I-80 CMCP

Comprehensive Multimodal Corridor Plan

Caltrans | I-80 CMCP
COMPREHENSIVE MULTIMODAL CORRIDOR PLAN

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I-80
COMPREHENSIVE MULTIMODAL CORRIDOR PLAN

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I accept this Comprehensive Multimodal Corridor Plan for the I-80 corridor as a document informing the regional transportation process.

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Acknowledgements

A special thank you to the Caltrans staff who worked to put this Comprehensive Multimodal Corridor Plan (CMCP) together.

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Disclaimer

The information, opinions, commitments, policies, and strategies detailed in this document are those of Caltrans District 3 and District 4 and do not necessarily represent the information, opinions, commitments, policies, and strategies of partner agencies or other organizations identified in this document.

Acknowledgements

A Technical Advisory Committee (TAC) and stakeholder group, comprised of key partner agencies and organizations, was formed and provided essential information, advice, and feedback for the preparation of this CMCP. The partners included are as follows:

- Bike Davis Board
- Buena Vista Rancheria of Me-Wuk Indians
- California Highway Patrol, Golden Gate Division
- Caltrans Headquarters Division of Rail and Mass Transportation
- Caltrans Headquarters Division of Transportation Planning
- Capitol Corridor Joint Powers Authority
- City of Davis
- City of Dixon
- City of Fairfield
- City of Sacramento
- City of Suisun City
- City of Vacaville
- City of Vallejo
- City of West Sacramento
- City of Winters
- Colfax – Todd's Valley Consolidated Tribe
- Cortina Rancheria – Kletsel Dehe Band of Wintun Indians
- Dixon Readi Ride
- Fairfield and Suisun Transit System
- Federal Highway Administration – California Division
- Ione Band of Miwok Indians
- Metropolitan Transportation Commission
- Napa Valley Transportation Authority
- Nashville Enterprise Miwok-Maidu-Nishinam Tribe
- Sacramento Area Bicycle Advocates
- Sacramento Area Council of Governments
- Sacramento County
- Sacramento County Department of Transportation
- Sacramento Metropolitan Air Quality Management District
- Sacramento Regional Transit District
- San Francisco Bay Area Air Quality Management District
- Shingle Springs Band of Miwok Indians
- Solano County
- Solano County Transit
- Solano Express (Soltrans)
- Solano Transportation Authority
- The Confederated Villages of Lisjan
- Travis Air Force Base
- University of California, Davis
- Union Pacific Railroad Company Engineering
- Vacaville City Coach
- WALKSacramento
- Water Emergency Transportation Authority
- Wilton Rancheria
- Yolo County Transportation District
- Yocha Dehe Wintun Nation
- Yolo County
- Yolo County Department of Community Services
- Yolo Solano Air Quality Management District

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List of Acronyms

§	Section
AB	Assembly Bill
AMTRAK	American Track (National Railroad Passenger Corporation)
AQMD	Air Quality Management District
ATP	Active Transportation Program
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
CalEPA	California Environmental Protection Agency
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CAPTI	Climate Action Plan for Transportation Infrastructure
CCJPA	Capitol Corridor Joint Powers Authority
CDT	Caltrans Core Development Team
CFMP	California Freight Mobility Plan
CMCP	Comprehensive Multimodal Corridor Plan
CNG	Compressed Natural Gas
COVID-19	Coronavirus disease 19
CSRP	2018 California State Rail Plan
CTC	California Transportation Commission
CTP	California Transportation Plan
DOCO	Downtown Commons
DOTP	Division of Transportation Planning
DPLAS	Division of Planning, Local Assistance, and Sustainability
DTPLA	Division of Transportation Planning and Local Assistance
EO	Executive Order
FAST	Fairfield Suisun Transit
FTC	Fairfield Transit Center
GHG	Greenhouse Gas Emissions
GIS	Geographic Information System
HCD	Housing and Community Development
HOT	High Occupancy Toll
HOV	High Occupancy Vehicle
HPI	Healthy Places Index
HQ	Headquarters
HSIP	Highway Safety Improvement Program
I	Interstate
INFRA	Infrastructure for Rebuilding America
IPEDS	Integrated Postsecondary Education Data System
IRRS	Interregional Road System
ITIP	Interregional Transportation Improvement Program
ITS	Intelligent Transportation Systems
MPO	Metropolitan Planning Organization
MTC	Metropolitan Transportation Commission
MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standards
NCES	National Center for Education Statistics

NHFP	National Highway Freight Program
NHS	National Highway System
NSFHP	National Significant Freight and Highway Projects
NSFLTP	Nationally Significant Federal Lands and Tribal Projects
P&R	Park and Ride
PEP	Public Engagement Plan
PHD	Person-Hours of Delay
PPEC	Planning Public Engagement Contract
Rail Plan	California State Rail Plan 2018
RAISE	Rebuilding American Infrastructure with Sustainability and Equity
ROW	Right of Way
RTP	Regional Transportation Plan
RTIP	Regional Transportation Improvement Program
SACOG	Sacramento Area Council of Governments
SacRT	Sacramento Regional Transit District
SACSIM	Sacramento Activity-Based Travel Simulation Model
SB	Senate Bill
SCCP	Solutions for Congested Corridors Program
SCS	Sustainable Communities Strategy
SFOBB	San Francisco-Oakland Bay Bridge
SHS	State Highway System
SMF	Caltrans Smart Mobility Framework
SMP	Strategic Management Plan
SNABM	Solano Napa Activity Based Model
SolTrans	Solano County Transit
SR	State Route
STA	Solano Transportation Authority
STBG	Surface Transportation Block Grant Program
STIP	State Transportation Improvement Program
SVS	Sacramento Valley Station
TAC	Technical Advisory Committee
TCEP	Trade Corridor Enhancement Program
TDM	Travel Demand Management
TIGERweb	Topologically Integrated Geographic Encoding and Referencing
TIRCP	Transit and Intercity Rail Capital Program
UC	University of California
US	United States
USDOT	United States Department of Transportation
VHD	Vehicle Hours of Delay
VHT	Vehicle Hours of Travel
VISSIM	Two Verkehr In Städten – SIMulationsmodel
VMT	Vehicle Miles Traveled
WETA	Water Emergency Transportation Authority
YCTD	Yolo County Transportation District
YSCAQMD	Yolo-Solano County Air Quality Management District
ZEV	Zero-Emission Vehicle

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Executive Summary

Purpose

The Solano/Yolo/Sacramento Interstate 80 (I-80) CMCP will assist local, regional, and state agencies as they address with the infrastructure, livability, economic, and sustainability needs related to the transportation system.

This system planning document is part of the long-range transportation planning process. The system planning process fulfills California Department of Transportation (Caltrans) statutory responsibility as owner/operator of the State Highway System (SHS) (Government Code Section [§] 65086) by identifying future improvements to the SHS. Through system planning, Caltrans focuses on developing an integrated multimodal transportation system that meets Caltrans goals of safety and health; stewardship and efficiency; sustainability, livability and economy; system performance; and organizational excellence.

The main purpose of the I-80 CMCP is to create an effective and efficient decision-making process focusing on developing solutions that increase accessibility and mobility, improve safety, and enhance the quality of life and environment within the study corridor. This process will determine what specific improvements to the existing transportation network are necessary to achieve the desired outcomes of corridor users, stakeholders, and the public agencies that own and operate corridor facilities. The CMCP provides the framework for agencies along the corridor to strategize future improvements and position partners to be more competitive and eligible for state, regional, and federal funding applications such as the Senate Bill (SB) 1 Solutions for Congested Corridors Program (SCCP) which requires a CMCP.

Vision Statement

Provide a safe, efficient, accessible, and connected transportation system that emphasizes public transit, walking, and biking to enhance transportation options to reduce our overall dependence on the automobile. These objectives will be achieved through collaboration, creativity, and sustainability with transportation partners and the public.

Due to the statewide and regional significance of the corridor between the Bay Area, Sacramento Region and outlining areas such as the Lake Tahoe Basin, Caltrans District 3 and District 4 have partnered on this joint CMCP effort for the I-80 and United States (US) 50 corridors to better understand the issues on the corridor and to plan appropriately for all modes of transportation and facility types, some of which includes passenger rail line, freight rail line, ports, local parallel arterial roadways, bicycle, and pedestrian facilities.

Corridors Characteristics

- The corridors are the primary link between the San Francisco Bay Area, Sacramento Region, and outlining areas such as the Lake Tahoe Basin.
- The corridors serve local, regional, and interregional traffic of people and goods across an urban, suburban, rural, and open space landscape.
- The corridors are a crucial part of the Northern California freight industry as they connect to I-5 and create the most northern interregional freight hub in California.
- The corridors carry an increasingly large amount of traffic.
- Motorists traversing the corridor experience increasing delays and unreliable travel times.
- Barriers and gaps exist in the corridor active transportation network.

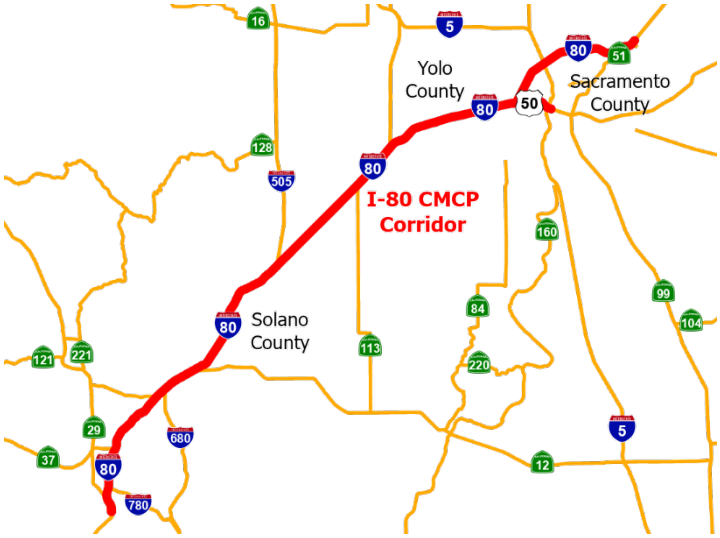


FIGURE ES 1 | CORRIDOR CHARACTERISTICS

The I-80 CMCP Corridor Study Area Overview

The I-80 corridor serves a variety of transportation needs ranging from daily commute travel between Solano, Yolo, and Sacramento counties to goods movement and recreational travel throughout Northern California and the western US. The I-80 CMCP covers the entire I-80 corridor in Solano and Yolo counties and a portion of Sacramento County as the route ends at the State Route (SR) 51 junction in the City of Sacramento. This CMCP also includes a portion of US 50 in Yolo and Sacramento counties, starting at the I-80 junction in the City of West Sacramento and ending at the I-5 junction in Sacramento.

Improvement projects will improve corridor operations, increase travel choices, and close gaps in the existing multimodal transportation system. **Figure ES 2** and **Figure ES 3** Illustrate a subset of the over 200 proposed multimodal transportation projects included in the I-80 CMCP (see **Table 9.2** for a full list of projects). The purpose of the proposed projects is to reduce vehicle miles traveled (VMT), greenhouse gas emissions (GHG), and improve livability in the community through operational strategies such as managed lanes, technological advancements, and increased multimodal options. The CMCP projects include improvements to roadways, transportation systems management programs/strategies, transit service and facilities, and active transportation facilities.

I-80 and US 50 corridors include parallel local roadways, transit lines, and bikeways located within one mile of the corridor. Major transportation hubs include Port of Venicia Ferry Terminal, Vallejo Transit Center, Fairfield Transit Center, and Vacaville Transit Center in Solano County. In Yolo and Sacramento counties the major transportation hubs include University of California (UC) Davis Memorial Union, UC Davis Silo, Amtrak train station in the City of Davis, West Sacramento Transit Center, Port of West Sacramento, Sacramento International Airport, and Sacramento Valley Station (SVS).

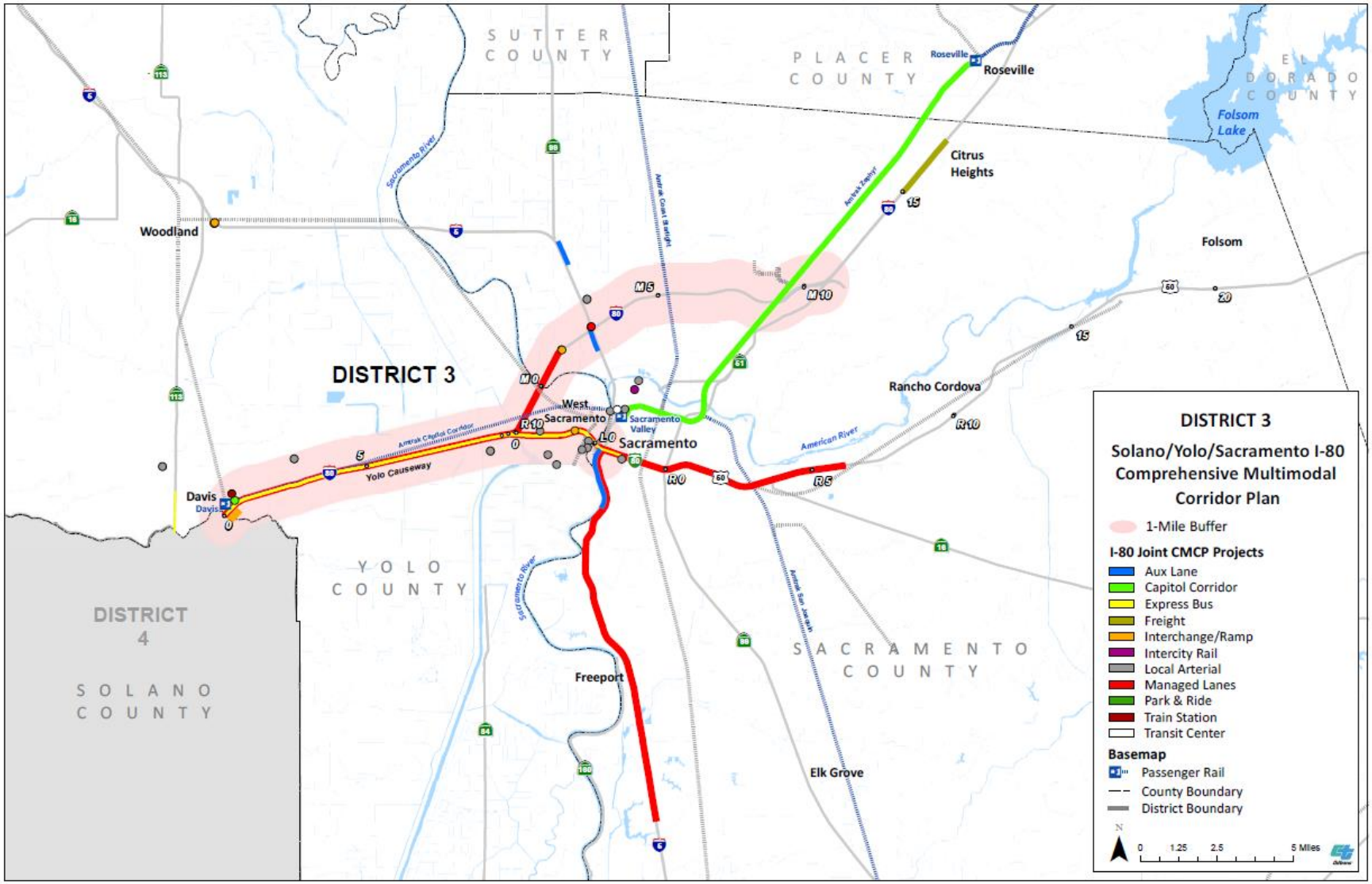


FIGURE ES 2 | I-80 CMCP YOLO AND SACRAMENTO COUNTIES A SUBSET OF PROPOSED PROJECTS

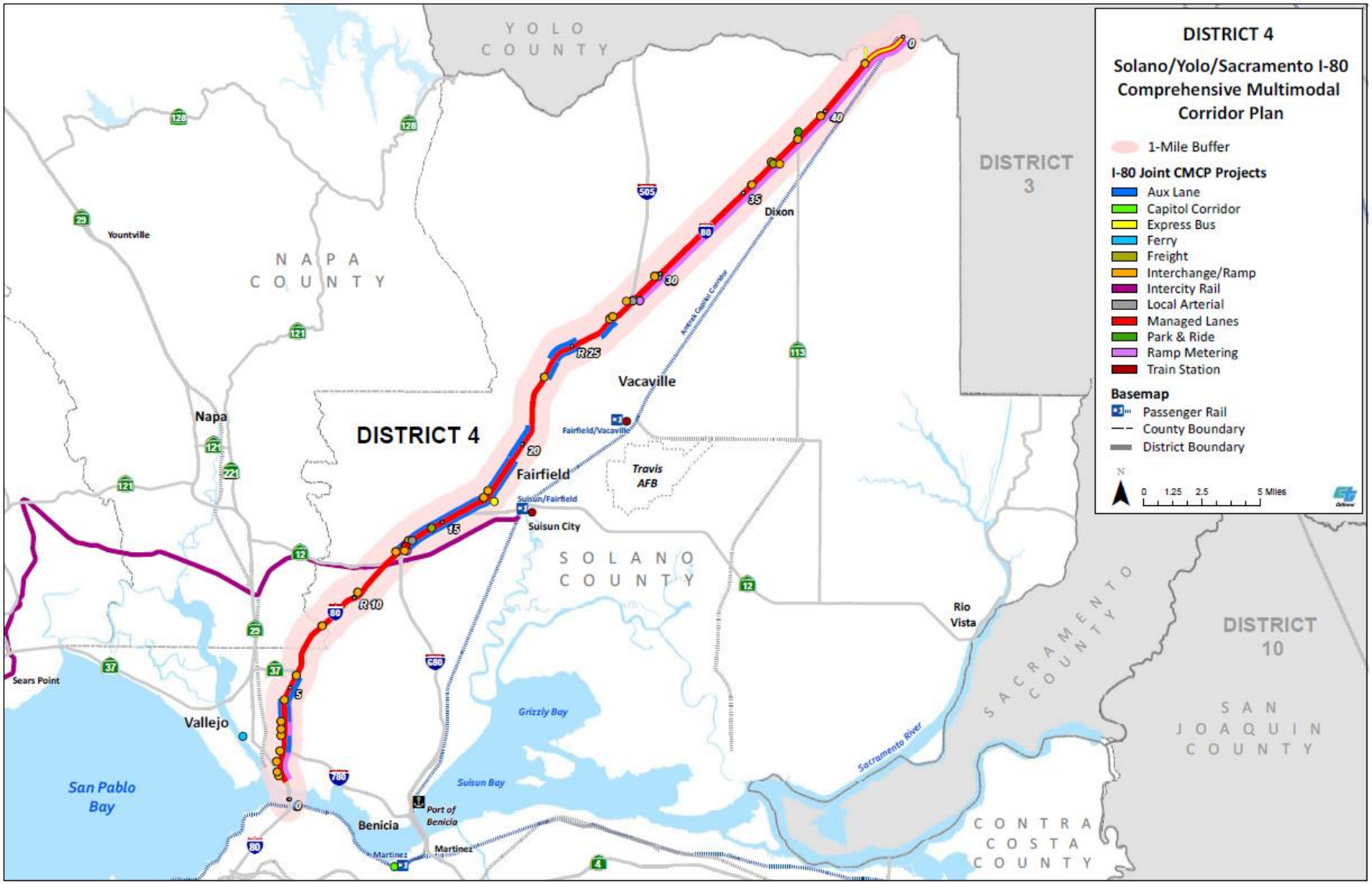


FIGURE ES 3 | I-80 CMCP SOLANO COUNTY A SUBSET OF PROPOSED PROJECTS

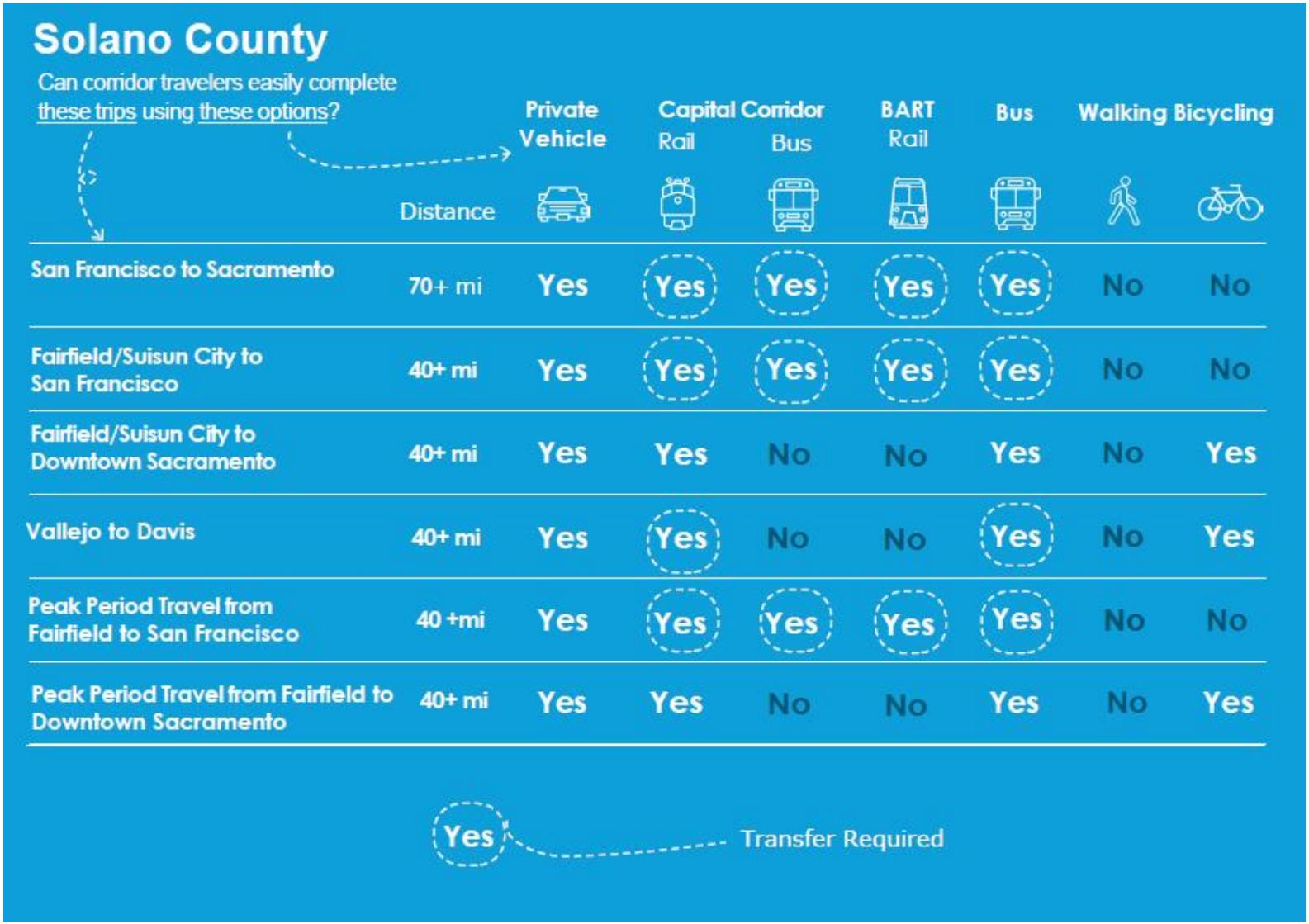


FIGURE ES 4 | SOLANO COUNTY EXISTING CORRIDOR TRAVEL OPTIONS

FIGURE ES 5 | YOLO AND SACRAMENTO COUNTIES EXISTING TRAVEL OPTIONS

Public Engagement

The public engagement process for the I-80 CMCP was to inform, collaborate, and solicit input from key stakeholders and the public on the plan for future corridor improvements:

- 49 agencies along the corridor made up the stakeholder group, which met on a quarterly basis. A subset of the stakeholder group was identified to create the TAC that met monthly.
- Two public engagement activities were held on the I-80 CMCP website to solicit virtual input and feedback.
- Altogether, the outreach activities attracted over 2,678 participants.

Corridor Projects

The multimodal corridor guidelines of Caltrans and the California Transportation Commissions (CTC) recommend a number of performance measures for multimodal corridor planning. The I-80 CMCP has utilized many of these key performance measures to assess current and future transportation system conditions. A number of key performance measures were used to measure the current transportation system as well as to assess potential transportation improvements. The performance measures were assessed using the available transportation models (Solano Napa Activity Based Model [SNABM] and Sacramento Activity-Based Travel Simulation Model [SACSIM19] models) in five separate scenarios. A qualitative analysis was also completed on the individual projects to help understand the potential effectiveness of those projects to improve the transportation system for all users.

Projects modeled for performance in the CMCP were fiscally constrained or programmed at the time of the CMCP document's development and completion. All CMCP implementation priority projects, be they constrained or unconstrained/conceptual, are subject to change and possible inclusion in the Regional Transportation Plan (RTP) managed by each MPO through regular 4-year updates.

To reduce and potentially mitigate induced VMT and GHG emissions from certain VMT and GHG inducing projects, the I-80 CMCP includes various types of multimodal transportation projects as follows:

- Construction of new river and freeway crossings.
- Additional transit/rail/light rail tracks, layover/platform facilities, operation assistance and/or track modifications for higher speeds.
- Intelligent transportation system (ITS) elements like transit signal priority to increase service frequency and improve travel time reliability.
- Road diets on local arterials to reduce the number of vehicular lanes to accommodate low stress pedestrian and/or bicycle facilities.

With these type of multimodal projects, the overall CMCP induced VMT and GHG will be reduced and/or mitigated, but a more specific project level analysis would need to be completed for each project.

Altogether, the I-80 CMCP includes over 200 multimodal transportation improvement projects (see **Figure ES 6**) along the study corridor, including over 100 projects being active transportation projects, 22 transit, 60 freeway, 15 arterial and several freight and conceptual projects (see **Table 9.2** for full list of projects). **Figure ES 2** and **Figure ES 3** illustrate a subset of the projects along the I-80 and US 50 corridors.

FIGURE ES 6 | MULTIMODAL TRANSPORTATION IMPROVEMENT PROJECTS

Plan Performance

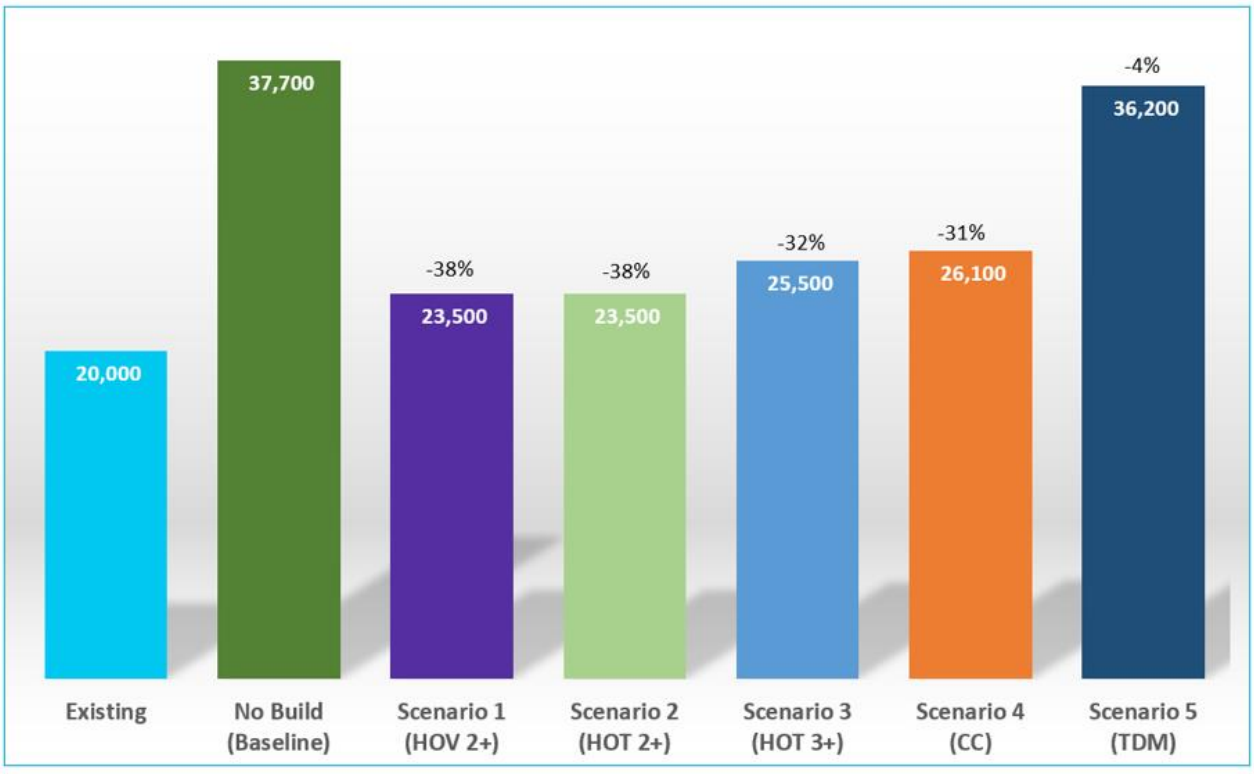
Table ES 1 and **Figure ES 7** illustrates the demand modeling analysis summary for the I-80 CMCP which shows a 2% increase in VMT but at the same time shows a 35% reduction in vehicle hours of delay (VHD) and 4% reduction in vehicle hours of travel (VHT). The reduction in delay helps with the goal of reducing GHG. The slight increase in VMT can be addressed by analyzing unfunded projects and quantifying the VMT reduction that can be achieved. With the reduction in VMT that can be achieved, this will also allow for further reduction in VHD and VHT. Below is an overview of the scenarios analyzed in this CMCP.

- **Existing |** This scenario represents year 2019 and its existing conditions.
- **No Build |** This scenario estimates future traffic volumes for 2040 only as a result of population and employment growth to show how the corridor would perform without improvements except for the projects that are currently under construction and projects that are fully funded and will be implemented by 2040. The following future build scenarios utilize the projects in the no build scenario with either the addition of a managed lane, improvements to the Capitol Corridor, or enhancements to travel demand management (TDM)/active transportation.
- **Future Build Scenario 1 | HOV 2+ |** This scenario assesses the changes resulting from completing an HOV 2+ lane along the I-80 corridor study area.
- **Future Build Scenario 2 | HOT 2+ |** This scenario assesses the changes resulting from the addition of HOT 2+ lanes along the I-80 corridor study area. This scenario includes all the projects included in Scenario 1 and it converts the HOV lanes in Scenario 1 to HOT 2+ lanes.
- **Future Build Scenario 3 | HOT 3+ |** This scenario assesses the changes resulting from a HOT 3+ lane along the I-80 corridor study area. This scenario is similar to Scenario 2 but with different occupancy requirements for the HOT lanes.
- **Future Build Scenario 4 | Capitol Corridor Improvement |** This scenario assesses improvements to the Capitol Corridor Intercity Rail service between San Jose and Sacramento.
- **Future Build Scenario 5 | Travel Demand Management / Active Transportation Enhancement |** This scenario assesses the changes resulting from assumed changes in travel behavior due to TDM programs as well as future implementation of active transportation facilities and shift of some trips to active transportation.

TABLE ES 1 | DAILY VMT/VHT/VHD COMPARISON BY SCENARIOS

Scenario	VMT	VHT	VHD	Average Speed	Difference VMT from Baseline	Difference VHT from Baseline	Difference Delay from Baseline	Difference Speed from Baseline
Existing	10,370,700	182,300	20,000	56.9	-	-	-	-
No Build (Baseline)	11,878,600	224,100	37,700	53.0	-	-	-	-
Scenario 1 (HOV 2+)	12,260,900	215,000	23,500	57.0	382,300	(9,100)	(14,200)	4.0
Scenario 2 (HOT 2+)	12,286,000	215,400	23,500	57.0	407,400	(8,700)	(14,200)	4.0
Scenario 3 (HOT 3+)	12,072,000	214,100	25,500	56.4	193,400	(10,000)	(12,200)	3.4
Scenario 4 (CC)	10,997,500	197,100	26,100	55.8	(881,100)	(27,000)	(11,600)	2.8
Scenario 5 (TDM)	11,804,000	223,000	36,200	52.9	(74,600)	(1,100)	(1,500)	-0.1

** Numbers are rounded to nearest thousand*



** Numbers in Table 9 are presented as visuals in above bar charts*

FIGURE ES 7 | VEHICLE HOURS OF DELAY COMPARISON BY SCENARIO

Performance Measures

Figure ES 8 illustrates the performance measures of the I-80 CMCP. Specific performance measures were developed based on CTC requirements and refined based on public engagement and stakeholder collaboration.

Safety
- The CMCP includes operational improvements such as auxiliary lanes and interchange improvements that are designed to improve the safety of the system.
- The CMCP also identifies a network of active transportation facilities and projects that will improve safety and accessibility for bicyclists and pedestrians.

Efficiency
- Multimodal strategies such as passenger rail, transit and active transportation will promote mode shift and improve freeway efficiency.
- Many operational improvements such as managed lanes, auxiliary lanes and ramp metering also offer significant congestion relief benefits.

Reliability
- Projects that offer safety and efficiency benefits often improve freeway reliability.
- When implemented at the right locations, auxiliary lanes and bus-on-shoulder operations improve express bus reliability.

Multimodal Accessibility
- Infrastructure and operational improvements to the transit system will improve reliability and accessibility to high quality transit options along I-80.

Air Pollution and Greenhouse Gas Emissions Reduction
- Multimodal projects and programs such as Capital Corridor improvements and express bus projects will decrease GHG emissions

Economic Prosperity
- The projects and programs included in the I-80 CMCP will provide congestion relief benefits and reduce truck and freight rail travel times
- The CMCP includes improvements at truck scales and projects to provide more truck parking, supporting safe and efficient movement of trucks

Asset Management
- The I-80 CMCP recommends new and improved existing bicycle and pedestrian infrastructure at freeway crossings and local road junctions
- It also includes projects to modernize and fill gaps in existing Traffic Operations System (TOS) assets at on-ramps and freeway-to-freeway connectors to reduce congestion

Efficient Land Use
- Service expansion/enhancement of transit and rail services will promote mode shift.
- Improvements at major transit and rail stops/stations will support more efficient land use.

Figure ES 8 | I-80 CMCP Performance Measures

State and Local Responsibility

Improvements to the transportation network are the responsibility of both Caltrans and local agencies. However, with responsibility comes opportunity to leverage funding sources and collaborate on projects in a manner that benefit both Caltrans and local agencies. Local developments that add cumulative impacts to these corridors, or the regional and local transportation network, may necessitate local jurisdictions to provide nexus based, proportional fair-share funding for future transportation improvements and mitigations.

Strategic Management and Performance

Caltrans Strategic Management Plan (SMP) is the road map of Caltrans role, expectations, and activities, and includes performance measures to bring about transparency, accountability, sustainability, and innovation. The SMP highlights the Department goals which are health, stewardship and efficiency, sustainability, livability and economy, system performance, and organizational excellence.

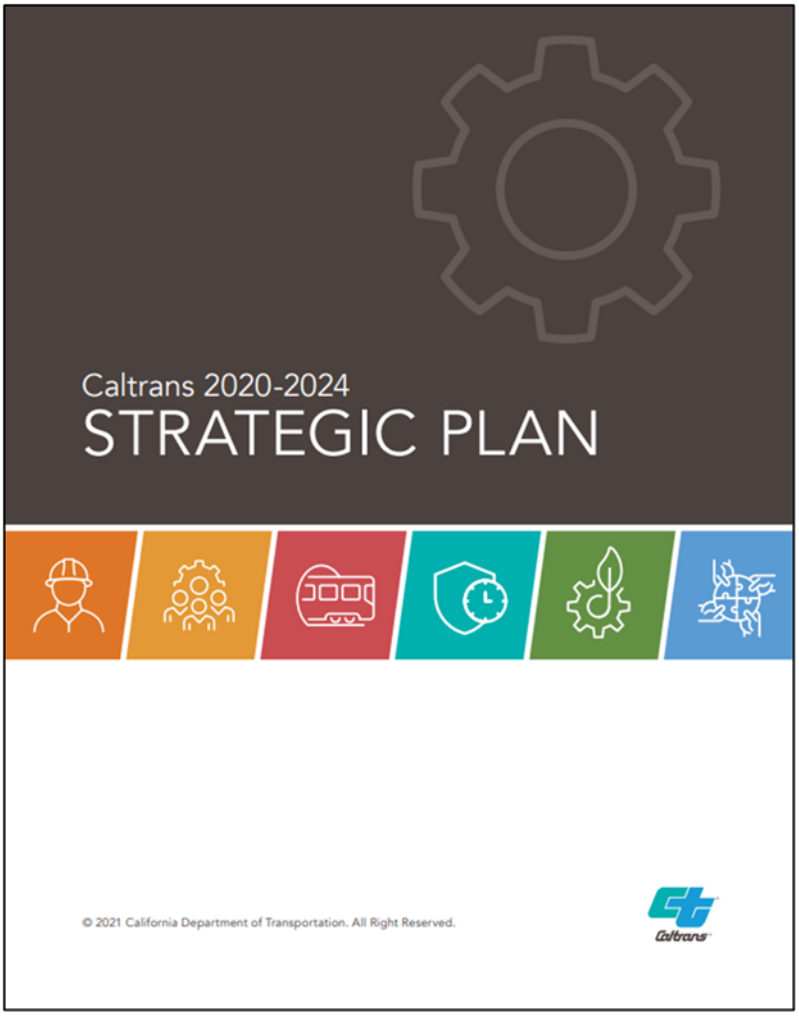


FIGURE ES 9 | CALTRANS STRATEGIC MANAGEMENT PLAN

Chapter 1 | Introduction

1.1 | Interstate 80/United States 50 Corridor Overview

I-80 serves local, regional, and interregional traffic of people and goods across an urban, suburban, rural, and open space landscape. This Interstate is one of two such facilities that extend east of the San Francisco Bay Area region and is vital to interregional and regional commuting, freight movement, and recreational travel. I-80 is the primary corridor connecting the San Francisco Bay Area to the Sacramento Region and beyond. The I-80 corridor serves as an important freight corridor for the movement of agricultural goods between the Sacramento Valley's Port of West Sacramento and Port of Oakland and provides an essential link to the Ports of Richmond, San Francisco, and Redwood City via connecting routes.

Beyond the west limits of the corridor, I-80 travels through western Contra Costa and Alameda counties and makes a vital connection to I-880 and I-580 providing access to the East Bay communities, Central Valley, and Marin County via the Richmond-San Rafael Bridge. The route intersects intraregional routes SR 4 and SR 13 which provide continuation eastward into interior Alameda and Contra Costa counties, with connections to SR 24, I-680, and SR 242. Crossing over the San Francisco-Oakland Bay Bridge (SFOBB), I-80 travels through the County and City of San Francisco where it joins US 101/I-280 connecting to the San Mateo peninsula.

From Solano County, I-80 transitions into Yolo County with connections to SR 113 and US 50 before connecting with I-5 and SR 51 in Sacramento County as it heads northeast through Nevada and Placer counties towards the Nevada State line. Within the City of Sacramento, I-80 connects to I-5 on the northern end of the city limits whereas the US 50 section of the corridor scope connects with I-5 through the Sacramento downtown core with eventual connections to El Dorado County, Lake Tahoe Basin, and the Nevada State line. Through these two divergent routes, several state routes meet both I-80 to the north and US 50 to the south: feeding into the activity taking place along the corridor, transporting agricultural goods, commuters, and travelers.

Within the corridor, the Yolo Bypass Wildlife Area and floodplain limits east-west linkages, funneling all modes of transportation into the narrow I-80 corridor between the City of Davis, City of West Sacramento, and City of Sacramento. Within a cross-section of less than a quarter mile exists the Capitol Corridor inter-regional rail line, I-80 and US 50, and a dedicated Class I multi-use bicycle and pedestrian path that links the City of Davis with downtown Sacramento.

Within the Sacramento region, the route carries seasonal recreational traffic and is a primary corridor for goods movement from San Francisco and Oakland as it head north through the cities of Vallejo, Fairfield, Dixon, Davis, West Sacramento, and Sacramento. I-80 and US 50 continue east after Sacramento until they cross the Nevada State line.

1.2 | Solano County

Solano County is situated midway between San Francisco and Sacramento. The county is home to rolling hillsides, waterfronts, and fertile farmland and offers a mix of rural and suburban lifestyles with access to the urban amenities associated with two of the nation's most dynamic metropolitan regions. The County limits residential and commercial development outside of the cities, thus preserving approximately 80 percent of the land for open space or agricultural uses. The county boasts a thriving agricultural economy, biotechnology, and other growth industries. I-80 traverses through the county to the northeast, from the Carquinez Bridge to the Solano/Yolo County line.

City of Vallejo is located at the northeastern edge of the San Francisco Bay Region. It is within commute distance of major employment centers in the Bay Area such as San Francisco and Oakland, and within acceptable commute range of Sacramento. Vallejo has a variety of land uses, including the California State University Maritime Academy, Mare Island, and Six Flags Discovery Kingdom Theme Park. I-80 travels northward through the center of Vallejo beginning at the Carquinez Bridge toll plaza, and contains junctions with SR 29, I-780, and SR 37 before continuing to the northeast toward Fairfield.

City of Fairfield is the county seat of Solano County. The city is the midpoint between San Francisco and Sacramento, located approximately 40 miles from the city center of both cities, as well as 40 miles from the city center of Oakland. Travis Air Force Base is located on the eastern edge of Fairfield. I-80 passes through Fairfield to the northeast toward Vacaville. This section of the facility contains a junction with I-680, as well as the Cordelia Commercial Vehicle Enforcement Facility.

City of Vacaville is comprised of just under 27 square miles and is bordered by rolling hillsides, fruit orchards and fertile farmland. Vacaville is a vibrant community in one of the fastest growing areas of the nation and has become home to some of the largest life-science companies in the world. The city's rich history has transformed the community from a small agricultural town into a thriving and progressive city. I-80 passes through Vacaville to the northeast toward Dixon, and the facility contains junctions with SR 179 and I-505.

City of Dixon is comprised of just under eight square miles and is located in the northeastern corner of Solano County that maintains its gold rush era charm. Living in Dixon offers residents a sparse suburban feel. I-80 travels through the city to the northeast toward Davis, and most of the Dixon's land area lies on the eastbound

1.3 | Yolo County

Located directly between the rapidly growing regions of Sacramento and the Bay Area, Yolo County is home to a vast array of infrastructure, serving as a primary rail and interstate transportation corridor for northern California. Union Pacific, Burlington Northern and Santa Fe, and Amtrak all operate through Yolo County. Most notably the Amtrak corridor runs parallel to a majority of I-80 and US 50 corridors in the county. The primary mode through the county is via automobile for people and trucks for goods movement which primarily use the I-80 and US 50 corridors. This need creates congestion along the corridors which are exacerbated by neighboring interstates such as I-5 and I-505 and major trip generators such as the Sacramento International Airport and Port of West Sacramento. The induced congestion on I-80 and US 50 corridors impact the county's economy which is primarily based on agriculture. Yolo County has led the State in agricultural preservation practices for the last several

decades, primarily by directing growth into the incorporated cities where services are available and where development can occur more efficiently.

City of Davis is comprised of approximately 10 miles with a small-town atmosphere, it contains diverse land uses including UC Davis adjacent to I-80. Davis has more than 50 miles of bicycle paths and more bicycles per capita than any other city in the nation. I-80 passes through Davis and onto the Yolo Causeway, a 3.2-mile-long elevated viaduct that crosses the Yolo Bypass floodplain connecting Davis and West Sacramento.

City of West Sacramento contains both established neighborhoods and new development. The city is increasingly being discovered by new residents and businesses. West Sacramento offers small town charm with a business-friendly attitude in a convenient location near downtown Sacramento and the greater Sacramento Metropolitan Area. I-80 traverses northeast through West Sacramento until it crosses the Sacramento River at Garden Highway. With US 50 beginning at the I-80/US 50 split in West Sacramento, the route traverses the northern city limits. It shares a designation for five miles with Business 80.

1.4 | Sacramento County

Sacramento County is home to the California State Capitol and has a population of approximately 1.55 million people over an area of 994 square miles[1]. The county is bordered by Contra Costa and San Joaquin counties on the south, Amador and El Dorado counties on the east, Placer and Sutter counties on the north, and Yolo and Solano counties on the west. Sacramento County boasts one of the strongest commerce economies in the state, facilitated by an international airport and direct access to the San Francisco Bay in the southernmost part of the county. It also acts as the most northern freight hub for north-south connections between Southern California and the Oregon State line, and east-west connections between the Bay Area and the Nevada State line.

City of Sacramento is the urban core of the County and the metropolitan region. With just under 100 square miles, it is the largest city in the region. The City of Sacramento is made up of older neighborhoods developed before the automobile became the dominant mode of transportation where newer and lower density neighborhoods were developed after World War II. I-80 travels through a variety of neighborhoods such as the Natomas and North Sacramento communities, which are predominately low-density residential housing with pockets of commercial and industrial land uses.

Operationally, within the CMCP study area, as I-80 traverses the northern limits of the City of Sacramento, the route crosses I-5 in the Natomas community and the Capital City freeway (SR 51) north of the Arden Arcade community. Outside of the CMCP study area, I-80 continues through North Highlands within Sacramento County before it enters the City of Citrus Heights.

In contrast to I-80, US 50 begins at the I-80 junction on the western limits of the City of West Sacramento, crosses through the city, and into the core of Sacramento. Within the CMCP study area, the US 50 section ends at the I-5 interchange just east of the Sacramento River. Outside of the CMCP study area, US 50 continues just south of the Sacramento downtown core, crosses the SR 51 and SR 99 junction as it heads east towards the cities of Rancho Cordova and Folsom.

[1] Sacramento County "Demographics and Facts" https://www.saccounty.net/Government/Pages/DemographicsandFacts.aspx

Chapter 2 | Corridor Goals, Objectives, and Performance Measures

The purpose of the subsequent sections is to tie in the policies and objectives of the statewide plans with those of the CMCP. As discussed previously, the purpose of the CMCP, similar to other Caltrans and State plans and policies, is to provide a safe, efficient, accessible, and connected system of transportation that emphasizes multimodal options, reduces GHG, and VMT. This is achieved through collaboration, creativity, and sustainability with our partners.

2.1 | Multimodal Corridor Planning Guidance

This CMCP was developed based on the adopted CTC CMCP guidelines and Caltrans Corridor Planning Guidebook (February 2020). These corridor planning guides provide the framework for assessing transportation improvement projects as part of the Road Repair and Accountability Act of 2017, or SB 1. SB 1 requires that funding shall be available for projects that make specific performance improvements and are part of a comprehensive corridor plan designed to reduce congestion in highly traveled corridors by providing more transportation choices for residents, commuters, and visitors to the area, while preserving the character of the local community and creating opportunities for neighborhood enhancement projects. The I-80 CMCP closely follows both the CTC and Caltrans corridor planning guides.

Based on the CTC and Caltrans guidance, objectives of the comprehensive multimodal corridor planning process may include but are not necessarily limited to:

- Define multimodal transportation deficiencies and opportunities for optimizing system operations.
- Identify the types of projects necessary to reduce congestion, improve mobility, and optimize multimodal system operations along highly traveled corridors.
- Identify funding needs.
- Further state and Federal ambient air standards and GHG reduction standards pursuant to the California Global Warming Solutions Act of 2006 (Division 25.5, commencing with §38550, of the Health and Safety Code) and SB 375 (Chapter 728, Statutes of 2008).
- Preserve the character of local communities and create opportunities for neighborhood enhancements.
- Identify projects that achieve a balanced set of transportation, environmental, and community access improvements.

2.2 | Corridor Planning Process Guide

The Caltrans Corridor Planning Process Guide (February 2020) assists in the development of updating or creating new corridor plans, studies, and documents. Caltrans develops multimodal transportation corridor plans with partners that help identify transportation improvements resulting in a range of concepts and projects that are consistent with Caltrans goals and policies. The Guide outlines a planning approach to develop multimodal transportation plans through an Eight-Step Corridor Planning Process (see **Figure 2.1**).

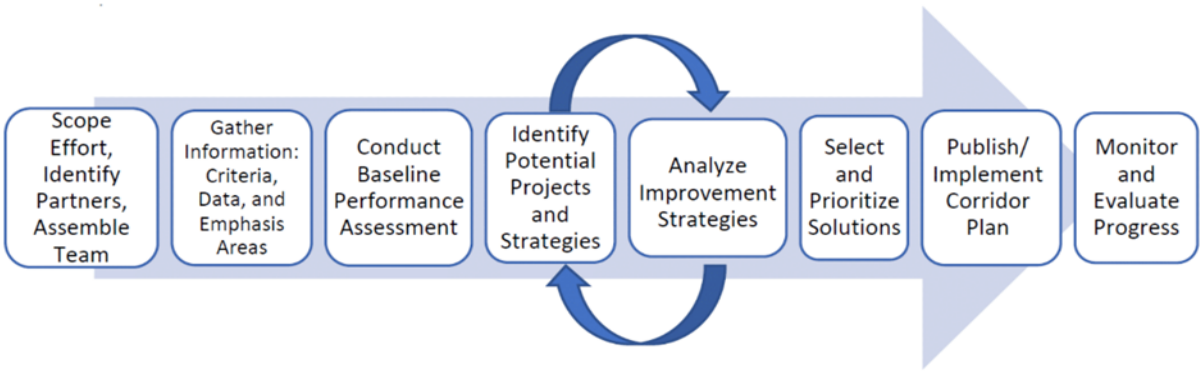


FIGURE 2.1 | EIGHT-STEP CORRIDOR PLANNING PROCESS

A key element of the CMCP is to reduce congestion in highly traveled and highly congested corridors through performance improvements. A set of transportation performance metrics is applied to measure projects or groups of projects which result in performance improvements in the study area. Some of these metrics can be assessed using quantitative data such as transportation model output, while others are qualitatively evaluated based on project type, project location, and other factors. This is consistent with the CTC guidelines which state "in recognition that data availability and modeling capabilities vary by agency based on available resources, the Commission expects agencies to address plan and project performance qualitatively and quantitively to the degree reasonable given technical and financial resources available during the planning process. As part of the comprehensive multimodal corridor planning process, a plan-level corridor performance assessment must be conducted and documented to clearly outline system performance and trends." The evaluations provided in this plan clearly document the conditions, including congestion levels, in the overall study area. Per the CTC and Caltrans CMCP guidelines, it is critical to create multimodal corridor plans that closely match the local and regional goals and objectives for transportation planning.

The I-80 CMCP is built on a variety of guidance documents, stakeholder input, regional and State plans, and policies, and exemplifies the five Caltrans priorities from Moving Forward to Transportation(https://dot.ca.gov/-/media/dot-media/about-caltrans/documents/director-5-topic-fact-sheet-a11y.pdf). These key priorities are the focus of the I-80 CMCP, consistent with Climate Action Plan for Transportation Infrastructure (CAPTI), and its project recommendations.

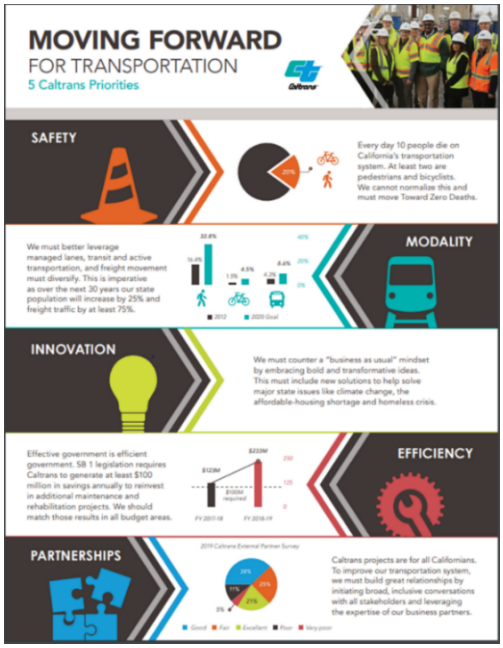


FIGURE 2.2 | 5 CALTRANS PRIORITIES

The purpose of the system planning process is to identify the existing and future route conditions and needs for a corridor. This I-80 CMCP is a complex, multi-jurisdictional planning document that identifies future needs within the corridor that is currently experiencing high levels of congestion, and is a foundation document that supports the partnership-based, integrated management of various travel modes (transit, cars, trucks, bicycles) and infrastructure (rail, roads, highways, information systems, bike routes) in a corridor to improve mobility along the corridor.

2.3 | Climate Action Plan for Transportation Infrastructure

The California Transportation Agency (CalSTA) adopted CAPTI[2] on July 12, 2021, which is an overarching framework and statement of intent for aligning State transportation infrastructure investments with California's climate, health, and social equity goals with priority given to "fix-it-first" as stated in SB 1. The CAPTI serves as statewide policy to meet the Governor's Climate goals and directs CalSTA, Caltrans, and the CTC to address climate change as described in Executive Orders (EO) N-79-20 and N-19-19.

The CAPTI investment framework consists of:

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

CAPTI strategies include cultivating and accelerating sustainable transportation by leading with State investments and advancing State transportation leadership on climate and equity through improved planning and project partnerships. CAPTI efforts will support the California Transportation Plan (CTP) 2050 goals to meet State climate change targets, mandates, and policies. CAPTI is also closely aligned with Caltrans 2020-2024 SMP which showcases a fundamental shift for Caltrans to lead climate action as a top priority.

2.4 | California Transportation Plan 2050

The CTP 2050, adopted by Caltrans in 2021, presents a vision for California's future transportation system and articulates strategic goals, policies, and recommendations to improve multimodal mobility and accessibility while reducing GHG. The CTP is committed to addressing the immediate threats of Coronavirus disease 19 (COVID-19), long-standing systemic injustice, and California's firm commitment to combat climate change and the many risks it poses to our infrastructure and communities.

SB 391 requires the CTP to address how the state will achieve maximum feasible emissions reductions in order to attain a statewide reduction of GHG to 1990 levels by 2050. The CTP outlines advancements in clean fuel technologies, continued shifts toward active transportation, transit, and shared mobility; efficient land use development practices; and how continued shifts to telework can collectively reduce transportation emissions to support these goals.

The CTP 2050 also reinforces long-held values such as improving system safety, improving mobility and accessibility, advancing environmental health and justice, and enhancing quality of life. In long-range

[2] https://calsta.ca.gov/-/media/calsta-media/documents/capti-2021-calsta.pdfation Infrastructure

planning, it is crucial that the strategies, goals, and projects identified for each corridor further the goals of CTP 2050. This will result in reducing GHG while improving transportation for all users.

2.5 | Caltrans Smart Mobility Framework Guide 2020

The Smart Mobility Framework (SMF) guides implementation of multimodal transportation strategies in support of compact and sustainable communities through a broad range of transportation and housing choices. Smart Mobility 2010: A Call to Action for the New Decade, provided concepts and tools to incorporate smart mobility principles into all phases of transportation decision-making. This was developed in partnership with the US Environmental Protection Agency (EPA), the Governor's Office of Planning and Research, and the California Department of Housing and Community Development (HCD).

In December of 2020, the Caltrans 2020 SMF guide introduced strategies, performance measures, and analysis methods for implementing smart mobility, organized around five themes: network management, multimodal choices, speed suitability, accessibility and connectivity, and equity. The guide also describes the application of five "place types" to identify transportation planning and project development priorities across the state. These place types describe existing geographic areas based on location, land use, density, and other characteristics:

- Central Cities
- Urban Communities
- Suburban Communities
- Rural Areas
- Protected Lands and Special Use Areas

Each of the place types correspond to transportation planning priorities and serves as a guide, not a rule, for development of recommendations. Planners consider the specific characteristics of a given planning area in addition to local, regional, and State plans when recommending strategic transportation system investments.

SB 743 directs use of VMT, as a metric in place of Level of Service, to better measure transportation-related environmental impacts of any project and promote the reduction of GHG, the development of multimodal transportation networks and a diversifying land uses. The SMF guide incorporates the intention of SB 743, as well as social equity and environmental justice, which are integral to all planning decisions. The SMF guides Caltrans and stakeholder agencies in assessing how plans, programs, and projects support Smart Mobility.

2.6 | Vulnerability Assessment

In 2019, Caltrans completed a Climate Change Vulnerability Assessment for each District that identifies segments of the SHS vulnerable to climate change impacts including precipitation, temperature, wildfire, storm surge, and sea level rise. These studies involved applying climate data to refine the agency's understanding of potential climate impacts to the SHS, and Caltrans coordinated with various state and federal agencies and academic institutions to obtain the best available climate data for California. Discussions with professionals from various engineering disciplines helped identify how changing climate hazards may affect highways, including their design. The assessment allowed Caltrans to begin to understand how climate change may affect the highway and identified a subset of SHS assets on which to focus future adaptation efforts.

2.7 | Adaptation Priorities Report

Released in 2020, the Adaptation Priorities Report for each District picked up where the 2019 Climate Change Vulnerability Assessments left off. These reports include a prioritized list of assets that are potentially exposed to climate change impacts in each Caltrans District. The prioritization methodology in the reports considers, amongst other things, the timing of the climate impacts, their severity and extensiveness, the conditions of each asset (a measure of the sensitivity of the asset to damage), the number of system users affected, and the level of network redundancy in the area. Prioritization scores are generated for each potentially exposed asset based on the above factors and then used to rank their potential exposure to climate change impacts.

2.8 | Transit Planning

California EO N-79-20 (Newsom) highlights the need to build towards an integrated, statewide rail and transit network, consistent with the 2018 California State Rail Plan (CSRP), in order to provide seamless and affordable multimodal travel options for all.

California's transit systems face challenges due to sprawling and low-density land use patterns. When destinations are far apart, it becomes harder to efficiently serve more people with fewer vehicles, resulting in worsening chronic roadway congestion. Aside from major urban areas, many transit systems routes and scheduling are not well-connected or coordinated and required varying or inconvenient payment methods.

2.9 | Equity and Transit

Local planning efforts need to include all aspects and modes of travel involved in a trip to ensure mobility for seniors, people with disabilities, and lower income communities. Lower-income communities of color own fewer cars and have a greater reliability on transit to fulfill their transportation needs. Unreliable transit networks, in terms of time and frequency, creates a burden for individuals reliant on the transit system. As the population ages, the share of Californians living with a disability is expected to increase. Seniors and other people with disabilities often rely on public transit to meet daily travel needs.

2.10 | Improving Transit

Looking to the future, Caltrans, along with the California Air Resources Board (CARB) and CalSTA formed the California Integrated Travel Project (Cal-ITP) to improve transit scheduling coordination, payment methods, and trip-planning data by creating industry standards for California's transit providers.

2.11 | Bicycle Planning

The CMCP was developed in cooperation with the public and local and regional partners to ensure that the recommended bicycle improvements on the SHS complement proposals for local and regional networks. The CMCP considers all types of bicycle trips but prioritizes bicycle trips to daily necessities such as to work, school, shopping, recreational, or connection to transit. The CMCP helps inform future investments on the State and local transportation bicycle network. This is critical as many funding programs require consideration of complete streets improvements as part of a project. Programs such as the State and regional Active Transportation Program (ATP) fund complete street projects that include strategies to increase biking trips or enhance safety.

2.12 | Broadband

Broadband service has become an essential element of communication, an engine of economic activity as it provides educational opportunity, civic engagement, access to health care, teleworking, and much more. Income, education, disability status, age, race, and ethnicity all correlate with broadband availability and use. Residents in less populated areas generally have less access to broadband services. State highway right of way (ROW) can be a source of expanding the broadband network which could provide increased accessibility to tribal land, rural communities, and priority populations.

California Governor's EO S-23-06, Twenty-First Century Government, directed establishment of the California Broadband Task Force to bring together Caltrans, public, and private stakeholders to identify opportunities to facilitate broadband installation across the State. Assembly Bill (AB) 1549 of 2016 requires Caltrans to notify broadband deployment organizations on construction methods suitable for broadband installation through Caltrans website. This would bring together private and public partnership for opportunities to increase advanced communication technologies. In 2018, Caltrans developed the "Incorporating Wired Broadband Facility on State Highway Right-of-Way User Guide," providing guidelines on Caltrans processes for wired broadband providers to incorporate wired broadband facilities in State highway ROW.

In 2021, the California Advanced Services Fund provided $645 million for the California Public Utility Commission to provide broadband access to no less than 98% of California households in each region.[3] It has funded 17 regional broadband consortia across the State that have identified "Strategic Broadband Corridors" which are now used as part of Caltrans planning efforts to provide broadband services to areas currently without broadband access and build out facilities in Equity Priority Community areas. Caltrans encourages developing partnerships with stakeholders and the regional broadband consortium during planning, environmental scoping, and project development to integrate broadband into projects.

2.13 | Caltrans Equity Statement

State Departments of Transportation are bound by law to consider the needs of residents with low incomes, communities of color, people with limited English proficiency, seniors, the disabled, and other communities, and individuals when developing transportation plans.[4]

Caltrans acknowledges that communities of color and priority populations have experienced fewer benefits and a greater share of negative impacts associated with our State transportation system. Some of these disparities reflect a history of transportation decision-making, policies, processes, planning, design, and construction that put up barriers, divided communities, and amplified racial inequities, particularly in our Black and Brown neighborhoods."[5]

Caltrans recognizes our leadership role and unique responsibility to eliminate barriers and provide more equitable transportation for all Californians. This understanding is the foundation for intentional decision-making that recognizes past and stops current harms from our actions.

[3] California Advanced Services Fund

[4] The US Department of Transportation Title IV program https://www.transportation.gov/mission/department-transportation-title-vi-program

[5] California State Transportation Agency Secretary David Kim's Statement on Racial Equity, Justice and Inclusion in Transportation. https://calsta.ca.gov/press-releases/2020-06-12-statement-on-racial-equity

To ensure our processes and projects address equity, Caltrans is developing public outreach methodologies for increasing participation from priority populations members and local community-based organizations as part of our planning and project development processes.

2.14 | Environmental Justice

Information used in identifying potential environmental justice issues are documented in corridor plans to address the fair treatment and meaningful involvement of all people in transportation projects regardless of race, color, national origin, or income. This applies to the Caltrans processes, from the early stages of transportation planning and investment decision making, through construction, operations, and maintenance phases. Title VI of the Civil Rights Act of 1964 states "No person in the US shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." EO 12898, issued in 1994, gave a renewed emphasis to Title VI and added low-income populations to those protected by the principles of environmental justice[6]

There are three fundamental principles at the core of environmental justice:[7]

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

2.15 | California Climate Investments Priority Populations

According to SB 535, priority populations are disproportionately affected by environmental pollution, low income, high unemployment, low levels of home ownership, high rent burden, sensitive populations[8], or low levels of educational attainment. In AB 1550, low-income communities are census tracts with median household incomes at or below 80 percent of the statewide median income or with median incomes at or below the threshold designated as low income by the US HCD. Both SB 535 and AB 1550 include a requirement to direct a portion of funds to reduce GHG in priority populations and low-income communities.

2.16 | Priority Populations

Priority populations refers to communities that were previously termed as underserved communities. The equity measure analyzes scenarios and defines priority populations based on variables that includes minority populations, low-income areas, less English proficient populations, seniors (age 75 and older), zero-vehicle households, single-parent households, people with disabilities, and rent-burdened households.

[6] https://www.transportation.gov/transportation-policy/environmental-justice/environmental-justice-strategy

[7] https://www.fhwa.dot.gov/environment/environmental_justice/

[8] https://www.epa.gov/expobox/exposure-assessment-tools-lifestages-and-populations-highly-exposed-or-other-susceptible

2.17 | 2018 California State Rail Plan

The CSRP is a strategic plan with operating and capital investment strategies that guide the coordination and development of a statewide travel system. The CSRP is an important element in the comprehensive planning and analysis of statewide transportation investment strategies detailed in the CTP 2040. In concert with CTP 2040 and other plans, the CSRP will help improve air quality, invigorate cities, and provide increased mobility for California in the future. State, local, and regional transportation plans build off the CSRP to increase regional rail capacity, develop transit networks, and set land use recommendations that benefit from enhanced connectivity. Federal and State grant awards and funding decisions will consider project alignment with the 2040 Passenger Rail Vision and strategies reflected in the CSRP. The CSRP is currently being updated with an anticipated completion date by end of 2022.

Consistent with federal and State laws, the CSRP proposes a unified statewide rail network that integrates passenger and freight service, connects passenger rail to other transportation modes, and supports smart mobility. The CSRP aims to capture an increasing percentage of travel demand by rail. The rail system has the potential capacity to provide more service, with more efficient performance with longer trains, more frequent services, better connectivity, and greater ease of access. Addressing these areas will grow the number of riders and reduce average costs per passenger. More trains, with shorter headways and faster travel times, can be more competitive with automobiles and airlines, thus motivating travelers to use rail and transit more frequently. This will provide another option for travelers to be less dependent on automobiles and air travel.

2.18 | California Freight Mobility Plan 2020

The guiding vision of the California Freight Mobility Plan (CFMP) 2020[9] is to guide freight sustainability in California from three perspectives: economic vitality, environmental stewardship, and social equity. The CFMP has seven goals to ensure California's freight transportation system continually works towards greater efficiency, less-pollution, and higher-capacity in its freight facilities, equipment, and operations. The CRMP was developed by the California Freight Advisory Committee, a group of representatives from private and public sector freight stakeholders from airports, seaports, railroads, shippers, carriers, and industry workforce. The CFMP analyzed California's freight system from seven regional perspectives to highlight the uniqueness and the different needs of each region. The CFMP also includes project lists for each region that serve as a basis for the SB 1 Trade Corridor Enhancement Program (TCEP) funding.

2.19 | Interregional Transportation Strategic Plan 2021

The Interregional Transportation Strategic Plan (ITSP) 2021[10] provides guidance for the identification and prioritization of projects to improve interregional movement of people, vehicles, and goods, and achieve a sustainable, integrated, and efficient transportation that enhances California's economy and livability. The California State Legislature recognized the importance of interregional travel and the need for the State to target investments in key corridors through the designation of the Interregional Road System (IRRS). As part of this effort, 93 important interregional routes identified in the 1989 Blueprint Legislation (a ten-year transportation funding package created by AB 471, SB 300, and AB 973).

[9] https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/cfmp-2020-final/final-cfmp-2020-chapters-1-to-6-remediated-a11y.pdf

[10] https://dot.ca.gov/programs/transportation-planning/multi-modal-system-planning/interregional-transportation-strategic-plan

SB 45, 1997 dedicated 25 percent of State Transportation Improvement Program (STIP) funding to interregional highways and passenger rail, and 75 percent to regional transportation improvements. The State portion of interregional improvement funds is programmed in the Interregional Transportation Improvement Program (ITIP) every two years. The goals and objectives of the ITSP apply to a subset of the IRRS and intercity rail corridors, thereby guiding investments decisions to prioritize projects of the ITIP. The ITIP was updated in 2021 and there is an addendum under development that will be completed in 2022.

2.20 | Corridor Goals and Objectives

As previously discussed, the CTC and Caltrans guiding documents contain recommended corridor planning goals, objectives, performance metrics, and evaluation criteria for assessing transportation improvement projects at the corridor level. These goals, objectives, and performance measures are shown below in **Table 2.1**.

TABLE 2.1 | PERFORMANCE METRICS

Goals	Objectives	Performance Metrics
1. Safety	1.1 Reduce the number of incidents within the corridor	• Number/severity/type of collisions on freeways • Number/severity/type of bicycle collisions • Number/severity/type of pedestrian collisions
2. Efficiency	2.1 Reduce recurring delay along the I-80 corridor	• Vehicle Hours of Delay (VHD) • Person Hours of Delay (PHD)
	2.2 Improve productivity along the I-80 corridor	• Person throughput • Freight throughput • Transit Ridership
	2.3 Increase vehicle occupancy by mode	• Vehicle occupancy rate • Percentage of non- Single Occupancy Vehicles (SOV) compared to SOV by mode • Share of alternative modes
3. System Reliability	3.1 Improve freeway travel time reliability	• Travel time by mode • Buffer time index, or the amount of extra "buffer" time needed to be on-time 95 percent of the time • Planning time index is the ratio of the 95th percent peak period travel time to the free flow travel time
	3.2 Reduce non-recurring delay along the I-80 corridor	• Response time of non-recurring incidents (planned) • Clearing time of non-recurrent incidents (collisions)
	3.3 Improve transit on-time performance	• Transit on-time performance • Number of transit operational improvements
4. Multimodal Accessibility and Connectivity	4.1 Improved access and connections to existing or future multimodal transportation hubs	• Number of transit access improvements including new connection points • Number of active transportation improvements at transportation hubs
	4.2 Reduce gaps in the bicycle network	• Bicycle lane miles by facility classification, • Bike/ped freeway crossing spacing/density
	4.3 Reduce gaps in the pedestrian network	• Pedestrian walkway miles, including bike/pedestrian overcrossings

Goals	Objectives	Performance Metrics
5. Air Pollution and GHS Reduction	5.1 Reduce VMT and/or VHD	• Total VMT and VHD • Per capita VMT and VHD
	5.2 Reduce criteria pollutants	• Emissions of criteria pollutants, including carbon monoxide (CO), lead, nitrogen dioxide (NO2), ozone (O3), particulate matter, and sulfur dioxide (SO2)
	5.3 Reduce GHG	• Emissions of GHG
6. Economic Prosperity	6.1 Increase freight efficiency	• Freight throughput
	6.2 Promote access to jobs	• Share of jobs accessible in congested conditions
	6.3 Reduce per-capita delay on freight network	• Per-capita delay on freight network
7. Modern Infrastructure and Asset Management	7.1 Close gaps in Transportation Operation Systems (TOS) elements, such as Ramp Metering, Vehicle Detection Sites, Closed-Circuit Television Cameras and Changeable Message Signs	• Number of TOS elements installed • Presence of fiber-optic
	7.2 Ensure good TOS element health	• TOS elements uptime percentage
		• Percentage of TOS elements inspected or maintained within the last X number of years
	7.3 Improve pavement conditions	• Pavement condition index rating
	7.4 Upgrade facilities to meet best practice in design of multimodal facilities	• Number of bike facility upgrades from unclassified, Class 3, Class 2 to Class 2 enhanced, and Class 4 • Bike/ped freeway crossing spacing/density • Number of transit operational improvements
8. Efficient Land Use	8.1 Reduce reliance on single occupancy vehicles	• Non-SOV mode share • Non-vehicle mode share
	8.2 Reduce trip length and overall trips generated	• Per capita VMT

Chapter 3 | Demographics, Land Use and Trip Generators

The following sections discuss demographic characteristics, land uses, and major trip generators along the corridors. These factors provide background on existing and future travel patterns along the corridors based on how residents and commuters utilize the freeways. The demographic data utilized included in this chapter came from the 2019 Census Bureau database to stay consistent with the most current data available for the smart mobility framework analysis at the end of this chapter. This is also consistent with the use of 2019 data as the base year for the modeling analysis in this CMCP.

3.1 | Solano County

Solano County extends north of San Pablo Bay to Yolo County and the Central Valley to the east. The county is centrally located between the San Francisco Bay Area and the Sacramento metropolitan region. The county is approximately 910 square miles, 830 square miles of land, and 80 square miles of water. Approximately 14 percent of the total land area is within seven cities, four of which border I-80. They are Dixon, Fairfield, Vacaville, and Vallejo.

Solano County has a population of 441,829 (2019). The median household income is $81,472 (2019), about eight percent higher than the median income for all California households ($75,235). Most people in Solano County commute by driving alone, and the average commute time is 33.2 minutes.

According to data from the National Center for Education Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS)[11], the largest colleges and universities in Solano County are Solano Community College (total enrollment 13,507 in 2019-2020), Touro University California (total enrollment 1,460 in 2019-2020), and California State University Maritime Academy (total enrollment 1,016 in 2019-2020).

The median property value in Solano County is $442,700, less than half of the median property value across the greater San Francisco Bay Area region ($995,841). Many Solano County residents commute to job centers located in other parts of the Bay Area due to more affordable housing. The majority commute by driving alone, and the average commute time is 32.6 minutes.

TABLE 3.1 | SOLANO COUNTY DEMOGRAPHIC DATA[12]

Solano County	
Total Population (2019)	441,829
White	52.6%
Black or African American	13.9%
American Indian and Alaska Native	0.5%
Asian	15.4%
Native Hawaiian and other Pacific Islander	0.9%
Two or More Races	7.5%
Not Hispanic or Latino	73.5%

[11] National Center for Education Statistics Integrated Postsecondary Education Data System. https://nces.ed.gov/ipeds/use-the-data

[12] US Census American Community Survey: 2019 ACS 5-Year Data Profile https://www.census.gov/acs/www/data-tables-and-tools/data-profiles/2018

Solano County	
Population Density (people/square mile)	537.62
Total Households (occupied housing units)	149,865
Average Household Size	2.88
Owner-Occupied Housing Units	61.5%
Renter-Occupied Housing Units	38.5%
Households with No Vehicle Available	4.9%
Median Household Income (dollars)	$81,472
Mean Travel Time to Work (minutes)	33.2

City of Vallejo

Vallejo is located northeast of San Pablo Bay, in the southern portion of Solano County. The city is at the junction of several major highways and is approximately 30 miles from major employment centers of San Francisco and Oakland, and 60 miles from Sacramento. Vallejo has many landmarks including the California State University Maritime Academy, Mare Island, and Six Flags Discovery Kingdom Theme Park. I-80 and I-780 along with SR 37 divide the city. I-80 within the study limits travels northerly through Vallejo beginning at the Carquinez Bridge, and has junctions with SR 29, I-780, and SR 37 before continuing northeast toward Fairfield.

Demographics

Vallejo had a population of 121,267 in 2019, making it the most populous city in Solano County, accounting for about 27 percent of Solano County's total population. Vallejo is one of the most ethnically diverse cities in Solano County. The population has nearly equal share of Hispanic (26.3%), White (35.3%), African American (20.3%), and Asian (23.8%) residents.

The educational level for persons 25 years and older with a high school diploma or higher is 87.9 percent, with 26.1 percent with a bachelor's degree or higher (2019). The median household income (2019) is $69,405, about eight percent lower than California's overall median household income. Nearly seven percent of households in Vallejo do not have access to a vehicle, the highest of all cities in Solano County. Vallejo residents also have the longest average travel time to work in Solano County, at about 36.5 minutes.

TABLE 3.2 | CITY OF VALLEJO DEMOGRAPHIC DATA[13]

City of Vallejo	
Total Population (2019)	121,267
White	35.3%
Black or African American	20.3%
American Indian and Alaska Native	20.3%
Asian	23.8%
Native Hawaiian and other Pacific Islander	1.1%
Some Other Race	12.2%
Two or More Races	7.0%
Hispanic or Latino (of any race)	26.3%
Population Density (people/square mile)	3,986.42

[13] US Census Bureau, "Quick Facts, Vallejo City, California" https://www.census.gov/quickfacts/vallejocitycalifornia

City of Vallejo	
Total Households (occupied housing units)	42,048
Average Household Size	2.85
Owner-Occupied Housing Units	55.5%
Renter-Occupied Housing Units	44.5%
Median Household Income (dollars)	$69,405
Mean Travel Time to Work (minutes)	36.5

Land Uses and Major Trip Generators

Currently, the urbanized area of Vallejo is primarily residential. According to the Vallejo General Plan (GP) 2040 (2017), single-family and multi-family residents occupy 40 percent of land within the city limits. Commercial land uses account for eight percent, and industrial and manufacturing uses, concentrated primarily on Mare Island, make up five percent. Vacant and undeveloped land account for six percent of the total land area, consisting of wetlands, parks, and natural open space.[14]

Major Trip Generators in Vallejo

- California State University Maritime Academy
- San Francisco Bay Ferry Terminals
- Vallejo Ferry Terminal
- Mare Island Ferry Terminal
- Mare Island
- Six Flags Discovery Kingdom Theme Park
- Solano Community College
- Touro University California

City of Fairfield

Fairfield is the County seat of Solano County. The city is at the approximate midpoint (40 miles) between San Francisco/Oakland and Sacramento. Travis Air Force Base is located on the eastern edge of Fairfield. I-80 traverses the northwest portion of Fairfield toward Vacaville. The junction with I-680 and SR 12 is a major interchange with I-80 and there are major projects planned to improve the interchange complex. The Cordelia Commercial Vehicle Enforcement Facility both east and westbound is located adjacent to I-80 within the I-80/I-680/SR 12 interchange.

Demographics

Fairfield had a population of 115,282 in 2019 and is Solano County's second largest city, accounting for about 26 percent of the County's total population.

The educational level for persons aged 25 years and above with a high school diploma or higher was 85.6 percent, with 25.6 percent having a bachelor's degree or higher. The median income (2019) is $84,557, about 11 percent higher than the median income for all California households.

[14] City of Vallejo General Plan. https://www.cityofvallejo.net/city_hall/departments___divisions/planning_and_development_services/planning_division/general_plan_2040

TABLE 3.3 | CITY OF FAIRFIELD DEMOGRAPHIC DATA[15]

City of Fairfield	
Total Population (2019)	115,282
White	49.4%
Black or African American	15.2%
American Indian and Alaska Native	0.5%
Asian	16.9%
Native Hawaiian and other Pacific Islander	1.3%
Some Other Race	8.6%
Hispanic or Latino (of any race)	29.3%
Population Density (people/square mile)	2,771.87
Total Households (occupied housing units)	36,751
Average Household Size	3.09
Owner-Occupied Housing Units	59.3%
Renter-Occupied Housing Units	40.7%
Households with No Vehicles Available	4.9%
Median Household Income (dollars)	$84,557
Mean Travel Time to Work (minutes)	32.5

Land Uses and Major Trip Generators

Currently, the Fairfield area is characterized by three distinct communities: unincorporated Cordelia, central Fairfield, and the Travis Air Force Base/Northeast area. Fairfield is surrounded by undeveloped hills to the north and west. To the east and northeast are grazing and prairie grasslands. To the south, beyond the neighboring city of Suisun City, is the largest remaining wetland of San Francisco Bay, Suisun Marsh. Suisun Valley, an unincorporated area and one of the county's most productive and intensive agricultural regions, adjoins Fairfield and separates the central city from Cordelia. Several large corporations are located in Fairfield, including Anheuser-Busch, Clorox, and Jelly Belly Candy Company.

Major Trip Generators in Fairfield

- Travis Air Force Base
- Jelly Belly Candy Company
- Anheuser-Busch
- Clorox
- Solano Town Center Shopping Mall

City of Suisun City

Suisun City is rich in water-oriented natural and recreational resources, as well as historic architecture and other heritage resources. Natural watercourses traverse the community providing opportunities to increase recreational access. The Suisun Marsh, the largest contiguous brackish water marsh remaining on the west coast of North America, surrounds the City on the south. Throughout the City, there are views of the Suisun Marsh, Vaca Hills to the north, the Coastal Range beyond to the west, and the Montezuma Hills to the southeast. The City is located on the eastbound side of I-80, near the junction of I-80 and SR 12.

[15] US Census Bureau, "Quick Facts, Fairfield City, California" https://www.census.gov/quickfacts/fairfieldcitycalifornia

Demographics

Suisun City has a population of 29,488 (2019), accounting for just under seven percent of Solano County's total population.

The educational level for persons aged 25 years and above with a high school diploma or higher is 88.8 percent, with 21.9 percent having a bachelor's degree or higher (2019). The median income (2019) is $93,529, about 20 percent higher than the median income for all California households and the highest of all cities along the I-80 corridor.

TABLE 3.4 | SUISUN CITY DEMOGRAPHIC DATA[16]

Suisun City	
Total population (2019)	29,488
White	42.4%
Black or African American	21.1%
American Indian and Alaska Native	0.5%
Asian	20.4%
Native Hawaiian and Other Pacific Islander	0.4%
Some Other Race	6.9%
Two or More Races	8.3%
Hispanic or Latino (of any race)	26.8%
Not Hispanic or Latino	73.2%
Population Density (people/square mile)	7353.62
Total Households (occupied housing units)	9,310
Average Household Size	3.15
Owner-Occupied Housing Units	62.1%
Renter-Occupied Housing Units	37.9%
Households with No Vehicles Available	4.3%
Median Household Income (dollars)	93,529
Mean Travel Time to Work (minutes)	35.8

Land Uses and Major Trip Generators

Single-family residential occupies more land within Suisun City than any other use, with some multi-family and mixed-use development located in the downtown area. The majority of the City's commercial land uses are located in one of three retail shopping centers. According to the Suisun City 2035 GP[17], most of the City is built out, with only 5 percent of the land classified as vacant and available for development, and less than 1 percent of the City's land is used for agriculture.

[16] US Census Bureau, "Quick Facts, Suisun City, California" https://www.census.gov/quickfacts/fairfieldcitycalifornia

[17] City of Suisun City General Plan. https://www.suisun.com/departments/development-services/planning/general-plan/

Major Trip Generators in Suisun City

- Downtown Suisun City
- Suisun Waterfront District
- Suisun Wildlife Center
- Heritage Park Shopping Center
- Sunset Shopping Center
- Marina Shopping Center

City of Vacaville

Vacaville comprises just under 27 square miles and is surrounded by rolling hillsides, fruit orchards and fertile farmland. Vacaville is a vibrant community and has become home to some of the largest life science companies in the world, such as Genentech, Alza, and Thermo-Fisher Scientific. The city's rich history has transformed the community from a small agricultural town into a thriving city. I-80 bisects Vacaville heading northeast toward Dixon. This segment of I-80 also includes the junction with I-505.

Demographics

Vacaville has a total population of 98,875 (2019), accounting for about 22 percent of Solano County's total population.

The educational level for persons 25 years and older with a high school diploma or higher is 89.1 percent, with 23.5 percent of persons 25 years and older having a bachelor's degree or higher. The median household income (2019) is $87,823, about 14 percent higher than the median income for all California households.

TABLE 3.5 | CITY OF VACAVILLE DEMOGRAPHIC DATA[18]

City of Vacaville	
Total Population (2019)	98,875
White	65.7%
Black or African American	10.1%
American Indian and Alaska Native	0.7%
Asian	7.8%
Native Hawaiian and other Pacific Islander	0.9%
Some Other Race	6.6%
Two or More Races	8.1%
Hispanic or Latino (of any race)	24.8%
Not Hispanic or Latino	75.2%
Population Density (people/square mile)	3,310.18
Total Households (occupied housing units)	32,698
Average Household Size	2.81
Owner-Occupied Housing Units	62.0%
Renter-Occupied Housing Units	38.0%
Households with No Vehicles Available	4.3%
Median Household Income (dollars)	$87,823
Mean Travel Time to Work (minutes)	28.7

[18] US Census Bureau, "Quick Facts, Vacaville city, California" https://www.census.gov/quickfacts/vacavillecitycalifornia

Land Uses and Major Trip Generators

Most of Vacaville is single-family residential, with retail uses concentrated along I-80 and mixed uses in downtown Vacaville. There are two large retail centers located along I-80, the Vacaville Premium Outlets and Nut Tree Plaza. Vacaville has significant amounts of vacant land designated for development as well. The city has a growing employment base in the areas of biotechnology and pharmaceuticals and is home to Genentech. The city has 5.7 million square feet of research and development and manufacturing space in three large business parks and over 1,000 acres of additional vacant industrial land.

Major Trip Generators in Vacaville

- Nut Tree Plaza
- Vacaville Premium Outlets
- Vacaville Commons Shopping Center
- Genentech
- Nut Tree Airport

City of Dixon

Dixon is a small agricultural city located in the northeastern corner of Solano County that maintains its gold rush era charm. Living in Dixon offers residents a low-density suburban environment. The small-town character is a source of pride in Dixon. The community is surrounded by agricultural lands and open space that are intrinsic to its identity, and residents value the "Main Street" charm of downtown Dixon. I-80 bisects the city with Davis in Yolo County to the east. There is a junction with SR 113 which passes through downtown Dixon. Most of the city's land area is east of I-80.

Demographics

Dixon has a population of 20,084 in 2019, making it the least populous city in Solano County, accounting for just under five percent of Solano County's total population. Dixon also has the lowest population density of all cities in Solano County. More housing units are owner-occupied in Dixon (69.9%) than any other city along the I-80 CMCP corridor.

The educational level for persons 25 years and older with a high school diploma or higher is 78.3 percent, with 17.4 percent of persons 25 years and older having a bachelor's degree or higher (2019). The median household income (2019) is $82,507, about nine percent higher than the median household income for all California households.

TABLE 3.6 | CITY OF DIXON DEMOGRAPHIC DATA[19]

City of Dixon	
Total Population (2019)	20,084
White	69.8%
Black or African American	1.9%
American Indian and Alaska Native	0.7%
Asian	5.1%
Native Hawaiian and other Pacific Islander	0.4%
Two or More Races	7.1%
Hispanic or Latino (of any race)	42.4%
Not Hispanic or Latino	57.6%

[19] US Census Bureau, "Quick Facts, Dixon city, California" https://www.census.gov/quickfacts/dixoncitycalifornia

City of Dixon	
Population Density (people/square mile)	2,828.73
Total Households (occupied housing units)	6,062
Average Household Size	3.31
Owner-Occupied Housing Units	69.9%
Renter-Occupied Housing Units	30.1%
Households with No Vehicles Available	2.4%
Median Household Income (dollars)	$82,570
Mean Travel Time to Work (minutes)	29.9

Land Uses and Major Trip Generators

Development is concentrated in the hubs of commercial businesses in the downtown area and adjacent to the freeway interchanges. Industrial uses are concentrated on the east side of the city, north of the downtown area, and there are large tracts of undeveloped land at the northern edge of the city limits. According to the Dixon GP Update (2020), nearly 40 percent of all land in Dixon is undeveloped which includes vacant as well as agricultural land designated for urban uses. Residential uses, including single and multi-family units occupy about 22 percent of land within the city, public uses 12 percent, industrial uses 7.5 percent, and commercial uses 3.6 percent.[20]

Major Trip Generators in Dixon

- Downtown Dixon
- Dixon Canning (Campbell's)
- Superior Packing
- Goldstar Foods

3.2 | Yolo County

Yolo County is northeast of Solano County and east of Sacramento County where I-80 begins to connect to the Sacramento metropolitan region. It is directly west of the State's capitol in Sacramento and northeast of the Bay Area counties of Solano and Napa. The county is approximately 1,021 square miles, the eastern two-thirds of the county consists of nearly level alluvial fans, flat plains, and basins, while the western third is largely composed of rolling terraces and steep uplands used for dry-farmed grain and range. The elevation ranges from slightly below sea level near the Sacramento River around Clarksburg to 3,000 feet along the ridge of the western mountains.

Yolo County has a population of 217,352 (2019). The median household income is $70,228 (2019), about seven percent lower than the median income for all California households.[21] Most people in Yolo County commute by driving alone, and the average commute time is 24 minutes.

[20] City of Dixon General Plan Update.https://www.ci.dixon.ca.us/DocumentCenter/View/16259/Dixon-General-Plan_digital

[21] US Census American Community Survey: 2019 ACS 5-Year Data Profile

According to NCES IPEDS, the largest colleges and universities in Yolo County are Woodland Community College (total enrollment of 6,313 in 2019-2020)[22] and the UC Davis (total enrollment of 41,236 in 2019-2020).[23]

TABLE 3.7 | YOLO COUNTY DEMOGRAPHIC DATA[24]

Yolo County	
Total Population (2019)	217,352
White	69.3%
Black or African American	2.7%
American Indian and Alaska Native	0.6%
Asian	14.%
Native Hawaiian and other Pacific Islander	0.4%
Two or More Races	6.3%
Hispanic or Latino	31.6%
White alone, not Hispanic or Latino	68.4%
Population Density (people/square mile)	214.2
Total Households (occupied housing units)	74,296
Average Household Size	2.81
Owner-Occupied Housing unit	51.6%
Renter-Occupied Housing Units	48.4%
Median Household Income (dollars)	$70,228
Mean Travel Time to Work (minutes)	24.0

City of Davis

City of Davis comprises approximately 9.9 square miles with a small-town atmosphere east of the Solano County line. It contains a variety of land uses including the UC Davis campus adjacent to I-80. Davis is approximately 15 miles from Sacramento and 70 miles from San Francisco and Oakland. Commuters between the two metropolitan areas utilize I-80 which runs through the southern edge of Davis. Travelers heading northbound from Davis utilize the junction at SR 113 to connect to the Woodland and the Sacramento International Airport.

The City of Davis supports bicyclists with more than 50 miles of bicycle paths and more bicycles per capita than any other city in the nation. This includes bicycle connections between Davis and West Sacramento with the existing Class I bike path facility along the Yolo Causeway.

Demographics

Davis has a total population of 68,543 (2019), accounting for about 32 percent of Yolo County's total population. Davis is the largest city in the county and is situated northeast of the I-80 and SR 113

[22] National Center for Education Statistics, "Woodland Community College" https://nces.ed.gov/ipeds/datacenter/institutionprofile.aspx?unitId=455512

[23] National Center for Education Statistics, "University of California – Davis" https://nces.ed.gov/ipeds/datacenter/institutionprofile.aspx?unitId=110644

[24] US Census American Community Survey: 2019 ACS 5-Year Data Profile https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2018/

junction. Davis identified as a college town in California is known as one of the "top bicycling cities in the county" and considered the bicycle capital of the US.

The educational level for persons 25 years or older with a high school graduate degree or higher is 97.5 percent, with 75.2 percent of persons 25 years or older having a bachelor's degree or higher. The median household income is $69,379 (2019), about eight percent lower than the median income for all California households. Davis has the highest unavailability of vehicles of all cities along the I-80 CMCP corridor, where 9.3% of households have no vehicles available. Davis also has the highest population density of all cities along the corridor, with about 6,875 people per square mile.

TABLE 3.8 | CITY OF DAVIS DEMOGRAPHIC DATA[25]

City of Davis	
Total Population (2019)	68,543
White	64.6%
Black or African American	2.2%
American Indian and Alaska Native	0.4%
Native Hawaiian and other Pacific Islander	0.3%
Two or More Races	6.4%
Hispanic or Latino (of any race)	13.6%
Not Hispanic or Latino	86.4%
Population Density (people/square mile)	6,874.92
Total Households (occupied housing units)	24,630
Average Household Size	2.70
Owner-Occupied Housing Units	43.2%
Renter-Occupied Housing Units	56.8%
Households with No Vehicles Available	9.3%
Median Household Income (dollars)	$69,379
Mean Travel Time to Work (minutes)	22.6

Land Uses and Major Trip Generators

Davis is primarily residential with a small downtown. The majority of trip generators are related to the UC Davis campus which includes a variety of attractions, some of which include the Arboretum, the Robert Mondavi Center, and the Jan Shrem and Maria Manetti Shrem Museum of Art.

Major Trip Generators in Davis

- UC Davis
- The Arboretum at UC Davis
- Davis Community Park
- US Bicycling Hall of Fame
- Bohart Museum of Entomology
- Jan Shrem and Maria Manetti Shrem Museum of Art
- The Robert Mondavi Center

[25] US Census American Community Survey: 2019 ACS 5-Year Data Profile
https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2019/

City of West Sacramento

West Sacramento is a mid-sized city with a total population of 53,519 (2019), West Sacramento covers 21.43 square miles, with Davis to the east and Sacramento to the east. The city is primarily residential land uses with a mixture of light industrial area and commercial areas. The primary trip generators in the city include the Port of West Sacramento, Sutter Health Park for the Sacramento River Cats (Triple A affiliates for the San Francisco Giants), and the West Sacramento waterfront. The Port of West Sacramento is an inland port situated 90 miles from the San Francisco Bay where ships enter before proceeding up the Sacramento River to the Port. Exports from West Sacramento include "bagged and bulk rice, cement, lumber, fertilizers, and project cargoes like wind generators."[26]

Demographics

West Sacramento had a population of 53,151 (2019), accounting for about 25 percent of Yolo County's total population.

The educational level for persons 25 years or older with a high school graduate degree or higher is 83.5 percent, with 29.9 percent of persons 25 years or older having a bachelor's degree or higher (2019). West Sacramento's median household income (2019) is $70,699, about six percent lower than the median income for all California households.

TABLE 3.9 | CITY OF WEST SACRAMENTO DEMOGRAPHIC DATA[27]

City of West Sacramento	
Total Population (2019)	53,151
White	66.3%
Black or African American	5.3%
Asian	10.7%
Native Hawaiian and other Pacific Islander	1.1%
Some Other Race	6.3%
Two or More Races	9.9%
Hispanic or Latino (of any race)	30.1%
Not Hispanic or Latino	69.9%
Population Density (people/square mile)	2,475.59
Total Households (occupied housing units)	18,577
Average Household Size	2.84
Owner-Occupied Housing Units	56.9%
Renter-Occupied Housing Units	43.1%
Households with No Vehicles Available	8.0%
Median Household Income (dollars)	$70,699
Mean Travel Time to Work (minutes)	24.7

Land Uses and Major Trip Generators

West Sacramento land uses include commercial, mixed uses near the Sacramento River waterfront, suburban development, and light industrial use near the Port of West Sacramento. Specific key attractions to generate trips include Sutter Health Park and the West Sacramento's waterfront.

[26] City of West Sacramento, "Port of West Sacramento". https://www.cityofwestsacramento.org/government/departments/city-manager-s-office/port-of-west-sacramento

[27] US Census American Community Survey: 2019 ACS 5-Year Data Profile

Below is a list of major trip generators in the vicinity of the corridor, some of which are outside of the CMCP limits but influence travel within the corridor.

Major Trip Generators in and around West Sacramento

- The Bridge District
  - Sutter Health Park home of the River Cats (AAA affiliate of the San Francisco Giants)
- The Washington District
- Sacramento River Waterfront
  - Provides water related activities including boating, fishing, and paddle boarding
- Port of West Sacramento
  - Rowing club hosts NCAA championship races

3.3 | Sacramento County

Sacramento County is heart of the Sacramento region and lies next to various counties such as Yolo, Placer, and El Dorado. It is the location of major interregional junctions with routes such as I-5, I-80, US 50, and SR 99.

Sacramento County has a total population of 1.5 million (2019). The median household income is $67,151 (2019), about 11 percent lower than the median income for all California households. Most people in Sacramento County commute by driving alone, and the average commute time is 26.6 minutes.

According to the NCES IPEDS, the largest colleges and universities in Sacramento County are the California State University, Sacramento (total enrollment of 31,902 in 2018)[28], American River Community College (total enrollment of 31,366 in 2018)[29] and Sacramento City College (total enrollment of 21,379 in 2018).[30]

The five largest ethnic groups in Sacramento County are White (Non-Hispanic) (44.1 percent), Asian (Non-Hispanic) (15.8 percent), White (Hispanic) (12.6 percent), Black or African American (Non-Hispanic) (9.54 percent), and Some Other Race (Hispanic) (7.52 percent). 34 percent of the people in Sacramento County speak a non-English language, and 90.7 percent are US citizens[31].

[28] National Center for Education Statistics, "California State University - Sacramento" https://nces.ed.gov/ipeds/datacenter/institutionprofile.aspx?unitId=110617

[29] National Center for Education Statistics, "American River College" https://nces.ed.gov/ipeds/datacenter/institutionprofile.aspx?unitId=109208

[30] National Center for Education Statistics, "Sacramento City College"

[31] US Census Bureau, "Quick Facts, Sacramento County, California." https://www.census.gov/quickfacts/sacramentocountycalifornia

TABLE 3.10 | SACRAMENTO COUNTY DEMOGRAPHIC DATA[32]

Sacramento County	
Total Population (2019)	1,524,553
White	57.3%
American Indian and Alaska Native	0.7%
Asian	15.7%
Native Hawaiian and Other Pacific Islander	1.1%
Some other race	7.9%
Two or more races	7.5%
Hispanic or Latino (of any race)	23.2%
Not Hispanic or Latino	76.8%
Population Density (people/square mile)	1,579.41
Total households (occupied housing units)	543,025
Average household size	2.76
Owner-occupied housing units	56.4%
Renter-occupied housing units	43.6%
Households with No vehicles available	6.6%
Median household income (dollars)	$67,151
Mean travel time to work (minutes)	27.8

City of Sacramento

Sacramento is the capitol of California and located east of the Sacramento river. Located in Sacramento County, it has a population of 513,624 spanning 97.92 square miles. Sacramento is the largest city in Sacramento County by land area as well as the most populous city along the I-80 CMCP corridor. It is directly adjacent to West Sacramento, separated by the Sacramento River. The city began revitalizing its downtown core area in 2015 renaming the Sacramento Downtown Plaza with Downtown Commons (DOCO). DOCO is anchored by the Golden 1 Center, and revitalization focused on infill developments such as the Railyard Specific Plan that included a Kaiser Permanente Medical Center opening in 2018 and new Major League Soccer stadium to open in 2023.

Demographics

Sacramento has a population of 500,930 (2019). The educational level for persons 25 years or older with a high school graduate degree or higher is 84.7 percent, with 32.6 percent of persons 25 years or older having a bachelor's degree or higher (2019). The median household income in Sacramento is $62,335 (2019), about 17 percent lower than the median income for all California households and the lowest of all cities along the I-80 corridor.

TABLE 3.11 | CITY OF SACRAMENTO DEMOGRAPHIC DATA[33]

City of Sacramento	
Total Population (2019)	500,930
White	46.3%
Black or African American Alone	13.2%
American Indian and Alaska Native	0.7%

[32] US Census American Community Survey: 2019 ACS 5-Year Data Profile https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2019/

[33] US Census Bureau, "Quick Facts, City of Sacramento, California." https://www.census.gov/quickfacts/sacramentocitycalifornia

City of Sacramento	
Asian	18.9%
Native Hawaiian and other Pacific Islander	1.7%
Some Other Race	11.7%
Two or More Races	7.4%
Hispanic or Latino	28.9%
Not Hispanic or Latino	71.1%
Population Density (people/square mile)	5,079.91
Total Households (occupied housing units)	185,331
Average Household Size	2.66
Owner-Occupied Housing Unit	48.5%
Renter-Occupied Housing Units	51.5%
Households with No Vehicles Available	8.6%
Median Household Income (dollars)	$62,335
Mean Travel Time to Work (minutes)	26.2

Land Uses and Major Trip Generators

Sacramento includes a series of hub communities of urban/suburban design, commercial land uses in dense urban and suburban communities, commercial uses in dense urban centers and office parks as well as industrial uses such as Land Park neighborhood in South Sacramento and East Sacramento which includes the "Fabulous Forties" neighborhood. There are also several institutional uses and sports venues such as the Golden 1 Center which is a multi-use complex that is home to the Sacramento Kings and various concerts, conventions, and other entertainment events. This venue is the primary economic anchor for the Sacramento Downtown Commons[34] which also includes mixed land uses such as restaurants, hotels, and commercial land uses on the former Downtown Plaza shopping center which is within proximity of the I-80/US 50 corridor.

Included in Sacramento County is Natomas as one of the communities in the City of Sacramento that is a major center of employment, retail, and entertainment facilities. Below is a list of major trip generators in the vicinity of the corridor, some of which are outside of the CMCP limits but influence travel within the corridor.

Major Trip Generators in the Corridor

- Downtown Sacramento
- Golden 1 Center
- Sacramento Convention Center
- California State University, Sacramento
- Sacramento City College
- Mercy General Hospital
- Sutter Hospital

3.4 | Priority Populations

With the development of the CTP 2050, Caltrans has identified equity as one of the strategic goals for the transportation system in California. CTP 2050 aims to advance social equity by actively directing

[34] https://en.wikipedia.org/wiki/Golden_1_Center

support, resources, and protections to priority populations, and ensuring that the highest quality transportation options are available to those most in need. To help advance the equity goal, Caltrans is committed to working with local partners to improve the lives of residents in priority populations to provide a transportation network that accommodates all users, while providing a safe and reliable transportation network that serves all people and respects our shared environment.

The State of California, as of 2022, does not have a uniform definition of what constitutes a priority population, previously termed as undeserved communities. Generally, priority populations refer to communities throughout California which are impacted disproportionately from a combination of economic, health, and environmental burdens. These include poverty, high unemployment, air and water pollution, presence of hazardous wastes and a high incidence of asthma and heart disease.

In 2012, SB 535 was passed, which requires that, in addition to reducing GHG, a quarter of the funding received from Cap-and-Trade auction proceeds must be spent towards projects that provide meaningful and assured benefits to priority populations. This requirement was further modified by AB 1550 (2016) where a minimum of 25 percent of the proceeds be invested in projects that are located within and benefiting individuals living in priority populations.

Pursuant to SB 535 requirements, the California Environmental Protection Agency (CalEPA) has been directed to identify priority populations in the State. In response, CalEPA developed CalEnviroScreen, a tool that helps identify California communities by census tract that are disproportionately burdened by and vulnerable to multiple sources of pollution, based on geographic, socioeconomic, public health and environmental hazard criteria.

Identifying Priority Populations within the Corridor

To identify priority populations within the corridor, the Caltrans Core Development Team (CDT) reviewed and analyzed data from CalEnviroScreen and the California Healthy Places Index (HPI). CalEnviroScreen uses a series of thresholds to identify a community's potential for being defined as a priority population. See below for factors considered by CalEnviroScreen in determining a priority populations.[35]

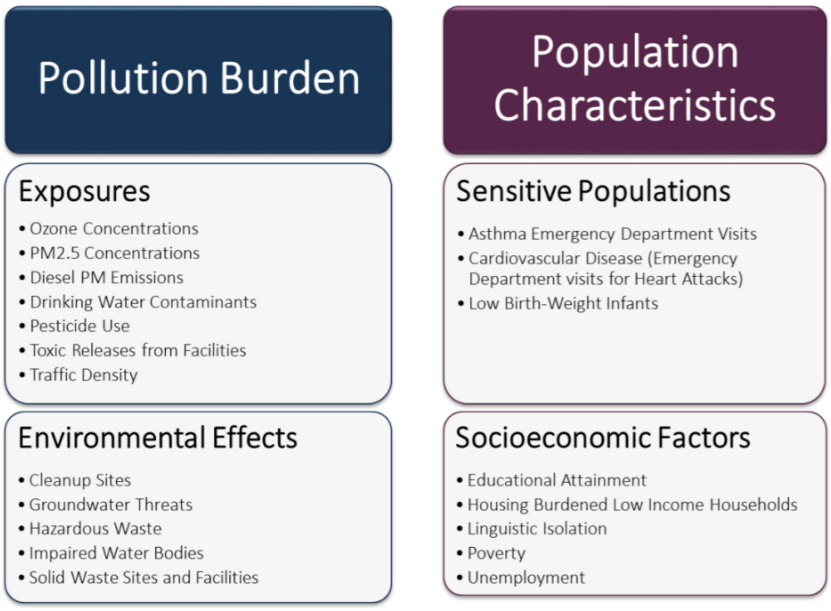


FIGURE 3.1 | CALENVIRONSCREEN FACTORS

Each of these factors (see **Figure 3.1**) were evaluated with a percentile assigned to each census tract. An average score was calculated for Pollution Burden factors and Population Characteristics factors,

[35] https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

respectively. The two average scores were then combined to arrive at a final score, expressed as a percentile. This percentile represents the risks a census tract is facing. Census tracts with a higher percentile are more vulnerable to environmental burden and represent priority populations in the State.

The CDT used the following methodology/steps to identify priority populations based on CalEnviroScreen data:

- Import the CalEnviroScreen shapefiles into Geographic Information System (GIS) to show all census tracts in Solano, Yolo, and Sacramento counties.
- Filtered census tracts by percentile, those scoring 70 percent or greater were retained.
- Applied a two-mile buffer around the I-80 CMCP study area.
- Census tracts with a percentile of 70 percent or greater that are located within the two-mile buffer were identified as priority populations.

Census tracts identified using the above method represent CalEnviroScreen priority populations in the corridor. See **Figure 3.2** and **Appendix I** for the locations of these census tracts and associated data for different factors from CalEnviroScreen.

There is a total of 38 census tracts along the corridor that meet the priority populations selection criteria. The majority of these census tracts are found in Sacramento County, including the only two census tracts that scored above the 95th percentile, representing the most vulnerable communities along the corridor. Yolo County has four census tracts that meet the same criteria, three of which are in West Sacramento, the highest percentile being 93 percent. Solano County has six census tracts that meet the criteria, five of which are found in Vallejo and one in Fairfield. Most of Solano County census tracts received a percentile in the range of 75 to 90.

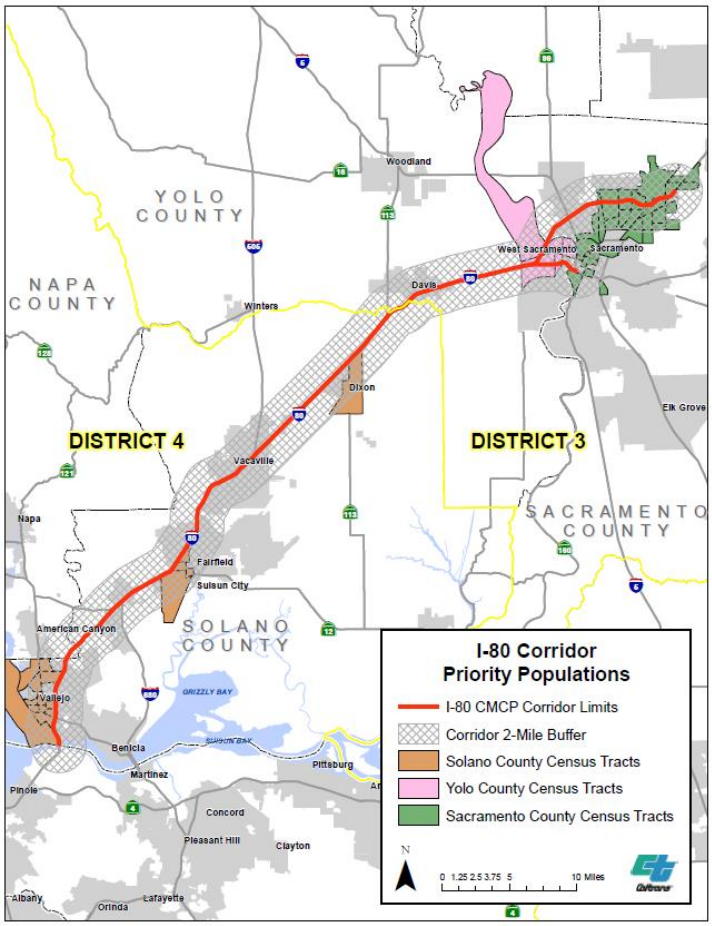


FIGURE 3.2 | PRIORITY POPULATION CENSUS TRACTS MAP

California Healthy Places Index

In addition to CalEnviroScreen, the CTC's 2018 CMCP guidelines recommends the California HPI, an interactive data and mapping tool that provides a detailed snapshot of the social determinants of health at the census tract level across California. HPI was developed by the Public Health Alliance of Southern California and the Virginia Commonwealth University's Center on Society and Health in collaboration with health departments and

data experts across the State. Much like CalEnviroScreen[36], which uses environmental, health, and socioeconomic information to help identify priority populations that are most affected by many sources of pollution, the HPI uses this information to help predict health outcomes and life expectancy within these communities.

To be included in the California HPI, census tracts must meet eligibility criteria based on a population size of 1,500 or greater, and less than 50 percent of the population living in group quarters. The US Census Bureau classifies all people not living in housing units (house, apartment, mobile home, rented rooms) as living in group quarters. Group quarters include living arrangements such as college dormitories, military barracks, nursing homes, and correctional facilities. Some census tracts within the I-80 corridor have been excluded from the HPI due to not satisfying at least one of these criteria.

The California HPI combines 25 community characteristics into a single indexed HPI Score. The HPI score for each census tract is then ranked and a percentile assigned to show how a census tract compares to the rest of the State. **Appendix II** shows the HPI scores and percentiles for census tracts identified through the priority population's selection process described before. A smaller HPI score, and a higher percentile indicate a census tract is more vulnerable compared to others. There are seven census tracts in Sacramento County, one in Yolo County, and one in Solano County that received a percentile greater than 90th.

Caltrans Smart Mobility Framework Guide 2020

The SMF guides implementation of multimodal transportation strategies in support of compact and sustainable communities through a broad range of transportation and housing choices. *Smart Mobility 2010: A Call to Action for the New Decade,* developed in partnership with the US EPA, the Governor's Office of Planning and Research, and the California HCD, provided concepts and tools to incorporate smart mobility principles into all phases of transportation decision-making.

As discussed in Chapter 2 of this CMCP, the SMF introduced strategies, performance measures, and analysis methods for implementing smart mobility. **Table 3.12** shows detailed characteristics of each of the five place types described in the SMF guide.

[36] CalEnviroScreen. https://oehha.ca.gov/calenviroscreen

TABLE 3.12 | PLACE TYPE CHARACTERISTICS

Type	Description	Metrics
Central Cities	High density, mixed-use places with well-connected grid street networks, high levels of transit service, and pedestrian supportive environments.	• Average populations density: 40,000 • Average transit mode share: 33% • Average road density: 28
Urban Communities	Moderately dense places, mostly residential but with mixed-use centers. Housing is varied in density and type. Transit is available to connect neighborhoods to multiple destinations. Fine-grained network of streets with good connectivity for pedestrians and bicyclists.	• Average population density: 15,500 • Average transit mode share: 10% • Average road density: 26
Suburban Communities	Primarily lower density residential with a high proportion of detached housing. Some interspersed retail and services, but little mixing of housing with commercial uses. Street networks often have poor connectivity. Low levels of transit service, large amounts of surface parking, and inconsistent pedestrian networks.	• Average population density: 6,800 • Average transit mode share: 3% • Average road density: 19
Rural Areas	Very low-density places with widely spaced towns separated by farms, vineyards, orchards, or grazing lands. Includes rural towns that provide a mix of housing, services, and public institutions in compact form that serve surrounding rural areas. May include tourist and recreation destinations which can significantly affect land uses, character, and mobility needs. Very limited modal choices.	• Average population density: 340 • Average transit mode share: 1% • Average road density: 3.5
Protected Lands and Special Use Areas	Lands protected from development by virtue of ownership, long-term regulation, or resource constraints. Also includes large tracts of single use lands that are outside of, or poorly integrated with, their surroundings.	• Not Applicable

Each of the place types correspond to transportation planning priorities and serves as a guide, not a rule for development of recommendations. Planners consider the specific characteristics of a given planning area in addition to local, regional, and State plans when recommending strategic transportation system investments.

Smart Mobility Framework Place Types Within the I-80 Corridor

The land use and transportation system characteristics of place types strongly influence travel behavior. Locations with higher density, and mixed-use development patterns, coupled with well-connected multimodal transportation systems, encourages shorter trips and travel by non-automobile modes, both of which tend to reduce VMT.

The three main metrics used to determine place type are population density, transit mode share, and road density. Population density and transit mode share numbers were obtained from the US Census. The American Community Survey 5-Year Data includes total population and transit mode share at the city, census tract, and block group levels. Land area data is available from Topologically Integrated Geographic Encoding and Referencing (TIGERweb), a web-based mapping service provided by the US

Census Bureau. Population density is defined as persons per square mile, calculated by dividing total population by the study area. Road density is calculated as the ratio of total length of all roads to the land area within the specified area. The total length of all roads is obtained by intersecting TIGERweb line shapefiles from the US Census Bureau with each study area boundary, using a GIS mapping application.

For the I-80 corridor, place type analysis was conducted at the city level for all cities along the corridor. Areas between these cities were not analyzed as they are known to be mainly rural areas and protected lands. A deeper analysis at the census tract level was performed for the downtown areas of the cities of Sacramento, Davis, Vallejo, Fairfield, and Vacaville. The results are included in **Table 3.13**.

TABLE 3.13 | SMART MOBILITY FRAMEWORK PLACE TYPE METRIC

CITIES	METRIC				PLACE TYPE
	LAND AREA (SQUARE MILE [SQ. MI.])	POPULATION DENSITY	ROAD DENSITY	TRANSIT MODE SHARE (%)	
VALLEJO	30.42	3986.42	17.88	5.7	SUBURBAN COMMUNITY
FAIRFIELD	41.59	2771.87	14.26	2.1	SUBURBAN COMMUNITY
SUISUN CITY	4.01	7353.62	24.82	5.1	SUBURBAN COMMUNITY
VACAVILLE	29.87	3310.18	14.44	1.2	SUBURBAN COMMUNITY
DIXON	7.1	2828.73	15.01	0.3	SUBURBAN COMMUNITY
DAVIS	9.97	6874.92	20.84	7.6	SUBURBAN COMMUNITY
WEST SACRAMENTO	21.46	2475.59	14.29	1.9	SUBURBAN COMMUNITY
SACRAMENTO	98.61	5079.91	20.21	3.3	SUBURBAN COMMUNITY
DOWNTOWN SACRAMENTO	9.46	5506.39	20.46	4.85	SUBURBAN/CENTRAL CITY
DOWNTOWN DAVIS	0.8	6434.34	24.15	8.6	SUBURBAN/URBAN COMMUNITY
DOWNTOWN VALLEJO	2.39	6125.94	3.37	18.42	SUBURBAN COMMUNITY
DOWNTOWN FAIRFIELD	25.65	1124.84	1.15	1.3	SUBURBAN COMMUNITY
DOWNTOWN VACAVILLE	4.71	2044.88	1.37	0.62	SUBURBAN COMMUNITY

For some areas, there was a need for professional judgment of place type because the metrics do not match a single place type category. Using the place type metrics alone, downtown Sacramento was identified as a Suburban Community. This is because although downtown Sacramento has high road density, it has low population density and low transit mode share. The low population density and transit mode share is because downtown Sacramento consists of mostly commercial and office land uses and is lacking in housing. However, the Sacramento Central City Specific Plan acknowledges this lack of housing and puts forth a planning framework for increasing housing options in the downtown area. Because of this, and the fact that downtown Sacramento has the high road density to support high transit mode share given a higher population density, it can be assumed that the population density and

transit mode share will increase as housing options are added and thus the area has been identified as a Central City. The SMF also lists downtown Sacramento as an example of a Central City.

Similarly, downtown Davis was identified as a Suburban Community using the place type metrics alone. This is because although downtown Davis has high road density and relatively high transit mode share, it has low population density. It also consists of mostly commercial land uses and has inadequate housing opportunities. The downtown Davis Specific Plan acknowledges this lack of housing and seeks to expand housing options to the downtown area. Because of this, and the fact that downtown Davis has high road density as well as relatively high transit mode share, it can be assumed that the population density and transit mode share will increase as housing options are added and thus the area has been identified as an Urban Community.

A deeper analysis was also conducted on the downtown areas of Vallejo, Fairfield, and Vacaville. However, there was not sufficient evidence to support identifying them as a different place type than what was found based on the place type metrics alone.

Transportation Project Priorities

Place types are a tool to classify neighborhoods, towns, cities, and larger areas for purposes of making investment, planning, and management decisions that advance smart mobility and help determine transportation needs. The SMF identifies transportation project priorities for each place type to achieve greater location efficiency, and garner smart mobility benefits in the future. **Table 3.14** lists the SMF transportation project priorities for the place types along the I-80 corridor.

TABLE 3.14 | SMART MOBILITY FRAMEWORK TRANSPORTATION PROJECT PRIORITIES

Place Type	Transportation Project Priorities
Central Cities	• Direct service by high capacity and high-speed transit serving local and regional destinations and state-wide destinations • Creation and improvement of major transportation hubs connecting modes for intercity and international travel as well as intra- and inter-regional movement • Coordination of transit and related systems to provide convenient multimodal trips • Pedestrian facilities with high amenity levels • Extensive network of bicycle facilities • Shared mobility opportunities • Complete Streets facility treatments • Limited parking to reduce demand • Projects providing service, facility, and connectivity improvements to provide an equivalent level of activity connectedness to all population groups • Design and speed compatibility with surroundings • Operating strategies to optimize use of existing roadway capacity
Urban Communities	• Pedestrian facilities with high amenity levels • Extensive network of bicycle facilities • Convenient opportunities for multimodal transfers and transit transfers • Design and speed compatibility with surroundings • Shared mobility opportunities • Complete Streets facility treatments

Place Type	Transportation Project Priorities
	• Limited parking to reduce demand
Suburban Communities	• Improvements to network connectivity to reduce route/trip lengths and opportunities to encourage non-SOV trips • Complete Street facility treatments near schools and areas with an opportunity to transition to Urban Community place types • Transit, on-demand transit, or rideshare implementation attached to employment centers where appropriate • Access management and speed management on arterial streets

Chapter 4 | Multimodal Facilities and Needs

As a multimodal transportation corridor, the I-80 corridor serves the movement of people and goods with a variety of transportation modes. This chapter describes public transit services, park and ride (P&R) facilities, bicycle and pedestrian facilities, private commuter shuttle services, and micro/shared mobility options as available transportation modes within the I-80 corridor. It also identifies programmed, planned, and in some cases visionary multimodal projects within the corridor. In addition, the chapter summarizes the ZEV and Broadband infrastructure, Transportation Systems Management and Operations strategies and equipment that are currently deployed within the corridor and examines the networks and major trip generators for freight movement.

Caltrans has adopted Deputy Directive 64-R2[37] to incorporate complete streets into all phases of project development. At the regional and county levels, Metropolitan Transportation Commission (MTC) has complete streets requirements in order to qualify for certain funding programs, such as the One Bay Area Grant program. Sacramento and Yolo counties both have complete streets requirements in order to meet Sacramento Area County of Governments (SACOG) ATP funding requirements created under SB 99 in 2013.[38]

4.1 | Transit Services

A number of public transit agencies provide services within the I-80 corridor. Some agencies are specialized in one type of service, while others provide a variety of transit services. The following section outlines the express bus service, local bus service, light rail, Capitol Corridor, transit centers, and ferry service.

Express Bus Service

Solano Transportation Authority (STA)/Solano Express manages a fleet comprised of a total of 37 buses, 19 of which are operated by Fairfield Suisun Transit (FAST) and the remaining 18 by Solano County Transit (SolTrans), which provides both express-intercity and local bus service in and beyond Solano County. In addition, Napa Vine also provide express bus service within the corridor.

The Yolo County Transportation District (YCTD) fleet of Yolobus buses consist of 44 transit size coaches powered by Compressed Natural Gas (CNG), six highway coaches that run on clean diesel and 10 cutaway buses and vans that primarily serve the elderly and disabled. Yolobus services Yolo County which covers West Sacramento, Davis, and Woodland.

The Sacramento Regional Transit District (SacRT) fleet consists of 205 buses powered by CNG and 23 shuttle vans. SacRT operates 78 fixed bus routes with connecting bus service in the Sacramento area covering 440 square miles. In addition to serving the City of Sacramento, SacRT serves the Sacramento International Airport, much of the norther portion of Sacramento County that includes the incorporated cities of Citrus Heights and Rancho Cordova, as well as unincorporated areas of Sacramento County that includes the Arden Arcade, Carmichael, Fair Oaks, Florin, Gold River, North Highlands, Orangeville, Rio Linda, and Rosemont communities. Recently SacRT expanded its transit system by taking over the Elk Grove Transit service known as e-tran. SacRT operates e-tran as a contractor for the City of Elk Grove replacing MV Transportation Incorporated.

[37] https://www.calbike.org/wp-content/uploads/2019/08/DD64_R2.pdf

[38] file:///C:/Users/s131651/Downloads/Status%20of%20the%20State%20and%20Regional%20Active%20Transportation%20Program%20Competitions_202108242114376.pdf

Table 4.1 lists the express bus routes that travel along the I-80 corridor.

TABLE 4.1 | EXPRESS BUS ROUTES ALONG I-80 IN SOLANO COUNTY

Operator	Route	Origin-Destination	Between Interchanges		Approximate length along I-80 (miles)
FAST	Blue	Downtown Sacramento – Pleasant Hill Bay Area Rapid Transit (BART) Station	Jefferson Avenue – I-80	I-680 Fairfield	44.0
	Green (GX)	Suisun City Amtrak Station – El Cerrito Del Norte BART Station	SR 12 E	Cutting Boulevard El Cerrito	28.3
	7	Fairfield Transportation Center – Solano Community College – Green Valley Shopping Center	SR 12 W	Suisun Valley Road Fairfield	3.3
SolTrans	38	Gateway Plaza – Jesse Bethel High School	Magazine Street	E. Lincoln Road Vallejo	2.1
	82	Vallejo Transit Center – El Cerrito Del Norte BART Station – San Francisco Ferry Building	I-780	Fremont Street San Francisco	28.9
	Red	Suisun City Amtrak Station – Del Norte BART Station	SR 12 W	SR 37	11.0
			I-780	Cutting Boulevard El Cerrito	14.6
Napa Vine	21	Soscol Gateway Transit Center – Suisun City Train Depot	SR 12W	SR 12 E	4.2
Yolobus	43/43R	Downtown Sacramento – Davis/UC Davis	Tower Bridge Gateway	Mace Boulevard	9.4
	230	West Davis – downtown Sacramento	SR 113/I-80 Interchange	Tower Bridge Gateway	13.8
SacRT	138	Silo Terminal (Davis) – UC Davis Medical Center	SR 113/I-80 Interchange	Stockton Boulevard	17.3

Local Bus Service

Within Yolo County, YCTD operates Yolobus which is the only fixed route bus service. Yolobus operates five local routes that serve primary connections within Davis, West Sacramento, downtown Sacramento, and eastern part of Solano County. Yolobus also provides daily service to Sacramento International Airport and is the only public transit providing daily service to Cache Creek Casino Resort. YCTD operates two types of routes, a regular routes which operates hourly during five to seven days a week, and commuter and express routes that only operate at peak times in the mornings and evenings, Monday through Friday.

Within Sacramento County, the primary local bus service is provided by SacRT which does not primarily utilize I-80 as part of its bus routes as their routes mostly intersect I-80 on the local street network at interchange locations.

There are three local transit operators within Solano County providing fixed route bus service: SolTrans operates nine local routes that serve primary connections within Vallejo and Benicia. FAST operates eight local routes Monday through Saturday and a single weekday school route, while Vacaville City Coach offers service on six local routes Monday through Saturday. Additionally, SolTrans complements

their local service in Benicia by partnering with Lyft to offer rides from Benicia to retail and medical locations within Benicia and Vallejo. Aside from fixed route service, both FAST and Vacaville City Coach offers a Dial-a-Ride paratransit service, while Dixon Readi-Ride provides weekday Dial-a-Ride transit service to all Dixon residents that also connects to Vacaville and Davis. A list of fixed bus routes that cross and/or travel adjacent to I-80 in Solano, Yolo, and Sacramento counties is included in **Table 4.2**.

TABLE 4.2 | FIXED ROUTE BUS SERVICE

Operator	Route	Origin-Destination	Crossing I-80	Major Roads adjacent to I-80
FAST	1	Fairfield Transportation Center – Armijo High School – Fairfield-Wal Mart	Not Applicable	Texas Street/N. Texas Street
	2	Solano Town Center - Grange Middle School – Vacaville/Fairfield Amtrak Station	Not Applicable	Travis Boulevard
	3	Fairfield Transportation Center- Solano Town Center – Fairfield Wal Mart	Travis Boulevard Texas Street	Travis Boulevard, Texas Street, Air Base Parkway
	4	Fairfield Smart & Final – David Grant USAF Medical Center	Not Applicable	N. Texas/Air Base Parkway
	5	Fairfield Transportation Center – Suisun City Amtrak Station – Suisun City Senior Center	Not Applicable	Beck Avenue/Cordelia Road
	8	Green Valley Shopping Center – Rodriguez High School – Cordelia Hills Elementary School	Green Valley Road	Business Center Drive
SolTrans	3	Vallejo Transit Center – Beverly Hills Elementary School – Curtola P&R	I-780 Magazine Street	SR 29
	6	Vallejo Transit Center – Rosewood Hogan Middle School	Tennessee Street	Admiral Callaghan Lane
	7A	Vallejo Transit Center – Solano Community College	Columbus Parkway	Fairgrounds Drive
			Redwood Parkway	Admiral Callaghan Lane
	7B	Vallejo Transit Center – Gateway Plaza – Sereno Transit Center	Solano Avenue Redwood Parkway	Admiral Callaghan Lane
	8	Vallejo Transit Center – Rosewood Hogan Middle School	Benicia Road	Not Applicable
	Yellow	Vallejo Transit Center – Pleasant Hill and Walnut Creek BART Stations	I-780	Curtola Parkway
Vacaville City Coach	1	Vacaville Transportation Center – Kaiser Medical Center	Leisure Town Road	Yellowstone Drive
	2	Vacaville Transit Plaza – Davis Street P&R	Not Applicable	E. Monte Vista Avenue
	3	Vacaville Transportation Center – Foxboro Elementary School	Not Applicable	Nut Tree Parkway
	4	Vacaville Transportation Center – Genentech - Kaiser Medical Center	Vaca Valley Parkway	I-80/I-505/Orange Drive/Nut Tree Parkway
	5	Vacaville Transit Plaza – Vacaville Transportation Center	Alamo Drive	Nut Tree Parkway
	6	Vacaville Transit Plaza – Vacaville Transportation Center	Nut Tree Road	Not Applicable
YoloBus	42A/42B	Yolo County Intercity Loop (Clockwise and Counterclockwise)	Enterprise Boulevard	Mace Boulevard

Operator	Route	Origin-Destination	Crossing I-80	Major Roads adjacent to I-80
	35	Southport Local (West Sacramento Transit Center – Southport)	Westacre Road	Not Applicable
	39	Southport – Sacramento Commute	5th Street	Not Applicable
	240	West Sacramento – Sacramento Shuttle	Reed Avenue	West Capitol Avenue
	241	West Sacramento – Sacramento Commute	Enterprise Boulevard	West Capitol Avenue
SacRT	11	Land Park/City College - Natomas/Club Center	Truxel Road	Not Applicable
		Natomas/Del Paso Road – W. El Camino Avenue & Watt Avenue	Truxel Road	Not Applicable
	11	Land Park/City College - Natomas/Club Center	Truxel Road	Not Applicable
	13	Natomas/Del Paso Road – W. El Camino Avenue & Watt Avenue	Truxel Road	Not Applicable
	15	Arden Way/Del Paso Road Station – Watt Avenue/I-80 Station	Watt Avenue	Not Applicable
	19	Arden Way/Del Paso Road Station - Watt Avenue & Alverta	Norwood Avenue	Not Applicable
	26	Watt Avenue & Elverta Road - University/65th Street Station	Watt Avenue	Not Applicable
	84	Watt Avenue/Manlove - Watt Avenue & Elverta Road	Watt Avenue	Not Applicable
	93	Louis & Orlando – Watt Avenue/I-80	Watt Avenue	Not Applicable
	113	Truxel/Gateway Park to Arden Way Del Paso Road	Northgate Boulevard	Not Applicable
	142	Downtown Sacramento – Sacramento International Airport	I-80/I-5 Interchange	Not Applicable
Unitrans	A	Amtrak/5th Street Alhambra	Mace Boulevard	5th Street
	K	Lake/Arlington/Arthur	Not Applicable	Russel Boulevard
	L	E 8th Street/Pole Line/Moore/Loyola	Not Applicable	East 8th Street
	M	B Street/Cowell/Drew	Cowell Boulevard	Not Applicable
	O	Amtrak/5th Street/Alhambra/Target	Not Applicable	5th Street, Alhambra Drive, 2nd Street
	P & Q	Davis Perimeter Clockwise and Counterclockwise	Pole Line Road, Mace Boulevard	Russel Boulevard, 5th Street, Cowell Boulevard, Covell Boulevard
	Z	Amtrak/Cantrill/5th Street	Not Applicable	5th Street, Alhambra, and 2nd Street

Light Rail

SacRT operates three light rail lines in the greater Sacramento metropolitan region, the Blue Line, Green Line, and Gold Line. The Blue Line runs from the Watt Avenue/I-80 station to the Cosumnes River College station in Elk Grove and intersects with segment 8 of the I-80 corridor at the Watt Avenue/I-80 station. The Green Line runs from the 13th Street station in downtown Sacramento to the Richards Boulevard/Township 9 station just north of downtown Sacramento, with long range plans for an extension to the Sacramento International Airport. These plans will extend the light rail line by 13 miles north from downtown Sacramento and the River District to communities in North Natomas and eventually the airport. The Green Line extension, when complete, will cross the I-80 corridor in segment 8. The Gold Line runs from the SVS in downtown Sacramento to the Historic Folsom Station in Folsom.

In 2020 SacRT was awarded $23.6 million in funding from the SB 1 TIRCP managed by CalSTA to purchase eight new low-floor light rail vehicles to enable low-floor operations on the Gold Line. This project leverages investment in targeted low-floor conversions along the Gold Line awarded in 2018, providing better accessibility to passengers with disabilities, bicycles, and strollers, and help reduce traffic congestion.

TABLE 4.3 | LIGHT RAIL

City	Rail Line	Station Name
Sacramento	Blue Line	Watt Avenue/I-80
		Watt Avenue/I-80 West
		Roseville Road
		Marconi Avenue/Arcade Boulevard
	Green Line	Township 9 Station
	Gold Line	SVS
	All Three Lines	7th Street & Capitol
		8th Street & Capitol
		8th Street & O Street
		Archives Plaza
		13th Street Station

Amtrak/Capitol Corridor

The Capitol Corridor, which began service in 1991, is a 168-mile intercity-passenger train route that connects San Jose to Oakland and Sacramento. This is one of three intercity passenger train corridors that Caltrans provides the necessary funds to operate the service. Additionally, Caltrans owns the rolling stock. Since 1998, the route has been administered by the Capitol Corridor Joint Powers Authority (CCJPA). The service provides connections to Auburn, Roseville, and San Francisco (via thruway bus service) as well as to BART stations at the Richmond and Oakland Coliseum Stations.

Along the I-80 corridor, this service runs between Sacramento (with limited service to Auburn) and San Jose with two Solano County stations (Suisun/Fairfield Station and the recently opened Fairfield-Vacaville Station), one Yolo County Station (Davis Station) and one Sacramento County station (SVS). These stations provide a crucial connection between the intercity rail service and local transit services.

FIGURE 4.1 | AMTRAK'S CAPITOL CORRIDOR PHOTO

Current TIRCP funded projects include third track service between Sacramento and Roseville, integrated ticketing, South Bay Connection and Link 21 program alternative development. Additional planned system improvements include operational enhancements and investments focusing on passenger service between San Jose and Sacramento by increasing speeds to reduce headways and travel time. Construction of additional sidings and /or alternative alignments and replacing existing infrastructure to reduce or eliminate bottlenecks and chokepoints causing delays in the movement of freight and passengers along the corridor.

Transit Centers

In addition to the Amtrak stations within the corridor that serve as transportation hubs, there are transit centers that provide connections between local and regional bus transit option. Within Solano County there are three transit centers, the Fairfield Transportation Center which is served by FAST and SolTrans Blue, Green, and Red Express lines, and acts as a P&R facility with 640 available parking spaces. The Vacaville Transportation Center which is served by the FAST Blue Line and Vacaville City Coach express service. This facility also provides 225 parking and 22 vanpool spaces. Lastly, the Vallejo Transit Center serves as the mega-transfer point for bus traffic between both Napa and Solano County outbound to San Francisco and other Bay Area communities. Facilities at this transit center include a twelve-bay bus shelter for riders, public parking, and proximity to connections at Vallejo Ferry Terminal.

There are five transportation centers within Sacramento and Yolo counties that serve as hubs for connections between local and regional transit options. City of Davis in Yolo County has three transit center locations serving the I-80 corridor inter-system transfer: Train Depot (Capitol Corridor, Amtrak, Unitrans) and the UC Davis Memorial Union (Yolobus and Unitrans), and the UC Davis Silo (FAST and Unitrans). Sacramento County is served by the West Sacramento Transit Center (Yolobus and SacRT) and SVS in downtown Sacramento serves as a transit center for SacRT.

Ferry Service

Water Emergency Transportation Authority (WETA) is a regional public transit agency tasked with operating and developing ferry service on the San Francisco Bay and coordinating water transit response to regional emergencies. Under the brand name San Francisco Bay Ferry, WETA currently serves the cities of Alameda, Oakland, Richmond, San Francisco, South San Francisco, and Vallejo, utilizing a fleet of twelve high speed passenger-only ferry vessels. The Vallejo Ferry – San Francisco route is the busiest service in the entire system, regularly reaching 97 percent occupancy. During the summer, the Vallejo

Terminal operates fifteen outgoing and fourteen incoming boats during the weekdays and seven outgoing and incoming boats on weekends. The Ferry Terminal is located next to the Vallejo Transit Center which is directly connected to SolTrans local fixed and regional express routes (the Solano Express Red and Yellow Lines), and the Napa eVine Routes 11 and 29. There are plans to increase service for Solano Express and the Vallejo Ferry as part of SB 1 funding and potential future bridge toll funding increases from Regional Measure 3.

4.2 | Park and Ride Facilities

The Caltrans P&R Program facilitates access to transit and ride-sharing services along freeway corridors with the goal of reducing congestion and VMT. A mode shift away from single-occupancy vehicles (SOV) helps reduce congestion, improves air quality, and helps Caltrans meet its sustainability goals. Due to limited funding capacity for P&R projects, Caltrans is focusing on collaboration with local jurisdictions, regional and transit agencies to develop partnership opportunities to enhance, expand, and/or construct P&R facilities.

Existing Park and Ride Inventory along the I-80 Corridor

Along the I-80 corridor in Solano County, there are 17 locations either owned and maintained by Caltrans or local jurisdictions featuring just under 1,900 parking spaces[39], and most facilities including ZEV charging stations, bicycle storage, and access to transit for I-80 corridor travelers.

Along the District 3 portions of the I-80 corridor in Yolo and Sacramento counties, there are two P&R locations either owned and maintained by Caltrans or local jurisdictions featuring 1,667 parking spaces. More information about the current Caltrans P&R inventory and the services available at each can be seen below in **Table 4.4**. In addition, **Table 4.5** displays 14 P&R facilities within the I-80 corridor that are operated and maintained by local jurisdictions.

TABLE 4.4 | CALTRANS OWNED PARK AND RIDE FACILITIES

City	Location	Parking Spaces	Electric Charging Spaces	Bike Parking	Transit Services
Vallejo	Magazine Street & I-80	19	No	No	No
	Benicia Road & I-80	80	No	No	No
Vacaville	Cliffside Drive & Mason Street	125	No	No	No
West Sacramento	Enterprise Boulevard @ I-80 (North)	96	No	No	Yes
	Enterprise Boulevard @ I-80 (South)	79	No	No	No

[39] http://www.dot.ca.gov/d4/parkandride/

TABLE 4.5 | LOCALLY OWNED PARK AND RIDE FACILITIES ALONG I-80

City	Location	Parking Spaces	Electric Charging Spaces	Bike Parking	Transit Services
Vallejo	Curtola Parkway & Lemon Street	592	4	Yes	SolTrans, Solano Express Yellow Line
	Lemon Street & Curtola Parkway	64		Yes	SolTrans
	Vallejo Transit Center Sacramento Street	900	4	Yes	SolTrans, VINE, VA Medical Shuttle, Private Bus, Solano Express Red & Yellow Lines
	Vallejo Ferry Terminal Mare Island Way & Georgia Street				San Francisco Bay Ferry
Fairfield	Red Top Road Northwest of I-80	214	No	Yes	Private Bus
	Fairfield Transportation Center (Casdenasso Drive)	640	2	Yes	FAST, Rio Vista Delta Breeze, VINE, Solano Express Blue, Green, & Red Lines
	Oliver Road & Hartford Avenue	178	No	No	No
Suisun City	Suisun City Train Depot (Main Street & Lotz Way)	306	3	Yes	Capitol Corridor, FAST, Rio Vista Delta Breeze, Greyhound, VINE, Solano Express Green & Red Lines
Vacaville	Davis Street & I-80	250	4	Yes	Vacaville City Coach, Yolobus- Saturdays, VA Medical Shuttle (on request)
	Bella Vista Avenue & I-80	201	8	Yes	No
	Vacaville Transportation Center	249	No	No	Vacaville City Coach, FAST, Yolobus weekdays, Solano Express Blue Line
	Leisure Town Road & I-80	45	2	No	No
Dixon	Market Lane & Pits School Road	90	No	Yes	Dixon Redi-Ride, Solano Express Blue Line, Private Bus
	N. Jefferson & West B Street	114	No	Yes	Dixon Redi-Ride
Davis	County Road 32 at Mace Boulevard	147	Yes	No	Yes
Sacramento	Watt Avenue/I-80	248	No	No	Yes
	Roseville Road	1,087	No	No	Yes

Planned Park and Ride Facility Improvements in the I-80 Corridor

The following P&R projects are planned for the I-80 corridor in Solano, Yolo, and Sacramento counties:

- Vallejo: Curtola P&R Battery Electric Bus Infrastructure Improvements | Install two 300-kilowatt inductive battery electric bus chargers.
- Vallejo: Vallejo Station Parking Structure | Construct parking structure and a pedestrian link between Vallejo Transit Center and Ferry Terminal.
- Vallejo: Fairgrounds Drive P&R | Construct a P&R facility to coordinate with Solano Express and car/vanpool needs.
- Fairfield: Fairfield Transit Center (FTC) Phase II | Reconfigure access into and out of the FTC and construct additional parking spaces.
- Suisun City: Construct a new parking structure to accompany new Amtrak ridership and housing.
- Vacaville: Construct a multi-level parking structure at Vacaville Transit Center and create shuttle to the Fairfield-Vacaville Amtrak/Capital Corridor rail station.
- City of West Sacramento: Enterprise south P&R | Upgrade existing P&R to align with shift towards mobility hub. Proposed enhancements include installation of four direct current rapid charging stations, 10 dual-port level 2 charging stations, bus shelter, and bike lockers.

4.3 | Bike and Pedestrian Facilities

Biking and walking are important active transportation modes to address the corridor goals. While bicycles and pedestrians are prohibited on I-80 and US 50 within the I-80 CMCP study area, this CMCP focuses on freeway crossings as well as local facilities that are parallel to the freeway to accommodate active transportation modes. A network of bicycle and pedestrian facilities was developed, which was informed by the Caltrans District 4 Bike Plan[40] and Pedestrian Plan[41], the STA Countywide Active Transportation Plan[42], Caltrans District 3 Caltrans Active Transportation Plan, SACOG's bike and pedestrian project list, and the City of Sacramento's active transportation projects.

The bicycle and pedestrian network developed in this I-80 CMCP envisions a seamless network of pedestrian and bicycle facilities that would provide safe and reliable access to transit and schools, and a contiguous parallel cycling route within a 1-mile buffer of the corridor that would allow cyclists to traverse the three counties by traveling across segments of local and regional network facilities. A list of existing bike facilities and planned projects was first compiled from the plans referenced above and an accompanying web map (see a depiction of web map in **Figure 4.2** and **Figure 4.3**) was developed to help visualize the network and identify gaps. Next, the planned projects were verified with respective stakeholder agencies. Additional projects were then proposed by the CDT to close the gaps and those proposals were vetted by corridor stakeholders and added to the web map to form the final I-80 CMCP bicycle and pedestrian network.* The planned and proposed projects are further discussed in Chapter 9 (see **Table 9.2**).

Overall, a total of 43 freeway crossings along the corridor were identified in Solano County, seven in Yolo County and nine in Sacramento County. It should be noted that the I-80 CMCP network connects to other local facilities and is part of the larger active transportation network.

[40] https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-bike-plan
[41] https://storymaps.arcgis.com/stories/9a25b6f7dcf146328663b62660a0b6f9
[42] https://sta.ca.gov/documents_and_report/solano-countywide-active-transportation-plan/
*Some of the projects or project segments in Solano County are outside the 1-mile buffer area due to how they are coded in the geodatabase of the Solano Countywid Active Transportation Plan

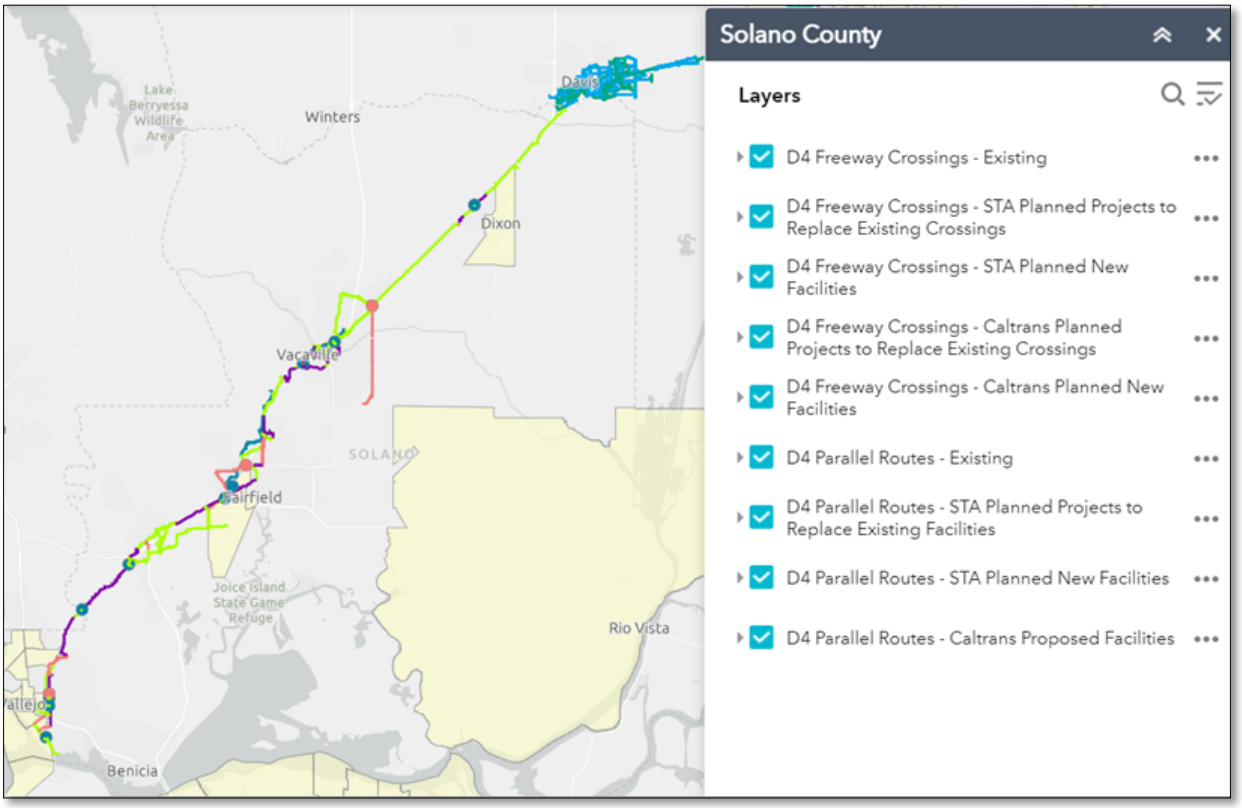


FIGURE 4.2 | SOLANO COUNTY BICYCLE AND PEDESTRIAN DEPICTION WEB MAP

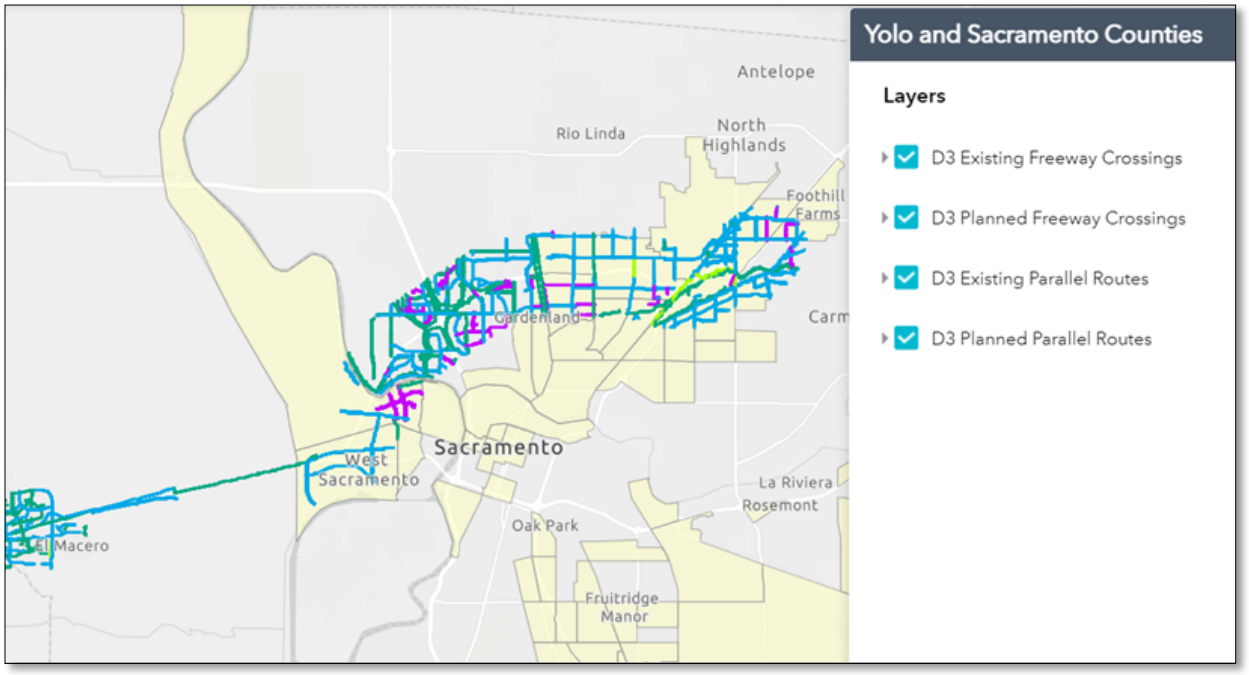


FIGURE 4.3 | YOLO AND SACRAMENTO COUNTIES BICYCLE AND PEDESTRIAN DEPICTION WEB MAP

4.4 | Transportation Demand Management

Transportation demand management also known as traffic demand management or TDM is a broad application of incentive driven programs and strategies aimed at reducing Single Occupancy Vehicle (SOV) travel demand and shifting that demand to other active and transit modes for multiple users of a corridor during traditional travel periods when demand is high and during non-traditional travel periods when certain transportation service are not available. Such incentive programs include, but not limited to the following:

- Alternative mode travel incentives
- Carpool van incentives
- Subsidized transit passes
- Parking management programs
- Guaranteed ride home programs
- Alternative mode trip planning websites and applications

The Solano Mobility Program is an example of TDM programs in District 4 that includes the Safe Routes to School program that promotes active transportation modes to and from local schools and the Solano Community College Transportation Fee Program that lets students with ID ride Solano Express and local buses for free within the County.

The Yolo Commute is an example of TDM program in District 3 that includes ride matching services representing a commitment by public and private sector stakeholders and communities to address the increasing mobility needs the regional and help alleviate traffic congestion, air pollution, and fuel consumption. Sacramento Transportation Management Association also offers additional TDM options serving the Sacramento downtown area for commuters along the I-80 corridor

SACOG launched a new Innovative Mobility program in 2019 that combines traditional TDM activities with the development and testing of innovative mobility solutions. A major component of this new program is to fund demonstration projects that solve transportation challenges with new mobility solutions in the form of an accelerator program. Another large part of the program is to expand the reach of existing and new tools, programs, and incentives that reduce emissions and VMT.

4.5 | Other Mobility Services

Mobility Hubs

Mobility Hub is defined as a location within a community that enables all users of the transportation network access to multiple transportation options and supportive amenities that offer safe, comfortable, and seamless transfer between different travel modes such as micro mobility/transit, and TDM programs ran by single or multijurisdictional Mobility Hub Managers or Agencies.

MTC has established a Mobility Hub Program with the goals focusing on coordination of existing and planned transit service, improving the safety, value, and experience of using transit, reducing GHG while promoting sustainable transportation modes, and achieving equitable mobility through low-cost and needs based anti-displacement measures.

Types of hubs include Regional downtown, Urban District, Emerging Urban District, Suburban-Rural, Pulse and Opportunity Hubs, each gaining its characterization based on the function of the facility

(train/bus station), the capacity level, frequency and number of transit/bus service providers serving that location, the access to car, bike, and scooter shared services and an estimation of probable demand for Transportation Network Companies (TNC) like Uber and other for hire services like taxis. Using these criteria, the program's Implementation Playbook (April 2021) identifies three Mobility Hubs within the I-80 CMCP corridor.

- The Suisun-Fairfield Capitol Corridor/Amtrak Station is characterized as an "Emerging Urban District Hub" type for its access to high-capacity/frequency transit and bus service. Its lack of shared mobility services and the moderate demand for TNCs like Uber and other for-hire services.
- Fairfield and Vacaville Transportation Centers are characterized as Suburban-Rural Hub types due its P&R service and access to regional rail, frequent and infrequent local feeder bus services within car/bike share markets, and a moderate demand for TNCs and taxis.

In addition to the MTC program, Caltrans District 4 is currently conducting its own Mobility Hub Concept Study. The study will evaluate opportunities for the development of mobility hubs on Caltrans ROW within District 4 connecting multiple transportation modes, enable the integration of emerging technologies, and by provide travelers with the services and amenities supportive of sustainable travel. The result will select optimal candidate locations for mobility hub concepts and will inform future mobility hub projects.

Caltrans District 3 is collaborating with HQ in its efforts to transition P&R facilities into Mobility Hubs. Currently, District 3 is inventorying existing lots and prioritizing them for Mobility Hub improvements.

4.6 | Transportation Systems Management and Operations

Caltrans is committed to effective TSMO strategies to optimize the performance of California's transportation systems for all users and modes of travel. Successful TSMO strategies require proactive integration of the transportation systems to efficiently move people and goods along highly congested urban corridors. Examples of TSMO strategies include but are not limited to ramp metering, traffic signal synchronization, ITS/TOS, and managed lanes. Efficiency can often be achieved by operational improvements through ITS deployment. Operations and Maintenance (O&M) resources are essential to achieve Caltrans fix-it-first target for ITS elements. As TSMO strategies are developed and implemented, additional ITS/TOS elements within the corridor are often required and O&M resource needs will continue to grow.

Caltrans Ramp Metering Development Plan[43]

As required by Caltrans DD-35-R1, each District that currently operates, or expects to operate ramp meters within the next ten years, shall prepare a Ramp Metering Development Plan (RMDP). According to the 2017 RMDP, there is a total of 49 existing and/or programmed ramp meters and another 38 planned ramp meter projects in District 4 on I-80 in Solano County, a top priority corridor for ramp metering implementation and activation. For District 3, there is a total of 43 existing ramp meters and 25 programmed and/or planned ramp meters on I-80 in Yolo and Sacramento counties, per the draft 2021 Ramp Metering Development Plan. Some of these programmed and/or planned ramp meters include the installation of a ramp meter for the High Occupancy Vehicle Preferential Lane of on-ramps that already meter the general-purpose lane.

[43] http://www.dot.ca.gov/trafficops/tm/ramp.html

4.7 | Broadband

Broadband service has become an essential element of communication, an engine of economic activity, educational opportunity, civic engagement, access to health care, teleworking and much more. Income, education, disability status, age, race, and ethnicity all correlate with broadband availability and use. Residents in less populated areas generally have less access to broadband services. State highway ROW can be a source of expanding the broadband network which could provide increased accessibility to rural and other priority populations, including Tribal lands.

California Governor's EO N-73-20 creates the California Broadband Council and mandates the development of the California State Broadband Action Plan which directs CalSTA, Caltrans and the CTC examine their processes and implement the deployment of fiber optic and fiber optic conduit of the "middle mile" along the SHS. With Governor Newsom's approval of SB 156 Communications: Broadband in July 2021, a $6 billion multiyear investment was established to expand, enhance, operate, and maintain high-speed broadband internet infrastructure to unserved and priority populations. Caltrans will work closely with the newly established Office of Broadband and Digital Literacy to construct a statewide open-access middle-mile broadband network.[44] Caltrans encourages developing partnerships with stakeholders and the regional broadband consortium during planning, environmental scoping, and project development to integrate broadband into projects.

4.8 | Freight Network, Facilities, and Trip Generators

I-80 is identified on the federally designated National Highway Freight Network (NHFN) as a Primary Highway Freight System (PHFS) route and is part of the Surface Transportation Assistance Act of 1982 National Network. The corridor directly serves the Port of West Sacramento and provides freight connections to the agricultural and manufacturing producers throughout Solano, Yolo, and Sacramento counties. The State is committed to a broader, long-term vision for accelerating the transition of California's multimodal freight system from its already robust stature to a safer, more efficient, and reliable, and less polluting freight system.

I-80 is also part of MTC's 2019 Northern California Megaregion Goods Movement Study, with support from Caltrans, the San Joaquin Council of Governments (SJCOG), SACOG, and the Association of Monterey Bay Area Governments (AMBAG). The megaregion contains many goods movement clusters (also known as freight-dependent industries), and I-80 is critical in connecting the San Francisco Bay Area to the Sacramento Valley/Central Valley.

4.9 | Zero-Emission Vehicle Infrastructure

At the federal level, I-80 from San Francisco to the California/Nevada border is ready for the refueling of Battery Electric Vehicle (BEV), CNG and Fuel Cell Electric Vehicles (FCEV) in FHWA's Alternative Fuel Corridors program. For a route to gain such status, FHWA requires that EV charging facilities be readily available at least every 50 miles or less, and AFC facilities be available every 100 miles or less. Currently, there are twenty-seven ZEV charging stations in the corridor serving battery, plug-in, natural gas, and hydrogen fuel powered private and commercial vehicle along the route in the urbanized areas of Vallejo, Fairfield, and Vacaville. And a total of 73 total ZEV charging stations dispersed in the urbanized areas of Davis, West Sacramento, and Sacramento. The sites include big box retailers like Walmart and Target, motel/hotel chains, locally operated P&R lots, privately owned and operated gas/truck stops, transit

[44] https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB156

centers, and intercity rail stations accessible by priority populations and all users of the various transportation networks.

Directed by the Governor's EO N-79-20, the Office of Business and Economic Development (GO-Biz), the California ZEV Marketing Development Strategy, and the CAPTI, the Department has developed the ZEV Action Plan. The ZEV Action Plan lays out the State's path forward in the implementation of the goals and objective of the Governor's ZEV program to underserved, low-income, and Black, Indigenous, and People of Color Communities.

FIGURE 4.4 | CITY OF SACRAMENTO CURBSIDE CHARGING

Chapter 5 | Corridor Performance

5.1 | Introduction

The I-80 CMCP corridor spans three counties in two Metropolitan Planning Organization (MPO) regions. As a result, modeling of the corridor was separated into nine segments (see **Figure 5.1**) based on political boundaries, traffic volumes, as well as existing and planned lane configurations. For detailed maps by segment see **Appendix VI**. In total, the CMCP study area includes the entire I-80 corridor in Solano and Yolo counties between the Carquinez Bridge and SR 51 junction in the City of Sacramento. A portion of US 50 is also included in this study area which begins at the I-80 interchange in West Sacramento and ends at the I-5 interchange in Sacramento. Due to the size of the corridor, and to take advantage of existing analyses, the modeling for the CMCP includes work from Cambridge Systematics (CS), Fehr and Peers, and Caltrans District 3 Modeling and Forecasting staff. The segments analyzed, performance measures, and modeling results were agreed upon by the TAC and stakeholder groups.

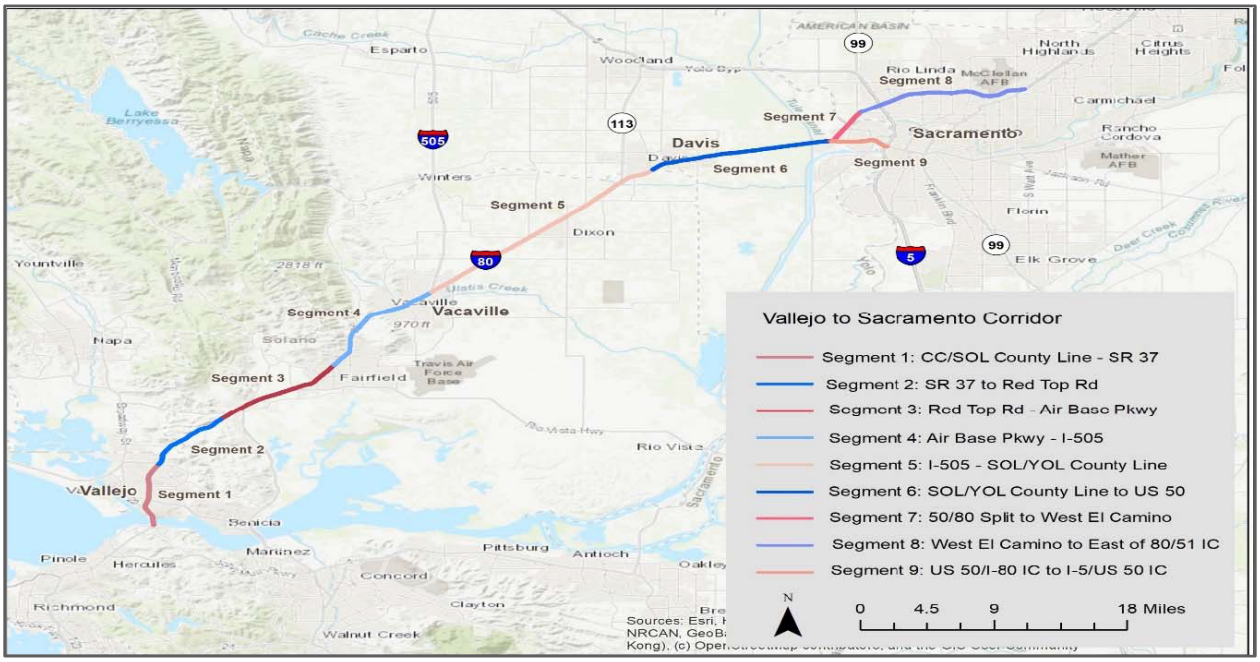


FIGURE 5.1 | I-80 CMCP CORRIDOR SEGMENT MAP

In Solano County, which covers Segments 1-5, CS performed a traffic operations analysis using both travel demand modeling and a microsimulation analysis for select segments that are currently experiencing congestion.

In Yolo and Sacramento counties, Fehr and Peers conducted a project-level travel demand modeling analysis for Segments 6, 7, and 9, consistent with the scope and analysis from the I-80/US 50 Managed Lanes project.

Within Sacramento County, Caltrans District 3 Forecasting and Modeling staff conducted a travel demand modeling analysis for Segment 8 as this section of the corridor goes beyond the scope analyzed by Fehr and Peers as part of the I-80/US 50 Managed Lanes project.

This chapter highlights the findings from the final I-80 corridor Modeling and Analysis Project report completed by CS and findings from the US 50 Managed Lanes Study (see full report in **Appendix III)**.

5.2 | Model Development

This section presents a summary of the model development for the I-80 CMCP corridor analysis.

As stated earlier in the CMCP, the corridor encompasses two MPOs which utilize separate models for their respective RTPs. Due to this, data from the SNABM and the SACSIM19 were used in the I-80 Corridor Modeling and Analysis Project Summary report. As part of this effort, it required CS to match the traffic counts and reconcile the volumes of the SNABM model to the SACSIM19 model at the Solano and Yolo County line along I-80, I-505, and SR 113 corridors. This was needed to allow the two models to work cohesively together and ensure that the resulting traffic numbers form one set of contiguous data to the best extent feasible. Consistent with the map in **Figure 5.1**, traffic data for segments 1-5 were extracted from the SNABM model and segments 6-9 from the SACSIM19 model.

Two Verkehr In Städten – SIMulationsmodel (VISSIM {German for "Traffic in cities - simulation model"}) models were developed for two locations along the I-80 corridor at the cities of Vallejo and Fairfield. The microsimulation model networks include all freeway mainline and ramp segments, managed lanes, interchange ramps, and ramp intersections in the Vallejo and Fairfield study areas. The microsimulation model in the Vallejo area begins at the Alfred Zampa Memorial Bridge on the western edge of the model and extends to the east of Columbus Parkway/SR 37 interchange ramps (see **Figure 5.2**). The microsimulation model in the Fairfield area starts from west of the Red Top Road ramps and extends to east of Manuel Campos Parkway (see **Figure 5.3**). The freeway ramps and ramp terminal intersections are also included in the analysis. The microsimulation models were used to analyze existing conditions, Future No Build Scenario and three Future Build Scenarios (see section 5.5 for more detail), and the modeling networks match those of the travel demand forecasting models for each of the corresponding scenarios. Microsimulation analysis results are not included in this chapter, because microsimulation was conducted for select segments in Solano County only. The full microsimulation analysis report can be found in Appendix D-2 (Microsimulation Model Traffic Demand) as part of the I-80 Corridor Modeling and Analysis Project Summary report.

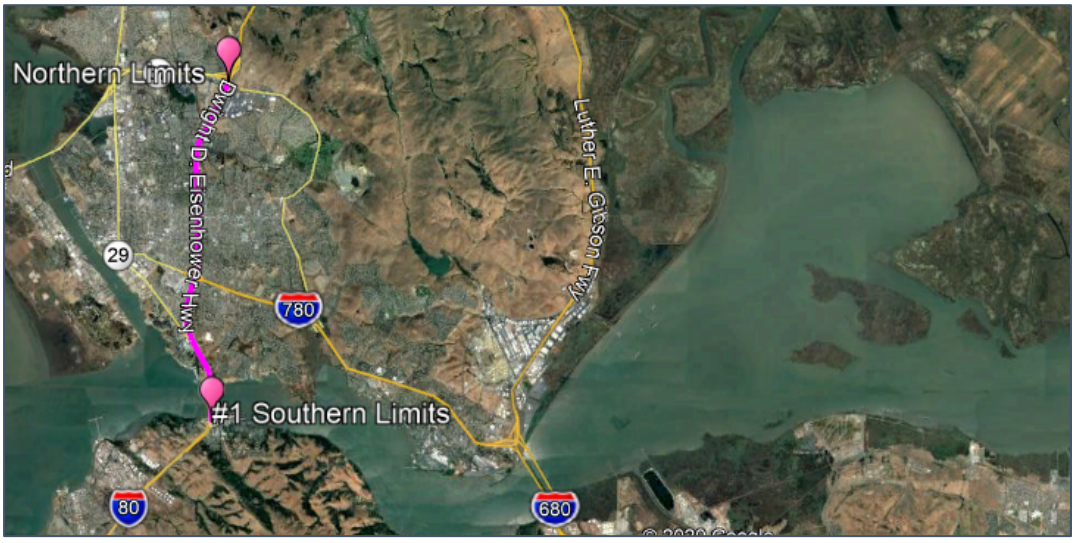


FIGURE 5.2 | I-80 VALLEJO AREA SIMULATION MODEL COVERAGE

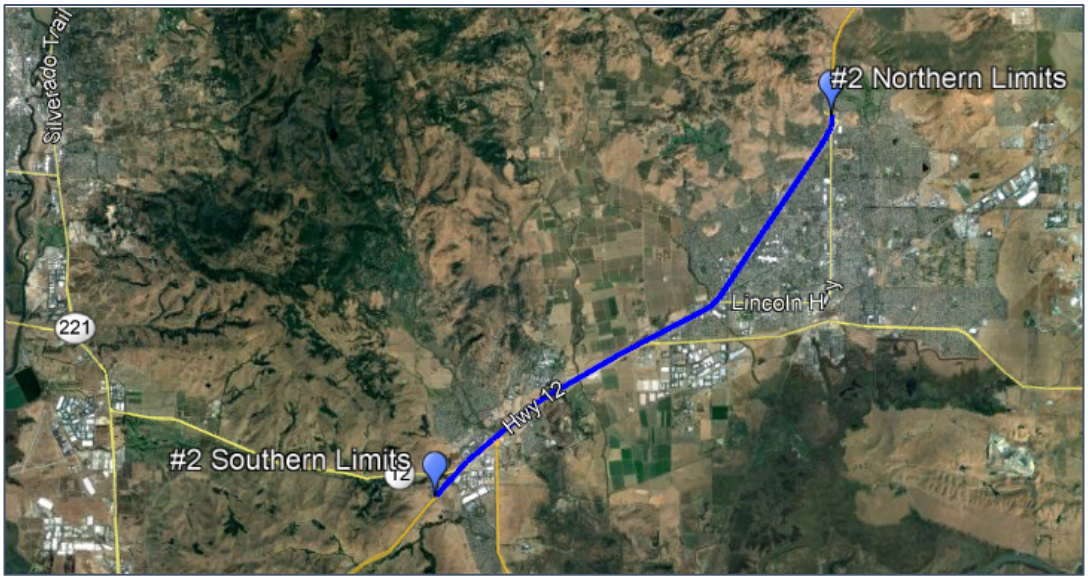


FIGURE 5.3 | I-80 FAIRFIELD AREA SIMULATION MODEL COVERAGE

The travel demand model and microsimulation model analyzed typical weekday traffic operating conditions, including A.M. (6:00 A.M.-10:00 A.M.) and P.M. (3:00 P.M. to 7:00 P.M.) peak periods. The models are not able to assess weekend conditions as there is not sufficient background data to support weekend models (lack of full weekend volume data and no regional travel demand models for weekend time periods). Also, weekend traffic analysis is typically not completed for corridor studies because the weekday commute peaks generally represent the worst-case conditions in most areas.

However, it is recognized that weekends have potential for increased congestion and different traffic peak periods than those that occur on the weekdays, due to higher levels of recreational and tourist activities. To assess weekend versus weekday conditions along I-80, some key performance metrics have been reviewed and compared between the weekday and weekend including speeds, location and extent of queues and traffic volumes. **Appendix B** of the I-80 Corridor Modeling and Analysis Project Summary report (see **Appendix III**) includes a memorandum with weekday to weekend operating conditions comparison. The weekday to weekend comparison found that along I-80 weekday conditions are generally worse than the weekends, although significant congestion was observed on Saturdays at some locations.

The modeling included an analysis of the existing conditions, the development of the Future No Build scenario as well as five Future Build scenarios. Due to the COVID-19 pandemic, and related Caltrans directives on data collection (no in-field data collection after March 2020), the CS team was unable to collect new data in the field, thus available historical data sources were used and applied. The existing scenario represents year 2019, or the last year of normal travel demand and operations before the beginning of the COVID-19 pandemic, which significantly changed the travel conditions throughout 2020 and 2021. As a result, 2019 was chosen as the year to replicate typical existing conditions for purposes of the modeling and analysis.

Future Build scenarios were developed through collaboration between both Caltrans District 3 and 4 and staff from CS. Caltrans staff included members from the CDT, Modeling and Forecasting, Traffic Operations, and Program Project Management from both districts. These scenarios were then approved

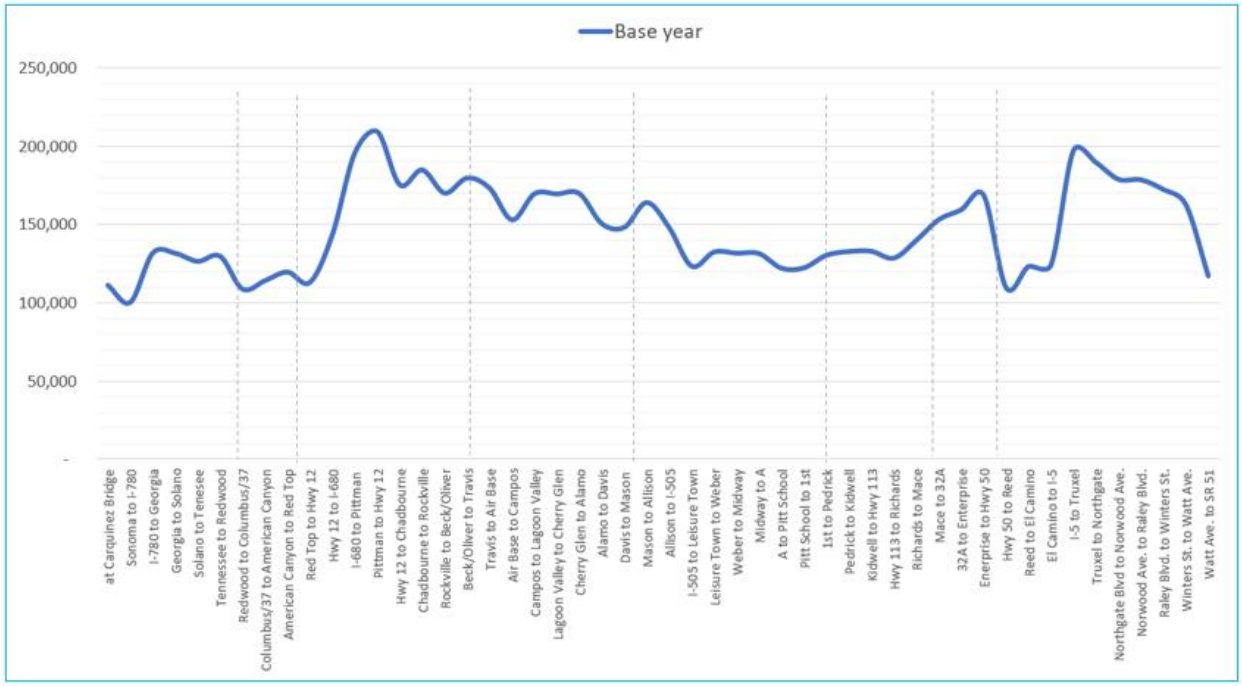
by the I-80 CMCP TAC and stakeholder members. A detailed description of the Future Build scenarios can be found in *Section 5.5 | 2040 Future Year Build Scenarios*. Future Build scenario analysis included planned/programmed projects from Plan Bay Area 2050, MTC's RTP/Sustainable Communities Strategy (SCS) and SACOG's 2020 Metropolitan Transportation Plan (MTP)/SCS, select unconstrained projects and SHOPP projects. The full list of projects being analyzed can be found in **Appendix A** of the I-80 Corridor Modeling and Analysis Project Summary (see **Appendix III**). Each Future Build scenario package of projects was measured against key transportation performance measures such as VMT, VHT and VHD.

5.3 | Existing Conditions

5.3.1 | I-80 Existing Conditions Traffic Volumes (Segments 1-8)

Existing travel demand models were updated to match existing 2019 conditions. Model enhancements and network updates were performed by CS on the SNABM model to make the model volumes match with observed field volumes. Detailed information of the base year model results is included in the base year memorandum in **Appendix C** of the I-80 Corridor Modeling and Analysis Project Summary report included in I-80 CMCP.

Figure 5.4 shows the daily traffic along the I-80 corridor in both directions combined. The corridor within the study area carries from 100,000 to over 200,000 vehicles on a daily basis in both directions, depending on location. The peak flow occurs near the I-680 junction with I-80, in Segment 3, which is nearly matched in the eastern portion of the study area in Sacramento. As shown in **Figure 5.5** and **Figure 5.6**, more than 95% of this vehicular traffic is auto traffic. There are less than 5% trucks along the corridor with about one-fifth of the vehicular traffic is shared ride (more than one occupant per vehicle).



Source: SNABM and SACSIM19 models

FIGURE 5.4 | EXISTING DAILY TRAFFIC ON I-80 (BOTH DIRECTIONS COMBINED

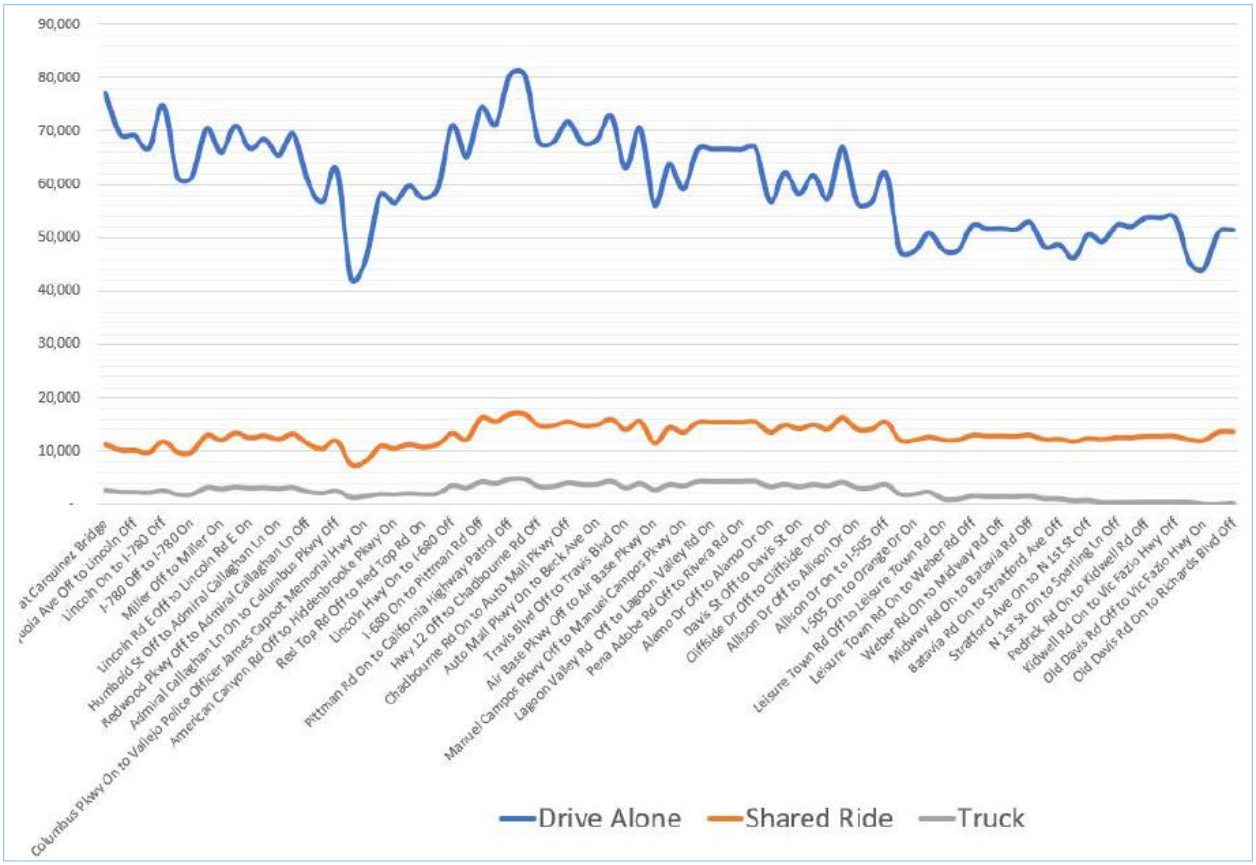


FIGURE 5.5 | I-80 EASTBOUND AUTO VOLUMES BY MODE AND TRUCK VOLUMES

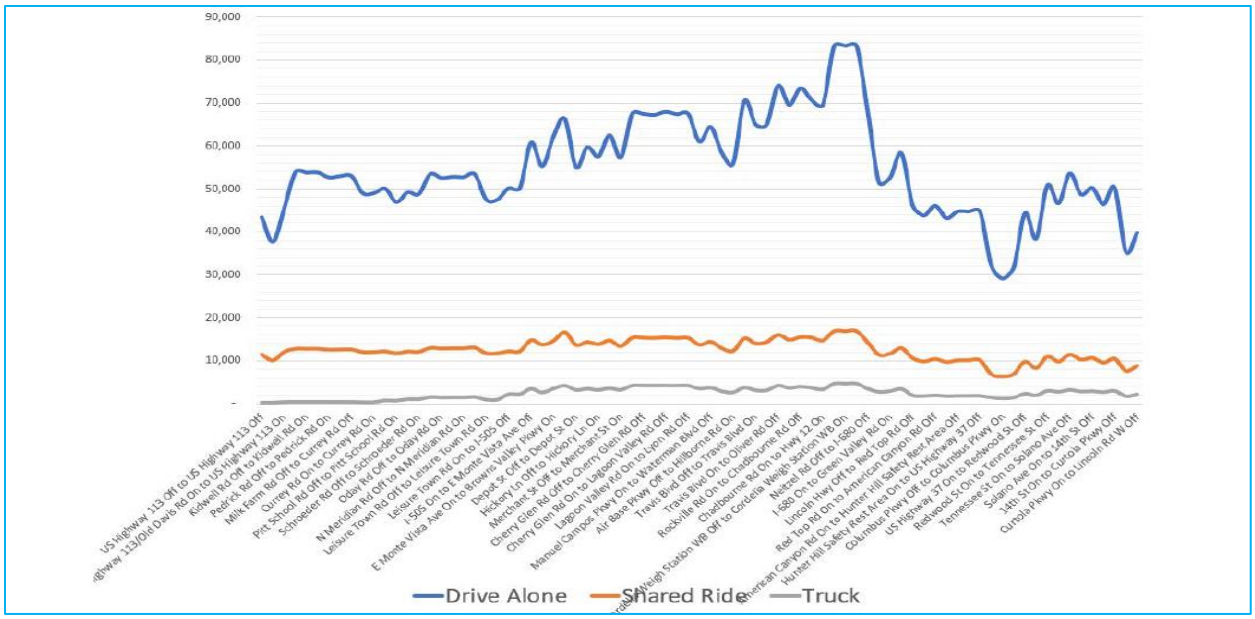


FIGURE 5.6 | I-80 WESTBOUND AUTO VOLUMES BY MODE AND TRUCK VOLUMES

5.3.2 | US 50 Existing Conditions Traffic Volumes (Segment 9)

The US 50 corridor within the study area carries from 140,000 to over 157,000 vehicles on a daily basis in both directions, depending on location. The peak flow occurs between Harbor and Jefferson Boulevards between I-80 and I-5 in Sacramento.

TABLE 5.1 | US 50 DAILY TRAFFIC VOLUMES (BOTH DIRECTIONS)

Daily Volumes Both Directions	I-80 to Harbor Boulevard	Harbor Boulevard to Jefferson Boulevard	5Th Street Off-Ramp to I-5
	140,143	157,629	141,981

5.4 | 2040 No Build Scenario

The purpose of this scenario is to estimate future traffic volumes for 2040 along the I-80 corridor as a result of population and employment growth. It also shows how the corridor would perform without improvements except for projects that are currently under construction and projects that are fully funded and will be implemented by 2040. This scenario is assessed using the SNABM and SACSIM19 travel demand forecasting models. In addition, two simulation models were developed and calibrated to existing conditions and a 2040 No Build scenario was created within the VISSIM modeling platform.

The 2040 No Build scenario includes one of the key inputs to the model using socioeconomic data (SED) which is the basis of the activity of individual simulated households and persons. These key inputs include population, households, jobs, income, and other variables that affect trip making, producing an overview of the range of traffic demand growth expected along the I-80 corridor. The 2040 No Build scenario also includes assumptions regarding the freeway and arterial roadway networks. Model roadway networks are different for the base year model and 2040 No Build model due to planned improvements.

5.4.1 | 2040 Planned Projects in 2040 No Build Scenario

Before performing future analysis model runs, the 2040 highway model network was updated to include all under-construction and approved and fully funded roadway projects that will be completed by 2040.

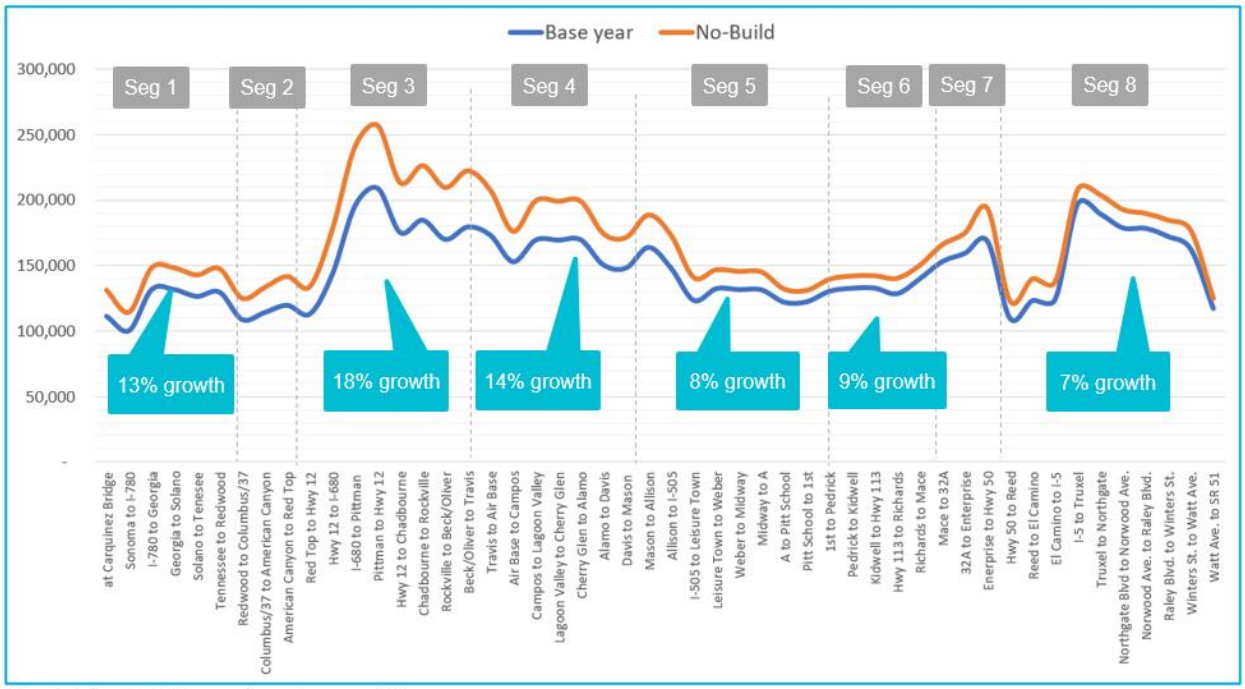
Below is a list of network updates:

- I-80 / I-680 / SR 12 Interchange Project
- Jepson Parkway Project
- SR 37/Fairgrounds Drive Interchange Project
- I-80/Richards Boulevard Interchange Project
- I-80/W. El Camino Avenue Interchange Project

5.4.2 | I-80 Volume Comparison

Future year 2040 traffic model results show a growth range of 7% to 18% along I-80 with a median growth of 12%. The growth varies along the corridor depending on location and reflecting the different SED growth projections in various parts of the corridor study area. There is higher estimated future growth in Segments 3 and 4 of the I-80 corridor compared to the eastern sections. The lowest growth is in Segment 8 between west of W. El Camino Avenue to east of SR 51 interchange. See **Figure 5.7** for the growth details along the corridor in terms of projected volume growth between the existing base year and 2040. Average growth is shown for each of the study area segments. Note **Figure 5.8** and **Figure 5.9** show volume comparisons for Segment 1 to Segment 8, which are all along I-80.

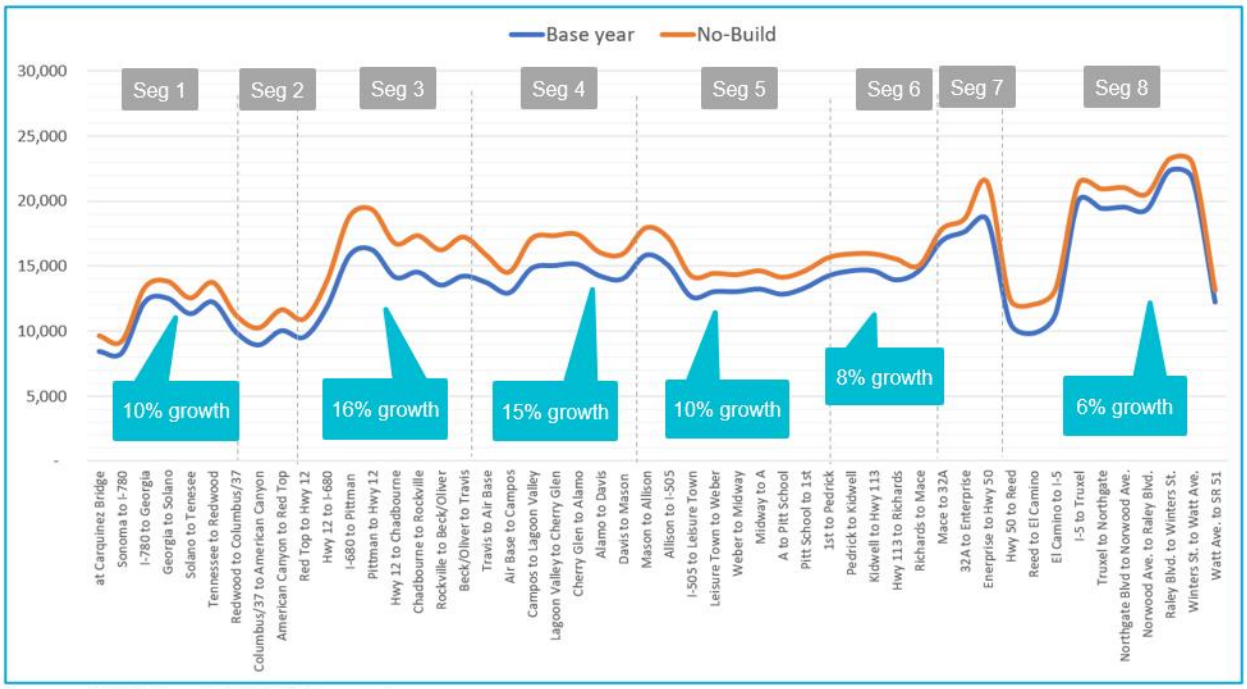
There is higher estimated future growth in the mid- and western sections of the corridor compared to the eastern sections. The lowest growth is between I-505 and the SR 113.



No-Build = 2040 future baseline conditions
Source: SNABM and SACSIM19 models

FIGURE 5.7 | FUTURE (2040) NO BUILD DAILY TRAFFIC GROWTH ON I-80 CORRIDOR (BOTH DIRECTIONS COMBINED)

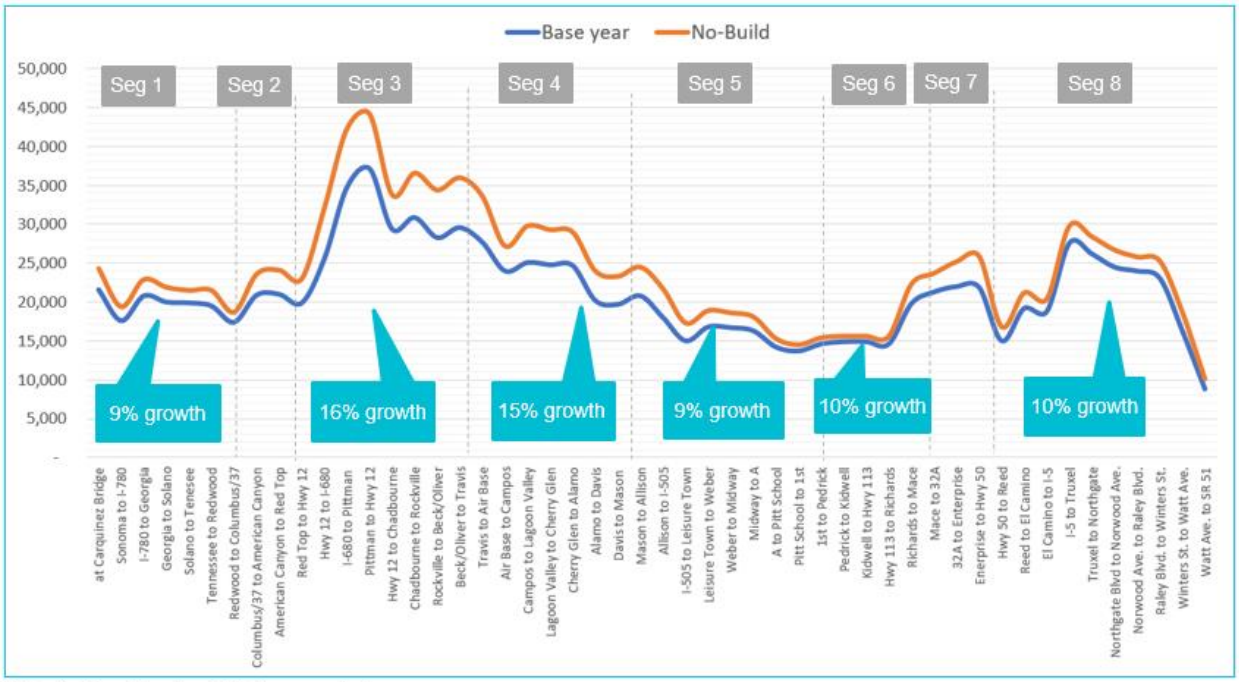
The A.M. peak period eastbound growth (see **Figure 5.8**) is slightly lower than the forecast growth in the westbound direction (see **Figure 5.9**). In the mid-section, between Red Top Road and I-505 (Segments 3 and 4) the model projects growth of 15% to 16% which is about 2,000 to 2,500 more vehicles for the four-hour period (6:00 A.M. to 10:00 A.M.) and in the western and eastern portions of the corridor the projected growth is in the range of 6% to 8%. **Figure 5.8** shows the details of the A.M. peak period eastbound traffic volume growth percentages and numeric growth in traffic flow.



Source: SNABM and SACSIM19 models

FIGURE 5.8 | FUTURE (2040) NO BUILD A.M. PERIOD EASTBOUND TRAFFIC GROWTH ON I-80 CORRIDOR

Similar to the daily growth, A.M. peak period westbound traffic (see **Figure 5.9**) is projected to grow in the range of 9% to 16%. More growth is observed in the mid-section; between Red Top Road and I-505. The farther eastern and western sections grow by about 10%. **Figure 5.9** shows the details of the A.M. peak period westbound traffic volume growth percentages and numeric growth in traffic flow.

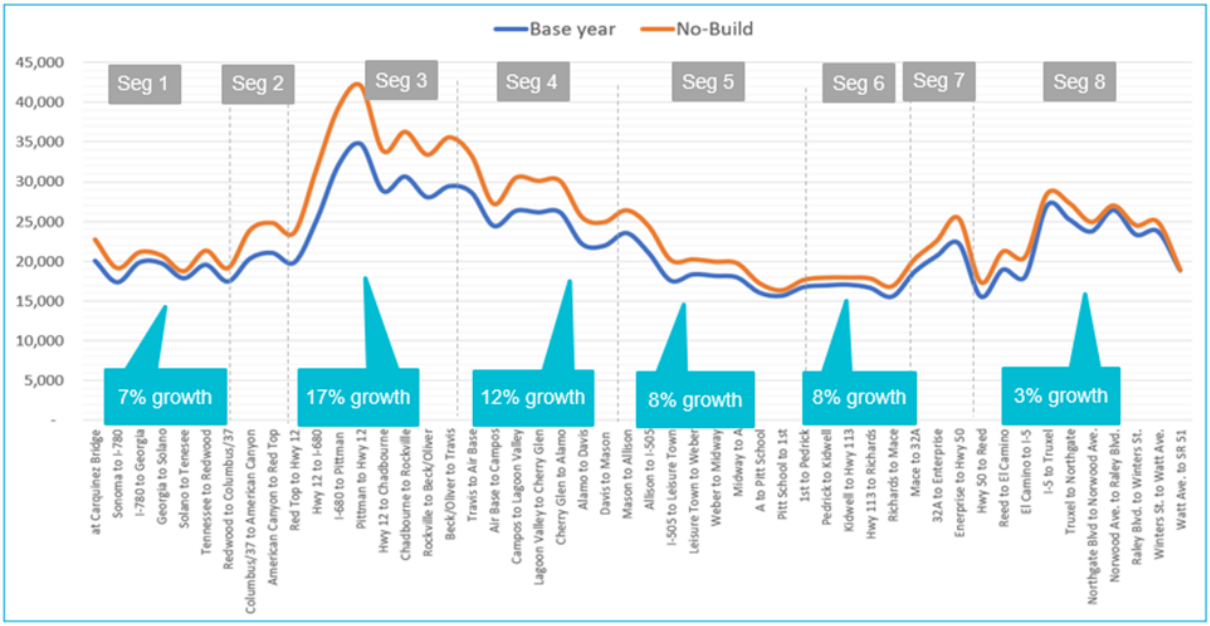


** Peak direction for this time period*

Source: SNABM and SACSIM19 models

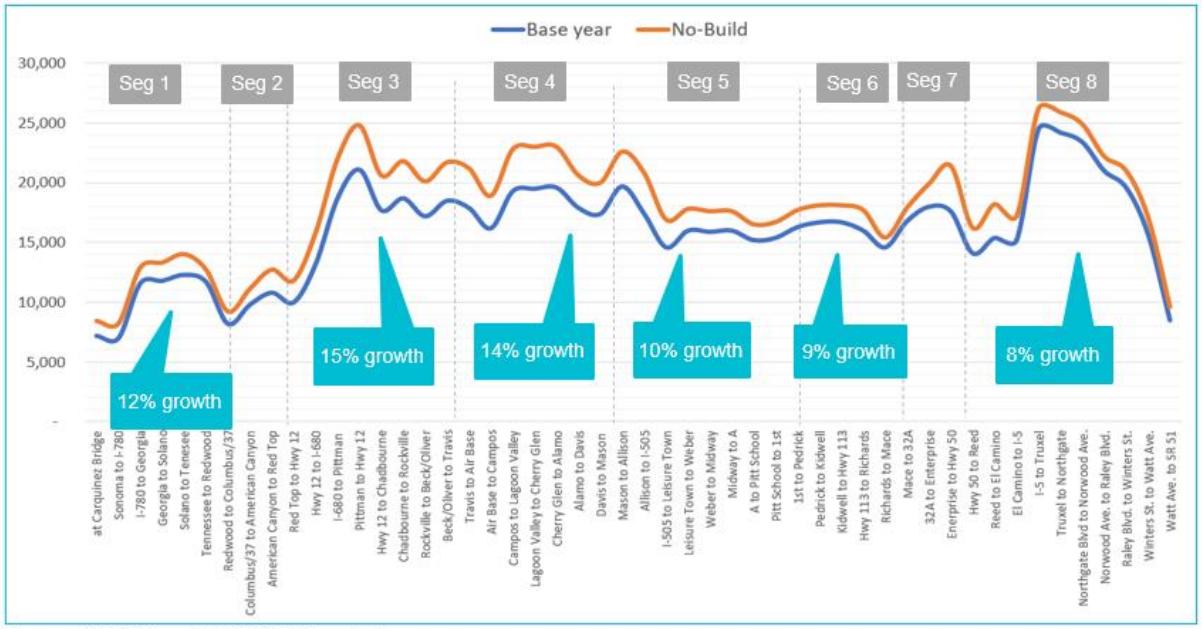
FIGURE 5.9 | FUTURE (2040) NO BUILD A.M. PERIOD WESTBOUND* TRAFFIC GROWTH ON I-80 CORRIDOR

The P.M. period westbound growth is less than the projected P.M. period eastbound direction growth, as the P.M. period eastbound is the peak direction for this period. In a similar pattern to the above statement the mid-section traffic growth is greater for this time period as well. In the middle part of the corridor the traffic grows in the range of 14% to 15%, or about 3,500 to 6,000 more vehicles in the four-hour time period. The eastern and western sections grow in the range of 8% to 9%, or about 1,400 to 1,600 more vehicles for the four-hour time period. **Figure 5.10** and **Figure 5.11** show the details for P.M. period traffic growth along the I-80 corridor in eastbound and westbound direction, respectively.



** Peak direction for this time period*
Source: SNABM and SACSIM19 models

FIGURE 5.10 | FUTURE (2040) NO BUILD P.M. PERIOD EASTBOUND * TRAFFIC GROWTH ON I-80 CORRIDOR



Source: SNABM and SACSIM19 models

FIGURE 5.11 | 2040 FUTURE YEAR P.M. PEAK WESTBOUND VOLUMES

5.4.3 | I-80 VMT, VHT, and VHD Comparison

Under the future No Build conditions, the added population and jobs will generate new trips in the area and the results are shown as the increase in the VMT, VHT, and VHD. VHT and delay also increase significantly from existing to 2040 based on the model results. **Table 5.2** shows the details of the VMT, VHT, and VHD change to 2040. VMT, VHT and VHD data presented below is for freeway segments only in the I-80 CMCP corridor study area. The models project that VMT will increase along the I-80 corridor by about 15%. The model predicts that VMT will go up from 10.3 million miles traveled per day to over 11.8 million miles traveled per day along the I-80 corridor study area. VHT and VHD increase more than VMT due to the increase in congestion which exponentially increases and impacts vehicles on the system. This is especially true where there is already congestion or conditions nearing the point of heavy congestion with resulting vehicle queues.

TABLE 5.2 | VEHICLE MILES TRAVELED, HOURS TRAVELED, AND DELAY COMPARISON

	VMT	VHT	VHD
Base year	10,370,700	182,300	20,000
2040 No-Build	11,878,600	224,100	37,700
Total. Difference	1,507,900	41,800	17,700
Percent Difference	14.5%	22.9%	88.5%

5.4.4 | US 50 Future (2040) No Build Scenario

Figure 5.12 shows existing and future No Build volume growth along US 50 (Segment 9). The model estimates indicate 9% growth is expected to occur along US 50 (Segment 9) in the next 20 years. The growth varies along the corridor depending on location and reflecting the different SED growth projections in various parts of the corridor study area.

The highest estimated future growth occurs between 5th Street and I-5. The lowest growth of 7% occurs between I-80 and Jefferson Boulevard.

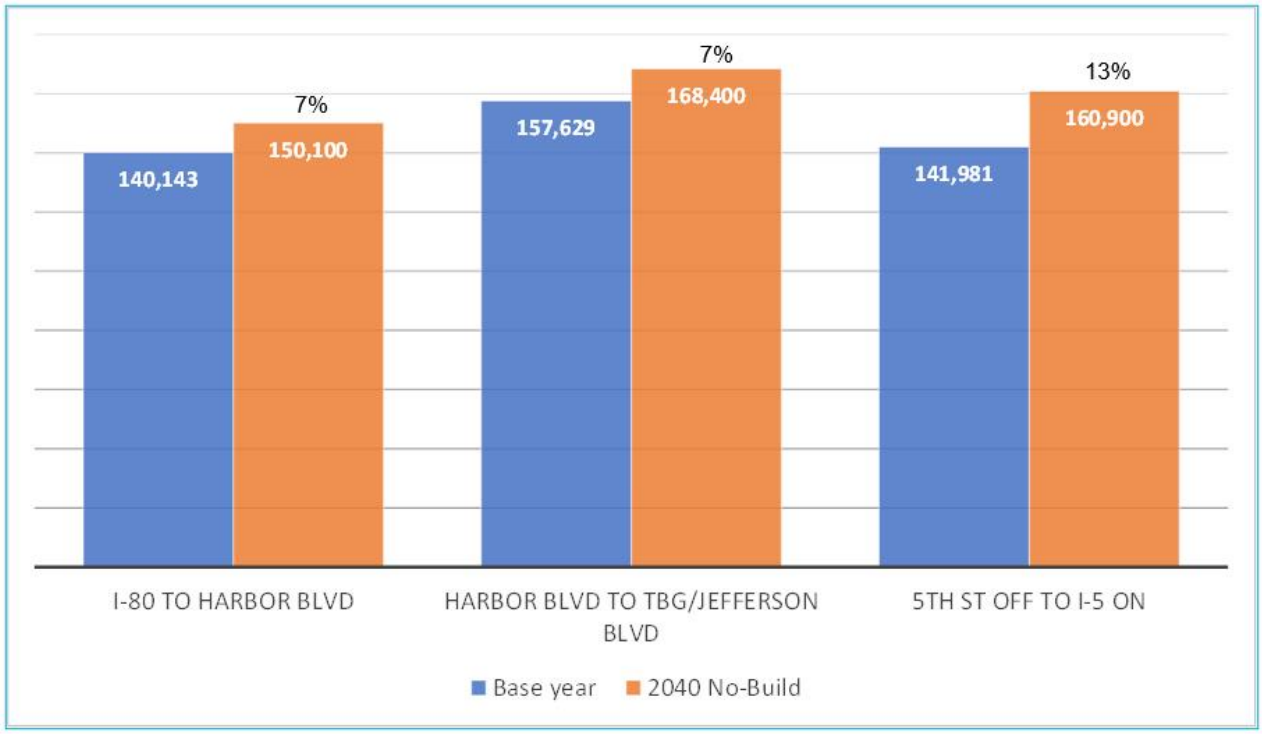


FIGURE 5.12 | US 50 FUTURE (2040) TRAFFIC VOLUMES (BOTH DIRECTIONS)

5.5 | 2040 Future Year Build Scenarios

Future Build scenarios were developed through collaboration between both Caltrans District 3 and 4 and staff from CS. Caltrans staff included members from the CDT, Modeling and Forecasting, Traffic Operations, and Program, Project, and Asset Management from both districts. These scenarios were then approved by the I-80 CMCP TAC and stakeholder members. All future analyses use the 2040 horizon year, which matches the Napa-Solano and SACSIM19 Travel Model years of analysis.

The purpose of the scenarios is to test packages of improvement strategies and projects to assess how effective they would be at alleviating future transportation congestion.

The following performance measures are compared in this section to assess the effects of each alternative against the No Build alternative. The comparative performance measures are:

- Corridor volumes
- Person throughput (Vehicle Occupancy)
- VMT
- VHT
- VHD

All the performance measures reported are for four-hour A.M. (6:00 A.M. – 10:00 A.M.) and P.M. (3:00 P.M. – 7:00 P.M.) peak periods, as well as for a typical weekday. There are a total of five Future Build scenarios that are assessed using the travel demand models.

Future Build Scenario 1 | HOV 2+

This scenario assesses the changes resulting from completing a HOV 2+ lane along I-80 study corridor. Currently, in the study corridor, the HOV lanes exist from Red Top Road to Air Base Parkway and from W. El Camino Avenue to SR 51. The HOV 2+ model scenario added HOV lanes on I-80 from the Solano County line (Carquinez Bridge) in Vallejo to east of I-80/SR 51 Interchange in Sacramento County and along US 50 between I-80 and I-5. This scenario includes all the projects included in the 2040 No Build scenario plus financially constrained RTP projects that are not fully funded and select unconstrained projects and SHOPP projects. This scenario is assessed using the travel demand forecasting models for the corridor as well as the focused corridor microsimulation model.

Future Build Scenario 2 | HOT 2+

This scenario assesses the changes resulting from the addition of HOT 2+ lanes along I-80 CMCP study area. This scenario includes all the projects included in Scenario 1 and it converts the HOV lanes in Scenario 1 to HOT 2+ lanes. High occupancy vehicles will travel for free in HOT 2+ lanes and single occupancy vehicles will have to pay full toll to use HOT 2+ lanes. This scenario is assessed using the travel demand forecasting models for the corridor as well as the focused corridor microsimulation model.

Future Build Scenario 3 | HOT 3+

This scenario assesses the changes resulting from HOT 3+ lane along I-80 CMCP study area. This scenario is similar to Scenario 2 but with different occupancy requirements for the HOT lanes. In this scenario, in the HOT lanes, vehicles with 3+ occupancy will travel for free, vehicles with 2 occupants will pay half toll and single occupancy vehicles will have to pay the full toll. This scenario is assessed using the travel demand forecasting models for the corridor as well as the focused corridor microsimulation models.

Future Build Scenario 4 | Capitol Corridor Improvement

This scenario assesses improvements to the Capitol Corridor Intercity Rail service between San Jose and Sacramento. The Capitol Corridor system is planning future improvements to its services which will enable more people to use the commuter rail as an alternative to driving on the I-80 corridor. The assumed improvements included 110 miles per hour top speed, a high-bridge between Benicia and Martinez, and 1/2-hourly service. Data was provided by Capitol Corridor and Caltrans Division of Rail and Mass Transportation regarding the future forecasted increases in passenger service and that information was used to model a similar reduction in people driving on the I-80 CMCP study area. This scenario is assessed using the travel demand forecasting models.

Future Build Scenario 5 | Travel Demand Management / Active Transportation Enhancement

This scenario assesses the changes resulting from assumed changes in travel behavior due to TDM programs as well as future implementation of active transportation facilities and shift of some trips to active transportation. Since it is not possible to model every trip that uses active transportation, this modeling scenario assumes future reduction in auto trips due to shift to active transportation as well as other changes such as increased work at home or shifts to off peak travel. This scenario is assessed using the travel demand forecasting models.

5.6 | 2040 Future Build Scenario Volumes

5.6.1 | I-80 Future Build Scenario Volumes

The traffic volumes for the 2040 managed lanes alternative scenarios are compared to the 2040 No Build scenario in this section, followed by comparisons of the Capitol Corridor Alternative and the TDM alternative to the 2040 No Build. The assumed operating hours of the managed lanes are during A.M. and P.M. peak periods, which are 6:00 A.M. to 10:00 A.M. and 3:00 P.M. to 7:00 P.M., respectively.

5.6.2 I-80 Volume Comparison of Scenarios 1(HOV 2+), 2(HOT 2+), and 3(HOT 3+)

All three managed lanes alternatives are projected to carry more traffic volume along the freeway corridor (General Purpose and Managed Lanes together) than the future No Build scenario. The lowest growth sections are the areas that do not have additional capacity assumed to be added to the mainline. They are as follows:

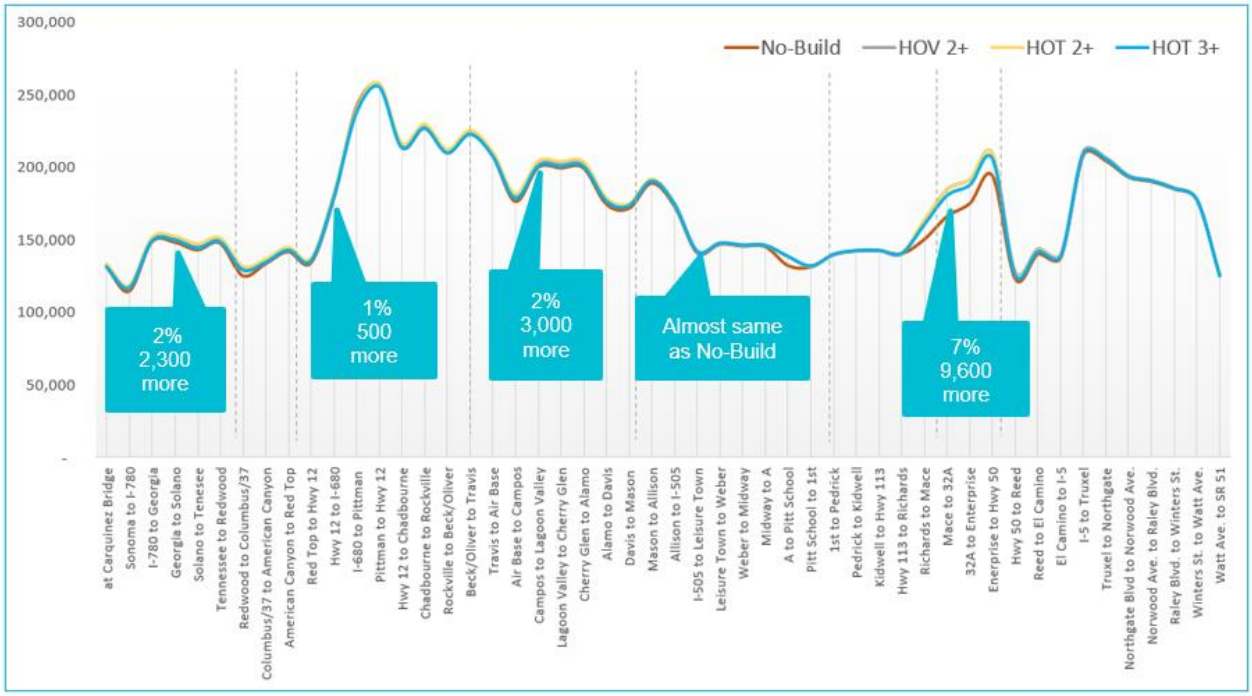
- Highway 12 to Air Base Road
- W. El Camino Avenue to Northgate Boulevard

These HOV and HOT project scenarios assume added mainline capacity to all other sections of the study area. Based on the model results, the highest growth is observed between SR 113 and US 50 (Segments 6 and 7). This section has 9,500 to 12,700 more vehicles under the managed lane build scenarios along I-80 CMCP study area at the daily level, compared to 2040 No Build scenario, which represents about a 7% increase in traffic throughput.

Next highest growth is observed between Air Base Parkway and I-505 (Segment 4). This is consistent for all three managed lanes alternatives. This section has 3,000 to 3,600 more vehicles under the three Build scenarios at the daily level, compared to the 2040 No Build scenario, which is about a 2% increase in traffic. For alternatives 1 (HOV 2+) and 2 (HOT 2+), this section has 3,000 to 4,300 more vehicles at daily level in both directions, compared to 2040 No Build scenario, which is about a 2% increase in traffic. For alternative 3 (HOT 3+), where only HOV 3+ was free, the increase in total daily traffic is only 1% in this corridor.

Figure 5.13 shows the comparison of daily traffic along the I-80 corridor for all three managed lane alternatives as compared to the 2040 No-Build alternative.

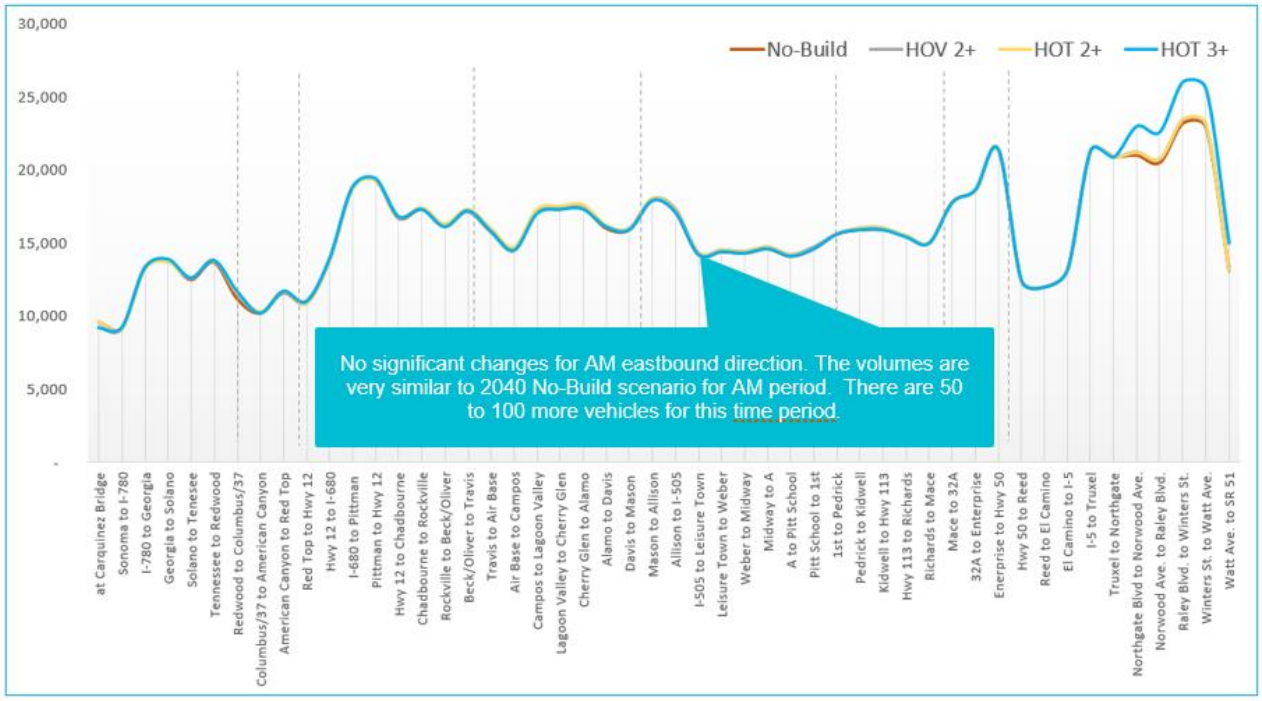
West of Red Top Road (Segment 1 and 2) and east of US 50 (Segment 9), the I-80 CMCP study area sections carry 2,000 to 3,000 more vehicles at the daily level in both directions under the HOV/HOT Build scenarios as compared to the No Build scenario which is about a 2% increase in traffic.



Source: SNABM and SACSIM19 models

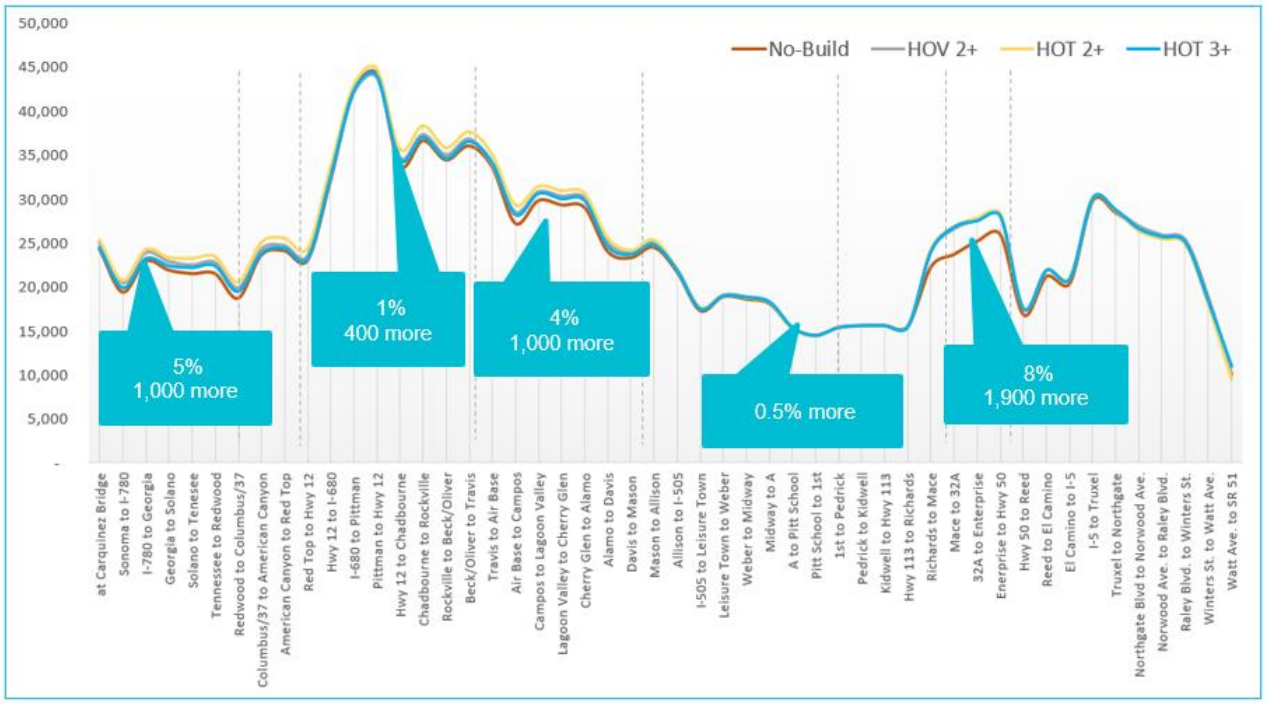
FIGURE 5.13 | FUTURE (2040) DAILY TRAFFIC ON I-80 BY SCENARIO (BOTH DIRECTIONS)

The following sections show the peak period level observations from the model for the HOV and HOT alternatives. For this corridor the A.M. peak period flow is in the westbound direction and the P.M. peak period flow is in the eastbound direction. **Figure 5.14** and **Figure 5.15** show A.M. peak period traffic comparison for eastbound and westbound direction, respectively. **Figure 5.16** and **Figure 5.17** show P.M. peak period traffic comparison for eastbound and westbound direction, respectively.



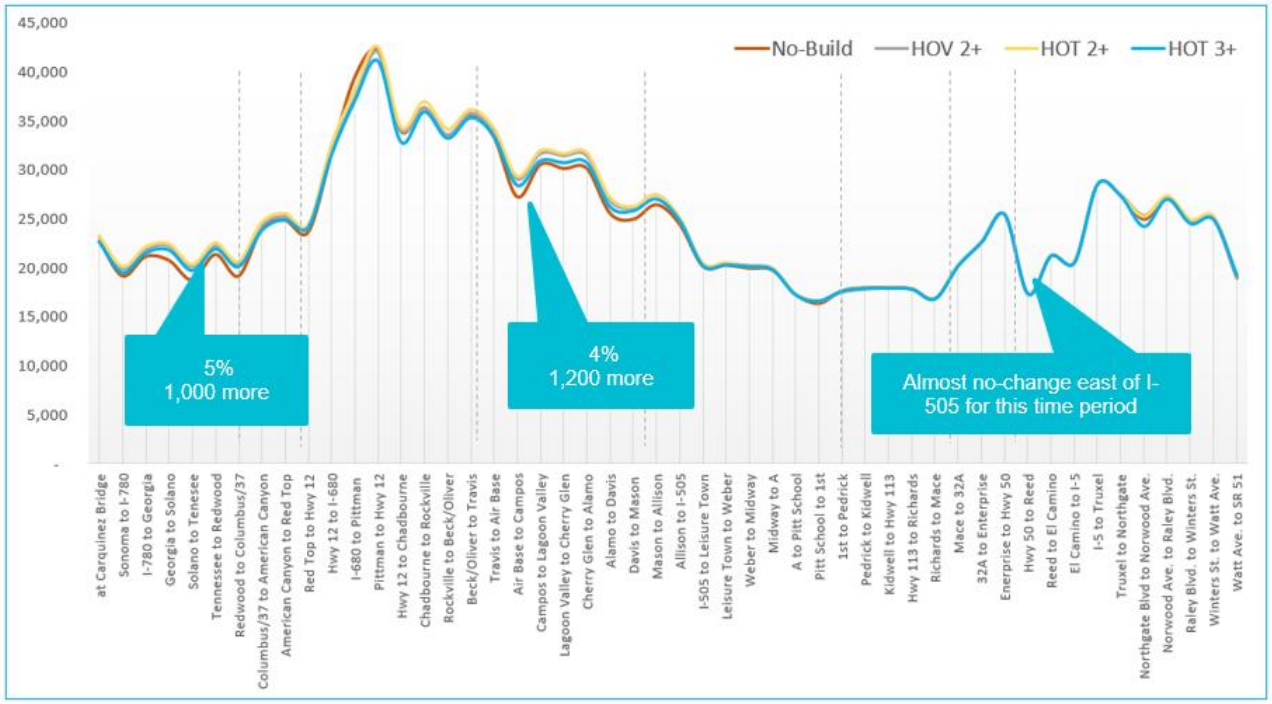
Source: SNABM and SACSIM19 models

FIGURE 5.14 | FUTURE (2040) A.M. PEAK PERIOD EASTBOUND TRAFFIC ON I-80 BY SCENARIO



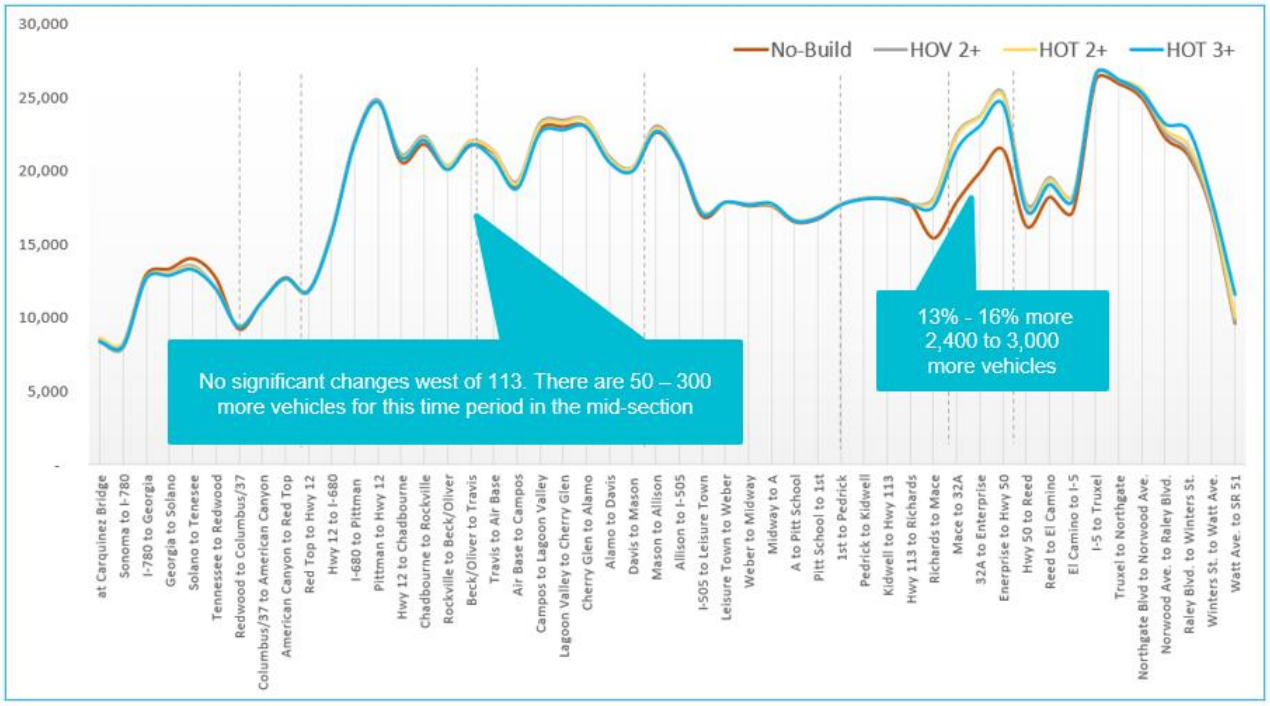
Source: SNABM and SACSIM19 models

FIGURE 5.15 | FUTURE (2040) A.M. PEAK PERIOD WESTBOUND TRAFFIC ON I-80 BY SCENARIO



Source: SNABM and SACSIM19 models

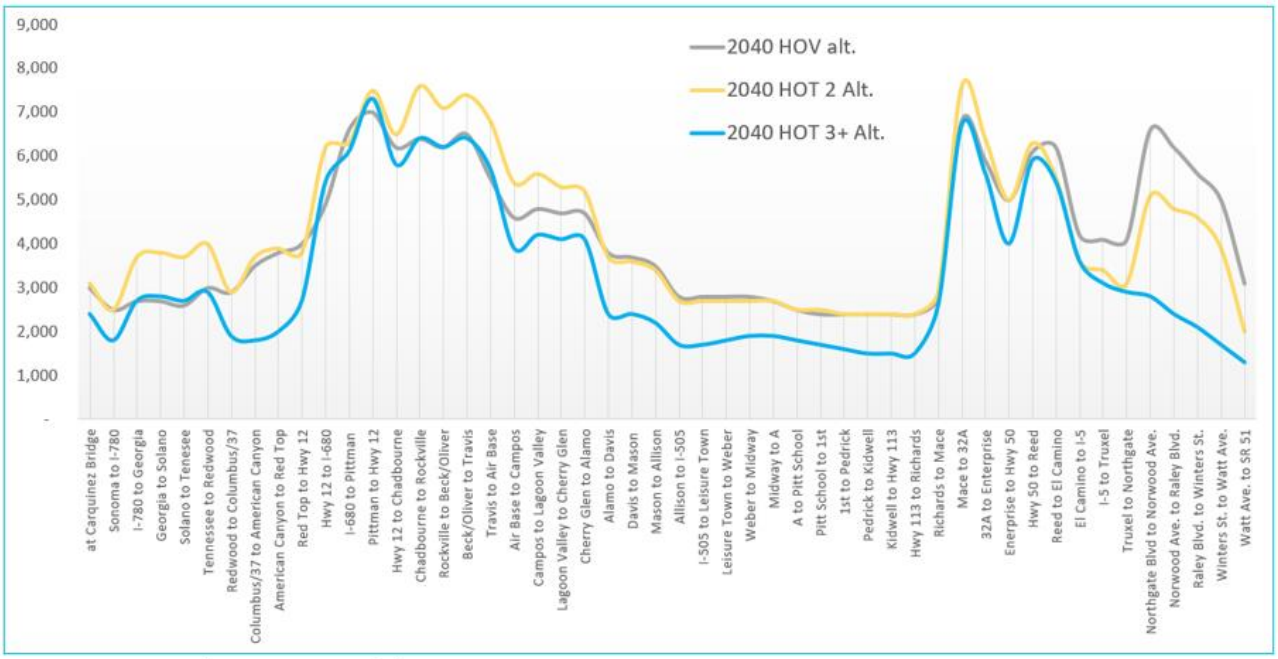
FIGURE 5.16 | FUTURE (2040) P.M. PEAK PERIOD EASTBOUND TRAFFIC ON I-80 BY SCENARIO



Source: SNABM and SACSIM19 models

FIGURE 5.17 | FUTURE (2040) P.M. PEAK PERIOD WESTBOUND TRAFFIC ON I-80 BY SCENARIO

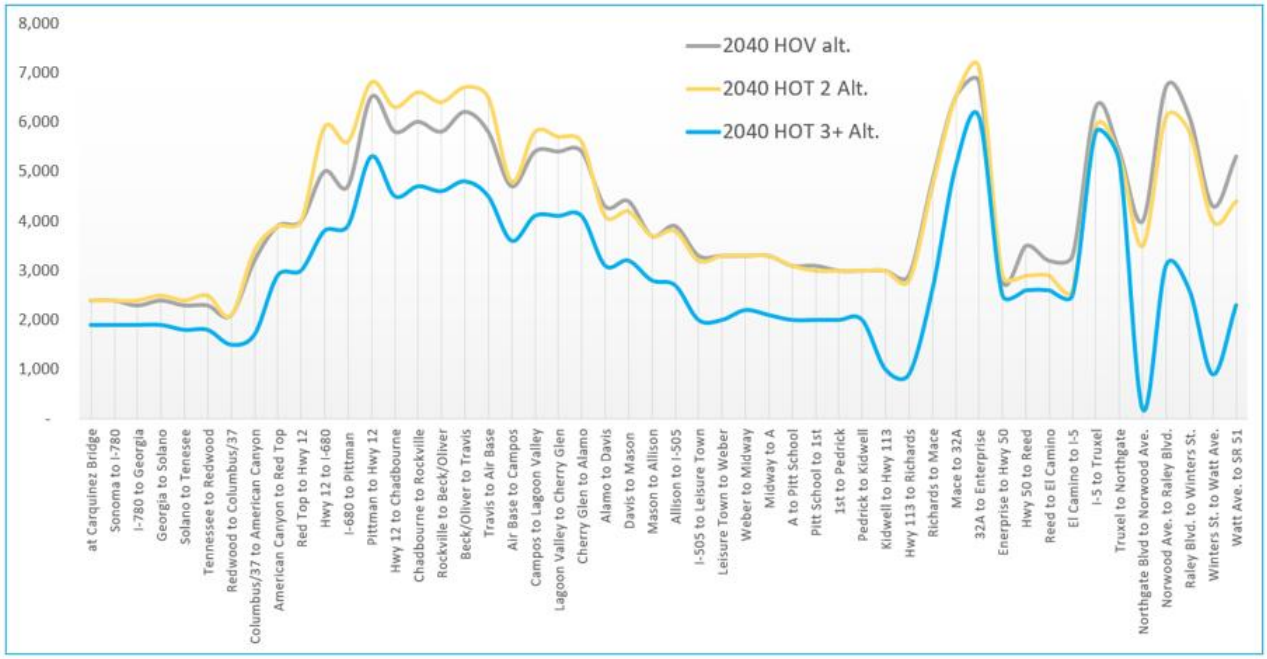
The assumed future managed lanes are shown to carry from 10,000 to 50,000 vehicles at the daily level in both directions combined within the I-80 CMCP study area. During peak periods, the assumed future managed lanes are shown to carry from 2,000 to 7,000 vehicles in peak direction within the study area. These represent the four-hour model time periods. **Figure 5.18** and **Figure 5.19** show A.M. westbound and P.M. eastbound managed lane volumes, respectively. A.M. westbound and P.M. eastbound represent the peak direction of managed lane volumes.



Source: SNABM and SACSIM19 models

FIGURE 5.18 | FUTURE (2040) A.M. WESTBOUND MANAGED LANE I-80 TRAFFIC BY SCENARIO

During P.M. peak period, the sections from Red Top Road to Air Base (Segment 3) and from the US 50/I-80 split to W. El Camino Avenue (Segment 7) carries the most traffic in the assumed future managed lanes, in the range of 6,000 to 7,000 vehicles in eastbound direction (see **Figure 5.19**). The level of traffic projected in the managed lanes is very similar for HOV and HOT 2+ alternatives.



Source: SNABM and SACSIM19 models

FIGURE 5.19 | FUTURE (2040) P.M. EASTBOUND MANAGED LANE I-80 TRAFFIC BY SCENARIO

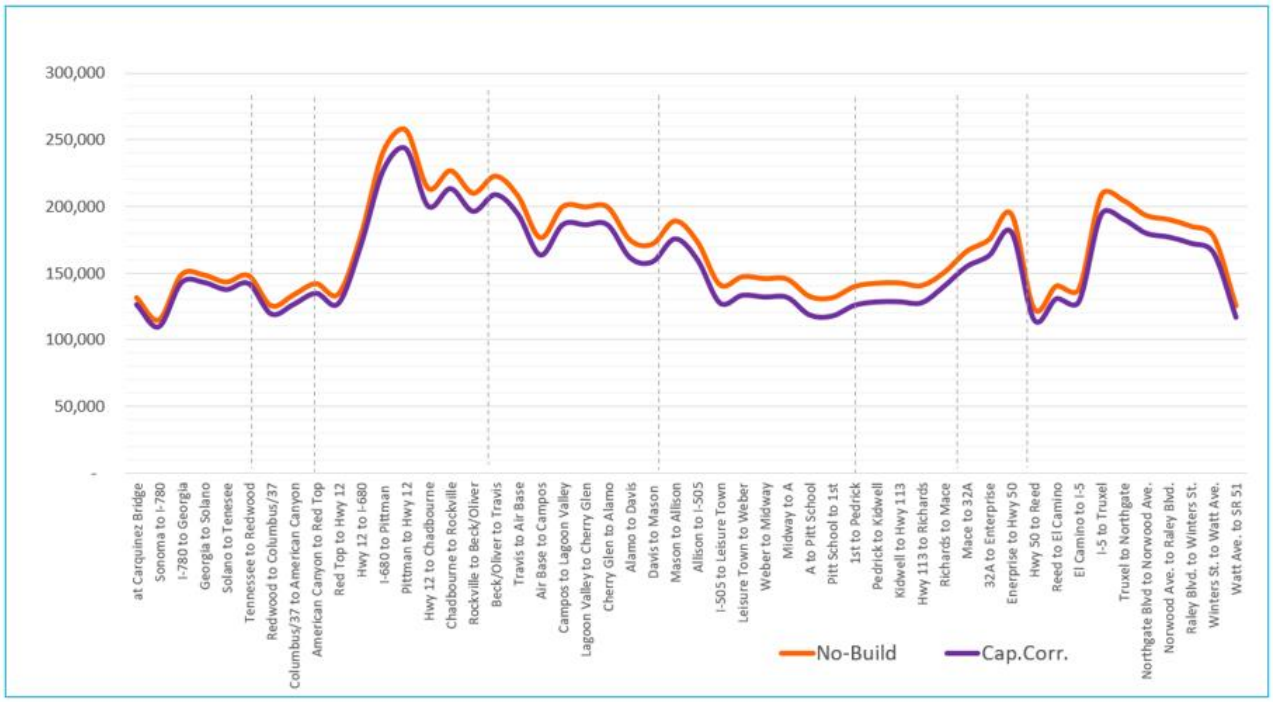
There is a slight drop in projected traffic demand in managed lanes for HOT 3+ alternative, which is due to the requirement for HOV 2 to pay to use the lanes under this scenario, which deters some users from taking these lanes. The section between Northgate Boulevard and SR 51 (Segment 8) has less volume in HOT 3+ scenario compared to other managed lane scenarios during both A.M. and P.M. peak periods. The toll paying traffic in this section is projected to shift to general purpose lane due to available capacity.

Note that in the A.M. eastbound and P.M. westbound directions (which are the off-peak directions of flow) the managed lanes are shown to carry far fewer vehicles, thus figures/charts are not provided for these directions and time periods. This lower demand is due to the reduced incentive for drivers to use the managed lanes in the off-peak directions, which have less congestion and lower delay, thus lower propensity for drivers to use the managed lanes.

Capitol Corridor Improvement Scenario Comparison

The Capitol Corridor Improvement alternative, which accounts for the assumed Capitol Corridor project enhancements, has a significant effect on the I-80 corridor traffic according to Capitol Corridor I-80 Modeling memorandum prepared by STEER dated November 8, 2021 (see **Appendix IV**). Without Capitol Corridor improvement project(s) the forecasted ridership is approximately 2.5 million in 2040. With Capitol Corridor project(s) the corridor is forecasted to have a ridership of 7.3 million, which is an additional 4.8 million riders per year.

As shown in **Figure 5.20,** traffic on I-80 corridor is reduced in the range of 4% to 10% due to a shift in trips to the parallel transit option along the Capitol Corridor, with improvements. Based on the modeling projections, there are 5,000 to 14,000 less vehicles per day on the I-80 corridor under this Build alternative. This alternative also is projected to reduce traffic demand by about 500 vehicles during the peak period hours.

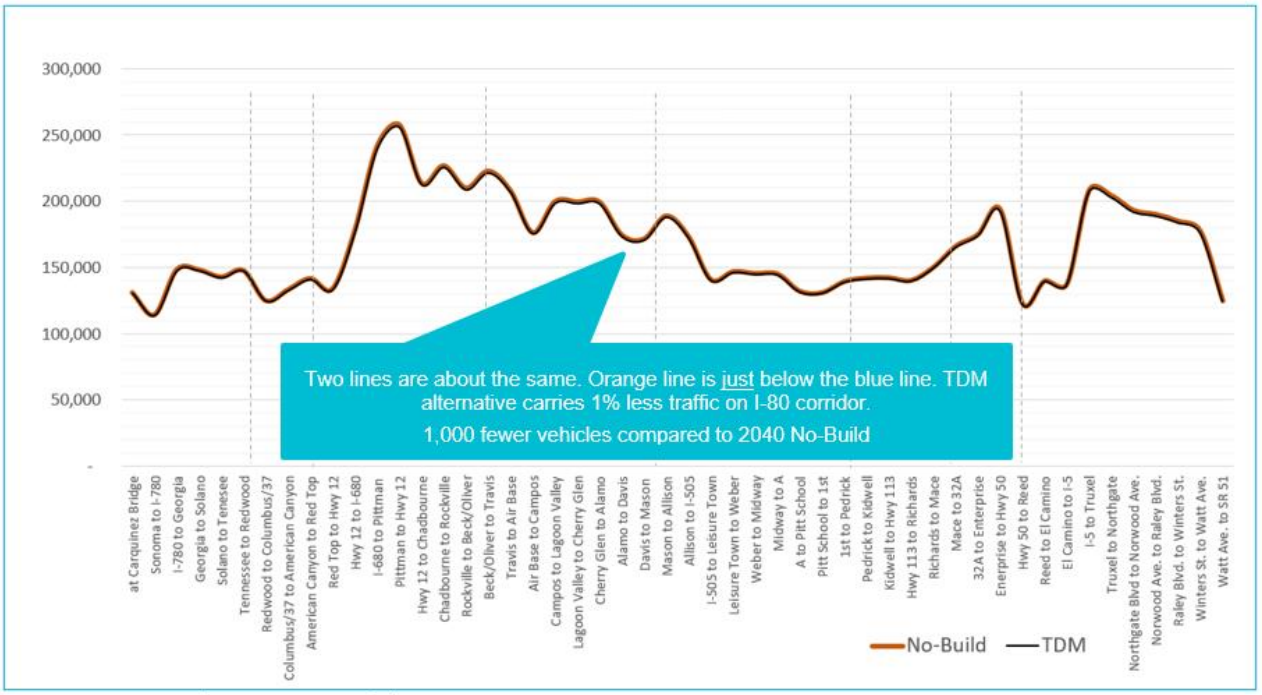


Source: SNABM and SACSIM19 models

FIGURE 5.20 | FUTURE (2040) CAPITOL CORRIDOR IMPROVEMENT SCENARIO DAILY TRAFFIC (BOTH DIRECTIONS)

TDM/Active Transportation Enhancement Scenario Comparison

The TDM/Active Transportation Enhancement scenario assesses the changes resulting from assumed changes in travel behavior due to TDM programs as well as future implementation of active transportation facilities and shift of some trips to active transportation. The TDM alternative modeling results indicate about one percent less traffic demand as compared to 2040 No Build alternative along the I-80 CMCP study area. **Figure 5.21** shows daily traffic demand on I-80 for the No Build and TDM alternative. This alternative accounts for assumed increases in work at home and shifting to other non-auto modes (besides transit such as walk or bike for shorter trips or due to relocation). Under this alternative, about 1,000 fewer vehicle trips would occur on I-80 at the daily level which will be equivalent to about 100 fewer vehicles during the peak hours.



Source: SNABM and SACSIM19 models

FIGURE 5.21 | FUTURE (2040) DAILY TRAFFIC ON I-80 TRAVEL DEMAND MANAGEMENT / ACTIVE TRANSPORTATION ENHANCEMENTS SCENARIO (BOTH DIRECTIONS)

5.6.2 | US 50 Future Build Scenarios Volumes

Figure 5.22 shows future volumes under the five different alternatives along US 50. All three managed lanes alternatives are projected to carry more traffic volume along the freeway corridor (General Purpose and Managed Lanes together) than the future No Build scenario. Based on the model results, the highest growth is observed between I-80 and Harbor Boulevard. This section has 7,900 to 10,000 more vehicles under the Build scenarios along US 50 at the daily level, compared to 2040 No Build scenario, which represents about a 4% increase in traffic throughput.

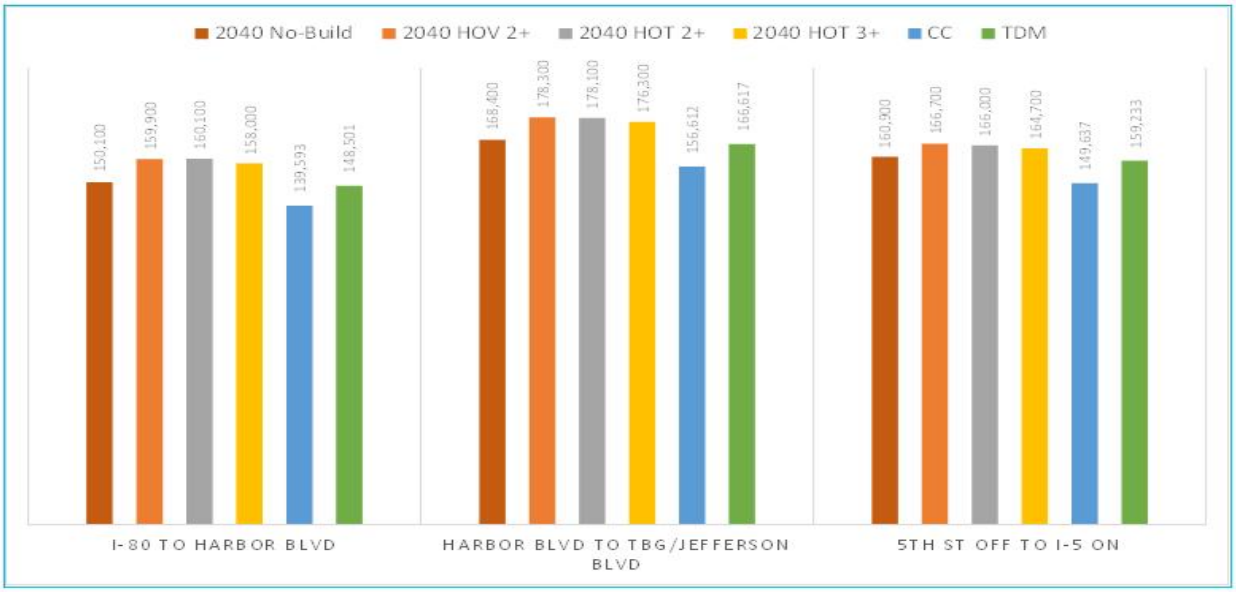


FIGURE 5.22 | FUTURE (2040) DAILY TRAFFIC ON US 50 UNDER THE FUTURE ALTERNATIVES (BOTH DIRECTIONS)

5.7 | 2040 Future Build Scenario Vehicle Occupancy

Table 5.3 shows vehicle occupancy by segment for each scenario. Vehicle occupancy data is for the entire freeway segment including the general purpose and managed lanes. Overall, vehicle occupancy for a segment is similar across different alternatives. The vehicle occupancy data is used to calculate person throughput. The person throughput pattern across alternatives will be similar to volume patterns.

TABLE 5.3 | VEHICLE OCCUPANCY BY SEGMENT BY ALTERNATIVE

Occupancy	Existing	No Build (Baseline)	Scenario 1 (HOV 2+)	Scenario 2 (HOT 2+)	Scenario 3 (HOT 3+)	Scenario 4 (CC)	Scenario 5 (TDM)
Segment 1	1.31	1.31	1.32	1.28	1.28	1.32	1.31
Segment 2	1.31	1.34	1.34	1.34	1.34	1.35	1.34
Segment 3	1.31	1.35	1.35	1.34	1.35	1.36	1.35
Segment 4	1.33	1.35	1.36	1.35	1.35	1.37	1.37
Segment 5	1.34	1.37	1.37	1.37	1.37	1.39	1.37
Segment 6	1.33	1.34	1.34	1.34	1.34	1.34	1.34
Segment 7	1.31	1.31	1.32	1.32	1.33	1.31	1.31
Segment 8	1.33	1.31	1.31	1.34	1.35	1.31	1.31
Segment 9	1.31	1.32	1.33	1.34	1.34	1.32	1.32

5.8 | 2040 Future Build Scenario VMT, VHT, and VHD

5.8.1 | Corridor-wide VMT/VHT/VHD Comparison of Scenarios

Daily level VMT, VHT, and VHD are compared in this section for the I-80 CMCP study area. As previously noted, two models were used to obtain VMT, VHT and VHD data. The SNABM model was utilized to obtain data for freeway segment between the Carquinez Bridge and SR 113/City of Davis and for the eastern portion of I-80, data were obtained from the I-80/US 50 Managed Lanes project which used the SACSIM19 model.

Scenario 1 | HOV 2+

HOV 2+ scenario carries about the same number of vehicles or slightly more vehicles along the I-80 corridor. This alternative has 3% higher VMT within the entire I-80 corridor than 2040 No-Build. This alternative has fewer VHT and less delay as a result of the improvements. Within the study area there are about 9,100 fewer hours of travel which is 4% reduction in VHT. This alternative has about 14,200 fewer hours of delay compared to the No Build scenario, which is a 38% reduction in delay. **Table 5.4** shows VMT, VHT and VHD comparison between Build Scenario 1 and the No Build Scenario.

TABLE 5.4 | FUTURE (2040) HOV 2+ ALTERNATIVE VMT/VHT/VHD COMPARISON

HOV Alt. Comparison	VMT	VHT	VHD
2040 Baseline	11,878,600	224,100	37,700
2040 Scenario 1 [HOV alt.]	12,260,900	215,000	23,500
Num. Diff.	382,300	-9,100	-14,200
Percent Diff.	3.2%	-4.1%	-37.7%

Scenario 2 | HOT 2+

Similar to the HOV 2+ scenario, the HOT 2+ alternative also carries about the same number of vehicles or slightly more vehicles along I-80 within the study area. This alternative also has 3% higher VMT than 2040 No Build. This alternative has fewer VHT and less delay. Within the study area there are about 8,700 fewer hours of travel which is 3.9% reduction in VHT. This alternative has about 14,200 fewer hours of delay compared to the No Build scenario, which is a 38% reduction in delay. **Table 5.5** VMT, VHT and VHD comparison between Build Scenario 2 and the No Build Scenario

TABLE 5.5 | FUTURE (2040) HOT 2+ ALTERNATIVE VMT/VHT/VHD COMPARISON

HOT 2 Alt. Comparison	VMT	VHT	VHD
2040 Baseline	11,878,600	224,100	37,700
2040 Scenario 2 [HOT 2 alt.]	12,286,000	215,400	23,500
Num. Diff.	407,400	-8,700	-14,200
Percent Diff.	3.4%	-3.9%	-37.7%

Scenario 3 | HOT 3+

The HOT 3+ scenario carries slightly more vehicles on I-80 CMCP study area. This alternative has slightly higher VMT than 2040 No Build; 1.6% higher VMT increase. This alternative also has fewer VHT and less delay. Within the I-80 CMCP study area there are about 10,000 fewer hours of travel which is a 4.5% reduction in VHT. This alternative has about 12,200 fewer hours of delay compared to the No Build scenario, which is a 32% reduction in delay. **Table 5.6** shows VMT, VHT and VHD comparison between Build scenario 3 and the No Build scenario.

TABLE 5.6 | FUTURE (2040) HOT 3+ ALTERNATIVE VMT/VHT/VHD COMPARISON

HOT 3+ Alt. Comparison	VMT	VHT	VHD
2040 Baseline	11,878,600	224,100	37,700
2040 Scenario 3 [HOT 3+ alt.]	12,072,000	214,100	25,500
Num. Diff.	193,400	-10,000	-12,200
Percent Diff.	1.6%	-4.5%	-32.4%

Scenario 4 | Capitol Corridor Improvements

The Capitol Corridor Improvements scenario has fewer auto trips in the study area due to the shift in trips from automobile to transit mode. Accordingly, this alternative has lower VMT than 2040 No Build; 7.4% lower VMT. This alternative also has fewer VHT and less delay. Within the study area there are about 27,000 fewer hours of travel which is a 12% reduction in VHT. This alternative has about 11,600 fewer hours of delay compared to the No Build scenario, which is a 31% reduction in delay. **Table 5.7** shows VMT, VHT and VHD comparison between Build scenario 4 and No Build scenario.

TABLE 5.7 | FUTURE (2040) CAPITOL CORRIDOR IMPROVEMENTS ALTERNATIVE VMT/VHT/VHD COMPARISON

Capitol Corridor Alt. Comparison	VMT	VHT	VHD
2040 Baseline	11,878,600	224,100	37,700
2040 Scenario 4 [Capitol Corridor alt.]	10,997,500	197,100	26,100
Num. Diff.	-881,100	-27,000	-11,600
Percent Diff.	-7.4%	-12.0%	-30.8%

Scenario 5 | Travel Demand Management/Active Transportation Enhancement

The TDM alternative has fewer trips in the study area due to the TDM strategies which would shift trips from automobile to work at home as well as other modes such as walk and bike (for example as people relocate to live close to work). Due to this, this alternative has lower VMT than the 2040 No Build; about 1% lower VMT. This alternative also has fewer VHT and less delay. Within the study area there are about 1,100 fewer hours of travel which is less than 1% reduction in VHT. This alternative has about 1,500 fewer hours of delay compared to the No-Build scenario, which is a 4% reduction in delay. **Table 5.8** shows VMT, VHT and VHD comparison between Build scenario 5 and the No Build scenario.

TABLE 5.8 | FUTURE (2040) TRAVEL DEMAND MANAGEMENT ALTERNATIVE VMT/VHT/VHD COMPARISON

TDM Alternative Comparison	VMT	VHT	VHD
2040 Baseline	11,878,600	224,100	37,700
2040 Scenario 5 [Telework alt.]	11,804,000	223,000	36,200
Num. Diff.	-74,600	-1,100	-1,500
Percent Diff.	-0.6%	-0.5%	-4.0%

Table 5.9 shows daily VMT, VHT and VHD comparison between all scenarios.

TABLE 5.9 | DAILY VMT/VHT/VHD AVERAGE SPEED COMPARISON

Scenario	VMT	VHT	VHD	Average Speed	Difference VMT from Baseline	Difference VHT from Baseline	Difference Delay from Baseline	Difference Speed from Baseline
Existing	10,370,700	182,300	20,000	56.9	-	-	-	-
No Build (Baseline)	11,878,600	224,100	37,700	53.0	-	-	-	-
Scenario 1 (HOV 2+)	12,260,900	215,000	23,500	57.0	382,300	(9,100)	(14,200)	4.0
Scenario 2 (HOT 2+)	12,286,000	215,400	23,500	57.0	407,400	(8,700)	(14,200)	4.0
Scenario 3 (HOT 3+)	12,072,000	214,100	25,500	56.4	193,400	(10,000)	(12,200)	3.4
Scenario 4 (CC)	10,997,500	197,100	26,100	55.8	(881,100)	(27,000)	(11,600)	2.8
Scenario 5 (TDM)	11,804,000	223,000	36,200	52.9	(74,600)	(1,100)	(1,500)	-0.1

** Numbers are rounded to nearest thousand*

The Capitol Corridor Improvements (Scenario 4) has the lowest VMT in the future year, with 7.4% less VMT than the future No Build condition. Managed lane alternatives (Scenarios 1, 2, and 3) have higher VMT that future No Build scenario; however, all the build scenarios have less delay than the future No Build scenario. Average speeds are also shown to increase for all scenarios with the exception of the TDM alternative, which matches close to the No Build.

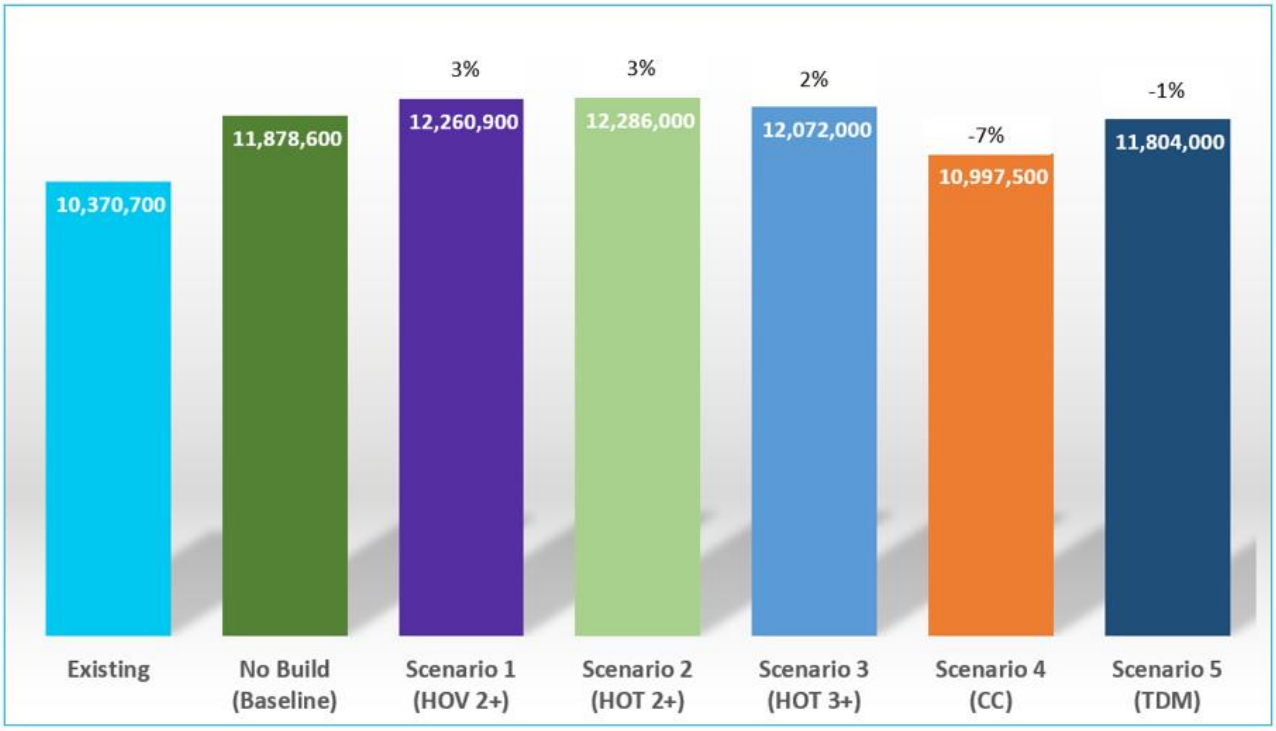
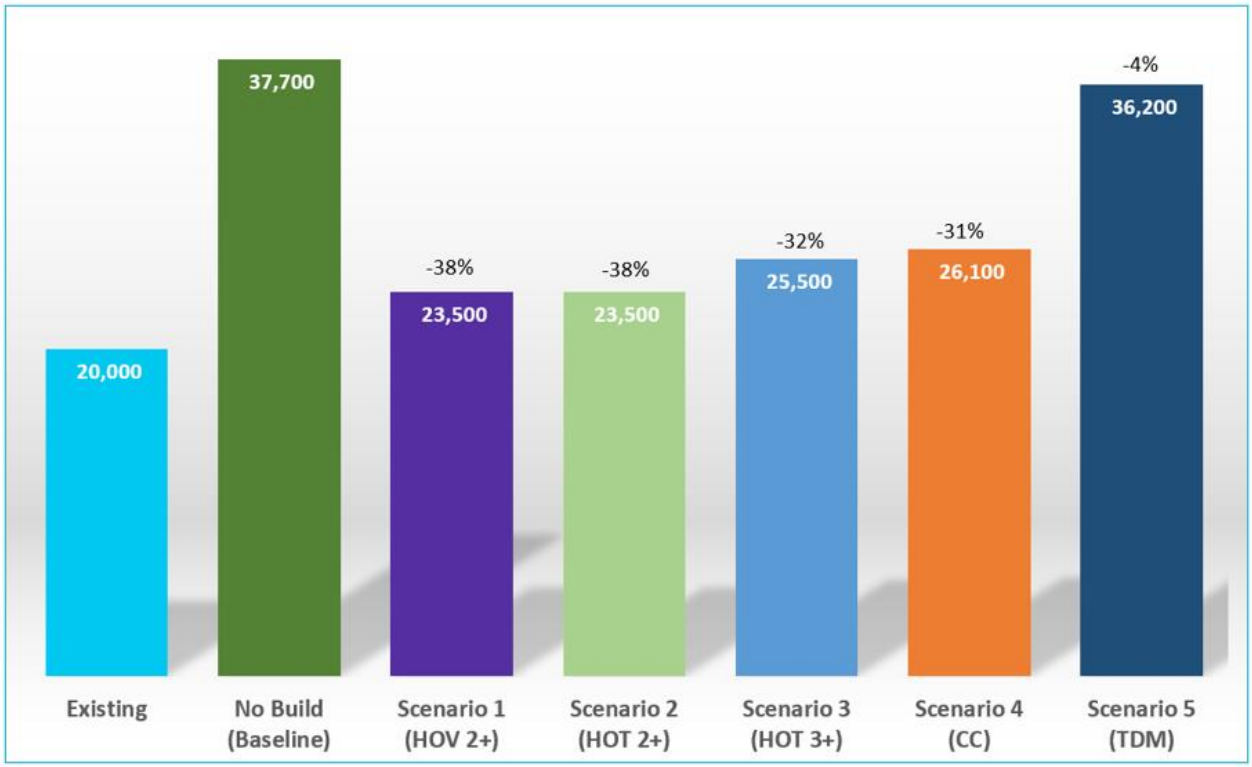


FIGURE 5.23 | VEHICLE MILES TRAVELED COMPARISON BY SCENARIO



** Numbers in Table 9 are presented as visuals in above bar charts*

FIGURE 5.24 | VEHICLE HOURS OF DELAY COMPARISON BY SCENARIO

5.8.2 | Segment-wise VMT/VHT/VHD Comparison of Scenarios

This section of the report compares the VMT, VHT, and VHD statistics by each of the study corridor segments, for all scenarios. **Table 5.10** and **Figure 5.25** show VMT by the I-80 CMCP corridor segments. Note that segments 5 and 6 have the highest VMT in comparison to other segments due to length of these segments.

TABLE 5.10 | SEGMENT-WISE VMT SCENARIO BY SEGMENT COMPARISON

VMT Existing		No Build	Scenario 1 (HOV 2+)	Scenario 2 (HOT 2+)	Scenario 3 (HOT 3+)	Scenario 4 (CC)	Scenario 5 (TDM)
Segment 1	599,253	707,754	720,294	727,412	714,154	673,703	703,323
Segment 2	644,114	784,513	790,052	797,427	785,308	740,415	779,499
Segment 3	1,265,284	1,590,933	1,600,456	1,613,637	1,592,651	1,497,606	1,583,578
Segment 4	1,415,368	1,718,748	1,745,161	1,753,694	1,728,043	1,588,330	1,712,551
Segment 5	1,841,808	2,110,063	2,109,565	2,109,321	2,108,598	1,889,628	2,108,208
Segment 6	2,134,113	2,273,815	2,480,485	2,486,624	2,445,911	2,109,562	2,251,077
Segment 7	455,042	510,007	551,380	553,984	540,110	473,166	504,907
Segment 8	1,469,104	1,593,641	1,620,302	1,602,208	1,525,546	1,478,522	1,577,705
Segment 9	546,638	589,089	643,255	641,681	631,649	546,536	583,199
I-80 Corridor	10,370,700	11,878,600	12,260,900	12,286,000	12,072,000	10,997,500	11,804,000

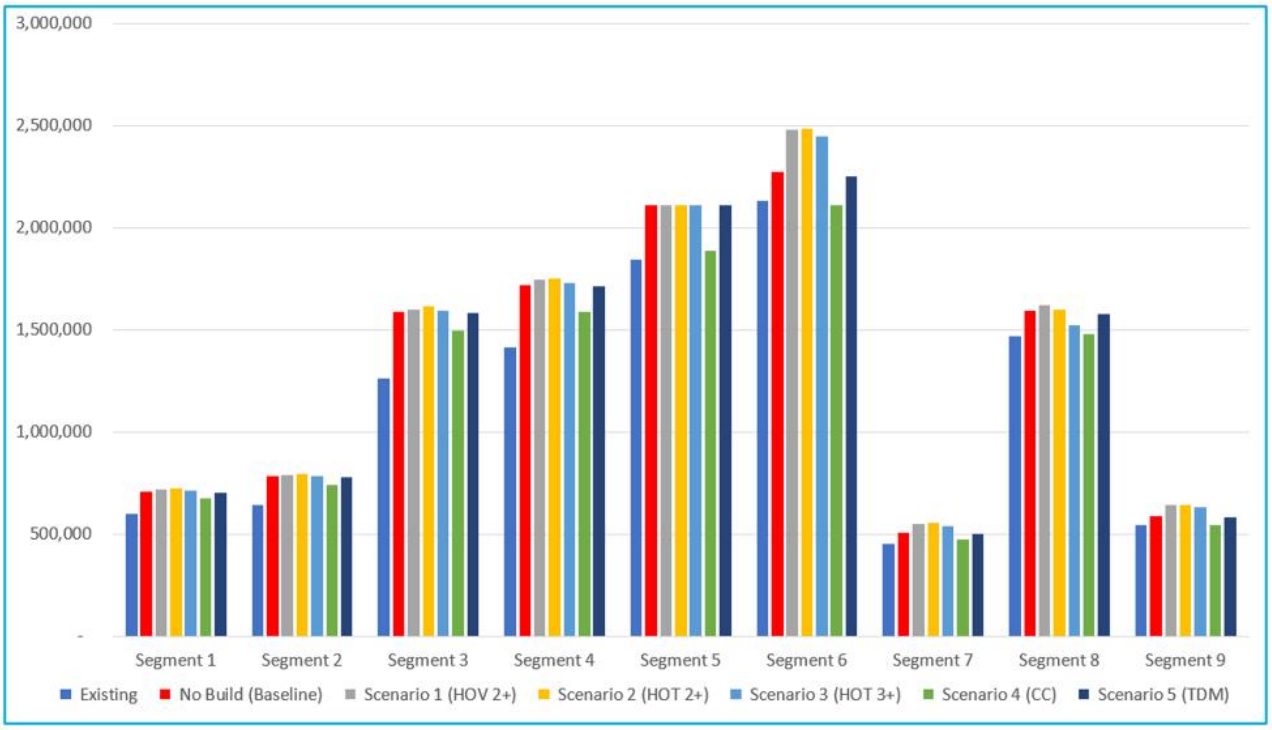


FIGURE 5.25 | VMT BY SEGMENT BY ALTERNATIVE

Table 5.11 and **Figure 5.26** show VHT by the I-80 corridor study segments. Note that segments 5 and 6 have the highest VHT in comparison to other segments and Segments 1, 7 and 9 have least VHT.

TABLE 5.11 | SEGMENT-WISE VHT BY SCENARIO

VHT	Existing	No Build (Baseline)	Scenario 1 (HOV 2+)	Scenario 2 (HOT 2+)	Scenario 3 (HOT 3+)	Scenario 4 (CC)	Scenario 5 (TDM)
Segment 1	9,739	12,171	11,895	12,019	11,750	11,362	12,021
Segment 2	10,166	12,989	12,534	12,707	12,599	12,051	12,847
Segment 3	20,935	29,097	29,326	29,930	29,320	26,663	28,767
Segment 4	23,149	31,896	29,147	29,366	29,184	28,179	31,604
Segment 5	29,259	35,425	33,445	33,430	33,866	30,533	35,377
Segment 6	44,827	52,830	48,393	47,971	48,345	45,534	52,758
Segment 7	7,768	8,824	9,282	9,292	9,192	7,606	8,812
Segment 8	25,942	28,507	28,900	28,701	28,056	24,570	28,468
Segment 9	10,473	12,332	12,120	11,961	11,822	10,629	12,315
I-80 Corridor	182,300	224,100	215,000	215,400	214,100	197,100	223,000

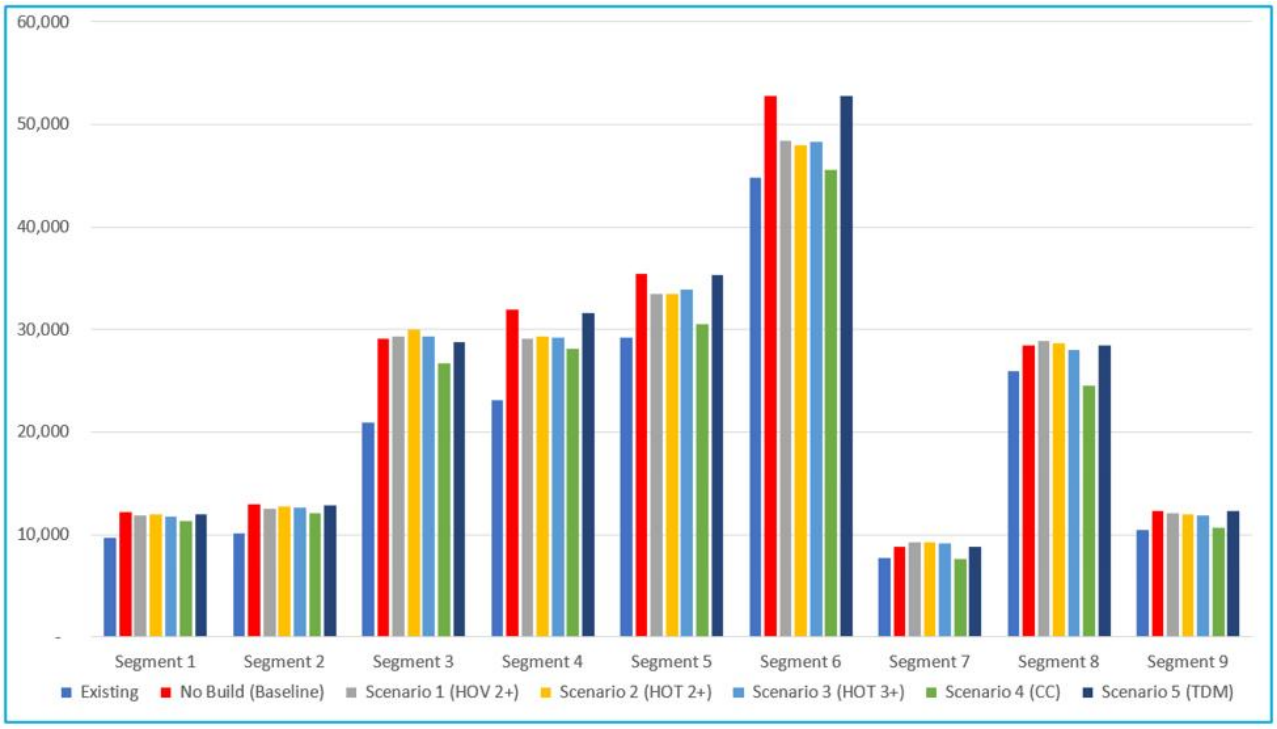


FIGURE 5.26 | VHT BY SEGMENT BY SCENARIO

Table 5.12 and **Figure 5.27** show VHD by I-80 corridor segment. Segment 6 has highest VHD in comparison to other segments and segments 2 and 7 has least VHD.

TABLE 5.12 | SEGMENT-WISE VHD BY SCENARIO

VHT	Existing	No Build (Baseline)	Scenario 1 (HOV 2+)	Scenario 2 (HOT 2+)	Scenario 3 (HOT 3+)	Scenario 4 (CC)	Scenario 5 (TDM)
Segment 1	520	1,282	814	828	763	997	1,201
Segment 2	253	885	366	428	505	634	821
Segment 3	1,435	4,396	4,569	4,989	4,707	3,442	4,187
Segment 4	1,343	5,129	2,195	2,294	2,502	3,512	4,941
Segment 5	913	2,761	939	935	1,369	1,351	2,742
Segment 6	11,046	16,834	9,347	8,824	9,797	11,677	16,142
Segment 7	517	704	580	548	644	488	675
Segment 8	2,676	3,279	3,254	3,337	3,892	2,274	3,144
Segment 9	1,271	2,417	1,484	1,343	1,346	1,677	2,318
I-80 Corridor	20,000	37,700	23,500	23,500	25,500	26,100	36,200

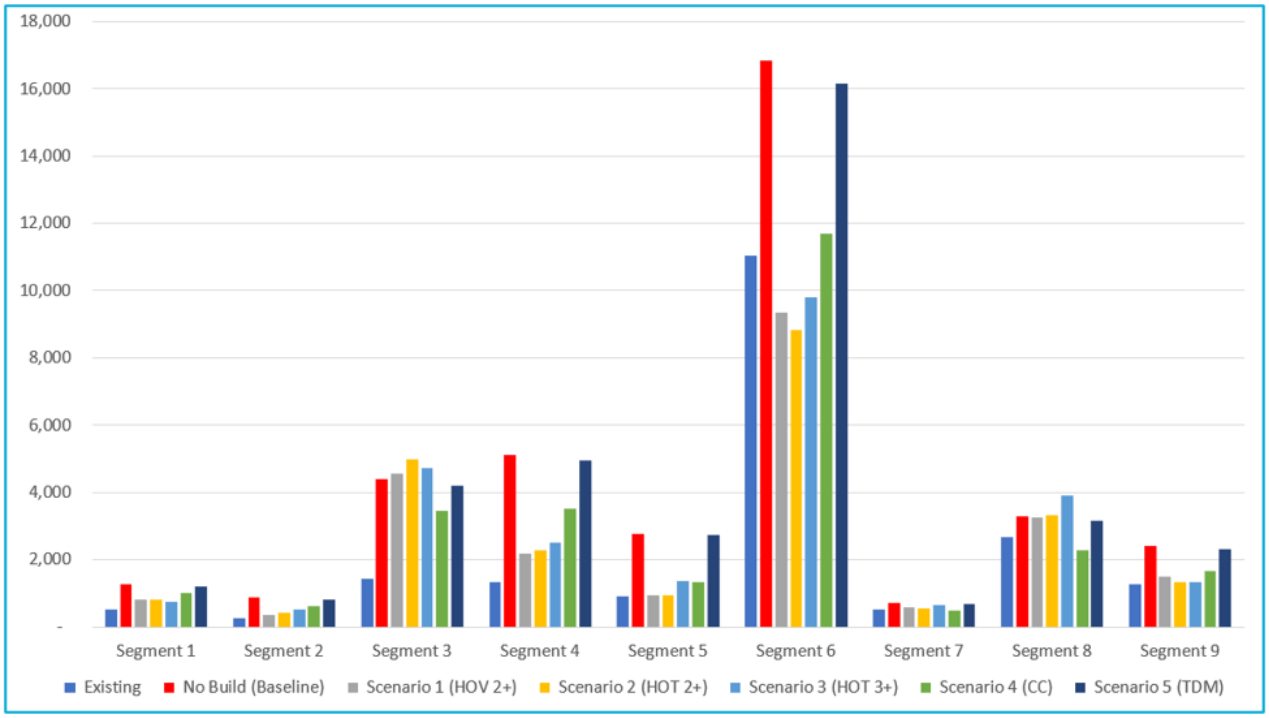


FIGURE 5.27 | VHD BY SEGMENT BY SCENARIO

5.9 | Benefit Cost Analysis

This section reports on the Benefit Cost Analysis (BCA) for the future Build scenarios including methodology, model data inputs, and results.

5.9.1 | Benefit Cost Analysis Methodology

The California Life-Cycle Benefit/Cost Analysis Corridor Model (Cal-B/C Corridor) Version v7.1 was utilized to conduct the BCA for the I-80 CMCP scenarios. Cal-B/C Corridor is a Microsoft Excel spreadsheet that provides economic benefit-cost analysis for a range of transportation projects.

Cal-B/C Corridor estimates user benefits in four main categories:

- Travel time savings due to faster travel speeds on highways, or faster or more frequent service on transit modes.
- Vehicle operating cost savings on highways due to lower costs from more efficient travel speeds or avoided vehicle operating and out-of-pocket costs when travelers switch from highways to transit.
- Safety benefits on highways due to safety improvements or for transit riders who switch from highways to a safer transit mode.
- Emissions benefits on highways due to travel at less polluting speeds or by reductions in VMT due to suppressed trips or mode shifts to transit.

5.9.2 | Benefit Cost Analysis Model Inputs and Assumptions

The following inputs were used for the Cal-B/C calculations:

- Cost Estimate – Project costs are estimated from available sources including the MTC RTP, SACOG MTP/SCS, and Caltrans for both Districts 3 and 4 projects. Cost estimates for each

scenario were calculated based on available information. No cost was assumed for demand management or programmatic improvements that could reduce travel demand.

- VMT and VHT – VMT and VHT for each scenario were obtained for A.M. and P.M. peak period from the microsimulation model.
- All other inputs were the same for all scenarios such as truck percentages, average vehicle occupancy, and safety data.

Estimated costs and assumptions used in Cal-B/C calculations can be found in the I-80 Corridor Modeling and Analysis Project Summary report (see **Appendix III).**

5.9.3 | Benefit Cost Analysis Results

Table 5.13 | Benefit Cost Ratio by CMCP Segments shows the benefit-cost ratios of the I-80 CMCP for each of the Build scenarios. Among the five scenarios, Scenario 4 (Capital Corridor Improvements) has the best (highest) benefit cost ratio. Scenario 4 has least cost among the scenarios and does provide more benefits due to model projected shift from single occupancy vehicle to transit. As shown, the Cal-B/C varies widely by segment, primarily based on the cost of the improvements.

TABLE 5.13 | BENEFIT COST RATIO BY CMCP SEGMENTS

	Scenario 1 (HOV 2+)	Scenario 2 (HOT 2+)	Scenario 3 (HOT 3+)	Scenario 4 (CC)	Scenario 5 (TDM)
Segment 1	0.08	-0.04	0.23	1.58	0.36
Segment 2	0.32	0.07	0.49	46.26	15.71
Segment 3	0.00	-0.08	-0.02	0.55	0.08
Segment 4	0.82	0.59	0.81	6.98	0.15
Segment 5	0.42	0.42	0.43	4.18	0.07
Segment 6	-0.29	-0.18	0.09	82.21	6.87
Segment 7	-1.52	-1.62	-1.15	2.19	0.55
Segment 8	-0.45	-0.36	1.06	3.90	39.63
Segment 9	-1.15	-1.00	-0.62	7.88	0.73
I-80 Corridor	**0.03**	**-0.02**	**0.22**	**3.05**	**0.27**

Note that Cal-B/C analyses include all fully funded RTP projects, financially constrained RTP projects that are not fully funded, and some selected unconstrained projects and SHOPP projects. These projects are included in all 5 scenarios and are not part of Future No Build. For example, Segment 3 includes the I-80/I-680/SR 12 Interchange project, which has an estimated cost of $380 million. The entire cost of this project is included in the analysis, even though the entire benefit of this project is not captured. The resulting analysis results capture only the portion of benefit along I-80, not along I-680 or SR 12 or any other parallel routes which may also benefit. This is one of the limitations of the Cal-B/C analysis. These results of Cal-B/C analyses should be used for comparing scenarios only, rather than ultimate project implementation decisions. To measure the benefit-cost analysis of a particular project a separate analysis would be required using model results to show the with and without performance metrics for each particular project.

Chapter 6 | Environmental / Sustainability / Climate Change

California has been on the forefront of climate change policy, planning, and research across the nation. With rising GHG, climate and extreme weather conditions continue to impact California's population and infrastructures. Caltrans recognizes that outside of its own efforts, there are regional efforts to mitigate the effects of climate change. Coordination with local governments and stakeholders is crucial to ensure that climate analyses and adaptations are developed in partnership. Regional coordination will be especially important to combat stressors like rising temperature, volatile precipitation levels, and an increase in wildfire severity. Majority of the information in this chapter comes from the Caltrans Climate Change Vulnerability Assessment Technical Report and Map. This report was produced to provide an in-depth overview on the potential implications of climate change to Caltrans assets, and how climate data can be applied in decision-making.

6.1 | Corridor Setting

Spanning three counties, the I-80 CMCP corridor lies at the intersection of numerous geographical and geological features that, in conjunction with variations in hydrology and climate, has resulted in the formation of unique ecological conditions. Urban areas occur throughout with the greatest concentration of development occurring along I-80, the main transportation artery that generally runs southwest to northeast.

About 20 percent of the unincorporated land along the corridor in Solano County is undeveloped open space, including marshlands and watershed, creeks, and other waterways that support wildlife habitat. Just over half of lands along the corridor are in agricultural use. Agricultural land supports very few native species and provides few foraging areas, nesting or den sites, or wildlife corridors.

In Yolo County, outside the cities and other developed portions, much of the region consists of annual grasslands that are dominated by non-native grasses and forbs. The regions agricultural lands consist of irrigated hayfields and croplands, which includes areas used for hay production and fallow farm fields. There are several small pockets of oak woodland that are also present along the corridor. Between Davis and West Sacramento lies the Yolo Bypass Wildlife Area. This roughly 16,770 acre, ecologically rich, protected area is managed by the California Department of Fish and Wildlife and consists of various natural resources including rice fields, grasslands, seasonal and permanent wetlands, and riparian woodland communities. The I-80 corridor in Sacramento County is largely urban in nature.

FIGURE 6.1 | I-80 YOLO CAUSEWAY PHOTO

6.2 | Environmental Factors

Environmental Considerations

The purpose of this environmental scan is to conduct a high-level identification of potential environmental factors that may require future detailed analysis in the project development process. This is a general qualitative evaluation of the environmental factors in the corridor for planning purposes to identify issues early that may significantly affect project cost and schedule prior to the project development process. Information presented here is not meant to represent all environmental issues that exist within the corridor vicinity. The major factors are given an impact probability rating of Low-Medium-High or a No or Yes depending on their presence in the corridor and shown in **Table 6.1**. Environmental considerations for project funding include mitigation and restoration costs, including protection of critical habitat and open space.

TABLE 6.1 | ENVIRONMENTAL FACTORS

Segment			1	2	3	4	5	6	7	8	9
Air Quality*	**CO_2**		A	A	A	A	A	A	A	A	A
	Lead		A	A	A	A	A	A	A	A	A
	NO_2		U	U	U	U	U	U	U	U	U
	Ozone		NA	NA	NA	NA	NA	NA	NA	NA	NA
	Particulate Matter	**2.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA
		10	U	U	U	U	U	U	NA	NA	NA
	SO2		A	A	A	A	A	U	U	U	U
Bay Conservation and Development Commission Jurisdiction			Yes	No	No	No	No	No	No	No	No

Segment	1	2	3	4	5	6	7	8	9
Climate Change/Sea Level Rise	Low	Low	Low	Low	Low	Low	Low	Low	Low
Cultural Resources	Low	Low	Low	Low	Low	Low	Low	Low	Med
Farm/Timberland	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Fish Passage	Low	Low	Low	Low	Low	High	Low	Low	Low
Floodplain	100 year	100 year	100 Year	100 Year	100 Year	100 Year	100 Year	100 Year	100 Year
Habitat Connectivity[45]	Low	High	Med	Low	Low	Low	Med	Low	Low
Hazardous Materials	Low	Low	Med	Low	Low	Low	Low	Low	Low
Naturally Occurring Asbestos	Low	Low	Low	Low	Low	Low	Low	Low	Low
Visual Aesthetics	Low	Low	Low	Low	Low	Low	Low	Low	Low
Seismic	Low	Low	Med	Med	Low	Low	Low	Low	Low
Section 4(f) Land	Low	Med	High	High	Low	Low	High	Med	Low
Special Status Species	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Waters and Wetlands	High	Low	High	Low	Low	Low	Med	Low	Low

A=Attainment, NA=Non-Attainment, U=Unclassified

*Source: Environmental Protection Agency (EPA), National Ambient Air Quality Standards (NAAQS) Data

Air Quality

There are three Air Quality Management Districts (AQMD) covering the I-80 CMCP corridor. The California Legislature created the Bay Area Air Quality Management District (BAAQMD) in 1955, as the first regional air pollution control agency in the country. BAAQMD is tasked with regulating stationary sources of air pollution in the nine-county Bay Area, except for northern parts of Sonoma and Solano counties which fall under the jurisdiction of the Yolo-Solano County Air Quality Management District (YSCAQMD). YSCAQMD was created in 1971 by a joint-powers agreement between the Yolo and Solano County Boards of Supervisors. The Sacramento Metropolitan AQMD, created in 1959 by the Sacramento Board of Supervisors, monitors air quality for the Sacramento Valley basin east of Yolo County. Each AQMD is governed by a Board of Directors composed of locally elected officials from each of the represented counties, with the number of board members proportionate to population. Projects need to be consistent with the air quality conformity analysis performed for the current RTPs and Regional Transportation Improvement Program.

Air quality conformity is determined by the US EPA which promulgates existing National Ambient Air Quality Standards (NAAQS) for each criteria air pollutant based on state monitoring and modeling of each pollutant. NAAQS are applied to determine if an AQMD is in conformity. If the air quality criteria pollutant meets or exceeds the NAAQS, the area is in attainment; otherwise, the area is in non-attainment. If EPA cannot make a determination, the area is designated “Unclassified.”

Farm/Timberland

Prime farmland has the best combination of physical and chemical composition to sustain long-term agricultural production. This agricultural land has high soil quality, desirable growing season, and ideal water supply to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date to receive such a designation. Prime farmland is in Suisun Valley north of Fairfield (Segment 3), and in the unincorporated areas of Solano County (Segments 4 and 5). Agriculture is the primary business in Yolo County. Ninety-two percent of the land surface of Yolo County is off-limits to residential, commercial, and industrial development uses. Sixty-seven percent of the unincorporated area of the county is protected under

[45] Essential Connectivity Layer, https://map.dfg.ca.gov/bios/

Williamson Act contracts to provide further long-term protection of these lands[46] (Segments 9, 10, and 11).

Habitat and Biological Resources

The San Francisco Bay Area and Sacramento Valley region, which includes Solano, Yolo, and Sacramento counties, has been characterized as a biodiversity hotspot at both global and national levels since there are inland, saltwater, freshwater habitats, and vast watersheds feeding into the Sacramento River and the Delta. This geographical area is known as the California Floristic Province, or a biodiversity hotspot containing species and plant life that cannot be found elsewhere in the world. The corridor area is home to a number of threatened or endangered species, such as the Swainson's hawk, burrowing owl, giant garter snake, and California red-legged frog.

The Suisun Marsh is located in southern Solano County and is bordered by I-680 to the west and on the east by the Sacramento-San Joaquin Delta. It is a critical part of the San Francisco Bay-Delta estuary ecosystem and encompasses more than ten percent of California's remaining natural wetlands, serving as resting and feeding ground for thousands of waterfowl migrating on the Pacific Flyway. It also supports 80 percent of the State's commercial salmon fisheries by providing important tidal rearing areas for juvenile fish and provides critical protection of the drinking water for 22 million people by preventing saltwater intrusion into the Delta. Suisun Marsh is within the jurisdiction of the Bay Conservation and Development Commission.

The Sacramento Valley region, which includes Sacramento and Yolo counties, has been characterized as a biodiversity hotspot at both global and national scales since it includes inland, saltwater, and freshwater habitats and vast watersheds feeding the Sacramento River and the Delta. Myers et. al (2000) classifies this geographical area as the California Floristic Province, of which there are only three other areas as biodiverse as it is in North America because of its assortment of flora, fauna, and habitat. The structure, composition, and functionality of ecosystems in the area are home to a number of sensitive species, such as the Swainson's Hawk, Burrowing Owl, Giant Garter Snake, and California Red-Legged Frog.

Stretching along the bottom of the valley floor with elevations ranging from about 15 to 90 feet above sea level, habitats along the I-80 corridor are different depending on whether you are in a developed region. Within the highly developed areas of the major cities, including the greater Sacramento area and Davis, habitats would mostly be classified as either urban with ornamental trees and other landscaped planting, or barren where areas naturally or artificially contain less than 2 percent herbaceous vegetation cover or less than 10 percent tree or shrub cover. Outside the cities and other developed portions, much of the region consists of annual grasslands that are dominated by non-native grasses and forbs, or irrigated hayfield and cropland, which includes areas used for hay production and fallow farm fields. Small pockets of oak woodland are also present.

This stretch of I-80 covers the Lower American, Upper Coon-Upper Auburn, and Lower Sacramento watersheds, in addition to a small portion of the Upper Putah watershed at the Yolo/Solano county line. Virtually all watercourses, save some maintained canal systems for agricultural irrigation, contain extensive riparian vegetative communities in areas that interface between land and the river stream system. This is especially true for the major rivers such as the Sacramento River, Prospect Slough, Putah Creek, and Arcade Creek, including their larger floodplains. Because these larger systems are receiving

[46] https://www.yolocounty.org/home/showpublisheddocument/14465/635289380535200000

all the waters and nutrients originating from the higher areas outside the valley, these areas provide vast amounts of food, water, migration, and dispersal corridors, in addition to escape, nesting, and roosting habitat for numerous wildlife species while providing shade, sediment, nutrient or chemical regulation, and stream bank stability. These areas are also a source of input for large woody debris or organic matter to the channel, which are necessary habitat elements for fish and other aquatic species. Due to the flat topography and local relief of the region, wetlands are present in areas where water persists long enough to create anaerobic conditions. Wetlands provide additional habitat benefits to wildlife as well as their water detention and water recharge properties. A special kind of wetland, vernal pools, are depressions in areas where a hard, underground layer prevents rainwater from draining downward into the subsoils. These areas support plant and animals that a specifically adapted to vernal pool ecology.

There are several wildlife species that reside throughout this area of I-80 corridor including threatened and endangered, or otherwise regulated species. Major species include but are not limited to: Valley Elderberry Longhorn Beetle, Giant Garter Snake, Swainson's Hawk, Tricolored Blackbird, multiple vernal pool and rare plant species, and anadromous fish within the major rivers. Notably, the Yolo Causeway bridge contains one of the largest maternal colonies of Mexican free-tailed bats in the state of California and is well known to the residences and non-governmental agencies in the region. The bridge also provides ample habitat for mud-nesting birds like swallows.

Historic/Cultural Resources

The National Register of Historic Places includes properties located within and along the I-80 corridor. Native American archaeological sites are found in rural settings where homesteads, ranches, or farms were once present in the corridor. Architecturally significant properties located within the corridor will most likely be associated with the agricultural history of the area. State or locally listed historic properties are located in the general vicinity of the corridor as well. Impacts to these resources would need to be further studied during project development based on project location and scope.

Parks/Open Space

The US Code 49 §303[47] 4(f) sets federal policy to preserve the natural beauty of open space and historic areas. Resources include publicly owned parks, recreation areas, wildlife or waterfowl refuges, and historic sites. Caltrans Environmental staff will determine the need for a Section 4(f) evaluation based on a specific project potential to impact 4(f) resources located in a given study area. Mitigation for impacts will be developed where appropriate in corridor specific areas. Where specific projects for the I-80 CMCP do not involve new ROW acquisition, potential impacts to 4(f) resources could result due to the proximity of project related construction the Yolo Bypass since these 4(f) resources are directly adjacent to the I-80 corridor. The Fairfield Linear Park in Fairfield, Lagoon Valley Hills Park and Pena Adobe Historical Site in Vacaville and Peytonia Slough Ecological Reserve in unincorporated Solano County represent examples of land potentially protected by Section 4(f) in Solano County. In south Sacramento, downtown Sacramento, and Natomas, more City and County Parks are located along the I-80 corridor.

Special Status Species

"Special Status Species" is a universal term used in the scientific community for species that are considered sufficiently rare that they require special consideration and/or protection and should be, or have been, listed as rare, threatened, or endangered by the Federal and/or State governments.

[47] https://www.law.cornell.edu/uscode/text/49/303

Special Status Species occur along the I-80 corridor; the most abundant animal species include, but are not limited to, giant garter snake (*Thamnophis gigas*), song sparrow (Modesto population) (*Melospiza melodia*), Western, yellow-billed cuckoo (*Coccyzus americanus*), Swainson's hawk (*Buteo swainsoni*), burrowing owl (*Athene cunicularia*), tricolored blackbird (*Agelaius tricolor*), and a rare population of purple martin (*Progne subis*) located near downtown Sacramento. The I-80 corridor crosses the Sacramento River which is habitat for Central Valley steelhead (*Oncorhynchus mykiss irideus*), longfin smelt (*Spirinchus thaleichthys*), Sacramento splittail (*Pogonichthys macrolepidotus*), Central Valley spring-run chinook salmon (*Oncorhynchus Tshawytscha pop. 11*), and Sacramento winter-run chinook salmon (*Oncorhynchus Tshawytscha pop. 7*), which are all special status species.

Seismic

The area surrounding the corridor is seismically active. During a seismic event there could be liquefaction in some locations. The Green Valley Fault, a branch of the slip-strike San Andreas fault system, crosses the I-80 corridor just west of Fairfield in Segment 3, in a northwest to southeast direction beginning in Foss Valley in Napa County and ending in unincorporated Contra Costa County at the Concord Fault. The Cordelia Fault, a sibling of the Green Valley Fault, also crosses the corridor in Segment 3 at Cordelia Junction in a northwest to southeast direction originating at the Sonoma Volcanic area north of Fairfield to the Cordelia Slough in the Grizzly Island Wildlife Area. Lastly, the Vaca Fault is the northerly extension of the Pittsburg-Kirby Hills Fault found in Contra Costa County. It crosses the corridor in Segment 4 just west and through the center of Vacaville in the same northwest to southeast direction beginning in the Vaca Mountains northwest of Vacaville, running beneath Travis Air Force Base, and ending in the unincorporated Solano County community of Birds Landing.

Earthquakes and seismic activity will always pose a threat to California's infrastructure. Since 1700 there have been 78 recorded earthquakes that either met a magnitude greater than or equal to 6.5, caused loss of life, or created more than $200,000 in damage[48]. There are no known fault lines that intersect with I-80 corridor in Caltrans District 3. The nearest fault zone to I-80 is a north-south running fault line that begins south of Dixon, passes through Rio Vista, and ends south of Brentwood (along SR 4)[49]. This unnamed fault zone has not had a major earthquake since 1892[50].

6.3| Climate Change

Climatic and extreme weather conditions in California are expected to change, with atmospheric warming contributing to higher seas, changing precipitation patterns and higher temperatures. These changing conditions are anticipated to affect the SHS in a variety of ways and may increase exposure to environmental factors beyond the facilities' original design considerations, requiring adaptive responses. Changing climate conditions and associated extreme weather changes present a series of challenges in delivering resilient transportation facilities. The primary concern is that changing conditions such as extreme weather events or permanent inundation may impact the public or the transport of goods and services through the I-80 corridor.

Sea Level Rise

Sea level rise (SLR) is perhaps the best documented and most accepted impact of climate change, which can be directly tied to increased levels of GHG. The Governor's EO B-18-12 (April 25, 2012) directed

[48] California Department of Conservation: https://www.conservation.ca.gov/cgs/Pages/Earthquakes/Earthquakes-Significant.aspx

[49] Office of Planning and Research: https://sitecheck.opr.ca.gov/

[50] Map Sheet 49, Epicenters of and Areas Damaged by M>5 California Earthquakes, 1800-1999: https://www.conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_049.pdf

State agencies to reduce GHG by twenty percent by 2020. Observations of sea levels along the California coast, and global climate models indicate that California's coast will experience rising sea levels over the next century. The effects of SLR will have impacts on all modes of transportation, significantly increasing the challenge to transportation managers in ensuring reliable transportation routes are available. Inundation of even small segments of the intermodal transportation system can render much larger portions impassable, disrupting connectivity and access to the wider transportation network. Caltrans seeks to address SLR and GHG by partnering with local and regional stakeholders to address climate change on the SHS and local streets and roads.

If left unmanaged, the impacts from future flooding and coastal erosion could pose considerable risks to life, safety, critical infrastructure, natural and recreational resources, and have impacts on the economy. Although the I-80 mainline is not expected to be inundated, a large section of Union Pacific tracks will likely be subject to sea level rise and storm surge related inundation. Disruption to rail operations may lead to increased travel demand on the I-80 corridor and local arterials. Current projections published by the Ocean Protection Council in 2018 suggest that sea levels at the San Francisco tide gauge could rise by 1.9 feet by 2050 and 6.9 feet by 2100. Based on sea level rise mapping data from the Bay Conservation and Development Commission, rail operations could be impacted by sea level rise by the Year 2050 which may affect travel on I-80.

According to the CCJPA Sea Level Rise Vulnerability Assessment[51], sea level rise poses several vulnerabilities to the Capitol Corridor rail system. Portions of the railroad tracks are physically vulnerable to sea level rise and liquefaction due to their geographic location in wetlands and on soft sandy soils. The ballast (the strata of granular materials upon which the railroad track is laid) and earth embankment are susceptible to washout in cases of strong wave action and high water. In the event of railroad tracks being submerged in water, trains are not permitted to pass due to the design of railroad equipment and safety reasons. The tracks are functionally vulnerable to disruptions of external electricity sources, which powers the signal system, and train service on the entire track system is impacted if one section of track is out-of-service. The vulnerabilities of the signal system are closely linked with the vulnerabilities of the railroad track system as the two systems are located in the same place and are reliant on each other.

The major vulnerability to the portion of Capitol Corridor within the I-80 corridor is due to the tracks crossing wetlands, which are very likely to be impacted by the effects of sea level rise. Soil subsidence in the wetlands is already a concern and is the cause for much of the current railroad track maintenance. Permanent inundation of the tracks is likely to occur with as little as two feet of sea level rise, and temporary flooding of the tracks may occur with a 5-year extreme storm tide level. The station will be vulnerable to disruption if road access from Suisun City is flooded. Many of the key access roads are expected to be impacted by sea level rise starting at two feet.

Additionally, train stations can be vulnerable to flooding, and will become more vulnerable to flooding as climate change increases the frequency and severity of flood events. The only rail station located in the I-80 corridor is the Suisun/Fairfield station. The station is not situated near any bodies of water but is near the FEMA 1% annual chance flood zone. Impeded road access to the station due to sea level rise will be a concern. At 3 feet of sea level rise, roads needed to access the Suisun/Fairfield station will become permanently inundated, and at 5 feet of sea level rise, the station will be almost entirely surrounded by water.

[51] Capitol Corridor Joint Powers Authority Sea Level Rise Vulnerability Assessment (2014) http://www.adaptingtorisingtides.org/wp-content/uploads/2015/04/CCJPA-SLR-Vulnerability-Assessment_Final.pdf

Temperature

Temperature rise is an important facet of climate change. Summer temperatures are projected to continue rising, and a reduction of soil moisture, which exacerbates heat waves, is projected for much of California. Materials exposed to high temperatures over long periods of time will deform. Pavements in particular can be deteriorated by exposure to high temperatures. The Caltrans Vulnerability Assessment Report[52] analyzed change in the average minimum temperature for the Years 2025, 2055, and 2085.

Solano County is expected to see an increase of 1.5 to 3.9 degrees Fahrenheit by year 2025. By year 2055, Solano County is expected to see an increase of 3.5 to 4.9 degrees Fahrenheit. By 2085, Solano County will see an increase of six to 7.9 degrees Fahrenheit, and portions of the county near Fairfield and Vallejo will see an increase of up to 8.9 degrees Fahrenheit.

Yolo and Sacramento counties are expected to see an increase of 2 to 5.9 degrees Fahrenheit by year 2025. By year 2055, Sacramento and Yolo counties are expected to see an increase of 4 to 7.9 degrees Fahrenheit by 2055, and 8 to 11.9 degrees Fahrenheit by 2085. These increasing temperatures would need to be considered as a part of pavement design for any projects planned for the corridor, and more frequent maintenance of the existing pavement facilities may be needed.

The consideration of the timing of climate change differs for pavement design when compared to other assets. Many of Caltrans assets, including roadways, bridges, and culverts, will likely be in place for many decades or longer, and therefore decisions made today for these types of assets need to incorporate a longer view than is the case for asphalt pavement. Asphalt pavement is replaced approximately every 20-25 years, or sooner if quality degrades more rapidly.

Precipitation

Increasing temperatures are expected to result in changing precipitation events, due to an increase in energy and moisture in the atmosphere. Increased precipitation levels, combined with other changes in land use and land cover, can increase the risk of damage or loss from flooding. Transportation assets in California are affected by precipitation in a variety of ways, such as inundation/flooding due to heavy rainfall events, landslides and washouts, or structural damage from heavy rain events. Many of these impacts may lead to disruptions of key transportation infrastructure and services.

The Caltrans Vulnerability Assessment Report used Representative Concentration Pathways (RCP) 8.5 (high-emissions scenario) to analyze the 100-year storm rainfall event. The assessment was done for the Years 2025, 2055, and 2085. Most of Caltrans District 4 Solano County is expected to see a zero to 4.9 percent increase in precipitation, with some portions of the county experiencing a five to 9.9 percent increase by 2055. Most of Caltrans District 3 Yolo and Sacramento counties are expected to see a zero to 4.9 percent increase in precipitation, with some portions of Sacramento County experiencing a five to 9.9 percent increase by 2055.

The primary concern with regard to transportation assets is not the overall volume of rainfall observed over an extended period, but rather the expectation of changing future conditions for heavy precipitation and the potential for increasing damage to the SHS. The impact of changing precipitation events should be considered during project design and the need for regular monitoring and

[52] Caltrans, & WSP. (2018). *Caltrans Climate Change Vulnerability Assessments: District 4* (pp. 1-73, Tech.). CA: Caltrans. https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/climate-change

maintenance should be highlighted, because it is difficult to identify vulnerable assets and their locations at the planning level.

Wildfire

Wildfire frequency and intensity is expected to be affected by changes in climate due to increasing temperatures, changing precipitation patterns, and resulting changes to land cover. Wildfire can be a direct risk to travelers on California roadways, transportation system operations and maintenance, and Caltrans infrastructure. Wildfires can indirectly contribute to landslide and flooding exposure, by burning off soil-stabilizing land cover and reducing the capacity of the soils to absorb rainfall. Both factors can contribute to dramatically higher runoff and the presence of debris that can clog culverts or bridge openings. Wildfire smoke can impact visibility and the health of the public.

The Caltrans Climate Change Vulnerability Assessment Report examined which areas in District 3 and District 4 pose medium, high, and very high levels of concern and where roadway would be exposed to potential wildfires. The report analyzed the likelihood of wildfires for the Years 2025, 2055, and 2085. With this assessment, no portion of the I-80 corridor would be exposed to potential wildfires. In addition, the California Department of Forestry and Fire Protection's (Cal Fire) Fire and Resource Assessment Program (FRAP)[53] assesses the amount and extent of California's forests and rangelands, analyzes their conditions, and identifies alternative management and policy guidelines. Through the FRAP, Cal Fire examines which areas throughout the State pose moderate, medium, high, very high, and extreme wildland fire threat within State Responsibility Areas and establishes Fire Hazard Severity Zones based on this data. Cal Fire has responsibility for wildland fire protection and prevention in the SRA only. Local Responsibility Areas (LRA) are incorporated cities, urban regions, agriculture lands, and other areas where the local government is responsible for wildfire protection. Within the I-80 corridor, only parts of Solano County are located within the SRA. The remainder of the District 4 portion of the corridor and the entirety of the District 3 portion are located in LRAs, and fire threat data from Cal Fire is not available for those areas. Based on mapping data from Cal Fire, the Solano portion of the I-80 corridor experiences moderate to very high fire threat. In particular, the entirety of segment 2 (Post Mile 5.8 – Post Mile R11.4) experiences very high fire threat. In the past few years, the area has experienced devastating wildfires. In August 2020, the LNU Lightning Complex fires occurred across Lake, Napa, Sonoma, Solano, and Yolo counties. The complex of fires was composed of several lightning-sparked fires and began when the Hennessey Fire grew to merge with the Gamble, Green, Markley, Spanish, and Morgan Fires. In Solano County, the LNU Lightning Complex fires burned in the hills surrounding Fairfield and Vacaville, destroyed 1,491 structures, and burned a total area of 363,220 acres.

[53] California Department of Forestry and Fire Protection's (Cal Fire) Fire and Resource Assessment Program (FRAP) https://frap.fire.ca.gov/

Chapter 7 | Stakeholder and Public Engagement

Over the course of developing this multijurisdictional I-80 CMCP, there has been continuous collaboration between the CDT, TAC, and the stakeholder group. This collaboration's goal is to accurately identify multimodal needs and propose projects and strategies to address those needs to achieve a multimodal system on the I-80 corridor.

Public engagement is a critical component of the I-80 CMCP. All corridor stakeholders were in agreement that public input would inform the CMCP development and meaningful public engagement should be carried out. To achieve this, the CDT was able to secure public engagement support from Moore Iacofano Goltsman, Incorporated (MIG) through Caltrans Planning Public Engagement Contract (PPEC) in developing the Public Engagement Plan (PEP) and conducting engagement activities.

7.1 | Public Agency Engagement

The collaboration with the public agency stakeholders began with an in-person kick-off meeting on December 9, 2019, where the project scope, scope and timeline/deliverables were revealed. It was also decided that public agency stakeholders would be divided up into two groups: the TAC and the stakeholder group. Soon thereafter, COVID-19 protocols and safety concerns meant that all TAC and stakeholder meetings would be hosted through a virtual platform.

Technical Advisory Committee and Stakeholder Group

The I-80 CMCP TAC was composed of professional engineering and planning staff from MPOs and Regional Transportation Planning Agencies, County Transportation Agencies, major transit operators, and Tribal governments throughout the I-80 corridor. Staff representing Caltrans Districts 3 and 4 included Planning, Modeling and Forecasting, Traffic Operations, and Program, Project, and Asset Management, as well as Caltrans Headquarters (HQ) representatives from Division of Transportation Planning (DOTP) and Division of Rail and Mass Transportation. The TAC serves as working group to provide guidance on key technical issues. The TAC was scheduled to meet monthly or as needed over the course of CMCP development.

The I-80 CMCP stakeholder group was composed of representatives from cities, counties, transit operators, Federal Highway Administration, Solano-Yolo and Sacramento Metropolitan AQMDs, and Tribal governments. The stakeholders met quarterly over the course of the CMCP development.

To date there have been 16 TAC meetings. The focus of these meetings is for consensus on building CMCP chapters, modeling methodology, modeling scenarios and projects list, and the approval of the CMCP. TAC members are also tasked with reviewing deliverables to ensure the information is thorough and accurate.

Charter

The I-80 CMCP Charter was drafted beginning in winter 2019 and completed in summer 2020. The document describes the CMCP's purpose and need, objectives, deliverables, and milestones, as well as the roles and responsibilities of the TAC, stakeholder group, and Caltrans District 3 and 4 Corridor Managers. In addition, the Charter identifies known risks, constrains and discrepancies and includes strategies to address these risks and constraints. The I-80 CMCP final Charter can be viewed in **Appendix V**.

7.2 | Public Engagement

In February 2020, the Caltrans HQ DOTP Office of Multimodal System Planning approved a Corridor Planning Process Guide. This, together with the CTC CMCP guidelines, provides guidance to in preparing comprehensive corridor plans including a substantial emphasis on involvement with partner agencies, stakeholders, and the public.

The overall goal for the public outreach and engagement work of this CMCP is to develop and implement a meaningful and informed public engagement process that fully supports and informs the development of the I-80 CMCP. This involved informing and educating stakeholders and the public, while also building consensus, collaboration, and constructive relationships.

Planning Public Engagement Contract and Public Engagement Plan

It was acknowledged in the early stage of the I-80 CMCP development that additional public engagement support from a consultant would be needed, and it would be acquired through a PPEC administered by Caltrans HQ DOTP, which is also documented in the CMCP Charter. The PPEC is a task order-based contract, where the contractor MIG provides strategic public engagement services that helps Caltrans to design, prepare for, conduct, and evaluate public engagement efforts to improve the outcome of Caltrans transportation planning efforts. MIG also provides trainings and helps Caltrans staff develop public engagement skills.

A Task Order was executed in August 2020, which outlined the description, schedule, and costs of the tasks MIG would perform to support the I-80 CMCP public engagement. A PEP was developed as part of the PPEC Task Order that included the following: the PEP target audience(s); the timing and platforms of the public outreach within; and the roles and responsibilities of Caltrans District 3 and 4 staff, MIG, and Caltrans HQ DOTP, and Division of Procurement and Contracting in Sacramento.

Next, the CDT, MIG, and the PPEC Contract Manager organized multiple brainstorming sessions focusing on the overall public outreach program's messaging and what platforms would be utilized in order to deliver a robust pallet of information to the public. Ultimately it was agreed that the strategy would include a notification campaign and developing a dedicated CMCP website, which would include CMCP information and document and house various public engagement events and activities. designed to encourage participation and solicit public feedback.

First Round of Public Engagement

The first round of public engagement involved a virtual public open house. This included the launching of the CMCP website: www.I80CMCP.com, which contains key CMCP information. An online survey was also made available throughout Solano, Yolo, and Sacramento counties. Public notifications for the virtual open house started a week prior to the commencement of the event. The following outreach channels were used to promote the virtual open house including outreach to priority populations:

- Caltrans District 3 and 4, SACOG, YCTD and STA/SolTrans websites
- SACOG, YCTD and STA commissions' mailing lists
- KRCA Channel 3 Sacramento
- The CMCP website
- Caltrans District 3, District 4, and HQ social media platforms

Virtual Public Open House and CMCP website a Virtual Open House was held from January 8, 2021, to January 15, 2021, centered around a dedicated CMCP website: www.I80CMCP.com. The website offers

access to a variety of information such as an introductory video, a corridor map, CMCP goals and the CMCP fact sheet. An online survey was also made available on the website during the open house through January 31, 2021. The website serves as a central location for project information, announcements, schedule, and milestones and allows the public to provide input. The CMCP website also links to the Caltrans website for further information on current and near-term projects, highway conditions and interactive maps. The CMCP website remains accessible after the virtual open house concluded, with approximately 2,678 visitors to date which included outreach to priority populations based on outreach from TAC and stakeholder members that cover priority populations.

In addition to the launching of the CMCP website and the online survey, attendees also had the opportunity to participate in two live call-in question and answer sessions that aired on January 12, 2021, at noon to 1:00 P.M. and on January 14, 2021, at 5:30 P.M. to 6:30 P.M. hosted by Caltrans District 3 and District 4 Corridor Planning Managers.

Online Survey

To assist in managing the collection of public input, the www.I80CMCP.com website also included an online survey for the duration of the virtual open house. The survey was design to gather the following information:

- How people were using the I-80 corridor.
- When people were using I-80.
- Who are the people using I-80.
- What travel mode people used when traveling on I-80.
- Where people were going and the reason for their trips.

The survey contained a total of 10 questions, including one open-ended question which provided an opportunity for persons to add any additional information or comments. A total of 269 respondents filled out the survey. The responses demonstrated that trips on the I-80 corridor are primarily used for commuting and recreation with destinations in the Sacramento Valley and the San Francisco Bay Area. While there was significant travel reported during weekday commute hours as the survey indicated, there was also significant weekend travel during the mid-day and afternoon. Tallying the survey data, users identified the following top priorities for the I-80 corridor: System Reliability, Multimodal Accessibility, and Connectivity and Congestion which are consistent with the CMCP goals and objectives.

FIGURE 7.1 | I-80 CMCP WEBSITE PHOTO

Second Round of Public Outreach

The second and final round of public outreach was completed on July 28, 2022. This was needed to provide the public the opportunity to provide feedback on the proposed projects (**Table 9.2**).

The public outreach included a proposed project map, project table (**Table 9.2**) with descriptions and a qualitative rating for each project using the ratings from **Table 9.1**. There was also an active transportation network web-based map within the study area. The following outreach channels were used to promote the second public outreach including priority populations:

- Caltrans District 3 and 4, SACOG, YCTD, SacRT, and STA/SolTrans websites
- SACOG, YCTD and STA commissions' mailing lists
- Caltrans District 3, District 4, and HQ social media platforms

This final outreach generated six comments from the public. Most of the comments received were in relation to suggestions on additional active transportation connections and/or projects. These comments have been shared with the project managers overseeing the local Caltrans SHS projects in their respectively assigned areas. In total the I-80 CMCP received over website 2,678 views throughout the development of this plan which included outreach to priority populations based on outreach from TAC and stakeholder members that cover priority populations.

Board and Community Presentations

During the development of I-80 CMCP the CDT has continuously collaborated with partner agencies and local community organizations. This included public presentations to various committees or Boards who represent or work in coordination with priority populations. Below is a list of presentations made during the development of the CMCP.

- Willowbank County Service Area Advisory Committee
- Sacramento Transportation Management
- SacRT Board Meeting
- Sacramento Regional Transit Mobility Advisory Committee
- SACOG Regional Partnership Meeting

Chapter 8 | Tribal Government

For the I-80 CMCP, Caltrans reached out to the Native American Tribal Governments located along the I-80 corridor study area. Due to COVID-19 constraints and many tribal governments having to close as a result. Tribal government participation in either TAC or Stakeholder capacity was limited. However, all the tribes along the I-80 corridor study area continued to be invited to TAC or stakeholder meetings which included materials being discussed in the meeting invitations.

The following section is a list of the Native American Tribal Governments in the I-80 CMCP study area.

Buena Vista Rancheria of Me-Wuk Indians

Also known as:	Buena Vista Rancheria of Me-Wuk Indians of California Sierra Miwok
Recognition	Federally Recognized
County:	Amador
Tribal Affiliation:	Me-Wuk
Website:	https://www.bvtribe.com/
Land Acreage:	Approximately 67 acres
Tribal Membership:	Unknown
Adjacent Highways:	SR 99 and SR 16
Gaming Facilities Owned:	Harrah's Northern California Casino

Colfax – Todd's Valley Consolidated Tribe

Also known as:	Colfax – Todd's Valley Consolidated Tribe of the Colfax Rancheria
Recognition	Non-Federally Recognized
County:	Nevada, Placer, and Sacramento
Tribal Affiliation:	Nisenan Maidu & Miwok
Website	https://colfaxrancheria.com/
Land Acreage:	Approximately 40 Acres
Tribal Membership:	None, lost trust land in 1966 and lost federal recognition
Adjacent Highways:	I-80
Gaming Facilities Owned:	None

Ione Band of Miwok Indians

Also known as:	None Known
Recognition	Federally Recognized
County:	Amador, El Dorado, and Sacramento
Tribal Affiliation:	Miwok
Website:	https://ionemiwok.net/
Land Acreage:	Approximately 220 Acres
Tribal Membership	Approximately 800
Adjacent Highways:	I-5
Gaming Facilities Owned:	None

Kletsel Dehe Wintun Nation

Also known as:	Cortina Indian Rancheria Cortina Rancheria
Recognition	Federally Recognized
County:	Colusa and Solano
Tribal Affiliation:	Wintun (Patwin)
Website:	https://www.kletseldehe.org/
Land Acreage:	Approximately 640 Acres
Tribal Membership	Approximately 21
Adjacent Highways:	I-5, SR 16, and SR 20
Gaming Facilities Owned:	None

Nashville Enterprise Miwok Maidu – Nishiham Tribe

Also known as:	Nashville – El Dorado Miwok-Maidu-Nishinam
Recognition	Non-federally Recognized
County:	Glenn
Tribal Affiliation	None
Website:	Unknown
Land Acreage:	Unknown
Tribal Membership	Approximately Unknown
Adjacent Highways:	US 50 and SR 49
Gaming Facilities Owned:	None

Shingle Springs Band of Miwok Indians

Also Knows As:	Shingle Springs Rancheria (Verona Tract)
Recognition	Federally Recognized
County:	El Dorado, Placer, Sacramento, Yolo
Tribal Affiliation:	Miwok
Website:	https://www.shinglespringsrancheria.com/
Land Acreage:	Approximately 160 Acres
Tribal Membership	Approximately 500
Adjacent Highways:	US 50
Gaming Facilities Owned:	Red Hawk Casino

United Auburn Indian Community of the Auburn Rancheria

Also known as:	Ohlone
Recognition	Federally Recognized
County:	Alameda, Contra Costa, Solano, Napa, and San Joaquin
Tribal Affiliation:	None
Website:	https://sogoreate-landtrust.org
Land Acreage:	Unknown
Tribal Membership	Unknown
Adjacent Highways:	I-880 and I-580
Gaming Facilities Owned:	None

United Auburn Indian Community of the Auburn Rancheria

Also known as:	Auburn Rancheria
Recognition	Federally Recognized
County:	Placer
Tribal Affiliation:	None
Website:	https://www.auburnrancheria.com
Land Acreage:	Approximately 22 Acres
Tribal Membership	Approximately 170
Adjacent Highways:	I-80, SR 193, and SR 49
Gaming Facilities Owned:	Thunder Valley Casino

Wilton Rancheria

Also known as:	Wilton Rancheria Me-Wuk Me-Wuk Indian Community of the Wilton Rancheria
Recognition	Federally Recognized
County:	Colusa County (573 acres)
Tribal Affiliation:	Me-Wuk
Website:	https://wiltonrancheria-nsn.gov/
Land Acreage:	Approximately 38 Acres
Tribal Membership	Approximately 700
Adjacent Highways:	SR 99
Gaming Facilities Owned:	Sky River Casino

Yocha Dehe Wintun Nation, California

Also known as:	Rumsey Rancheria Yocha Dehe Rumsey Indian Rancheria of Wintun
Recognition	Federally Recognized
County:	Colusa, Napa, Solano, and Yolo
Tribal Affiliation:	Wintun (Patwin)
Website:	https://www.yochadehe.org/
Land Acreage:	Approximately 800+ acres (tribe also owns large amounts of non-trust land)
Tribal Membership	Approximately 65
Adjacent Highways:	SR 16
Gaming Facilities Owned:	Cache Creek Casino

Chapter 9 | Recommended Strategies

9.1 | Recommended Multimodal Projects

The recommended multimodal projects by this CMCP includes highway, active transportation, and public transportation projects. The recommended highway projects include managed lanes, auxiliary lanes, interchange reconfigurations and/or ramp improvements, ramp metering and local arterial projects that will help improve the operations of the freeway mainlines. Recommended rail and transit projects include service enhancements to the Capitol Corridor and express bus services as well as improvements at train stations, transportation centers and P&R lots that support transit services. Most projects are financially constrained and are included in the RTPs from MTC and SACOG. The unconstrained projects include projects from other plans and studies as well as project concepts proposed by the CDT, Caltrans Traffic Operations, Caltrans Modeling and Forecasting, Caltrans Program, Project, and Asset Management, TAC, and stakeholders.

As discussed in Chapter 4, this CMCP also includes a list of active transportation projects. These projects, along with existing facilities in the corridor, form the CMCP bicycle and pedestrian network and can be accessed on this web map.

9.2 | Additional Project Evaluation

In addition to the planning level modeling analysis of improvement scenarios, projects were assessed with a qualitative methodology using key selected performance measures. The reason for this type of evaluation is that the modeling tools, while very effective in evaluating certain types of projects, have limitations. For example, some of the CMCP goals are not quantifiable, while some project types cannot be easily modeled. These include bicycle and pedestrian projects, certain types of safety-related projects, local arterial projects that are outside of the modeling network. The following key performance measures are derived from the CMCP goals which are informed by a combination of plans, programs, goals, and objectives outlined from state (CTC and Caltrans), regional (MTC and SACOG), and local partners. The following performance measures were used to qualitatively assess the improvements:

- Safety
- Efficiency
- System Reliability
- Multimodal Accessibility and Connectivity
- Air Pollution and GHG Reduction
- Economic Prosperity
- Modern Infrastructure and Asset Management
- Efficient Land Use

These performance measures were used to assess the potential transportation system improvements in the study area. The intent is not to rank the improvements or measure them against each other, but rather to inform the I-80 CMCP and how these projects address the overall goals and objectives related to state, regional, and local plans.

9.3 | Project Evaluation Scoring Methodology by Project Type

A set of rules were applied by project type for each performance metric to determine if that project type has a greater or lesser benefit as it relates to the performance measures. For example, some types of transportation improvements may significantly improve safety but not necessarily reduce congestion, while others may reduce VMT but not significantly affect system reliability.

The qualitative ratings of Low, Medium, or High were assigned based on a classification of project types against the performance measures listed below (see **Table 9.1**). The ratings represent a starting point for further evaluation at an individual project level, which can be further refined in the environmental process or other more detailed project-focused modeling or analytical exercises. **Table 9.1** shows the qualitative project type assessment based on performance measures. Main project types that included active transportation, transit, arterial, highway, ZEV infrastructure and freight projects were rated Low, Medium or High.

It is critical to understand that individual projects may have greater or lesser benefit than represented by their generic classification used for the rating in **Table 9.1** depending on a number of factors, for example: 1) the scope and scale of the specific project; 2) the context within which the project is being proposed (e.g. a more congested or less congested setting); and 3) the cost or funding status of the project (e.g. a smaller scale lower scoring project could have high cost-effectiveness where the cost is also low). **Table 9.2** shows the detailed ratings of each individual project.

These caveats are important because it is not feasible to conduct a quantitative project-level evaluation for each project within the framework of the I-80 CMCP. The SACSSIM 19 and Napa/Solano regional travel model and the simulation models are also not effective in assessing individual active transportation (bike and pedestrian) projects. When a project goes through environmental review or is submitted for State or federal funding consideration, the projects will undergo a more rigorous analysis of the quantitative benefits associated with that project, in the specific context within which it will be implemented. This includes an assessment of the benefits against project costs, resulting in a cost-effectiveness assessment. This process has become well established with the advent of the SB 1 competitive programs.

Therefore, any project given a low rating in **Table 9.2** could prove to have greater benefits and greater cost-effectiveness in a more detailed project-level evaluation in a site-specific context. As a result, it is important not to pre-judge any individual project based on a rating alone but view it in its unique application. That said, the performance measure classification process and ratings are useful in highlighting the strengths and weaknesses of projects in each class.

TABLE 9.1 | PROJECT CATEGORY EVALUATION

Project Type	Subcategory	Safety (collision on state ROW)	*Efficiency - recurring congestion	System Reliability non-recurring congestion	*Multimodal Accessibility and Connectivity	*Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight / access to jobs, goods, and services	Modern Infrastructure and Asset Management	*Efficient Land Use
Active Transportation (Bike / Pedestrian)									
	Freeway Crossings	M	L	L	M	L	L	M (including pedestrians, as well as equipment that supports pedestrian movement [signals, beacons, etc.])	M
	Parallel (parallel Class I bike paths and bikeways on parallel arterials)	M	L	L	M	M (mode rate effects due to existing low mode share)	M	M	M
Transit									
	Capitol Corridor (service expansion)	M (reduce congestion-related collisions)	H	M	H	H	M	M	M
	Capitol Corridor - Station Area Improvements	L	L	L	M	L	L	L	H
	Express Bus	M	H	M	H	H	M	L	M
	Light Rail	L (not parallel to I-80)	H	M	H	H	M	M	M
	Park & Ride	M	H	M	H	H	M	M	M
	Transit Centers	M	H	M	H	H	M	M	H

Project Type	Subcategory	Safety (collision on state ROW)	*Efficiency - recurring congestion	System Reliability non-recurring congestion	*Multimodal Accessibility and Connectivity	*Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight / access to jobs, goods, and services	Modern Infrastructure and Asset Management	*Efficient Land Use
Transit									
	Ferry (parking)	L	L	L	M	L	L	L	M
	Streetcar	L (not parallel to I-80)	L	L	H	H	M	M	M
Freeway									
	Auxiliary Lanes (with transit)	H	H	H	M	M (location specific)	M	M	M
	Auxiliary Lanes (without transit)	H	M	M	L	L	L	M	L
	ITS (and Broadband / Ramp / Meters / Transit Signal Prioritization	H	H	H	M	M (smoother traffic flow, but no mode shift)	M	H	M
	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
	Managed Lanes	M	H	M	H	M	M	M	M
Arterial									
	Road Widening or Extension	M	M	L	L	L	M	L	L
Zero Emission Vehicles (ZEV) Infrastructure		L	L	L	L	H	L	M	L
Freight									
	Truck Scales	M	M	L	L	H	H	H	L
	Truck Parking	H	L	L	L	M	H	M	L
	Rest Areas	H	L	L	L	L	H	L	L
	Pull Outs	H	L	L	L	L	M	L	L

*These performance measures include a quantitative analysis that will be outlines in Chapter 5 of the CMCP. Performance measures that were not included in the quantitative analysis is because there are no outputs associated with them in the Travel Demand Modeling.

TABLE 9.2 | I-80 CMCP RATED PROJECTS

District	Project Name	Project Description	Category	Subcategory	Safety (collisions on state row)	Efficiency - recurring congestion	System Reliability - non-recurring congestion	Multimodal Accessibility and Connectivity	Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight/access to jobs, goods, and services	Modern Infrastructure and Asset Management	Efficient Land Use
3	Auburn Boulevard Bike Lane	Construct Class II bike lane on Auburn Boulevard parallel to I-80 eastbound from Highway 244 to Pasadena Avenue.	Active Transportation (Bike/Pedestrian)	Parallel	M	L	L	M	M	M	M	M
3	El Camino Class I Shared Use Path	Construct Class I shared use path on El Camino Avenue form the I-80 west to El Centro Road on the north side.	Active Transportation (Bike/Pedestrian)	Parallel	M	L	L	M	M	M	M	M
3	N. Market Bike Lane	Construct Class II bike lane on N. Market Boulevard from Gateway Park to Northgate Boulevard	Active Transportation (Bike/Pedestrian)	Parallel	M	L	L	M	M	M	M	M
3	Sacramento to Roseville Third Main Track - Phase 1	On the Union Pacific (UP) mainline, from near the Sacramento and Placer County boarder to the Roseville Station area in Placer County. Construct a layover facility, install various UP Railroad Yard track improvements, required signaling, and construct the most northern eight miles of third mainline track between Sacramento and Roseville (largely all in Placer county), which will allow up to two additional round trips (for a total of three round trips) between Sacramento and Roseville.	Transit	Capitol Corridor (service expansion)	M (reduce congestion-related collisions)	H	M	H	H	M	M	M
3	Sacramento to Roseville Third Main Track - Phase 2	On the UP mainline, from SVS approximately 9.8 miles toward the Placer County line. Construct third mainline track including all bridges and required signaling. Project improvements will permit service capacity increases for Capitol Corridor in Placer County, with up to seven additional round trips added to Phase 1-CAL18320 (for a total of ten round trips) between Sacramento to Roseville including track and station improvements.	Transit	Capitol Corridor (service expansion)	M (reduce congestion-related collisions)	H	M	H	H	M	M	M
3	Operating Assistance for the UC Davis Medical Center Shuttle Service	Between UC Davis and UC Davis Medical Center with limited stops in between: Operating assistance for three years. Operations would take place weekdays, approximately between 5:30 A.M. and 8:30 P.M.	Transit	Express Bus	M	H	M	H	H	M	L	M

District	Project Name	Project Description	Category	Subcategory	Safety (collisions on state row)	Efficiency - recurring congestion	System Reliability - non-recurring congestion	Multimodal Accessibility and Connectivity	Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight/access to jobs, goods, and services	Modern Infrastructure and Asset Management	Efficient Land Use
3	Green Line SVS Loop & K Street to H Street Improvements (final Design & Construction)	In Sacramento, two elements to accommodate the future Streetcar Project as well as future Green Line service: (1) SVS Loop - segment of the Green Line at the SVS including: Relocate the existing/temporary light rail(LRT) Station on H Street to a new north-south axis west of 5th Street; New platform and LRT station near the existing Amtrak station; new Station on the east side of N 7th Street near Railyards Boulevard that would serve the future MLS Stadium area; double-tracking on H Street from 7th Street to west of 5th Street, from west of 5th Street north to new station near Amtrak, and east along a future F Street. RT has been working with the City of Sac and the MLS Developers to advance this concept. (2) Relocation of the existing LRT tracks on K Street from 12th Street west to 7th Street. The tracks would be relocated to the center of (future) two-way H Street and would connect the LRT line between 12th, 7th, and 8th Streets with new stations near 12th Street and City Hall on H Street. SacRT has been working with the City of Sacramento and SACOG to advance this concept. Expanded SacRT facilities will include track, special trackwork, Overhead Catenary System, traction power system, signaling system, platforms, and storage tracks.	Transit	Light Rail	L (not parallel to I-80)	H	M	H	H	M	M	M
3	Green Line: MOS2 Township 9 to North	SacRT Green Line LRT: Extend LRT from Township 9 to North Natomas town center.	Transit	Light Rail	L (not parallel to I-80)	H	M	H	H	M	M	M
3	Natomas Town Center (CON)	Construction of the Phase 1 of the downtown/Riverfront Streetcar. The alignment runs from West Sacramento Civic Center/Riverfront Street to the Midtown entertainment, retail, and residential district of Sacramento. (Project Development programmed separately under VAR56127, for $14,570,000.).	Transit	Streetcar	L	L	L	H	H	M	M	M

District	Project Name	Project Description	Category	Subcategory	Safety (collisions on state row)	Efficiency - recurring congestion	System Reliability - non-recurring congestion	Multimodal Accessibility and Connectivity	Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight/access to jobs, goods, and services	Modern Infrastructure and Asset Management	Efficient Land Use
3	Downtown Riverfront Streetcar Project	The downtown / Riverfront Streetcar Project will connect the SVS (Sacramento intermodal transportation facility) to Sutter Health Park (AAA Professional Baseball Park, formerly known as Raley Field) in West Sacramento. (Total Project Cost: $130,518,412. Project Development programmed separately under VAR56127, for $21,666,284.).	Transit	Streetcar	L	L	L	H	H	M	M	M
3	Davis Crossover and Signal Project	Replace track crossovers and railroad signal system at East Davis for faster operation and increased reliability.	Transit	Capitol Corridor (service expansion)	M (reduce congestion-related collisions)	H	M	H	H	M	M	M
4	SMART East-West Service	Intercity passenger rail service between Sonoma, Marin and Solano counties connecting with SMART service to San Rafael/Petaluma at the SMART Novato-Hamilton Station and Capitol Corridor and Solano Express Regional Bus service at the Suisun City Capitol Corridor/Amtrak Station.	Transit	Intercity Passenger Rail	M	H	M	H	H	M	M	M
4	Oakland to Sacramento Signal Upgrades	Improved reliability of signal system achieved by upgrading outdated signal equipment.	Transit	Capitol Corridor (service expansion)	M	H	M	H	H	M	M	M
4	Martinez Station Turnaround	Increases capacity on Capitol Corridor from Sacramento to Oakland (assuming additional CC trains).	Transit	Capitol Corridor (service expansion)	M	H	M	H	H	M	M	M
4	110 miles per hour Speed Upgrades	Miscellaneous Track Upgrades allowing increase speed in sections suitable for speed increases; also includes any needed signal and other track infrastructure modifications.	Transit	Capitol Corridor (service expansion)	M	H	M	H	H	M	M	M
4	Frequency Increases to half-hourly optional peak service	New High-level Carquinez Bridge Crossing and Benicia Siding Project.	Transit	Capitol Corridor (service expansion)	M	H	M	H	H	M	M	M
4	Link21 Project	Improvements via Link21 Project that improve I-80 corridor throughput; projects under Link21 are in development at this time (2021/2022).	Transit	Capitol Corridor (service expansion)	M	H	M	H	H	M	M	M
3	Davis Station ADA Underpass & Platform	Reconfigure passenger access; island platform, underpass access, track modifications.	Transit	Capitol Corridor-Station Area Improvements	L	L	L	M	L	L	L	H

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4	Suisun-Fairfield Amtrak Station Transit and downtown Parking Structure	Construct a new parking garage to meet parking demand near the Suisun-Fairfield Amtrak Station and new housing developments.	Transit	Capitol Corridor-Station Area Improvements	L	L	L	M	L	L	L	H
4	Fairfield-Vacaville Train Station Building, Access, and Parking	Construction of a station building to provide shelter and seating for transit passengers. Construction of an access road into the station to improve route efficiency, and safe ingress and egress for buses, pedestrians, and bicyclists. Parking lot expansion and enhancements including safety features, lighting, parking lot solar array, and additional amenities.	Transit	Capitol Corridor-Station Area Improvements	L	L	L	M	L	L	L	H
3	Bus Service Expansion	#138 Causeway Connection - Hourly Service	Transit	Express Bus	M	H	M	H	H	M	L	M
3	Bus Service Expansion	#138 Causeway Connection – Add Peak Trips	Transit	Express Bus	M	H	M	H	H	M	L	M
4	Solano Express Bus to BRT-lite Transition: Capital Improvements and Implementation	Transition from Express Bus and build out a functioning BRT-lite system in Solano County. Implement improvements including Transit Signal Prioritization (TSP), adaptive signal timing, and ramp metering.	Transit	Express Bus	M	H	M	H	H	M	L	M
4	Dixon Solano Express Blue Line Park and Ride Facility	Relocate existing park and ride on SR 113 from downtown Dixon to the north side of I-80 in the vicinity of the on and off ramps.	Transit	Park & Ride	M	H	M	H	H	M	M	M
4	Fairfield Transportation Center (FTC) - Phase 2	Construct additional parking spaces, access improvements, and transit improvements in and around the FTC.	Transit	Transit Center	M	H	M	H	H	M	M	H
4	Vallejo Station Parking Structure Phase B	Vallejo: Baylink Ferry Terminal; Construct two phased parking structure to consolidate surface parking for ferry operations; create a pedestrian link between bus transit facility and existing ferry terminal building adjacent to ferry parking structure.	Transit	Ferry	L	L	L	M	L	L	L	M
3	I-5 Aux Lanes	Southbound from US 50 to Sutterville Road (Indirect effects on US 50).	Freeway	Auxiliary Lanes (without transit)	M	L	M	L	L	L	L	L
3	I-5 Auxiliary Lane	Southbound from I-80 to West El Camino Avenue.	Freeway	Auxiliary Lanes (without transit)	M	L	M	L	L	L	L	L

District	Project Name	Project Description	Category	Subcategory	Safety (collisions on state row)	Efficiency - recurring congestion	System Reliability - non-recurring congestion	Multimodal Accessibility and Connectivity	Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight/access to jobs, goods, and services	Modern Infrastructure and Asset Management	Efficient Land Use
3	I-5 Auxiliary Lane (NB) from Del Paso Road to SR 99 NB connector ramp	In Sacramento County construct auxiliary lanes on I-5 from Del Paso Road off ramp to SR 99 NB connector ramp (Post Mile 28.817/29.772).	Freeway	Auxiliary Lanes (without transit)	M	L	M	L	L	L	L	L
3	I-80/Richards Boulevard Interchange	In Davis: At the I-80/Richards Boulevard Interchange; reconstruct the north side of Richards Boulevard Interchange to remove the loop on- and off-ramps and replace with new ramp in diamond configuration. Includes traffic signal installation. Install new Class II bike lanes and a parallel Class I trail (0.5 mi of Class I and 1 mi of Class II). (CMAQ funds are for eligible bike/ped components only.). Toll Credits for CON.	Freeway	Interchange/Ramps (geometric)	M	M	M	M	M	M	M	L
3	I-80 at W. El Camino Avenue Interchange	Expand the W. El Camino Avenue Interchange on I-80 from 2 to 4 lanes and modify ramps.	Freeway	Interchange/Ramps (geometric)	M	M	M	M	M	M	M	L
3	U.S. 50/Jefferson Boulevard Interchange	Jefferson Boulevard Interchange--expand the ramps and signals from 1 to 2 lanes, add ramp metering and turn lanes, and related street closures.	Freeway	Interchange/Ramps (geometric)	M	M	M	M	M	M	M	L
3	I-5 / 113 Connector Phase 2	Phase 2 - Construct northbound I-5 to southbound SR 113 freeway to freeway connection.	Freeway	Interchange/Ramps (geometric)	L	L	L	L	L	L	L	L
3	I-5 / SR 113 Interchange	Construct new Interchange: northbound SR 113 to SB I-5 freeway to freeway connection. Phase 3.	Freeway	Interchange/Ramps (geometric)	L	L	L	L	L	L	L	L
3	Yolo Causeway Express Lanes	Expand causeway to 8 lanes (2 Managed Lanes + 6 General Purpose lanes), improve the existing bike path.	Freeway	Managed Lanes	M	H	M	H	H	M	M	M
3	US 50 HOV Lanes (I-5 to Watt Avenue)	US 50 HOV Lanes - Construct High Occupancy Vehicle (HOV) Managed Lanes - Managed lanes on US 50 [project covers PE: from I-5 to 0.8 mile east of Watt Avenue (Post Mile L0.2/R6.1) and CON: from 0.3 mile west of SR 99 to 0.8 mile east of Watt Avenue (Post Mile L2.2/R6.1)] (project description may change based on results from the Managed Lanes Study. Project is being evaluated for Expressed Toll Lanes, High Occupancy Toll Lanes, HOV lanes). 0H08U.	Freeway	Managed Lanes	M	H	M	H	M	M	M	M

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3	I-5 HOV Lanes Phase 1	In Sacramento County on I-5, from US 50 to Morrison Creek. Add high-occupancy vehicle (HOV) lanes (i.e., bus/carpool lanes) and sound walls in both directions (Post Mile 12.9/22.5) [EFIS ID 0312000165]; see 03-3C002 (CAL20467) for Phase 2 [PA&ED being done under 03-3C000 (CAL17840)]. (Toll Credits for PE and ROW) (Emission Benefits in kg/day: 52.9 NOx, 50.4 ROG, 10.5 Post Mile 10) [CTIPS ID 107-0000-0880] (The I-5 HOV Lanes - Phase 1 project (03-3C001/CAL20466) will be combined for construction with the I-5 Road Rehab project (03-0H100/CAL20700) and the I-5 Fiber Optics Installation project (03-4F450/CAL20693) to form the overall I-5 corridor enhancement project (03-0H10U). Project description may change based on results from the Managed Lanes Study. Project is being evaluated for Expressed Toll Lanes, High Occupancy Toll Lanes, HOV lanes.	Freeway	Managed Lanes	M	H	M	H	M	M	M	M
3	I-5 HOV Lanes Phase 2	In Sacramento County on I-5, from 1.1 mile south of Elk Grove Boulevard to just north of Morrison Creek - Add managed lane facility (Post Mile 9.7/13.1) [EFIS ID 0312000171]; see 03-3C001 (CAL20466) for Phase 1 [PA&ED being done under 03-3C000 (CAL17840)]. (project description may change based on results from the Managed Lanes Study. Project is being evaluated for Expressed Toll Lanes, High Occupancy Toll Lanes, HOV lanes).	Freeway	Managed Lanes	M	H	M	H	M	M	M	M
3	I-5 and I-80 Managed Lane Connectors and Lanes to downtown	Reconstruct I-5/I-80 Interchange, including managed lane facility connectors, and construction of managed lane facility on I-5 from the I-5/I-80 Interchange to downtown Sacramento (Post Mile 26.7/27.0) [EFIS ID 0300000313] (Emission Benefits in kg/day 1.0 ROG) (project description may change based on results from the Managed Lanes Study. Project is being evaluated for Expressed Toll Lanes, High Occupancy Toll Lanes, HOV lanes).	Freeway	Managed Lanes	M	H	M	H	M	M	M	M

District	Project Name	Project Description	Category	Subcategory	Safety (collisions on state row)	Efficiency - recurring congestion	System Reliability - non-recurring congestion	Multimodal Accessibility and Connectivity	Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight/access to jobs, goods, and services	Modern Infrastructure and Asset Management	Efficient Land Use
3	SAC/PLA – I-80 Managed Lanes	Evaluate new managed lanes strategies for the existing I-80 HOV lanes in Placer and Sacramento County between the W. El Camino Avenue and State Route 65 interchanges. Some strategies being considered include converting the existing HOV 2+ to HOV 3+, HOT lanes, and transit lanes. The project also proposes new and/or upgraded Intelligent Transportation System (ITS) elements, drainage culverts, ADA and complete streets items, and safety features. Outside of the existing HOV lane network on I-80, the project extends further west into Yolo County and further east into Placer County to accommodate appropriate signage for the toll alternatives.	Freeway	Managed Lanes	M	H	M	H	M	M	M	M
4	I-80 eastbound auxiliary lane between I-780 and Georgia Street in Vallejo	Construct eastbound auxiliary Lane between the I-780 on-ramp and the Georgia Street off-ramp.	Freeway	Auxiliary Lanes (with transit)	H	H	H	M	M	M	M	M
4	I-80 eastbound and westbound auxiliary lanes between Tennessee Street in Vallejo Redwood Street	Construct eastbound and westbound auxiliary lanes between the Tennessee Street on-ramp and the Redwood Street off-ramp.	Freeway	Auxiliary Lanes (with transit)	H	H	H	M	M	M	M	M
4	I-80 eastbound auxiliary lane between Redwood Street and SR 37 in Vallejo Redwood Street	Construct eastbound auxiliary lane between Redwood Street and SR 37 with two lane off-ramp.	Freeway	Auxiliary Lanes (with transit)	H	H	H	M	M	M	M	M
4	Provide auxiliary lanes on I-80 in eastbound and westbound directions from I-680 to Airbase Parkway	Project provides auxiliary lanes on I-80 in the eastbound and westbound directions from I-680 to Airbase Parkway; and remove the I-80/Auto Mall Parkway hook ramps and Collector-Distributor road slip-ramp.	Freeway	Auxiliary Lanes (with transit)	H	H	H	M	M	M	M	M
4	I-80 eastbound auxiliary lane between Air Base Parkway and North Texas Street/Manual Campos Parkway in Fairfield	Construct westbound auxiliary lane between Air Base Parkway and North Texas Street/Manual Campos Parkway.	Freeway	Auxiliary Lanes (with transit)	H	H	H	M	M	M	M	M

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4	I-80 eastbound auxiliary Lane between Cherry Glenn Road and Pleasant Valley Road in Vacaville	Construct eastbound auxiliary lane between Cherry Glenn Road and Pleasant Valley Road.	Freeway	Auxiliary Lanes (without transit)	H	M	M	L	L	L	M	L
4	I-80 eastbound and westbound auxiliary lane between Alamo Drive and Pleasant Valley Road in Vacaville	Construct eastbound and westbound auxiliary lane between Alamo Drive and Pleasant Valley Road.	Freeway	Auxiliary Lanes (without transit)	H	M	M	L	L	L	M	L
4	I-80 westbound auxiliary lane between Alamo Drive and Pleasant Valley Road in Vacaville	Construct westbound auxiliary lane between Alamo Drive and Pleasant Valley Road.	Freeway	Auxiliary Lanes (without transit)	H	M	M	L	L	L	M	L
4	I-80 eastbound auxiliary lanes between Cliffside Drive and Allison Drive in Vacaville	Construct eastbound auxiliary lane between Cliffside Drive and Allison Drive with a two-lane off-ramp at Allison Drive.	Freeway	Auxiliary Lanes (without transit)	H	M	M	L	L	L	M	L
4	I-80 Ramp Metering from the Carquinez Bridge Toll Plaza to Redwood Steet	Install and activate eastbound and westbound ramp metering from the Carquinez Bridge Toll Plaza to Redwood Steet.	Freeway	Ramp Metering	H	H	H	M	M	M	H	M
4	I-80/680 freeway to freeway connector ramp metering in Fairfield	I-80 West to 680 South and 680 North to I-80 East – ramp metering freeway-to-freeway connectors.	Freeway	Ramp Metering	H	H	H	M	M	M	H	M
4	I-80/I-505 freeway to freeway connector ramp metering in Vacaville	I-80 East to I-505 North and I-505 South to West I-80 ramp metering to freeway-to-freeway connectors.	Freeway	Ramp Metering	H	H	H	M	M	M	H	M
~~4~~	I-80 ramp metering from the I-505 Interchange to the Yolo County line	Install and activate eastbound ramp metering from the I-505 Interchange to the Yolo County line.	Freeway	Ramp Metering	H	H	H	M	M	M	H	M
4	I-80/SR 29 ramp improvements in Vallejo	Widen westbound on-ramp from SR 29/Sonoma Boulevard.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Maritime Academy Drive Ramp Improvements in Vallejo	Reconstruct - widen I-80 westbound Maritime Academy Drive on-ramp.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Magazine Street ramp improvements in Vallejo	Reconstruct - widen I-80 eastbound and westbound Magazine Street on-ramp.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M

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4	I-80/780-Curtola Parkway ramp improvements in Vallejo	Modify I-80/780 Curtola Parkway - eastbound and westbound on-ramps from 780 Curtola Parkway for Transit/TPS.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Georgia Street ramp improvements in Vallejo	Modify Georgia Street eastbound and westbound on-ramps.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Spring Street ramp improvements in Vallejo	Reconstruct - widen I-80 eastbound Spring Street on-ramp.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Tennessee Street Ramp Improvements in Vallejo	Modify Tennessee Street East and westbound on-ramps.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	Redwood Parkway Interchange, Phase 2	Improve Interchange at Redwood Parkway.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/SR 37-Columbas Parkway Interchange Improvements in Vallejo	I-80/SR 37/Columbus Parkway Interchange improvements.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	American Canyon Overcrossing	Class I multi use path over the Interchange between American Canyon Road and McGary Road	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Red Top Road Ramp improvements in Fairfield	Widen eastbound on-ramp from Red Top Road.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/I-680/SR 12 Interchange (Packages 2-7)	Packages 2-7 provide direct connectivity from I-680 northbound to SR 12 westbound, widens I-680 and I-80 near the Interchange, and improves connections to Red Top road off-ramp. Express lane direct connectors are included in RTPID 17-10-0061.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Green Valley Road ramp improvements in Fairfield	Widen eastbound and westbound on-ramps from Green Valley Road.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Suisun Valley Road ramp improvements in Fairfield	Widen eastbound on and off ramps from Suisun Valley Road.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80 N. Texas Street Ramp improvements in Fairfield	Widen eastbound off-ramp N. Texas Street for Transit/TPS.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Beck Avenue ramp improvements in Fairfield	Widen eastbound on-ramp from Beck Avenue for Transit/TPS.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M

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4	Lagoon Valley Interchange	Widen Lagoon Valley Road bridge for additional left turn capacity. Sidewalk, intersection signal improvements at ramps, and approach roadway work. TIF funded.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Allison Drive ramp improvements in Vacaville	Widen eastbound and westbound Allison Drive on and off ramps for Transit/TPS.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Browns Valley Parkway ramp improvements in Vacaville	Widen westbound Browns Valley Parkway on-ramp for Transit/TPS.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-505/I-80 Connector	Remove/Reconstruct/Realign 80/505/East Monte Vista Avenue/Orange Drive connections and bridges.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	Widen Orange Drive to eastbound I-80	Intersection and ramp widening at Orange/Lawrence with I-80 eastbound.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	Widen Vaca Valley Parkway	Widen to six lanes between I-505 and I-80.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Vaca Valley Parkway ramp improvements in Vacaville	Widen eastbound and westbound Vaca Valley Parkway / Leisure Town Road on and off-ramps for Transit/TPS	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	West A Street and I-80 Interchange upgrade	Upgrade in phases the existing I-80 on-ramp and reconstruct the existing roadway overcrossing.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	Pitt School Road and I-80 Interchange upgrade	Improvements include widening the overcrossing structures to four lanes and on- and off-ramp improvements particularly on the eastside of Pitt School Road. Project may be implemented in phases over the next ten years. Improvements to area roadways.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80/Pitt School Road Ramp Improvements in Dixon	Widen eastbound and westbound Pitt School Road on and off-ramps for Transit/TPS.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	SR 113 South and I-80 Interchange improvements	Improvements to the area's roadways required to improve traffic circulation.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M

District	Project Name	Project Description	Category	Subcategory	Safety (collisions on state row)	Efficiency - recurring congestion	System Reliability - non-recurring congestion	Multimodal Accessibility and Connectivity	Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight/access to jobs, goods, and services	Modern Infrastructure and Asset Management	Efficient Land Use
4	Milk Farm Road and I-80 Interchange upgrade	Interchange improvements consistent with finding of I-80/I-680/I-780. Major Investment and Corridor Study completed by Solano Transportation Authority and Caltrans. May include relocation of Milk Farm Road. Project may be implemented in phases. Increased traffic due to development (mostly the northeast quadrant) will require the need to improve the existing interchange.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	Pedrick Road and I-80 Interchange upgrade	Improvements include realignment of both on-ramps and relocation of Sparling and Sievers Roads. Project may be implemented in phases depending on the pace of development.	Freeway	Interchange / Ramps (geometric)	M	M	M	M	M	M	M	M
4	I-80 Managed Lanes through Vallejo (Carquinez Bridge to SR 37)	Construct Managed Lane on I-80 from Carquinez Bridge to SR 37 in both directions.	Freeway	Managed Lanes	M	H	M	H	M	M	M	M
4	I-80 Managed Lanes (SR 37 to Red Top Road)	Construct Managed Lane on I-80 from SR 37 to Red Top Road in both directions.	Freeway	Managed Lanes	M	H	M	H	M	M	M	M
4	I-80 Managed Lanes (Red Top Road to I-505)	The Solano I-80 Managed Lanes Project (project) will construct approximately 18 miles of managed lanes in the I-80 corridor through conversion of existing HOV lanes to express lanes from west of Red Top Road to east of Air Base Parkway and highway widening for new express lanes from east of Air Base Parkway to east of I-505.	Freeway	Managed Lanes	M	H	M	H	M	M	M	M
4	I-680 Express Lanes: I-80 westbound to I-680 southbound and I-680 northbound to I-80 eastbound direct connectors	Express lanes on I-680/I-80 Interchange in Solano County - widen to add express lane direct connectors I-80 westbound to I-680 southbound and I-680 northbound to I-80 eastbound. This complements the larger interchange project of RTP ID 17-08-0009.	Freeway	Managed Lanes	M	H	M	H	M	M	M	M
~~4~~	I-80 Managed Lanes (I-505 to Yolo County line)	Construct managed lanes in both directions on I-80 from I-505 to the Yolo County line.	Freeway	Managed Lanes	M	H	M	H	M	M	M	M

District	Project Name	Project Description	Category	Subcategory	Safety (collisions on state row)	Efficiency - recurring congestion	System Reliability - non-recurring congestion	Multimodal Accessibility and Connectivity	Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight/access to jobs, goods, and services	Modern Infrastructure and Asset Management	Efficient Land Use
3	Riverfront Street extension	Riverfront Street, from Mill Street to the existing 3-way intersection at 5th Street, S. River Road., and 15th Street (0.3 mi): Extend as a two-lane roadway with sidewalks, protected bicycle lanes, lighting, and landscaping. At existing 3-way intersection construct the new four-way intersection to include Riverfront Street extension. Also, 15th Street, from Jefferson Boulevard to future 4-way intersection at River Road, 5th Street, and Riverfront Street: Realign roadway.	Arterial	Road Widening or Extension	M	M	L	L	L	M	L	L
3	Railyards Streets	Construct New Road/Bike/Pedestrian improvements to implement Railyards Specific Plan.	Arterial	Road Widening or Extension	L	L	L	L	L	L	L	L
3	I Street Bridge Replacement	I Street Bridge, over Sacramento River and complex of bridge approach structures. Replace existing 2 lane bridge with a 2-lane bridge on a new alignment. Project includes bridge approaches 22C0154, 24C0006, 24C0364L, 24C0364R, 24C0351J.	Arterial	Road Widening or Extension	L	L	L	L	L	L	L	L
3	Enterprise Crossing	Amendment to feasibility study, complete design, environmental clearance and construction of a proposed joint flood-protection improvement and transportation connection linking Southport to the Port Industrial Complex.	Arterial	Road Widening or Extension	M	M	L	L	L	M	L	L
3	Broadway Bridge	From West Sacramento to Sacramento, across the Sacramento River, construct the Broadway Bridge, a new southern crossing of the Sacramento River. Project includes Auto, transit, bicycle, and pedestrian facilities. (Local funding is split between the Cities of Sacramento and West Sacramento).	Arterial	Road Widening or Extension	M	M	L	L	L	M	L	L
3	Lower American River Crossing	New all-modal Bridge: between downtown Sacramento and South Natomas across the Lower American River. Includes: Auto, transit, bicycle, and pedestrian facilities. Scale and features to be determined through need and purpose study anticipated to begin in 2012.	Arterial	Road Widening or Extension	L	L	L	L	L	L	L	L

District	Project Name	Project Description	Category	Subcategory	Safety (collisions on state row)	Efficiency - recurring congestion	System Reliability - non-recurring congestion	Multimodal Accessibility and Connectivity	Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight/access to jobs, goods, and services	Modern Infrastructure and Asset Management	Efficient Land Use
3	South River Road Reconfiguration (Phase 3)	Reconstruct South River Road to 4-lanes from 15th Street to the 19th Street extension and restripe Village Parkway to Stonegate Boulevard, including restriping the 4-lane bridge from 2-lanes to 4-lanes over barge canal.	Arterial	Road Widening or Extension	L	L	L	L	L	L	L	L
3	Covell Boulevard Widening	Widen: 4 lanes from Shasta Drive to Denali Drive Includes: bike lanes and a center median.	Arterial	Road Widening or Extension	L	L	L	L	L	L	L	L
3	Mace Boulevard Curve	In Davis, between Alhambra Drive and Alhambra Drive (Mace curve), widen from 2 to 4 lanes, provide bike lanes, a landscaped median, and turn lanes.	Arterial	Road Widening or Extension	M	M	L	L	L	M	L	L
3	East Commerce Way B	In Sacramento, extend East Commerce Way from Arena Boulevard. to Natomas Crossing Drive, as a 6-lane road.	Arterial	Road Widening or Extension	L	L	L	L	L	L	L	L
3	Industrial Boulevard Widening	In West Sacramento, Industrial Boulevard from the Palamidessi Bridge at the Barge Canal to Harbor Boulevard: widen from 4 to 6 lanes.	Arterial	Road Widening or Extension	M	M	L	L	L	M	L	L
3	Lake Washington Boulevard. Bridge Widening	Lake Washington Boulevard: Widen the Palamidessi bridge over the barge canal from 4 to 6 lanes.	Arterial	Road Widening or Extension	L	L	L	L	L	L	L	L
3	Harbor Boulevard Widening	Harbor Boulevard, West Capitol Avenue to Industrial: widen 4 to 6 lanes.	Arterial	Road Widening or Extension	M	M	L	L	L	M	L	L
3	Broadway Complete Street Phase I	Phase I: In Sacramento, Broadway from 3rd Street to 16th Street, convert four lane arterial to two lane arterial with buffered bike lanes, median improvements, sidewalk improvements and streetscape enhancements. Create surface street (29th Street) from X Street to SR 99 south. PA&ED will be completed for the entire 2-mile corridor, from 29th Street to 3rd Street.	Arterial	Road Widening or Extension	L	L	L	L	L	L	L	L
4	Suisun Valley Road Expansion Study and Implementation	Analysis of by-pass traffic on Suisun Valley Road from I-80 to Napa County line; Implementation of recommended improvements.	Arterial	Road Widening or Extension	M	M	L	L	L	M	L	L

District	Project Name	Project Description	Category	Subcategory	Safety (collisions on state row)	Efficiency - recurring congestion	System Reliability - non-recurring congestion	Multimodal Accessibility and Connectivity	Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight/access to jobs, goods, and services	Modern Infrastructure and Asset Management	Efficient Land Use
3	Antelope Truck Scales. 03-0H530	In Sacramento City in Sacramento and Citrus Heights 0.7 miles east of Greenback Lane overcrossing to 0.3 miles east of Antelope Road.	Freight	Truck Scales	M	M	L	L	H	H	H	L
4	I-80 westbound Cordelia Truck Scales Relocation Project	Project upgrades existing truck scales on westbound I-80 in Solano County. Existing westbound truck scales are located on the most congested freeway segment of I-80 in Solano County. Scales are outdated and cannot process the current and future truck volumes on westbound I-80. Trucks are slow to enter and leave the scales because of short ramps, adding to existing traffic congestion and safety issues on I-80.	Freight	Truck Scales	M	M	L	L	H	H	H	L
4	Dixon Truck Plaza	Located on Currie Road in Dixon, north of I-80, the project would include retail, a hotel, truck parking, charging stations for electric vehicles and electric trucks, and Soltrans transit vehicle charging and storage.	Freight	Truck Parking	H	L	L	L	M	H	M	L
Conceptual												
3	Operating Assistance for Route 42 Intercity and Express Bus Service	Bus service connecting Davis and Sacramento along I-80 with limited stops in between for Express Services, and additional local stops for Route 42: Operating assistance for three years. Operations would take place weekdays (Express and Route 42), and weekends (Route 42), approximately between 5:30 A.M. and 11:00 P.M.	Transit	Express Bus	M	H	M	H	H	M	L	M
3	Bus on Shoulder	Project allowing for safe and effective operation of Bus Only lanes on I-80 shoulders during times of high congestion.	Transit	Express Bus	M	H	M	H	H	M	L	M
3	Bus Service Expansion	#138 Causeway Connection, hourly service expansion – Add an additional 6 morning and 6 afternoon bi-directional, one-way transit trips per day to the existing route. The following are the proposed expansions to the morning and afternoon trips for the route: 3 morning trips from Davis to Sac 3 morning trips from Sac to Davis	Transit	Express Bus	M	H	M	H	H	M	L	M

District	Project Name	Project Description	Category	Subcategory	Safety (collisions on state row)	Efficiency - recurring congestion	System Reliability - non-recurring congestion	Multimodal Accessibility and Connectivity	Air Pollution and Greenhouse Gas Emissions Reduction	Economic Prosperity - freight/access to jobs, goods, and services	Modern Infrastructure and Asset Management	Efficient Land Use
		3 afternoon trips from Davis to Sac 3 afternoon trips from Sac to Davis										
3	Bus Service Expansion	#138 Causeway Connection, peak hour trips – Increase transit trips during the AM and PM peak hours to reduce headway times.	Transit	Express Bus	M	H	M	H	H	M	L	M
4	I-80 Improvements at SR 113 North Interchange	Reduction of excess lanes on eastbound I-80. At the SR-113 interchange the freeway expands from 3 to 6 lanes, and then abruptly drops 3 lanes creating a lot of losses in throughput. Removing the excess lanes should improve capacity and throughput.	Freeway	Operational Improvement (Mainline Lane Reduction)	H	H	H	L	M	M	L	L

Chapter 10 | Funding Sources

This chapter includes a comprehensive summary of various funding sources that can be used by Caltrans and I-80 corridor partners and stakeholders to implement the recommended projects. These include funding related local, regional, and state funding programs. The sections below describe potential grant programs to assist in the funding and development of projects outlined in the CMCP.

10.1 | Senate Bill 1 Competitive Programs

Solutions for Congested Corridors Program

The CTC administers the SCCP to provide funding to achieve a balanced set of transportation, environmental, and community access improvements to reduce congestion throughout the State. transportation agencies and Caltrans may nominate projects for funding.

Trade Corridor Enhancement Program

The TCEP focuses on routes and transportation infrastructure vital to California's trade and freight economy. Caltrans and regional entities can be project sponsors. Regional funding targets are set for specific regions in the State.

10.2 | Federal Funding Sources

Federal transportation funding is administered by the United States Department of Transportation (USDOT) and authorized by Federal transportation bills. The most recent transportation funding bill, Infrastructure Investment and Jobs Act/Bipartisan Infrastructure Law (IIJA/BIL) was signed into law by President Joe Bide on November 15, 2021. Much of the funding available through the USDOT's Highway Trust Fund is allocated to California based on the state's population. The State of California, in turn, distributes those funds to local agencies by formula or through competitive grant programs. For instance, the majority of the federally funded Surface Transportation Program funding in California is programmed through the STIP. Additionally, California's ATP consolidated most of the Federal and state funding sources for bicycle and pedestrian projects.

Through the IIJA/BIL, USDOT provides competitive discretionary funding programs for transportation projects, notable ones include Infrastructure for Rebuilding America (INFRA) which emphasizes highway and goods movement projects and Rebuilding American Infrastructure with Sustainability and Equity (RAISE) which emphasizes capital investments in surface transportation that will have significant local or regional impact.

Highlighted below in **Table 10.1**, lists the USDOT programs that may be utilized for the I-80 CMCP projects.

TABLE 10.1 | FEDERAL FUNDING SOURCES

Name	Funding Type	Eligible Modes/Description
INFRA	Discretionary	A Federal discretionary grant program reviewed by USDOT. Emphasis on highway and goods movement projects.
RAISE	Discretionary	A Federal discretionary grant program reviewed by USDOT. Emphasis on multimodal projects.
New Starts and Small Starts (Federal Transit Administration Section 5309)	Discretionary	Funds light rail, heavy rail, commuter rail, streetcar, and bus rapid transit projects.
Highway Safety Improvement Program (HSIP)	Discretionary	Federally allocated to the State by formula, the HSIP program is available for roadway safety projects through a competitive program administered by Caltrans.
Congestion Mitigation Air Quality	Formula	Federally designated air quality containment areas receive funding by formula to program local and regional projects.
Rail-Highway Crossings (Section 130) Program	Discretionary	Safety improvements to reduce the number of fatalities, injuries, and crashes at public railway-highway crossings.
National Highway Freight Program (NHFP)	Discretionary	The Fixing America's Surface Transportation Act established NHFP to improve the efficient movement of freight on the National Highway Freight Network.
National Highway Performance Program	Discretionary	The NHPP provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS.
Nationally Significant Federal Lands and Tribal Projects (NSFLTP)	Discretionary	The NSFLTP program provides funding for constructing, reconstructing, and rehabilitating nationally significant projects on Federal or Tribal lands.
National Significant Freight and Highway Projects (NSFHP)	Discretionary	The NSFHP provides financial assistance—competitive grants or credit assistance—to nationally and regionally significant freight and highway projects that align with the program goals to: improve safety, efficiency, and reliability of the movement of freight and people; generate national or regional economic benefits and an increase in US global economic competitiveness; reduce highway congestion and bottlenecks; Improve connectivity between modes of freight transportation; enhance the resiliency of critical highway infrastructure and help protect the environment; improve

Name	Funding Type	Eligible Modes/Description
		roadways vital to national energy security; address the impact of population growth on the movement of people and freight, mitigate impacts of freight movements on communities.
Surface Transportation Block Grant Program (STBG)	Formula	STBG provides flexible funding that states and local governments may use for projects on any Federal-aid highway, including the National Highway System; bridge projects on any public road; transit capital projects; and public bus terminals and facilities.
Federal Transit Administration Sections 5303, 5304, 5305	Discretionary	Provides procedural and funding requirements for multimodal transportation planning in States and metropolitan areas. Planning must be cooperative, continuous, and comprehensive leading to long-range plans and short-range programs that reflect transportation investment priorities. Funds are available to States and Metropolitan Planning Organizations for planning activities.
Federal Transit Administration Section 5307	Formula	The Urbanized Area Formula Funding program provides Federal resources to urbanized areas and to governors for transit capital and operating assistance and for transportation related planning.
Federal Transit Administration Section 5311	Formula	This program provides formula-based funding for capital and/or operating assistance to rural areas with a population fewer than 50,000 where many residents rely on public transit to reach their destinations.
Federal Transit Administration Section 5312	Discretionary	This program supports research activities that improve the safety, reliability, efficiency, and sustainability of public transportation by investing in the development, testing, and deployment of innovative technologies, materials, and processes.
Federal Transit Administration Section 5337	Formula	The State of Good Repair program is dedicated to repairing and upgrading the Nation's rail transit systems along with high-intensity motor bus systems that use high-occupancy vehicle lanes, including bus rapid transit.
Federal Transit Administration Section 5339	Formula	The Bus and Bus Facilities Infrastructure Investment Program (49 US Code 5339) provides Federal resources to states and direct recipients to replace, rehabilitate and purchase buses and related equipment. This programs also allows for the construction of bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities.
Federal Transit Administration Transit-Oriented Development Planning Pilot	Discretionary	Provides funding to advance planning efforts that support transit-oriented development (TOD) associated with new fixed-guideway and core capacity improvement projects. TOD focuses growth around transit stations to promote ridership, affordable housing near transit, revitalized downtown centers

Name	Funding Type	Eligible Modes/Description
		and neighborhoods, and encourage local economic development.
Recreational Trails Program	Discretionary	The Recreational Trails Program provides funds annually for recreational trails and trails-related projects. The RTP is administered at the Federal level by the Federal Highway Administration. It is administered at the state level by the California Department of Parks and Recreation.

Sources: US Department of Transportation; California Department of Transportation; Cambridge Systematics.

In addition to these Federal funding sources, the IIJA/BIL continues the Transportation Infrastructure Finance and Innovation Act (TIFIA) Program, which provides Federal credit assistance to eligible surface transportation projects, including highway, transit, intercity passenger rail, some types of freight rail, intermodal freight transfer facilities, and some modifications inside a port terminal.

The IIJA/BIL continues the authority of the TIFIA program to provide to States, localities, or other public authorities, as well as private entities undertaking projects sponsored by public authorities, three distinct types of financial assistance:

- Secured loans are direct Federal loans to project sponsors offering flexible repayment terms and providing combined construction and permanent financing of capital costs.
- Loan guarantees provide full-faith-and-credit guarantees by the Federal Government to institutional investors, such as pension funds, that make loans for projects.
- Lines of credit are contingent sources of funding in the form of Federal loans that may be drawn upon to supplement project revenues, if needed, during the first 10 years of project operations. [23 US Code 603 and 604]

10.3 | State Funding Sources

With the passage of California SB 1, the Road Repair and Accountability Act of 2017, the State of California has additional transportation funding for local and regional projects. SB 1 augmented existing sources of funding, such as the ATP and State Highway Operation and Protection Program, and created entirely new funding programs, such as the SCCP and Trade Corridor Enhancement programs. **Table 10.2** highlights the state funding sources that are most relevant to the I-80 CMCP projects.

TABLE 10.2 | STATE FUNDING SOURCES

Name	Funding Type	Eligible Modes/Description
Local Streets and Roads	Formula	Cities and counties receive funds for road maintenance, safety projects, railroad grade separations, complete streets, and traffic control devices.
SCCP	Discretionary	Regional transportation authorities and Caltrans may nominate projects for funding to achieve a balanced set of transportation, environmental, and community access improvements to reduce congestion.
TCEP	Discretionary	Caltrans and regional entities can be project sponsors. Funding is available for infrastructure improvements in the Central Coast, Bay Area, Central Valley, LA/Inland Empire, and San Diego/Border.

Name	Funding Type	Eligible Modes/Description
Local Partnership Program (LPP)	60% Discretionary 40% Formula	Eligible funding for "self-help" counties. *Most transportation improvements are eligible.
State Highway Operation and Protection Program (SHOPP)	Formula	Projects are selected by Caltrans and adopted by the CTC. Projects included in the program are limited to capital improvements relative to the maintenance, safety, operation, and rehabilitation of the SHS that do not add new capacity to the system. SB 1 has provided additional funding capacity to this program.
STIP	Formula	Projects are proposed by regional transportation agencies and approved by the CTC on a bi-annual basis. The majority of the STIP funding comes from Federal sources. SB 1 has provided additional funding capacity to this program.
TIRCP	Discretionary	Discretionary program administered by Caltrans and controlled by CalSTA. Funds transformative capital improvements that will modernize California's intercity, commuter, and urban rail systems, and bus and ferry transit systems, to significantly reduce emissions of greenhouse gases, VMT, and congestion.
Grade Separation (Section 190) Program	Discretionary	This competitive grant program provides $15 million each year to local agencies for the construction grade separation projects.

*Counties that have passed local option sales tax measures to fund transportation improvements.
Source: California Department of Transportation, California Transportation Commission.

Appendix I

I-80 CMCP Census Tracts Table

Appendix II

I-80 CMCP Healthy Places Index Census Tracts Table

Appendix III

I-80 Corridor Modeling and Analysis Project Summary

Appendix IV

STEER I-80 Modeling Report

Appendix V
Executed Project Charter

Appendix VI

I-80 CMCP Segment Maps