home to the San Joaquin Valley's $24 billion agricultural industry

as well as over 300,000 workers who support it. As a result, truck traffic is high in much of the corridor from Kern County to San Joaquin County. In Sacramento County, travel along the SR 99 corridor is focused on travel to and from the Sacramento and Bay Area job markets for workers and goods movement alike. Current travel in the SR 99 corridor is generally auto dependent, though various rail and transit alternatives are available to the public, with more on the way including California's under-construction High Speed Rail service.

The San Joaquin Valley has some of the highest poverty rates in the country as well as some of the worst air pollution in the US. All three Caltrans districts have recently experienced flood events that impacted SR 99. [United States Environmental Protection Agency (EPA). 2025. "San Joaquin Valley - EPA Activities for Cleaner Air." https://www.epa.gov/sanjoaquinvalley/epa-activities-cleaner-air]. When high snowmelt and/or precipitation cause the normally dried up Tulare Lake to reappear it can flood thousands of acres of farmland.

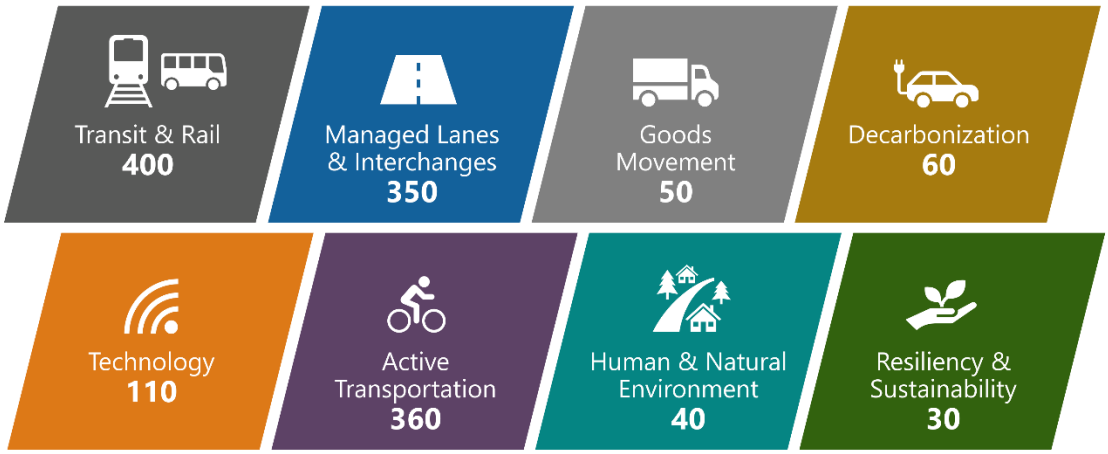
Key Issues. The CMCP addresses several critical questions:

- How do we support disadvantaged communities by providing better access to transportation while minimizing impacts that new infrastructure can bring?
- What strategies will enhance safety for all users of all modes?
- How can economic vitality be supported while mitigating freight-related impacts?
- What regional and local environmental improvements can be achieved through transportation investments?
- How can we make the SR 99 corridor more resilient to flooding and improve travel reliability?
- What multimodal options can reduce reliance on single-occupancy vehicles?

Engagement. A robust outreach strategy was developed and implemented to inform and help develop the transportation solutions for the SR 99 CMCP. The engagement strategy included 16 online open houses, two bilingual surveys, and outreach through social media, email, and community advocacy groups. The SR 99 CMCP team also engaged technical Subject Matter Experts and local partner agencies to craft and review the strategies included in this SR 99 CMCP. Meetings with these groups were held to identify key issues, draft an inventory of community supported transportation solution strategies, and provide feedback on the implementation framework. The outreach process helped ensure an inclusive approach to the development of the SR 99 CMCP that builds on years of transportation related public engagement in the corridor.

Investment Strategies. The CMCP outlines eight key strategies illustrated below in Figure ES-4 to support the study's diverse goals and offer a range of transportation and system improvements that will enhance equitable access and comprehensive mobility for all.

Figure ES-4. SR 99 CMCP Investment Strategies



The SR 99 CMCP outlines strategies aimed at expanding transportation alternatives to driving alone whether traveling to work, school, services, or visiting family and friends. The strategies expand travel options within communities along SR 99. Collectively, these multimodal strategies have the potential to mitigate induced vehicle miles traveled and greenhouse gas emissions from certain types of transportation projects. Key strategies include:

- Additional rail improvements, station improvements, and crossings that will improve conventional rail service to maximize the benefits that California High Speed Rail (CHSR) will have in the San Joaquin Valley and expand the rail options for travels within the SR 99 corridor and connections to the wider state rail network.
- Complementary transit services that strengthen regional mobility and support rail expansion as California advances its high-speed rail network.
- Integrated managed lanes (MLs) for the corridor, including the conversion of over 200 miles of general-purpose travel lanes to future carpool and/or truck lanes, and the addition of over 70 miles of new MLs.
- Enhancements to pedestrian and bicycle networks to improvement connectivity and safety for all travelers.
- Advancing intelligent transportation system elements to improve safety and operations of the current transportation system.

The robust multimodal transportation projects and programs outlined above are complemented by the following strategies to create a more resilient transportation system that also reduces emissions:

- Construct new river crossings that include wildlife crossings and improve drainage to improve safety, reduce animal-to-vehicle roadway crashes, and reduce flooding risk on the corridor.
- Install new chargers and decarbonization infrastructure across the corridor, specifically targeting medium and heavy-duty trucks, personal and fleet vehicles, and transit agency buses.
- Enhance inter-modal facilities to increase the share of goods moved by rail to and from the Central Valley.

Implementation. Solutions are evaluated against criteria such as construction and design complexity, environmental clearance, right-of-way needs, potential cost, and environmental considerations to determine an initial implementation period: short-term (less than five years), medium-term (six to 15 years), or long-term (more than 15 years).

Securing funding for the solutions in this CMCP will be necessary to implement the proposed solutions by 2050, especially for large, capital-intensive investments with complex delivery requirements. The funding for the solutions in this SR 99 CMCP will be reviewed during the upcoming regional transportation and land use planning work of the valley's transportation agencies, including evaluating the potential for State and Federal sources such as SB 1 funding.

Next Steps. Caltrans and its partners will continue to refine and advance the development of projects and programs proposed in the SR 99 corridor. The SR 99 CMCP team will also continue to engage stakeholders—including regional and local agency partners, industry and tribal organization representatives, and corridor residents—to help refine recommended strategies as they progress from plan to deployment.

1 Introduction

Caltrans Districts 3, 6, and 10, in collaboration with partner agencies across the study area, have developed a Comprehensive Multimodal Corridor Plan (CMCP) for State Route (SR) 99. This corridor spans nearly 300 miles of the Central Valley, extending from Interstate 5 (I-5), south of Bakersfield, to its terminus at U.S. Highway 50 (US 50) in Sacramento. Figure 1 shows the corridor alignment, the counties it traverses, and the Caltrans districts it serves.

Figure 1. CMCP Counties and Caltrans Districts

SR 99 and I-5 are parallel north-south corridors that serve as vital freight routes, particularly for agricultural products, across the San Joaquin Valley. Together they provide the bulk of the goods movement capacity through the San Joaquin Valley for trucks transporting commodities to ports, urban centers, and out-of-state destinations.

While I-5 primarily supports long-haul freight movement, SR 99 serves as the key mobility route for the communities of the southern Sacramento and San Joaquin Valleys. It connects major cities including Bakersfield, Delano, Tulare, Visalia, Fresno, Madera, Merced, Turlock, Modesto, Manteca, Stockton, and Sacramento, as well as numerous smaller cities and rural communities.

Previous improvements along SR 99 have enhanced safety, access, and operational efficiency. However, additional investments are needed to address existing deficiencies, accommodate growing populations and goods movement, manage increasing traffic volumes, and further expand multimodal transportation options. This CMCP provides a strategic framework to guide future improvements, incorporating emerging transportation trends, evolving technology, community needs, and state and regional priorities.

1.1 Comprehensive Multimodal Corridor Plan Background

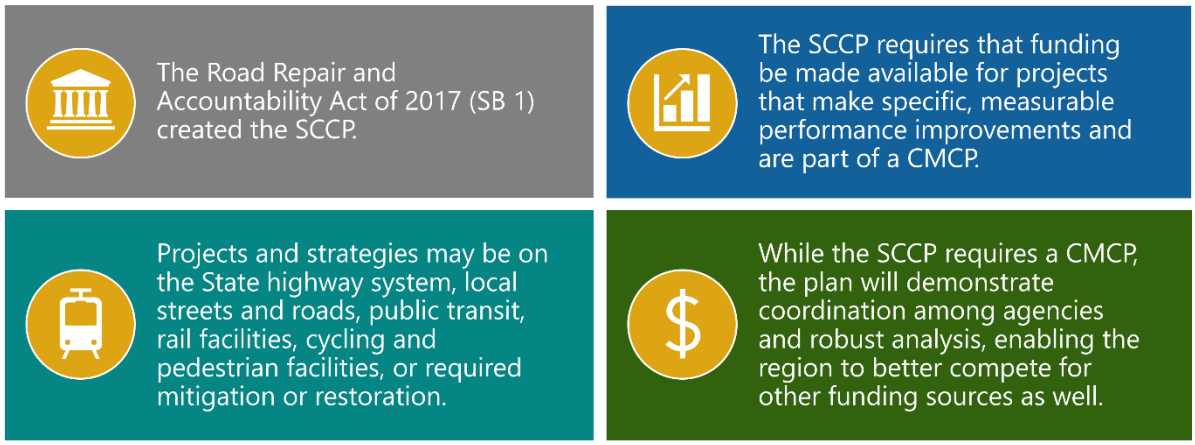
1.1.1 CMCP Purpose

The CMCP identifies a range of multimodal opportunities to improve and enhance the SR 99 corridor. A comprehensive outreach process, engaging various stakeholders and community members, was implemented to guide and inform the development of this plan (see Chapter 4).

This document presents a long-term vision for SR 99, informed by extensive public engagement, data analysis, and technical research. It aims to increase the competitiveness of corridor projects for state and federal funding, particularly through the Solutions for Congested Corridors Program (SCCP) established under Senate Bill (SB) 1. As shown in Figure 2, the SCCP provides approximately $250 million in funding annually for projects that deliver measurable improvements and are included in a CMCP.

Eligible projects may span the State Highway System (SHS), local streets and roads, public transit, rail, bicycle and pedestrian infrastructure, or mitigation or habitat restoration. Inclusion in the CMCP also strengthens competitiveness for California's Trade Corridor Enhancement Program, which funds infrastructure improvements on key freight corridors and requires alignment with regional transportation plans.

Figure 2. Solutions for Congested Corridors Program



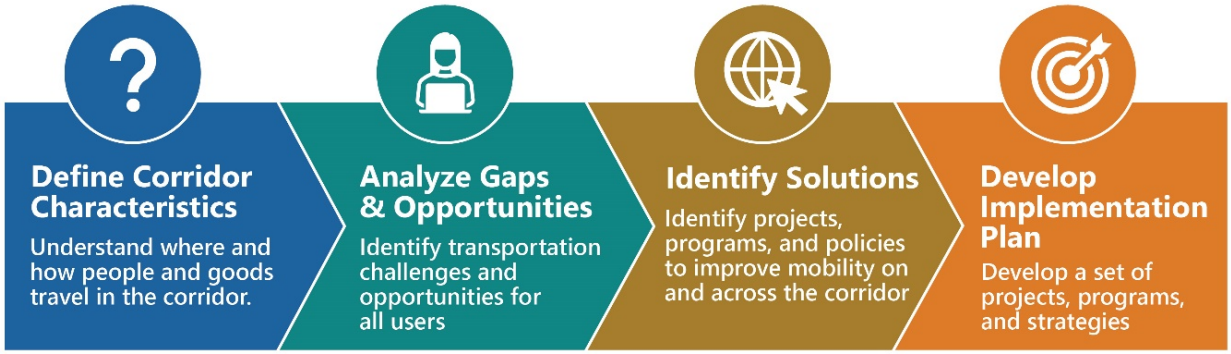
1.1.2 CMCP Development

The SR 99 CMCP was developed following the procedures outlined in the *Caltrans Corridor Planning Process Guide. [*California Department of Transportation (Caltrans). 2022. *Caltrans Corridor Planning Process Guide*. https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/system-planning/systemplanning/corridor-planning-process-guide-april-2022-a11y.pdf.] This guide establishes a structured, multimodal planning approach to identify and address corridor needs.

The development process involved four key phases of work outlined in Figure 1:

1. **Define Corridor Characteristics** - Collecting information to better understand the corridor
2. **Analyze Gaps & Opportunities** - Assessing this information and identifying challenges and opportunities
3. **Identify Solutions** - Exploring possible solutions to these challenges and opportunities
4. **Develop Implementation Plan** - Creating an implementation plan

Figure 3. CMCP Development Process



Throughout each phase, the SR 99 CMCP team engaged a broad range of stakeholders—including Caltrans technical staff, regional and local agencies, and corridor residents—to ensure the plan reflects community priorities. Virtual public workshops and bilingual online surveys were conducted during the Gaps & Opportunities and Solutions phases. Chapter 4 provides additional detail on the engagement process.

2 Goals, Objectives, and Performance Measures

This section outlines the SR 99 CMCP goals, objectives, and performance measures, along with descriptions of how they were developed.

2.1 Goals

Goals were developed based on a combination of the SR 99 CMCP objectives included in the scope of work and the goals from over 20 state, corridor, and local plans. The recommended goals in Figure 4 are aligned and adapted from the California Transportation Commission's (CTC's) CMCP Guidelines, California State Transportation Agency's (CalSTA's) Climate Action Plan for Transportation Infrastructure (CAPTI) 2.0, Caltrans' California Transportation Plan (CTP) 2050, the SR 99 CMCP objectives from the scope of work, several other state plans including the Freight Mobility and Rail Plans, prior SR 99 corridor plans, and the nine Regional Transportation Plans (RTPs).

Figure 4. SR 99 CMCP Goals

2.2 Statewide Goals and Policies

The following state initiatives guided the CMCP development process, as discussed in the following sections:

- CTP 2050
- CAPTI 2.0
- Caltrans System Investment Strategy
- Caltrans Smart Mobility Framework (SMF)

- Caltrans Vulnerability Assessment Statewide Summary Report
- California Freight Mobility Plan
- California State Rail Plan

2.2.1 California Transportation Plan 2050

The CTP 2050, adopted in 2021, is a long-range transportation plan designed to guide transportation investments and decisions for both private and public sectors. [California Department of Transportation (Caltrans). 2021. *California Transportation Plan 2050*. https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf.] It provides a policy framework designed to achieve the State of California's vision of accessible, safe, and resilient transportation systems, as well as bridge the gap between what RTPs propose and what is essential to achieve 2050 targets. The following list includes the key priorities and goals of the CTP:

- **Safety:** provide a safe and secure transportation system
- **Climate:** achieve statewide greenhouse gas (GHG) emissions reduction targets and increase resilience to climate change
- **Equity:** eliminate transportation burdens for low-income communities, communities of color, people with disabilities, and other disadvantaged groups
- **Accessibility:** improve multimodal mobility and access to destinations for all users
- **Quality of Life & Public Health:** enable vibrant, healthy communities
- **Economy:** support a vibrant, resilient economy
- **Environment:** enhance environmental health and reduce negative transportation impacts
- **Infrastructure:** maintain a high-quality, resilient transportation system

2.2.2 Climate Action Plan for Transportation Infrastructure 2.0

Adopted in 2025, the CAPTI 2.0 (an update to the 2021 version of the CAPTI) informs how the State of California recommends investing billions of dollars each year to support safety, equity, and public health, while adapting to climate change. [California State Transportation Agency (CalSTA). 2025. *Climate Action Plan for Transportation Infrastructure 2.0*. https://calsta.ca.gov/-/media/calsta-media/documents/capti-2025-a11y.pdf.] Executive Orders (EO) EO N-19-19 and EO N-79-20 serve as the basis for CAPTI 2.0, which targets GHG emissions reductions in transportation. As stated in SB 1, California will continue the "fix-it-first" approach, ensuring consistent repair and

maintenance for the transportation system. The following lists CAPTI 2.0's investment framework guiding principles: serve as the basis for CAPTI 2.0, which targets GHG emissions reductions in transportation. As stated in SB 1, California will continue the "fix-it-first" approach, ensuring consistent repair and maintenance for the transportation system. The following lists CAPTI 2.0's investment framework guiding principles:

- Building toward an integrated, statewide rail and transit network
- Investing in networks of safe and accessible bicycle and pedestrian infrastructure
- Including investments in light, medium, and heavy-duty zero-emission vehicle (ZEV) infrastructure
- Strengthening our commitment to equity by reducing public health and economic harms and maximizing community benefits
- Making safety improvements to reduce fatalities and severe injuries of all users towards zero
- Assessing physical climate risk
- Promoting projects that do not significantly increase passenger vehicle travel
- Promoting compact infill development while protecting residents and businesses from displacement
- Developing a zero-emission freight transportation system
- Protecting natural and working lands

2.2.3 Caltrans System Investment Strategy

The Caltrans System Investment Strategy (CSIS) aligns with CAPTI 2.0 and outlines a data and performance-driven investment framework for assessing transportation infrastructure projects. [California Department of Transportation (Caltrans). 2024. *Caltrans System Investment Strategy*. https://calsta.ca.gov/-/media/calsta-media/documents/capti-2025-a11y.pdf.] It describes the project nomination and implementation processes and provides CAPTI 2.0 alignment metrics for evaluating how projects adhere to state climate and equity goals and objectives and the ten CAPTI 2.0 guiding principles listed above. Essentially, the CSIS informs which projects Caltrans chooses to nominate for state and federal discretionary funding programs.

2.2.4 Caltrans Smart Mobility Framework

The SMF is a planning guide that helps integrate smart growth concepts into transportation planning throughout California, providing guidance and assessments on how well projects, plans, and programs fit into smart mobility. [California Department of Transportation (Caltrans). 2010. *Smart Mobility Framework*. https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/office-of-smart-mobility-and-climate-change/smf-handbook-062210-a-a11y.pdf.] Caltrans partnered with the California Department of Housing and Community Development, the Governor's Office of Planning and Research, and the US Environmental Protection Agency to implement sustainable transportation solutions throughout the state. The SMF's principles have guided the SR 99 CMCP's development and are listed below:

- **Location Efficiency** - Integrate transportation and land use to achieve high levels of non-motorized travel and transit use, reduced vehicle trip making, and shorter average trip length while providing a high level of accessibility.
- **Reliable Mobility** - Manage, reduce, and avoid congestion by emphasizing multi-modal options and network management through operational improvements and other strategies; provide predictability and capacity increases focused on travel that supports economic productivity.
- **Health and Safety** - Design, operate, and manage the transportation system to reduce serious injuries and fatalities, promote active living, and lessen exposure to pollution.
- **Environmental Stewardship** - Protect and enhance the State's transportation system and its built and natural environment; act to reduce the transportation system's emission of GHGs that contribute to global climate change.
- **Social Equity** - Provide mobility for people who are economically, socially, or physically disadvantaged to support their full participation in society; design and manage the transportation system to equitably distribute its benefits and burdens.
- **Robust Economy** - Invest in transportation improvements – including operational improvements – that support the economic health of the State and local governments, the competitiveness of California's businesses, and the welfare of California residents.

2.2.5 Caltrans Vulnerability Assessment Statewide Summary Report

The Caltrans Climate Change Vulnerability Assessment is an initial step towards gathering essential data for understanding and addressing climate change impacts on California's SHS. [California Department of Transportation (Caltrans). 2021. *Caltrans*

Climate Change Vulnerability Assessment Statewide Summary Report. https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/office-of-smart-mobility-and-climate-change/caltrans-climate-change-vulnerability-assessment-statewide-summary-feb2021-a11y.pdf.] Each of Caltrans' 12 districts created reports detailing their methodologies, findings, challenges, and ongoing efforts, and the Statewide Summary synthesizes these reports and outlines Caltrans' planned next steps. These next steps include integrating climate change assessments into project development and agency decisions, as well as engaging staff and stakeholders. These efforts ultimately aim to build a resilient highway network for California.

2.2.6 California Freight Mobility Plan

The California Freight Mobility Plan (CFMP) 2023 is an updated version of the 2018 plan, aligning with the CTP 2050 and the California Sustainable Freight Action Plan. [California Department of Transportation (Caltrans). 2023. *California Freight Mobility Plan*. https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/office-of-smart-mobility-and-climate-change/caltrans-climate-change-vulnerability-assessment-statewide-summary-feb2021-a11y.pdf.] [California Department of Transportation (Caltrans). 2016. *California Sustainable Freight Action Plan*. https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/main-document-final-07272016v2.pdf.] Assembly Bill 14 and the Infrastructure Investment and Jobs Act have mandated an update, requiring a state freight plan every four years to secure funding. The CFMP aims to have “the world’s most innovative, economically competitive, multimodal freight system that is efficient, reliable, modern, integrated, resilient, safe, and sustainable, where the benefits of freight are realized by all while supporting healthy communities and a thriving environment.

2.2.7 California State Rail Plan

The California State Rail Plan aims to enhance mobility over the next 25 years and beyond by connecting a growing population to more destinations. It targets regional and long-distance trips, which currently make up 75% of auto travel mileage in California. [California Department of Transportation (Caltrans). 2024. *California State Rail Plan*. https://dot.ca.gov/-/media/dot-media/programs/rail-mass-transportation/documents/california-state-rail-plan/2024-ca-state-rail-plan-a11y.pdf.] By 2050, passengers are expected to travel nearly 200 million miles daily on an integrated, zero-emission rail and transit network. This system will provide well-designed connections across all regions of California, offering greater access to opportunities and making car ownership optional for full participation in the state's economy.

2.3 Regional Goals and Policies

To gather information on regional goals and policies throughout the SR 99 corridor, a literature review of the RTPs (including related update documents) and Sustainable Communities Strategies (SCSs) listed in Table 1 was conducted. Metropolitan Planning Organizations (MPOs) are federally mandated to update their RTPs every four or five years to develop a 20-year vision for transportation investments and priorities. [California Department of Transportation (Caltrans). 2024. *2004 RTP Guidelines Update*. https://dot.ca.gov/programs/transportation-planning/division-of-transportation-planning/regional-and-community-planning/rtp-guidelines-update.] Under the Sustainable Communities and Climate Protection Act of 2008 (SB 375), California MPOs are required to develop an SCS, which is a long-range plan that aligns transportation, land use, and housing decisions to achieve GHG emissions reduction goals set by the California Air Resources Board. The SR 99 CMCP team has analyzed each RTP/SCS's goals, policies, and projects to ensure they align with the SR 99 CMCP.

Table 1. Regional Planning Documents

Document	Agency	Caltrans District	County	Document Link
SACOG Draft 2025 Blueprint	Sacramento Area Council of Governments (SACOG)	3	Sacramento	https://www.sacog.org/planning/blueprint
SJCOG 2022 RTP/SCS	San Joaquin Council of Governments (SJCOG)	10	San Joaquin	https://www.sjcog.org/608/Adopted-2022-RTPSCS-Plan
StanCOG 2022 RTP/SCS	Stanislaus Council of Governments (StanCOG)	10	Stanislaus	https://stancog.org/187/Regional-Transportation-Plan-RTP
MCAG 2022 RTP/SCS	Merced County Association of Governments (MCAG)	10	Merced	https://www.mcagov.org/364/2022-RTP
MCTC 2022 RTP/SCS	Madera County Transportation Commission (MCTC)	6	Madera	https://www.maderactc.org/transportation/page/your-madera-2046-rtpscs
Fresno COG 2022 RTP/SCS	Fresno Council of Governments (Fresno COG)	6	Fresno	https://www.planfresno.com/sustainable-communities-strategies-fall-outreach/
TCAG 2022 RTP/SCS	Tulare County Association of Governments (TCAG)	6	Tulare	https://tularecog.org/tcag/planning/rtp/rtp-2022/
KernCOG 2022 RTP/SCS	Kern Council of Governments (KernCOG)	6	Kern	https://www.kerncog.org/2022-rtp/
Kern Area Regional Goods-Movement Operations	Kern Council of Governments (KernCOG)	6	Kern	http://www.kerncog.org/KARGO

2.3.1 State Route 99 Prior Corridor Planning

Prior to the development of this CMCP, the SR 99 corridor has had decades of planning work aimed at developing and improving its transportation infrastructure. As shown in Figure 5, previous corridor planning work includes:

- The **2005 SR 99 Business Plan** provided the first comprehensive corridor management document with agreement between Caltrans Districts 6 and 10 and the eight MPOs in the study corridor. [California Department of Transportation (Caltrans). 2005. *2005 Route 99 Business Plan.* https://bondaccountability.dot.ca.gov/documents/Route99BusinessPlan-a11y.pdf] This plan created a 20-year program outlining goals for SR 99 and identifying 67 projects to achieve them. Key projects included fully converting conventional

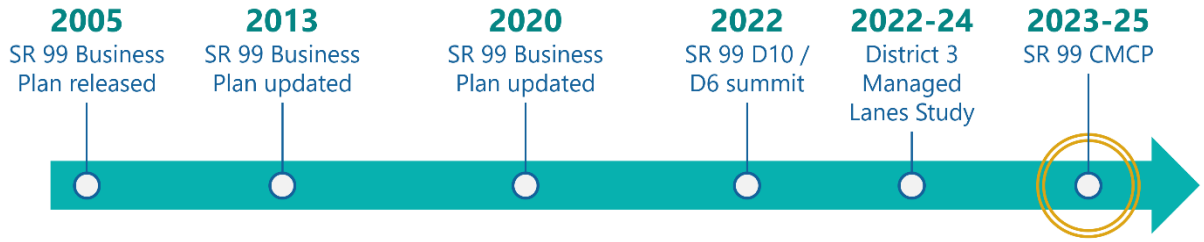
highway sections to freeways, widening SR 99 to a minimum of six lanes throughout the corridor, implementing operational improvements like high-occupancy vehicle (HOV) lanes, and constructing new interchanges. The 2005 Business Plan highlighted the following goals:

  - Identify major projects that will improve safety, reduce congestion, and facilitate efficient goods movement along the SR 99 corridor.
  - Achieve consensus among Caltrans and the MPOs in the San Joaquin Valley on the priority that will be given to different classifications of projects.
  - Identify a comprehensive list of major road projects to be completed along the corridor.
  - Develop strategies to improve the long-term success of all projects.
  - Discuss Interstate designation for the route.
  - Identify strategies for influencing land use decisions along the route.
  - Identify current and future potential funding sources and strategies.
  - Identify the economic benefits associated with an improved transportation corridor.
  - Determine the proper phasing of construction to most efficiently invest funds in a timely manner.

- The **2013 SR 99 Business Plan Update** provided an overview of progress made since 2005. [California Department of Transportation (Caltrans). 2013. *Route 99 Business Plan Update*.] In 2006, Proposition 1B: Goods Movement Emission Reduction Program was passed and dedicated $1 billion to projects on SR 99. Twenty-nine projects identified in the 2005 Plan were completed by 2013, including all freeway conversion projects and almost half of all four- to six-lane conversion projects.
- The **2020 SR 99 Business Plan Final Report** provided an update on accomplishments since 2013 and the remaining projects. It also aims to support the development of other SR 99 corridor plans, including this CMCP. [California Department of Transportation (Caltrans). 2020. *Route 99 Business Plan Final Report*. https://tularecog.org/sites/tcag/assets/File/Route%2099%20Business%20Plan%20Final%20Report%20(March%202020).pdf.]

Appendix C provides an overview of previous engagement and planning activities concerning SR 99.

Figure 5. Timeline of Prior Corridor Planning



2.4 Goals, Objectives and Performance Measures

Corridor objectives and performance measures were developed consistent with CMCP Guidelines and based on a review of over 20 CMCPs statewide. In addition, the metrics align with state, county, and local jurisdiction plans in the SR 99 CMCP corridor, as well as the CSIS, CAPTI 2.0, and CTP 2050. In particular, the SR 99 CMCP goals related to equity, climate resilience, safety, and multimodal integration directly align with CAPTI 2.0 guiding principles. The goals related to safety, equity, climate action, accessibility, and economic vitality directly align with the long-term goals in the CTP 2050. The goals, objectives, and performance measures guide development of a quantitative and qualitative assessment framework that will analyze baseline and future conditions as well as identified solutions (projects, concepts, and strategies). The framework includes measures that are both specific and viable for analysis. The measures were also selected based on the readily available data and analysis tools and methods such as:

- Caltrans Performance Measurement System (PeMS) Data
- Caltrans Truck Annual Average Daily Traffic (AADT) Data
- Geographic Information System (GIS)
- Statewide Integrated Traffic Records System/Transportation Injury Mapping System/Traffic Accident Surveillance and Analysis System
- California Statewide Travel Demand Model (CSTDM)
- Census/American Community Survey (ACS)
- Caltrans Equity Index
- EMFAC emissions model
- General Transit Feed Specification

Table 2 presents the SR 99 corridor goals, objectives, and performance measures. The performance framework addresses the complex needs of the corridor and its residents,

workers, and visitors. The analysis addresses the need to create balanced multimodal transportation system that improves safety, air quality, and affordability while supporting the communities of the south Sacramento and San Joaquin Valleys. The performance measures included in the table are general recommendations for consideration at the corridor level and will be evaluated on a project-by-project basis. The full Analysis Plan for the SR 99 CMCP can be found in Appendix A.

Table 2. SR 99 CMCP Goals, Objectives and Performance Measures

Goals	Objectives	Performance Measures
Provide a safe and secure transportation system	Improve safety on the corridor, adjacent and parallel facilities, and interchanges for all users of all modes	Number of safety or security improvements
Maintain and preserve infrastructure in a state of good repair	Maintain the transportation system in a state of good repair	Number of transportation assets or infrastructure improved
Support economic vitality and efficient freight movement	Improve the efficiency of the corridor for freight and goods movement	Truck delay Percent of volume that is trucks
Reduce emissions (GHG, particulates, etc.) and improve air quality	Reduce GHG emissions and criteria pollutants	Total GHG Total Criteria pollutants (Particulate Matter 2.5, Reactive Organic Gases, Nitrogen Oxides)

Goals	Objectives	Performance Measures
Improve equitable multimodal options, connectivity, and accessibility	Improve access to multimodal choices and system connectivity	Mode share Disadvantaged residents travel time
	Improve bicycle and pedestrian connectivity and the consideration of Complete Streets design concepts	Miles of active transportation facilities Bicycle and pedestrian miles traveled
	Increase investment in disadvantaged communities	Total investment in disadvantaged communities
	Reduce vehicle miles traveled (VMT)	Change in VMT
Improve bottlenecks with a range of alternatives	Improve system mobility and traffic operations	Person and vehicle throughput Person and vehicle hours of delay Average speed Travel time reliability
Advance corridor resilience and mitigate climate change impacts	Adapt to climate change and plan for resiliency for the corridor	Number of mitigated vulnerability and risks

Goals	Objectives	Performance Measures
Improve quality of life, public health, livability, natural resources, and environmental justice	Improve public health	Share of population engaged in 20 minutes or more of transportation-related physical activity Share of resident population within 1/4 mile of congested freeways, by subpopulation
Advance clean technology, innovation, smart infrastructure, and emerging technologies	Support zero-emission vehicle (ZEV) deployment Support innovation and emerging technology	Number of projects with ZEV equipment and facilities Number of improvements involving innovation, smart infrastructure, and emerging technologies
Promote sustainable land use, affordable housing, and jobs-housing balance	Improve multimodal options to support mixed-use and in-fill development	Mode share for short trips (three miles or less)

3 Existing Conditions

3.1 Corridor Overview

The SR 99 CMCP encompasses nearly 300 miles of SR 99 from its southern terminus in Kern County at I-5 north through the San Joaquin Valley to just south of downtown Sacramento in the southern Sacramento Valley (see Figure 6).

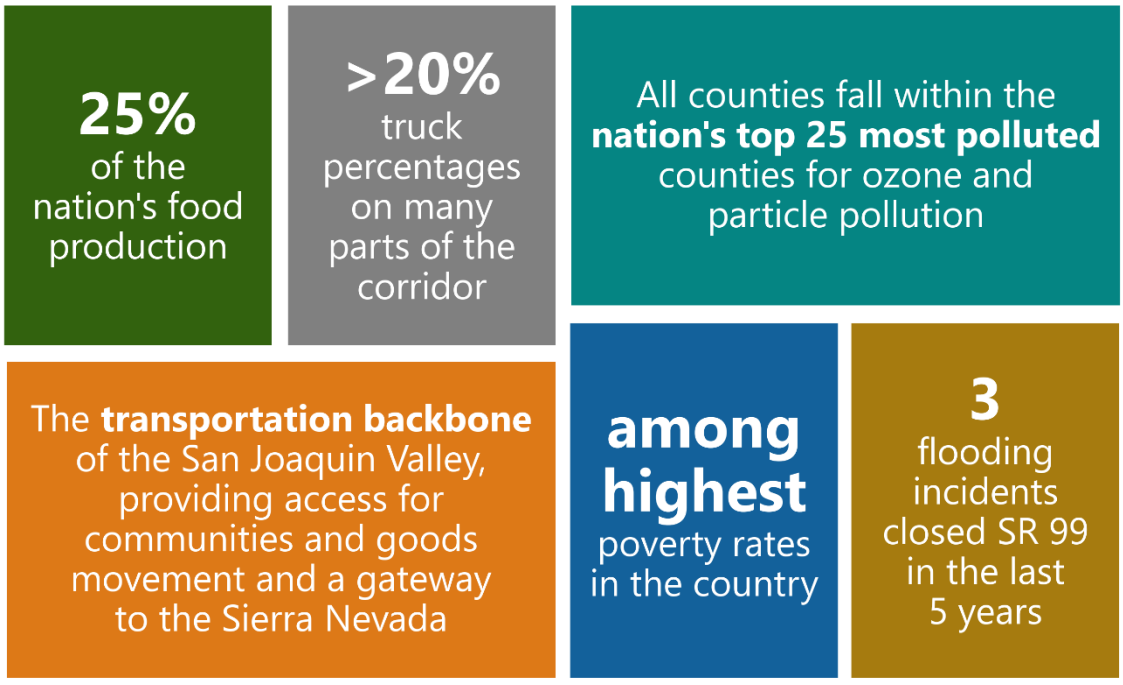
Figure 6. SR 99 CMCP Limits

While I-5 serves as the primary north-south route for long distance and interregional travel in the western Central Valley, SR 99's location in the heart of the Valley provides direct access for goods movement and local trips between urban areas, agricultural hubs, and local communities. SR 99 is the backbone of the Central Valley, providing major and primary access to northern and southern California via rail, transit, multiple

other state highways, and I-5. SR 99 links major cities including Bakersfield, Delano, Tulare, Visalia, Fresno, Madera, Merced, Turlock, Modesto, Manteca, Stockton, and Sacramento and many other cities and communities in between. SR 99 started out as US Route 99 during the mid-1920s and has gradually been converted to freeway designation throughout the nearly 300-mile study extents. All sections of SR 99 range between four to eight lanes in both directions in the larger metropolitan areas along the corridor. SR 99 is primarily a four- to six-lane facility in the remaining rural areas of the Central San Joaquin Valley. Figure 7 provides a summary of key opportunities and challenges relating to SR 99.

SR 99 is vitally important to all the communities along its stretch given the extent of agricultural commodities and agricultural producing land located for miles along either side. California's Central Valley is considered the agriculture capital of the world and SR 99 is its lifeline giving farmers, packing houses, food processing and other related industries much needed access to get their commodities from farm to market. The movement of these goods is illustrated by the high truck traffic on the corridor, which accounts for over 20% of traffic on some segments, straining transportation infrastructure and contributing to poor air quality.

Figure 7. SR 99 Corridor Opportunities and Challenges



The corridor provides major access to State universities, community colleges, other education facilities, and major industrial and service-oriented development. The Central San Joaquin Valley is home to very diverse populations including Hispanic, African

American, Asian, Punjabi, Native American, and others. Many cities and towns along SR 99 are home to these Valley minority families, some of which are also primarily low income and reliant on the agricultural industry for employment. Some of these communities are bisected by SR 99 and one or both parallel railroads (Union Pacific and BNSF Railway), causing emergency access issues, limited access for pedestrian, bicycle and auto/truck travel, as well as creating safety concerns. In addition, these communities rank as some of the state's most impacted by CalEnviroScreen 4.0, a tool that uses environmental, health, and socioeconomic data to identify areas throughout California that are impacted by various sources of pollution and where populations are vulnerable to their effects.

As the central route connecting the population centers of the San Joaquin and southern Sacramento Valleys, SR 99 is a critical route for its residents and workers. Flooding already poses a significant threat to SR 99, stemming from intense storm surges or failures in existing flood infrastructure, such as levees. Runoff from the Sierra Nevada can lead to flooding in areas and communities downstream along SR 99, with three multi-day closures over the last several years.

3.2 SR 99 Corridor Demographics

3.2.1 Population

Population estimates within one mile of SR 99 were developed using data from the 2020 Decennial Census. This dataset was selected because it provides detailed demographic information at the census block level, the smallest geographic unit used in compiling census data. Table 3 indicates that Madera and Merced counties have the highest concentrations of their population living within one mile of SR 99, with nearly a third of their population. Other counties, such as Stanislaus and San Joaquin, also show notable percentages. Overall, about 14% of the total population across these counties is situated within close proximity to SR 99, meaning that these residents would likely be directly impacted by changes made to the corridor.

Table 3. Population within One Mile of SR 99 by County

County	Population within One Mile of SR 99	County Population	Percent of County Population within One Mile of SR 99
Sacramento	155,000	1,585,000	10%
San Joaquin	117,000	779,000	15%
Stanislaus	120,000	553,000	22%
Merced	82,000	281,000	29%
Madera	46,000	156,000	30%
Fresno	117,000	1,009,000	12%
Tulare	52,000	473,000	11%
Kern	127,000	909,000	14%
TOTAL	**816,000**	**5,898,000**	**14%**

Data Source: US Census Bureau. 2020 Decennial Census, DEC Demographic Profile, Table DP1. https://data.census.gov/table?g=050XX00US06019,06029,06039,06047,06067,06077,06099,06107&d=DEC+Demographic+Profile

Data from the California Department of Finance in Table 4 shows significant population growth across these counties from 2000 to 2024, with notable increases in San Joaquin, Merced, and Kern counties. San Joaquin experienced the highest growth, followed closely by Kern and Merced counties, some of the fastest growing counties in the state. In 2050, these counties are all projected to continue growing. However, growth rates are anticipated to slow down compared to the previous two decades. Kings County is projected to have very minimal growth from 2024 to 2050, and Madera and Kern counties are expected to see increases below 10%. The overall data highlights ongoing population expansion, though at a slower pace in the future. As a result of expected population growth, more traffic congestion, wear on existing infrastructure, and demand for more developments (e.g. housing, schools, hospitals) should also be anticipated.

Given its proximity to SR 99, Kings County population data was included in Table 4 for additional context.

Table 4. Population Growth and Projection

County	2000 Population	2024 Population	% Change (2000-2024)	2050 Population	% Change (2024-2050)
Sacramento	1,223,000	1,584,000	+30%	1,921,000	+21%
San Joaquin	564,000	796,000	+41%	1,029,000	+29%
Stanislaus	447,000	551,000	+23%	609,000	+11%
Merced	211,000	290,000	+37%	331,000	+14%
Madera	123,000	161,000	+31%	171,000	+6%
Fresno	799,000	1,020,000	+28%	1,134,000	+11%
Tulare	368,000	481,000	+31%	538,000	+12%
Kings	129,000	153,000	+19%	155,000	+1%
Kern	662,000	911,000	+38%	986,000	+8%

Data Source: State of California Department of Finance. P-2A Total Population for California and Counties, 2023 Baseline. https://dof.ca.gov/forecasting/demographics/projections/

3.2.2 Demographics

The data in Table 5 reveals diverse demographic and socioeconomic trends across several counties. Sacramento and Fresno have significant Asian populations, while Merced and Tulare have high Hispanic/Latino populations. Language diversity is notable, with over 50% of Merced and Tulare residents speaking a language other than English at home. Educational attainment varies as well; Sacramento has the highest percentage of population with a college bachelor's degree or higher, while Merced and Tulare are significantly less. Median household incomes range widely, with Sacramento and San Joaquin at the higher end, and Kern and Tulare at the lower end. Poverty rates are highest in Madera and Fresno, and zero-vehicle households are most common in Fresno and Merced. Overall, these trends highlight the varied demographic, economic, and social landscapes within these counties. Appendix B provides a more in-depth overview of the demographics of each county along the SR 99 corridor.

The following are data sources for Table 5:

- **White Alone:** US Census Bureau. "ACS Demographic and Housing Estimates." American Community Survey, 2022 ACS 5-Year Estimates Data Profiles, Table DP05. https://data.census.gov/table/ACSDP5Y2022.DP05?g=050XX00US06019,06029,06031,06039,06047,06067,06077,06099,06107&d=ACS+5-Year+Estimates+Data+Profiles

- **Language Other Than English Spoken at Home:** US Census Bureau. “Selected Social Characteristics in the United States.” American Community Survey, 2022 ACS 5-Year Estimates Data Profiles, Table DP02. https://data.census.gov/table/ACSDP5Y2022.DP02?g=040XX00US06_050XX00US06019,06029,06031,06039,06047,06067,06077,06099,06107&y=2022&d=ACS+5-Year+Estimates+Data+Profiles
- **Median Household Income:** US Census Bureau. “Selected Economic Characteristics.” American Community Survey, 2022 ACS 5-Year Estimates Data Profiles, Table DP03. https://data.census.gov/table/ACSDP5Y2022.DP03?g=040XX00US06_050XX00US06019,06029,06031,06039,06047,06067,06077,06099,06107&y=2022&d=ACS+5-Year+Estimates+Data+Profiles
- **Zero Vehicle Households:** US Census Bureau. “Physical Housing Characteristics for Occupied Housing Units.” American Community Survey, 2022 ACS 5-Year Estimates Data Profiles, Table S2504. https://data.census.gov/table?q=S2504:+Physical+Housing+Characteristics+for+Occupied+Housing+Units&g=050XX00US06019,06029,06031,06039,06047,06067,06077,06099,06107&y=2022&d=ACS+5-Year+Estimates+Subject+Tables

Table 5. County Demographics

County	White Alone	Black Alone	Asian Alone	Hispanic/ Latino	Language Other than English Spoken at Home	Bachelor's Degree or Higher, Ages 25+	Median Household Income	Persons in Poverty	Zero Vehicle Households
Sacramento	42%	9%	17%	24%	33%	33%	$84,000	13%	6%
San Joaquin	29%	7%	17%	43%	42%	20%	$83,000	13%	5%
Stanislaus	39%	3%	6%	49%	43%	18%	$75,000	18%	5%
Merced	25%	3%	7%	62%	53%	15%	$65,000	19%	7%
Madera	32%	3%	2%	60%	46%	17%	$74,000	20%	4%
Fresno	27%	4%	10%	54%	44%	24%	$68,000	20%	7%
Tulare	27%	1%	3%	66%	50%	16%	$64,000	19%	5%
Kings	30%	7%	4%	56%	41%	15%	$69,000	16%	5%
Kern	32%	5%	5%	55%	45%	18%	$64,000	19%	6%
California	35%	5%	15%	40%	44%	36%	$92,000	12%	7%

3.2.3 Disadvantaged Communities

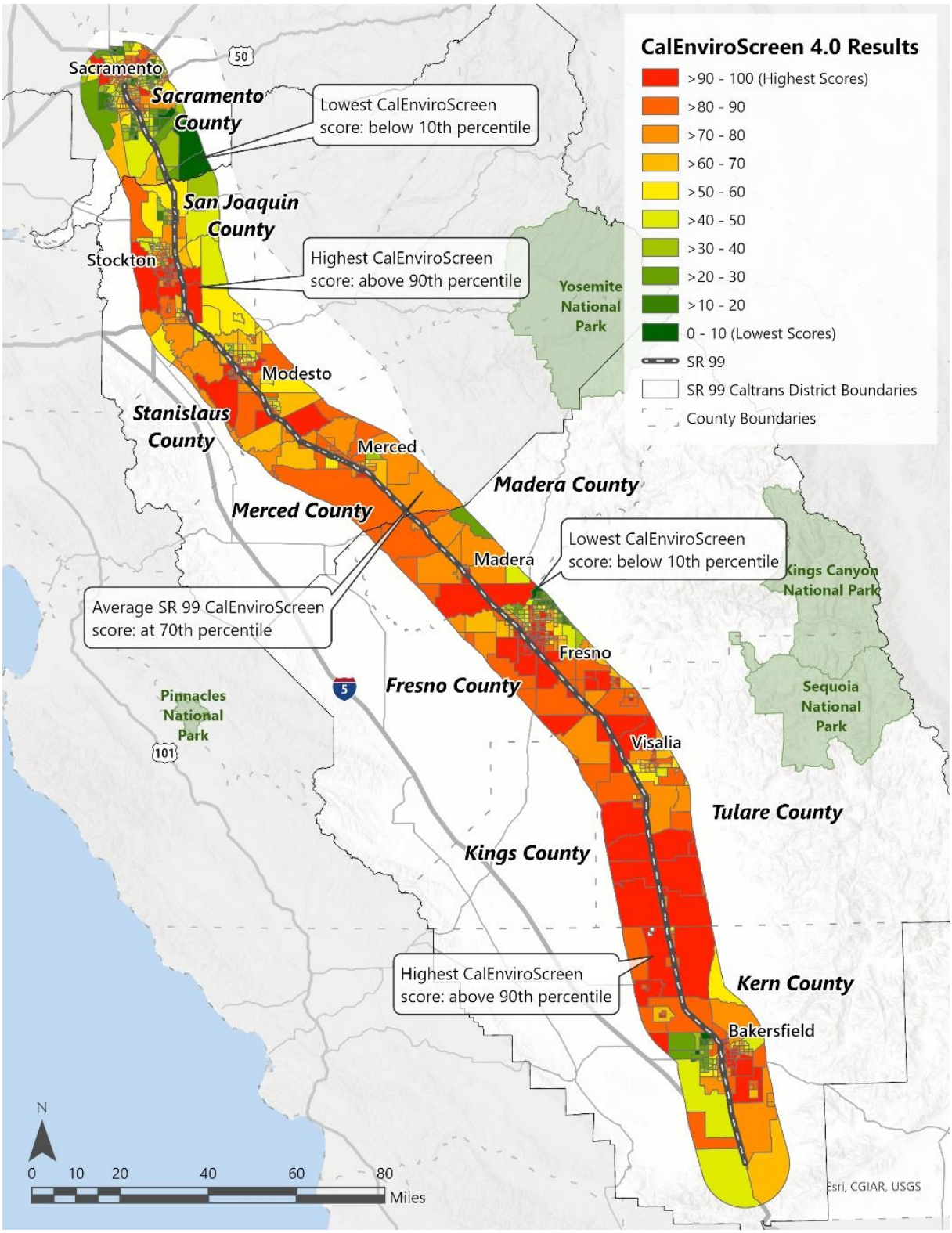
Disadvantaged communities along SR 99 were identified using two methods: the California Office of Environmental Health Hazard Assessment (OEHHA)'s CalEnviroScreen 4.0 and the Caltrans Transportation Equity Index (EQI) Version 1.0 Web Map.

Figure 8 displays the CalEnviroScreen 4.0 results, highlighting environmental risk and pollution burden across various counties in California. CalEnviroScreen 4.0 scores are determined using a combination of Pollution Burden and Population Characteristics indicators. The final CalEnviroScreen 4.0 score is calculated by multiplying the Pollution Burden score and the Population Characteristics score. Figure 8 shows CalEnviroScreen 4.0 percentiles by census tract within a 10-mile buffer around SR 99. 53% of these census tracts are in the 70th percentile and above for pollution burden in California, and 18% are in the 90th percentile and above. The highest scores, indicating the greatest environmental risk, are observed in Fresno County, Tulare County, Kings County, and Kern County. Conversely, the lowest scores are found in Elk Grove, Galt, and areas west of Bakersfield.

Figure 9 illustrates that Caltrans EQI Priority Populations are present along the entire SR 99 corridor. These communities face compounded challenges due to factors such as low-income levels, predominantly non-white demographics, proximity to high traffic volumes, elevated crash exposure, and limited access to multimodal options. As identified by the EQI, these populations bear a disproportionate share of transportation-related burdens while receiving fewer benefits from existing transportation infrastructure.

Disadvantaged communities were also identified at the district level using the California Climate Investments Priority Populations Mapping Tool 4.0. Figure 10 shows disadvantaged communities in Districts 3 and 10 and Figure 11 shows disadvantaged communities in District 6. The designations shown in these maps are in accordance with California Environmental Protection Agency's (CalEPA) definition of disadvantaged communities, CalEnviroScreen 4.0, and the California Department of Housing and Community Development's Revised 2021 State Income Limits. Large swaths of Districts 10 and 6 consist of census tracts with the highest 25% of CalEnviroScreen 4.0 scores and census tracts at or below.

Figure 8. CalEnviroScreen 4.0 Percentiles

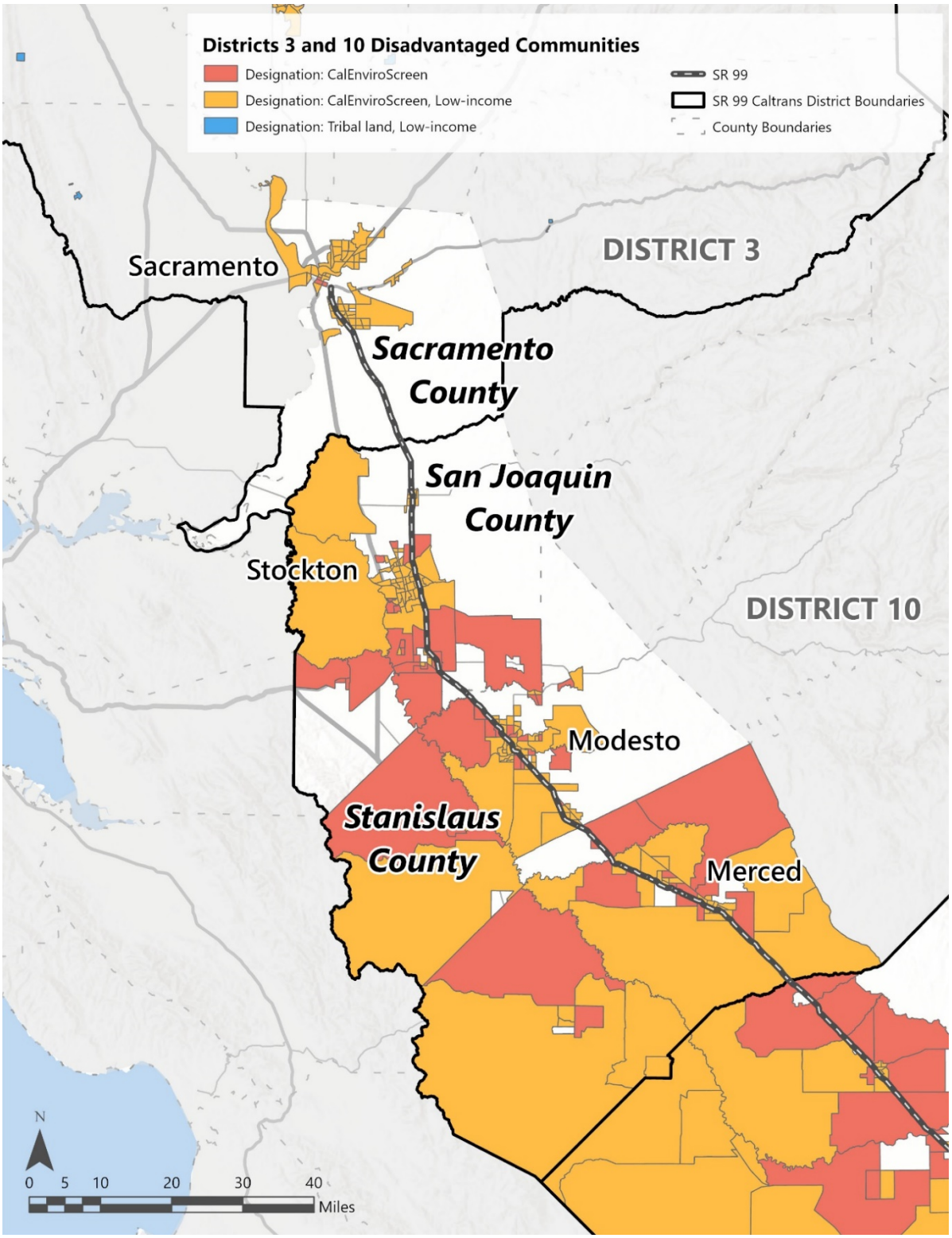


Data Source: California OEHHA. 2021. CalEnviroScreen 4.0. https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40

Figure 9. Caltrans Equity Index

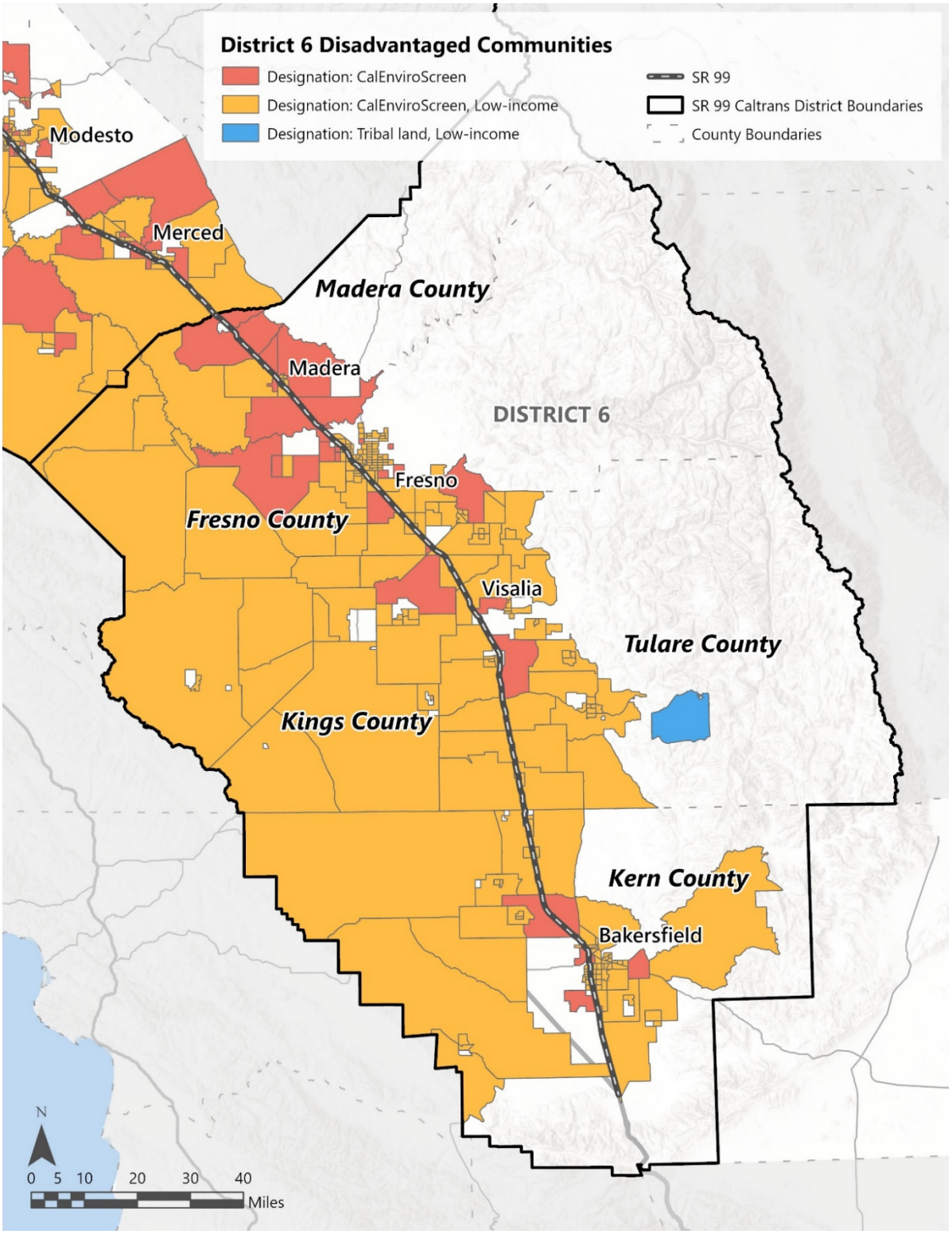
Data Source: Caltrans EQI. https://dot.ca.gov/programs/esta/race-equity/eqi

Figure 10. Disadvantaged Communities – District 3 and District 10



Data Source: California Climate Investments Priority Populations 4.0. https://gis.carb.arb.ca.gov/portal/apps/experiencebuilder/experience/?block_id=layout_89_block_72&id=5dc1218631fa46bc8d340b8e82548a6a&page=Priority-Populations-4_0

Figure 11. Disadvantaged Communities – District 6



Data Source: California Climate Investments Priority Populations 4.0. https://gis.carb.arb.ca.gov/portal/apps/experiencebuilder/experience/?block_id=layout_89_block_72&id=5dc1218631fa46bc8d340b8e82548a6a&page=Priority-Populations-4_0

3.2.4 Job Growth

The employment data in Table 6 shows substantial growth across the counties from 2000 to 2022, with the highest increases in Kern and San Joaquin counties. In 2050, employment is projected to continue rising at a slower pace. San Joaquin and Stanislaus counties are expected to see the largest percentage increases, while Madera and Merced will have more modest growth. Overall, these trends indicate ongoing expansion in employment opportunities, reflecting broader economic development across the region. More job growth could lead to more investment in these areas, as demand for housing and more robust transportation options may increase as well. To improve access to key employment centers, multimodal transportation improvements should be strongly considered.

Table 6. Job Growth in the Central Valley

County	2000 Employment	2022 Employment	% Change (2000-2022)	2050 Employment	% Change (2022-2050)
Sacramento	564,000	713,000	+26%	848,000	+19%
San Joaquin	204,000	287,000	+41%	356,000	+24%
Stanislaus	161,000	200,000	+24%	246,000	+23%
Merced	64,000	86,000	+34%	100,000	+16%
Madera	40,000	55,000	+38%	60,000	+9%
Fresno	331,000	420,000	+27%	512,000	+22%
Tulare	134,000	176,000	+31%	208,000	+18%
Kings	38,000	49,000	+29%	63,000	+29%
Kern	244,000	347,000	+42%	426,000	+23%

Data Source: Caltrans. 2022. Long-Term Socio-Economic Forecasts by County. https://dot.ca.gov/programs/transportation-planning/division-of-transportation-planning/state-planning/transportation-economics/long-term-socio-economic-forecasts-by-county

3.3 SR 99 Corridor Transportation

Improving and enhancing multimodal transportation options along the SR 99 corridor is critical, as SR 99 is a vital roadway for large populations of Californians during emergency situations or when traffic congestion peaks. Older sections of US 99 are present today, such as Golden State Boulevard, which provides alternative access when SR 99 is closed or severely congested due to collisions or construction. However, these sections are not continuous. In addition to repairs, the freeway needs physical and technological modifications to enhance and improve traffic flow, safety, and visual quality.

Urban areas along the corridor experience heavy traffic flow, especially during peak hours. The presence of HOV lanes in Sacramento reflects high commuter demand at

the north end of the study area. Congestion and safety issues are also prevalent in the corridor's more rural stretches, primarily where the freeway narrows to two lanes in each direction and where it passes through major cities. The interchanges in these congested areas are of particular concern. An expected increase in traffic along the corridor will impact truck time reliability, particularly as interest grows in locating new distribution centers and manufacturing facilities in Kern County to take advantage of proximity to the Southern California market as well as the county's connections to SR 58, the high desert, and future inland port facilities and with continued population, job, and distribution center growth in San Joaquin County near the Bay Area.

Limited transit options currently exist along the SR 99 corridor. Amtrak operates within the corridor, providing six round trip passenger trains per day between Bakersfield and Stockton with connections to northern and southern California. The Altamont Corridor Express (ACE) runs four trips per day between stations in San Joaquin County and San Jose with connections north to the San Francisco Bay Area. The San Joaquin Joint Powers Agency is planning to extend ACE passenger rail service to Modesto, Ceres, and Merced, which will provide commuter passenger rail service connecting Merced and Stanislaus County to the Bay Area. The California High-Speed Rail Authority (CHSRA) will also run high-speed rail adjacent to SR 99 in some stretches of the corridor in the future. Various transit agencies also run bus service on SR 99. Although multimodal transportation options do exist on SR 99, more improvements are needed to optimize travel along the corridor.

3.3.1 Annual Average Daily Traffic

Segment-wide vehicle throughputs were obtained and compiled based on Caltrans Transportation System Network, Caltrans 2019 Traffic Census Data, and October 2019 PeMS Data. This data period was chosen because it represents the most recent baseline year unaffected by the COVID-19 pandemic that was available during the development of the CMCP. As the vehicle throughputs change along the corridor, maximum vehicle throughputs were selected to represent the highest traffic demand on the segment as described earlier. AADT volumes along the SR 99 corridor are shown in Figure 12.

Urban areas in Sacramento, Kern, Fresno, San Joaquin and Stanislaus counties have the highest traffic volumes along SR 99. Daily traffic ranges from approximately 150,000 to more than 200,000 vehicles per day in these locations, while the remaining segments encompass rural areas and have lower daily traffic ranging from 50,000 to 90,000 vehicles.

The more recent Mobility Performance Reports from 2024 reveal high demand for travel on SR 99, resulting in numerous, recurring bottlenecks on the corridor with year over year increases post-COVID. In District 3, the southbound delays in the afternoon in Elk

Grove make it the fourth highest bottleneck in the District. In District 10, four of the top six bottlenecks are found on SR 99 in the afternoon south of Manteca in San Joaquin County on the way to Ripon and in Stanislaus County approaching SR 132, and Modesto. Caltrans District 6 also has six of its top ten bottlenecks on SR in Fresno County, approaching Fresno in the morning and afternoon.

Traffic volumes provide insight on the need to address congestion, safety, and connectivity along the high-demand segments. In contrast, the lower AADT in rural segments suggests a different set of priorities, such as maintaining accessibility and connectivity while supporting economic development and goods movement. The CMCP solutions respond to these conditions through strategies that optimize traffic flow, promote public transit, and integrate multimodal options.

3.3.2 Local Transit Network

Bus routes that travel along SR 99 are operated by Sacramento Regional Transit (SacRT), San Joaquin Regional Transit District (SJRTD), Stanislaus Regional Transit Authority (StanRTA), Merced County Transit (The Bus), Madera County Connection (MCC), Kings Area Regional Transit (KART), Visalia Transit, Tulare County Regional Transit Agency(, and Kern Transit. Many of these routes are commuter lines that run limited service on weekdays only. Figure 13 shows the identified bus routes along SR 99. Most of the corridor is served by buses, but there are a few gaps in the network in Merced, Madera, Fresno, Tulare, and Kern counties. Strengthening this network would help reduce traffic congestion, promote sustainable transportation options, and enhance access to essential services and employment opportunities.

Figure 12. Annual Average Daily Traffic

Data Source: Caltrans PeMS Data, October 2019

Figure 13. Local Transit Network

Data Source: GTFS

3.3.3 Goods Movement

The Federal Bureau of Transportation Statistic's Freight Analysis Framework 5 (FAF5) provides insights into the goods transported along SR 99. For each SR 99 link in the FAF5 network, the share of tonnage across the 12 commodity groups reported in the network-level FAF5 data was calculated. The 12 commodity groups include:

- Farm products; food, beverage, and tobacco
- Stone, sand, gravel, and ores; liquid and gases
- Chemicals
- Logs and other wood products
- Waste and scrap
- Consumer manufacturing goods
- Durable manufacturing goods (low tech)
- Durable manufacturing goods (high tech)
- Motorized and other vehicles
- Mixed freight

As shown in Figure 14, the results indicate that heavy trucks and freight trains traveling along SR 99 corridor are primarily transporting farm products, food and beverage products, consumer manufacturing goods, and durable manufacturing goods (low tech). The highest tonnage portions of the SR 99 corridor include:

- SR 99-SR 204 interchange in Bakersfield to the SR 99-SR 137 interchange in Tulare;
- SR 99-SR 198 interchange in Visalia to the SR 99-SR 41 interchange in Fresno; and
- E. Hatch Road in Modesto to the SR 99-SR 120 interchange in Manteca.

Figure 14. Goods Movement

3.3.4 Freight Network

In addition to SR 99 and other highways, freight is transported through the San Joaquin Valley via rail. Two major routes include the Union Pacific Railroad (UPRR) that mostly runs parallel to SR 99 from Sacramento to Bakersfield, and the BNSF Railway that runs between Stockton and Bakersfield. Shorter railway segments to the east and west of SR 99 are operated by San Joaquin Valley Railroad, California Northern Railroad, and Sierra Northern Railway. Figure 15 and Figure 16 show the highway and rail networks and the location of freight hubs along SR 99.

Figure 15. Freight Rail Network

Data Source: Caltrans GIS Data

Figure 16. Freight Hubs

Data Source: Caltrans GIS Data

3.3.5 Truck Volumes

The share of trucks with three or more axles was compiled based on Caltrans' 2019 Transportation System Network (TSN) data. This data period was chosen because it represents the most recent baseline year unaffected by the COVID-19 pandemic that was available at the time of analysis. Kern and Stanislaus counties have the highest truck volumes in the corridor, with over 16,000 per day. These high truck volumes, representing over 20% of traffic in numerous locations, necessitate strategies to enhance freight efficiency, reduce congestion, and improve safety in these segments. Sacramento and Merced counties have the lowest daily truck volumes, between 7,000 and 10,000. Conversely, the lower truck volumes suggest a different focus of maintaining accessibility and supporting local economic activities. The CMCP provides comprehensive solutions that optimize truck movements and promote sustainable practices, ensuring the corridor effectively aligns with both regional and interregional freight. Figure 17 shows truck volumes along the SR 99 corridor.

Figure 17. Truck Volumes

Data Source: Caltrans 2019 TSN

4 Stakeholder and Public Engagement

Throughout the SR 99 CMCP's development, a variety of strategies were used to reach its stakeholders and obtain input on potential solutions to the corridor's opportunities and challenges. The most effective involvement efforts use a combination of methods and technologies to convey and receive information, build awareness, provide resources, and develop relationships. The three stakeholder groups involved in the CMCP development process are described in Figure 18, and the following sections outline the various methods used to receive stakeholder input.

Figure 18. SR 99 CMCP Stakeholder Groups

4.1 Technical Stakeholder Meetings

Technical Advisory Committee (TAC) meetings were held once a month to receive feedback on the CMCP's purpose and background, technical products like modeling, corridor challenges (e.g. land use and transportation improvement options), public outreach and engagement input, and identifying data needs and collection resources. The Executive Collaboration meetings occurred quarterly to review SR 99 CMCP status, progress, appropriate technical input, and resolve key issues and potential challenges. Both of these stakeholder groups played vital roles in refining the CMCP's solutions and were given multiple opportunities to review the solutions list to ensure the plan reflects the priorities of partner agencies. For more details on the solutions development process, please refer to Chapter 5.

4.2 Public Workshops and Briefings

In June 2024 and February 2025, Caltrans Districts 3, 6, and 10 collaborated with Jacobs, VRPA Technology Inc., Linguistica translation services, and AIM Consulting to organize sixteen virtual public workshops. The objective of these workshops was to provide an overview of the CMCP process and share updates on the SR 99 CMCP from Sacramento to Bakersfield. The workshops were also used to gather input from the public on priorities, concerns, and solutions to improve the SR 99 corridor for its users and adjacent communities. These workshops were held at two key milestones in the CMCP development process: following the analysis of existing conditions and after the identification of draft solutions.

Each round of engagement involved a series of eight online public workshops held via Zoom with presentation slides in both English and Spanish and real time Spanish interpretation. Mailing lists provided by all Councils of Governments (COGs), MPOs, and Valley Community-Based Organizations (CBOs) were used to promote the workshops. [COGs included: SACOG, SJCOG, StanCOG, MCAG, MCTC, Fresno COG, TCAG, KernCOG, and KCAG.] Flyers were also posted to the relevant Caltrans Districts' social media accounts, and the SR 99 CMCP video was shared on YouTube, announcing the start of public outreach efforts in June 2024. Flyers promoting the events included options for additional interpretation languages if needed, but no requests were received.

During both rounds of virtual engagement, the workshops occurred on weekday evenings over a month-long period to maximize options for participation. Participants could attend any public workshop but were encouraged to attend the session that best corresponded with their geographic location. In total, 121 people attended the June 2024 workshops and 67 attended the February 2025 workshops. The total number of people reached via email and the totals of workshop registrants and attendees during each round of workshops are shown in Table 7 and Table 8. A full summary of the public workshops can be found in Appendix D.

Table 7. June 2024 Workshops Summary

County	Emails Sent	Date	Registrants	Attendees
Tulare, Kings, and Kern	668	Wednesday, June 5 6:30-7:30pm	21	2
	Included in total for Tulare, Kings, and Kern.	Thursday, June 6 5:30-6:30pm	32	8
Madera and Fresno	4,555	Wednesday, June 12 6:30-7:30pm	47	24
	Included in total for Madera and Fresno.	Thursday, June 13 5:30-6:30pm	53	30
Sacramento	4,259	Thursday, June 20 5:30-6:30pm	74	32
San Joaquin, Stanislaus, and Merced	559	Thursday, June 25 5:30-6:30pm	37	14
	Included in total for San Joaquin, Stanislaus, and Merced.	Wednesday, June 26 6:30-7:30pm	23	5
	Included in total for San Joaquin, Stanislaus, and Merced	Thursday, June 27 5:30-6:30pm	27	6
Valley CBOs	154	Not Applicable	Not Applicable	Not Applicable
TOTAL	10,195 emails	8 events	314 registered	121 attended

Table 8. February 2025 Workshops Summary

County	Emails Sent	Date	Registrants	Attendees
Tulare, Kings, and Kern	1,936	Wednesday, February 5 6:30-7:30pm	23	4
	Included in total for Tulare, Kings, and Kern.	Thursday, February 6 5:30-6:30pm	30	8
Madera and Fresno	1,727	Wednesday, February 11 6:30-7:30pm	34	9
	Included in total for Madera and Fresno.	Thursday, February 12 5:30-6:30pm	28	11
Sacramento	9,669	Thursday, February 19 5:30-6:30pm	56	15
San Joaquin, Stanislaus, and Merced	3,678	Thursday, February 20 5:30-6:30pm	32	11
	Included in total for San Joaquin, Stanislaus, and Merced.	Wednesday, February 26 6:30-7:30pm	22	5
	Included in total for San Joaquin, Stanislaus, and Merced.	Thursday, March 6 5:30-6:30pm	29	4
TOTAL	17,010 emails	8 events	254 registered	67 attended

The SR 99 CMCP team also hosted several briefings for industry and tribal government representatives to obtain input on proposed transportation solutions and priorities and concerns related to SR 99. Sixteen representatives from the agricultural and goods movement industries were invited to join an SR 99 CMCP briefing held on April 21, 2025.

Two briefings were held for tribal government representatives on June 3 and 4, 2025. Sixty-five representatives of tribal governments were invited to attend these briefings.

4.3 Online Surveys

Following each round of virtual public workshops, online surveys using the same questions as the live workshop polls were shared online. The online surveys were intended to build upon input received during the public virtual workshops and support the identification and prioritization of potential solutions for the CMCP. The first survey was live during November and December 2024, after the completion of existing conditions analyses, and the second survey was live during March and April 2025, after the identification of draft solutions. Over 460 responses to the first survey were received and they centered around goals and challenges pertaining to SR 99. Common responses were related to high traffic volumes in the corridor and the need to address congestion and improve safety. The second survey built off this input and asked questions about preferred strategies for relieving traffic congestion and enhancing safety. One hundred thirteen responses to this survey were received.

4.4 SR 99 CMCP Website and Videos

An SR 99 CMCP website hosted by Caltrans 6 and SR 99 CMCP video posted to YouTube were developed to share information and promote the public workshops and online surveys described above. Links to the English and Spanish versions of the SR 99 CMCP video, online surveys, and virtual public workshop registration were hosted on the website (see Figure 19). After each round of virtual public workshops, recordings from each workshop were added to the website for the public to view.

Figure 19. SR 99 CMCP Website URL and SR 99 CMCP Video

5 Transportation Solutions

5.1 Solution Development Process

The identification of multimodal solutions for the SR 99 corridor involved a multi-step process that included a literature review of existing plans and input from TAC members, public engagement, and consultant Subject Matter Experts (SMEs), as outlined in Figure 20.

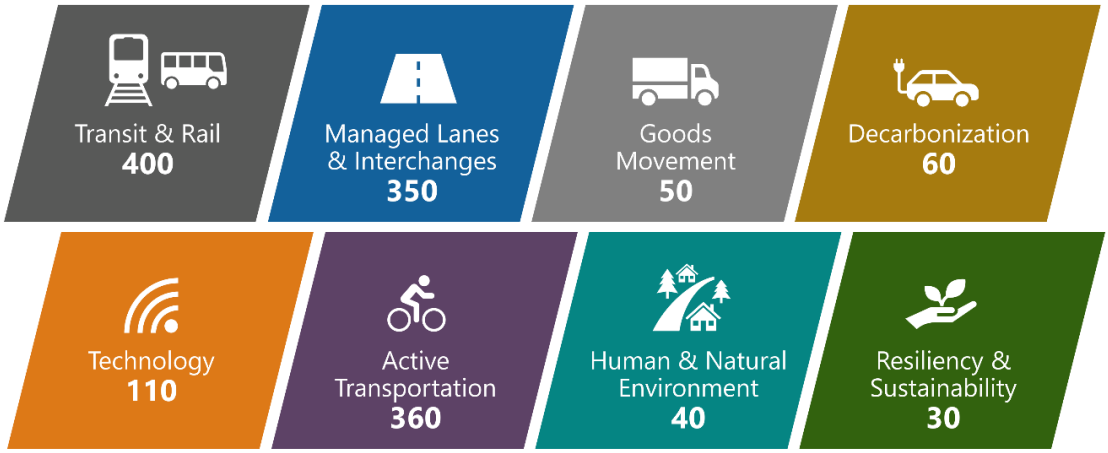
Figure 20. SR 99 Solutions Development

This phase of the CMCP began with the review of existing RTPs and SCSs from Regional Transportation Planning Agencies along the SR 99 corridor and select state transportation planning documents. Most solutions identified for inclusion in this CMCP are drawn from those efforts, building on years of planning, analysis, and public engagement. Not all solutions and/or timeframe of solutions in the SR 99 CMCP are consistent with or included in the Regional/Metropolitan Transportation Plan and Sustainable Communities Strategy.

Additionally, SR 99 CMCP ideas shared by the public during the June 2024 virtual public workshops and Fall 2024 online survey were incorporated in the initial list of solutions and shared with the public during the February 2025 virtual public workshops. Over the course of several months in Fall 2024, the SR 99 CMCP team held several meetings with public agency representatives from the TAC and Executive Collaboration Committee to refine the list and ensure the appropriate plans and projects had been

identified. Finally, a broad team of consultant SMEs reviewed the list of solutions and used their knowledge of best practices to synthesize the solutions into eight tailored strategies that aligned to the study's goals and the needs of the corridor. This round of review resulted in the addition of almost 500 new solutions. In total, there are nearly 1,400 solutions included in SR 99 CMCP. The breakdown by solutions category is shown in Figure 21 and the solutions summary and full list of solutions can be found in Appendices E and F.

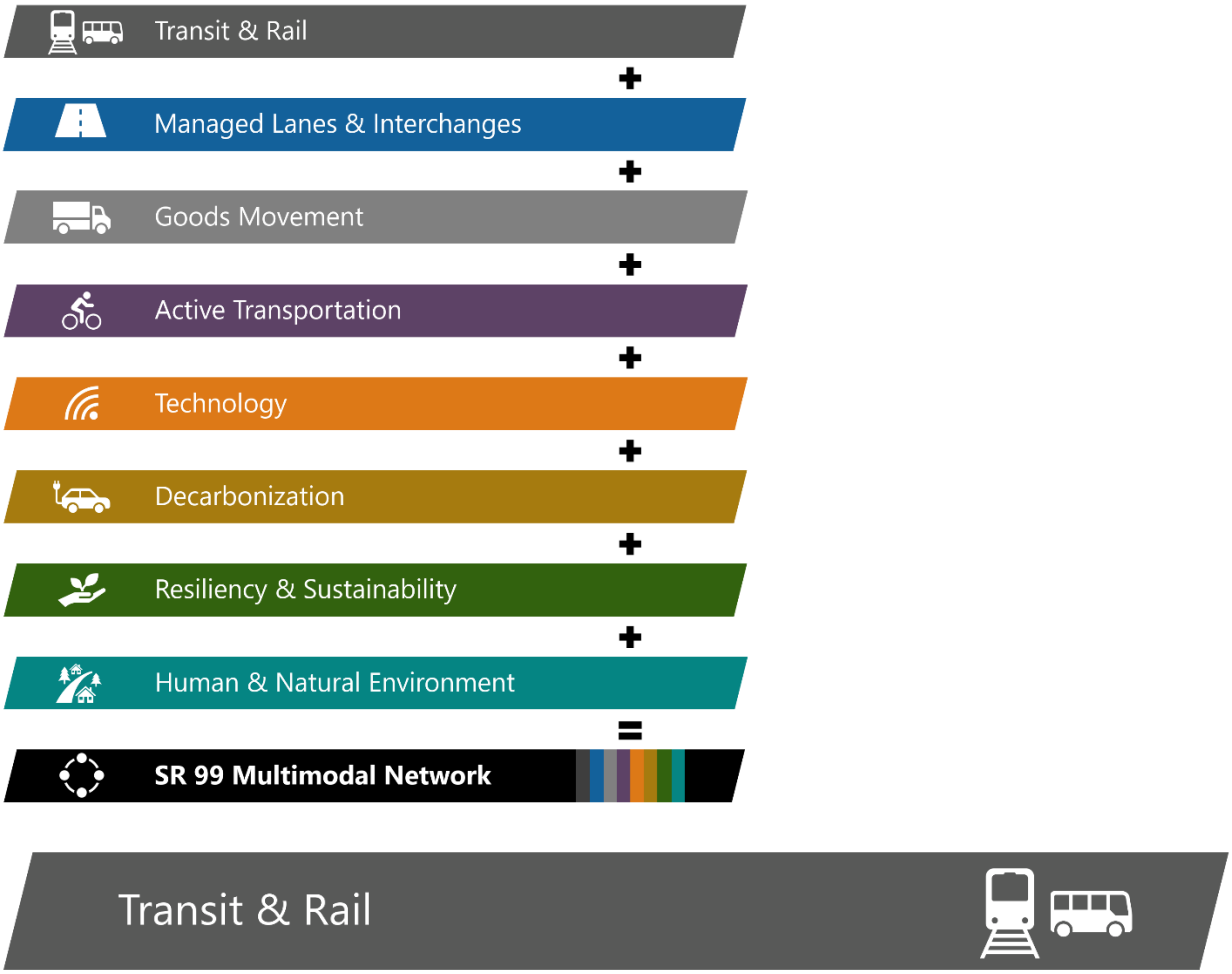
Figure 21. Solutions Categories



5.2 Recommended Solutions

The strategies and recommended solutions outlined in this section aim to create a more balanced transportation system for SR 99, one with fewer solo drivers on the road and more people walking, cycling, and using public transit in neighboring communities. These strategies also incorporate systemwide improvements that will improve the corridor's resilience in the face of future flooding, enhance the natural environment, provide for robust deployment of decarbonization, and improve public health in some of the state's most impacted neighborhoods. Figure 22 shows how these integrated efforts will create a multimodal network. Some strategies may require further study or expanded scope prior to implementation.

Figure 22. SR 99 CMCP Multimodal Approach



5.2.1 Transit and Rail

California High-Speed Rail

The California High-Speed Rail (CHSR), which runs parallel to the SR 99 corridor, represents a transformative investment in transportation infrastructure across the Central Valley. Its success will depend not only on the rail itself but also on integrated enhancements to conventional passenger rail, local transit, and first/last mile (FLM) connectivity. The CMCP addresses both the CHSR Early Operating Segment (EOS), spanning Merced to Bakersfield, and Phase 1, extending from Anaheim to San Francisco, by incorporating multimodal transportation strategies that support seamless mobility.

Conventional Passenger Rail

Several conventional passenger rail services including ACE Rail, Amtrak San Joaquins, and the proposed Valley Link are undergoing changes that align with and support the CHSR EOS and Phase 1. These changes include adjusting terminus stations, increasing

service frequencies and modifying schedules. The Valley Rail Program plays a key role by expanding ACE and San Joaquins service northward to Sacramento and southward to Merced, enhancing regional connectivity and creating vital feeder routes into the CHSR system. Figure 23 illustrates the anticipated future passenger rail network along the SR 99 corridor, featuring CHSR, ACE Rail, Amtrak San Joaquins, and Valley Link.

Bus Transit

As California advances its high-speed rail network, SR 99 offers a strategic opportunity to implement complementary transit services that strengthen regional mobility and support rail expansion. The CMCP includes four distinct types of bus service to support and enhance connectivity with passenger rail: interim bus service supplementing CHSR's early phases, intercity bus service complementing rail, regional bus connections to key destinations, and first/last mile bus connections. The transit solutions include rail-transit integration with CHSR and conventional rail services. The proposed intercity and regional connecting transit strategies are shown in Figure 24.

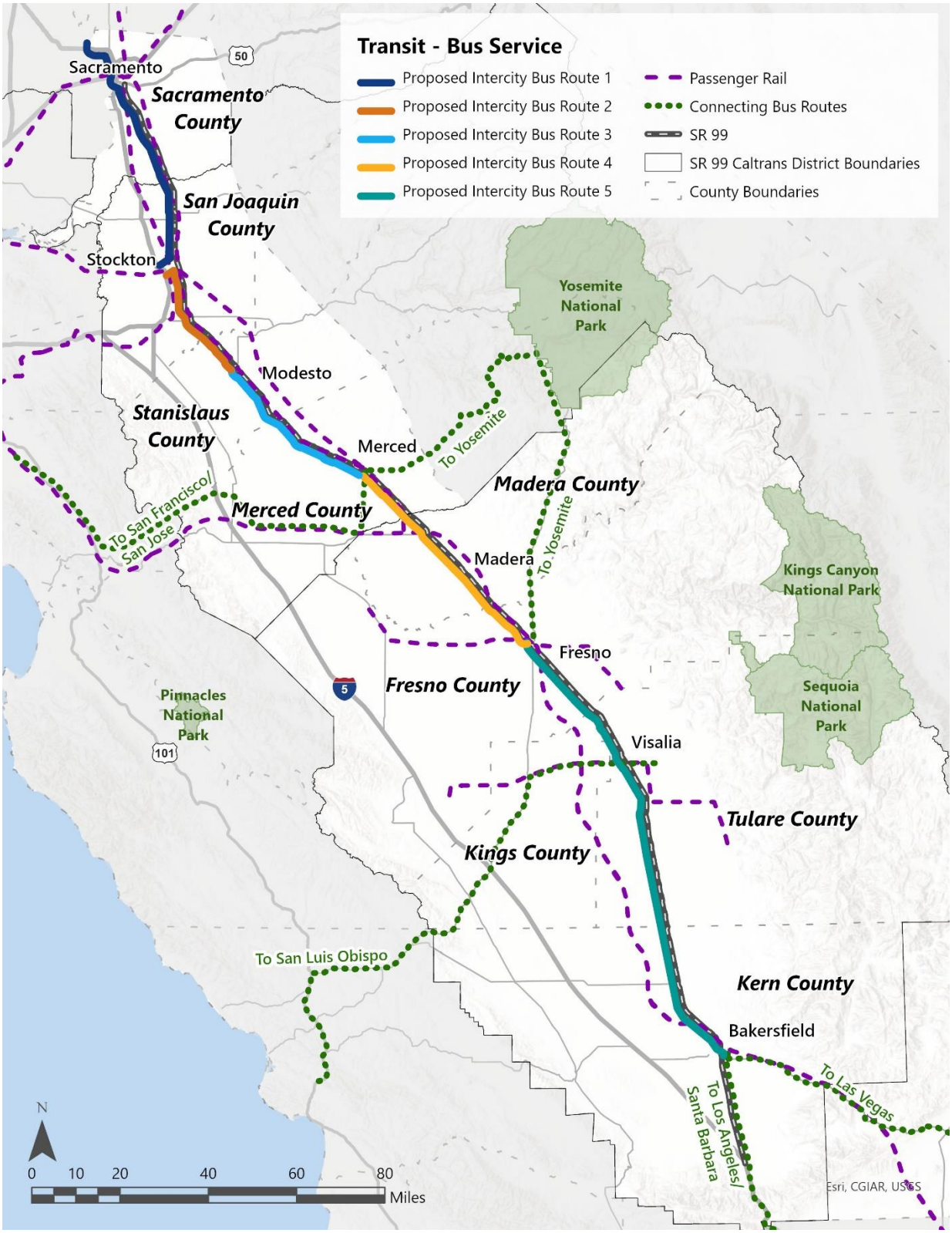
- **Interim Bus Services -** As the CHSR project progresses—particularly the IOS between Merced and Bakersfield—interim bus services are planned to bridge gaps in connectivity and support early ridership. These routes include: Merced to San Jose; Merced to Sacramento; Bakersfield to Los Angeles; Kings/Tulare Station to Visalia, Hanford and Portville; Fresno to Yosemite National Park.
- Intercity Bus - Intercity transit improvements present an opportunity to enhance mobility along the SR 99 corridor. The strategy includes frequent, all-day intercity express bus services that utilize the managed lanes (MLs) as dedicated transitways, enabling fast, reliable, and congestion-free operations. By allowing express buses to bypass traffic, this approach offers a compelling alternative to driving, encouraging broader public transit adoption and helping reduce vehicle volumes on the roadway.
- **Regional Bus Connections** - Regional bus connections to nearby cities and key destinations in the valley will connect to conventional and CHSR stations. These link communities to employment centers, educational institutions, and healthcare facilities. They enhance cross-valley connectivity, especially in underserved areas and key destinations like Yosemite.
- **First/last Mile Bus Connections** – These connections, many of which are planned as circulators, facilitate seamless transfers between rail stations and nearby destinations expanding access to each station.

Other Transit Improvements

In addition to four transit strategies above, a broader suite of transit improvements is recommended. Evaluating the need for direct connector ramps to improve travel times from SR 99 MLs to intercity express stations is recommended in congested areas such as downtown Bakersfield, Fresno, Merced, and Stockton is crucial. Procuring alternative fuel vehicles for new SR 99 intercity express services and local route improvements is another key aspect of the recommendations. Developing improvement plans for SR 99 intercity express bus stations with higher levels of customer amenities can improve the overall passenger experience and encourage greater transit use.

Figure 23. Future Rail Service

Figure 24. SR 99 Express Bus Service



Goods Movement

5.2.2 Goods Movement

The Central Valley is a tremendous economic force when it comes to the movement of major agricultural and other goods in the corridor. Goods movement solutions should protect that economic vitality while also minimizing the infrastructural and environmental impacts goods movement has on the SR 99 corridor.

Freight Rail and Roadway Improvements

Enhancing access to agricultural and industrial land uses is crucial for the efficient movement of goods. Recommended solutions include upgrading existing infrastructure to ensure seamless connectivity to freight rail stations and intermodal facilities as well as implementing freight priority roadway improvements between agricultural processing centers and distribution centers and SR 99. Improvements to freight rail infrastructure such as double tracking, expanding rail yards, and improving rail access to industrial areas are key. The introduction of new short-haul rail options can also reduce the reliance on trucking, alleviating congestion and reducing emissions. Figure 25 shows an existing freight yard located beside SR 99.

Figure 25. Freight Rail Yard Along SR 99

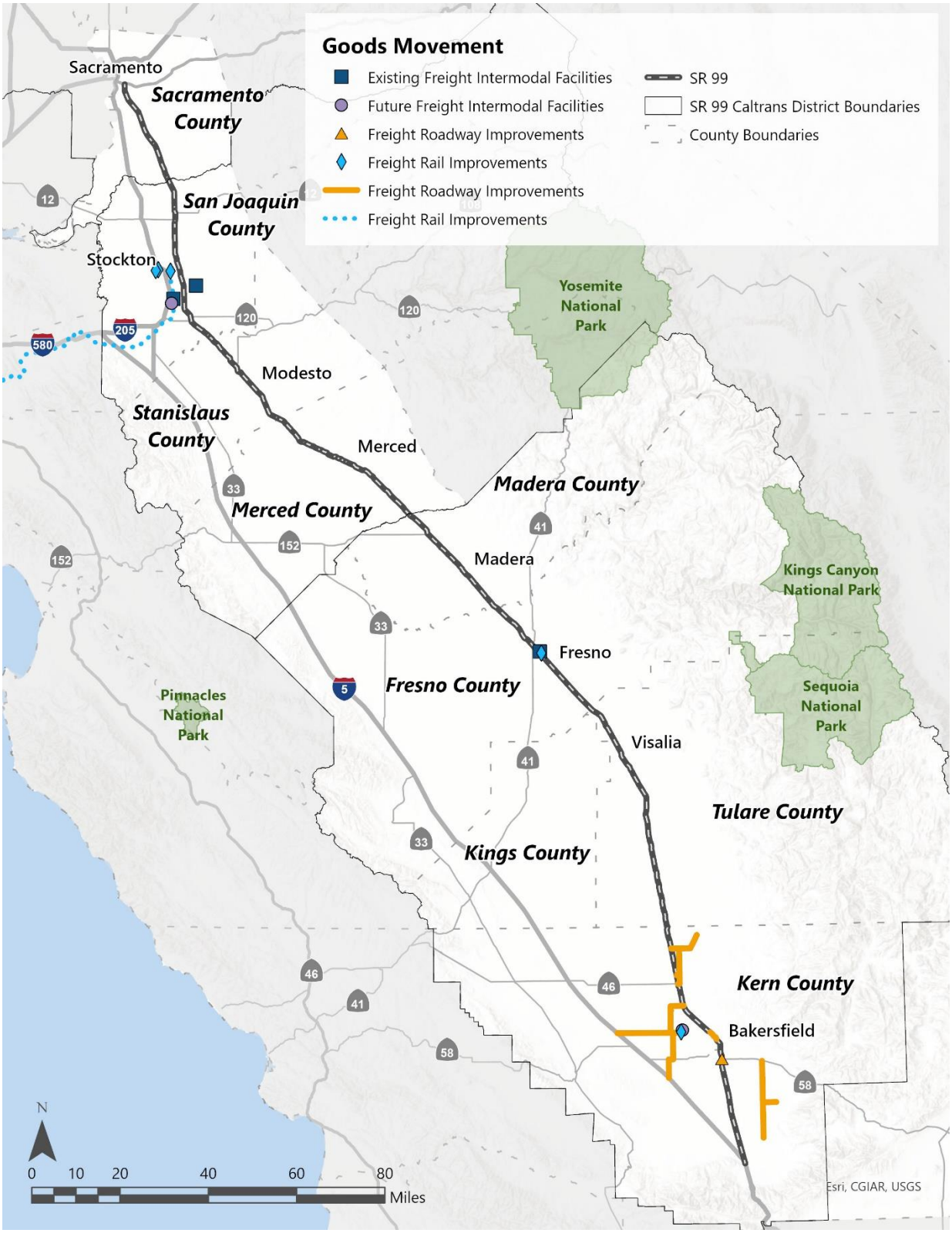
Source: California High-Speed Rail Authority

Figure 26 highlights the locations of key goods movement solutions in San Joaquin and Kern counties including new intermodal freight rail facilities, grade separations for rail, new rail track connections, improved truck routes, and road improvements for freight.

Zero-Emission Infrastructure

Implementing decarbonization policies and infrastructure is critical to reduce the environmental impacts of goods movement along SR 99. Establishing a network of zero-emission fueling stations along the corridor will support the transition to electric and hydrogen-powered freight vehicles. Furthermore, developing and implementing policies that encourage the purchase or lease of zero-emission medium and heavy-duty vehicles, including incentives for businesses to switch to cleaner technologies, will also be needed to accelerate the switch from today's primarily diesel fleet.

Figure 26. Goods Movement Solutions



5.2.3 Managed Lanes and Interchanges

Managed Lanes

Given the significant amount of growth occurring along the SR 99 corridor, it is critical to proactively manage the anticipated increase in travel demand. A corridor-wide ML strategy offers a targeted solution to meet the evolving needs of communities and travelers throughout the study area. MLs are lanes on a freeway that are actively regulated to improve traffic flow and maximize efficiency. They are not necessarily physically separated from general-purpose lanes, but they are operationally distinct—meaning their use is controlled based on criteria. Use of MLs is generally restricted either by vehicle eligibility (such as HOV, EV, trucks, etc.), or by limiting the number of vehicles allowed. MLs are often designed with flexibility in mind so that their operations can be managed as roadway and user needs evolve.

This solution proposes end-to-end MLs for the corridor that support transit services, high-occupancy vehicles, and truck-only operations where appropriate. This solution presents an opportunity to address high truck traffic, promote regional transit access, address safety concerns, and eliminate bottlenecks by implementing a series of ML projects that would span the entire length of the corridor. Close coordination with the California Highway Patrol (CHP), among many other partner agencies, will be critical to support the safety and compliance needs of future ML improvements on the corridor Figure 27 illustrates the plan for MLs along SR 99.

Two strategies would be used in tandem to achieve contiguous MLs for the length of the corridor when implemented:

- Constructing a new (third) ML on SR 99 segments that currently only have two lanes in each direction (approximately 80 miles)
- Converting one general purpose lane to a ML on the remaining SR 99 segments (approximately 210 miles)

The CMCP identifies two alternate configurations of SR 99 for the segment of SR 99 from Elk Grove to Galt: one that adds an additional ML (HOV) in each direction, and another that maintains the current 4-lane general purpose configuration. Approximately 12 miles of MLs (US 50 to Elk Grove) on SR 99 currently exist in Sacramento County. The Sacramento region is exploring the use of tolling to additionally control the operations of the segment south of the SR 99 and US 50 interchange to preserve

performance of the HOV facilities. Similar strategies may be applicable in other segments of the corridor where operational needs justify their use.

For the purposes of this CMCP, a continuous corridor-spanning ML solution was analyzed. Recognizing that a single strategy may not be appropriate for corridor spanning implementation, a ML strategy may be a hybrid approach - implementing MLs for transit and trucks or high occupancy vehicles on segments of the corridor where travel characteristics match the relevant application. This approach will be further studied in future Caltrans Managed Lanes System Plan(s) or a similar regional study, and also addressed in project-level analyses.

Highway Safety and Operations

The SR 99 CMCP team has also identified safety and operational solutions for SR 99. Many freeway ramps along SR 99 feature outdated 'hook' designs and are identified for upgrades to incorporate modern engineering standards, providing extended merge and diverge distances for improved traffic flow and safety. The addition of auxiliary lanes would provide dedicated space for vehicles to accelerate or decelerate when entering or exiting SR 99, helping to minimize traffic crashes, alleviate bottlenecks, and smooth the flow of traffic at these locations. Opportunities for intelligent transportation systems are also included to improve safety and efficiency, provide important transportation information, and use as a backbone for communications along the corridor.

Roads and Streets

This suite of solutions also includes improvements to roads and streets parallel to SR 99 or connecting to or crossing it. These solutions include maintenance and rehabilitation including pavement and pothole repair and drainage improvements, as well as operational improvements such as additional traffic signals, shoulder widening, or median improvements.

Figure 27. Managed Lanes and Freeway Improvements Solutions

Active Transportation

5.2.4 Active Transportation

The CMCP provides recommendations for active transportation (i.e., walking or bicycling) projects within approximately one mile of SR 99. The identified solutions aim to improve accessibility, connectivity, and safety for pedestrians and cyclists across the corridor.

First/Last Mile and Station Access

With the development of new rail infrastructure along SR 99, FLM improvements will play a critical role in promoting multimodal travel. Enhancing the areas around regional and local transit stations will help to provide seamless transfers for riders. Recommended improvements include better signage, improved walkways, and dedicated bike paths. Accessibility enhancements make it easier for people to access transit stations from their homes or workplaces by improving sidewalks, bike lanes, and pedestrian crossings. The integration of these improvements with future rail and bus projects can provide convenient access to transit without the use of a car. Figure 28 highlights rail stations along the SR 99 corridor and shows 3-mile active transportation sheds for targeted improvements.

Improved Bike and Pedestrian Networks

To improve safety and encourage the use of active transportation modes, a comprehensive set of improvements is included for both bicycle and pedestrian networks. This includes upgrading and repairing existing sidewalks to meet Americans with Disabilities Act (ADA) standards and adding new sidewalks where gaps exist in the pedestrian network. Increasing the safety of pedestrian crossings is also a priority and includes the upgrading of crosswalks, pedestrian signals, and other safety measures.

For cyclists, the plan emphasizes filling gaps in the bike network to strengthen connections between key destinations like schools, healthcare facilities, and transit stations. The implementation of protected bike lanes and separated bike paths creates bike networks that are comfortable for cyclists of all ages and abilities. Additionally, reconnecting communities that have been divided by SR 99 through the construction of bicycle and pedestrian bridges is a strategy to restore access and promote neighborhood cohesion along the corridor.

Bikeshare and Micromobility Infrastructure

Alongside increased passenger rail and bus transit options, implementing bikeshare programs and micromobility infrastructure at key stations and stops can help to promote the use of bikes and scooters for short trips around town and to access transit. Micromobility infrastructure includes bike and scooter parking, public charging stations for e-bikes and e-scooters.

"Main Street" Pedestrian Improvements

Many town centers in the Central Valley have undergone revitalization and "main street" pedestrian improvements can support this transformation. Improving the walkability of commercial areas could include upgrades to high-visibility crosswalks, the additions of shade trees, ADA-compliant curb ramps, and mid-block crossings in areas with high pedestrian activity.

Safe Routes to School

Targeted active transportation improvements near schools are also key for ensuring students can safely access educational institutions by foot or on bike. Traffic calming measures such as speed humps, raised crosswalks, and curb extensions can be implemented to make traveling to school via active modes safer. Figure 29 shows public schools within one mile of SR 99.

Figure 28. Active Transportation Solutions – First/Last Mile

Figure 29. Active Transportation Solutions – Safe Routes to School

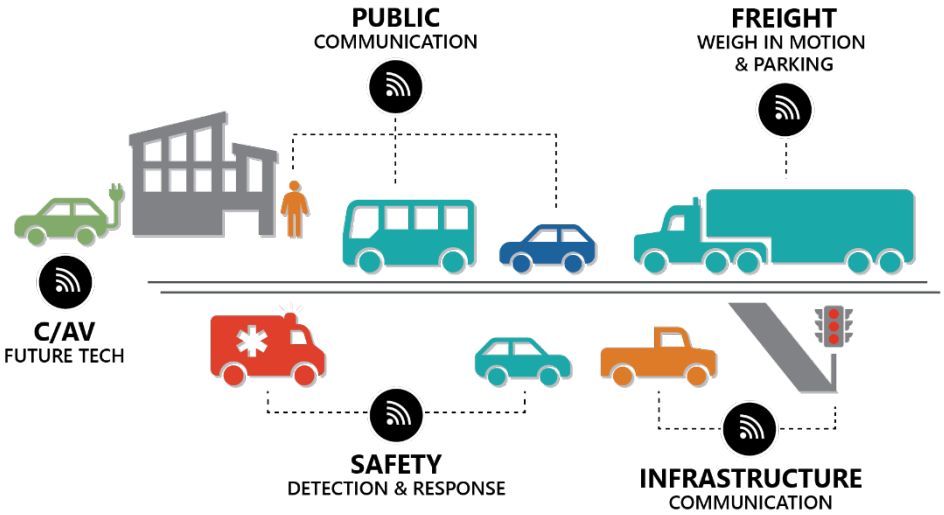
Data Source: California Department of Education. "California Public Schools and Districts." https://gis.data.ca.gov/maps/CDEGIS::california-public-schools-and-districts-map/about

Technology

5.2.5 Technology

Figure 30 shows the five recommended technology and emerging mobility solutions to improve efficiency, enhance collaborations and data sharing, and improve systems safety.

Figure 30. Technology and Emerging Mobility Solutions



Communication: Communication encompasses a broad range of solutions from implementing data sharing measures such as intra-agency data sharing agreements to enabling better communication and coordination between local and regional traffic management centers (TMCs). For instance, Kern, Fresno, and Tulare counties prioritize local coordination with the Central Valley TMC. This category also includes communication with the traveling public, such as presenting traveler information on changeable message signs.

Infrastructure: Several solutions use advanced technology to improve the flow of traffic. These include traffic signal synchronization, adaptive signal control, vehicle detection cameras, and transit signal priority. These technologies not only enhance traffic management but also enhance communication, as they can improve communication and coordination with local TMCs.

Freight: Using technology to enhance freight operations along SR 99 is essential for supporting goods movement activities. Recommended solutions include systems to communicate available parking and weigh-in-motion systems to ensure compliance and monitor violations.

Safety: Improving safety for all modes along SR 99 can be supported by deploying hardware and software solutions to enhance incident detection and response, arterial management systems, and freeway management systems. These solutions can enable quick identification of incidents, whether traffic-related, weather-related, or pavement condition-related, and facilitate coordinated responses. Fiber optic cables, Closed Circuit Television, and field sensors can be deployed to improve safety.

Connected/Autonomous Vehicles: As technology continues to evolve rapidly, it is important to prepare for the future by testing scalable technologies and installing infrastructure to support connected and autonomous vehicles. For example, the Sacramento Area Council of Governments (SACOG) has identified a project to upgrade signal controllers for future functions.

Decarbonization

5.2.6 Decarbonization

Recognizing that the San Joaquin Valley has some of the worst air pollution in the US, the SR 99 CMCP includes solutions to promote the transition from fossil fuels to more sustainable energy sources with the goal of reducing GHG emissions and air pollution. Through the SB 671 Clean Freight Corridor Efficiency Assessment, the CTC has identified SR 99 as one of the top six priority corridors for electric charging and hydrogen fueling stations. This underscores the importance of SR 99 in advancing clean energy infrastructure and promoting more sustainable transportation. The strategic placement of electric vehicle (EV) charging and alternative fueling stations is essential for promoting the adoption of clean transportation technologies along the SR 99 corridor. These solutions not only enhance the convenience and reliability of charging and alternative fueling options but also contribute to the broader goals of reducing GHG emissions and improving air quality within the heavily polluted Central Valley.

EV charging stations should be placed no more than 50 miles apart, while hydrogen fueling stations should be installed no more than 270 miles apart to accommodate both light duty trucks and freight. This placement ensures that drivers have reliable access to charging and refueling infrastructure, which can help to promote the transition away from using fossil fuels. Figure 31 shows the locations of existing truck stops along the SR 99 corridor that could be used for future zero-emission charging infrastructure or alternative fueling stations.

Several regional agencies have already identified recommended locations for public charging infrastructure. This includes the Kern County EV Charging Station Blueprint, the Fresno Council of Governments EV Readiness Plan, the Tulare County Association of Governments EV Implementation Study, the Madera County Zero Emission Vehicle Readiness and Implementation Plan, the Merced County Association of Governments EV Readiness Plan, and the SACOG (in partnership with the Metropolitan Transportation Commission and the San Joaquin Council of Governments) Northern California Megaregion Zero Emission Medium- and Heavy-Duty Vehicle Study.

Figure 31. Decarbonization Solutions

Data Source: Caltrans Traffic Operations Program. "California Truck Stops." https://dot.ca.gov/programs/traffic-operations/legal-truck-access/truck-stops-removed

Resiliency & Sustainability

5.2.7 Resiliency and Sustainability

The most significant threats to SR 99 are flooding and increased temperatures due to climate change. Solutions to bolster the resiliency and sustainability of SR 99 are vital to ensuring the long-term functionality and safety of this critical route. Implementing resilient design and maintenance strategies will help mitigate the challenges posed by flooding and increased temperatures.

Climate Change

Of all climate change effects, temperature increases are expected to have the greatest impact on SR 99. By 2085, temperatures within the SR 99 study area could rise between 6.0 and 11.9 degrees Fahrenheit. Over the past several decades, average summertime daily high temperatures in the Central Valley have been 89 to 99 degrees. [Climate Central. 2025. “Data: U.S. Summer Temperature Trends.” https://www.climatecentral.org/data/data-summer-package.] The measure for temperature is a factor in pavement design and could impact delivery of additional lanes or repairs to the existing SR 99 corridor. High temperatures can deteriorate pavement, necessitating the use of more resilient materials to ensure the longevity and safety of the roadway. Tree planting along SR 99 can also be used to reduce the urban heat island effect and minimize its impact on communities near the corridor.

Increasing wildfire frequency and droughts as a result of climate change also have the potential to impact SR 99. In the area between Atwater and Merced, post-wildfire conditions combined with heavy rainfall can trigger debris flows, threatening nearby infrastructure and communities. Additionally, prolonged droughts and heat stress contribute to soil subsidence, particularly in regions with a history of groundwater over-extraction. One such vulnerable area is SR 99 between Traver in Tulare County and Slater in Kern County, where subsidence could compromise the corridor. Another area with subsidence is from south of the City of Merced to south of the City of Madera.

There are several SR 99 waterway crossings that are identified as a priority due to aspects of climate change. For SR 99, these high priority waterway crossings include Elder Creek, Lagoon Creek, and North Channel Dry Creek (both northbound and southbound) in District 3; Little Johns Creek SB in District 10; and Chowchilla River, Fresno River, Elk Bayou (both northbound and southbound) in District 6. [High priority waterway crossings are those structures identified as priority 1 in the Caltrans Adaption

Priorities Report.] [Caltrans, District 3. December 2020. Climate Adaption Report; Caltrans, District 6. June 2020. Climate Adaptation Report; and Caltrans, District 10. December 2020. Climate Adaptation Report.] These bridges were identified, as well as several SR 99 roadway sections, and large and small culverts as a high priority. The relevant Caltrans district's Adaptation Priorities Report should be reviewed for SR 99 roadway features that are identified for improvement due to climate change vulnerability. Those priority features that are in the Adaptation Priorities Report would undergo detailed adaptation assessments before implementation of SR 99 improvements.

Flooding

Flooding already poses a significant threat to SR 99, stemming from intense storm surges or failures in existing flood infrastructure, such as levees. Runoff from the Sierra Nevada can lead to flooding in areas and communities downstream along SR 99. Therefore, any additions or improvements to SR 99 should be designed with consideration for increased precipitation and the maintenance or enhancement of existing water and flood infrastructure.

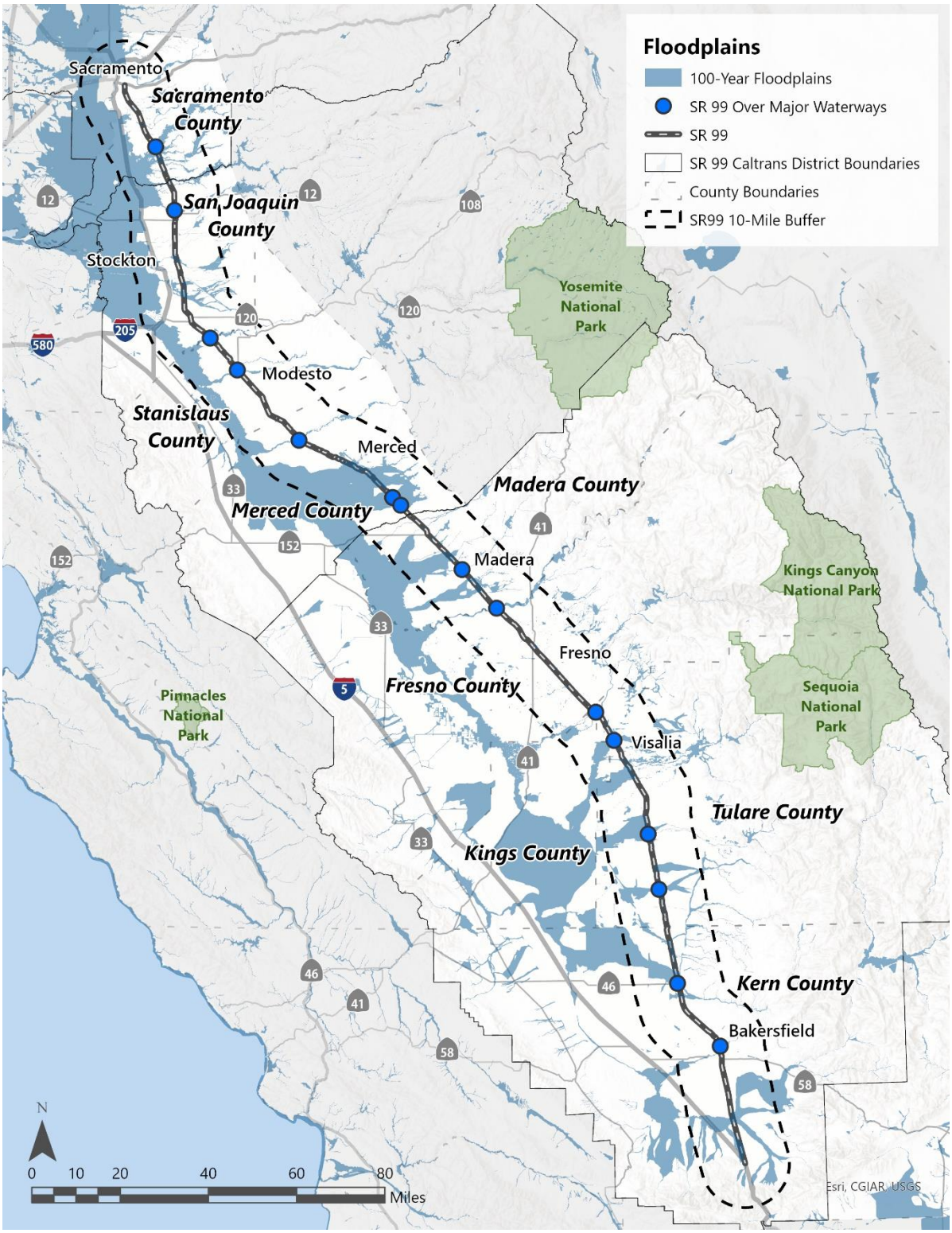
In the last several years, SR 99 has experienced flooding due to winter storms and levee failures. In January 2023, a private levee in the Wilton area of District 3 broke and flooded SR 99. Similarly, the Mokelumne River flooded near Acampo in District 10 and closed SR 99. In March of that year, both sides of SR 99 in Earlimart closed due to flooding from atmospheric rivers. Later that year, District 6 experienced an internal levee breach near Lerdo Highway north of Bakersfield, resulting in lane closures on SR 99.

In addition to the flooding events seen recently, flooding from megastorms continues to be a threat for the Sacramento and San Joaquin Valleys. Research has found that megaflooding events have inundated significant swaths of these valleys six times in the past 2,000 years. In 1862, an area of the Central Valley 300 miles long and more than 20 miles wide flooded after a megastorm; the water level in downtown Sacramento was over 10 feet. [Yale Climate Connections. 2023. "The other 'big one': How a megaflood could swamp California's Central Valley." https://yaleclimateconnections.org/2023/01/the-other-big-one-how-a-megaflood-could-swamp-californias-central-valley/] Megaflooding events will likely continue to occur in the future, with their probability anticipated to increase due to climate change. A megaflood could cause catastrophic damage to the region SR 99 runs through. Both the flooding incidents seen in recent storms and the potential for future megafloods highlight the urgent need for resilient and sustainable solutions to mitigate flooding risks.

Figure 32 shows 100-year floodplains. The Federal Emergency Management Agency (FEMA) considers these to be flood hazard areas with a 1% annual chance of flooding. To

mitigate the impacts of flooding of SR 99, it is recommended that the corridor be lifted above the floodplain and major waterways that SR 99 intersects. SR 99 crossings over key waterways are also highlighted in Figure 32. Because SR 99 runs mainly north/south in the San Joaquin Valley (which is parallel to the Sierra Nevada range), it is perpendicular to the major drainages that run from the mountains in the east to the Valley in the west. Viaducts that Caltrans has constructed on Interstates 5 and 80 in the Sacramento area have proven extremely resilient to floods and provide significant benefits for wildlife and agricultural operations; implementing viaduct projects in the San Joaquin Valley's major drainages could provide similar benefits. Improving floodplains to a more natural habitat that would aid local communities in absorbing water runoff could also help reduce the pressure on the existing flood prevention systems by levees and canals.

Figure 32. 100-Year Floodplains Along SR 99



Data Source: California Department of Water. FEMA Effective Floodplains. https://gis.bam.water.ca.gov/bam/

5.2.8 Human and Natural Environment

Human Environment

The SR 99 corridor has numerous disadvantaged communities concentrated along it. In the central and southern San Joaquin Valley, nearly 20% of households are living at or below the Federal poverty level, and many face systemic barriers to accessing safe, reliable, and multimodal transportation options. [California Health Care Foundation. 2020. “San Joaquin Valley: Despite Poverty and Capacity Constraints, Health Care Access Improves.” https://www.chcf.org/publication/san-joaquin-valley-despite-poverty-capacity-constraints-health-care-access-improves/#related-links-and-downloads] Figure 33 shows that EQI Priority Populations line the entirety of SR 99. These populations are characterized by a combination of factors, including low-income status, majority non-white demographics, proximity to high traffic volumes, increased crash exposure, and limited access to multimodal options. These communities identified by the EQI are disproportionately impacted by transportation-related burdens while receiving fewer benefits from existing transportation networks.

Recognizing these disparities, the CMCP integrates equity-focused strategies to ensure that infrastructure improvements along the corridor do not exacerbate existing inequities. The CMCP includes plans for MLs throughout the corridor, mostly through lane repurposing but also through construction of additional lanes within the existing right-of-way. Several strategies can be used to minimize the effects of construction on local communities. Implementing noise reduction measures to limit the impact on nearby residents and communication with the public about construction timelines and progress is key. Furthermore, efforts can be made to preserve green spaces and maintain access to local businesses and services during the construction period. By adopting these strategies, the solutions outlined in this CMCP can improve transportation infrastructure for Priority Populations while minimizing adverse effects on the communities surrounding SR 99.

Natural Environment

Wildlife movement by native species and fish passage are also a large concern. Providing safe passages for wildlife movement will not only improve wildlife access to new habitat for foraging or predation, and mating partners, but also improves safety for drivers by reducing wildlife collisions that could results in injury or death and damage to their vehicle. Several wildlife movement corridors have been identified in the San

Joaquin Valley, and Figure 34 highlights such corridors that intersect with SR 99. Key rivers for fish passage include:

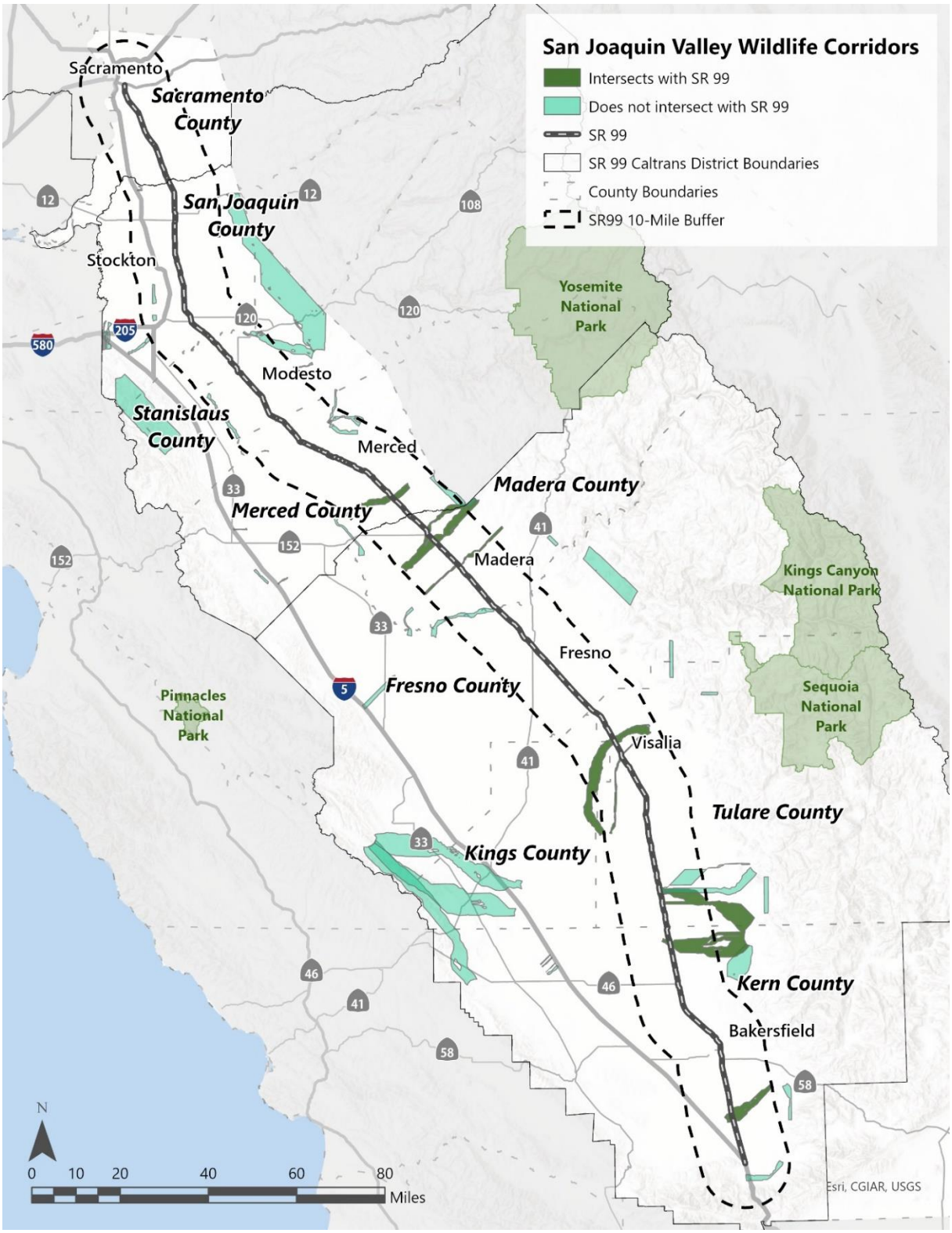
- Consumnes River in District 3
- Stanislaus River, Tuolumne River, Merced River, Dutchman and Deadman Creek in District 10
- Kings River, Cross Creek, Tule River, Deer Creek, Poso Creek, and Kern River in District 6

Figure 35 shows the locations of these major waterways that pass under SR 99.

Figure 33. SR 99 and the Human Environment

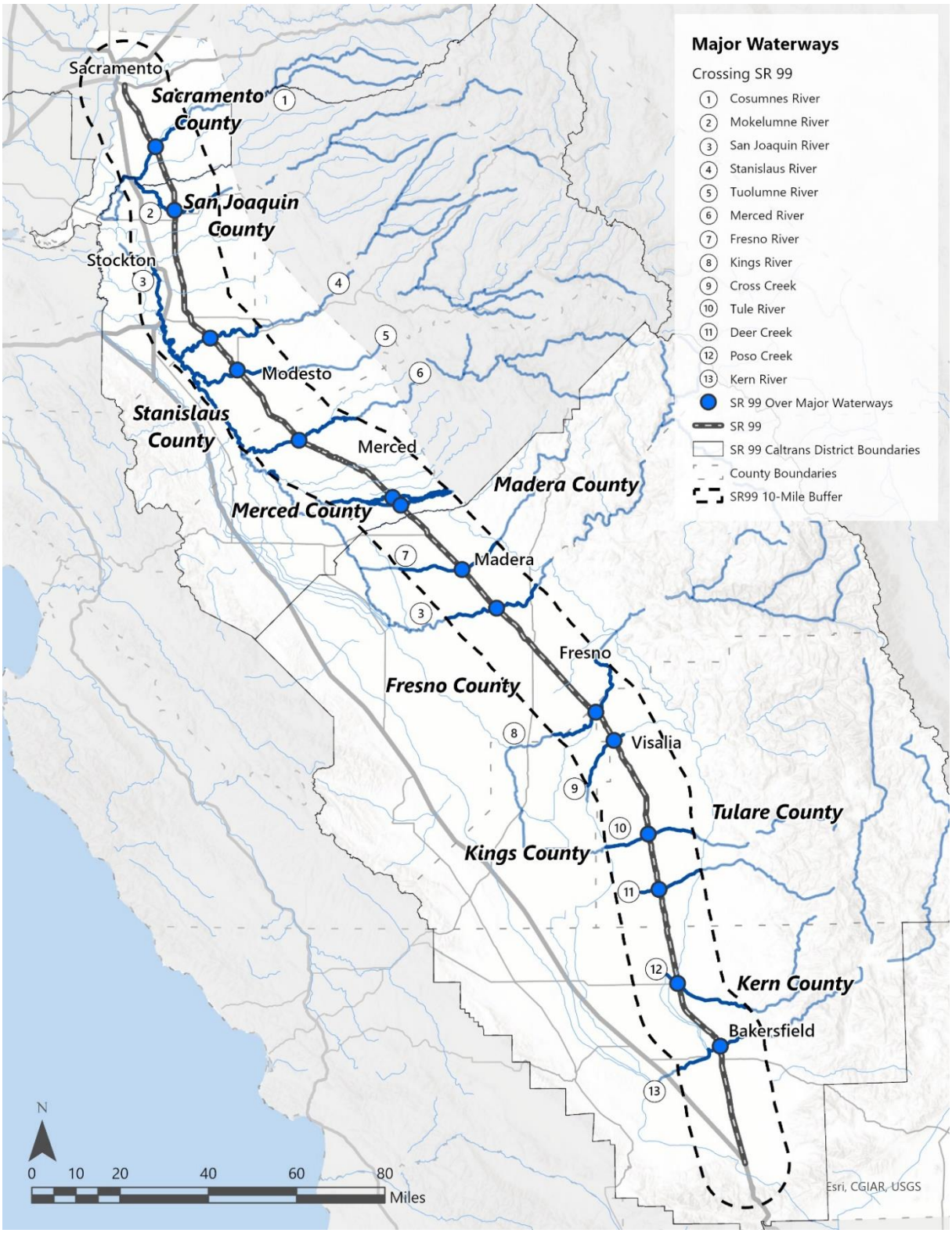
Data Source: Caltrans EQI. https://dot.ca.gov/programs/esta/race-equity/eqi

Figure 34. San Joaquin Valley Wildlife Corridors



Data Source: California Department of Fish and Wildlife. Biogeographic Information and Observation System. https://map.dfg.ca.gov/metadata/ds0423.html

Figure 35 Major Waterways Crossing SR 99



Data Source: US Census Bureau. 2024 TIGER/Line Shapefiles: Water. https://www.census.gov/cgi-bin/geo/shapefiles/index.php?year=2024&layergroup=Water

5.3 Solutions Analysis and Assessment

To evaluate the effectiveness of proposed strategies, the SR 99 CMCP team applied a corridor-wide analysis using the CSTDM. This model incorporates the current transportation network and includes highway, roadway, transit, and rail projects that are fully funded or already under construction. While the model covers major corridors such as I-5 and SR 58, the focus of this plan is the SR 99 corridor.

The CSTDM was selected to assess SR 99 for its ability to forecast travel demand across the entirety of the nearly 300-mile corridor, accommodating a wide range of facility types and travel modes while supporting both short- and long-term planning horizons. This model offers a consistent framework for evaluating diverse transportation strategies, traveler responses, and performance metrics over broad geographic areas. Compared to using individual county-level models, the statewide model avoids the challenges of reconciling differences in model structures, assumptions, and data inputs across jurisdictions.

While the CSTDM provides valuable insights for strategic planning and scenario comparison, the results of the analysis for SR 99 should be interpreted as general trends rather than precise predictions. These results represent the sum of modeled projects across all modes. As individual solutions advance, detailed project-level analyses will be conducted. A full summary of the analysis results can be found in Appendix G.

In addition to the 2020 and 2050 baselines, two future scenarios were modeled:

- **ML HOV Scenario**: Includes a continuous carpool lane from Sacramento (US 50) to south of Bakersfield (I-5), along with transit and rail improvements. An alternative model scenario left the section from Elk Grove to Galt unchanged from the existing four-lane configuration.
- **ML Truck Scenario**: Includes a carpool lane from Sacramento (US 50) to Elk Grove and a continuous truck ML from Elk Grove to south of Bakersfield (I-5), along with transit and rail improvements. An alternative model scenario retains the Elk Grove to Galt segment as a four-lane facility.

Key benefits from the SR 99 CMCP strategies are outlined in Figure 36. These strategies aim to improve alternatives to driving alone and expand multimodal travel options such as transit, rail, and active transportation. The analysis demonstrates that the solutions will improve multimodal options for all travelers in the corridor. Approximately 50% of the solutions fall under bus transit, rail, and active transportation, supporting a 65% increase in multimodal trips.

Under the ML HOV scenario, carpool volumes increase by 24,000 to 29,000, while single-occupant car trips decrease by over 47,000 compared to the 2050 baseline. This results in a 7,000 to 13,000 increase in carpool volumes on each segment of SR 99 from south of Ripon to south of Bakersfield. Consequently, person throughput increases by 500,000, while vehicle throughput increases by only 160,000. Caltrans notes that for purposes of the long-range CMCP, enforcement analyses of ML scenarios were not incorporated.

These strategies also present the opportunity to improve corridor resiliency to flooding and enhance wildlife access across the corridor through coordinated planning, funding, and project design.

Figure 36. SR 99 CMCP Key Benefits

Table 9 summarizes vehicle miles traveled (VMT) across scenarios. The CSTDM analysis results show that total VMT are projected to increase 30% from 2020 to 2050 due to strong job and steady population growth. Compared to the 2050 baseline scenario, the ML HOV scenario shows an increase in VMT. Compared to the 2050 Existing + Programed scenario the ML HOV scenario shows a decrease in VMT.

Table 9. State Route 99 Vehicle Miles Traveled

Scenario	Vehicle Miles Traveled on SR 99
2020 Baseline	906,128,000
2050 (Existing + Programmed)	1,163,827,500
2050 (6-lane minimum SR99)	1,165,778,000
2050 ML HOV	1,165,559,000
2050 ML Truck	1,162,765,000

Analysis based on statewide calculations

Truck trips are forecast to increase nearly 35% between 2020 and 2050 and remain consistently high across all the scenarios, putting additional strain on SR 99 and its connecting routes. This output aligns with statewide forecasts from the CTP 2050, which projects a 40% increase in truck trips across California by 2050. [California Department of Transportation (Caltrans). 2021. *California Transportation Plan 2050*. https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf.] Future feasibility and project-level studies will further evaluate how ML and ML Truck scenarios each affect freight movement.

Another key finding from the assessment of ML Truck scenarios is a roughly 7% decrease in speeds of all vehicles in the corridor, resulting from the conversion of a general lane in today's 6-lane sections to create the continuous truck lane, which are combined with the widened sections as shown in Figure 24.

The analysis conducted for this CMCP indicates that there is strong demand for travel in the car from both carpoolers and goods movement despite introducing new alternatives to autos and trucks. Due to the varied and complex characteristics across the nearly 300-mile corridor, a single ML solution (HOV or truck lane) was analyzed in each scenario for purposes of this SR 99 CMCP. Future analysis will be needed to tailor the needed improvements in the corridor to address SR 99's users' needs, building on the historic commitment to the communities along the corridors to make SR 99 safer, more resilient, and responsive to local, regional, statewide demand for travel. As an example, an ML strategy may be a hybrid approach - implementing MLs for transit and trucks or high occupancy vehicles on segments of the corridor where travel characteristics match the relevant application. A hybrid approach will be studied and analyzed further in future Caltrans Managed Lanes System Plan(s) or a similar regional study, and during project-level analyses.

6 Implementation, Funding, Limitations, and Next Steps

6.1 Implementation Phasing

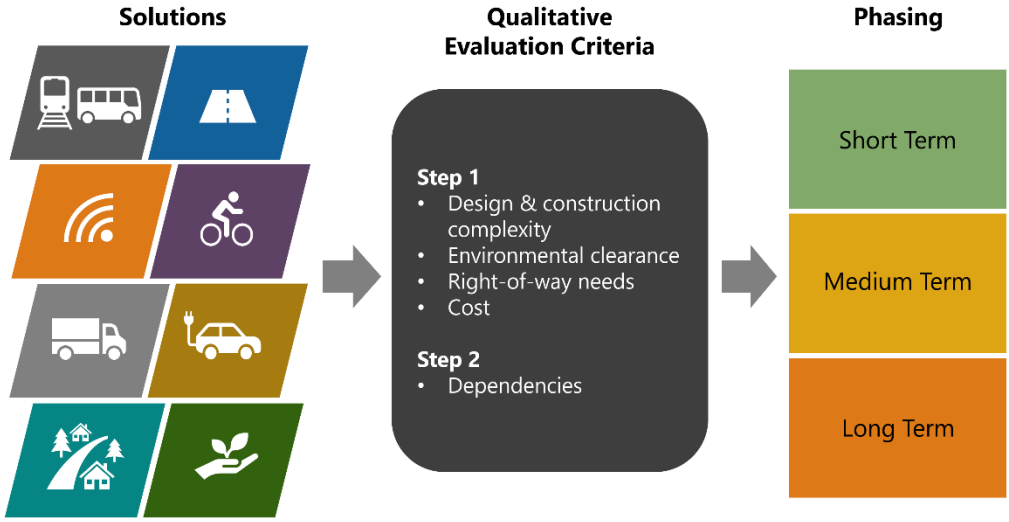
This chapter presents implementation activities for the CMCP and its solutions, including a phasing plan and discussion of future funding and planning. This chapter also provides an overview of the various federal, state, and local funding sources available to implement the CMCP.

The SR 99 CMCP was developed with guidance from regional, local, and statewide plans. [Not all solutions and/or timeframe of solutions in the SR 99 CMCP are consistent with or included in the Regional/Metropolitan Transportation Plan and Sustainable Communities Strategy.] In turn, this CMCP will inform future updates to those plans and guide investment decisions in the corridor. Policymakers and partners will consider a variety of factors when making decisions about implementation of solutions in the SR 99 CMCP. Given the extensive number of potential solutions, not all can be implemented simultaneously. Many will require years—or even decades—to fully realize. To prioritize implementation, a two-step approach was used as illustrated in Figure 37. First, each solution was qualitatively assessed against the following four criteria:

- Design and construction complexity
- Environmental clearance
- Right-of-way needs
- Cost

Each solution was evaluated across four criteria and assigned a score of high (one point), medium (two points), or low (three points), with lower scores indicating greater readiness for quick implementation. Total scores ranged from a minimum of four to a maximum of 12.

Figure 37. Phasing Evaluation and Recommendations



The best performing solutions had the lowest scores due to low construction/design complexity, easier environmental clearance due to minimal environmental documentation requirements, few or no property acquisition needs, and low costs. Therefore, these solutions are the most expedient to implement and can generally be done sooner; however, two additional factors were considered.

Following the initial scoring, each solution was evaluated to determine 1) planned implementation timeframe and 2) dependencies on other solutions.

- The planned implementation timeframe criterion measures a solution's initial score against its planned implementation timing (gathered from planning documents) to identify whether it should be pushed into a different phase.
- The dependency criterion identifies whether a solution must be preceded by implementation of another solution. For example, a solution with a high score may have been pushed from the short-term phase to the medium-term if it is dependent on implementation of a medium-term solution. To avoid developing projects simultaneously at risk, it was assumed that one solution would be fully implemented before the dependent solution would begin construction.
- As a result of the initial scoring and additional factors, the strategies were organized into the following timeframes: Short-Term: less than five years, Medium-Term: five to 10 years, and Long-Term: more than 10 years to delivery. Table 10 summarizes the solutions by implementation phase. The comprehensive list of solutions is presented in Appendix F and includes the implementation phasing for each solution. Greater detail on implementation phasing is provided in Appendix H.

Table 10. Implementation Phasing – Solutions by Implementation Phase

Phase	Strategies
Short-Term Implementation (Less than five years)	854
Medium-Term Implementation (six-15 years)	309
Long-Term Implementation (more than 15 years)	234
Transportation Solution Strategies – All Timeframes	**1,397**

6.2 Funding Sources

Funding for transportation improvements and enhancements is available through various federal, state, and local sources and programs. Depending on the source, eligible projects vary by transportation mode, scope, and project phase. Some funding programs allocate resources through competitive grant processes or other discretionary means, while other funds are distributed by formula to state, regional, or local public agencies.

There are two main types of grants available for transportation solutions within the SR 99 CMCP: discretionary and formula. Discretionary grants permit the agency to exercise judgment in selecting recipients through a competitive grant process. For formula grants, the award amount is calculated by formulas and statutes that favor statistical criteria for specific types of work. Appendix H includes more detailed funding source information. Because today's transportation funding environment is so competitive, active coordination and tracking will be required to ensure the recommended projects and program investments are delivered together.

6.3 Next Steps

The CMCP is an integrated set of investments that will support equitable, resilient, and safe travel along and across the SR 99 corridor resulting in a more comprehensive set of travel choices through 2050 and beyond. Developed through collaboration among local, regional, and state transportation agencies, elected officials, CBOs, and the public, the CMCP builds on prior planning efforts to present a shared vision for the corridor's future. While the CMCP identifies a range of potential projects and programs, most are high-level concepts that will require further planning to proceed with project initiation and to secure additional funding for design and construction. Caltrans may explore the feasibility of some solutions identified. The analysis conducted for this study provides a foundation to prioritize and advance solutions. However, each project must independently progress through environmental review, design, funding, and construction stages, offering multiple opportunities for public engagement to ensure communities help shape future infrastructure and program investments.

Caltrans, COGs, MPOs, CalSTA, local agencies, and the SR 99 CMCP team remain committed to ongoing collaboration and advocacy. Together, they will work to advance the recommended projects, programs, and policies, while continuing to seek public input to refine strategies and ensure alignment with community needs. Future partnerships will be critical to the successful implementation of these strategies with agencies such as the Federal Highway Administration, CHP, Federal Railroad Authority, and the Federal Transit Administration. As projects are initiated, in accordance with Director Policy DP-021 and Deputy Directive DD-63, Caltrans Districts will ensure there are no disproportionate adverse impacts, particularly on minority and low-income populations, and that any disproportionate adverse impacts of plans and projects on minority and/or low-income populations are voided, minimized, or mitigated. The public will be included in the transportation investment decision making process from early planning stages through construction, operations, and maintenance.

As a long-range planning tool, the SR 99 CMCP reflects the most current information available at the time of publication. However, as technologies evolve, travel behaviors shift, and regional conditions and priorities change, the strategies outlined in this document will need to be revisited and refined. Evolving political climates, funding availability, and priorities will also have an impact on the CMCP. This document is intended to adapt to change while providing a consistent vision to guide investment decisions over the next two decades and beyond.

The CMCP can also serve as a mechanism to compete for and secure the funding needed to advance specific strategies by highlighting the corridor needs and the importance of this comprehensive set of strategies to address such challenges facing the communities and users of the SR 99 corridor today and in the generations to come. The solutions identified in the SR 99 CMCP are eligible for SB 1 SCCP funding, with the next cycle anticipated in 2026. Additionally, the CMCP can help inform future local and regional plans, including the next round of RTPs and their SCSs. Throughout all future actions, stakeholders will have many more opportunities to tailor the solutions to meet the needs of their communities.

Appendix A
Analysis Plan

Appendix B
County Overviews

Appendix C
Assessment of Past Engagement and Planning

Appendix D
Engagement Summaries

Appendix E
Solutions Summary

Appendix F
Solutions Inventory

Appendix G
Modeling Results and Approach

Appendix H
Implementation and Phasing

Appendix I
Monitoring and Progress Evaluation