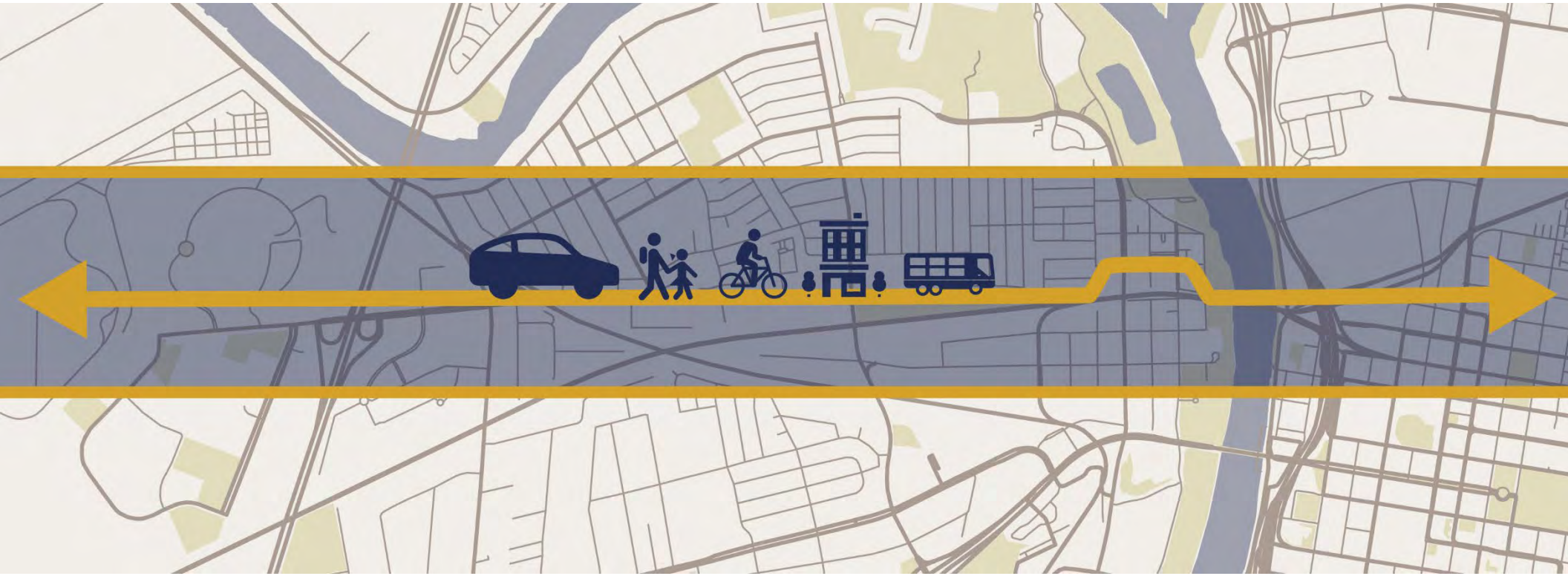
SACRAMENTO AVENUE

COMPLETE STREET PLAN



FINAL PLAN
SEPTEMBER 2024

Prepared For:

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1 Introduction

Sacramento Avenue

Sacramento Avenue is a key corridor in the City of West Sacramento (the "City") that runs east-west between interstates 5 and 80. As one of the City's major arterials, and most significant east-west transportation corridors, the roadway connects regional amenities such as West Sacramento's commercial anchors to the west and the developing Sacramento River riverfront, the C Street Railyards Bridge, the I Street Bridge Deck Conversion for Active Transportation Project, and Downtown Sacramento, to the east. As a local transportation route through primarily residential neighborhoods, the corridor also provides access to community amenities, including trails and outdoor recreation, schools, and lifestyle destinations. Figure 1 presents the Sacramento Avenue corridor in relation to its local context, highlighting the location of adjacent West Sacramento areas and regional interstates.

The land use context across the corridor is varied, and both City-wide and regional land use and infrastructure growth is projected in the near and long-term. Fulfilling these diverse and changing functions in both the near and long term requires a balance between traffic operations, safety, and accessibility for all of the road users who will use the corridor. With a 2021 Community Design Program grant from the Sacramento Area Council of Governments (SACOG), the City initiated the Sacramento Avenue Complete Street Plan to ensure that existing and future travel needs, and development impacts are considered within the local context.

The corridor's existing transportation infrastructure is primarily oriented toward vehicular traffic, offering limited multimodal facilities to support safe and connected travel along and across the corridor for non-vehicular modes. Class II bike lanes are present on most of the corridor; however, their value is limited due to high vehicular speeds, wide travel lanes, and minimal separation between bikes and cars. Pedestrian facilities are intermittent and disconnected, with approximately 40 percent of the corridor lacking sidewalk coverage. The existing conditions along the corridor result in a stressful experience for all road users, but especially for those who are walking, biking, or using transit.

Corridor History

Sacramento Avenue developed along some of the oldest communities in West Sacramento, where Euro American settlers first established and settled in the area in the 1840s. The alignment of Sacramento Avenue can be traced back to the development of Legislative Route Number 50 (LRN 50), which was commissioned in 1919 to connect the cities of Woodland to Sacramento. LRN 50 was also known as State Sign Route 16 and State Sign Route 24 between the 1930s to 1960s due to varying signing policies in California. In September 1963, the passage of Senate Bill 64 resulted in state-wide highway renumbering to reconcile the duplicative and confusing numbering and naming system, and it became known as Route 84 as adopted by the State Legislature in 1965. When State Route 84 was extended north along Jefferson Boulevard at United States 50 to Sacramento Avenue in the 1970-1980s, Sacramento Avenue between Jefferson Boulevard/Kegle Avenue to Interstate 80 was also widened to a four-lane street and re-signed as part of the State Route 84 to provide connections among the communities of Bryte, Broderick, and West Sacramento. Original design of the Sacramento Avenue section proposed a 100-foot cross section that would include four 12-foot lanes, a 16-foot median for left-turn movements, 8-foot parking strips on each side, 10-foot sidewalks on each side, and possibly utility area. Despite the original intent, this section of Sacramento Avenue was built without complete parking strips, sidewalks, and the utilities were installed along the available area.

Though the City of West Sacramento was incorporated in 1987, Sacramento Avenue remained part of the state highway system until it was relinquished by the California Department of Transportation (Caltrans) to the City in 2003. The history of Sacramento Avenue's original intended use - as a main thoroughfare to the county offices in

Woodland and as a state-controlled facility for 84 years - provides context to its current vehicular focused design. The City has made minor improvements to the corridor over time - by 2011, the City removed parking along Sacramento Avenue between Jefferson Boulevard/Kegle Avenue and Harbor Boulevard to add in Class II bike lanes with the Measure K Elkhorn/Broderick Area Street Rehabilitation Project.

Purpose & Approach

Creating a complete street corridor plan that meets the needs of residential neighborhoods, businesses, and commuters, while contending with right-of-way constraints, requires context-sensitive solutions that adapt to changing character and limitations. This Sacramento Avenue Complete Street Plan (the "Plan") aims to provide a roadmap for implementing community-driven improvements that provide safer and more comfortable transportation options for people of all ages and abilities, while enhancing public spaces for economic and community vitality along the corridor.

The Plan presents an overview of the project purpose and corridor study area, summarizes previous planning efforts and community engagement that informed the development of the project, and establishes a vision to introduce new mobility choices to Sacramento Avenue, expand safe access to existing multimodal opportunities, and strengthen community connectivity through urban and street design. Subsequent chapters review the existing conditions along the corridor, identify and evaluate strategies for addressing the needs of the corridor and present a strategic plan to implement the corridor vision.

The Sacramento Avenue Complete Street Plan will provide the City with an actionable framework for implementable programs and projects with proven results to address real safety and accessibility issues in the study area. Developed in close coordination with the community and project stakeholders, this Plan identifies improvements to streets, intersections, streetscape, and landscape using Complete Streets planning and design elements. A key focus of this Plan is to expand access and connectivity for non-vehicular modes of transportation. Improvements are evaluated based on several criteria, including safety, accessibility, equity, sustainability, and benefit-cost.

Project Area

The Sacramento Avenue corridor is approximately two miles in length between 2nd Street and Harbor Boulevard, including C Street east of 6th Street. The corridor runs east-west through the City of West Sacramento, with Interstate 5 on the West and Interstate 80, as well as the Sacramento River, on the east.

Land uses and destinations along the corridor include commercial and community destinations, and residential neighborhoods, many of which are considered disadvantaged. The Riverpoint Marketplace shopping center, which includes various retailers such as The Home Depot, IKEA, Walmart, and various other commercial businesses is located just west of the corridor. To the east of the corridor, the Sacramento Riverfront trail runs north-south adjacent to the corridor. Eastward beyond the river, the I Street Bridge connects to Downtown Sacramento. To the north and south of the corridor, there are several parks and open space areas, as well as schools.

Because the existing land use and street character is varied, the corridor was grouped into three core areas based on the initial segmentation of the corridor into six segments. This segmentation is described in detail in the subsequent section of the Plan. The discussion of existing conditions, proposed strategies and improvements and evaluation of the preferred concept in the chapters that follow are organized around the segmentation of the corridor.

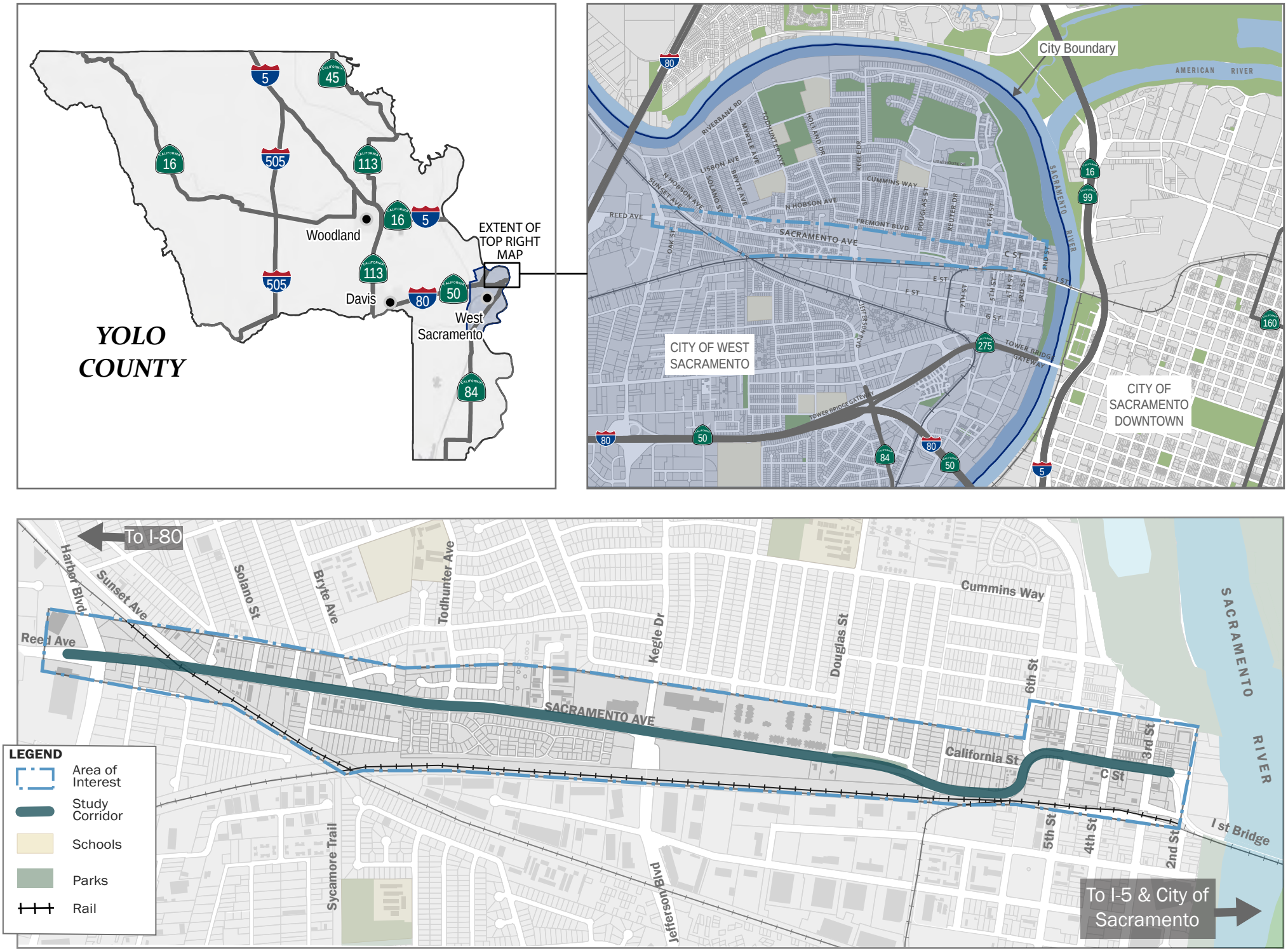


Figure 1 Area of Interest & Regional Vicinity

Corridor Areas & Segments

The corridor areas and sub-segments are shown in Figure 2, and described in further detail below.

Western Area: Wide & Multi-Lane

The western area of the corridor includes segments one, two and three, the areas from Harbor Boulevard to Jefferson Boulevard. This section features a wide, five-lane cross-section with adjacent land use that is almost entirely developed. The adjacent land use through this area is predominantly low- to medium-density residential, as well as some commercial. At the southwest of the western area is the Riverpoint Marketplace shopping center, which is a regional commercial destination that includes big box retailers like IKEA and Walmart as well as smaller businesses and restaurants. Just north of the corridor along Bryte Avenue is Lighthouse Charter School, a K-8 school whose students are served by Sacramento Avenue.

This section of the corridor serves as a key connection between two of the City's most highly trafficked arterial roadways, Harbor and Jefferson Boulevards, and connects to I-80 at the west, resulting in the highest traffic volumes found along the corridor. While speeds are posted at 40 mph, the 85th percentile speed is 45 mph, and community members report speeding is a common occurrence. The existing transportation facilities include Class II bike lanes and sidewalks, but there are intermittent gaps in sidewalk coverage and high traffic volumes and speeds result in a stressful experience for active transportation users.

Central Area: Transitional & Underdeveloped

The central area of the corridor includes segments four and five, the areas west of Jefferson Boulevard to the 6th Street curve west of California Street. West of Jefferson Boulevard, Sacramento Avenue narrows to two through lanes with a left-turn pocket at some locations. Most of the central area lacks sidewalks and while Class II bike lanes exist, high speeds and lack of street lighting diminish their utility.

The adjacent land use is varied and currently undeveloped in most areas on the south side of the corridor. To the northwest of the Sacramento Avenue / Jefferson Boulevard intersection is the Riverbend Shopping Plaza, which includes two grocery stores, a Post Office and convenience store. East of the shopping center, also on the north side, is a medium-density residential, and a small parklet called Elkhorn Plaza.

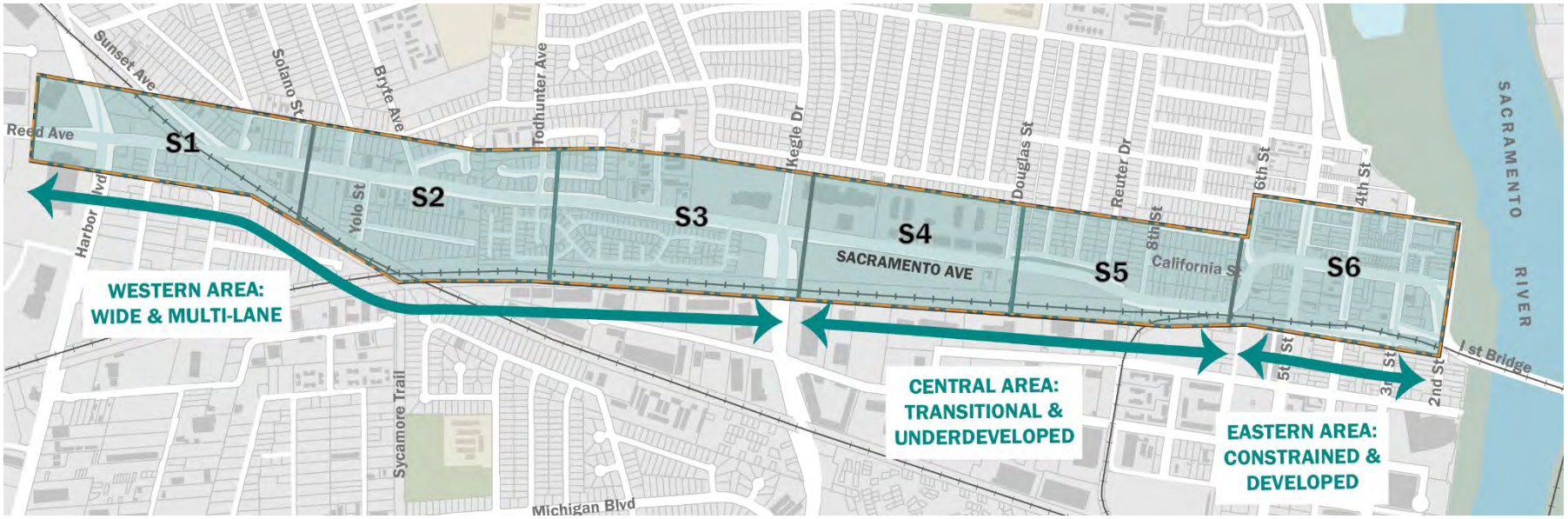
East of Elkhorn Plaza, the street width along Sacramento Avenue begins to narrow, constrained by railroad right-of-way to the south. At the east end of the central area, the roadway curves, and Sacramento Avenue transitions to 6th Street for a short distance. The curve in the roadway is notorious for safety concerns, with a lack of street lighting, site distance limitations and speeding being common issues.

Eastern Area: Constrained & Developed

The eastern area of the corridor comprises segment six, which includes the areas east of California Street to the corridor's east end at 2nd Street. Sacramento Avenue at 5th and 6th Streets provide connections to residential neighborhoods to the north and south of the corridor. East of 5th Street, the land use context changes from medium-density residential to high density residential and mixed-use development, with a few vacant parcels. The posted speeds also lower to 25 mph. With the transition in land use and lower speed, the eastern area / segment six lends more toward a pedestrian-scale environment.

While included in the corridor area of interest for the Plan, this segment is at the intersection of several planned projects, which are at various stages of planning and/or construction process. This segment is constrained by both an existing historical site and the planned projects that are already slated to upgrade the existing infrastructure and roadway geometry, as well as provide new connections to Downtown Sacramento. Planned projects are discussed in more detail in the following section of the Plan.

Figure 2 Corridor Areas & Segments



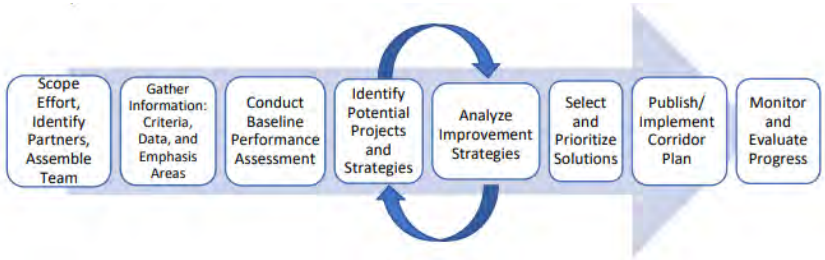
Planning Context

The Sacramento Avenue Complete Street Plan builds upon a framework of existing plans and policy documents at the statewide, regional and local levels, as well as several development and infrastructure projects within or connecting to the study area. This framework is described in more detail in the following sections.

State Planning Documents

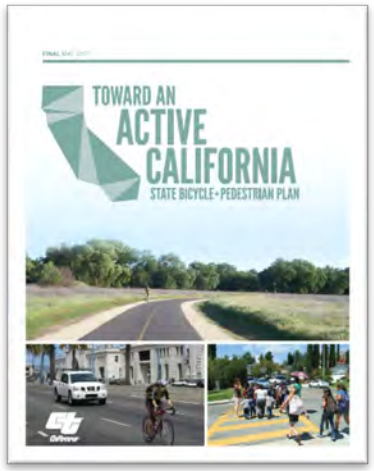
Caltrans Corridor Planning Process Guide (2020)

The Corridor Planning Process Guide was prepared by Caltrans' Division of Transportation Planning to provide guidance on preparing corridor planning document. The guide establishes a comprehensive planning approach vis-à-vis protocols and procedures to identify and implement transportation needs.



Toward an Active California (2017)

- Toward an Active California is the State's first bicycle and pedestrian plan that provides policies and actions for Caltrans and partner agencies to undertake to improve comfort, connectivity, safety, and feasibility of travel by walking and bicycling. By 2040, people in California of all ages, abilities, and incomes can safely, conveniently, and comfortably walk and bicycle for their transportation needs.
- The goals outline in the Caltrans' plan as related to the Complete Street Plan are:
  - MOBILITY: Reduce dependency on single-occupancy vehicle travel through mode shift to bicycling, walking, and transit.
  - SAFETY: Increase safety for all users (modes) and abilities, as expressed through Toward Zero Deaths (Caltrans) and Vision Zero (local agencies) initiatives



  - EQUITY: Promote active transportation solutions that serve the communities within the District by improving accessibility and expanding healthy transportation options for underserved communities
  - PRESERVATION: Ensure District active transportation strategies and actions adequately address the long-term maintenance needs and resources required to maintain a state of good repair for the state highway system.

Design Guidance

In addition to standards and planning guidance provided by state, regional and local agency documents, this project incorporates design guidance and best practices for multimodal and complete streets. The American Association of State Highway and Transportation Officials (AASHTO) has developed two manuals relevant to the Plan: a Policy on Geometric Design of Highways and Streets, (also called the "Green Book"), and a Guide for the Development of Bicycle Facilities.

The National Association of City Transportation Officials (NACTO) has also published several relevant books that provide comprehensive guidance and safety considerations for urban street environments, including the Urban Street Design Guide, Urban Bikeway Design Guide and the Transit Street Design Guide.

Regional Planning Documents

Yolo Active Transportation Corridors Plan (YATC)

The YATC Plan is under development by the Yolo County Transportation District (YoloTD) and is scheduled for completion in summer 2024. The YATC Plan prioritizes active transportation connections within and throughout Yolo County communities, addressing mobility barriers of low-income and minority residents.

Goals outlined by the YATC relevant to the Plan include:

- Improve safety by providing dedicated active transportation facilities
- Advance environmental sustainability and climate action by encouraging mode shift
- Enhance quality of life and equity by addressing transportation barriers facing isolate, low-income, and minority communities
- Promote state of good repair by reducing vehicle miles traveled (VMT) on existing roadways
- Boost economic competitiveness by increasing foot traffic to local business in incorporated areas and agritourism
- Advance regional vision for an interconnected trail network

Sacramento Region Trail Network Action Plan (2022)

The Sacramento Region Trail Network Action Plan establishes a prioritization framework and implementation strategy for planned trail projects in the SACOG region. The goals of the Action Plan are to establish a network that promotes safety, all ages and abilities, economic vitality, environmental justice, health, and recreation. The Sacramento Region Trail Network map identifies Sacramento Avenue as a trail study corridor.

SACOG Metropolitan Transportation Plan/Sustainable Community Strategy (MTP/SCS)



The SACOG 2020 MTP/SCS presents a transportation and land use strategy for the SACOG region of Sacramento, Sutter, Yolo, and Yuba counties. Its purpose is to support jobs, economic opportunity, transportation choices, and affordable housing for all. It identifies the best way forward to improve regional air quality, preserve open space and natural resources, and help the state of California achieve its greenhouse gas (GHG) emissions reduction targets.

Goals of the MTP/SCS relevant to the Plan include:

- "Build vibrant places for today's and tomorrow's residents."
- "Foster the next generation of mobility solutions."
- "Modernize the way we pay for transportation infrastructure."
- "Build and maintain a safe, reliable, and multimodal transportation system."

Programmed and planned projects proposed by the MTP/SCS relevant to the Sacramento Avenue corridor are described below. SACOG is underway with an update to the MTP/SCS, called the 2025 Blueprint, scheduled for adoption in early 2025. The following lists projects programmed and planned in the 2020 MTP/SCS, with updates from the City.

Programmed Projects:

» Downtown/Riverfront Streetcar: Sacramento Regional Transit District (SacRT) extension of Light Rail Transit (LRT) Service (Phase 1): The updated alignment for this LRT extension into West Sacramento at Sutter Health Park from the Sacramento Valley Station regional mobility hub in Sacramento utilizes existing rail infrastructure on H Street, 7th and 8th Streets; connecting with new track and LRT stations along N Street, 3rd Street, and Capitol Mall/Tower Bridge Gateway. This West Sacramento service extension will use the same LRT vehicles that are used systemwide. (Project Development programmed separately under VAR56127, for $14,570,000.) (Anticipated cost: $162,000,000 ; Anticipated completion: 2025-2030)

Planned Projects:

» C Street-Railyards Bridge (I Street Bridge Replacement): New Northern Bridge from Sacramento to West Sacramento across the Sacramento River. Includes auto, transit, bicycle, and pedestrian facilities. Project is currently under final design phase. Led by City of Sacramento in cooperation with West Sacramento and Caltrans. (Anticipated cost: $280,000,000; Anticipated completion: 2030-2031)

» 3rd and C Gateway Improvements: Design, environmental clearance, permitting and construction of streetscape improvements at and adjacent to the intersection of 3rd and C Streets in Washington. The improvements implement the streetscape improvements recommended by the Washington Realized: Sustainable Community Strategy for C Street, 3rd Street and the reconfigured 2nd Street south roadway. (Anticipated cost: $1,500,000; Anticipated completion: 2020-2025)

» I Street Bridge Deck Conversion: Design, environmental clearance, permitting and construction of approaches and the upper deck for the I St Bridge. The improvements include construction/modification of the approaches for ADA compliance, resurfacing of the deck and other appurtenant circulation improvements. Civic spaces will be incorporated into the project. Project is entering the design phase. (Anticipated cost: $23,000,000; Anticipated completion: 2030-2031)

» I Street to Indian Heritage Bike Trail: Construct Bike Trail under I Street Bridge and new C Street Bridge then continue atop levee to Indian Heritage Center. (Anticipated cost: $2,000,000; Anticipated completion: 2030-2035)

» Sycamore Trail Phase V: A five-phase project that extends south from Sacramento Avenue near Yolo Street across United States Highway 50 (US 50) and the Barge Canal to the Lake Washington Boulevard and Jefferson Boulevard intersection. Phase 1 between Rice Avenue and West Capitol was completed in 2019. The City is currently underway with construction of Phase 2 which will extend the trail from Westmore Oaks School over US 50 connecting with Joey Lopes Park and design of Phase 3 which will further extend the trail from Westmore Oaks Elementary School to the intersection of Park Boulevard and Stone Boulevard. SACOG was awarded a Reconnecting Communities and Neighborhood - Regional Partnership Challenge grant to conduct feasibility studies for extending the trail south across the Barge Canal (Phase IV) and north over the Union Pacific Railroad and Sierra Northern Railway (Phase V). Utilizing the existing sewer easement, Sycamore Trail Phase V will cross the Mikon Junction Underpass, twenty-foot-high Union Pacific Railroad (UPRR)/Sierra Northern Railway track embankments at the north end to reach the Broderick/Bryte neighborhoods. (Phase V Anticipated cost: $TBD; Anticipated completion: 2030-2035)

» I-80/Reed Ave. Interchange: Led by Caltrans, I-80 at Reed Ave. interchange improvements include widening ramps at the intersection with Reed Avenue, widening Reed Avenue, and limiting some local street access, as well as adding ramp metering to the on-ramps. (Anticipated cost: $12,350,000; Anticipated completion: 2025-2030)

Note that the City is planning to include the following projects in the 2025 Blueprint, consistent with grant applications/awards that were not captured in SACOG's 2022 data request.

» Clarksburg Branch Line Trail (CBLT) North Terminus Extension to Broderick: The planned northern terminus of the CBLT in West Sacramento is the Washington District and Broderick neighborhood. The upcoming updates to the Washington

Specific Plan and to the West Sacramento Bicycle, Pedestrian, and Trails Master Plan will each identify the Clarksburg extension and future trailhead connecting at 8th Street and Sacramento Avenue where, like the Sycamore Trail, the City will work with Union Pacific Railroad to design an under or overcrossing of existing elevated Union Pacific Railroad track. Within the City limits, 1.3 miles of the trail corridor between Locks Drive and Cherokee Road, running east of River City High School and the City's recreation center. From there, a 3-mile segment south to the City Limit was funded by SACOG through the Community Design Program to complete engineering design, and this work is estimated to be completed by 2025. Construction funding has been committed for that portion of the project as well through execution of local development agreements. The City, Yolo County, YoloTD, and the Delta Protection Commission submitted a 2024 Carbon Reduction Program grant application to SACOG for the planning and design of the City-owned 6.4-mile length of the Clarksburg Branch Line abandoned railroad right-of-way at the south City limits to Clarksburg in unincorporated Yolo County. (Anticipated cost TBD; Anticipated completion 2040 or later)

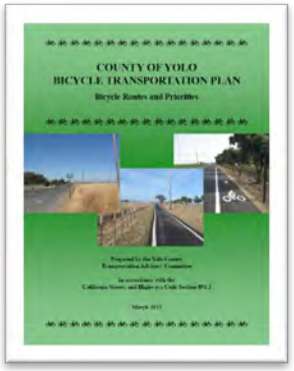
» HSIP Safety and Signal Improvement Project: Improvements aimed to increase the safety between vehicle and pedestrian movements at multiple intersections along the corridor. Citywide improvements include pedestrian crossing enhancements, improved hardware at signalized intersections, and geometric modification of approaches at intersections. (Anticipated cost: $3.3 million; Anticipated completion: 2019-2025)

» North 5th Street Connectivity and Complete Street Project: The City was awarded a 2023 Regional Active Transportation Program grant from SACOG for planning, design and right-of-way. The project will increase safety and close gaps in the active transportation network for bicyclists and pedestrians to safely connect to the Riverwalk Trail and the upcoming C Street-Railyards Bridge and the I Street Bridge Deck Conversion Project. The project will continue the high visibility bike lanes by reallocating one travel lane in each direction to add high visibility, parking protected Class II bike lanes on 5th Street between C Street and A Street and will add buffered high visibility bike lanes on Lighthouse Drive between A Street and Fountain Drive. The project will include the construction of the remaining needed active transportation infrastructure on C Street between 3rd Street and 6th Street to make the facility a complete streets corridor, facilitating a safe a connected network between residential areas to local destinations to the upcoming bridge projects. The project will also include pedestrian improvements such as construction of new sidewalk to close sidewalk gaps, safer pedestrian crossings at unmarked and unsignalized intersections, and an ADA accessible connection on A Street from 5th Street to the Riverwalk Trail. (Anticipated cost: $3.5 million; Anticipated completion 2025-2030)

Green Means Go Designation

The Sacramento Ave corridor is located within the West Sacramento Green Zone in SACOG's Green Means Go Program. Green Means Go is a multi-year pilot that aims to lower greenhouse gas emissions in the six-county Sacramento region by accelerating infill development and reducing and electrifying vehicle trips. Green Means Go allocates state funding to projects that create more infill housing, increase mobility, and reduce vehicle emissions.

County of Yolo Bicycle Transportation Plan (2013)



The County of Yolo Bicycle Transportation Plan acts as a comprehensive, long-range policy guide to achieving a fully realized bikeway network in the county. It includes a prioritized list of planned bicycle facilities to be developed in service to the goal of increasing countywide bicycle ridership as a means to improved air quality, improved energy efficiency, reduced traffic congestion, as well as improved individual health and fitness.

Priorities set by the County's Bicycle Transportation Plan relevant to the Complete Street Plan Include:

- » Prioritize bicycle safety and security, with emphasis on bicycle commute facilities over recreation facilities
- » Emphasis on transportation interfaces to allow bicyclists to employ multiple modes of transportation to reach their destinations
- » Prioritize cost effective measures like removal of physical barriers and maintenance
- » Rights of way on collector streets and minor streets should be adequate for bikeways. The needs of bicyclists shall be considered when new roads are constructed, or existing roads are upgraded
- » Ensure that bikeways are striped and signed in accordance with the standards defined in the California Manual of Uniform Traffic Control Devices and the Caltrans Highway Design Manual
- » Encourage the provision of bicycle rest facilities
- » Encourage the provision of bicycle parking facilities
- » When constructing bicycle facilities, trees and other significant vegetation shall be preserved or planted where feasible, considering the effects on construction, maintenance activities, and public safety, to realize the benefit of vegetation's shading effect and improved aesthetics

Local Planning Context

Transportation Planning Context

West Sacramento General Plan 2035 - Mobility Element

The Mobility Element addresses the City's transportation network, guiding its development with greater focus on connectivity, efficiency, and multi-modality. The Mobility Element pays particular attention to complete streets as well as policies related to parking, goods movement, and the Port of West Sacramento.

Goals and priorities set by the Mobility Element relevant to the Complete Street Plan include:

- » Develop and maintain a multimodal transportation system that provides for the safe and efficient movement of people and goods, supports vibrant neighborhoods, and reduces air pollution, greenhouse gas emissions and VMT. This includes establishing multimodal corridors and hubs within and between urban centers and along major corridors, removing and minimizing the effects of natural or manmade barriers on accessibility and within existing communities, ensuring that all streets are safe and accessible to people with disabilities and others with limited mobility, involving the public and seeking input at all stages of the planning process,


POLICY DOCUMENT PART 2
MOBILITY ELEMENT

- » Provide complete streets that are safe, attractive, and comfortable for all road users. This includes minimizing barriers to accessibility; reducing lane numbers and widths; enhancing walking and bicycling by minimizing, consolidating, or removing unused, underutilized, or unnecessary driveways and curb cuts; requiring street trees and landscaped medians for aesthetic and functional (stormwater runoff management) purposes; reducing conflicts between bicyclists, pedestrians, transit, and motorists; and providing amenities that promote walking, bicycling, and transit use.
- » Develop and maintain a street and highway system that is safe, efficient, and reduces noise, air quality, and GHG emission impacts. This includes traffic calming measures, consideration of roundabouts as intersection traffic control options, and level of service flexibility when considering impacts to active transportation.
- » Support and maintain a range of public and private transit systems that are efficient, safe, and respond to the needs of all users.
- » Develop comprehensive, safe, accessible, and integrated bicycle network and bicycle support facilities throughout the

city. This includes providing context appropriate bicycle facilities, connections to commercial and recreation activities, and ensuring that bikeways connecting to the existing bikeway system be provided in the first phase of all major phased developments.

» Develop a safe, accessible, and integrated pedestrian network that promotes walking. This includes filling gaps in systems of existing neighborhoods, separated sidewalks and paths, landscaping, and creating a continuous, convenient network free of impediments and obstacles; improving pedestrian safety at intersections and mid-block crossings by providing enhanced treatments like well-marking pedestrian crossings, bulb outs, or median refuges that reduce crossing distances.

» Develop and manage on- and off-street parking systems that balance the City's goals of economic development, livable neighborhoods, and public safety.

» Use transportation demand management to improve efficiency, reduce dependence on motor vehicles congestion, and expand travel options.

» Provide an efficient system for goods movement for industrial and commercial areas, while protecting residents from adverse impacts.

West Sacramento Bicycle Pedestrian and Trails Master Plan (2018)

The City's Bicycle, Pedestrian, and Trails Master Plan (BPTMP) lays out the vision for a connected active transportation network linking neighborhoods, employment centers, shopping destinations, parks, and schools. It seeks to build awareness and support for equal roadway access for all road users with the ultimate goal to increase the number of people bicycling or walking to work, school, errands, or for recreation in West Sacramento.



The vision of the BPTMP is "to be one of the United States' top bicycle- and pedestrian-friendly communities through the creation of a world-class bicycle and pedestrian trails network that efficiently and safely connects users of all ages to work, school, shopping and recreational amenities throughout the City."

Goals set by the BPTMP relevant to the Complete Street Plan include:

» Creating a continuous and interconnected network of low stress bikeways connecting residential areas and key destinations, integrated with other forms of transportation including public transit.

» Increasing bicycle mode share to at least 5 percent and a walking mode share of at least 10 percent by 2030.

» Secure and convenient bike parking at all major bicycle trip generators and attractors.

» Ensure new development provides bicycle- and pedestrian-friendly on-site circulation and access.

» Educational opportunities aimed at all levels of bicyclists, pedestrians, motorists, and law enforcement personnel.

Other priorities include improving safety, reducing congestion, emissions, and the need for road expansions and parking infrastructure, enhancing community health, and improving overall commuting experience.

Improvements proposed by the BPTMP for Sacramento Avenue and adjacent roadways include:

» Class III Bike Route on N. Harbor Blvd from Sacramento Avenue/Reed Avenue to West Sacramento City Limit (Northwest)

» Class II Bike Lane on Reed Avenue from Riverside Parkway to Harbor Boulevard

» Class III Bike Route 6th Street from C Street to Cummins Way

» Class II Bike Lane on 5th St between A & C Streets

» Class III Bike Route on Kegle Drive from Cummins Way to Fremont Boulevard

» Convert Class III Bike Route to Class II Bike Lanes on C Street from 6th Street to 3rd Street

West Sacramento Mobility Action Plan (2021)

The City's Mobility Action Plan (MAP) reflects the ongoing effort to expand access sustainable transportation solutions for members of the community. It provides tools and recommendations to help implement the mobility and climate goals it sets, and strategies to prepare for new mobility options and technological innovation in the future.



This plan aims to assist the City in achieving these goals. Specific priorities in the Mobility Action Plan relevant to the Plan include:

- Building a network of mobility hubs connecting residents to transit and activity centers, prioritizing under resourced, transit dependent areas.
- Enhance safety and create space for non-motor vehicle users.
- Provide convenient and accessible transit and shared mobility, connecting to local and regional destinations.
- Equitable access to zero emissions vehicles and alternative transportation options.
- Prepare for equitable implementation of emerging transportation technologies.
- Support the City's policies and equitably guide transportation investments.

Improvements along Sacramento Avenue proposed by the Plan, consistent with the MAP, include:

- Mobility hub and related infrastructure at State Foods Supermarket (Jefferson Blvd/Sacramento Ave).
- Develop a protected bike lane network and create protected intersections for a safer bike experience.

Climate Change Context

Goals and objectives related to climate change are intertwined throughout all of the General Plan elements to create and recreate West Sacramento as a safe, healthy, socially, and environmentally viable, and sustainable community. The General Plan is built around goals and objectives that promote sustainability and seek to address the sources of greenhouse gas emissions that contribute to climate changes. Sustainability concepts built into the General Plan include but are not limited to: "increasing densities in appropriate locations; promoting mix-use, green-building and transit-oriented development; encouraging energy efficiency and water conservation; developing complete streets that provide for bicyclists, pedestrians and transit and policy standards for GHG reduction targets."[1]

Climate Action Plan (CAP)

The West Sacramento CAP aims to reduce the City's GHG emissions to 40 percent below 1990 levels, consistent with the state's goals. Additionally, the CAP creates a framework for achieving carbon zero by 2045, supporting climate goals set by the Mayor's Commission on Climate Change.

The City is underway with an update to the CAP. The CAP's draft GHG mitigation measures to reimagine how people and goods are moved related to the Plan include:

- Prioritize transit-oriented development and center/corridor community growth through land use planning.
- Allocate funding to expand the active transportation and micro-mobility network.
- Develop partnerships and allocate funding to increase the accessibility, frequency, and reliability of public transit.
- Provide more telecommuting opportunities for City staff.

1 West Sacramento General Plan 2035 Policy Document, Introduction

» Advocate for use of alternative fuels within the rail freight system.

Mayors' Commission on Climate Change Final Report (2020)

Goals established in the Mayor's Commission on Climate Change Report relevant to the Complete Street Plan include:

» Expand and enhance access to low-stress and connected infrastructure for bicycling, walking, and rolling so that 30 percent of all trips are by active transportation by 2030 and 40 percent by 2045.

» Expand and improve transit and shared mobility services to be more accessible, affordable, reliable, and attractive than single-occupancy vehicles to achieve 30 percent of all trips by transit and/or pooled shared mobility by 2030 and 50 percent transit and/or pooled shared mobility by 2045.

» Create incentives and policies to encourage the adoption of zero-emission vehicles (ZEVs) so that 70 percent of new registrations will be for ZEVs by 2030 and all (public/private/shared fleet) vehicles are fully electric by 2045.

Landscape Development Guidelines

The City's Landscape Development Guidelines provides a basic framework for designing landscaped areas to ensure consistency and design excellence, as well as further the City's Climate Action Plan goals of reducing greenhouse gas emissions, promoting the use of recycled materials, and urban forest growth and maintenance. The document guided the development of landscaping and streetscape improvements along the corridor.



LAND USE AND DEVELOPMENT CONTEXT

This section summarizes the land use, parcel utilization, and proposed development and mobility projects within the study area The Sacramento Avenue corridor adjoins a mix of developed, undeveloped, and under-developed properties of primarily residential and mixed-use land uses. The corridor's design is car oriented and does not meet existing standards for keeping drivers safe and reducing potential conflicts on the road.

West Sacramento General Plan 2035 - Land Use Element

Existing land use along the corridor is characterized by low to high-density residential or neighborhood mixed-use commercial. The parcel which includes the Bryte Church is located at the northwest corner of Sacramento Avenue and Jefferson Boulevard/Kegle Avenue and is considered quasi-public. Figure 3 presents the City of West Sacramento General Plan Land Use. Approximately 40 percent of the corridor is fronted by residential land use, and 54 percent by a mixed-use land use. Approximately 21 percent of the corridor is fronted by a vacant parcel.

The following table summarizes the land use frontage per study segment based on total frontage (i.e., both sides of the roadway).

Table 1 Land Use Frontage Summary

Segment Location	Residential Frontage	Mixed-Use Frontage	Other Frontage	Vacant Parcel Frontage
Segment 1	76%	24%	-	28%
Segment 2	19%	81%	-	10%
Segment 3	70%	8%	22%	-
Segment 4	30%	70%	-	43%
Segment 5	41%	50%	9%	34%
Segment 6	-	100%	-	12%

Vacant/Underutilized Parcels

Most of the parcels that front the Sacramento Avenue corridor are developed. Vacant parcels are primarily mixed-use. Several parcels are considered underutilized. The designation of underutilized estimated considering two factors:

1. The parcel has structures that cover less than or around 25 percent of the parcel area.
2. The parcel has just fences or structures that are temporary in nature, like small sheds/enclosures.

Figure 4 presents the parcel utilization within the study area.

Washington Specific Plan (2020)



The Washington Specific Plan is a comprehensive update to the 1996 Specific Plan and identifies the long-term vision and strategy for redeveloping the Washington District, located along the western bank of the Sacramento River between A Street and Tower Bridge. The specific plan aims to support the Washinton District in becoming a vibrant, well-connected, transit-oriented neighborhood.

The city is currently updating the Washington Specific Plan, scheduled for completion in summer/fall 2024. The guiding principles of the Washinton Specific Plan relevant to the Complete Street Plan include:

- Prioritizing transit-oriented development to create an equitable walkable, mixed-use transit rich district that is integrated and connected to residential, employment, retail, entertainment, and recreational uses.
- Provide open space and pedestrian linkages that create both physical and visual connections to the river front.
- Provide memorable and meaningful outdoor experiences within the public realm through placemaking.
- Create a sustainable, resilient, and thriving district that through a mix of transit-serving uses and green building practices results in reductions in greenhouse gas emissions and stronger connections between people and place.
- Build social capacity and provide equitable access to a variety of housing types, services, amenities, jobs, open space, and transit.

PROPOSED DEVELOPMENT: INFILL AND MOBILITY PROJECTS

With projected City-wide and regional land use and infrastructure growth in the near and long-term, the City initiated the Sacramento Avenue Complete Street Plan to ensure that future travel needs, and development impacts are considered within the local context.

There are a variety of project types, including both land use and transportation projects, that are planned or proposed for the Sacramento Avenue corridor and the nearby corridor area of interest. Several residential and mixed-use projects are proposed along the Sacramento Avenue corridor to redevelop existing vacant parcels, as well as transportation projects that seek to improve mobility options for all road users. Proposed development and mobility projects are shown in Figure 5, and described in more detail below.

Proposed Infill Projects

Proposed infill projects relevant to the corridor study area of interest include the following:

- 219-225 5th Street
  - Three-story, high-density residential development with 18 units.
- 326 5th Street
  - Five-story, high-density residential development with 30 units.
- 735 Sacramento Avenue
  - Five-story, mixed-use development with 196 multi-family residential units and neighborhood commercial on the eastern side of the property.
- 851 Sacramento Avenue

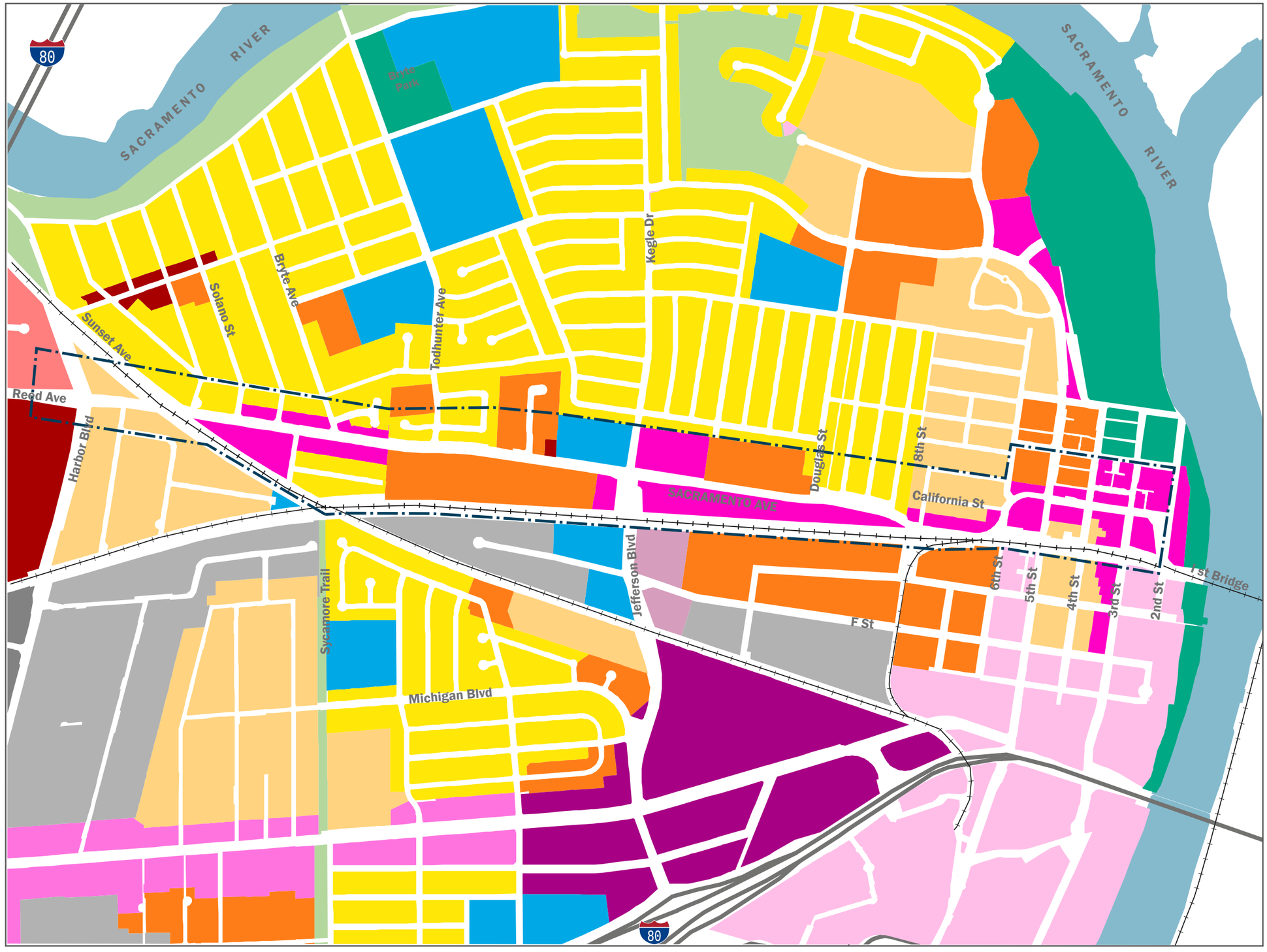
- Five-story, mixed-used development with 445 residential units with ground floor live/work units along the frontage accessible via Sacramento Avenue and a one story retail building on the western side of the property.

Proposed Mobility Projects

Proposed mobility projects in the corridor study area of interest include the following:

- C Street-Railyards Bridge (I Street Bridge Replacement)
  - Connecting the Cities of Sacramento and West Sacramento across the Sacramento River, the new C Street-Railyards bridge will include facilities for automobiles, transit, bicycles, and pedestrians.
- Existing I Street Bridge Conversion
  - The existing I Street Bridge will be converted to a bicycle and pedestrian only facility.
- 5th Street Connectivity and Complete Street Project
  - The project includes bicycle and pedestrian facility improvements along 5th Street between C and A Street, along Lighthouse Drive between A Street and Fountain Drive, and complete remaining improvements along C Street between 3rd and 6th Streets.
- Elkhorn Plaza EV Charging Station
  - At Elkhorn Plaza, the project will include Direct Current Fast Charging (DCFC) stations for three trucks and passenger electric vehicles. [2]
- Jefferson Boulevard / Kegle Drive Mobility Improvements
  - The Mobility Action Plan proposed a mobility hub at the northeast corner and protected intersection concept at the intersection.
- HSIP Safety and Signal Improvements Projects at several intersection locations along the corridor, including the following:
  - C Street at 6th Street: includes a high-visibility crosswalk markings across C, 6th, and California Streets; Rectangular Rapid Flashing Beacons (RRFB), yield landing strip markings, and yield signage at the C and 6th Street intersection, Class II bicycle lane markings west of C Street / 6th Street, and shared roadway bicycle pavement markings across California Street along C Street.
  - Jefferson Boulevard at Sacramento Avenue: includes signal hardware upgrades at the intersection of Jefferson Boulevard, Kegle Drive and Sacramento Avenue.
  - Simon Terrace at Sacramento Avenue: includes a median refuge island, high visibility crosswalk, RRFBs, advance warning markings and yield markings / signage across Sacramento Avenue.
  - Solano Street at Sacramento Avenue: includes high visibility crosswalk markings across both Solano Street and Sacramento Avenue, and a median refuge island, RRFBs, advance warning markings and yield markings / signage across Sacramento Avenue.
  - Sunset Avenue at Sacramento Avenue: the project reconfigures the intersection to improve safety by restricting left-turn access at Sunset Avenue, allowing right-in-right-out access only.

[2] *DCFC allows for a much higher capacity battery charging system, including commercial or fleet vehicles.*



LEGEND

Residential Zones
- Low-Density Residential
- Mid-Density Residential
- High-Density Residential

Commercial Zones
- Business Park
- Commercial
- Highway-Service Commercial

Mixed Use Zones
- Mixed Commercial Industrial
- Riverfront Mixed Use
- Neighborhood Mixed Use

Industrial Zones
- Light Industrial
- Heavy Industrial

Other Zones
- Open Space
- Recreation and Parks
- Public/Quasi Public

- Area of Interest
- Study Corridor
- Highways
- Rail

GHD

0 0.2 0.4 MILES

N

Figure 3 General Plan Land Use (2035)

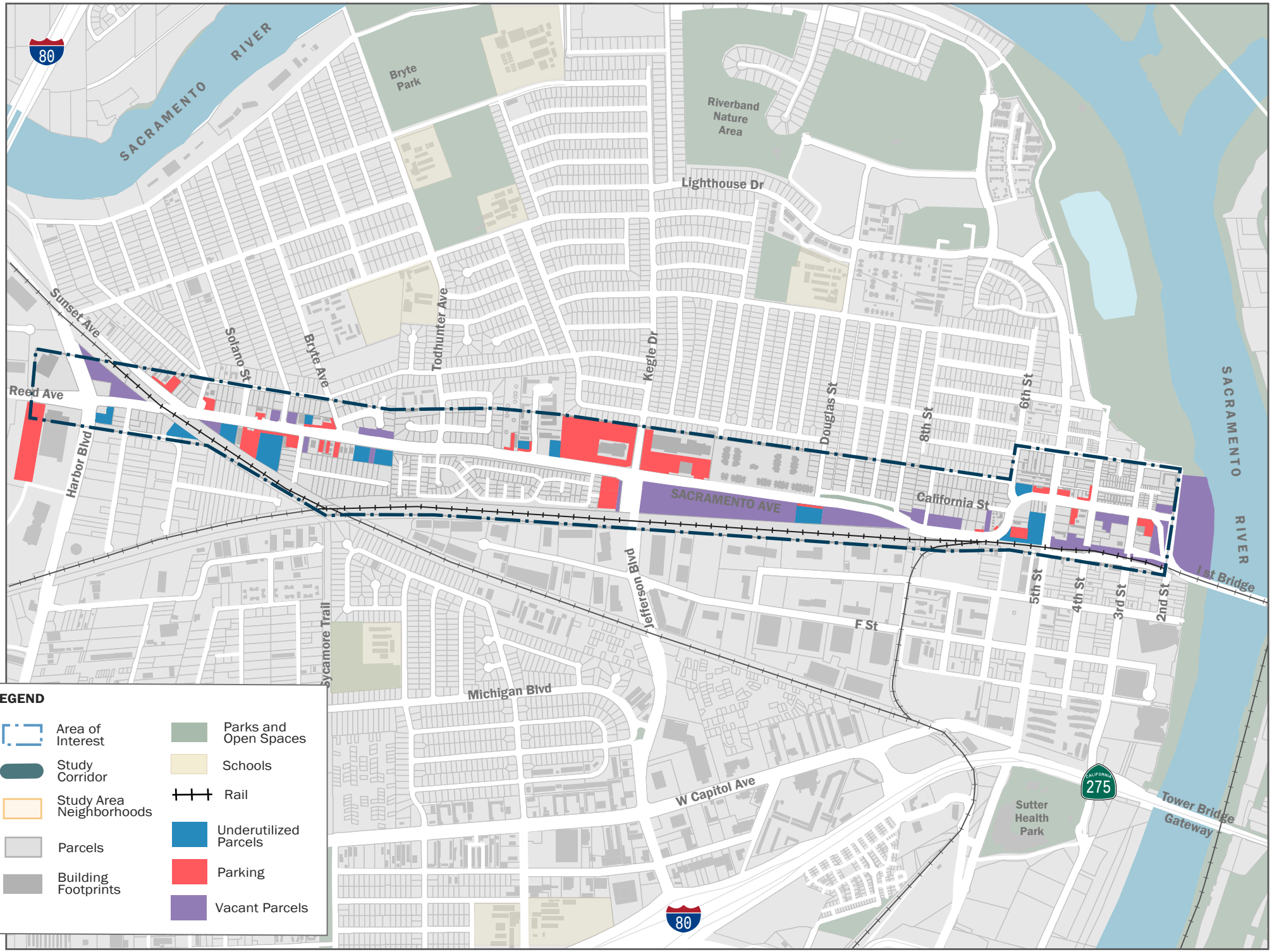
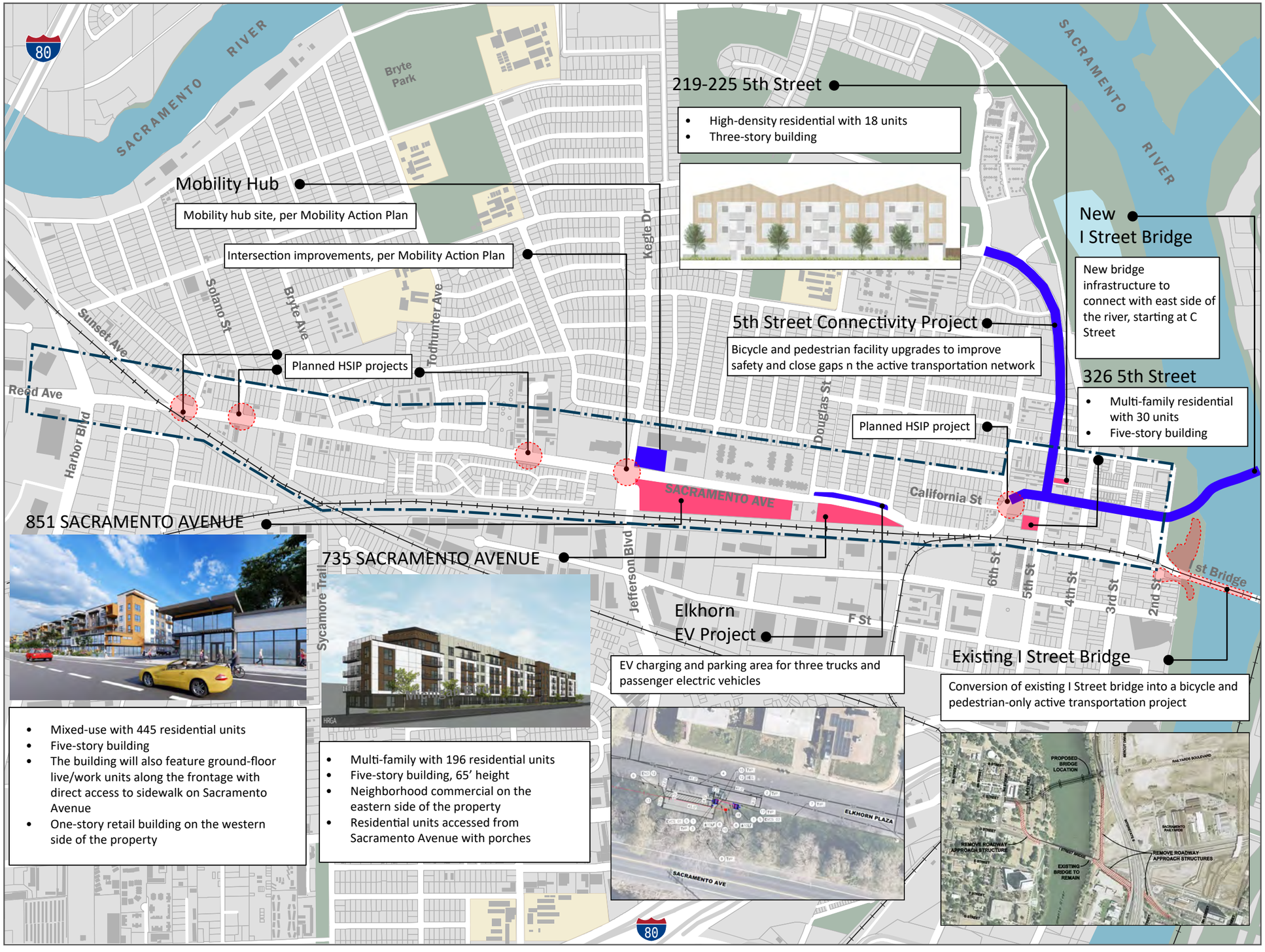


Figure 4 Vacant & Undeutilized Parcels



LEGEND

- Ongoing Intersection Redesign and Bike/Pedestrian-Friendly Infrastructure Projects
- Proposed Housing/ Mixed-use Projects
- Proposed Mobility Projects
- Area of Interest
- Parks and Open Spaces
- Schools
- Parcels
- Building Footprints
- Study Corridor
- Rail

Figure 5 Proposed Development & Mobility Projects

2 Vision & Goals

Based on current and prior planning efforts, direction from the Project Development Team and input from the community, a vision statement was identified for Sacramento Avenue that defines the desired purposed and function of the corridor as an integral thoroughfare in the West Sacramento Community. Safety, accessibility, and mobility emerged as priorities. Throughout the early phases of this project, the vision statement was refined as community input and technical analyses illuminated the priorities for the Sacramento Avenue Corridor.

The Sacramento Avenue Complete Street Plan aims to enhance safety and access of existing multimodal opportunities, provide more mobility options, and improve connectivity along the corridor. The Plan will target solutions that improve access to key amenities for the surrounding low-income community in West Sacramento through an improved multimodal transportation network.

Vision Statement

THE SACRAMENTO AVENUE / C STREET CORRIDOR IS A SAFE, ACCESSIBLE, AND ENJOYABLE COMMUNITY ASSET WITH ACTIVE MOBILITY INFRASTRUCTURE AND PEDESTRIAN-ORIENTED STREETSCAPES THAT SUPPORTS LOCAL ECONOMIC AND SOCIAL OPPORTUNITIES.

From Vision to Goals

Building on the vision statement and input from the community, two primary goals were identified to guide the project. These goals are distinguished from one another to emphasize the varying factors that will affect ultimate design, funding, and implementation of the Sacramento Avenue corridor. Each goal cannot be adequately achieved without proper consideration of and attempted implementation of the other.

Mobility-Focused Goal: Provide safer and more comfortable transportation options, including walking, biking, rolling, and driving, for people of all ages and abilities by incorporating "complete street" infrastructure within the roadway right-of way.

Urban Design-Focused Goal: Integrate placemaking strategies with multi-modal mobility and infill development.

Once two primary goals were identified, three themes were developed, with community input, to guide how the project vision and goals would be implemented. Each theme described below addresses the Plan's objectives but highlights a different focus, like green infrastructure, maximizing space for community use, or expanding mobility options.

The themes were presented throughout the engagement processes to better understand the community's priorities. Based on community input, "regional corridor" was desired to be de-emphasized, with emphasis on multimodal street in its place. The themes are listed below:



Green Corridor



Community Streetscape



Multimodal Boulevard

These themes do not reflect specific recommendations but were used to guide the project team when identifying and refining specific strategies and the development of improvement concepts. Together, the goals and themes provide a framework for the evaluation of existing conditions and development of recommended improvements along Sacramento Avenue to make the vision statement become a reality. The specific strategies associated with each of the identified themes are described in detail in Chapter 5: Design Approach.

3 Existing Conditions



Establishing a Baseline

The Existing Conditions chapter explores transportation conditions and development patterns along Sacramento Avenue. This document will assist the planning team in understanding the existing strengths and opportunities of the Sacramento Avenue corridor.

Sacramento Avenue is a key corridor in the City of West Sacramento (the "City") that runs east-west between interstates 5 and 80. The corridor is approximately 2-miles in length between 2nd Street and Harbor Boulevard, including C Street east of 6th Street. As one of the City's major arterials, the roadway connects regional amenities such as West Sacramento's commercial anchors to the west (IKEA, Walmart, and The Home Depot) and the developing Sacramento River riverfront and downtown Sacramento to the east. As a local transportation route through primarily residential neighborhoods, the corridor also provides access to community amenities, including trails and outdoor recreation, schools, and lifestyle destinations.

The corridor's existing transportation infrastructure offers limited multimodal facilities to support safe and connected travel along and across the corridor. Class II bike lanes are present on most of the corridor; however, their value is limited due to high vehicular speeds, wide travel lanes, and minimal separation between bikes and cars. Pedestrian facilities are inadequate or largely disconnected, with approximately 40 percent of the corridor lacking sidewalk coverage.

With projected City-wide and regional land use and infrastructure growth in the near and long-term, the city initiated the Sacramento Avenue Complete Street Plan to ensure that future travel needs, and development impacts are considered within the local context.

Local Context

The Sacramento Avenue corridor is used by both residents and visitors, as well as those who pass-through the study area for a variety of trip purposes. The corridor's east-west alignment bisects primarily residential and mixed-use land uses and borders West Sacramento's northernmost neighborhood areas. The existing railroad alignment runs parallel to Sacramento Avenue just south of the corridor, further distinguishing the geographies of northern and southern West Sacramento neighborhoods. As such, it is critical to consider the demographics or those who most frequently use the corridor and live within walking or biking distance to the corridor.

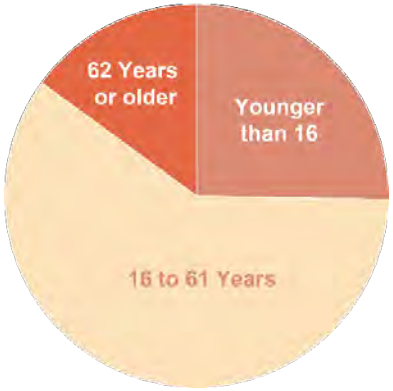
This section summarizes existing land use and local points of interest, as well as key demographic data points for individuals who reside in the Sacramento Avenue corridor area of interest. Individuals included in this evaluation include those who reside in the West Sacramento neighborhoods that intersect with the corridor area of interest – the Broderick, Bryte, Lighthouse, and Washington neighborhoods. Figure 6 presents neighborhood boundaries and points of interest within the vicinity.

Demographic Data

Demographic data presented here reflects 2021 Year estimates sourced from Replica. The study area neighborhoods within the vicinity of the Sacramento Avenue corridor have 14,300 residents, or 5,170 households.

Age

The average age of residents within the study area neighborhoods is 35 years. Of those residents, older adults (age 62 years and older) comprise over 15 percent while young people under the legal driving age (16 years) comprise 25 percent of the study area population.



Vehicle Ownership



Approximately 50% of residents own 2 or more vehicles

and 11% of residents do not own a vehicle.

Vehicle ownership is relatively high within the study area neighborhoods, with 34 percent of households owning one vehicle and 50 percent of households owning two or more vehicles. Approximately 11 percent of households do not own a vehicle. For the remaining 5 percent of households, vehicle ownership is categorized as unknown.

Employment Status

Of residents within the study area neighborhoods aged 16 years or older, approximately 55 percent of residents are employed, 39 percent are not in the labor force, and 6 percent are unemployed. The average age of residents that are not within the labor force is 53 years and the average age of residents that are unemployed is 30 years.

Points of Interest

The corridor's east-west alignment provides access to primarily residential and commercial properties. The north-south streets that intersect Sacramento Avenue provide access to neighborhood amenities including schools, parks and open space, community destinations and shopping.

Key destinations directly adjacent to the corridor include:

- Green/Open Space, including the Riverwalk along the Sacramento River at the corridor's east end.
- Neighborhood commercial centers, including:
  - Commercial center west of Harbor Boulevard/Reed Ave, including IKEA, Walmart, and The Home Depot.
  - Local markets and shops near Sacramento Avenue at Bryte Avenue and Solano Street.
  - Riverbend Shopping Plaza near Sacramento at Jefferson Boulevard/Kegle Drive.
  - Mixed-use residential and commercial buildings along C Street, between 5th Street and 2nd Street.



Figure 6 Local Context

Disadvantaged Communities

Disadvantaged communities, including low-income communities, communities of color, tribal nations and other disadvantaged groups are often faced with environmental or pollution burden. These communities often also have a history of a lack of investment in infrastructure, burdened by lack of appropriate facilities for bicycling, walking and public transit. The California Air Resources Board (CARB) cites that historical practices often limited access to public services and public funding for communities, based on race or ethnicity.[3] People living in disadvantaged communities often face difficulty in accessing transportation, and are more likely to be reliant on walking, bicycling, or public transit. It is important to identify disadvantaged communities, and to analyze infrastructure in these communities.

Disadvantaged community (DAC) status can be measured based on a variety of criteria. The DAC status criteria examined in the Plan are consistent with the California Transportation Commission (CTC) 2023 Active Transportation Program Guidelines and are discussed in greater detail below.

Median Household Income

Communities located within Census Tracts with a Median Household Income (MHI) that is less than 80 percent of the statewide median, or less than $60,188 is considered disadvantaged.[4] Figure 7 presents the MHI for the Census Tracts within the vicinity of the study corridor. As shown, both of the Census Tracts overlap with the corridor area of interest, and the two Tracts to the southwest are considered disadvantaged based on income. Three of the four tracts in the area that are considered disadvantaged based on MHI, feature incomes that are less than 65 percent of the statewide average.

CalEnviroScreen 4.0

CalEnviroScreen (CES) 4.0 is the latest iteration of the California Communities Environmental Health Screening Tool, an environmental justice mapping tool developed by the California Environmental Protection Agency (CalEPA) and the California Office of Environmental Health Hazard Assessment (OEHH). CES combines a variety of data sources to identify communities affected by multiple forms of pollution and highlight communities living at the intersection of pollution and poverty.

According to the CalEnviroScreen 4.0 Indicator Maps, the census tracts that encompass the study area neighborhoods are identified as disadvantaged communities based on their rankings in a variety of environmental, health, and socio-economic factors. Census Tracts 6113010102 and 6113010101 boundaries overlap with the Plan's area of interest and are referenced here. The two Census Tracts to the southeast of the study area are also considered disadvantaged These communities are within the top 25 percent of California's disadvantaged communities, identifying them as funding priority areas for projects that reduce emissions of greenhouse gases (per SB 535).

Figure 8 presents the CES 4.0 results for the areas within the vicinity of the study corridor and highlights the Census Tracts considered disadvantaged based on the CES results.

SACOG Environmental Justice Areas

SACOG, with the assistance of the SACOG Equity Working Group, identified 2020 Environmental Justice (EJ) areas based on various factors related to environmental impact in the Sacramento region, consistent with SACOG's 2020 MTP/SCS adopted plan. The EJ areas consider Census block group-level concentrations of income status, minority status, DAC status identified by CES 3.0, and "other vulnerabilities". Other vulnerabilities consider concentrations of older adults aged 75 or more, linguistically isolated households, single parent households with children under the age of 18, low educational attainment, severely housing cost burdened households, and persons with disabilities.

Figure 9 presents the block groups in the study area vicinity considered disadvantaged based on SACOG's EJ Area designation. As shown, all the block groups within the vicinity are considered disadvantaged based on at least one of the criteria used to quantify SACOG's EJ Areas.

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[3] https://ww2.arb.ca.gov/resources/documents/opportunities-address-past-inequity-sustainable-communities

4 Based on data U.S. Census Data Table B19013, 2015-2019 American Community Survey (ACS) 5-Year estimates. Statewide median income for this vintage is $75,235.

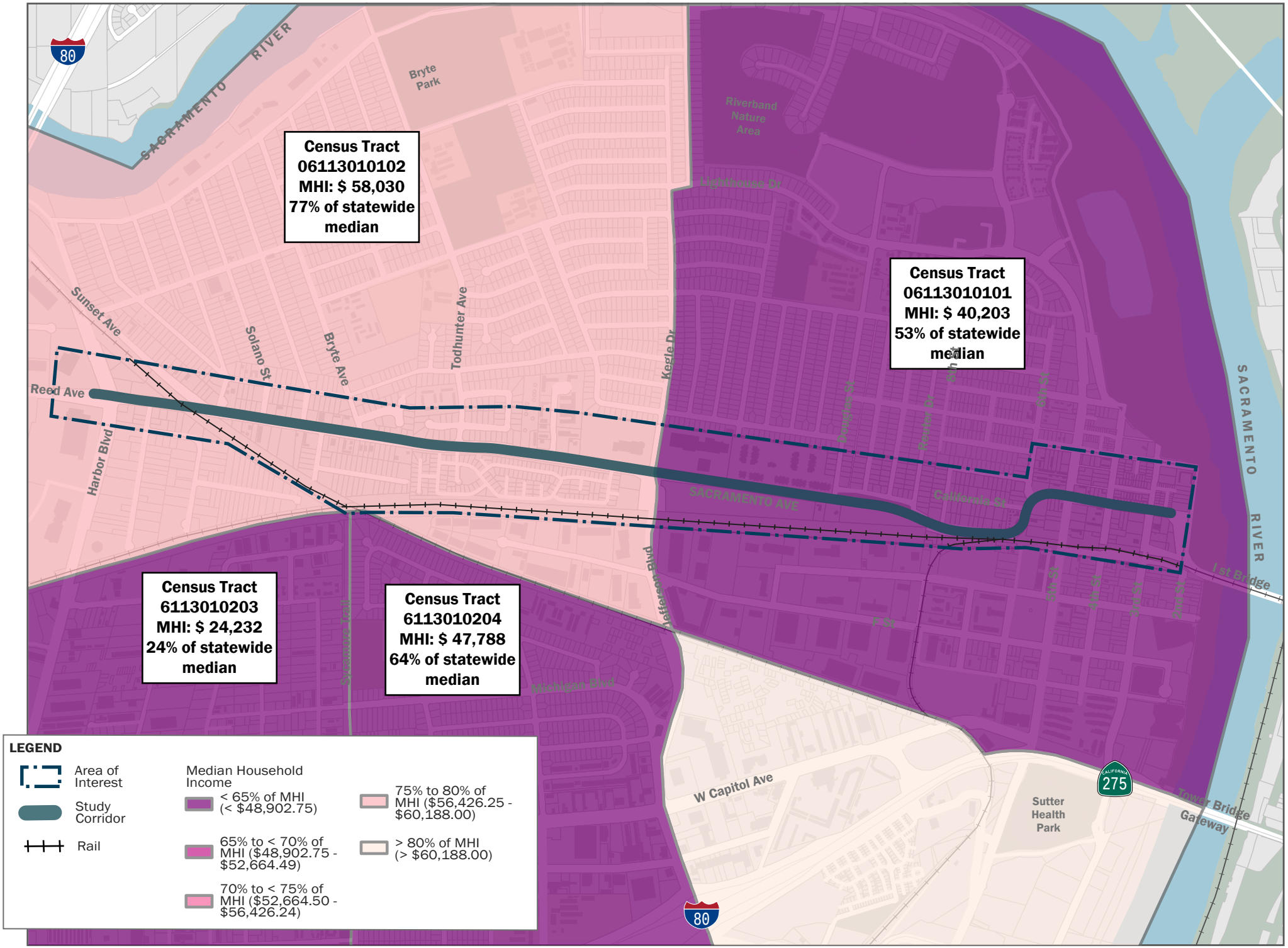


Figure 7 Disadvantaged Communities: Median Household Income (MHI)

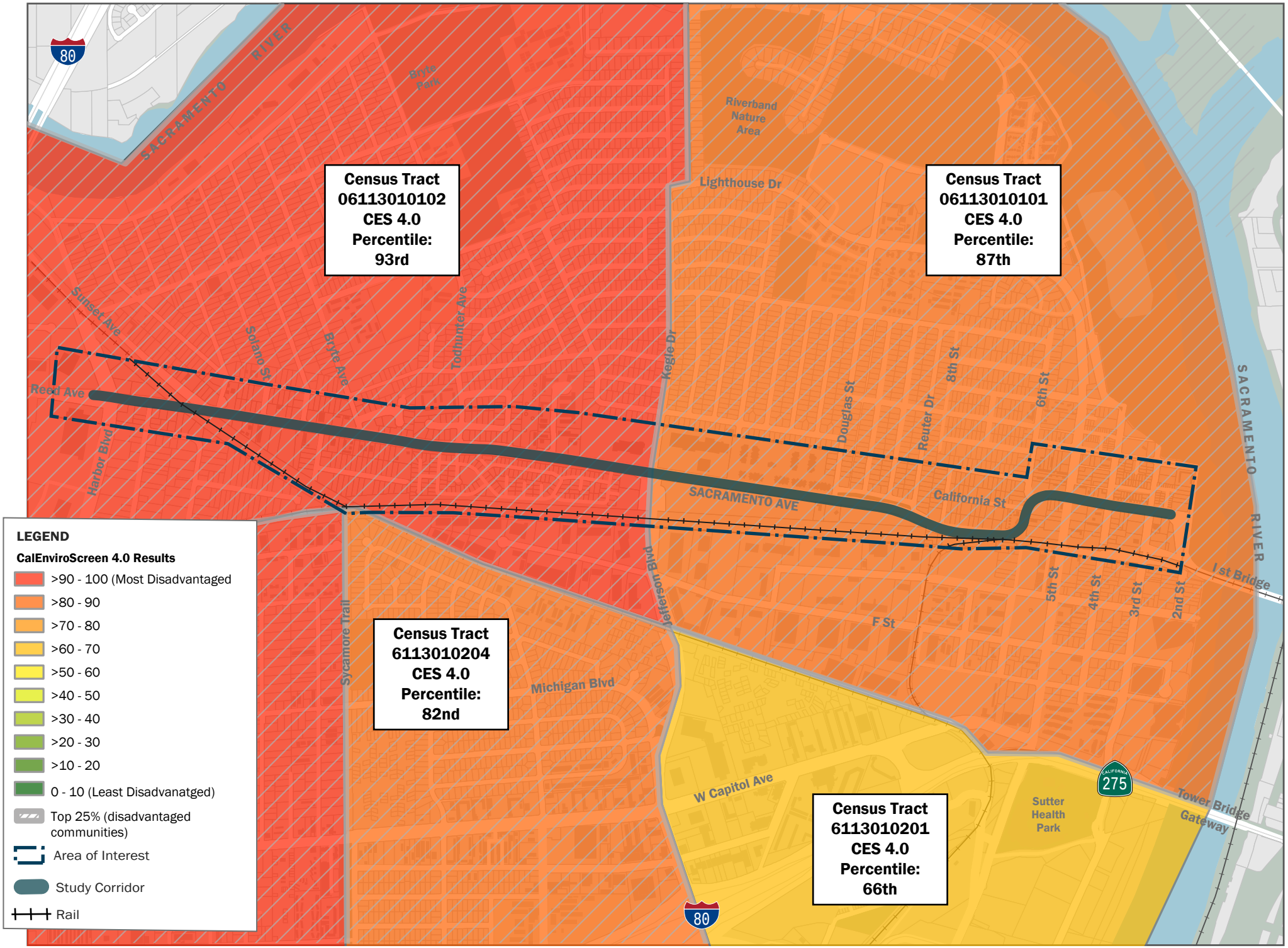


Figure 8 Disadvantaged Communities: CalEnviron Screen (CES) 4.0

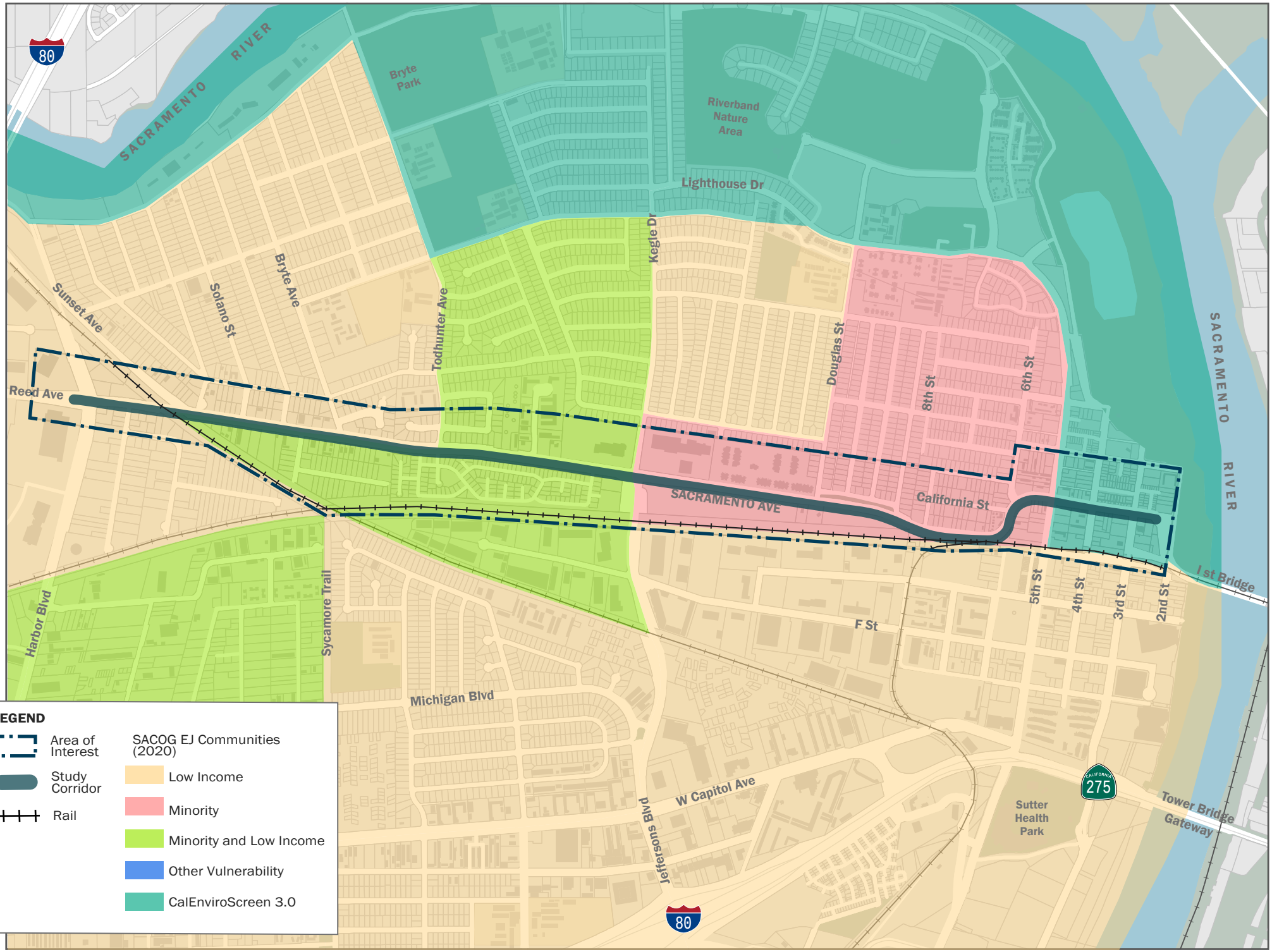


Figure 9 Disadvantaged Communities: SACOG EJ Areas

Local Mobility Trends

This section discusses local mobility trends, such as how people commute, where they walk or bike, and length of trips for individuals who reside within the vicinity of the Sacramento Avenue corridor area. Individuals included in this evaluation include residents of West Sacramento neighborhoods that intersect with the corridor area of interest – the Broderick, Bryte, Lighthouse, and Washington neighborhoods. Data reflects 2021 Year estimates sourced from Replica.[5]

All Trips

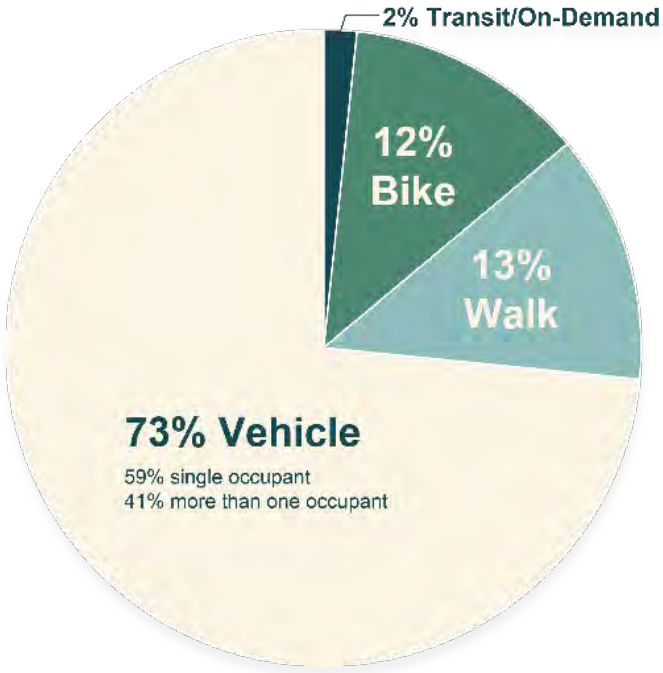
As shown in Table 2, 73 percent of all trips made by residents within the vicinity of Sacramento Avenue are made by vehicle, including carpool trips. Approximately 13 percent of trips were made by foot and 12 percent were made by bike. Just under 2 percent of trips were made by either public transit or on-demand services.

The average trip distance for all trips is 8.3 miles. As shown in Table 2, the average vehicle trip is 8.8 miles, the average walking trip is 0.6 miles, the average bicycle trip is 2.4 miles, and the average public transit trip is 8.9 miles.

Table 2 Trip Distance & Mode Split

Mode	Average Trip Distance (miles)	Proportion of Trips
Walking	0.6	13%
Biking	2.4	12%
Vehicle (including carpool)	8.8	73%
Public Transit/On-Demand	8.9	2%

Figure 10 Trip Mode Split – All Trips



Trip Purpose

The primary trip purpose for residents of the neighborhood study area are home-based trips (where the destination is the residence), comprising 33 percent of all resident trips.

Non-Home-Based Trips

For all non-home-based trips, 18 percent were work trips, 67 percent were lifestyle trips (shopping, eating, social), 9.4 percent were school trips, and 5.3 percent were recreation trips. Table 3 presents the average trip lengths associated with each trip purpose.

[5] Replica is a "big data" platform that provides traffic volume estimates based on a variety of sources, including mobile location data.

Table 3 Non-Home-Based Trip Purposes

Trip Purpose	Average Trip Distance (miles)	Proportion of Trips
Work-based	10.7	18.0%
Recreation	8.6	5.3%
Shop/Eat/Social	9.2	67.3%
School	3.4	9.4%

**"Other" trip purpose are not included in this analysis.*

Commute to Work

As shown in Table 4, over 63 percent of employed residents in the study area neighborhoods drive alone to work, while 27 percent carpool, almost 3 percent bike and 5 percent walk to work.

Table 4 Commute Mode Split

Mode	Average Trip Distance (miles)	Proportion of Trips
Public Transit or On-Demand	14.1	1.2%
Carpool	11.4	27.5%
Vehicle (including carpool trips)	8.3	63.5%
Biking	3.4	2.8%
Walking	0.4	5.0%

Short Trips

Understanding where "short" vehicle trips (one-way trips up to 1-mile in length) are concentrated highlights areas of opportunity where implementing complete street infrastructure may encourage a shift from driving to active modes. While not all drivers will choose to shift from driving to other modes, it is more likely when infrastructure and streetscape design make the active transportation experience more comfortable.

For study area residents, most short trips are made by vehicle (70 percent). Approximately 19 percent of short trips are made by walking and 11 percent are made by bicycle. Short trips of 1-mile or less are concentrated on Sacramento Avenue west of Jefferson Boulevard. Of those trips that are 0.5-mile or less, most occur on Sacramento Avenue between Solano Street and Todhunter Avenue.

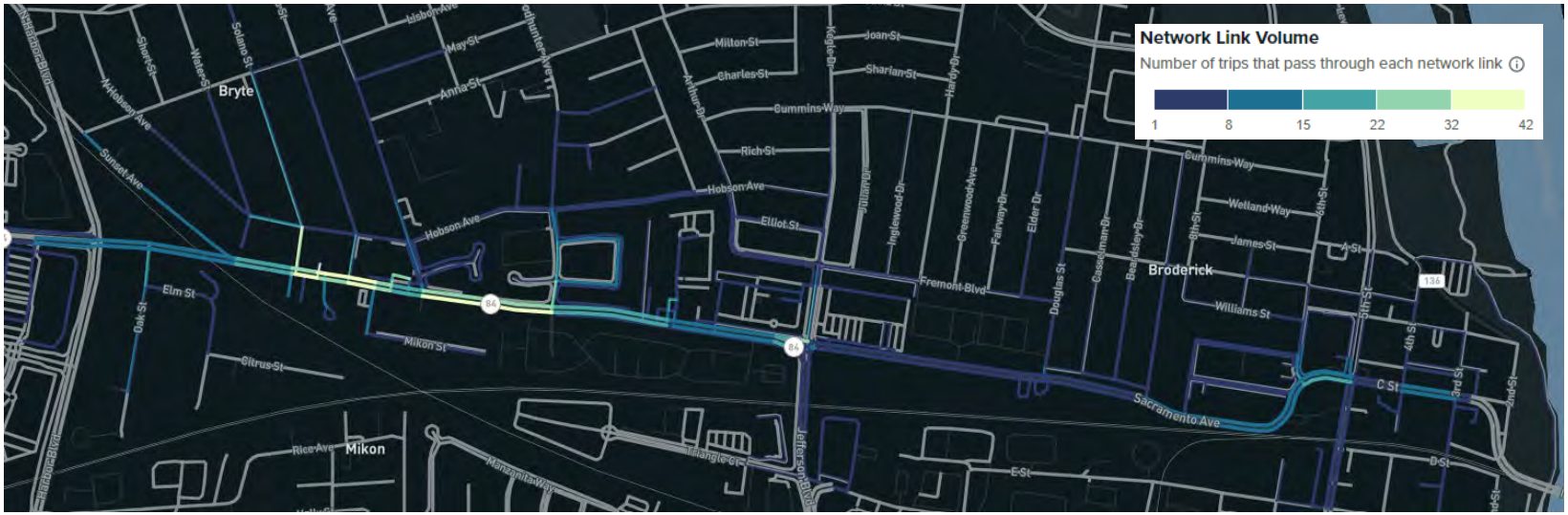
Figure 11 and Figure 12 show the concentration of short trips of up to 0.5-mile and 1-mile, respectively.

Corridor Origins and Destinations

Understanding the directionality of trips is important in identifying the routes that are most often used to access the corridor.

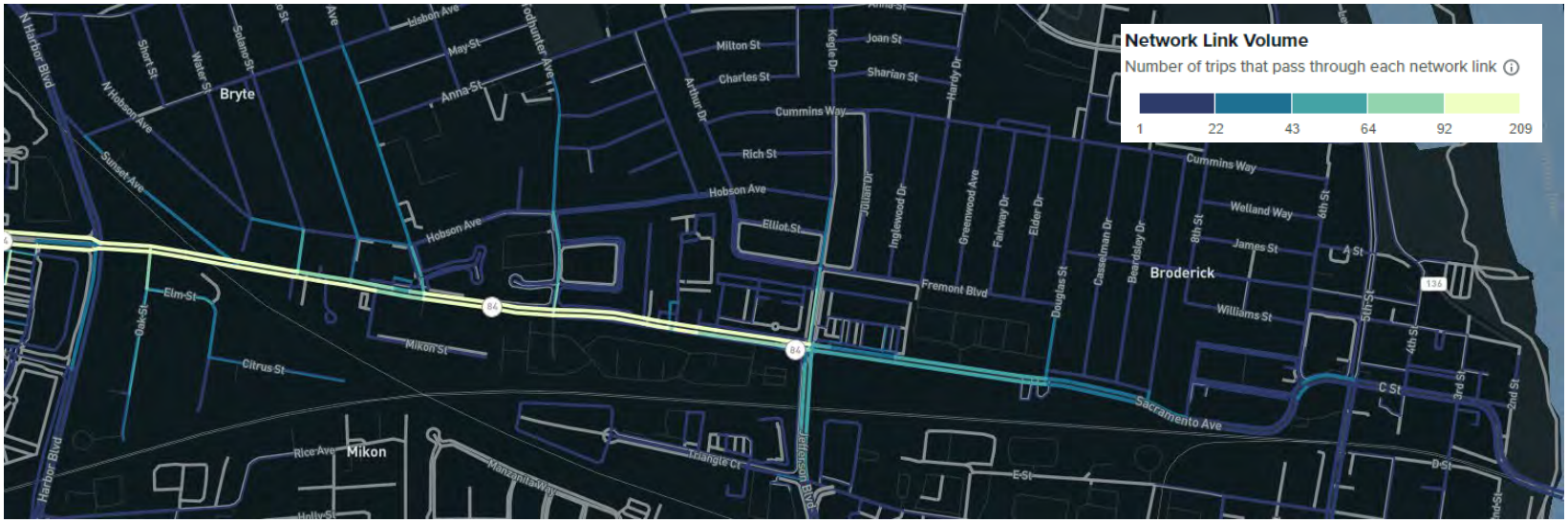
Figure 13 shows the directionality and distribution of outbound vehicle trips on the Sacramento Avenue corridor that are made by residents of the neighborhoods surrounding the corridor area of interest. These trip estimates exclude "home-based" trips (i.e., they do not include trips made to residents' houses. Trip patterns are consistent with traffic volume counts, with most trips occurring on Reed Avenue west of the study area, Jefferson Avenue south of the study area, and the I Street Bridge east of the study area.

Figure 11 Concentration of Short Vehicle Trips (up to 0.5 mile)



Source: Replica.

Figure 12 Concentration of Short Vehicle Trips (0.5 to 1 mile)



Source: Replica.



Figure 13 Resident* Outbound (Non-Hom-Based) Trips

Roadway Conditions

The Sacramento Avenue corridor includes Sacramento Avenue and C Street between Harbor Boulevard and 2nd Street in West Sacramento. It is classified as a medium-high access control arterial with an east-west alignment bisecting West Sacramento between Interstates 5 and 80. The western end of the corridor transitions to Reed Avenue approximately ¼ mile from Interstate 80 ramps. The eastern end of the corridor transitions to I Street across the existing I Street Bridge alignment, providing access to the Sacramento River, Downtown Sacramento, and indirect access to Interstate 5 freeway ramps.

Functional Classification

Sacramento Avenue is classified as a minor arterial between Harbor Boulevard and 5th Street, and as a major arterial from 5th Street to the I Street Bridge. The corridor intersects major north-south roadways in West Sacramento including other major arterials (Harbor Boulevard and Jefferson Boulevard), several minor arterials (North Harbor Boulevard, 5th Street, and 3rd Street) and several collectors (Bryte Avenue, Todhunter Avenue, Kegle Drive, Douglas Street, and 6th Street).

Traffic Control & Speed

Figure 14 presents the traffic control at intersections and speed limits along the corridor. As shown, there are signalized intersections at the following intersections:

- Harbor Boulevard/Reed Avenue
- Sacramento Avenue/ Bryte Avenue
- Sacramento Avenue/Kegle Dr/Jefferson Boulevard
- Sacramento Avenue/5th Street
- Sacramento Avenue/3rd Street

The remaining intersections along the corridor are side-stop-controlled. Posted speeds along most of the corridor, from the east end at Harbor Boulevard to 6th Street, are 40 mph. Posted speed on the west end of the corridor is 25 mph. According to traffic data collected by the City of West Sacramento in 2021 and 2022, the 85th percentile vehicle speeds along the corridor exceed the speed limits, with speeds of 45 mph west of 5th street and speeds of 37 mph east of 5th street.

However, public engagement efforts highlighted issues with speeding, with some members of the public citing speeds as high as 70 mph in some locations.

Volume & Operations

Average daily traffic (ADT) volume, heavy truck movement and intersection level of service along the corridor is discussed in the following sections.

Average Daily Traffic (ADT)

Daily roadway segment traffic volumes were collected at three locations on the corridor by the City of West Sacramento in 2021 and 2022:

- Sunset Avenue to Jefferson Boulevard: 14,464 ADT
- Jefferson Boulevard to 6th Street: 7,840 ADT
- 5th Street to City Limit: 10,100 ADT

Twelve additional locations on roadways that intersect the study corridor were also collected in 2021 and 2022. Figure 15 presents the ADT volumes from these. As shown, volumes along the corridor west of Jefferson Boulevard/Kegle Drive are around 14,000 to 15,000 vehicles per day and 8,000 to 10,000 vehicles per day east of Jefferson Boulevard.

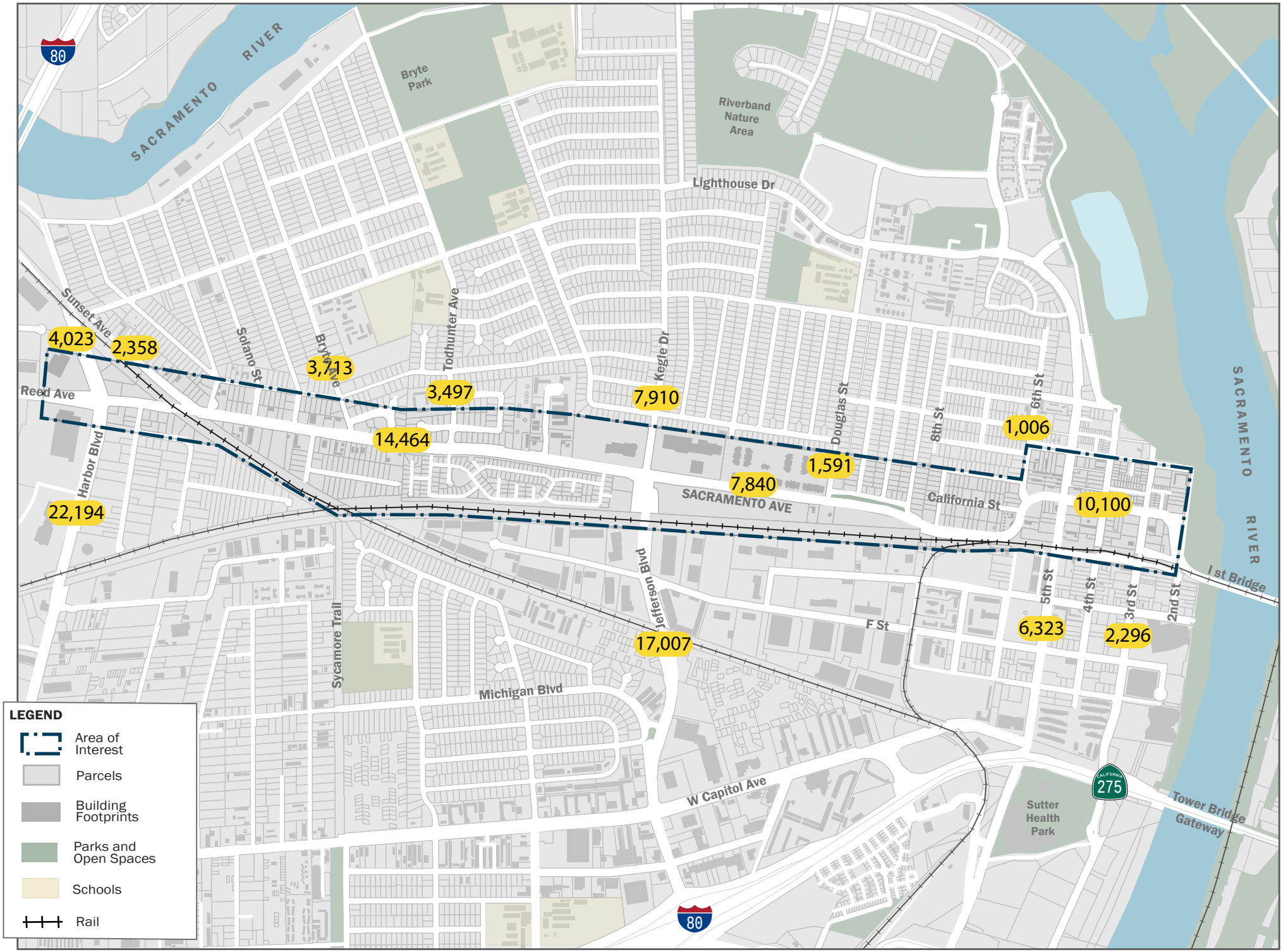
Heavy Trucks

Figure 16 presents truck routes in the vicinity of the corridor area of interest. As shown, west of Jefferson Blvd, Sacramento Avenue west of Jefferson Boulevard is a Terminal Access (STAA) truck route. The STAA route continues south along Jefferson Boulevard. Additionally, the south leg Harbor Blvd connects at Sacramento Avenue as a local city truck route (CA LEGAL).

Heavy truck volumes along the corridor are approximately 8 percent of total vehicle volumes west of Jefferson Boulevard, 6 percent between Jefferson Boulevard and 5th Street, and 11 percent east of 5th Street according to 2021 Replica estimates. Replica is a “big data” platform that provides traffic volume estimates based on a variety of sources, including mobile location data.



Figure 14 Existing Traffic Control & Speed



*Approximate locations for Average Daily Trafic (ADT) counts collected in 2021 & 2022 by City of West Sacramento.

Figure 15 Daily Vehicle Volumes

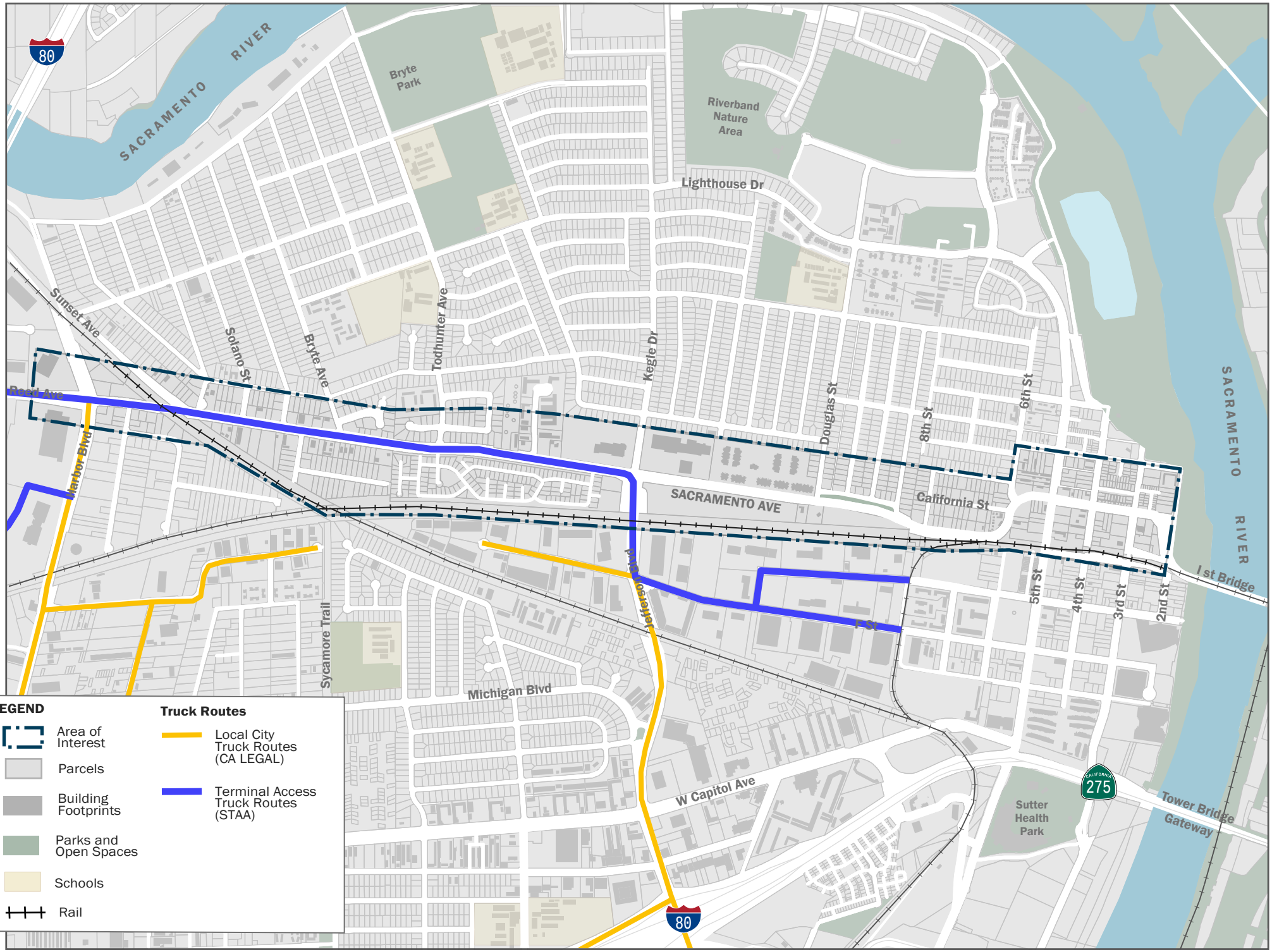


Figure 16 Truck Routes

INTERSECTION LEVEL OF SERVICE

Traffic operations were measured by Level of Service (LOS) at key intersections selected for vehicle operations analysis, including:

1. Sacramento Ave/Reed Ave/Harbor Boulevard
2. Sacramento Avenue/Solano Street
3. Sacramento Avenue/Bryte Avenue
4. Sacramento Avenue/Todhunter Avenue
5. Sacramento Avenue/Kegle Drive
6. Sacramento Avenue/Douglas Street
7. Sacramento Avenue/Reuter Drive
8. Sacramento Avenue/C Street/6th Street
9. C Street/5th Street
10. C Street/3rd Street

LOS a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection, or roadway segment, representing progressively worsening traffic conditions. LOS "A" represents free-flow operating conditions and LOS "F" represents over-capacity conditions. Levels of Service methodology is described in the Appendix.

The City's General Plan Mobility Element includes the following policies pertaining to LOS.

M-3.2 Vehicular Level of Service

For planning purposes, the City shall endeavor to maintain a vehicular Level of Service "C" on all streets within the City, except at intersections and on roadway segments within one-quarter mile of a freeway interchange or bridge crossing of the Deep Water Ship Channel, barge canal, or Sacramento River, where a Level of Service "D" shall be deemed acceptable, and within pedestrian oriented, high-density, mixed-use areas, such as the Pioneer Bluff and Stone Lock Reuse Master Plan area, Bridge District Specific Plan area, Washington District Specific Plan area, and Sacramento Avenue and West Capitol Avenue corridors east of Harbor Boulevard, where a vehicular Level of Service "E" shall be deemed acceptable. (RDR)

M-3.3 Level of Service Flexibility

The City shall, on a case-by-case basis, allow for lower vehicle level of service if other transportation goals (i.e., creation of complete streets) will be met; other modes (i.e., walking, bicycling, and public transit) would be negatively impacted by improvements required to maintain the vehicular LOS; or the land use context warrants deviation. Exceptions to the vehicular level of service operating goals shall require the approval of the City Council. (RDR)

Per policy M-3.2, all study intersections use LOS E as the threshold for acceptable conditions as Sacramento Avenue and the Washington District Specific Area are pedestrian oriented, high-density, mixed-use area. Policy M-3.3 does allow flexibility in determining the LOS threshold within the context of meeting other transportation goals, such as complete streets, which is a goal of this plan; however, exceptions to the LOS thresholds stated in Policy M-3.2 require approval from City Council.

LOS Results

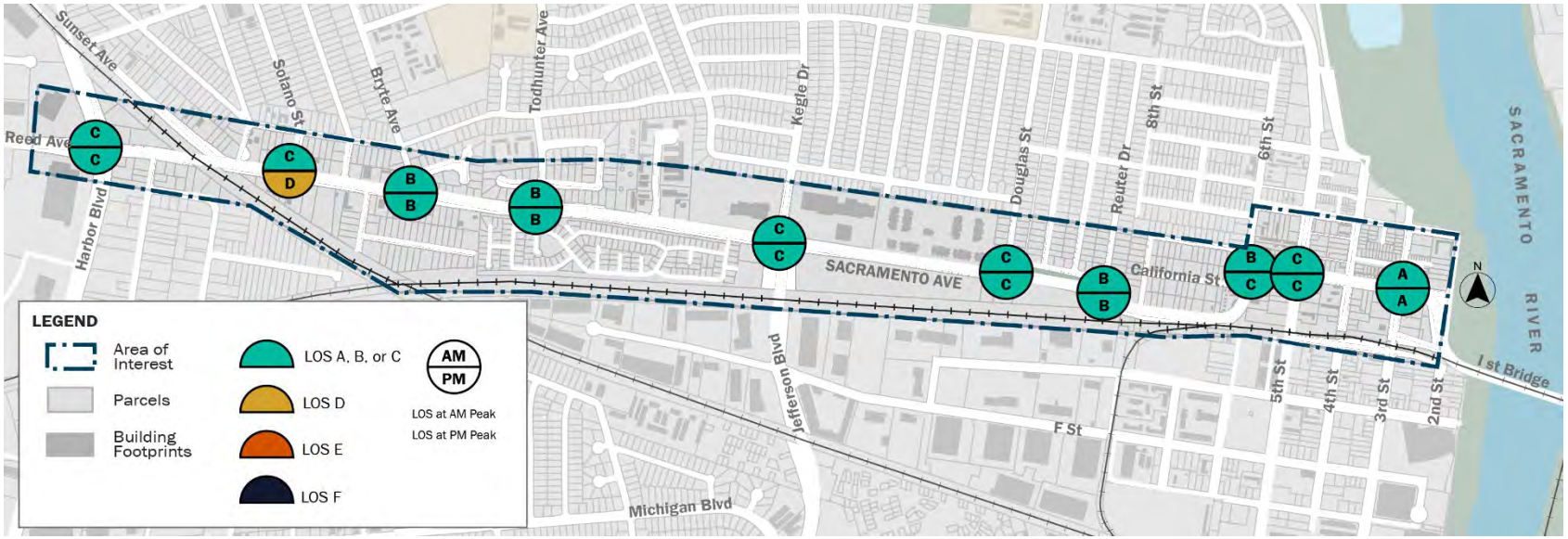
Table 5 presents the LOS results at the ten study intersections, and these results are also shown in Figure 17. As shown, all intersections currently operate better than the target LOS E threshold for the corridor.

Table 5 Intersection Level of Service – Existing Conditions

#	Location	Control Type [1]	Target LOS[2]	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	Sacramento Ave/Reed Ave/Harbor Blvd	Signal	E	20.1	C	24.0	C
2	Sacramento Ave/ Solano Street	SSSC	E	16.6	C	32.2	D
3	Sacramento Ave/ Bryte Avenue	Signal	E	11.1	B	11.1	B
4	Sacramento Ave/ Todhunter Ave	Signal	E	13.6	B	11.3	B
5	Sacramento Ave/Kegle Dr	Signal	E	29.3	C	32.9	C
6	Sacramento Ave/Douglas St	SSSC	E	16.2	C	16.4	C
7	Sacramento Ave/Reuter Dr	SSSC	E	11.2	B	14.2	B
8	Sacramento Ave/C St/6th St	SSSC	E	12.6	B	15.7	C
9	C Street/5th St	Signal	E	21.3	C	23.4	C
10	C Street/3rd St	Signal	E	7.7	A	9.7	A

1. SSSC = Side-Street Stop Control
2. LOS = Delay based on worst minor street approach for SSSC and average of all approaches for Signal.

Figure 17 Existing Intersection Level of Service



Existing Roadway Cross-Sections

The Sacramento Avenue roadway cross-section varies in paved roadway width, number of lanes per direction, posted vehicle speed, and fronting land use types. Furthermore, the corridor adjoins a mix of developed, undeveloped, and underdeveloped properties. The Plan has identified six distinct segments along the corridor to emphasize the changing characteristics of the roadway as well as the adjacent land use types and development status. The existing roadway characteristics and surrounding land use of the six segments are described below. Multimodal facilities and connectivity are described in greater detail in the following chapter.

The corridor segments include the following:

- S1. Harbor Boulevard to Solano Street
- S2. Solano Street to Todhunter Avenue
- S3. Todhunter Avenue to Jefferson Boulevard/Kegle Dr
- S4. Jefferson Boulevard/Kegle Drive to Douglas Street
- S5. Douglas Street to California Street
- S6. California Street to 2nd Street

Cross sections associated with each segment are presented in the following pages. The key map for the cross-sections associated with each segment is presented in Figure 18.

Segment Summary

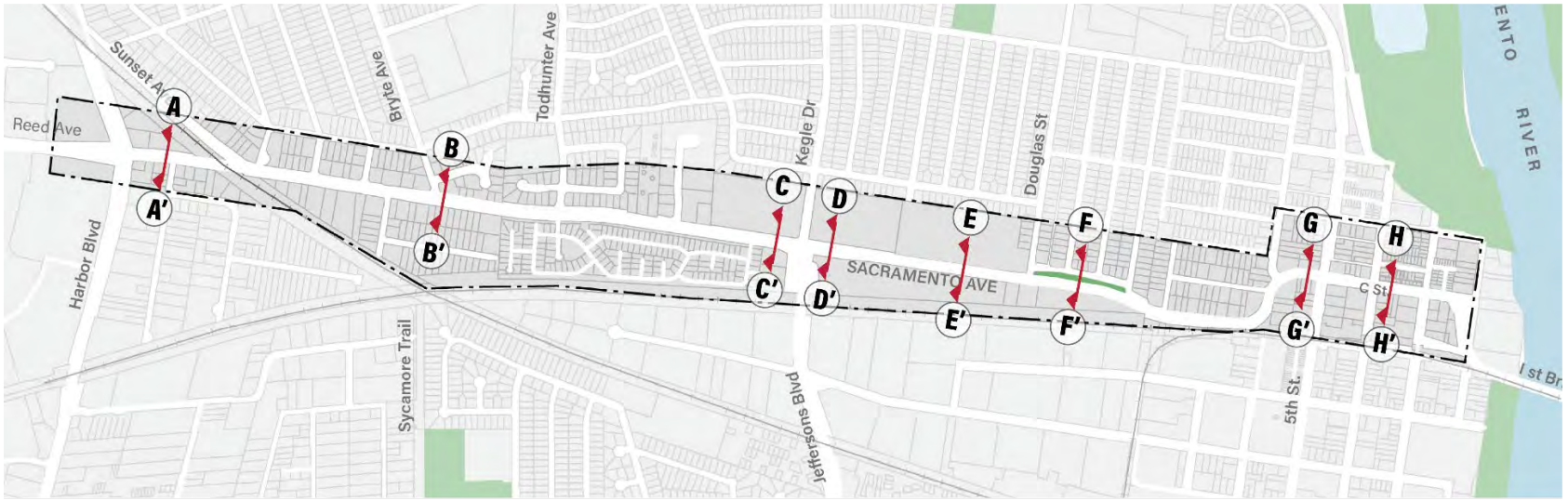
The following table presents a summary of the existing roadway conditions per study segment.

Table 6 Roadway Conditions Summary

Segment Location	Length (mile)	Posted Speed Limit (mph)	Total # Vehicle Lanes	ROW (feet) [1,2]	Existing Pavement (average, rounded) (feet)
Segment 1	0.30	40	4 + Center Turn Lane	100	80
Segment 2	0.35	40	4 + Center Turn Lane	100	80
Segment 3	0.35	40	4 + Center Turn Lane	90 – 120	80
Segment 4	0.35	40	2 + Buffered Median / Center Turn Lane	80 – 100	30 – 75
Segment 5	0.40	40	2	36* - 100	30 – 75
Segment 6	0.25	25	2 + Left/Right Turn Lanes	80**	47 – 65

1. Calculated to mid-intersection to reflect curb.
2 Approximate measurements between existing parcel boundaries.
**55' ROW borders City-owned landscaped area on southside of Elkhorn Plaza.*
***ROW for Segment 6 provided within the Washington Realized, A Sustainable Community Strategy, 2015*

Figure 18 Existing Cross-Section Key Map



KEY MAP

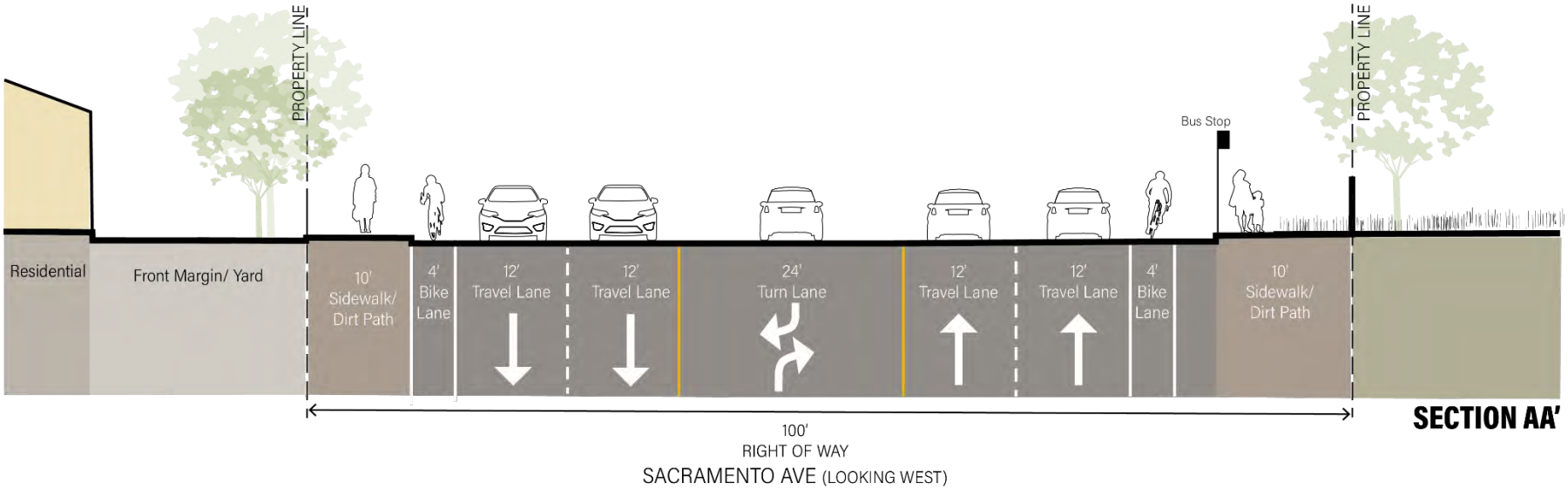
Segment 1: Harbor Boulevard to Solano Street

Segment one is 0.3 miles long with two vehicle lanes per direction and a center turn lane. The posted speed is 40 mph and the 85th percentile speed is 45 mph. The right-of-way (ROW) is 90 feet, and the average paved roadway width is 80 feet.

The segment includes sidewalk facilities with gaps on both the north and south sides of the street. There are Class II bike lanes on both sides of the street. Adjacent land use designations include medium-density residential, commercial, and business park.

The cross-section associated with Segment 1 is shown in Figure 19.

Figure 19 Segment 1 – Cross-Section AA'



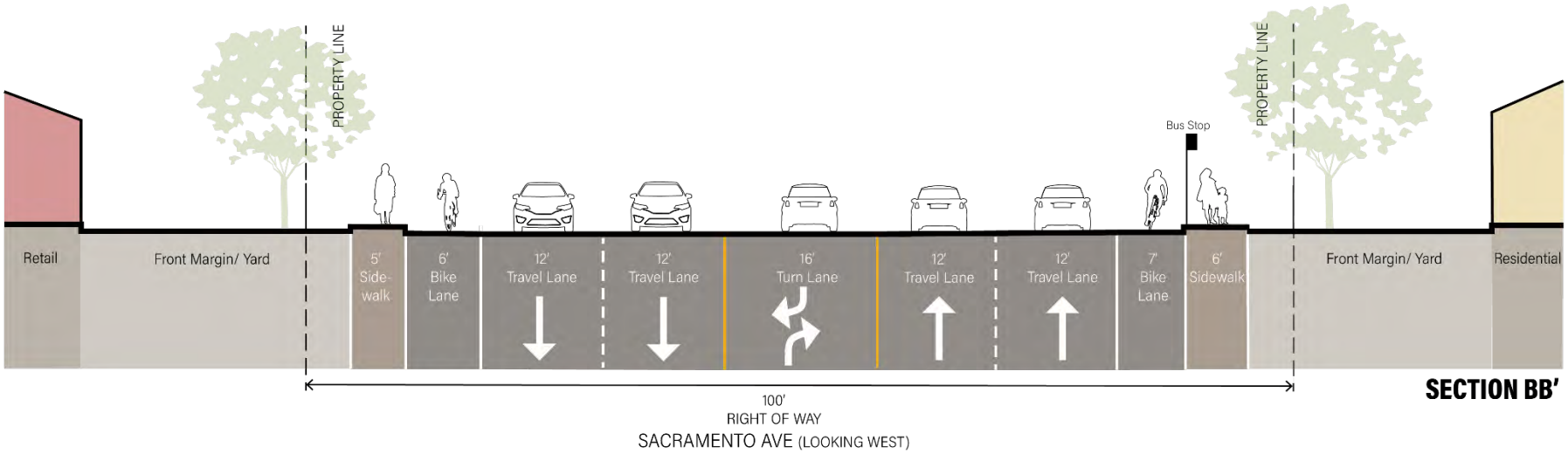
Segment 2: Solano Street to Todhunter Avenue

Segment two is 0.35 miles long with two vehicle lanes per direction and a center turn lane. The posted speed is 40 mph and the 85th percentile speed is 45 mph. The right-of-way is 90 feet, and the average paved roadway width is 80 feet.

The segment includes sidewalk facilities with gaps on the north side of the street, while the majority of the south side of the street includes continuous sidewalks. There are Class II bike lanes on both sides of the street. Adjacent land use designations include low-density residential and neighborhood mixed use.

The cross-section associated with Segment 2 is shown in Figure 20.

Figure 20 Segment 2 – Cross Section BB'



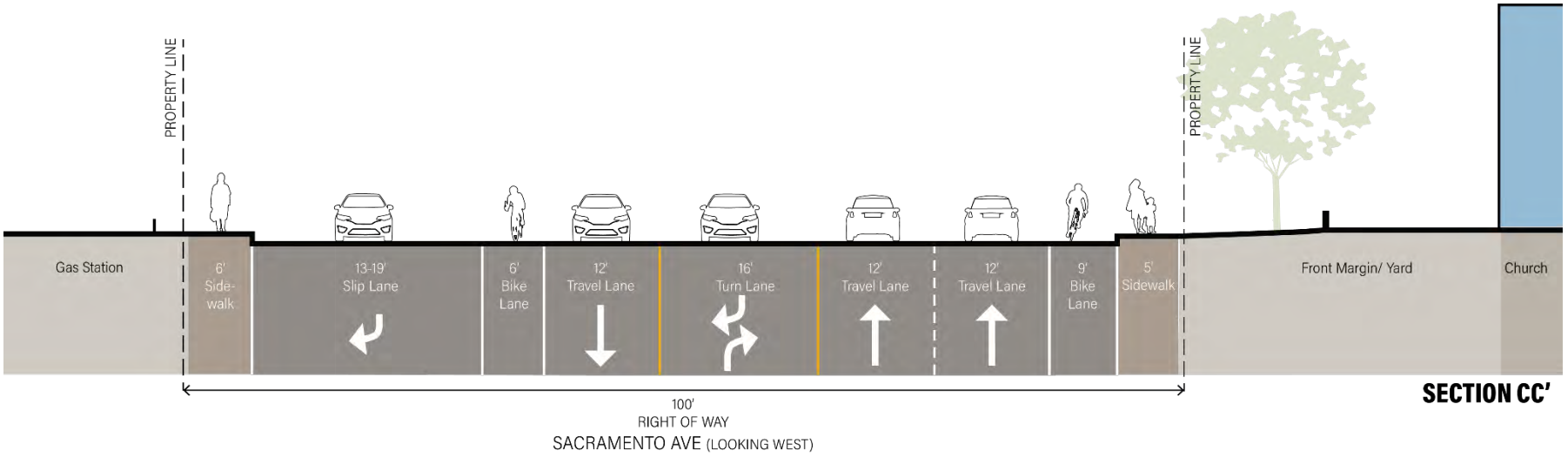
Segment 3: Todhunter Avenue to Jefferson Boulevard/Kegle Drive

Segment three is 0.35 miles long with two vehicle lanes per direction and a center turn lane. The posted speed is 40 mph and the 85th percentile speed is 45 mph. The right-of-way is 90 feet, and the average paved roadway width is 80 feet.

The segment includes sidewalk facilities with gaps on the north side of the street, with continuous sidewalk on the south side. There are Class II bike lanes on both sides of the street. Adjacent land use designations include low- and high-density residential, commercial, neighborhood mixed use and public/quasi-public (church).

The cross-section associated with Segment 3 is shown in Figure 21.

Figure 21 Segment 3 – Cross Section CC'



Segment 4: Jefferson Boulevard/Kegle Drive to Douglas Street

Segment four is 0.35 miles long with two vehicle lane per direction and left turn pockets at some intersections. The posted speed is 40 mph and the 85th percentile speed is 45 mph. The right-of-way is 75 feet, and the average paved roadway width is 30 to 75 feet.

The segment includes minimal sidewalk facilities on the north side of the street, with no sidewalk facilities on the south side. There are Class II bike lanes on both sides of the street. Adjacent land use designations include high-density residential and neighborhood mixed use. There is a large vacant parcel on the south side of the roadway that is slated for proposed high-density, mixed-use development.

The cross-sections associated with Segment 4 are shown in Figure 22 and Figure 23.

Figure 22 Segment 4 – Cross Section EE'

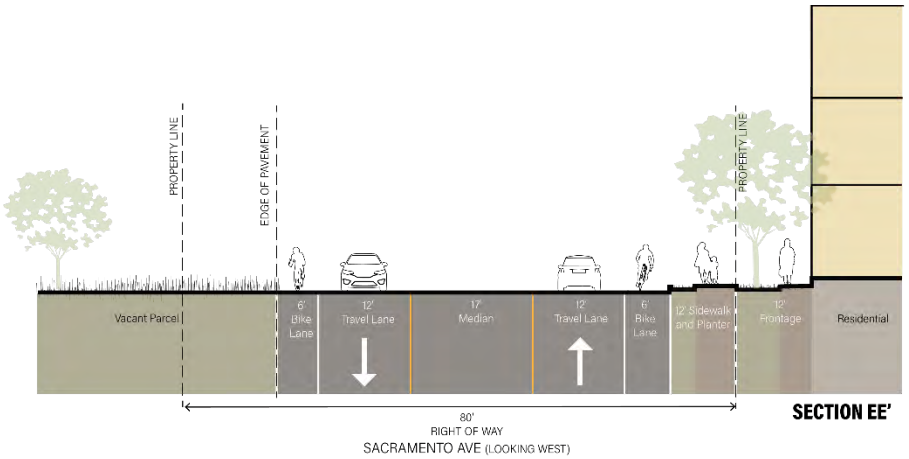
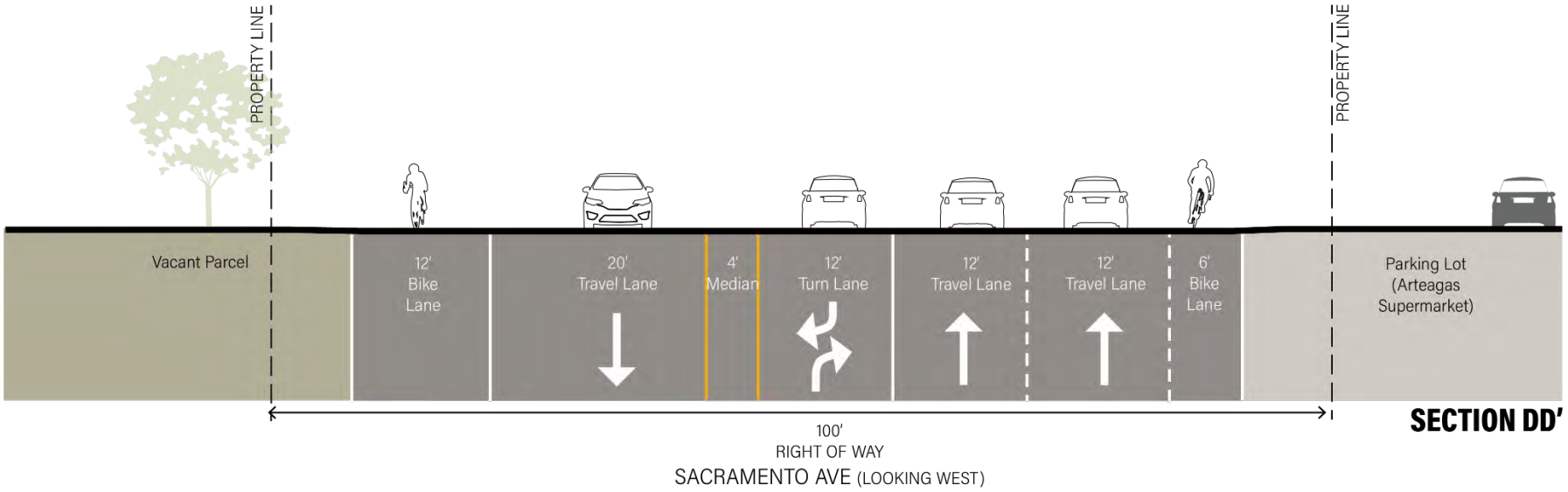


Figure 23 Segment 4 – Cross Section DD'



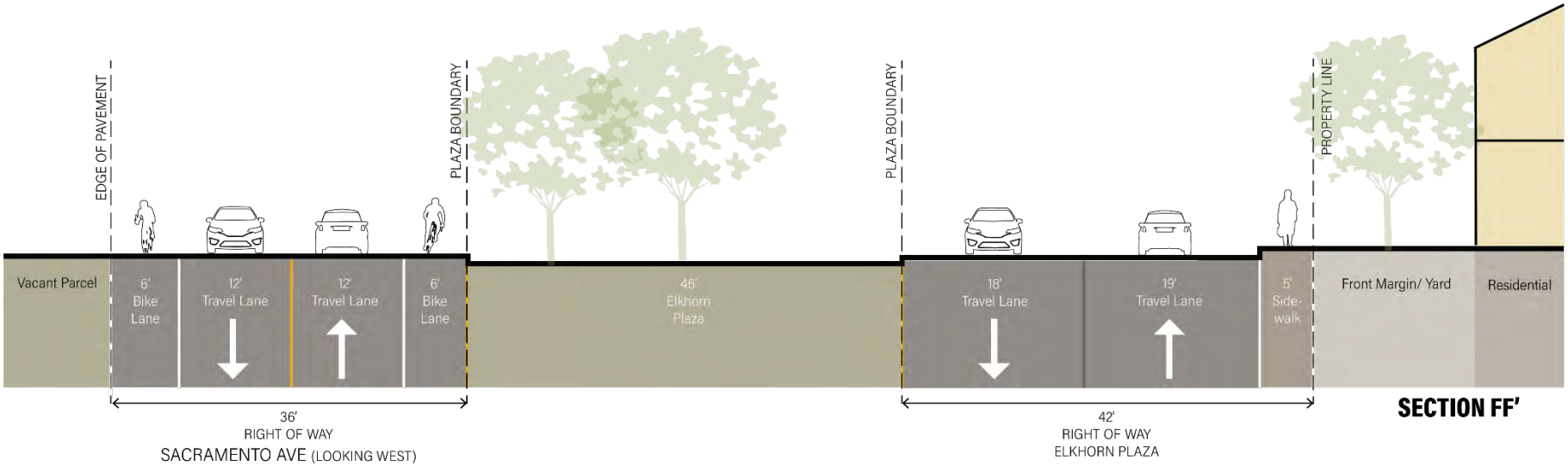
Segment 5: Douglas Street to California Street

Segment five is 0.40 miles long with one vehicle lane per direction with no center turn lane. The posted speed is 40 mph and the 85th percentile speed is 45 mph. The right-of-way is 75 feet, and the average paved roadway width is 30 to 75 feet.

Aside from a small segment of existing sidewalk on the south side of the street south of California/6th Street, there are no sidewalk facilities along the segment and there are Class II bike lanes on both sides of the street. Adjacent land use designations include low-density residential and neighborhood mixed use.

The cross-section associated with Segment 5 is shown in Figure 24.

Figure 24 Segment 5 –Section FF'



Segment 6a: California Street to 2nd Street

Segment 6 significantly differs in cross-section west and east of 5th Street. Both conditions are described below as 6a and 6b, respectively.

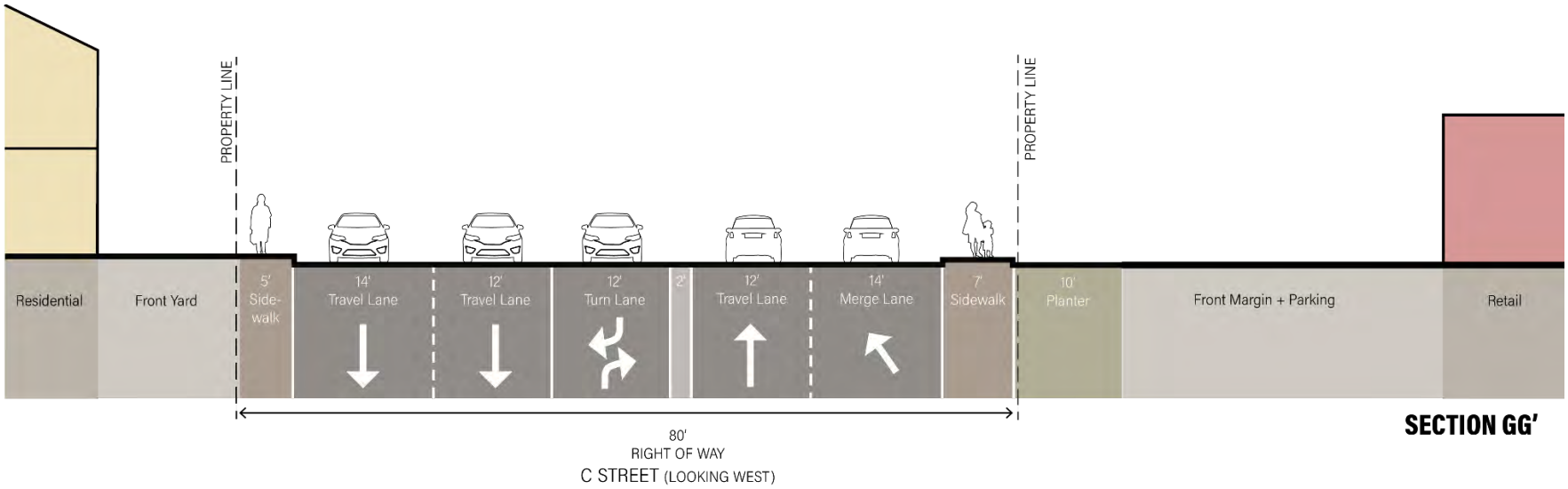
Segment 6a: California Street to 5th Street

Segment five is 0.10 miles long with one vehicle lane per direction with no center turn lane. The posted speed is 40 mph and the 85th percentile speed is 45 mph. The right-of-way is 80 feet, and the average paved roadway width is 60 feet.

There are sidewalk facilities on both sides of the street. The Class II bike lanes are dropped in this location, but the segment is designated as a Class III bike route. Adjacent land use designations include medium-density residential and neighborhood mixed use.

The cross-section associated with Segment 6a is shown in Figure 25.

Figure 25 Segment 6a –Section GG'



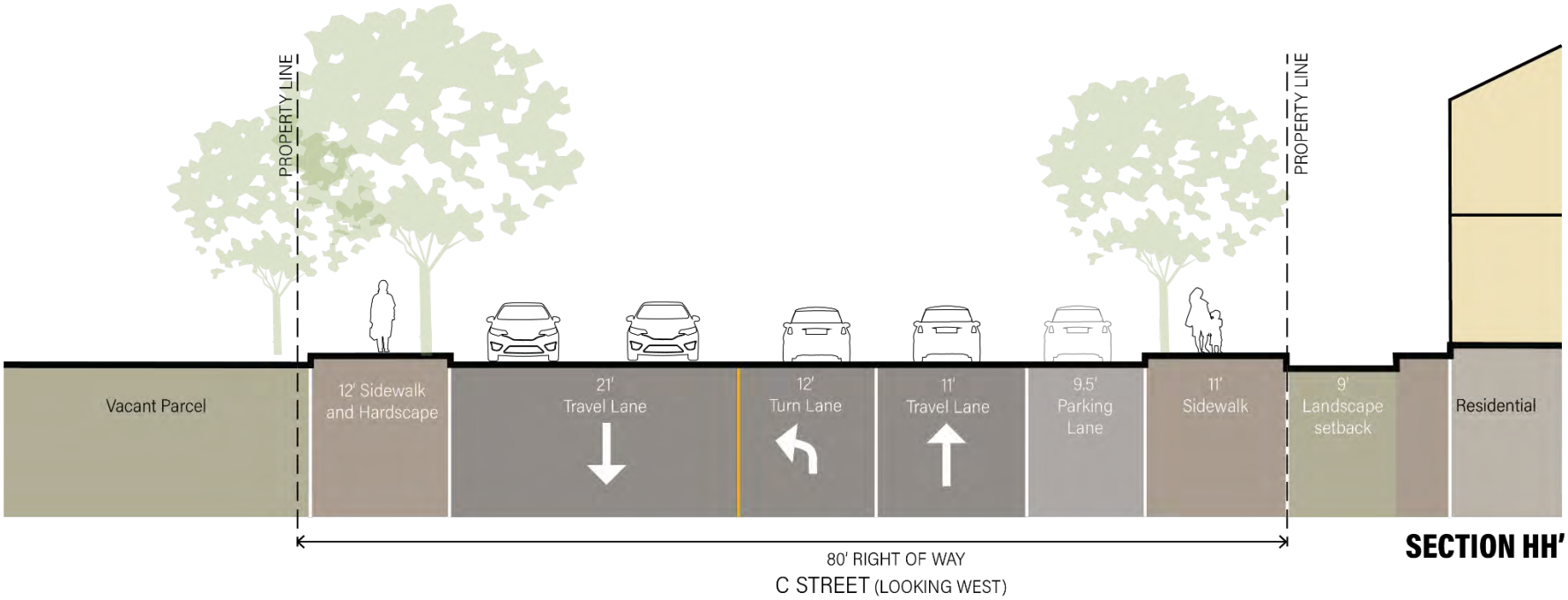
Segment 6b: 5th Street to 2nd Street

Segment 6b is 0.15 miles long with one to two vehicle lanes per direction and left turn pockets at some intersections. The posted speed is 25 mph and the 85th percentile speed is 37 mph. The right-of-way is 80 feet, and the average paved roadway width is 60 feet.

There are sidewalk facilities on both sides of the street. There are no bike lanes along this segment. Adjacent land use designations include medium- and high-density residential and neighborhood mixed use. Nearby land use includes recreation along the Sacramento Riverfront.

The cross-section associated with Segment 6b is shown in Figure 26. Note this cross section reflects roadway conditions prior to streetscape improvements as part of the North Riverwalk Trail Extension Project completed in summer 2023.

Figure 26 Segment 6b –Section HH'



Multimodal Conditions

This section provides a summary of existing multimodal infrastructure, including bicycle and pedestrian facilities, transit service and rail, as well as identifies barriers and discusses results for the Bicycle Level of Traffic Stress and connectivity assessment conducted for the corridor.

Bicycle and Pedestrian Facilities Overview

Figure 28 displays existing multimodal infrastructure within the study area vicinity, including bicycle facilities, transit stops and rail facilities. Pedestrian facilities are shown only within the corridor area of interest.

Bicycle Facilities

The corridor area of interest features existing Class II bike lanes and Class III bike routes, as shown in Figure 28. Existing bike lanes widths generally vary between four and six feet through the corridor but narrow in a few locations where roadway width/right-of-way is constrained.

There are existing Class II bicycle lanes along Sacramento Avenue from the corridor's west end at Harbor Boulevard/Reed Avenue to California Street/6th Street. Additionally, there are Class II bicycle facilities along Harbor and Jefferson Boulevards, connecting to the corridor at the south, and at Kegle Drive, connecting at the north.

Between California Street/6th Street to the corridor's east end, there is an existing Class III bike route. Class II bike lanes, which are upgraded with green paint and conflict markings connect to the corridor from the south at 5th Street. The bike lane that connects at 5th Street/Sacramento Avenue provides connectivity to additional facilities along W Capitol Ave and the Tower Bridge Gateway, which connects key destinations to the south of the study area, and Downtown Sacramento.

Bicycle facilities at most of the key intersections along the corridor lack buffers, barriers or conflict markings, or are dropped all together at the intersection approach. Coupled with cracking pavement or fading paint in some locations, existing bicycle facilities along the corridor provide a high-stress experience for bicyclists, particularly children and other vulnerable road users.

Pedestrian Facilities

Pedestrian facilities like sidewalks and crossings form the foundation of a complete street. Users of all modes of transportation become pedestrians for at least part of their journey after parking a car, locking a bicycle, or arriving at a transit stop.

Pedestrian facilities throughout the corridor area of interest include a discontinuous network of sidewalks with gaps, narrow sections, and vegetation overgrowth in many locations. Most locations with sidewalk vary in width between four and six feet. However, there are some locations that also feature a landscaped area with sidewalk that are as wide as 15 feet.

The east end of the corridor, specifically between 2nd Street and 5th Street is markedly more pedestrian-oriented, with very few gaps in sidewalk, fewer travel lanes, lower vehicle speeds, and more lighting, landscaped areas and higher-density land use. Conversely, the west end of the corridor is much less pedestrian-friendly, with many sidewalk gaps, wider roadway widths and higher vehicle speeds.

While there are marked crosswalks along at least two of the legs of the intersection locations listed below, some locations have faded crosswalk markings and lack ADA compliant curb ramps and proper sidewalk connections.

- Sacramento Avenue/Reed Avenue & Harbor Boulevard
- Sacramento Avenue & Bryte Avenue
- Sacramento Avenue & Todhunter Avenue/Sierra Pl
- Sacramento Avenue & Jefferson Blvd/Kegle Drive
- C Street & 5th Street
- C Street & 3rd Street

Segment Bicycle & Pedestrian Facility Summary

The following table summarizes the existing bicycle and pedestrian facilities per study segment based on total frontage (i.e., both sides of the roadway). These calculations do not include roadway frontage on side streets; however, the calculations do include curbs at intersections.

Figure 27 Segment Bicycle & Pedestrian Facility Summary

Segment Location	Length (mi)	Sidewalk Coverage (%)	Average Sidewalk Width (feet)	Bike Lane (Y/N)	Average Bike Lane Width (feet)
Segment 1	0.30	59%	5	Y	8.0
Segment 2	0.35	81%	5.0	Y	7.5
Segment 3	0.35	88%	5.5	Y	8.0
Segment 4	0.35	30%	5	Y	6.0
Segment 5	0.40	4%	5	Y	6.0
Segment 6	0.25	100%	5 (up to 16)	N	-

Transit Service

Local transit service within the study area of interest includes bus service and Via Rideshare, which are discussed below.

Bus Service

Bus service is provided by Yolobus, which is administered by YoloTD. Local bus routes servicing the study area neighborhoods include Routes 40, 41, and 240. Figure 29 presents Yolobus' West Sacramento Map, showing local and regional routes servicing West Sacramento. As shown, Routes 40 and 41 both loop in the Bryte and Broderick neighborhoods, and along Sacramento Avenue. Route 240 services the shopping center at the corridor's west end, near Harbor Boulevard.

On-Demand Rideshare Program

Via is a transportation technology company contracted by the City of West Sacramento to provide on-demand rideshare services to and from any destination within the City for residents, employees, and visitors. The service is most easily accessed using the Via Rideshare App but can also be booked by phone. Riders are required to take a short walk or roll to an intersection or main road close to their destination where they are picked up to share a ride with passengers traveling in a similar direction.

Bryte/Broderick Free Ride Program

Between February 1, 2023, and April 19, 2023, the City of West Sacramento was able to offer all Via on-demand rides starting and ending in the Broderick and Bryte neighborhoods at no cost. The program was funded by a Clean Air Funds grant awarded by the Yolo-Solano Air Quality Management District and expanded upon the 2022 Summer Free Rides program. The Bryte/Broderick Free Ride Program was able to provide 16,691 free rides in about ten-and-a-half weeks.[6]

Rail

Existing rail facilities include both passenger, freight, and recreation operations along two rail lines that intersect the corridor.

The Union Pacific Railroad (UPRR) Martinez subdivision line runs south of the corridor from the east end at the I St bridge and continues southwest toward the City of Davis before continuing on to the bay Area. This rail line includes freight operations provided by UPRR and BNSF Railway. Passenger operations along this line is provided by Amtrak and services the California Zephyr, Capitol Corridor and Coast Starlight routes. The closest passenger rail stop is at Sacramento Valley Station in Downtown Sacramento.

The Sierra Northern Railway (SERA) Woodland Branch subdivision line runs southeast edge of the corridor, intersects with the Martinez subdivision line at the West Sacramento Diamond Railroad Crossing and continues northeast through the corridor area of interest via a grade-separated rail crossing before continuing adjacent to Sunset Ave. This line provides service for the Sacramento River Train, a recreational passenger rail line that runs from West Sacramento to Woodland, as well as freight operations.

[6] *City of West Sacramento Via Rideshare Information webpage, 2023.*

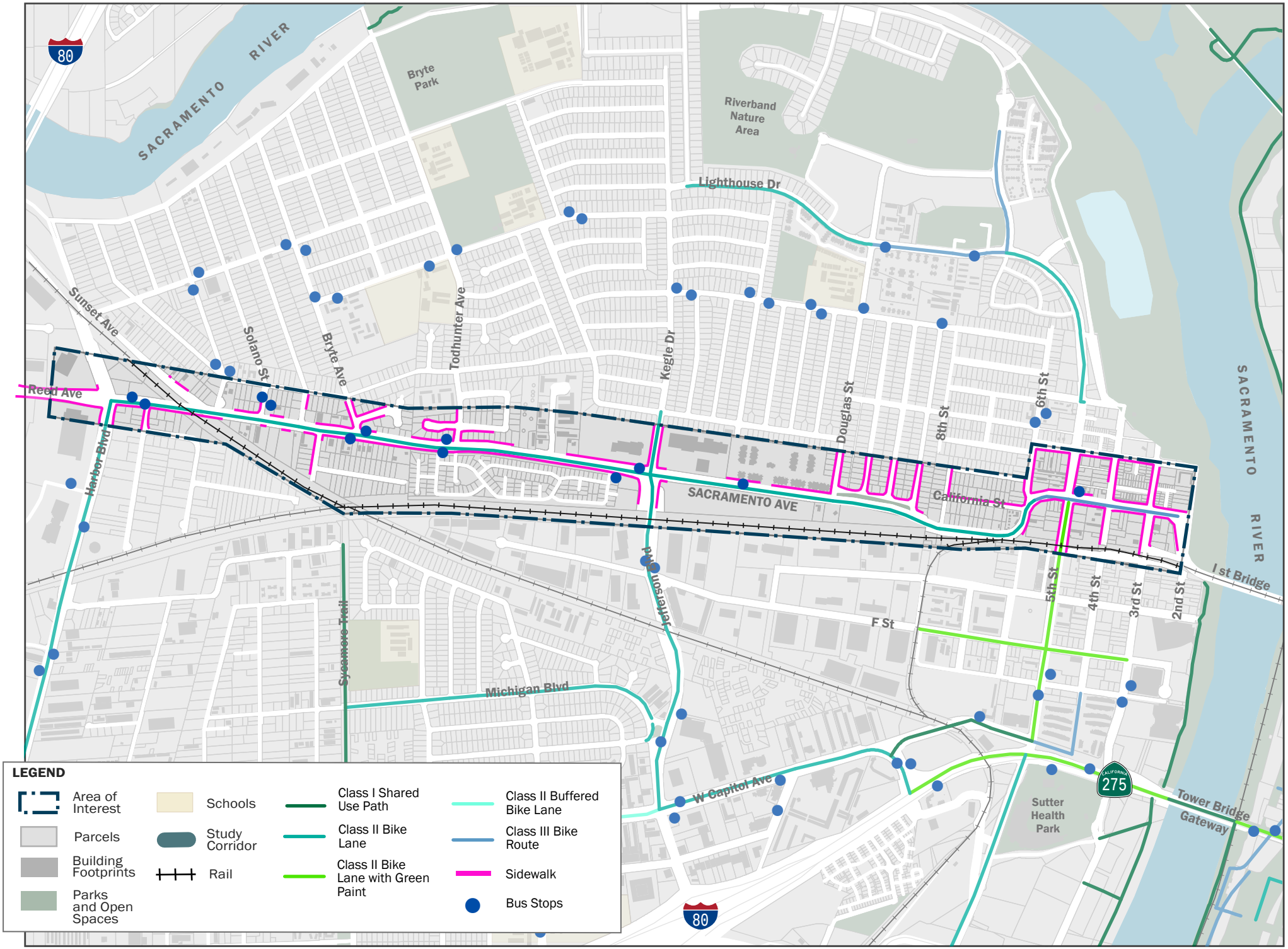
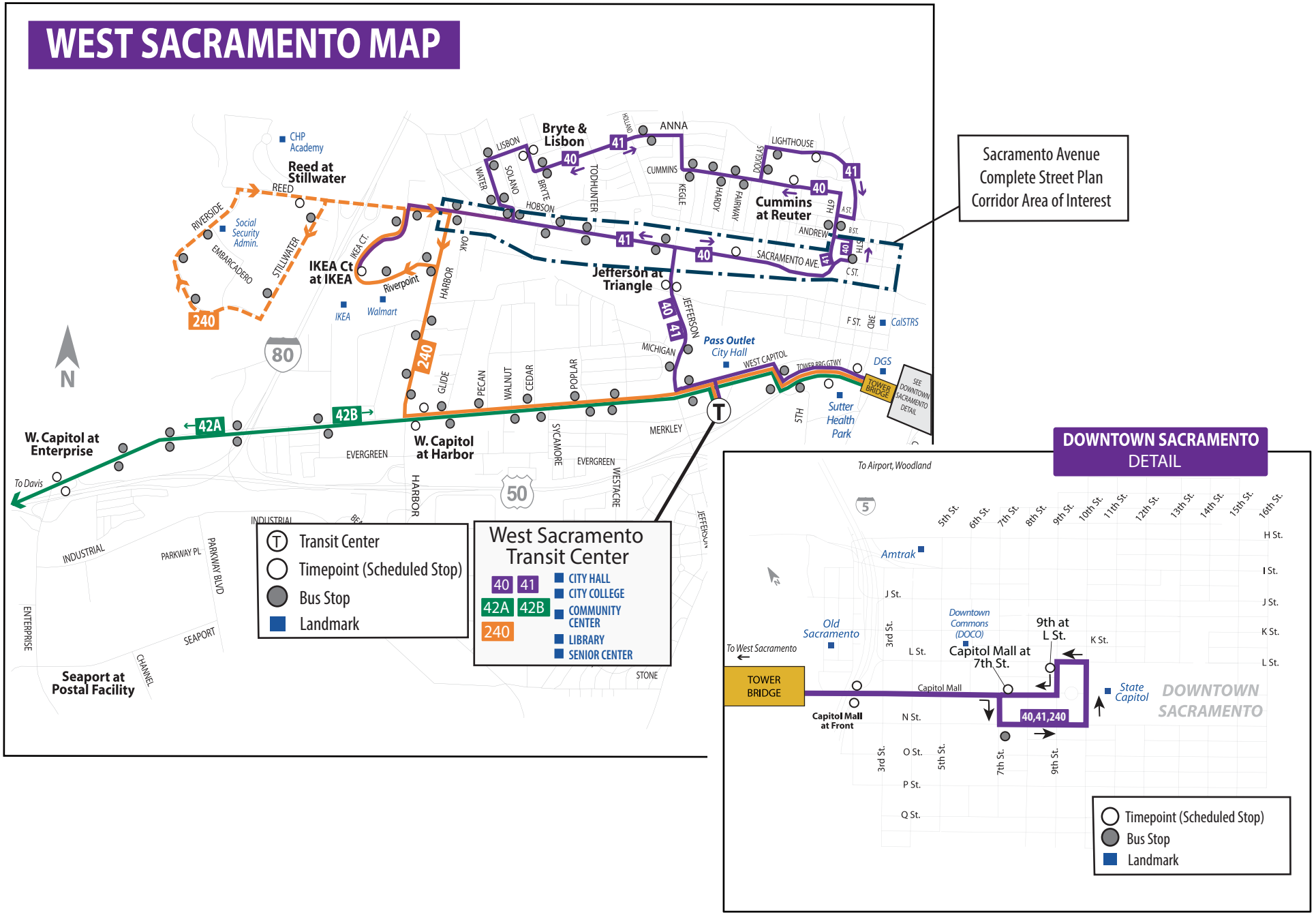


Figure 28 Existing Multimodal Infrastructure

WEST SACRAMENTO MAP



Data Source: Yolobus Route 40, 41 & 240 West Sacramento Transit Map (Yolo County Transportation District, January, 2022)

GHD NOT TO SCALE N

Figure 29 Existing Transit Service

Existing Multimodal Facilities at Intersections

Pedestrian Conditions

Many intersections on Sacramento Avenue have four-way, transverse crosswalks. However, crosswalk markings may be faded, and wide intersections make for longer crossing distances that are high stress for most pedestrians. On Sacramento Avenue and Todhunter Avenue, pedestrians are prohibited from crossing Sacramento Avenue on the east side of the intersection where they are instead instructed to cross on the opposing crosswalk. Some intersections lack ADA accessible curb ramps. Sight distance issues are present along 6th Street and C Street, and there are no crossing opportunities at California Street and 6th Street, creating a dangerous environment for pedestrians. Advanced stop bars are present at the Jefferson Boulevard/Kegle Drive intersection. Some intersections have left turn pockets and protected left turn phases that prevent conflicts with pedestrians.

Gaps in the sidewalk network are common approaching intersections along Sacramento Avenue. Missing sidewalks create an inaccessible environment for pedestrians and force users to walk on dirt paths or road shoulders. Existing sidewalks are narrow and adjacent to high-speed and high-volume traffic. In some cases, sidewalks are degrading or overgrown by plants.



Kegle Drive/Jefferson Boulevard



Todhunter Avenue

Bicycling Conditions

Exiting bicycle facilities are typically four- to five-foot Class II bike lanes that are adjacent to high-speed and high-volume traffic. Bicycle facilities are unprotected in most locations.

At some intersections along Sacramento Avenue and adjacent streets, bicycle lanes transition from the right side of the roadway to the left side of the right turn pockets without high visibility conflict markers. In these instances, the bicycle lane typically disappears. Bicycle lanes may also be positioned on the right side of vehicles turning right, creating a higher risk of conflict between motor vehicles and bicyclists. Bicycle parking facilities are positions at intersections between 5th Street and 3rd Street.



Kegle Drive/Jefferson Boulevard

Lighting Conditions

Standard roadway lighting on traffic signal mounts is typical at most intersections. Light fixtures are blocked by foliage in some locations. Lighting is sparce towards the west end of the corridor where the context is lower-density. Pedestrian scale lighting is present on C Street and 3rd Street.

Transit Conditions

Some transit stops along the corridor include rider amenities like benches and shelters, while most are only represented by a route blade sign. In some cases, transit stops lack accessible infrastructure like curb ramps or paved pathways connecting transit stops to sidewalks. A bus pullout is present at the stop between Douglas Street and Kegle drive and includes a shelter, bench, lighting, and a trash receptacle.

Bicycle Level of Traffic Stress

This section provides information about the level of traffic stress (LTS) analysis and results for the bicycle network within the Sacramento Avenue corridor area of interest and the surrounding areas. A detailed summary of methodology and results is provided in the Appendix.

LTS is the perceived sense of danger associated with bicycling or walking in or adjacent to vehicle traffic. Studies have shown that traffic stress is one of the biggest deterrents to bicycling and walking. The less stressful the experience, and the lower the LTS score, the more likely it is to appeal to a broader segment of the population[7]. A bicycle and pedestrian network will attract a larger portion of the community if it is designed to reduce stress associated with potential motor vehicle conflicts and connect people to their destinations.

Bicycle and pedestrian facilities that provide greater separation between vehicle traffic and people walking and bicycling, as well as minimize the potential for stressful conflicts between active transportation users and vehicles, will result in the lowest levels of traffic stress and highest level of comfort using the facility. Moreover, bicycle and pedestrian facilities are considered lower stress if they have fewer interactions with vehicles (such as along slow, low-traffic neighborhood streets).

Bicycle LTS assigns a score from one to four to street segments, intersection approaches, and intersection crossings, with one being the most comfortable four being the least comfortable, and based on roadway data including the following:

- type of bikeway, if applicable
- level of separation from vehicular traffic
- street width (number of lanes), daily traffic volumes and/or functional classification
- posted speed limit, or prevailing speed
- presence, width and configuration of bike lanes, parking lanes, medians and turn lane
- intersection control type (stop signs, traffic signals)

Bicycle LTS is considered for the three infrastructure categories described below:

- **Segments** traveling between intersections in a bikeway or sharing the roadway with vehicles
- **Approaches** to intersections where there are dedicated right- or left-turn lanes can create conflict points distinct from segment or intersection characteristics
- **Intersection Crossings** between two roadways, which may cause challenges for bicyclists when crossing the intersection

[7] *"Four Types of Transportation Cyclists in Portland," Geller, 2006*

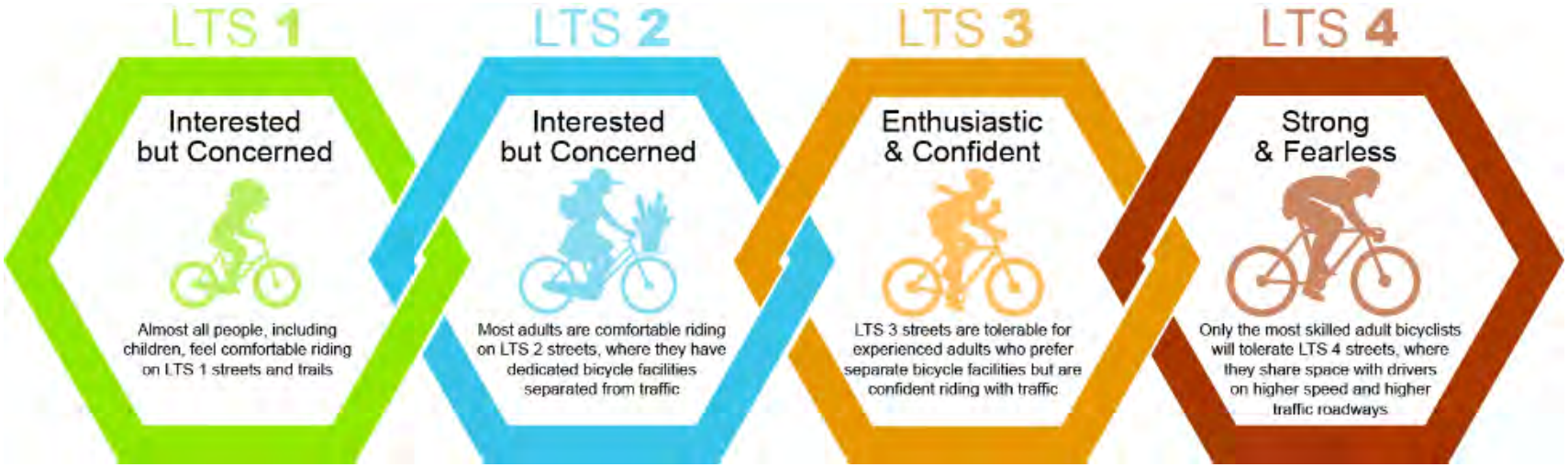
Based on the evaluation of infrastructure characteristics at segments, approaches, and intersection crossings, locations are assigned scores between one and four. A score of LTS 1 indicates a street with low stress and high comfort for people bicycling. LTS 4 reflects a highly stressful experience. A lower-stress network means all bicyclists, regardless of age or ability, can comfortably ride to their destination.

Types of Bicyclists

Research conducted by the Portland Bureau of Transportation indicates the majority of people in the United States would bicycle if dedicated bicycle facilities were provided. Based on their skill level and confidence, most people self-identify as one of the four "types of bicyclists" shown in Figure 30. Only a small percentage of Americans are willing to ride if no facilities are provided—the "Strong & Fearless" cyclists.

To better meet the needs of the "Interested but Concerned" bicyclists, it is recommended that communities work to decrease traffic stress and improve the comfort of their bikeway network. LTS 1 and LTS 2 roads are typically the most appealing to these bicyclists.

Figure 30 Types of Bicyclists



Data Source: Image created by GHD, based on PDOT research.

WHAT WE LEARNED

Below are the LTS results for segments, intersection approaches, and crossings along Sacramento Avenue. A detailed description of the criteria for analyzing each of the following infrastructure categories is provided in the Appendix.

Segments

The LTS of segments within a roughly 0.75-mile proximity of the corridor were evaluated to allow for connectivity to nearby destinations to be assessed. Local, or neighborhood streets with speeds of 25 mph or less and one lane per direction were assumed to be low stress, while streets classified as collector or arterial streets, and/or those with speeds greater than 25 mph were analyzed.

Many of the segments to the north and south of the corridor scored LTS 1 (64 percent), however, these facilities are primarily minor local roads or off-street paths. When examining only arterial roadways, which serve as the direct connections to most destinations, 76 percent of the analyzed segments are LTS 3 and LTS 4. Most residents may not feel comfortable bicycling outside their immediate neighborhood on low-stress local streets. This means reaching major destinations from residential areas may not be possible given most people's tolerance for bicycling with traffic, even on streets that have bicycle lanes.

Intersection Approaches

Intersection approaches are analyzed in locations where right or left turn lanes are present.[8] At right-turn locations, the configuration of turn lanes, length of turn lanes, and vehicle turning speeds are considered. At left-turn locations, the analysis considers the number and speed of vehicle lanes a bicyclist must cross to access the left-turn movement. Intersection approaches with right- and left-turn lanes along the corridor and within a roughly 0.25-mile proximity of the corridor were assessed in this analysis.

Many intersection approaches along Sacramento Avenue feature bicycle lanes that end abruptly as well as right turn pockets that are long or position bicyclists on the right side of the turn lane, which increases risk of right hook collisions. Left turn pockets on Sacramento Avenue force bicyclists to shift across several lanes of high-speed and volume traffic to reach the turn lane. These conditions result in high stress approaches for bicyclists.

Intersection Crossings

Crossings at intersections of two local residential streets were typically found to be low-stress, likely to be easy for most adults and children on bicycles to navigate. Moderately stressful LTS 3 crossings were identified primarily along collector and arterial roadways, contributing to the perception of these larger streets as barriers to low-stress connectivity. A stressful crossing can discourage a potential bicyclist, even if the route is otherwise low stress.

Overall LTS

The overall LTS score reflects the worst-case score between a given segment and the adjacent intersection approaches and crossings. The overall LTS results are shown in Figure 31. The separately mapped LTS results for segments, intersection approaches and intersection crossings can be found in the Appendix.

The LTS results shown in Figure 31 reflects the impact a higher-stress crossing or approach can have on an otherwise lower stress segment, which can result in a barrier to connectivity. When considering segment LTS scores alone, the entirety of the Sacramento Avenue corridor is already considered high stress, with segment LTS scores of LTS 3 and LTS 4. When crossings and approaches are considered, many locations with segment LTS scores of LTS 3 increase to LTS 4, and almost all of the adjacent segments are also considered high stress.

[8] See Appendix for detailed analysis criteria.

Connectivity Assessment

Low stress connectivity is defined in this analysis by connections that can be made via the LTS 1 and LTS 2 bicycling network. The overall LTS results highlight the "islands of connectivity" created by high-stress barriers that surround pockets, or "islands" of lower-stress streets. Most local neighborhood streets, with lower traffic volumes and speed are buttressed by high stress segments, approaches and intersections, specifically along collector and arterial streets with higher speeds and traffic volumes, which serve as barriers to low stress connectivity throughout the analyzed areas.

With 100 percent of segments along the corridor assigned overall LTS scores of LTS 3 or LTS 4, all connections between destinations to the north and south of the corridor are cut off by the high stress corridor, meaning that zero percent of destinations between the north and south of the corridor can be accessed via the low stress network. With higher stress barriers creating islands of low stress connectivity within small areas to the north and south of the corridor, potential connection points between key destinations and points of interest are closed off, resulting in no low stress connectivity. While low stress connections can be made within the small pockets of low stress areas to the north and south of the corridor, residential and non-residential destinations are mostly cut off from one another.

Infrastructure recommendations proposed as part of this Plan will seek to improve level of traffic stress to LTS 1 or 2, where possible.

"Zero percent of destinations between the north and south of the corridor can be accessed via the low stress network."

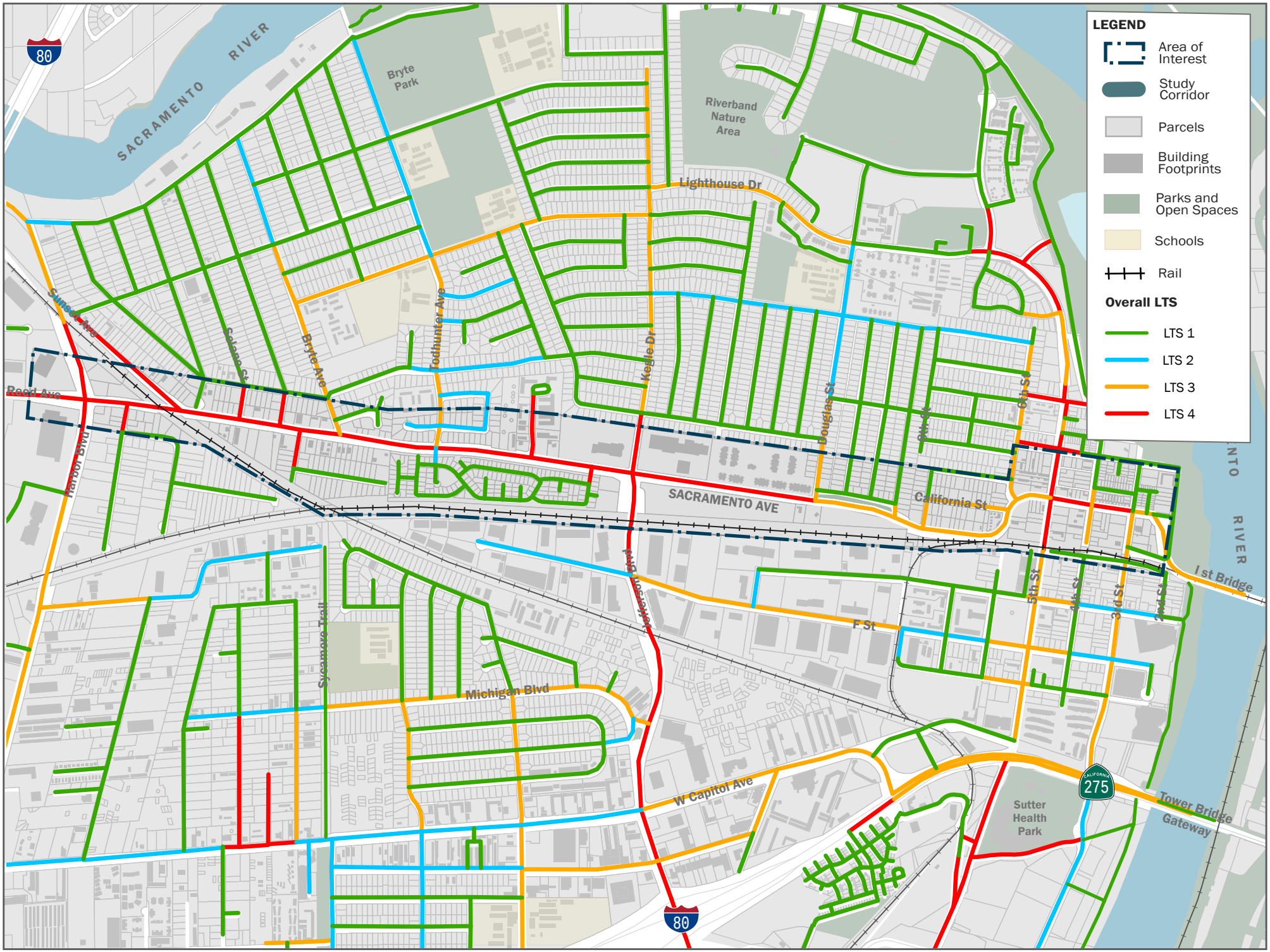


Figure 31 Existing LTS - Overall

Safety History

Sacramento Avenue serves diverse populations and trip purposes and features changing roadway conditions and land use characteristics from end to end. As a result, the corridor faces the challenge of competing mobility needs. In some locations, the existing roadway conditions feature multiple travel lanes, high speeds, and minimal, or non-existent, multimodal infrastructure that prioritizes vehicular travel over other non-vehicular modes of travel (walking, biking, and transit).

Collision information was sourced from 2011-2021 Statewide Integrated Traffic Records System (SWITRS) and Transportation Injury Mapping System (TIMS) data. Data was post-processed to correct for data points with missing /inaccurate location coordinate information.

Collision density is shown for all collisions and fatal and severe injury collisions only in Figure 32.

Collision Overview

As shown in Figure 32, prominent collision hotspots can be seen at several locations, including Harbor Boulevard/Reed Ave, Sacramento Avenue/Jefferson Boulevard, C St between 2nd and 3rd Streets, with the highest collision density at the Jefferson Boulevard location. Less prominent collision hotspot locations can also be seen between 4th and 6th Streets, and near Todhunter and Bryte Avenue.

Most collisions, including both fatal collisions and nine of the ten severe injury collisions, occurred at intersections along the corridor.[9] Table 7 presents the number of collisions occurring at intersection locations versus along roadway segment locations. As shown, 86 percent were classified as having occurred at an intersection, while the remaining occurred between intersections (i.e., on a segment), highlighting safety concerns at intersections along the corridor.

Table 7 Intersection and Segment Collisions by Severity

Location Type	Number of Collisions	Percent of Total
Occurred at Intersection	**440**	**86%**
PDO	301	68.4%
Complaint of Pain	88	20.0%
Visible	40	9.1%
Severe	9	2.0%
Fatal	2	0.5%
Occurred on Segment	**71**	**14%**
PDO	44	62.0%
Complaint of Pain	14	19.7%
Visible	12	16.9%
Severe	1	1.4%
Grand Total	**511**	**100%**

Collision Severity & Type

Table 8 summarizes collision severity of total collisions and pedestrian and bicycle collisions. Between 2011 and 2021, 511 collisions occurred within the study area of interest, including two fatal collisions and 10 severe injury collisions. Fifty-nine collisions involved pedestrians and bicyclists, resulting in two fatalities. Pedestrian and bicycle collisions make up 12 percent of all crashes, but 100 percent of fatalities and 50 percent of severe injuries.

Figure 32 shows the density and location of fatal and severe injury collisions. As shown, prominent collision hotspots associated with fatal and severe injury collisions are present near Sunset Avenue, Todhunter Avenue, Jefferson Boulevard, and Douglas Street, with less prominent hot spots at Solano Street and 6th Street.

[9] *Collisions occurring within 250 of an intersection were considered intersection collisions.*

Table 8 Collisions by Severity

	Collision Severity					
	Fatal	Severe Injury	Other Visible Injury	Complaint of Pain	Property Damage Only (PDO)	Total
Total Collisions	2	10	52	102	345	511
Bicycle Collisions	0	2	14	15	12	43
Pedestrian Collisions	2	3	6	3	2	16

Table 9 presents the total collisions by collision type, the majority of which were rear-end (32 percent) or broadside (28 percent) collisions resulting from high vehicular speeds.

Table 9 Collision Types

Collision Type	Number of Collisions	Percent of Total
Rear-End	161	32%
Broadside	143	28%
Sideswipe	84	16%
Hit Object	58	11%
Head-On	30	6%
Vehicle/Pedestrian	17	3%

Segment Collision Summary

Table 10 provides a summary of total collisions, FSI collisions, bicycle or pedestrian collisions, and the primary cause of the collisions per corridor segment. As shown, unsafe speed was the most common cause of collisions across the corridor, underscoring the need for traffic calming. Of the total collisions, most concentrated in segments one, two, three and six, with 21, 15, 22 and 32 percent of all collisions, respectively. Fatal and severe injury collisions were concentrated in segments one, two and three, with nine of the 12 fatal and severe injury collisions occurring in these segments, and both fatal collisions occurring in segment two.

Table 10 Segment Collision Summary

Segment Location	Total Collision	Percent of Total	Fatal Collisions	Severe Injury Collisions	Bike / Pedestrian Collisions	Primary Collision Cause
Segment 1	107	21%	-	2	8	Unsafe Speed / Auto ROW
Segment 2	77	15%	2	1	12	Unsafe Speed
Segment 3	111	22%	-	4	17	Unsafe Speed
Segment 4	22	4%	-	1	7	Automobile ROW
Segment 5	32	6%	-	1	-	Unsafe Speed / Wrong Side of the Road
Segment 6	162	32%	-	1	15	Unsafe Speed
Total	511	100%	2	10	59	Unsafe Speed

Figure 32 Collision Density Maps



Key Findings

Community Engagement

Throughout the community engagement process, the community highlighted a variety of concerns relating to transportation along Sacramento Avenue, including:

- High vehicle speeds
- Disconnection throughout the pedestrian network, including gaps in the sidewalk network and a lack of safe crossing opportunities.
- Bicycle safety, and an interest in protected bicycle facilities and clear bicycle routes.
- The public showed interest in creating a corridor for a variety of road users, from commuters to recreators. The community showed interest in shared use paths, landscaping, and creating a park-like feel along the corridor, as well as improving connectivity and safety.
- Lighting issues, specifically along the C Street curve

Existing Conditions Assessment

The existing conditions analysis revealed findings that aligned with community concerns. These findings highlight opportunities and needs that can be addressed by the complete street improvements identified in later chapters of the Plan. Key findings from the existing conditions assessment are described below.

Multimodal Conditions

- The sidewalk network features gaps, is inconsistent in width, and features vegetation overgrowth in many areas.
- Where they do exist, crossing distances are often long and some feature accessibility issues such as ADA non-compliant curb ramps and sidewalk connections ending abruptly.
- The bikeway network includes unprotected bike lanes or missing bicycle facilities alongside high-speed and high-volume traffic.
- Bicycle facilities at intersection approaches feature less-than-ideal alignment, lack conflict markings, or disappear altogether.
- Stressful, non-existent, or discontinuous bicycle and pedestrian facilities along segments, and at intersection approaches and crossings result in high levels of traffic stress conditions along the entire corridor.
- Most transit stops lack amenities like transit shelters or benches and some lack accessible infrastructure like curb ramps and paved pathways that connect stops to nearby sidewalks.

Land Use Context & Streetscape

- Adjacent land use ranges from single-family residential to neighborhood retail/commercial to multi-family residential, with most of the current land use along the corridor characterized as low- to medium-density.
- The north-south streets that intersect the corridor provide access to neighborhood amenities, such as schools, parks, and open spaces, but stressful, auto-oriented multimodal facilities reduce the connectivity to these destinations.

- While most of the parcels adjacent to the corridor are developed, the areas east of Jefferson Boulevard feature the most amount of vacant land. Some parcels are considered under-utilized.
- While limited, corridor edges along the corridor include active frontages in some locations. Edges are primarily defined by long stretches of undefined or fenced edges, and landscaping in some locations.
- There are long stretches of the corridor with no street trees or shading, making the environment hostile to pedestrians.
- A lack of pedestrian-oriented community space along the corridor highlights placemaking opportunities.

Travel Characteristics

- Most trips along the corridor are made via car.
- Lifestyle trips, like shopping and social activities, make up most of trips along the corridor.
- People also commute along Sacramento Avenue, and while most drive, there is an opportunity to create protected facilities that create safer, more comfortable facilities for people interested in walking and biking to work, utilitarian and leisure trips alike.
- A concentration of short vehicles trips (less than one mile) along the corridor highlights an opportunity for mode shift from vehicles to active modes.

Safety

- Collision history shows high collision densities overall as well as fatal and severe injury (FSI) collisions at major intersections, highlighting intersection safety concerns.
- Collisions involving bicycle and pedestrian collisions make up a disproportionate share of FSI collisions, highlighting safety concerns with non-motorized infrastructure.
- Unsafe speed was the most common primary cause of collisions, echoing public concerns over traffic speeds and underscoring the need to implement traffic calming measures.

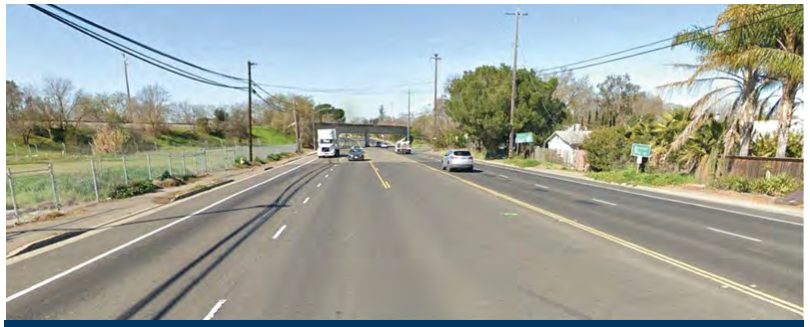
Roadway Volume & Operations

- Average daily traffic volumes along the corridor range between roughly 7,800 and 14,500 vehicles per day, with the highest volumes seen west of Jefferson Boulevard.
- Most of the intersections along the corridor are currently operating at acceptable levels of service

Roadway Cross-Sections: Corridor Areas

The Sacramento Avenue roadway cross-section varies in paved roadway width, number of lanes per direction, posted vehicle speed, and fronting land use types. Furthermore, the corridor adjoins a mix of developed, undeveloped, and underdeveloped properties. The existing corridor generally consists of three basic cross-section types, which are listed below with the corresponding segments of the corridor. Corridor strategies and proposed improvements presented in the following chapters align with the grouping of these three core areas.

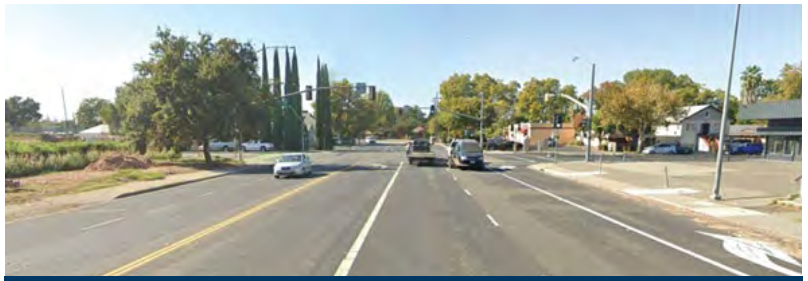
- WIDE & MULTI-LANE: Five-lane cross-section with wide vehicle lanes and center turn lanes, unbuffered bike lanes, and narrow or incomplete sidewalk infrastructure. This section connects two major north- south arterials: Harbor Boulevard and Jefferson Boulevard. The primary land use is low to high-density residential with pockets of neighborhood mixed-use commercial. This cross-section condition generally applies to Segments 1 – 3, which comprises the Western Area of the corridor.
- TRANSITIONAL & UNDERDEVELOPED: Transitional cross-section between five-lane and 2-lane cross- section with narrow, unbuffered bike lanes and minimal sidewalk infrastructure. This section adjoins the largest vacant parcels on the south side of the study corridor where 641 new multi-family apartments are proposed. This section is constrained to the south near 8th Street by the Union Pacific Railroad alignment. This cross-section generally applies to Segment 4 and Segment 5 and comprises the Central Area of the corridor.
- CONSTRAINED & DEVELOPED: Two-lane cross-section with left and/or right turn lanes, no bike lanes, and complete sidewalk infrastructure of varying widths. This section will play a key role in ensuring bicycle and pedestrian connectivity to the planned improvements along C Street and the future I Street bicycle and pedestrian bridge. This cross-section generally applies to Segment 6, or the Eastern Area of the corridor.



Segment 1, looking West towards Sunset Ave (Image Source: Google)



Segment 4, looking West toward Jefferson Boulevard / Kegle Drive (Image Source: Google)



Segment 6, looking West toward 5th Street (Image Source: Google)

4 Community Engagement



Community Participation

Successful plans are partnerships between local agencies, stakeholders, and community members. Engaging the Bryte / Broderick communities and the broader West Sacramento community has been a priority throughout the Sacramento Avenue Complete Street Plan process to ensure the Plan addresses community concerns and priorities. A variety of outreach opportunities, led by GHD's sub consultant, AIM, were used to seek input from West Sacramento's community members, including targeted coordination with key community stakeholder groups, several pop-ups and open-house style community meetings, as well as email and social media blasts, flyers, and lawn signs. Additionally, a project website was developed, which includes a project landing page and corridor use and theme survey, as well as an interactive map and ideas wall that allowed members of the public to provide comments regarding corridor concerns and priorities.

Ongoing outreach ensured a continuous process that informed the final improvement concept and development of the Plan. This Chapter presents an overview of the format and approach for these outreach opportunities, and summarizes the feedback received. This plan reflects the guidance and input gathered through a robust community outreach process, summarized in the timeline below. Additional details about community engagement can be found in the Appendix.

Project Development Team

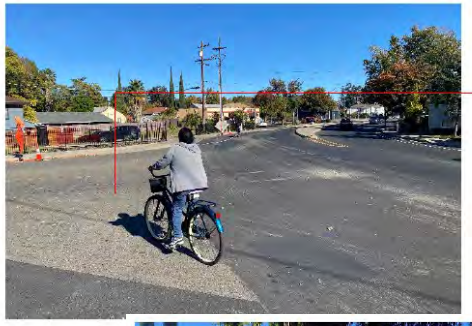
A project development team (PDT) was developed to provide the project team with insight from key interdepartmental representatives from the City of West Sacramento and other relevant government agencies. GHD met with the PDT at key decision points in the development of the Plan, including project kick-off, existing conditions, goals and strategy development, and concept development.

Walk Audit

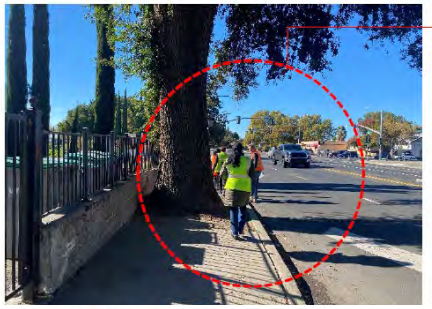
At the start of the project walk audit was performed with the PDT to gather feedback regarding the existing conditions along the corridor. Those in attendance for the walk audit were directed to respond to a questionnaire, which included prompts concerning sidewalk and bicycle lane quality, perceived safety for pedestrians and bicyclists riding or crossing the street, traffic speeds, and more.

Findings from the walk audit included:

- The sidewalk network is disconnected, and sidewalks are narrow and obstructed in many locations.
- The bicycle network is disconnected, and bike lanes are narrow, unprotected, and unsafe for vulnerable road users. Poor bicycle lane quality, lack of bicycle parking, and concerns about interface between bikeways and transit routes were also mentioned.
- Intersections are wide, under-signalized, have large turning radii, making pedestrians and bicyclists crossings unsafe.
- Wide travel lanes, high vehicle speeds, and poor transit facilities.



Lack of pedestrian crossings, bicycle crossings and a large turning radius at the intersection of 6th Street and C street.



Sidewalk on the C street, between 4th and 5th street has a tree as an obstacle that exposes pedestrians on the travel lanes.



Transit stops at the intersection of Bryte Street and Sacramento Avenue



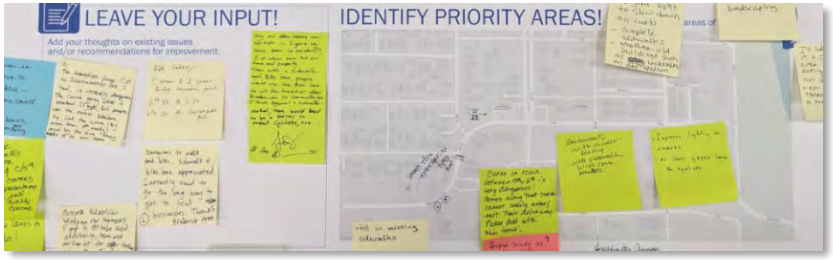
Long pedestrian crossings and large intersection area at the intersection of Sacramento avenue and Kegle Drive

Community Workshop #1

The first community workshop at the West Sacramento City Hall Galleria at 1110 West Capitol Avenue on March 23rd, 2023. Attendees had the opportunity to learn more about the Plan, discuss details of the project with the planning team, and share their feedback on potential improvements to the Sacramento Avenue corridor, including bike and pedestrian safety changes and landscaping design. A total of 66 community members attended the workshop. The purpose of the initial community workshop was to introduce the project to the public and solicit community feedback on ways to make future improvements to Sacramento Avenue.

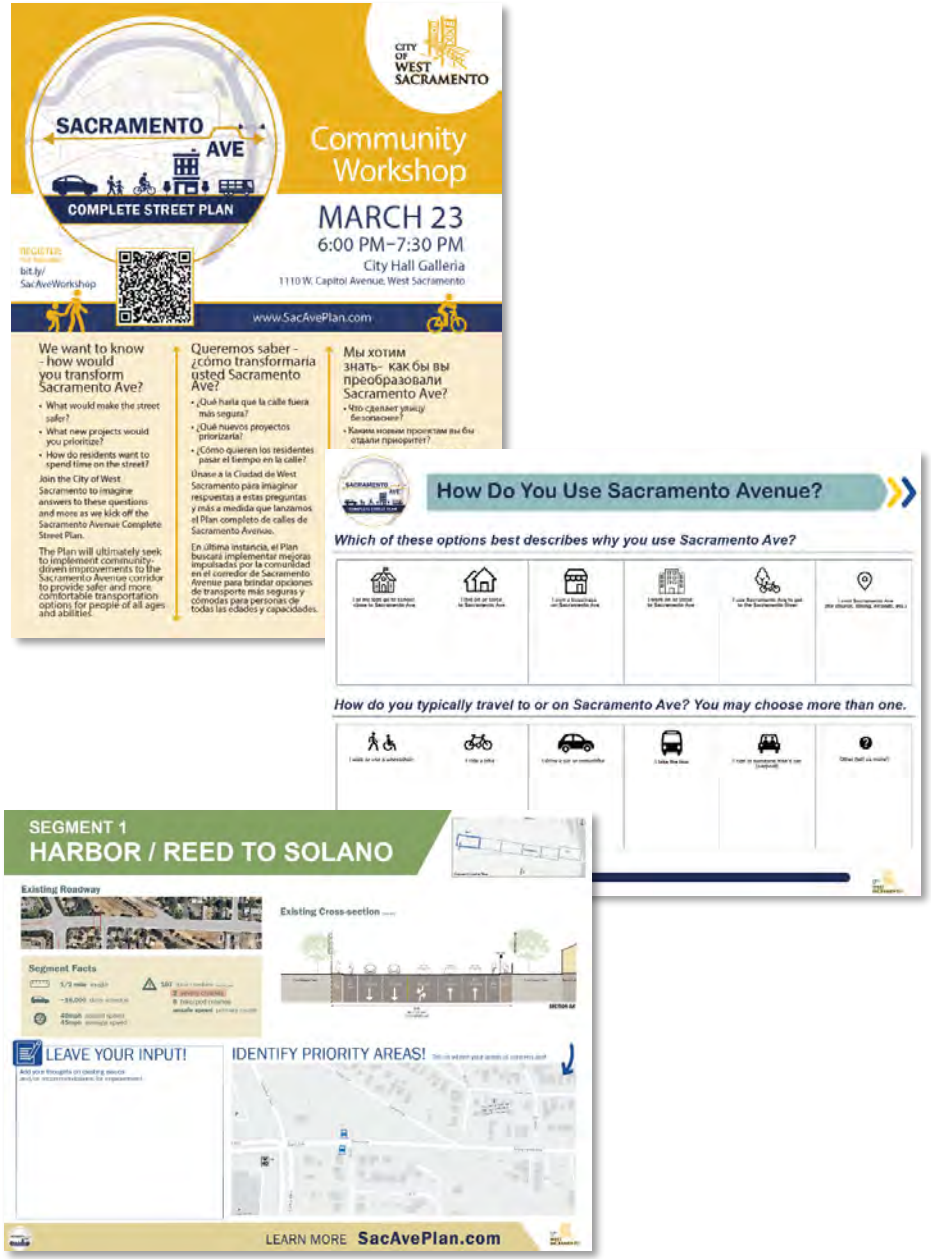
A variety of materials were created for participants to provide comments, including:

- Six segment boards each displaying an arial view of the corridor segment, facts about the area, existing cross sections, and a map for participants to leave location-based comments.
- A complete street design element board with examples like intersection control, shared use paths, and street amenities.



Attendees were also provided sticker dots to indicate their priorities on two additional engagement boards:

- A corridor theme board where participants could prioritize how they want to use and experience Sacramento Avenue. Choices included an accessible green corridor, a multimodal boulevard, a community streetscape, and a regional corridor.
- A corridor use board where participants could describe how they use the corridor (destination, recreation, etc.) and how they travel.



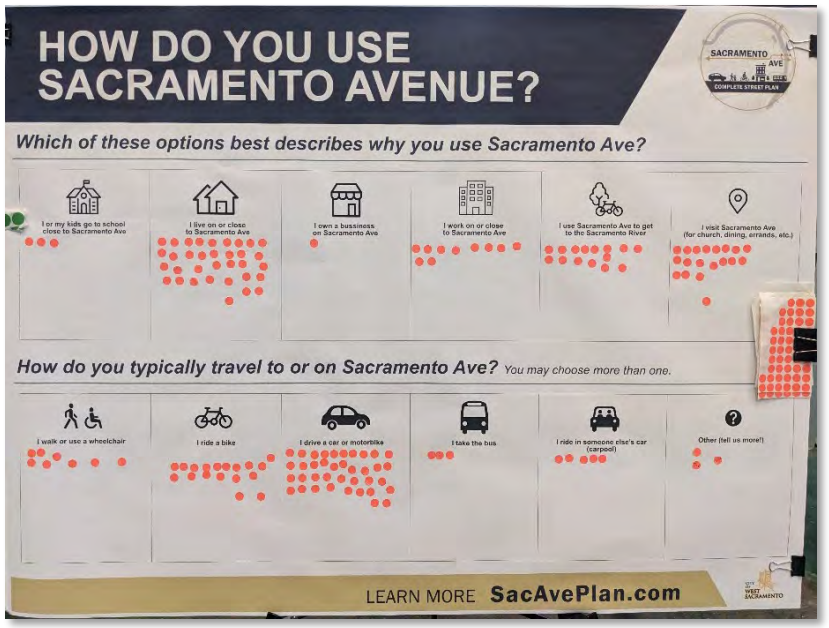
What We Heard

Traffic speeds were identified as high priority concerns, with participants noting a need for traffic calming and slowing throughout the entire study area. The intersection of 6th Street curve was identified as a location for frequent crashes and hazards for pedestrians and bicyclists, including speeding and lack of lighting.

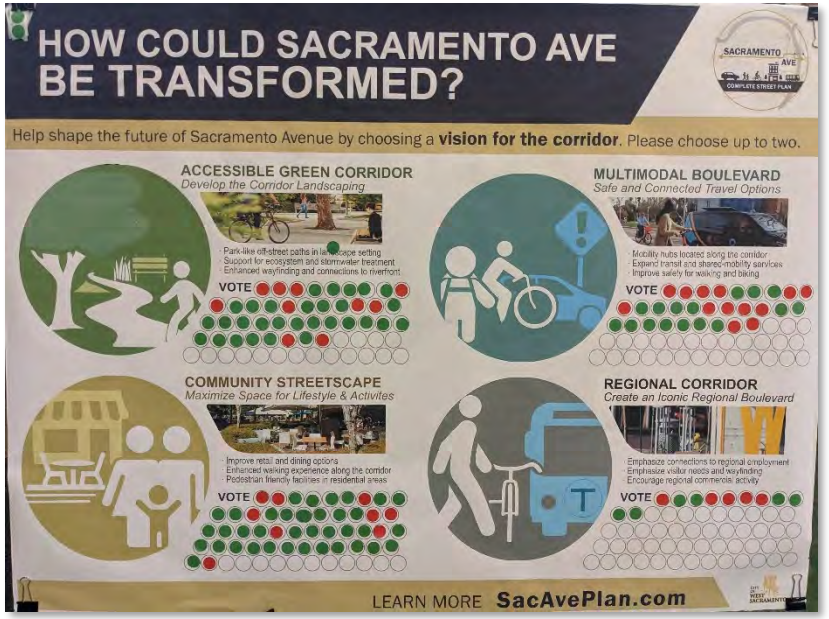
Comments highlighted the need for new and improved crosswalks, specifically to connect pedestrians to the Cornerstone Diner, under the train tracks, at Simon Terrace, Sunset Avenue, Reed Avenue, and Yolo Street, and a decorative crossing at C Street and 5th Street. Participants showed interest in RRFBs.

Participants mentioned closing gaps in the sidewalk network along the entire corridor as a top priority, as well as improved lighting for active transportation users.

Bicycle facility improvements like protected and buffered bicycle lanes, clearing bike lane labels, bicycle racks were mentioned by workshop participants.







Community Workshop # 2

The City of West Sacramento hosted the second community workshop at the West Sacramento City Hall Galleria at 1110 West Capitol Avenue. Attendees had the opportunity to hear a project update, discuss the proposed improvements with the planning team, and share their feedback on potential changes to the Sacramento Avenue corridor, including bike and pedestrian safety changes and landscaping design. A total of 38 community members attended the workshop.

Attendees were invited to provide feedback using a variety of interactive engagement materials provided at the workshop, including:

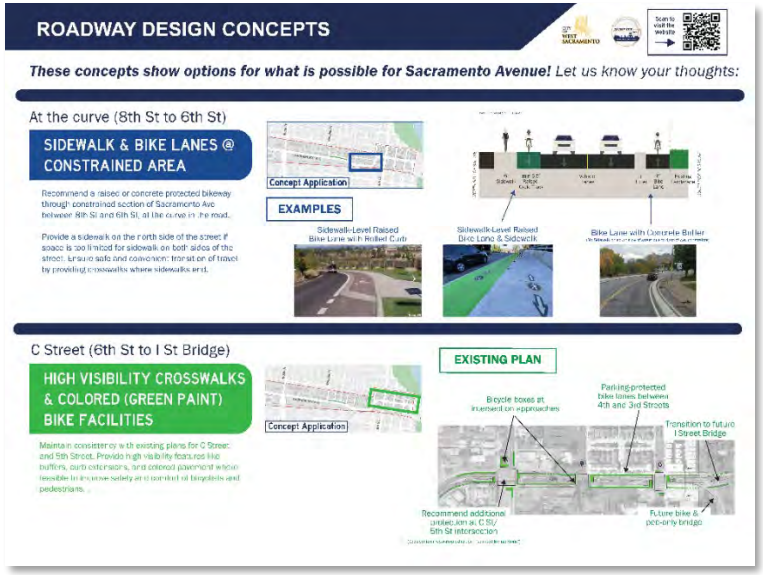
- Design concept boards for various locations throughout the corridor.
- Examples of crossing treatments, protected intersections, and roundabout intersections, and other potential improvements.
- A corridor map where participants could make location-based comments about flooding, power outages, and sewer issues.

Participants were given dots to place on design concepts they wished to prioritize, including the below. Dots noted in parentheses indicate the number of dot votes each concept received.

- A roundabout option (3 dots) and a signalized intersection option (2 dots) at the Jefferson Kegle Social Hub.
- A plan focused on an accessible green corridor (3 dots) as compared to community streetscape and multimodal focuses.
- Elkhorn Plaza concept with on-street bicycle facilities and shared use path (5 dots)
- Protected one-way bikeways and sidewalks on East Jefferson Blvd/Kegle Dr. Concept (2 dots)
- Landscape protected bikeways and sidewalk concept (6 dots) and the two-way neighborhood shared use path concept (6 dots) between Harbor Boulevard and Jefferson Boulevard/Kegle Dr.
- Sidewalk and bike lanes (1 dot) from 8th Street to 6th Street, and high visibility crosswalks and green painted bicycle facilities (2 dots) on C Street.

Comments gathered at Workshop 2 were reviewed and incorporated into the final improvement concepts presented in Chapter 6 of this Plan. A summary of community support for the presented design concepts can be found in Chapter 7.





Website and Survey

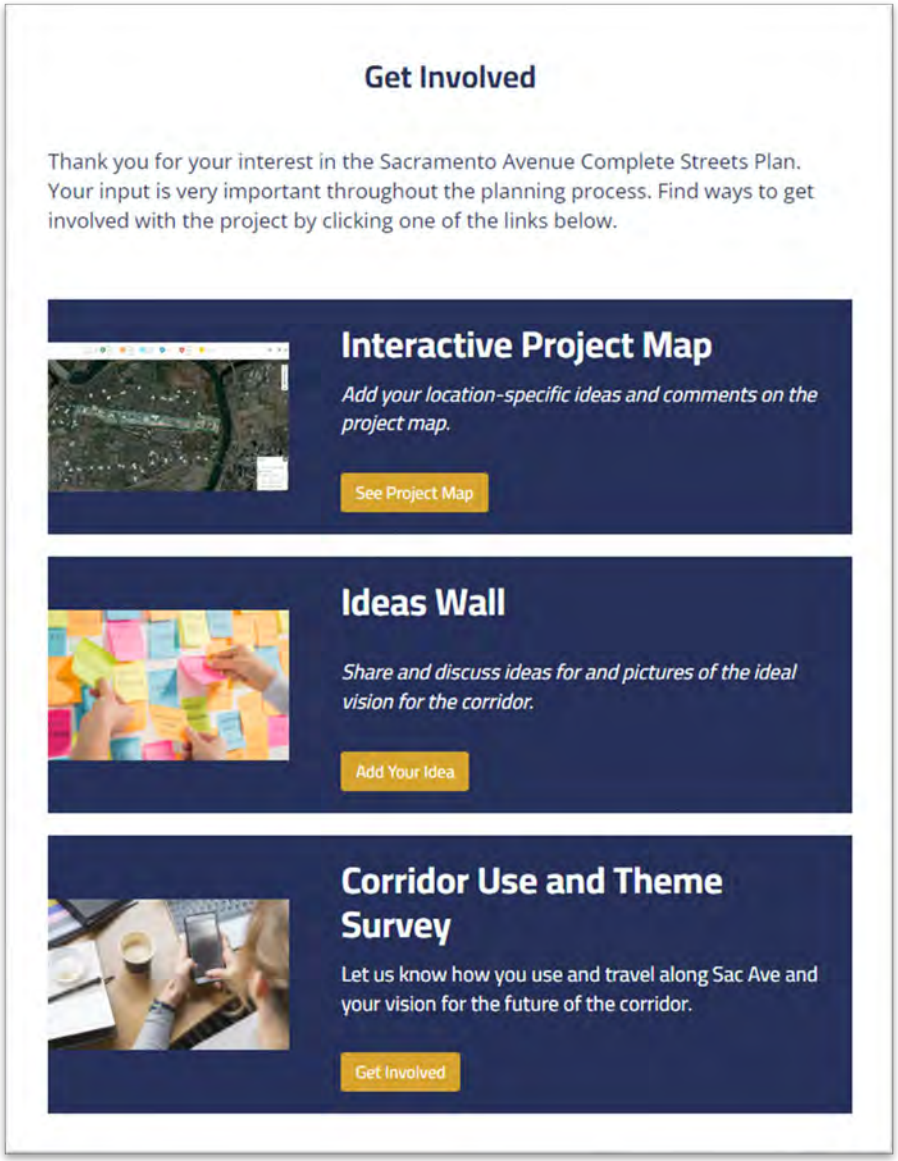
A project website was developed for the Sacramento Avenue Complete Street Plan to share information about the project, update the community regarding engagement events, and gather feedback.

In addition to a project landing page and informational sub-pages, the project website features three primary engagement tools for gathering public input:

- An interactive project map for location specific ideas and comments.
- An ideas wall for community members to discuss ideas, provide images of conceptual ideas, and engage with one another's comments.
- A corridor use and theme survey to gather information about how people use and travel along the Sacramento Avenue corridor, as their preferences for how the corridor could be transformed in the future.

Findings from the three key engagement tools listed above are described in the following sections.





Interactive Project Map

The interactive project map was open for comments between January 2023 and January 2024, during which 159 comments were left. The interactive map gave six comment category options where members of the public could select the comment category and drag it to a location along the corridor to provide their comment. The map also includes the location of existing bus stops and bicycle facilities for reference, and community members could engage with one another's comments by liking, disliking, and responding to comments.

As shown in Figure 33, most comments were related to walking and biking at 44.7 percent of all comments, followed by traffic speed & safety at 28.4 percent of all comments. Common concerns noted in interactive map comments included mentions of overall safety while walking and bicycling, high traffic speeds or vehicles speeding, lighting, and difficulty at intersection crossings.

Figure 33 Distribution of Interactive Map Comments by Category

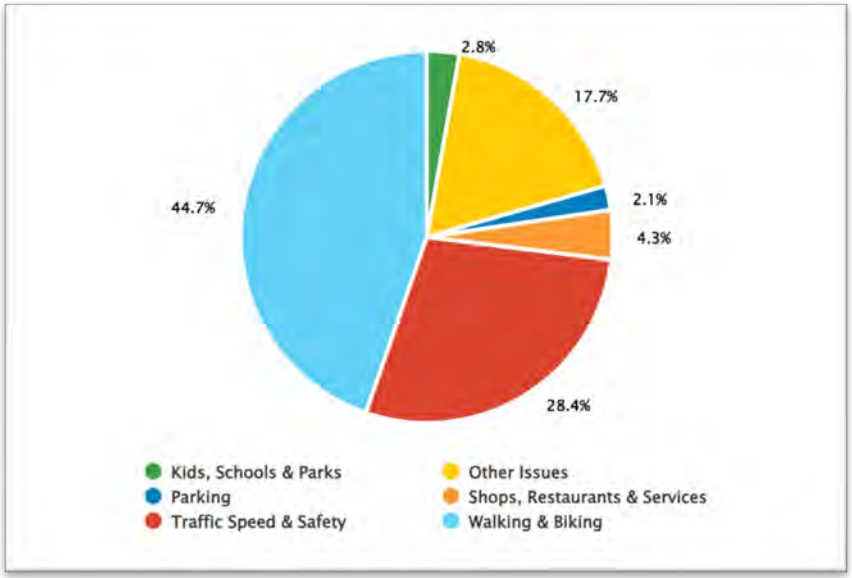
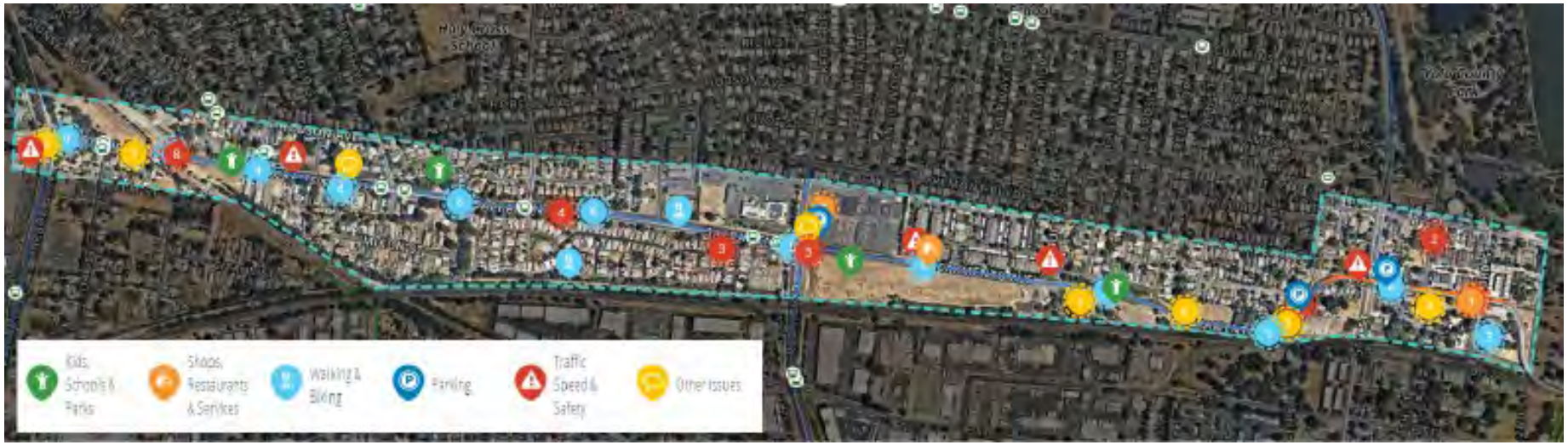


Figure 34 Interactive Map Comments



Ideas Wall

The ideas wall was open to the public from February 2023 to January 2024, during which 29 posts were made to the idea wall. The idea wall allows community members to select one of three categories for posting, including ideas and suggestions, a general comment and something they like. Postings can include text and/or images to allow members of the public to provide examples of images of their ideas and comments. Respondents could also engage with existing postings by liking or disliking an existing post.

Concerns over traffic control and speeding, as well as the need for protected bike facilities were a common theme among idea wall comments.



Corridor Use & Theme Survey

The corridor use and theme survey was open to the public from April 2023 to January 2024, during which between 11 and 18 responses were received on each of the three questions posed. The three questions posed mimicked the corridor use and theme survey boards presented in Workshop 1 to allow for members of the public who could not attend the workshop to participate. The results of the online survey were combined with the workshop results to form the vision, goals, and themes for the corridor.

Survey questions included:

- How do you use Sacramento Avenue?
- How do you typically travel to or on Sacramento Avenue?
- How could Sacramento Avenue be transformed?

How could Sacramento Avenue be transformed?



How do you use Sacramento Avenue?



Pop-Up Events

Over the course of the planning process, the project team held two pop-up events. The goal of these events were to meet community members at spaces where they were already gathering to encourage them to participate in the Sacramento Avenue Complete Street Plan, gather their feedback on potential street improvements, and promote upcoming outreach opportunities. The two pop-up events are described in more detail below.

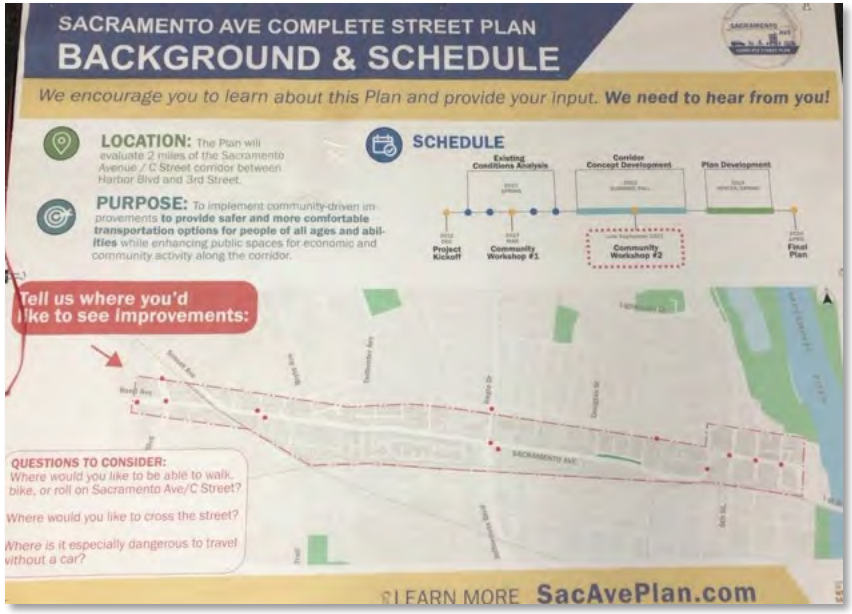
Pop-Up Event # 1

The first pop-up event was hosted by the City of West Sacramento on August 3, 2023, at the Yolo County Children's Alliance's Back-to-School Family Resource Fair, which was held at Bryte Park (425 Todhunter Avenue). The project team engaged approximately thirty community members about the Sacramento Avenue Complete Street Plan, handed out more than 100 flyers with information on the project website, and distributed more than 125 cards promoting the community meeting planned for Fall 2023.



The Sacramento Avenue Complete Street Plan booth was one of many booths available for community members to visit during the Back-to-School Resource Fair. Project team members engaged families and individuals in a conversation about Sacramento Avenue, what is being planned for improvement, and upcoming outreach opportunities for sharing input. The purpose of the pop-up workshop is to spread awareness of the Sacramento Avenue Complete Street Plan, obtain community feedback on how the street can better fit their needs, and encourage people to visit the project website for upcoming engagement opportunities.

In addition to handing out collateral pieces such as project fliers and business cards, the project team also asked pop-up workshop attendees to share their input on the two interactive board displays using dot stickers.



One of the interactive boards included an overview of the project and a map of the project area, where participants were asked to place dots along the corridor at areas of concern where they would like to see improvements. The second board presented complete street infrastructure improvements and asked participants to place dots next to the improvement types they would like to see made along Sacramento Avenue. Improvement types presented included crossing improvement types to improve safety, one-way protected bikeway types, two-way bike facility types, and raised bikeway types.



What We Heard

On each of the interactive boards, the project team received 13 vote dots from members of the public. With regards to areas of concern along the corridor, two locations received two votes each – the intersections of Sacramento Avenue with Kegle Drive / Jefferson Boulevard and Yolo Street. The following locations received one vote each:

- intersection of 3rd Street and Sacramento Avenue
- intersection of 4th Street and Sacramento Avenue
- intersection of 5th Street and Sacramento Avenue
- intersection of California Street and Sacramento Avenue
- intersection of Elizabeth Street and 8th Street
- intersection of Kegle Drive and Fremont Boulevard
- intersection of Harbor Boulevard and Reed Avenue
- west most point of Reed Avenue
- the area slightly north of the Reed Avenue and Harbor Boulevard

Community members also identified improvement types they would like to see implemented along the corridor, with the improvement types below receiving votes:

- Safer Crossings:
  - High-Visibility Crosswalks with Flashing Beacons (3 votes)
- One-Way Protected Facilities:
  - Concrete Protected Bikeways (3 votes)
  - Landscaping Protected Bikeways (1 vote)
- Two-Way Bike Facilities:
  - Shared-Use Path with Landscape (2 votes)
  - Bike-Only Cycle Track (1 vote)
- Raised Bikeways
  - Sidewalk-Level Raised Bikeway (2 votes)
  - Two-Way Raised Bikeway (1 vote)

The following improvement types did not receive any votes:

- Median refuge islands
- Curb extensions (bulb-outs)
- One-way bollard-protected bikeways
- Two-way shared-use paths (without landscaping)
- Rolled-curb raised bikeways

Pop-Up Event # 2

The second pop-up event was held on Sunday April 28, 2024, by featuring a booth at the 2024 Breathe Bike Festival and May is Bike Month Kick Off Event hosted by Sacramento Area Bicycle Advocates (SABA) and Breathe California Sacramento Region.



Five project team members engaged with community members to discuss the complete street improvement concepts for Sacramento Avenue, and the upcoming release of the draft plan. The event provided an opportunity for community members to learn more about the project and the inclusions to the forthcoming draft plan. Over 100 project website cards and stickers were distributed to attendees at the event.



The pop-up format was designed to provide a comprehensive overview of the project. It featured a project map board, two boards showing the draft improvement concepts along the corridor, and a previous outreach board. These boards were instrumental in educating community members about the project's progress, the proposed improvements, and the general project area. Project engineers and managers were on hand to explain the draft plan initiatives and project history. The pop-up event was centered around bicycling and bicycle safety, with project team members engaging with dozens of bicyclists about Sacramento Ave bicycle safety issues and improvements.

Attendees were prompted to visit the website to provide comments on the draft plan and the recommended improvement concepts.

Draft Plan Review

The Draft Plan was available for public review between May 7, 2024, and June 7, 2024. The City of West Sacramento hosted a website that provided links to download the Draft Plan document. Community members were able to provide their comments on the Draft Plan to the City via email, by mail or by phone. These details were also posted to the project website.

Community partners, the Broderick & Bryte Community Action Network and Meals on Wheels, helped distribute flyers to advertise the public review period for the Draft Plan, which included details about the Plan and how to provide comment, in three languages. Also, City staff promoted the public comment period through utility mailer, the City's Sock Station for May is Bike Month, and the Community Senior Resource Fair.

Comments received on the Draft Plan and responses to these comments are summarized in the Appendix.





5 Design Approach

Based on the vision statement, community input, and existing corridor conditions identified in previous chapters, strategies that relate to the identified themes were developed to improve the corridor as a whole as well as for the three corridor areas. This chapter reiterates the vision statement, goals, and established themes for the corridor, and identifies strategies associated with each of the vision themes.

In following sections, the variety of improvement types and treatments considered in this plan are described and depicted, and specific strategies for achieving these goals as they relate to the corridor as a whole and the corridor areas and segments are discussed. The strategies presented in this chapter are intended to address the goals and themes identified in Chapter 2 and provide an overall framework for recommending mobility and urban design focused improvements throughout the corridor.

Detailed design concepts informed by these over-arching strategies are presented in Chapter 6. In subsequent chapters, the benefits associated with the improvement concepts are assessed and recommendations for implementing the proposed improvement concepts are presented.

From Vision to Strategy Development

Findings from the existing conditions and opportunities assessment and the community engagement process support the three themes for Sacramento Avenue: green corridor, community streetscape, and multimodal street. With these findings in mind, and in close collaboration with the city and the community, strategies were developed to address the identified goals and themes for the corridor. To the right, the vision statement, goals, and themes described previously in Chapter 2 are reiterated. In the next section, strategies associated with each of the three themes are discussed.

Vision Statement

The Sacramento Avenue / C Street corridor is a safe, accessible, and enjoyable community asset with active mobility infrastructure and pedestrian-oriented streetscapes that supports local economic and social opportunities.

Corridor Goals

Mobility-Focused Goal: Provide safer and more comfortable transportation options, including walking, biking, rolling, and driving, for people of all ages and abilities by incorporating "complete street" infrastructure within the roadway right-of way.

Urban Design-Focused Goal: Integrate placemaking strategies with multi-modal mobility and infill development.

Vision Strategies Overview

Consistent with the vision & goals of the Plan, strategies for street design relate to the three themes identified in Chapter 2 and described below. Overall corridor strategies associated with each of these three themes are discussed in the following section. The overall corridor strategies associated with the three themes described below were integrated in the more specific strategies for each of the corridor's three areas – the western area, central area and eastern area – which is discussed in subsequent sections.



Green Corridor: Use natural, sustainable landscaping to improve comfort, aesthetics, and resiliency.



Community Streetscape: Maximize space for active lifestyles and community activities.



Multimodal Boulevard: Prioritize safe and connected travel options for people of all ages and abilities.



Theme A: Green Corridor

Use natural, sustainable landscaping to improve comfort, aesthetics, and resiliency.

Strategies

- Use landscape as a buffer between pedestrian through zone and the street.
- Incorporate green infrastructure to treat roadway runoff and to provide adequate stormwater management.
- Provide seamless connectivity to the riverfront trails.
- Provide shade along the corridor using native and drought-tolerant trees.



Theme B: Community Streetscape

Maximize space for active lifestyle and community activities.

Strategies

- Improve retail and dining options with cohesive built form-informed character zones.
- Enhance the experience along and across the corridor with pedestrian scale and oriented design.
- Create clearly defined public spaces at key locations along the corridor through inviting streetscapes with a variety of amenities, such as seating, water fountains, landscape, and art.
- Foster civic identity and community pride through placemaking.





Theme C: Multimodal Boulevard

Prioritize safe and connected travel options for people of all ages and abilities.

Strategies

- Integrate mobility hubs along the corridor, consistent with the Mobility Action Plan, to increase accessibility and convenience of mobility options.
- Support access to transit and shared-mobility services with continuous and universally accessible multimodal infrastructure that accommodates a wide range of users.
- Provide continuous sidewalks and/or pathways along the corridor and provide frequent, well designed pedestrian crossings that provide access to local destinations.
- Provide comfortable bicycle infrastructure that encourages a wide range of users by providing physical separation between bicyclists and motor vehicles via painted buffers and/or vertical elements.
- Enhance pedestrian and bicyclist visibility at intersections through strategic design that provides easily navigable dedicated paths of travel.



Source: City of West Sacramento

Improvement Types

This section describes the types of complete street and placemaking improvements considered in developing the Complete Street Plan.

Types of Bikeways

Class I Shared Use Paths

Class I shared use paths are two-way, paved trails completely separated from the roadway. Class I facilities are intended for pedestrians and bicyclists to share and are more comfortable for less experienced or vulnerable riders as compared to on street facilities. The minimum width of a Class I facility is 8 feet, 10 feet preferred.



Class II Bicycle Lanes

Class II bicycle lanes are one-way travel lanes for bicyclists. A painted, striped buffer can be added on both sides of the lane to increase separation from vehicle traffic and parked cars, where people may open doors into the bicycle lane. Some Class II bicycle lanes may also include green paint to increase the visibility of bicyclists in areas known to feature higher levels of vehicle to bicyclist conflict.

Standard Class II Bicycle Lane



Class II Bicycle Lane with Green Paint



Class II Buffered Bicycle Lane



Class III Bicycle Route

Class III bicycle facilities are signed routes on low-speed, low volume streets where bicyclists share the road with motorists. Sharrows, or shared lane markings that indicate a Class III, can be added to recommend to alert drivers that bicyclists may be present. Class III bicycle boulevards are Class III routes enhanced with traffic calming measures that prioritize bicyclists and increase comfort.



Class IV Separated Bikeways

Class IV separated bikeways are on street bicycle facilities with a physical barrier separating them from vehicle traffic. Bollards, parking, planters, and landscaping can all be used as protection from the roadway. Class IV facilities can be one-way or two-way and increase comfort on higher speed, higher volume roadways where inexperienced or vulnerable road users may be uncomfortable on Class II facilities.

Parking-Protected Class IV Bikeway



One-Way Class IV Bikeway at Sidewalk Grade



Pedbikeimages.org / Carl Sundstorm

Bi-directional Class IV Bikeway



Bicycle and Pedestrian Improvements

Sidewalk



High Visibility Crosswalk Markings

High visibility crosswalks typically include bold white bars that run perpendicular to the pedestrian path of travel. High visibility crossings are easier to see than standard crosswalks and improve visibility of pedestrians.



Enhanced Decorative Crosswalk

Enhanced decorative crosswalks may include decorative or aesthetic elements such as stamped concrete or colored pavement to aesthetically enhance the streetscape and calm traffic by sending a visual cue to motorists about pedestrian-scale function the street. These should include reflective lines to ensure proper visibility, especially at night or on rainy days.



Advance Stop Bar

Advance stop bars include a white bar prior to a marked crossing that indicates where drivers should stop and discourage vehicle encroachment into the crosswalk.



Image capture: Oct 2022, 2023 Google

Advance Yield Line

Advance yield lines include a white bar, or triangular "shark's teeth" placed prior to a marked crosswalk that is without stop or signal control. They indicate where drivers should yield and discourage vehicle encroachment into the crosswalk.



Curb Ramps

Under the Americans with Disabilities Act (ADA), curb ramps are required at street crossing with grade changes to ensure accessibility for pedestrians at crosswalks and for bicyclists where sidewalks level bikeways or shared-use facilities transition to street level. At intersections, two perpendicular curb ramps are preferred to a single diagonal ramp.



Curb Extension

Curb extensions expand the sidewalk into the street at a crossing. Curb extensions are typically used where there is on street parking. They narrow traffic lanes to slow speeds, shorten crossing distances, and improve visibility of people crossing the street.



Passive Bicycle Detections

Passive bicycle detection eliminates the need for bicyclists to push a button to receive a green crossing signal; allowing bicyclists to remain upright on their bicycle and reducing risk of collisions with turning vehicles. Most commonly, bicycle detection loops are placed in the pavement that detect metal bicycle frames to turn the crossing signal green.



NACTO

Green Conflict Markings

Green conflict markings are dashed marks placed where potential conflicts with drivers are anticipated. Locations typically include intersections and driveways. Conflict markings increase visibility of bicycle facilities and remind drivers to yield to bicyclists.



Protected Intersection

Protected intersections increase safety for pedestrians and bicyclists at crossings. Raised pedestrian islands are used to reduce crossing distances, increase turning radii for vehicles, and reduce conflict risk between bicycles and turning drivers.

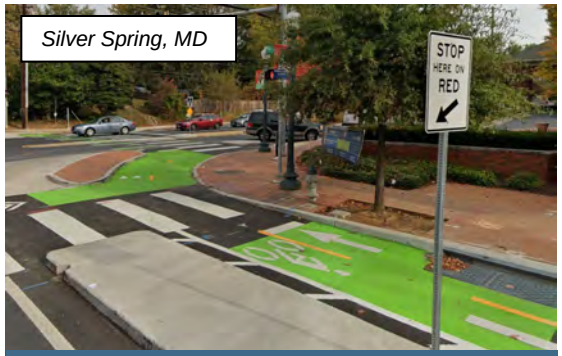


Image Capture: October 2019, 2023, Google

Roundabout

Roundabouts decrease conflict points compared to traffic signals, stop signs, or yield-controlled intersections. Roundabouts allow for the continuous flow of traffic in all directions, potentially reducing queuing and wait times for drivers.



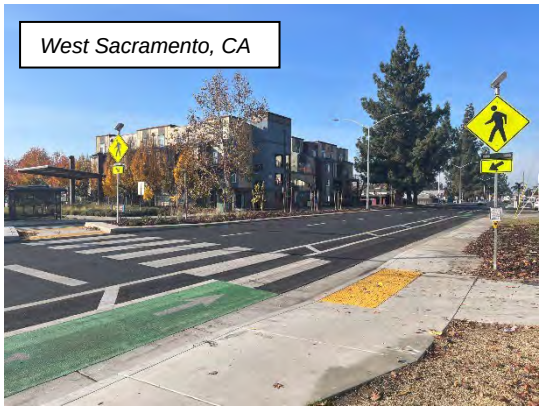
Median Refuge Island

At intersections and midblock crossings, Median refuge islands break up long crossings and reduce crossing distances for pedestrians. A protected, pedestrian designated space is placed in the middle of the roadway and allows pedestrians to wait and cross one direction of traffic at a time.



Rectangular Rapid Flashing Beacon (RRFB)

RRFBs combine pedestrian crossing signs and bright flashing lights that are illuminated when a pedestrian presses a button. RRFBs improv visibility at crossings and are proven to increase yielding. RRFBs can be used at intersections or midblock crossings.



Lead Pedestrian Interval (LPI)

LPIs are signalized intersections with a walk phase that prevents the green phase for motorists by a few seconds, allowing pedestrians to get a head start crossing the street. LPIs improve visibility of pedestrians by bringing them into the crosswalk into the field of view for turning vehicles.



Pedestrian Hybrid Beacon (PHB) or Pedestrian Signal

PHBs or pedestrian signals are used at locations where motorists must yield to pedestrians, but the current crossing is not signalized or stop controlled. Roadway context like the number of lanes, crossing distances, and posted speed limit may be used to dictate where PHBs or pedestrian signals are recommended. PHBs and pedestrian signals are pedestrian activated and display a red signal when the button is pushed, indicating drivers to stop. Pedestrians must wait for a WALK signal before crossing.



FHWA

Streetscape and Placemaking

Benches

Benches can be placed at transit stops and along the corridor for a variety of roads users, like people taking transit, walking, jogging, or bicycling.

When placing benches, consider transit wait time, heavily trafficked areas, or if the areas serve vulnerable road users like children or seniors. Plan room for people with mobility devices to pull next to benches or move easily around them.



West Sacramento, CA

Trash Receptacles

Trash and recycling receptables provide a convenient place to dispose of litter. When placing receptacles, consider maintenance, visibility for easy access and preventing vandalism, and areas that are heavily trafficked.

Bicycle Parking

Bicycle racks at convenient locations provide secure places to park and lock bicycles on a short-term basis. Bicycle parking should be sited at level locations that are highly visible to avoid bicycle theft and are near bicycle amenities. Avoid conflicts with motor vehicles, pedestrians, and mobility devices. Providing sanctioned bike parking in the right locations can help avoid bikes locked to objects such as trees, fences, railings, etc. which may cause maintenance or accessibility issues.

The chosen style of rack should support the bicycle upright by its frame in two places, prevent the wheel of the bicycle from tipping over, enable the frame and one or both wheels to be secured, support bicycles without a diamond-shaped frame with a horizontal top tube, and allow front-in parking. A U-lock should be able to lock the front wheel and the down tube of an upright bicycle, and allow back-in parking, and a U-lock should be able to lock the rear wheel and seat tube of the bicycle. Wheel-bending schoolyard bicycle racks, which can damage bicycles, and "wave" style bicycle racks, are outdated and space inefficient. Thus, these are not recommended.



West Sacramento, CA

Landscaped Medians

Raised medians offer opportunities to add greenery to a corridor. Native plants, water use, and maintenance costs should be considered when planning landscaping. Foliage should be trimmed and maintained to preserve visibility at crossings. All landscaping components should be selected in accordance with the City's Landscape Development Guidelines and Master Tree List.

Landscaped Sidewalk/Bikeway Buffer

Like medians, buffers between active transportation facilities and vehicle traffic are prime locations for creating green spaces along a corridor. A landscape buffer provides separation from the roadway, aesthetic benefits, and canopy shade for users.



Shade Trees

In cities like West Sacramento, with hot, dry summers, street trees provide pedestrians with essential shade protection from the sun, while also contributing to air quality, aesthetic, and mental health benefits. Street trees can also improve traffic safety, with studies showing that individual driving speeds are significantly reduced along tree-lined streets in suburban settings.

Bioswales

Bioswales are areas of landscaping that provide a permeable surface to drain stormwater back into soil rather than diverting it back into the drainage system or flooding into the street. Bioswales can be placed at medians, curb extensions, or sidewalk buffer areas.



Wayfinding

Wayfinding signage informs road users of their surroundings and guides them along the best routes to key destinations.

Decision signs inform bicyclists of routes connecting to key destinations – they may also show information about how long or far a destination may be from the sign location. Decision signs should be placed at intersections of two or more bikeways to indicate the best route to each destination.



Turn signs signal when a bikeway turns from the current roadway onto another roadway. Confirmation signs indicate that a road is a designated bicycle route and can inform drivers that they are sharing the roadway with bicyclists.



Pedestrian wayfinding should help pedestrians navigate efficiently to their desired destinations. Waying should be comprehensible and easy to find, placed at pedestrian height for easy access. Wayfinding visuals should be consistent and appealing, avoiding cluttered information.

Transit wayfinding should guide riders to and between transit stops. It should be developed in partnership with local transportation service providers, and have clear, predictable placement, and legibly display routes and service information.

Pedestrian Lighting

Pedestrian scale lighting illuminate walkways to increase comfort for people walking and improve visibility of pedestrians for drivers. Scaled lighting is typically mounted 10 to 15 feet high and spaced 15 to 30 feet apart.





Landscapeforms.com

Bicycle Repair Stations

Bicycle repair stations allow users to repair their bicycles on the go. Repair stations typically include securely attached tools, a stand, and a bike pump, and are meant to withstand both vandalism and the elements.

Care should be taken when placing bicycle repair stations to avoid areas where vandalism is more likely, and instead placing them in highly visible, well-lit, and accessible locations where bicyclists may easily pull off the bikeway to make repairs.



Bicycle Repair Station, Davis Local Wiki

Transit Facilities

Transit Shelters

Transit shelters provide a comfortable place for passengers to wait for the bus by providing shade and protection from the elements. Transit shelters should include benches for passengers to rest. When deciding placement of transit shelters, consider elements like ridership, if the transit line serves vulnerable users like children or seniors, or stops that are particularly weather exposed.



West Sacramento, CA

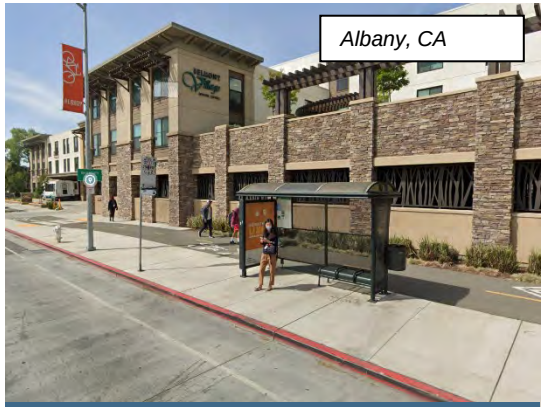
Floating Transit Island

Floating transit islands provide a platform for riders and a designated area for buses to stop in the travel lane, or within a bus pullout. The island allows for a continuous protected bike facility, separating the bikeway from vehicular traffic and eliminating conflicts between buses and bicyclists.

When designing separated bikeways adjacent to a transit island, there are multiple variations that can be implemented, depending upon vehicle traffic volumes, roadway speed, transit ridership and headways, and right-of-way constraints. In the examples below, the bikeway is designed adjacent to the transit island within a bicycle and pedestrian mixing zone.


Seattle, WA

NACTO

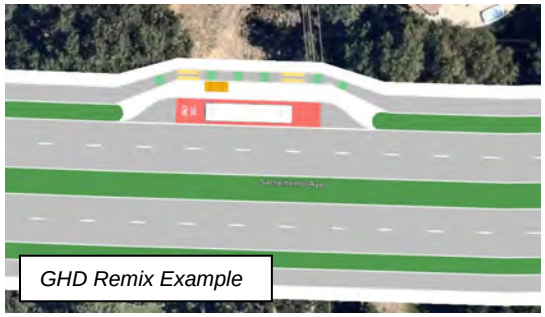

Albany, CA

Google Image Capture, 2023

Turn-Out Bays

The images to the left depict in-lane transit stop, while the two images below depict two turn-out bay design options, which are the two design options preferred by YoloTD, the transit agency serving the corridor.

In the first image below, the transit shelter is placed on the floating transit island, with a mixing zone that provides connection to the sidewalk. The mixing zone features high visibility markings and crossings between the transit shelter and the sidewalk. In the second image, there is also a mixing zone with high visibility markings, but the transit shelter is placed at the sidewalk.


GHD Remix Example



GHD Remix Example

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Corridor Strategies

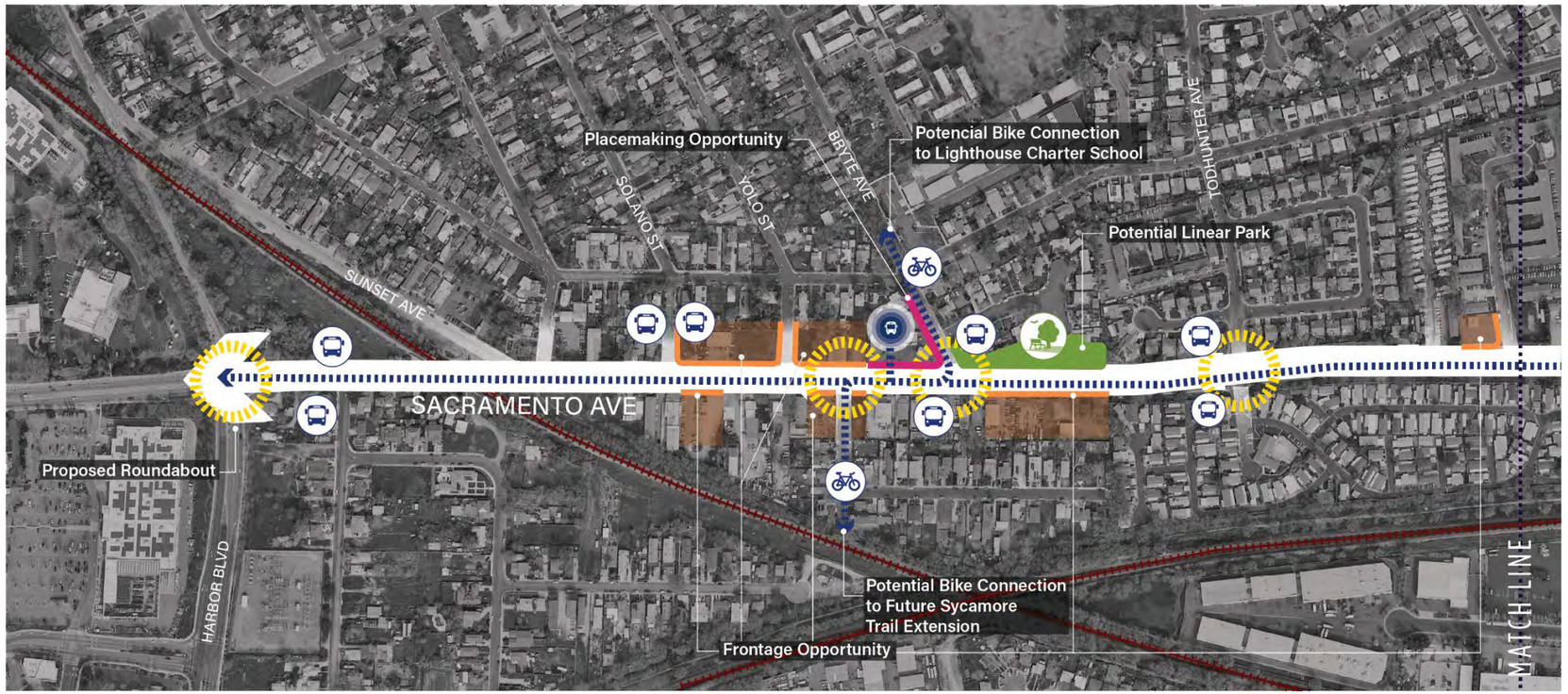
Investing in green spaces and infrastructure, enhanced community streetscape and multimodal improvements designed for all ages and abilities will transform Sacramento Avenue into a vibrant, inviting, and multi-functional corridor with unique community spaces and character that enhance social and economic activity. The figure to the right gives an overview of both the mobility and design-focused improvements recommended as part of this complete street plan.

This section outlines corridor-wide mobility-focused and urban-design focused strategies leveraged to develop the corridor recommendations. In subsequent sections, key strategies utilized in each of the corridor's three core areas, western, central, and eastern are discussed.

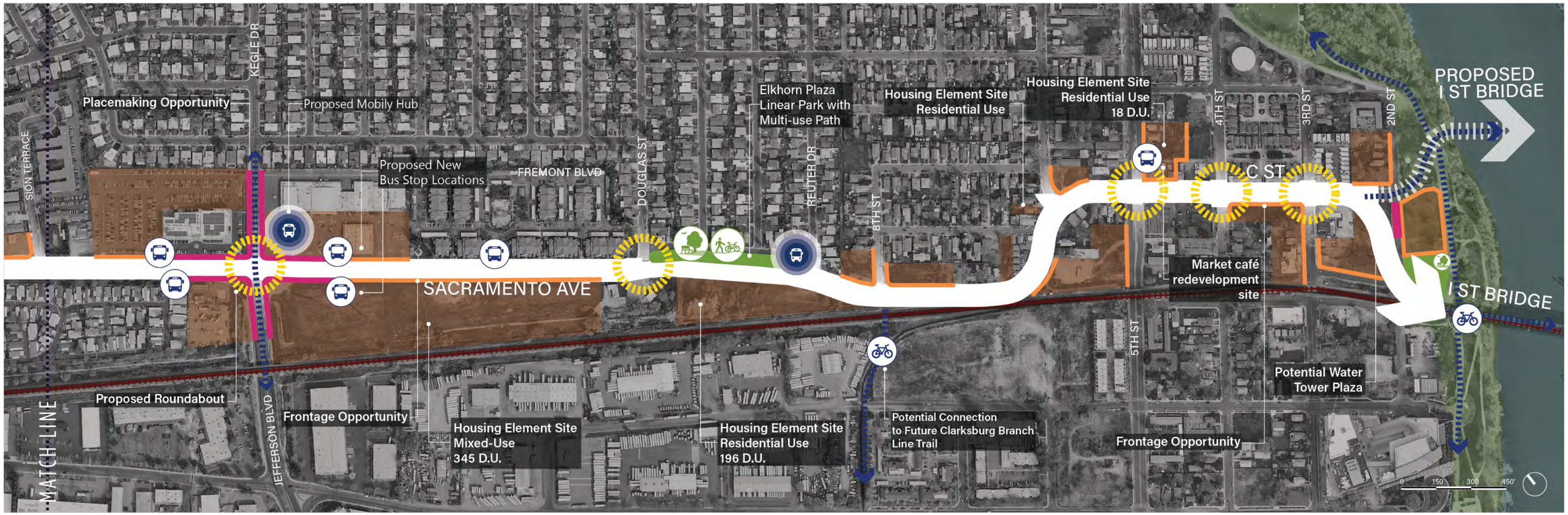
Mobility-Focused Strategies

With a key focus of this Plan being improving access and connectivity for non-vehicular modes of transportation, complete street improvement design standards and best practices inform the corridor-wide strategies used to develop the recommended improvements.

Throughout the corridor, the Plan recommends safe, comfortable bicycle and pedestrian facilities designed for people of all ages and abilities and the "interested but concerned" category of bicyclists, meaning that the recommendations seek to provide facilities that are level of traffic stress scores LTS 1 or LTS 2 to appeal to as much of the population as possible.[10] Similarly, new sidewalk and sidewalk gap closure is recommended across the corridor, which should provide a comfortable, connected and accessible pedestrian experience.



[10] *See the existing bicycle level of traffic stress analysis section in Chapter 4 for "Types of Bicyclists" categorized as interested but concerned.*



LEGEND

Safety Opportunity

- Critical Intersection

Multi-Modal Choices Opportunity

- Bus Stop
- Potential Bike Route

Placemaking Opportunity

- Potential Placemaking

Land Use Opportunity

- Development Potential
- Residential Frontage Opportunity
- Linear Green
- Opportunity for Multiuse Pathway

Mobility Hub

- Potential Mobility Hub

Mobility-Focused Strategies (Continued)

Pedestrian paths should be provided in the form of sidewalks or shared-use paths on both sides of the street, and should be at least six feet in width, where feasible.

Class IV separated bikeways are recommended at sidewalk grade, which are also known as raised cycle tracks. Differentiation between the material type of the raised cycle tracks and sidewalks are recommended to provide a visual and tactile queue between the different facility types. In areas where right-of-way allows, additional separation between the bikeway and sidewalk is recommended with a paved concrete area, or small landscape strip that would separate the two facilities. Additionally, native, and drought-tolerant plantings are recommended in the landscaped areas, space permitting, within the median and the buffer zone between proposed Class IV bikeways and vehicular travel lanes. Landscaped areas will provide ample separation between vehicular traffic and dedicated spaces for those who are walking, biking and rolling along Sacramento Avenue, as well as narrow street widths to provide a more pedestrian-scale environment.

At key locations along the corridor, new crossing locations and improvements at existing crossing locations will provide additional low-stress crossings for both bicyclists and pedestrians, resulting in improved connectivity.

Transit Strategies

During the Plan development process, the project team coordinated with the regional transit agency serving the corridor, YoloTD, to identify transit stop design options and changes in stop placement that meets the existing and future needs of the corridor with regards to multimodal operations, accessibility, and land use context.

In collaboration with YoloTD, several transit stop design options were identified. While a floating transit island stop design with a bus turn-out, rather than an in-lane stop, is the transit agency's preferred design option, and in-lane stop design was also discussed as an option. Two turn-out bay type design options were identified, which are depicted in the improvement types discussed in the previous section of this chapter. All transit stops are recommended to include a transit shelter and bench.

While turn-out bays are preferred along the corridor, there may be potential right-of-way acquisition required in some locations to implement these changes. Subsequent design phases will further consider existing right-of-way constraints and right-of-way acquisition needs that may be required to implement upgrades. Additionally, further bus stop and route location planning will be coordinated with YoloTD during the design phase.

Truck Routes

What we heard from the community is that besides speed and volume of traffic, the presence of trucks contributes to making the corridor less attractive to walking, biking, and rolling. Several strategies to minimize the impacts of truck traffic along the corridor were identified during the Plan development process.

Truck Strategies include:

- Traffic calming will reduce the auditory impact of freight on adjacent neighborhoods due to reduced speeds that will result from traffic calming.
- The design standards for intersections will be designed to discourage truck traffic off of designated truck routes.
- City collaboration with Caltrans to change the truck routes along and adjacent to the corridor while preserving access to key STAA terminals.

Proposed truck routes are shown in Figure 35 on the following page.

Vehicular Facilities

Complete street plans consider all modes, including vehicles. The Plan recommendations seek to maintain acceptable traffic conditions in the existing and future condition, per city LOS standards, while balancing the needs of all road users.

Roundabouts

There are myriad safety and operational benefits associated with roundabouts that would be realized with the implementation of roundabouts proposed at a few key locations along the corridor.

Featuring lower vehicle speeds and fewer conflict points, roundabouts are a proven safety countermeasure at locations known to be collision hotspots. Roundabouts can also serve as a traffic calming treatment at the entry to a corridor to slow vehicle speeds and signal a change in context as vehicles enter a corridor.

According to the City of West Sacramento's 2018 Systemic Safety Analysis Report (SSAR), the Sacramento Avenue corridor is among the City's highest ranked crash corridors. The Jefferson Boulevard / Sacramento Avenue intersection is the sixth highest ranked high crash intersection location. Moreover, converting intersections to roundabouts from signals was a countermeasure identified by the SSAR for high crash signalized intersection locations, making roundabouts an obvious safety countermeasure to consider for the Sacramento corridor.

In addition to safety benefits, roundabouts offer traffic operations benefits due to the fact that, when appropriately designed, they can accommodate 30 to 50 percent more traffic than conventional intersections and result in less traffic delay.[11] As discussed in further detail in Chapter 7, maintaining acceptable traffic conditions at the Jefferson Boulevard / Sacramento Avenue intersection in the future condition would otherwise require widening to accommodate expected increases in traffic if a roundabout is not implemented.

Alternative Intersection Configurations

Although the roundabout option was selected as the preferred concept, protected intersection concepts have also been developed and are presented in the Appendix. While protected intersection concepts provide safety benefits, the additional right-of-way needed would constrain operational conditions such that vehicular delay would drop below acceptable levels of service in the future condition.

The next sections present a corridor-wide overview of urban-design focused strategies, then strategies specific to each corridor area are discussed. Detailed improvement concepts are presented for each of in Chapter 6.

11 Kittelson & Associates, Inc. (August 2000), roundabout.kittelson.com. Modern Roundabouts.

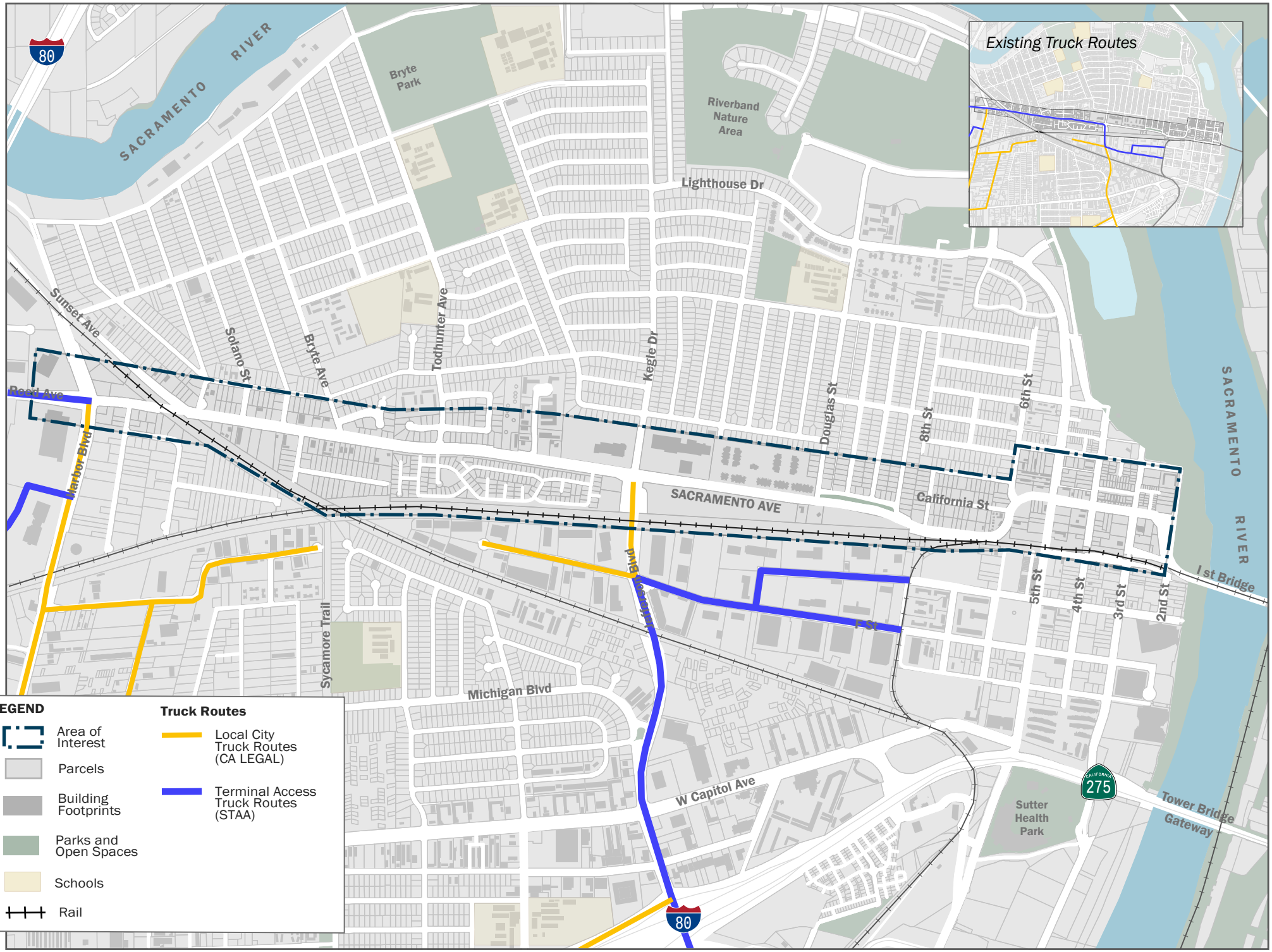


Figure 35 Proposed Truck Routes

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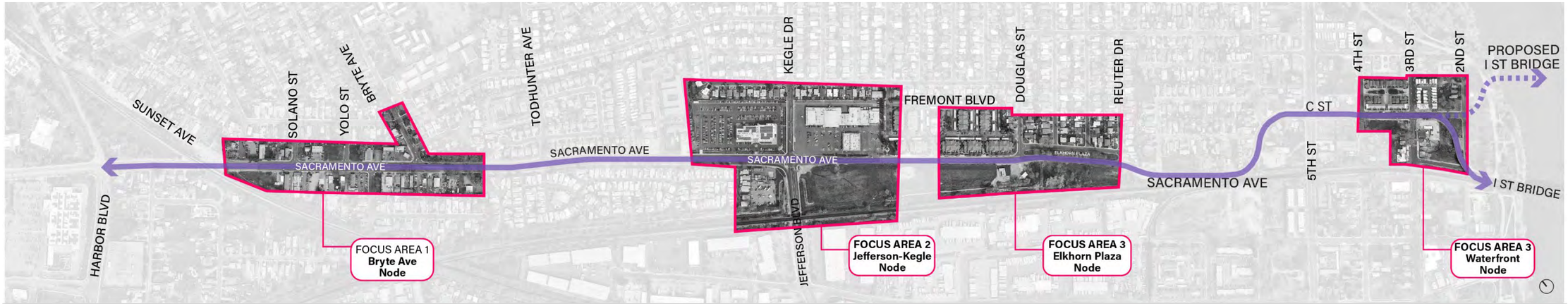
URBAN DESIGN-FOCUSED STRATEGIES



The urban-design focused strategies identified as part of the Plan are centered around identifying key focus areas along the corridor that meet the goals, visions and three themes of the corridor. The image above presents an overview of four urban design focus areas. The focus areas include recommendations for residential frontage opportunities, edge activation and placemaking, streetscape and greening and mobility hubs, which are depicted below. Each of these four focus areas are described in more detail in the sections that follow, which outline the strategies that are specific to the corridor areas and segments.

STREETSCAPE & GREENING

Similarly, streetscape elements, like benches, bike racks along with greening can activate pedestrian-scale and community-friendly spaces that promote community vitality and livability









Residential Frontage Opportunities

As new development occurs, residential frontages can integrate with streetscape and mobility improvements to activate spaces and create a sense of place.





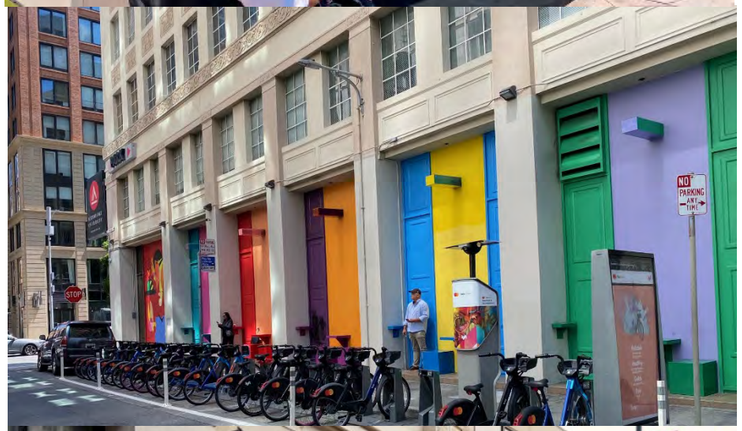




Mobility Hubs

Mobility hubs can be placed at key locations at the intersection of important transportation routes and transit stops with micro-mobility options and community spaces that bring together transportation options and placemaking.







Western Area Strategies

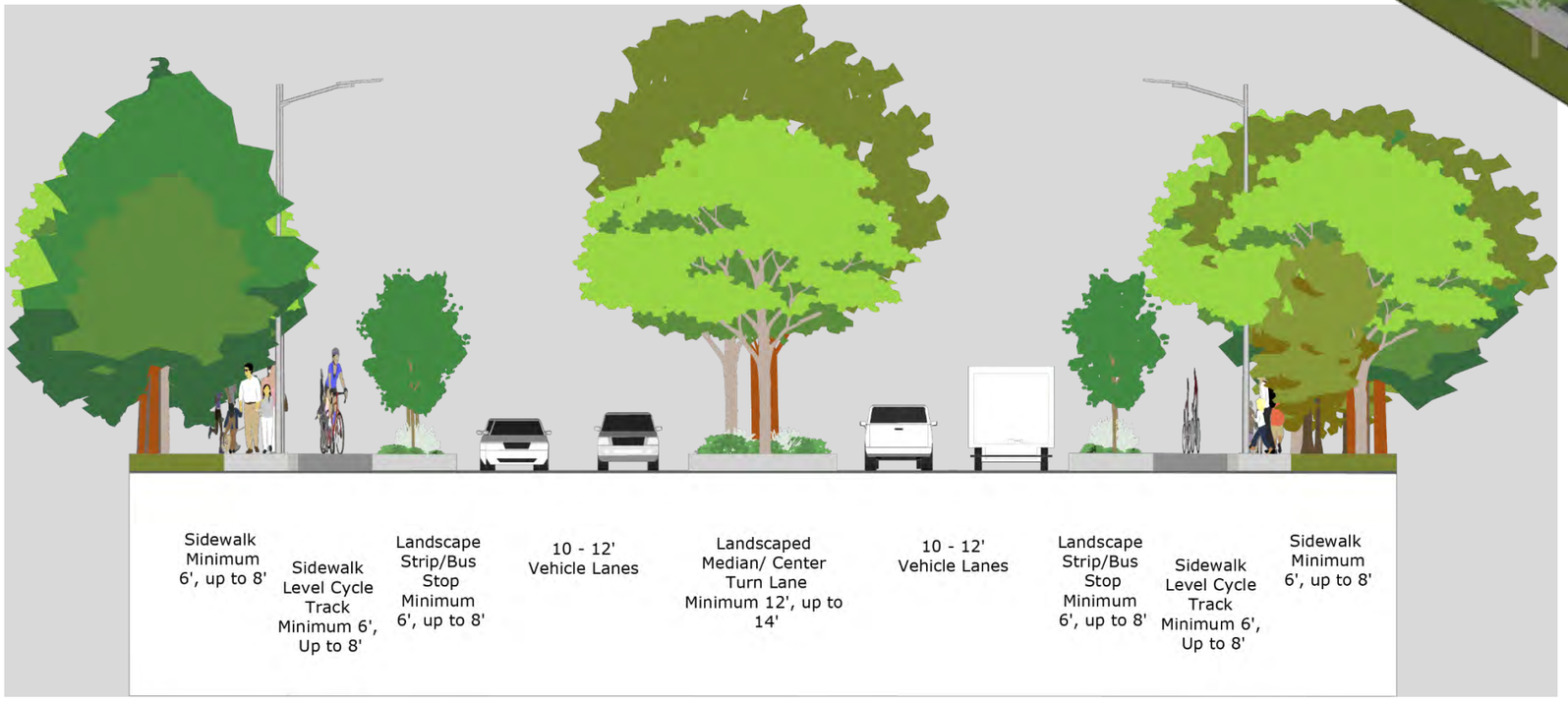
The image to the right shows a standard cross-section for the western area of the corridor in an area where there is existing mature tree coverage. Existing trees in these areas will be retained where ever feasible.

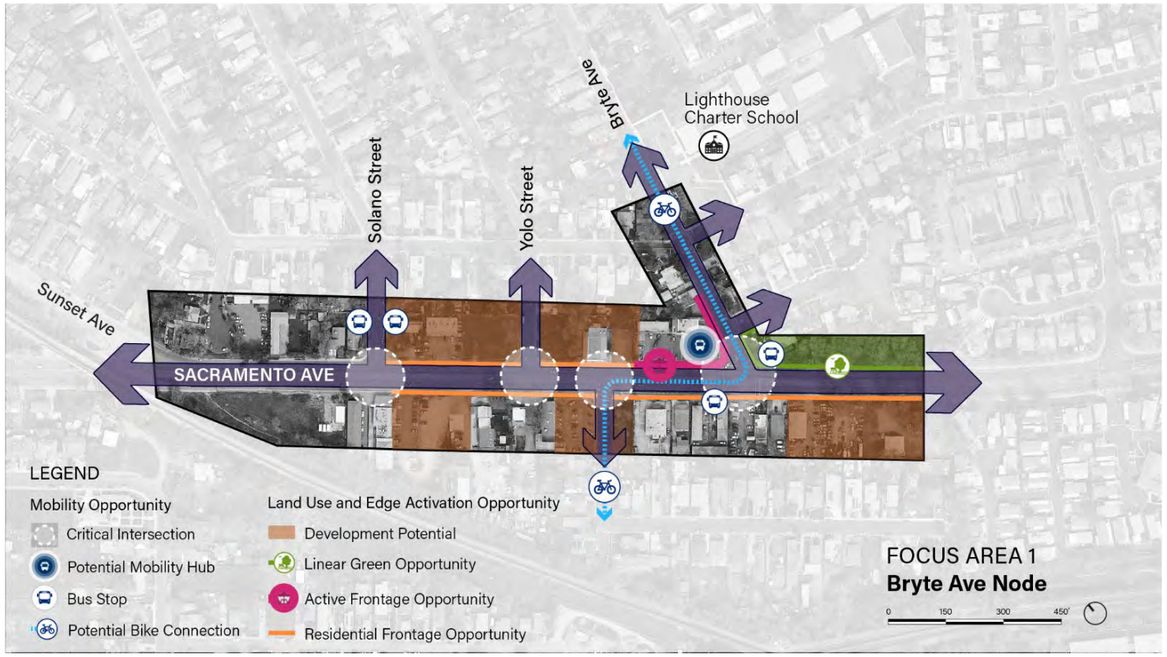
Along with sidewalk gaps closure and new Class IV bikeways, a landscaped buffer and landscaped medians are proposed. Two-travel lanes per direction will remain to accommodate the heavier through traffic that the Jefferson Boulevard to Harbor Boulevard stretch is known for.

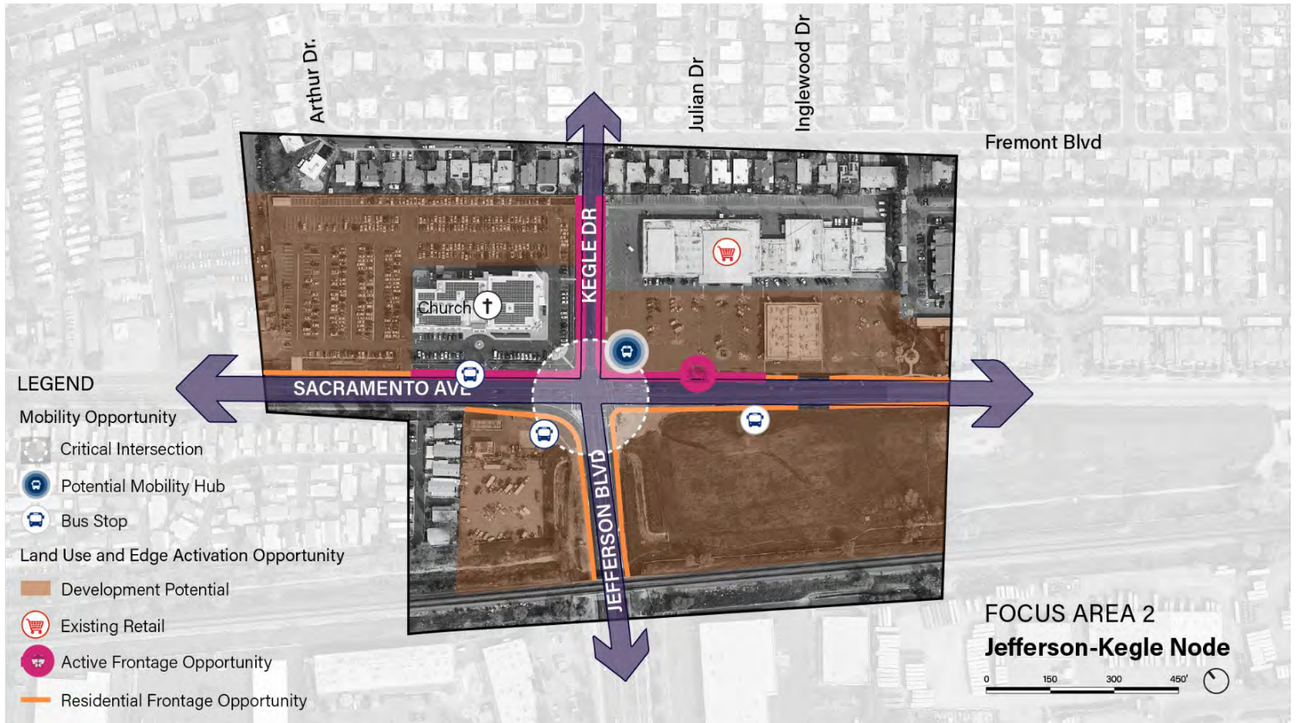
The cross-section below shows the minimum proposed widths and variation allowable by the existing right-of-way.

On the following page, two urban design focus areas are identified within the Western Area, depecited below, at Bryte Avenue and Jefferson Boulevard / Kegle Drive, which identify mobility, land use and edge activation and linear green opportunities.

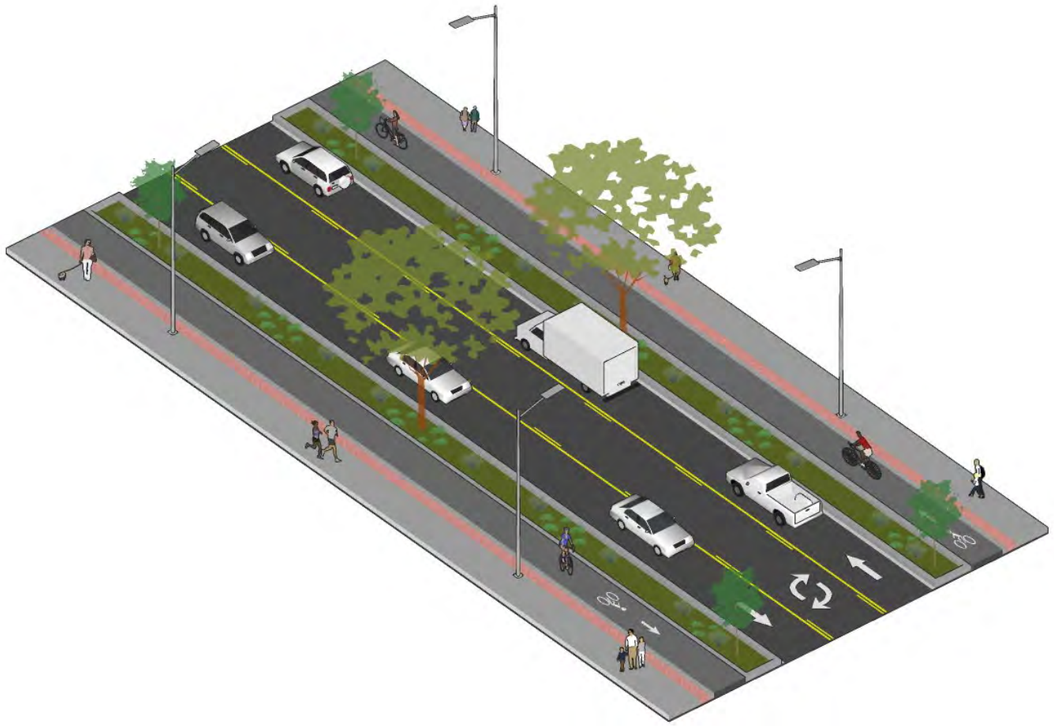





Bryte Ave
Lighthouse Charter School
Solano Street
Yolo Street
Sunset Ave
SACRAMENTO AVE
LEGEND
Mobility Opportunity
Critical Intersection
Potential Mobility Hub
Bus Stop
Potential Bike Connection
Land Use and Edge Activation Opportunity
Development Potential
Linear Green Opportunity
Active Frontage Opportunity
Residential Frontage Opportunity
FOCUS AREA 1
Bryte Ave Node
0
150
300
450'


Arthur Dr
Julian Dr
Inglewood
Fremont Blvd
KEGLE DR
Church
SACRAMENTO AVE
JEFFERSON BLVD
LEGEND
Mobility Opportunity
Critical Intersection
Potential Mobility Hub
Bus Stop
Land Use and Edge Activation Opportunity
Development Potential
Existing Retail
Active Frontage Opportunity
Residential Frontage Opportunity
FOCUS AREA 2
Jefferson-Kegle Node
0
150
300
450'

Central Area Strategies

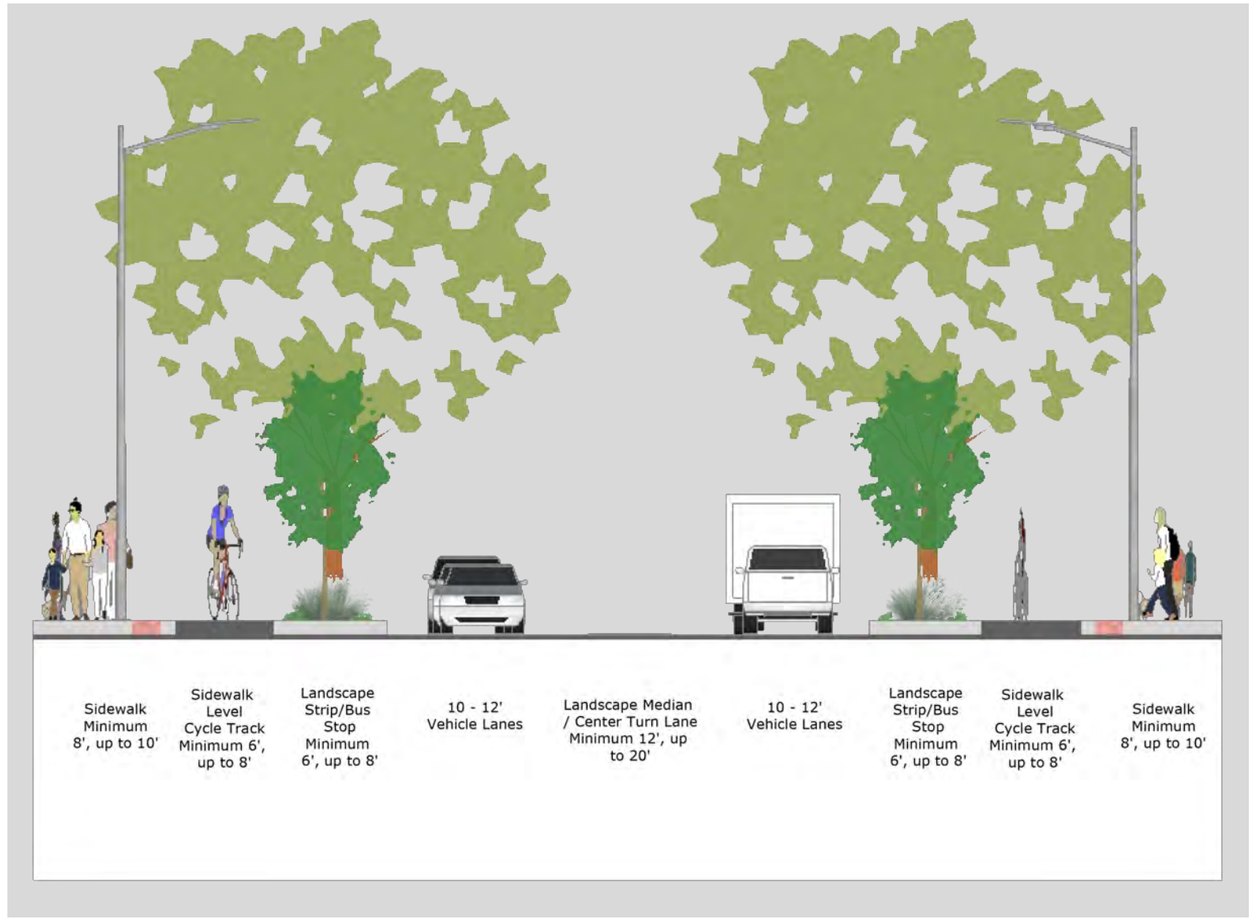


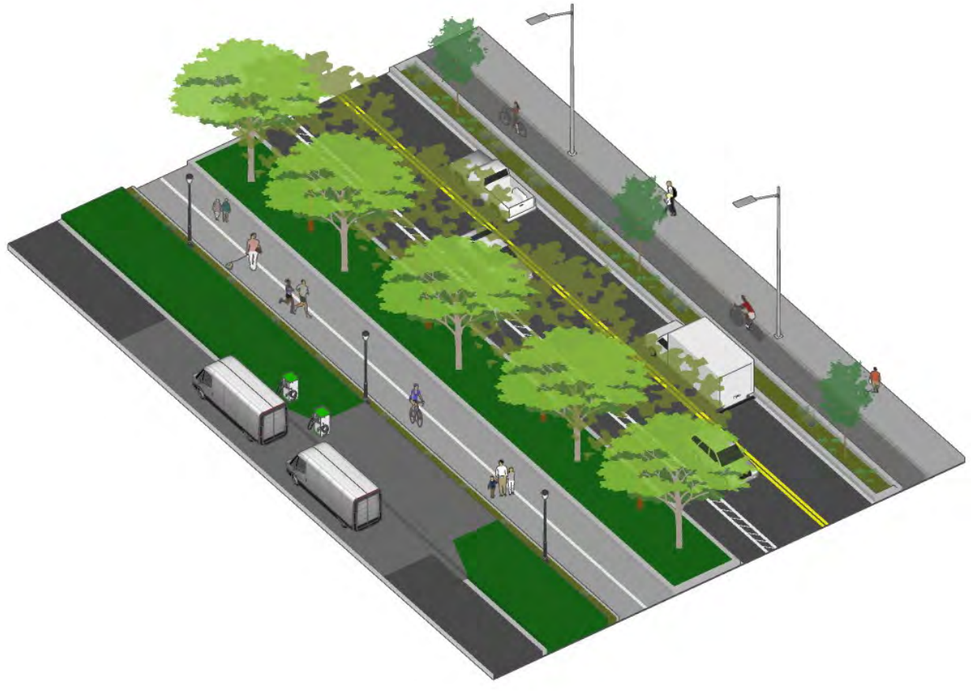
As shown in Focus Area 2 on the previous page, the mobility hub proposed at the northeast corner of Jefferson Boulevard / Kegle Drive will interface with the mobility improvements that continue eastward along Sacramento Avenue.

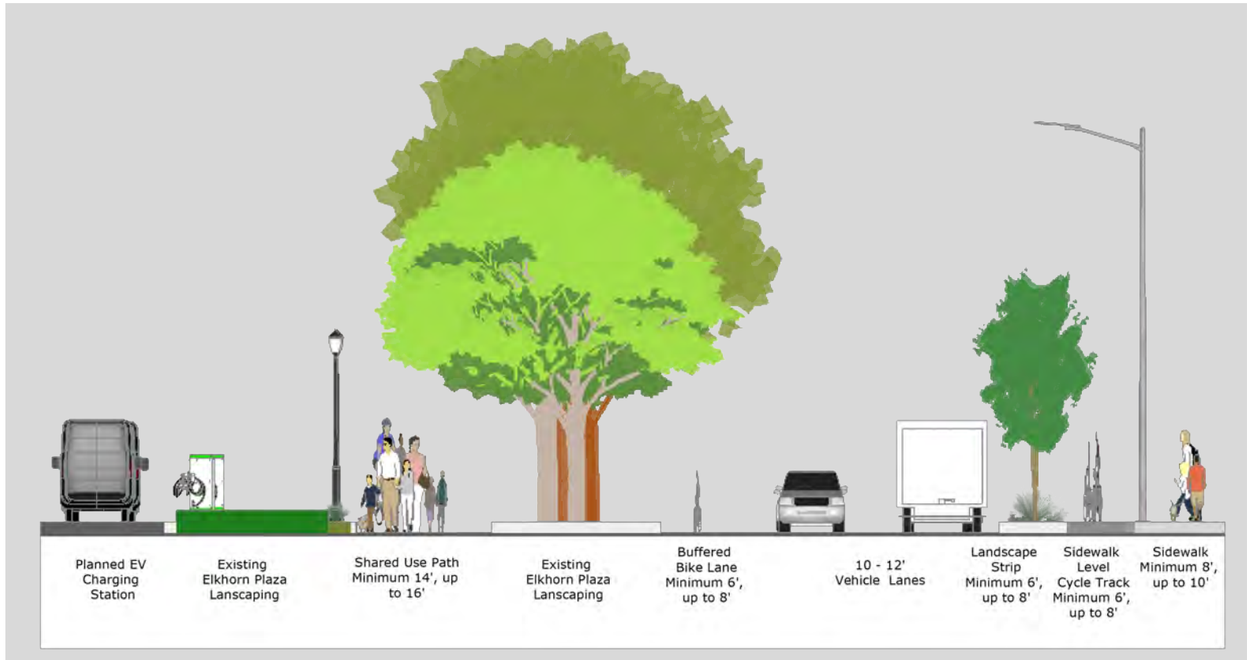
As shown in the standard street section in the image at the top left of the page, along Sacramento Avenue east of the Jefferson Boulevard / Kegle Drive intersection, the roadway narrows to one travel lane per direction. However, the wide existing right-of way allows for the new Class IV bikeway, landscaped median or two left turn lane, as well as sidewalk recommendations to continue east. The cross-section images to the right shows the minimum proposed widths and variation allowable by the existing right-of-way.

As shown in the standard street section on the next page, East of Douglas Street, the existing right of way between Elkhorn Plaza and the south side of the roadway begins to narrow. As shown, the Class IV bikeway recommendation continues east alongside the eastbound travel lane, while a Class II buffered bike lane is proposed in the westbound direction. However, the right of way within Elkhorn Plaza provides an opportunity for a Class I shared use path that could interface with the City's planned EV charging station and the Plan's proposed mobility hub at the Plaza, where mature trees would remain. The image at the bottom right of the following page t highlights these opportunities in Focus Area 3.

East of Reuter Dr, the roadway right of way further constrains, where the landscaped buffer between Class IV bikeways and vehicular traffic is transitioned to concrete curb separation. This is discussed in greater detail in the improvement concepts presented in Chapter 6.





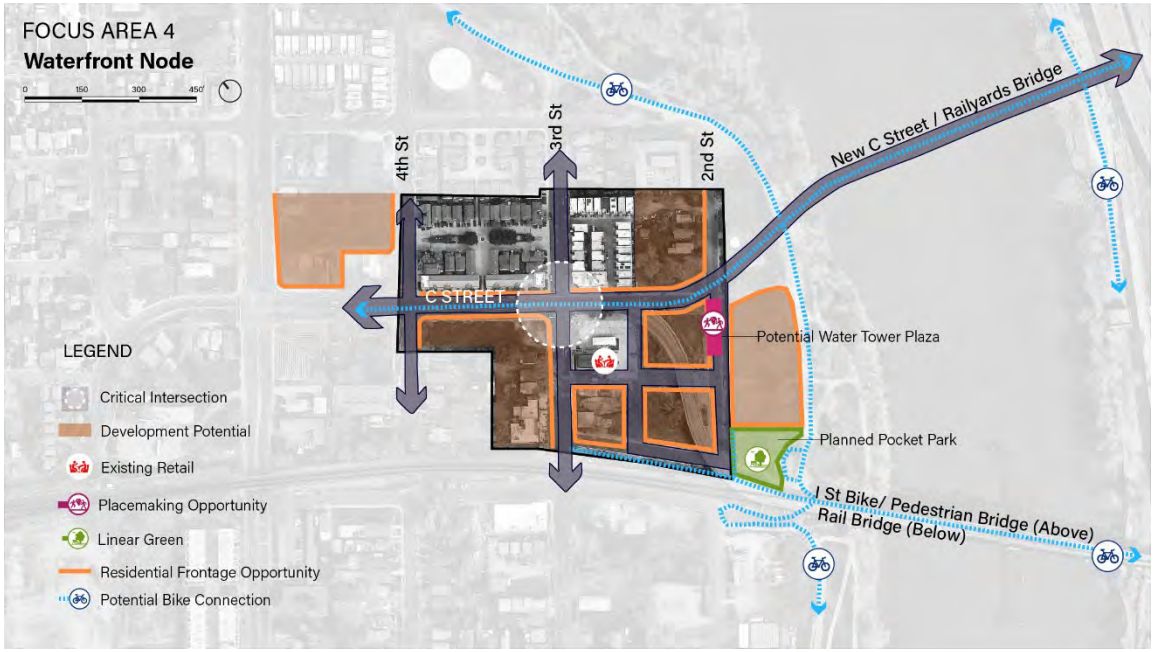

Planned EV Charging Station
Existing Elkhorn Plaza Lanscaping
Shared Use Path Minimum 14', up to 16'
Existing Elkhorn Plaza Lanscaping
Buffered Bike Lane Minimum 6', up to 8'
10 - 12' Vehicle Lanes
Landscape Strip Minimum 6', up to 8'
Sidewalk Level Cycle Track Minimum 6', up to 8'
Sidewalk Minimum 8', up to 10'

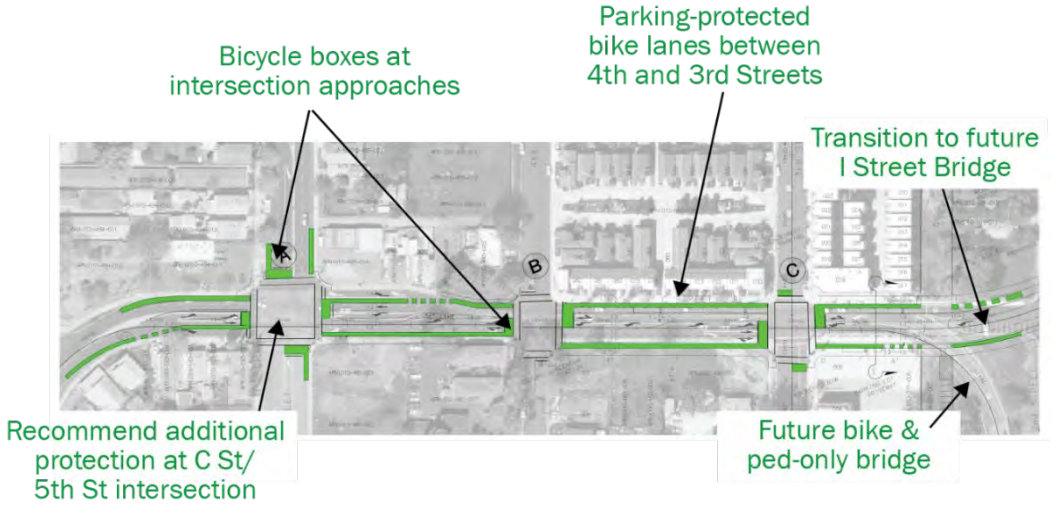

Douglas St
Casselman Dr
Beasaley Dr
Reuter Dr
SACRAMENTO AVE
ELKHORN PLAZA
LEGEND
Mobility Opportunity
Critical Intersection
Potential Mobility Hub
Bus Stop
Land Use and Edge Activation Opportunity
Development Potential
Linear Green
Opportunity for Multiuse Pathway
Residential Frontage Opportunity
FOCUS AREA 3
Elkhorn Plaza Node
0
150
300
450'

Eastern Area Strategies

The strategies within the eastern area include maintaining consistency with existing plans for C Street and 5th Street improvements planned by the City, as well as a protected intersection at 5th and C Streets. Planned improvements would include high visibility features like buffers, curb extension, and colored pavement where feasible to improve the safety and comfort of bicyclists and pedestrians.

As shown in Focus Area 4 to the right, there is opportunity for placemaking activation, development potential and residential frontage opportunities. At the intersection of the future C Street-Railyards Bridge realignment and planned bicycle and pedestrian only bridge along the existing I Street Bridge, these opportunities would integrate with mobility improvements and opportunities.





6 Improvement Concepts

This chapter provides improvement concepts that support safety, comfort, and connectivity along Sacramento Avenue for all road users. The recommendations outlined are a product of an extensive community engagement process and analysis of existing conditions. They support a vision for the corridor that encourages active transportation, activates public spaces, and supports a variety of needs, from commuting to recreation. The recommendations aim to not only create a safe environment for road users, but to create enjoyable, useful public spaces for people of all ages and abilities.

The following sections present the improvements concepts developed for Sacramento Avenue. The design concepts included are the product of an iterative community engagement process with the public, key stakeholders, and city staff, and were informed by the visions and goals, analysis, and identified needed developed throughout the Plan.

More detailed improvement concepts are provided in the Appendix.

Based on similarity in roadway characteristics, the Plan recommendations are grouped into the corridor into three areas, including

- The **Western Area** from Harbor Boulevard and Reed Avenue to Kegle Drive/Jefferson Boulevard along Sacramento Avenue
- The **Central Area** from Kegle Drive/Jefferson Boulevard to 6th Street along Sacramento Avenue
- The **Eastern Area** from California Street to 2nd Street along C Street

The complete street improvement concepts are presented by corridor sub-segment and improvement details are called out as they relate to each of the three corridor themes: green corridor, community streetscape and multimodal street.

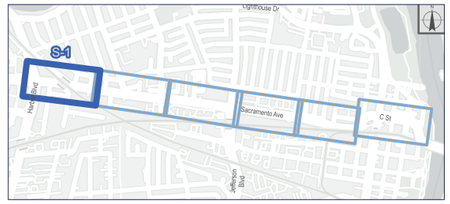


Planned transportation improvement and development projects are called out with dark grey boxes and circles.



Yellow and green dashed areas highlight key areas where community streetscape and green corridor improvements are recommended, consistent with the focus areas noted in the previous chapter.

WESTERN AREA - SEGMENT 1
HARBOR BLVD / REED AVE TO SOLANO ST



The roundabout at Harbor Boulevard will improve safety and connectivity by reducing conflict points between active users and vehicles, while improving traffic flow. With landscaping and gateway signage improvements, there is also opportunity for the roundabout to serve as a gateway feature to the corridor, which will further help calm traffic as it enters the corridor from the west end, as well as contribute to community streetscape.

At the transit stops on both sides of Oak Street, the Class IV bikeway will transition to a bicycle and pedestrian mixing zone as it traverses behind floating transit islands. The transit stops at this location will include a transit shelter and in-line stop configuration.

SUNSET AVE HSIP PROJECT: RESTRICT LEFT TURNS OUT

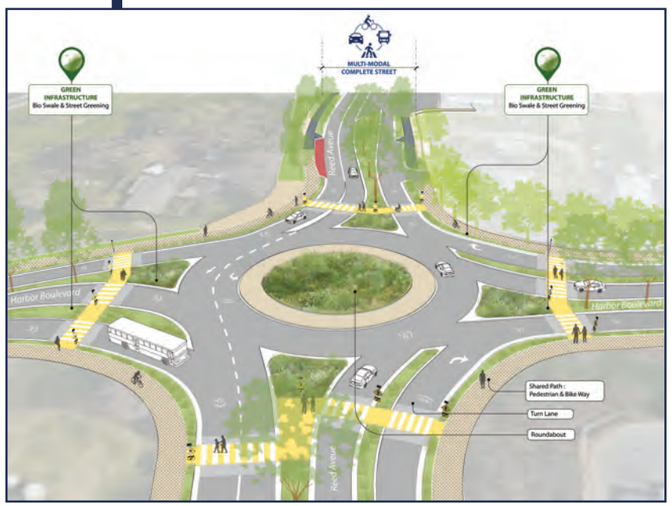
The City received HSIP funding to implement medians at Sunset Avenue and Sacramento Avenue. The Plan recommends including pedestrian refuge islands on both approaches, high visibility crosswalk / cross-bike markings. A bulb out is also added at the northeast corner, which will shorten the crossing distance and calm traffic by reducing the wide turn radii that contributes to high turning speeds.

Sidewalk gaps will be addressed on both sides of Sacramento Avenue to improve pedestrian connectivity. Sidewalks along this segment will be 6-feet wide, separated from vehicular traffic by a Class IV bikeway and landscaped buffer.

SOLANO ST HSIP PROJECT: PEDESTRIAN REFUGE

The City received HSIP funding to implement high visibility crosswalks on both intersection approaches, a RRFB, and median refuge island across Sacramento Avenue. The Plan recommends implementing these projects by modifying designs to be consistent with other improvements along this segment. The Plan recommends adding crossbike and conflict markings across Solano Street.





Eight-foot Class IV bikeways in each direction (directional) that are separated from vehicular traffic by a landscaped buffer are recommended to increase safety and comfort for bicyclists of all experience levels. Throughout the corridor, the Class IV bikeway is recommended as a raised cycle track at sidewalk-grade, and the two facilities will be distinguished by distinct materials that create a visual and tactical cue between the two facilities. A bike facility that is flush with the sidewalk appeals to the community's interest in Class I facilities and recreational walkways, as well as the needs of bicyclists who may move at a faster pace than pedestrians and recreational bicyclists. This will provide safe and comfortable connectivity throughout the corridor.

As drought-tolerant trees mature, the landscaped buffer will provide shade during the region's hot summers, and can also be designed as a bioswale to assist with stormwater management. Together, the sidewalk, raised cycle track, and landscaping improvements will address all three themes of the Plan by improving mobility, and contributing to a green corridor and community streetscape improvements.

A 12-foot landscaped median will require reducing vehicle travel lanes to 11 feet. Narrower vehicle lanes will help to calm traffic, contributing to a more pedestrian-oriented steetscape. The landscaped median will also provide shade as trees mature and can be designed to facilitate stormwater management.

High visibility crosswalk and bicycle conflict markings at the Oak Street, Sunset Avenue and Solano Street intersections will improve safety for all users by increasing visibility of active users crossing the roadway.

Pedestrian refuge islands at Sunset Ave and Solano Street will reduce crossing distances, alowing pedestrians to cross one direction of traffic at a time, while RRFBs will increase driver awareness of bicyclists and pedestrians crossing the roadway.

WESTERN AREA - SEGMENT 2
SOLANO ST TO TODHUNTER AVE

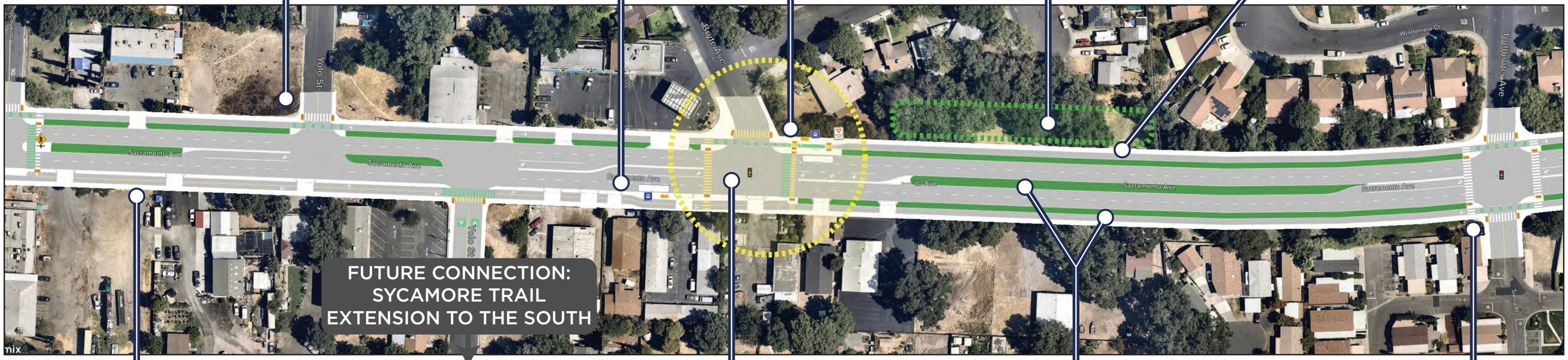


A high visibility crosswalk and green bicycle conflict markings at the north-side segment of Yolo Street highlights conflict and increases motorist visibility of active users as they cross, which will improve comfort for all road users and improve safety and connectivity for bicyclists and pedestrians.

The transit stops on both sides of Bryte Avenue are proposed to include a floating transit island and sidewalk area, with the bi-directional Class IV bikeway traversing behind the transit island as a mixing zone that is raised to slow bicycle traffic as it passes through. The street edges along the northwest and northeast corners provide a placemaking opportunity for a social node with community streetscape enhancements. The location also provides a micro-mobility hub opportunity that could integrate well with the proposed pocket park highlighted to the east.

The vacant parcel east of the Bryte Avenue intersection that is filled with existing trees is identified as an opportunity site for a pocket park. The pocket park could integrate with potential in-fill development as in occurs. The details of funding, design and construction of the park will need to be studied prior to implementation.

Closing sidewalk gaps, which predominantly exist on the north side of Sacramento Avenue, will improve pedestrian connectivity and accessibility along the corridor.



FUTURE CONNECTION: SYCAMORE TRAIL EXTENSION TO THE SOUTH

The Class IV bikeway on the south side of Sacramento Avenue transitions to a two-way facility from Solano Street to Bryte Avenue in order to facilitate safe crossing and access to the future Sycamore Trail extension that is planned to connect to bicycle facilities along Yolo Street. The proposed bikeway along other areas of this segment are one-way facilities on each side of the roadway.

To accomodate the two-way facility on the south side, the bikeway is separated from the roadway by a 4-foot concrete buffer rather than the landscaped median separation seen throughout most of the corridor. Curb cuts will be included to allow for vehicles driving into residential and commercial driveways on the south side. Signage, conflict markings, and a change in material can improve safety at driveways by making active users more visible to drivers. If redevelopment occurs, the City should seek driveway and lot consolidation opportunities to further address conflict points between driveways and the proposed Class IV facility.

The community voiced support for protected facilities as well as improved connections to recreation and community spaces. The two-way Class IV bikeway will include wayfinding signage to help bicyclists safely access the future Sycamore Trail extension to the south, the Sacramento Riverfront to the east of the corridor, and Riverpointe Shopping Center to the west of the corridor to help realize this community priority.

A high visibility school crossing and green bicycle conflict markings improve safety for people traveling between facilities on the south side of the corridor and key destinations to the north, including several schools that are accessible via Bryte Avenue.

The 12-foot landscaped median and 8-foot landscaped buffer separating the Class IV facility from the travel lane will continue through this segment, providing green space, shade trees and stormwater managment opportunities.

Existing crosswalks at Todhunter Avenue will be upgraded with high visibility crosswalks and protected bike crossings that facilitate safe and comfortable travel along and crossing of Sacramento Avenue.

WESTERN AREA - SEGMENT 3
TODHUNTER AVE TO JEFFERSON BLVD / KEGLE DR



A directional Class IV bikeway separated from vehicle traffic by a landscaped buffer will continue along both sides of the corridor, providing comfortable, dedicated space for bicyclists.

SIMON TERRACE HSIP PROJECT: PEDESTRIAN REFUGE

The City has received HSIP funding to implement high visibility crosswalk markings and RRFBs across Sacramento Avenue at Simon Terrace. The Plan recommends adding a high visibility crosswalk and cross-bike across Simon Terrace to increase motorist visibility of active users.

New sidewalks along the entire northside of the segment are proposed, and filling gaps on the northside will improve connectivity throughout the corridor.

The City's Mobility Action Plan (MAP) proposed a mobility hub at the northeast corner of Jefferson Blvd / Kegle Dr, a recommendation that is carried over in this Plan. The mobility hub will interface with the shared-use path around the roundabout and the pedestrian-scale design of the hub, and a landscaped plaza will contribute to community streetscape. The street edges along all four corners of the intersection provide a placemaking and activation opportunity to create a social hub at the location. Micro-mobility options will support first- and last-mile trips between key destinations in the community and the nearby transit stops along the corridor.

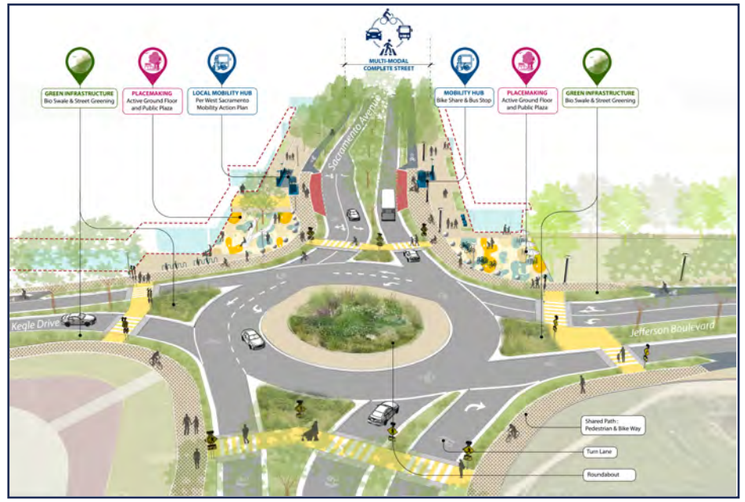


The 12 foot lansdcaped median and 8 foot landscaped buffer separating the Class IV facility from the travel lane continues east through the corridor. The landscaped areas have the opportunity to provide green space, shade trees and stormwater management opportunities.

Where ever possible, mature trees in the existing right-of-way will be retained to preserve the existing tree canopy. Sidewalks may need to meander around existing trees in some locations.

The Jefferson Boulevard / Kegle Drive intersection features a high density of collisions. Being one of the most prominent collision hotspots along the corridor as well as across the City as a whole, safety concerns are a key priority at this location. In addition to safety concerns, traffic operations are expected to degrade to less than acceptable level of service in the future condition. The proposed roundabout will improve safety and connectivity by reducing conflict points between all modes, while also addressing traffic flow.

A shared-use path is proposed around the roundabout to allow safe and comfortable travel for all modes. For more advanced bicyclists that prefer to ride in a shared travel lane, bike ramps are provided at all intersection legs to allow bicyclists to ramp down from the separated bikeway into the circulating lanes. Crosswalks may be raised and pedestrian refuge islands shorten crossing distances and allow active users to cross one direction of travel at a time.



CENTRAL AREA - SEGMENT 4
JEFFERSON BLVD / KEGLE DR TO DOUGLAS ST



The proposed mobility hub at the northeast corner of Jefferson Boulevard / Kegle Drive will provide additional mobility options and activate the community space in this area with micro-mobility options, a landscaped plaza, and placemaking opportunities on all corners, as pictured in the roundabout conceptual design on the previous page. The mobility hub may include a bus stop on the southside curb after coordination with YoloTD.

New crossing locations are proposed at the east end of the Riverbend Shopping Plaza and at the entrance to the 850 on the Avenue apartment complex. Both are proposed to include a median refuge and high visibility crosswalks across Sacramento Avenue, as well as a high visibility crosswalk and cross-bike markings across the minor approaches. The crossing at the apartment complex is proposed to include a RRFB. Both crossings will provide new crossing opportunities, increase motorist visibility of bicyclists and pedestrians and make crossing Sacramento Avenue easier and less stressful.

The existing transit stop in front of the apartment complex would be altered to allow the Class IV bikeway to traverse behind the bus pullout in a bicycle and pedestrian mixing zone with high visibility conflict and crossing markings to address bicylcle and pedestrian conflict. The location of this stop may be moved to the mobility hub after coordination with YoloTD.

A traffic signal is planned to address future operational needs at Douglas Street. The Plan proposes high visibility crosswalk and cross-bike markings to facilitate safe travel to the destinations to the north of the corridor and the proposed Class I shared-use facility through Elkhorn Plaza to the east.



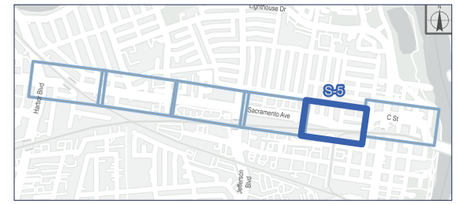
Eight-foot sidewalks are recommended between Jefferson Boulevard and Douglas Street. While the raised cycle track is at sidewalk grade, the wide pedestrian walkway is separated from the Class IV bikeway by a two-foot paved buffer to further separate bicyclist and pedestrian traffic and contribute to a more pedestrian-scale environment.

The proposed 8-foot, directional Class IV bikeways, separated from traffic with a landscaped buffer, continue along the segment to provide low stress bicycling connectivity.

The proposed improvements will serve the residential and commercial uses in the planned mixed use devlopment project at the currently vacant site at 851 Sacramento Avenue. The five-story mixed use development will include a 445 residential units, as well as live/work units along the building frontage with direct access to the sidewalk along Sacramento Avenue, and one-story retail building on the western side of the property. The ground floor retail and live/work units will provide a placemaking opportunity to activate the area as a community space that is integrated with the multimodal mobility and green space options along the corridor. This private development project is dependent on the developer to move forward.

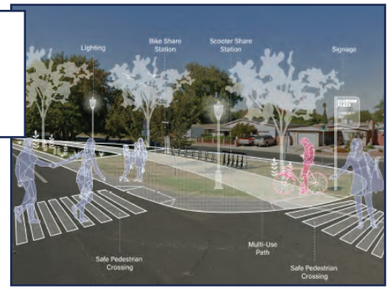
A slightly wider landscaped median, which varies between 14 and 20 feet in width is proposed along this segment. The wide median provides ample room for shade trees and narrows the roadway width to create a more pedestrian-scale environment. The eight-foot landscaped buffer separating the Class IV bikeway from the vehicle travel lanes also continues through this segment, providing additional room for green space, shade trees and stormwater management opportunities.

CENTRAL AREA - SEGMENT 5
DOUGLAS ST TO CALIFORNIA ST



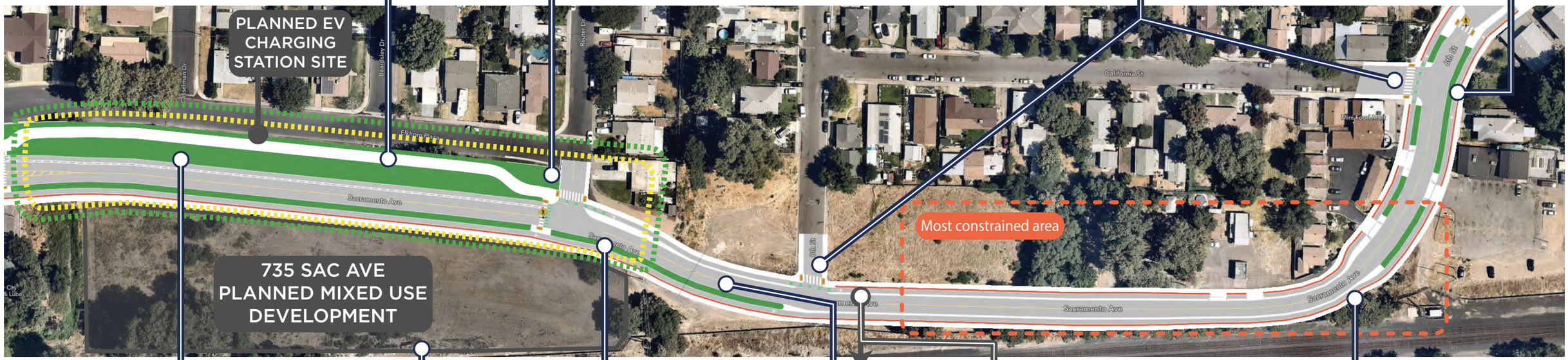
Elkhorn Plaza provides a multi-faceted opportunity to activate the area as a community social node with green space and mobility improvements. Coupled with the electric vehicle (EV) charging station planned at the park, the Class I shared use path from Douglas St to Reuter Dr provides a recreational pathway through Elkhorn Plaza for people walking, biking, and rolling. The 25-foot landscaped buffer between the path and the roadway not only provides separation from vehicle traffic, but reimagines the existing neighborhood green space, where existing trees are proposed to remain. The area is also identified as a potential mobility hub location, enhanced by improved pedestrian and bicycle crossings at each end of the park.

Conceptual View of Elkhorn Plaza Social Node and Mobility Hub



High visibility crosswalks and conflict markings are proposed across 8th St and California Street to improve motorist visibility of active users.

Sidewalks and Class IV bikeways separated from vehicle traffic by a landscaped buffer are proposed to extend to 5th and C Streets, where the improvements recommended in this Plan intersect with several planned transportation projects.



735 SAC AVE PLANNED MIXED USE DEVELOPMENT

The buffered Class II bike lane on the north side of the corridor provides bicyclists the option to ride on the roadway, if preferred, catering to different cyclist needs and comfort levels. On the south side, the directional Class IV bikeway continues east.

The planned mixed use development provides a placemaking opportunity for edge activation, where 8-foot sidewalks and 6-foot directional Class IV bikeway is recommended. The sidewalk and bikeway are separated by a 2-foot concrete bikeway and the Class IV bikeway is separated by an 8-foot landscpaed buffer. The five-story multifamily building will include 196 residential units with neighborhood commercial on the eastern side of the property. Residential units will be accessed via porches along Sacramento Avenue, providing an opportunity to activate the space and integrate with the proposed mobility and streetscape improvements at Elkhorn Plaza. This private development project is dependent on the developer to move forward.

Crossing improvements at Reuter Drive, including a high visibility crosswalk, crossbike and an RRFB across Sacramento Avenue, as well as a crosswalk and green bicycle conflict markings provide improved connectivity between the improvements proposed at Elkhorn Plaza and the bicycle and pedestrian facilities and planned development on the south side of the corridor.

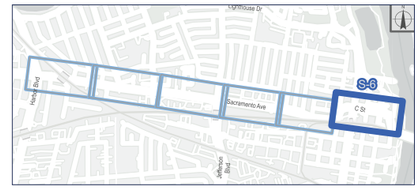
East of Reuter Drive, the existing right-of-way begins to narrow. On the south side of the corridor, the proposed sidewalk reduces from eight to six feet, but the eight-foot landscaped median continues. On the north side, the 6-foot Class IV bikeway is separated from traffic by a 2-foot paved curb that widens as it approaches Reuter Drive in the eastbound direction to support a protected bikeway crossing.

FUTURE CONNECTION: CLARKSBURG BRANCH LINE TRAIL

The City is currently undertaking a grant application to assist in funding a rails-to-trails conversion that will connect from 8th and Sacramento Streets to Clarksburg. The Clarksburg Branch Line Trail (CBLT) would provide a new connection over the railroad to the Broderick Neighborhood and Washington District.

Just before Sacramento Avenue begins to curve southwest of California Street, the right-of-way is more constrained than any other corridor location, predominantly due to the railway right-of-way to the south. A two-foot concrete buffer replaces the landscaped buffer proposed along other segments to accommodate the narrowing roadway. The thinner buffer allows for maintaining appropriate sidewalk, vehicle and bike lane widths while still providing physical separation between the vehicles and active users. Due to the constraints, the sidewalk and bike lanes narrow to five feet, while the vehicle lanes narrow to 10 feet.

EASTERN AREA - SEGMENT 6
CALIFORNIA ST TO 2ND ST



Sidewalks and Class IV bikeways separated from vehicle traffic by a landscaped buffer are proposed to extend to 5th and C Streets, where the improvements recommended in this Plan intersect with several planned transportation projects.

The 5th Street Road Diet project includes planned Class II bike lanes and conflict markings with green paint from the northbound approach to the intersection of C and 5th Streets to the southbound approach to 5th Street and Fountain Dr. The Plan recommends upgrading the Class II green bike lanes on the north and southbound approaches to the 5th and C Street intersection to separated bike lanes to connect to the proposed protected intersection concept.

5TH STREET ROAD DIET PLANNED IMPROVEMENTS

219-221 5TH ST RESIDENTIAL DEVELOPMENT & 422 C ST MARKET CAFE REDEVELOPMENT

Construction of an 18-unit, three story mutlifamily project began in October 2023. Construction is expected to be completed at the end of 2024.

Planned redevelopment of the existing aluminum building to create a market-café.The project will include substantial renovations to the existing building including build-out of a full restaurant kitchen, bar and indoor seating area, and improvements to the parking area including a potential outdoor bar and seating along 5th and C Streets.

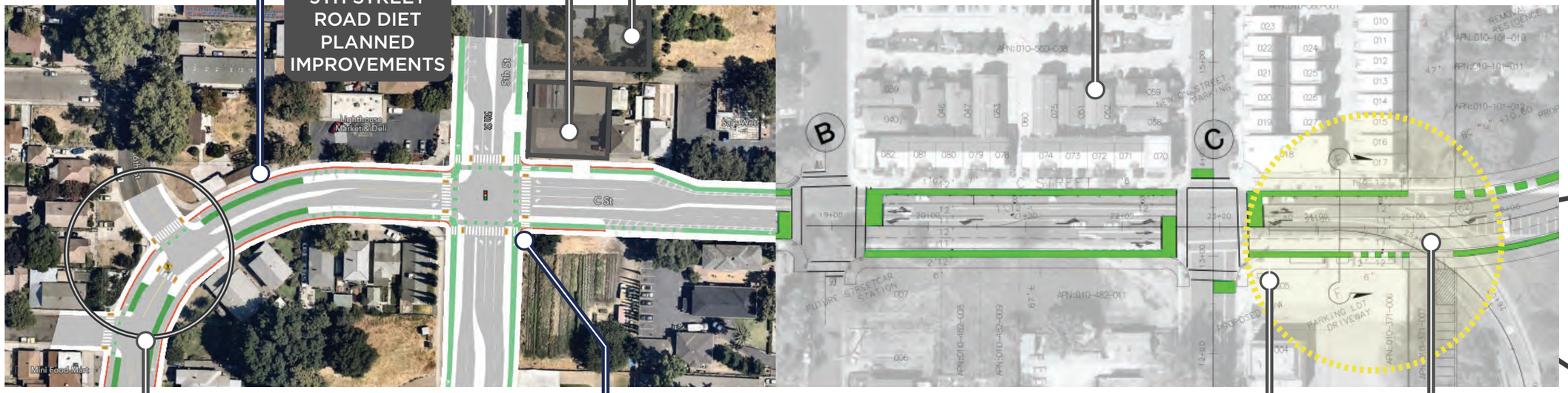
C STREET PLANNED IMPROVEMENTS

The C Street planned improvements include transportation facility upgrades from the eastbound approach to the intersection of 5th and C Streets to the connections with the future I Street bridge realignment and bicycle and pedestrian only bridge proposed at the east end of the corridor. Improvements include bicycle boxes at intersection approaches, green bike lanes in the eastbound direction, and parking protected bike lanes in the westbound directionbetween 4th and 3rd Streets, as well as roadway widening and restriping.

The I Street Bridge Replacement Project will include the construction of a new bridge north of the existing I Street bridge, which will connect to the Sacramento Railyards. In the future, a new bicycle and pedestrian-only bridge will replace the existing I Street bridge alignment, as shown in the graphic on the bottom right side of the page.

I STREET BRIDGE REALIGNMENT

FUTURE BICYCLE & PEDESTRIAN-ONLY BRIDGE



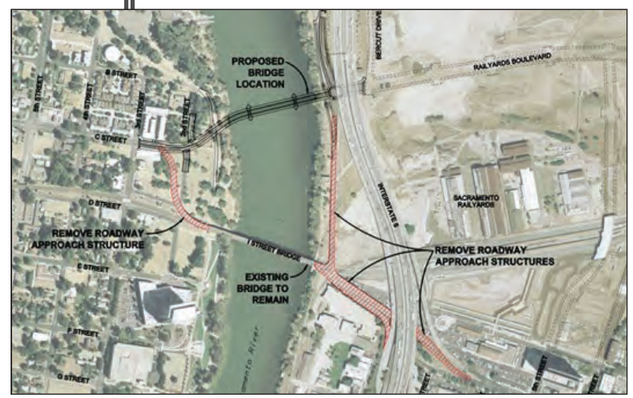
6TH STREET HSIP PROJECT: CURB EXTENSIONS

The City has received HSIP funding to implement high visibility crosswalk markings and RRFB across Sacramento Avenue, as well as a high visibility crosswalk across 6th Street. Due to the at-grade sidewalk level bike lane recommended in the Plan, the curb extension will need to be redesigned and reconstructed. This Plan also recommends adding cross-bike markings across 6th Street to increase motorist visibility of active users and facilitate safe and comfortable connection between proposed facilities on either side.

The protected intersection at 5th and C Streets is intended to improve safety and reduce conflicts between motorists and active users, by providing dedicated and clearly marked space for bikes, pedestrians and cars. Concrete separation between the bikeway and vehicle lane prevents drivers from merging into the bicycle lane to turn and makings bicyclists more visible to drivers making right turns. Corner islands reduce vehicular turning radii and turning speeds and creates a bike queue area after the crosswalk, where bikes can wait to cross the intersection. The space between the vehicle lane and the crossbike creates a motorist waiting zone where vehicles can wait before turning across the bike's path of travel, as well as while through-traffic passes, alleviating pressure to turn quickly. Pedestrian islands reduces crossing distances for pedestrians, resulting in shorter, safer crossings for people walking. Green conflict markings support protected intersections by increasing visibility of bicyclists for turning vehicles.

The mobility hub identified in the MAP provides multimodal mobility, placemaking and green space opportunities.

The eastern area, or segment 6 of the corridor, is at the intersection of several transformational projects planned by the City of West Sacramento and partner agencies, which are at various stages of the planning process. Overall, the improvements proposed by the Plan seek to maintain consistency with previously planned improvements, while recognizing opportunities for more green space, sustainability and community streetscape enhancements and to further improve multimodal recommendations and as each of the projects concurrently progress. The Plan recommends some improvements and/or upgrades to planned projects as proposed in this area, as described in the call outs on this page.



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7 Evaluation

This chapter presents an evaluation of the proposed improvement concept. Using the guidance from the Caltrans Corridor Planning Process Guide (February 2020), including the Smart Mobility Framework, proposed improvement concepts were analyzed to ensure a holistic improvement concept that maximizes future implementation and funding opportunities through competitive grant programs.

Analyses conducted as part of the existing conditions assessment were repeated for the proposed improvement scenario to assess the expected benefits associated with various metrics. Calculated benefits include recommendations proposed by the City's HSIP project in addition to countermeasures recommended by this Plan.

Evaluations included in this chapter include:

- Safety Improvement & Gap Closure
- Improvement in Bicycle Level of Traffic Stress (LTS) & Neighborhood Connectivity
- Intersection Level of Service (LOS)
- Benefit to Disadvantaged Communities
- Community Support
- Benefit-cost of the corridor concept

Safety & Gap Closure Benefits

Safety Benefits

Jurisdictions should take a safe systems approach when implementing infrastructure improvements intended to improve safety on their roadways. A safe systems approach to roadway design focuses on minimizing the risk of fatality or injury for all road users while considering the possibility and likelihood of human error that often cause collisions, examining likely collision types and severity, and emphasizing the importance of considering the safety of vulnerable road users. A component of this approach is anticipating future safety challenges before they occur based on evaluation of recent historical collision data and known safety countermeasures proven to reduce the likelihood of future collisions. This type of forward thinking about improving safety is vital to ensuring jurisdictions have the best chance at proactively managing future crashes.

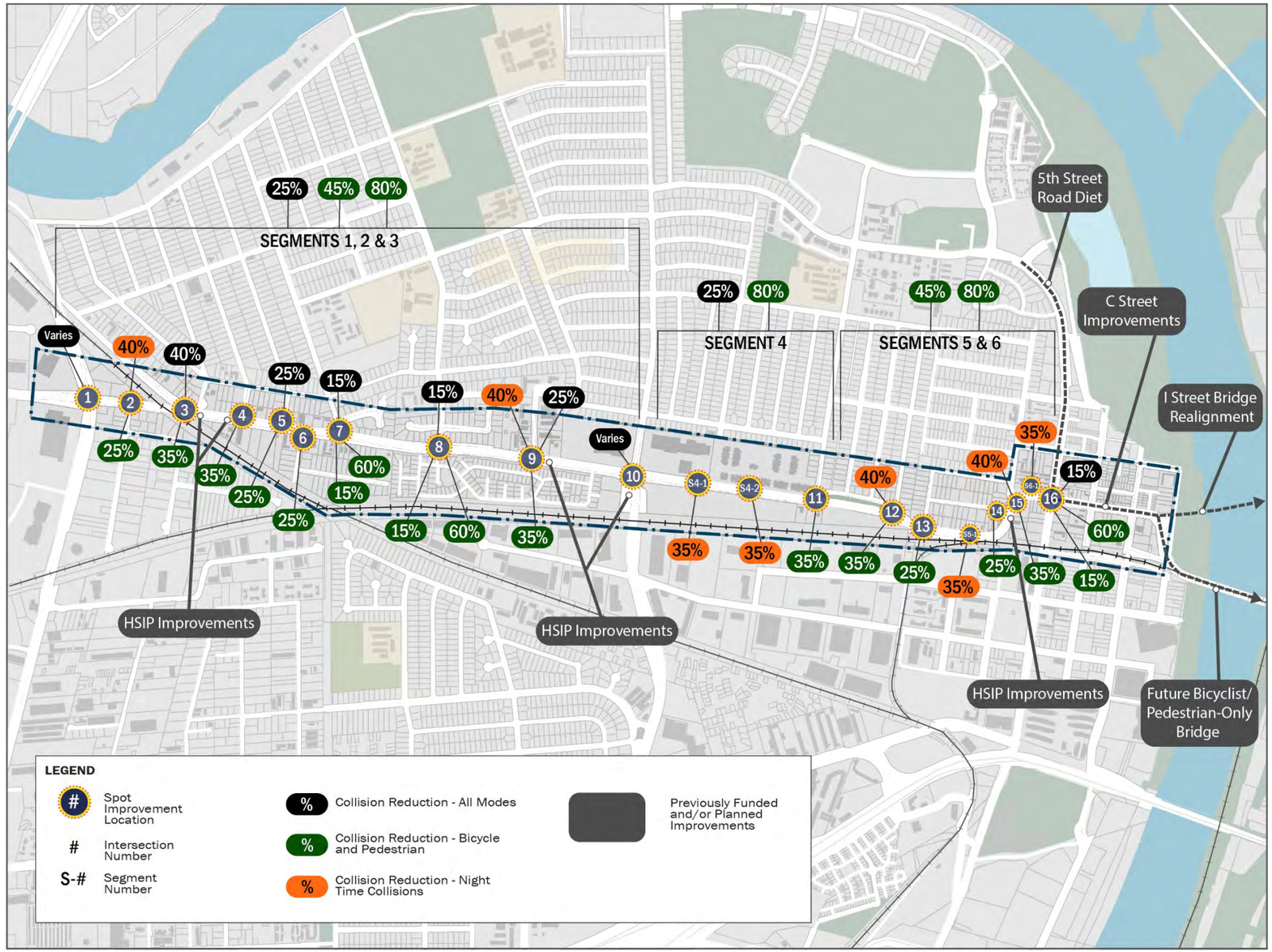
Figure 36 shows the crash reduction factors (CRF) associated with improvements proposed along the corridor, at intersections and along segments. CRFs estimate the potential of a safety improvement to reduce crash rates. CRFs can apply to all crashes, only bicycle and pedestrian crashes, or other specific conditions such as time of day.

Table 11 shows, by intersection and segment location, the safety improvements (or countermeasures) associated with the crash reduction factors shown in Figure 36. Additional detail on how safety improvements were calculated is provided in the Benefit-Cost Analysis section.

Table 11 Safety Improvements

Improvement Type	Location #
Convert Signalized Intersection to Roundabout	1, 10
Install High Visibility Crosswalk and Cross-Bike Markings	2, 5, 6, 13, 14
Install High Visibility Crosswalk Markings, Median Refuge Island and RRFBs	3, 4, 9, 11, 12, 15, S4-1, S4-2
Improve Retroreflective Back Plates on Signal Hardware, Implement Leading Pedestrian Interval & Upgrade Crossings	7, 8, 16
Install Class IV Separated Bikeways	S1, S2, S3, S4, S5
Install Sidewalk	S1, S2, S3, S4, S5
Install Class I Shared-Use Path	S5
Install Buffered Bike Lanes	S5
Install Segment Lighting	S5

Figure 36 Safety Countermeasure Reduction Factors



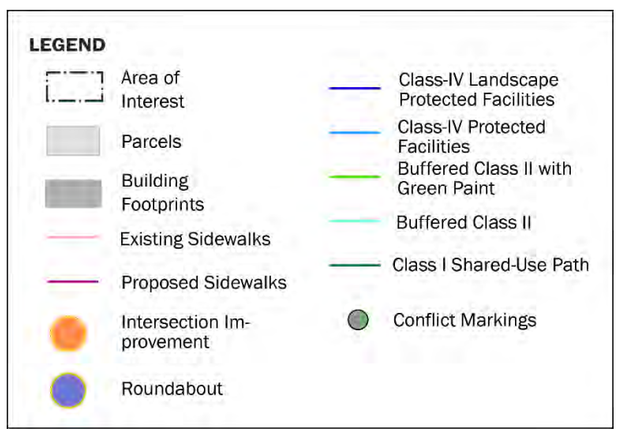
Gap and Barrier Closure Benefits

From top to bottom, the figures to the right show sidewalk gap closures, as well as crossing improvements and recommended bicycle facilities, which will close gaps and address high stress barriers to connectivity.

Sidewalks are recommended throughout the corridor where gaps in the sidewalk network currently exist. Six-foot sidewalks are recommended west of Kegle Drive and East of 8th Street. Eight-foot sidewalks are proposed between Kegle Drive and 8th Street, in addition to a recommended 14-foot Class I facility through Elkhorn Plaza to provide a parklike feel for which the community voiced support.

Pedestrian crossing improvements are recommended along most Sacramento Avenue crossings, which will result in LTS 1 crossing opportunities. Crossing improvements include one-through four-way high visibility crossings, pedestrian refuge islands, and RRFBs. The proposed recommendations shorten crossing distance, increase pedestrian visibility, and make walking and bicycling along and across Sacramento Avenue safer and more comfortable.

Protected bicycle facilities are prioritized throughout the corridor. Eight-foot Class IV bikeways with an 8-foot landscape buffer are proposed between Harbor Boulevard and Kegle Drive. Six-foot elevated Class IV bikeways with a buffer between the sidewalk are proposed between Kegle Drive and 6th Street. The bicycle facility is effectively a Class I facility shared with pedestrians, but the delineated bicycle markings, as well as the separation between pedestrian and bicycle traffic, reduces conflict between people walking and bicycling. The Class I shared use path proposed along Elkhorn Plaza is open for bicycle travel, but an on-street, 6-foot buffered Class II is also recommended along this segment for commuters.



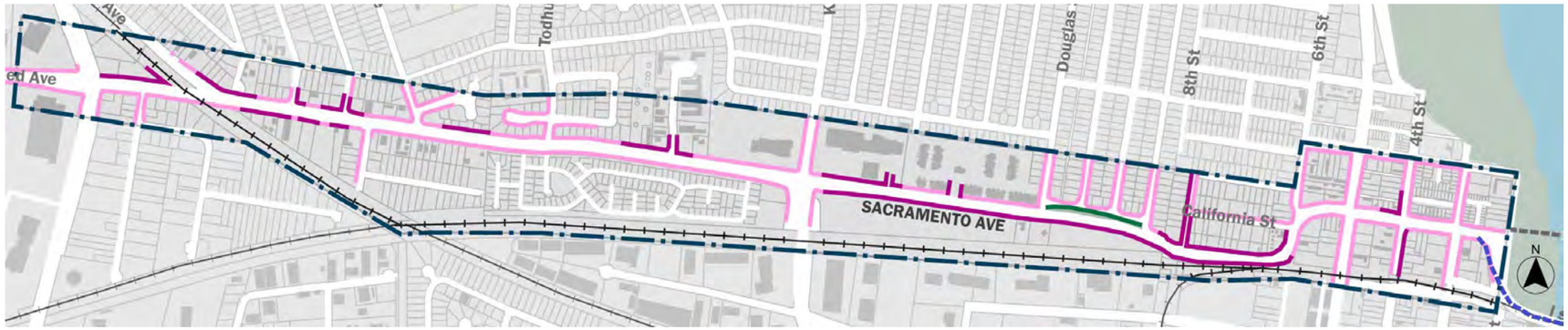


Figure 37 Sidewalk Gap Closure

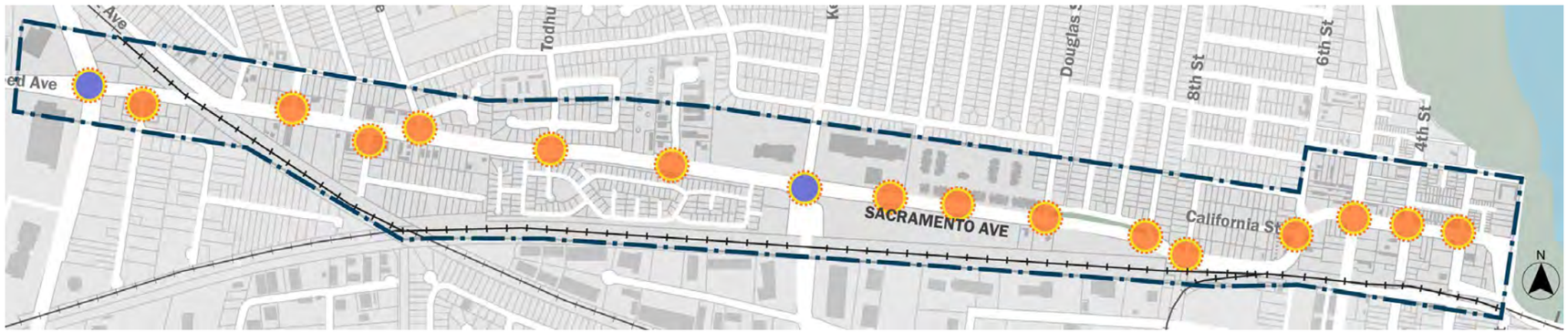


Figure 38 Intersection Crossing Improvements

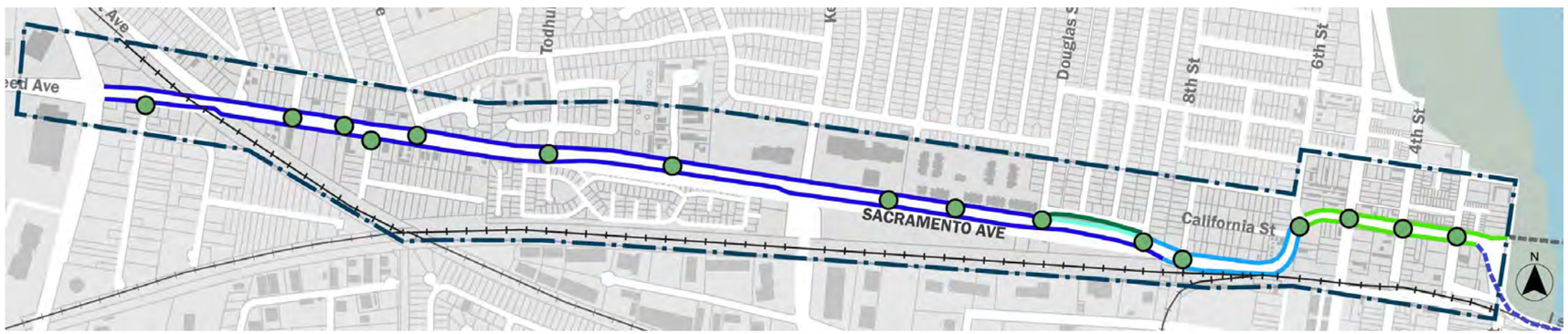


Figure 39 Bicycle Improvements

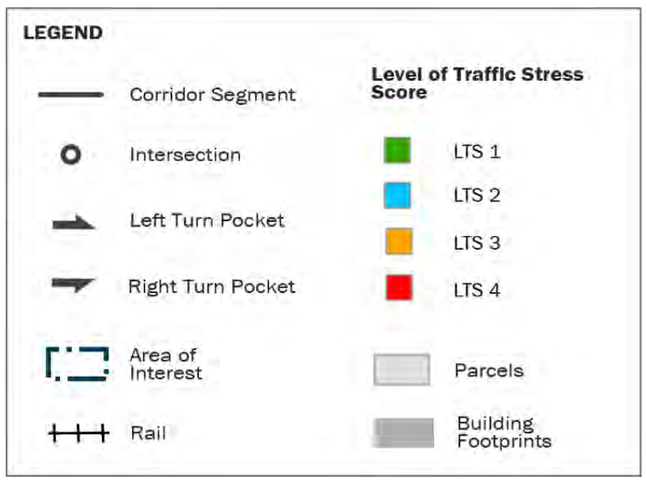
Level of Traffic Stress & Connectivity Benefit

The figures to the right show the bicycle level of traffic stress (LTS) expected following implementation of the proposed improvement concept presented in Chapter 3 of the Draft Plan. For more information on the LTS methodology, see Chapter 3 of the Draft Plan.

As shown, the improved condition provides low-stress connectivity throughout the corridor where high stress segments, approaches and crossings created barriers to connectivity in the existing condition.

LTS on corridor segments improves to LTS 1 following implementation of Class IV separated bikeways, or cycle tracks along the entirety of the corridor and a Class I shared-use path through Elkhorn Plaza. The cycle tracks are separated from vehicular traffic with a combination of landscaped and stamped concrete treatments. Additionally, the cycle tracks are a raised concept, placing bicyclists at sidewalk-level.

Left-turn lane approaches that were previously LTS 3 or 4 are addressed by installing new two-stage turn maneuvers at multiple intersections, where bicyclists are directed to cross at enhanced crossing locations instead of at left-turn pocket locations. Right-turn pockets at Harbor Blvd, and Jefferson Boulevard / Kegle Drive are addressed by the separated bicycle and pedestrian ramps proposed as part of the roundabout concepts at the two locations. A protected intersection concept at 5th and C Street improves LTS of both left- and right-turn approaches and the intersection crossing.



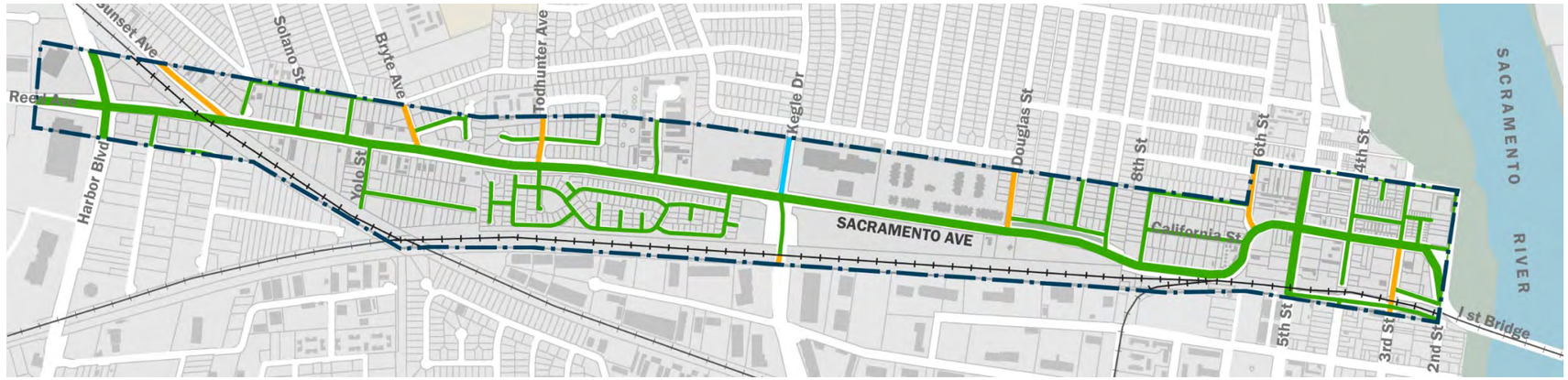


Figure 40 Improved Segment LTS



Figure 41 Improved Approach LTS



Figure 42 Improved Crossing LTS

Vehicular Benefit

Figure 43 shows the expected intersection Level of Service (LOS) (based on vehicular delay) in the future condition without the improvements proposed in the Plan, while Figure 44 shows the expected LOS in the future condition following the implementation of the proposed improvements presented in Chapter 6. For more information on LOS thresholds, see Chapter 3. Future traffic conditions were estimated by using an average growth factor for the corridor derived in coordination with the City to be consistent with anticipated General Plan buildout and regional growth.

As shown in Figure 43, the vehicular LOS in the future condition will be degraded in the PM peak hour at the intersections of Sacramento Avenue with Solano Street and Jefferson Boulevard / Kegle Drive, at LOS F and LOS E, respectively. It should be noted that the City's General Plan sets a threshold for acceptable vehicular operations at LOS E. However, the intersection of Jefferson Boulevard / Kegle Drive will also experience queue spillbacks that contribute to poor air quality and driveway blockages.

As shown in Figure 44, following implementation of corridor improvements, LOS during both peak hours is anticipated to improve with implementation of the proposed roundabout intersections. The roundabouts proposed at the Harbor Boulevard and Jefferson Boulevard intersections will decrease vehicular delays, reducing corridor travel times and reducing emissions from traffic congestion and queues. The vehicular delays seen in the future condition without the proposed roundabout at the Jefferson Boulevard intersection would otherwise require intersection widening to accommodate future traffic at a similar level of performance for all users. Intersection widening along the corridor would conflict with the competing goals of this plan, which include reducing barriers to multimodal connectivity.

No improvements are recommended to address the LOS F condition during the PM peak hour at the Solano Street intersection. While this intersection could be signalized to address the anticipated LOS deficiency, this side-stop-controlled intersection is not expected to meet peak hour signal warrants for signalization. A receiving outbound two-stage left turn lane would also help address operations but would conflict with the proposed installation of a mid-block crossing and RRFB through the HSIP funded project at this location. This intersection should be monitored as area traffic redistributes following implementation of the proposed HSIP-funded turn channelization and restrictions at Sunset Avenue. As conditions warrant, the City may consider options to address operational concerns through signalization, left turn access control, or other turn restrictions. Alternatively, the City may choose to seek City Council approval for an LOS threshold exemption at this location to accommodate the complete street improvements.

The intersection of Sacramento Avenue and 5th Street is anticipated to degrade from an LOS C to an LOS D condition during the PM peak hour with the implementation of the proposed protected intersection, which removes turn channelization on some movements in exchange for reduced crossing distances and reduced levels of traffic stress for pedestrians and cyclists. LOS D conditions are considered acceptable per City standards during peak hours.

Figure 43 Future Intersection LOS without Project Improvements

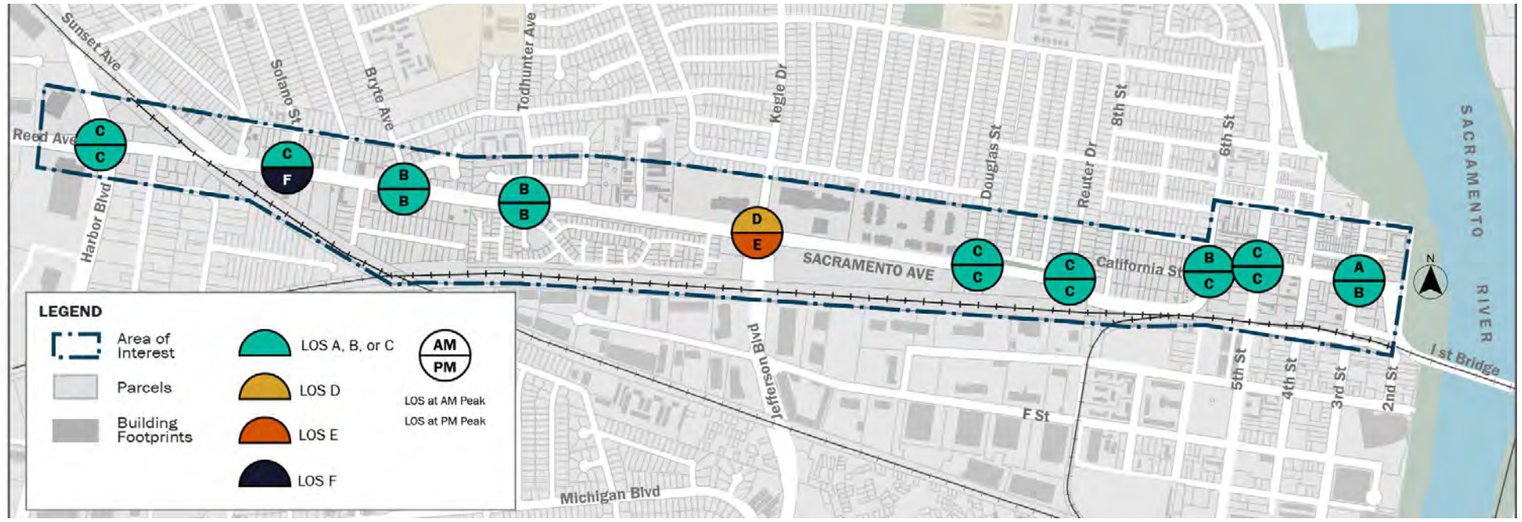
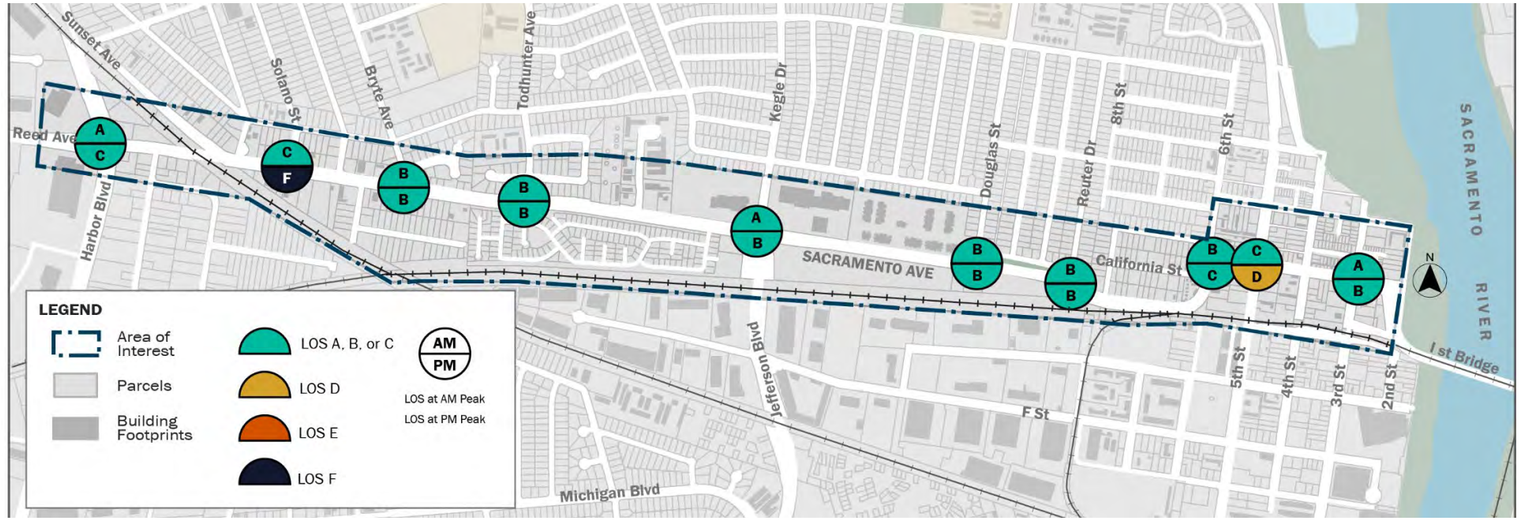


Figure 44 Future Intersection LOS with Project Improvements



Disadvantaged Community Benefit

Disadvantaged community (DAC) status can be measured based on a variety of criteria at the U.S. Census Tract level. The DAC status criteria examined in this Plan are consistent with the California Transportation Commission (CTC) 2023 Active Transportation Program Guidelines (Cycle 6) for identifying disadvantaged community status. While not an exhaustive list, the DAC criteria analyzed in this Plan include the following

- Median Household Income (MHI)
- CalEnviroScreen 4.0
- SACOG Environmental Justice Areas (Regional Definition)

The DAC analysis included in the Plan was completed prior to the official release of the 2025 Active Transportation Program (Cycle 7). Thus, Cycle 6 criteria were used. As the City seeks grant application funding to implement the improvements proposed in the Plan, the DAC analysis should be updated to reflect the most current program criteria, as appropriate.

As shown in Chapter 4: Existing Conditions, the entirety of the corridor area of interest is identified as a disadvantaged community based on one or more of the criteria listed above. The proposed corridor improvements would serve these disadvantaged populations by providing vital connectivity between existing and future local destinations to the north, south and along the corridor.

Grant funding applications for the Active Transportation Program assess DAC status based on project location and severity of the disadvantage. Project location assesses whether the project is located partially or fully within a DAC, while severity assesses the level of disadvantage per the criteria established by CTC Cycle 6 guidelines. As described in the Cycle 6 guidelines, a one through four points scale is ascribed based on the severity of the DAC.

This criterion for determining DAC severity is described in further detail below for each of the measures of DAC included in the Plan. The DAC severity criteria for the Census Tracts along the corridor are also described by segment below.

Severity Criteria

Median Household Income

Communities located within Census Tracts with a MHI of less than 80 percent of the statewide median, or less than $60,188.00 is considered disadvantaged.[12] The number of points awarded for each level of severity is described below.

- 0 points: greater than 80 percent of the MHI, or greater than $60,188.00
- 1 point: between 75 percent and less than 80 percent of MHI, or between $56,426.25 and $60,188.00
- 2 points: between 70 percent and less than 75 percent of MHI, or between $52,664.50 through $56,426.24
- 3 points: between 65 percent and less than 70 percent of MHI, or between $48,902.75 through $52,664.49
- 4 points: less than 65 percent of MHI, or less than $48,902.75

CalEnviroScreen 4.0

CalEnviroScreen (CES) 4.0 results are reported on a scale of 0 to 100, with 90th percentile being the most disadvantaged and the 10th percentile being the least disadvantaged. In order to be considered disadvantaged based on CalEnviroScreen results under the Active Transportation Program Cycle 6 guidelines, a Census tract must be within the top 25 percent disadvantaged. The number of points awarded for each level of severity is described below.

12 Based on data U.S. Census Data Table B19013, 2015-2019 American Community Survey (ACS) 5-Year estimates. Statewide median income for this vintage is $75,235.

- 0 points: above 25 percent most disadvantaged, or a CES score percentile of less than 75.
- 1 point: between 20 percent and 25 percent most disadvantaged, or a CES score percentile of between 75 and 80.
- 2 points: between 15 percent through less than 20 percent disadvantaged, or a CES score percentile of between 80 and 85.
- 3 points: between 10 percent and less than 15 percent most disadvantaged, or a CES score percentile of between 85 and 90.
- 4 points: less than 10 percent most disadvantaged, or a CES score percentile of between 90 and 100.

Regional Definition

If there is a regionally-adopted DAC definition, this can be used to assess DAC status. SACOG has a regional definition called Environmental Justice Areas, which considers a variety of factors such as: income status, minority status, DAC status identified by CES 3.0, as well as other vulnerabilities. A regional definition is ascribed zero or one points based on whether or not the community qualifies under that definition or not.

Table 12 DAC Severity by Segment

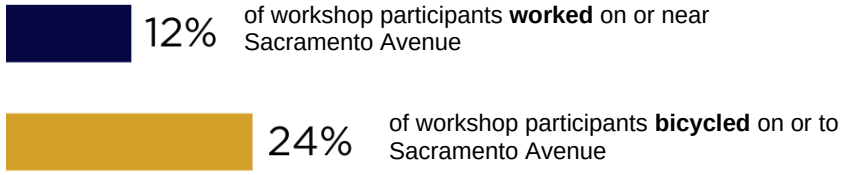
Segment Location	DAC Category		
	MHI	CES 4.0	Regional Definition
Segment 1	1 Point	4 Points	1 point
Segment 2	1 Point	4 Points	1 point
Segment 3	1 Point	4 Points	1 point
Segment 4	4 Points	3 points	1 point
Segment 5	4 Points	3 points	1 point
Segment 6	4 Points	3 points	1 point

DAC Severity by Segment

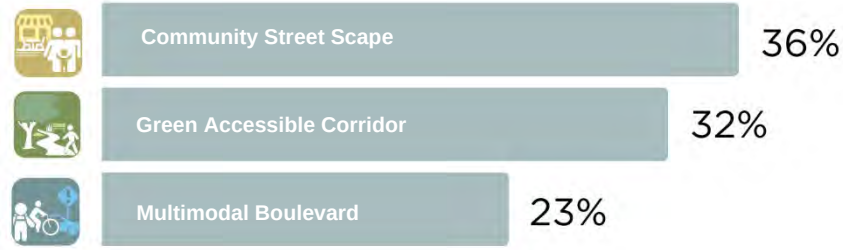
Table 12 shows the number of points a project in each segment would receive based on severity using the DAC criteria included in the Plan, per the 2023 Active Transportation Program Guidelines. As shown, assessing DAC severity based on MHI alone shows Segments four, five and six as the highest severity of disadvantage along the corridor, while segments one, two and three are somewhat disadvantaged based on income alone. When assessing DAC severity based on CES 4.0 results, segments one, two and three show the highest severity of disadvantage, followed by segments four, five and six, which are slightly less disadvantaged based on the CES results. The regional definition shows all six segments as disadvantaged, but the number of points received using this definition is lower.

Community Support

At Workshop 1, a significant portion of participants indicated that they worked on Sacramento Avenue or used the Corridor to get to work (12 percent). A fourth of participants indicated that bicycling was their primary mode of transportation along or to and from the corridor.

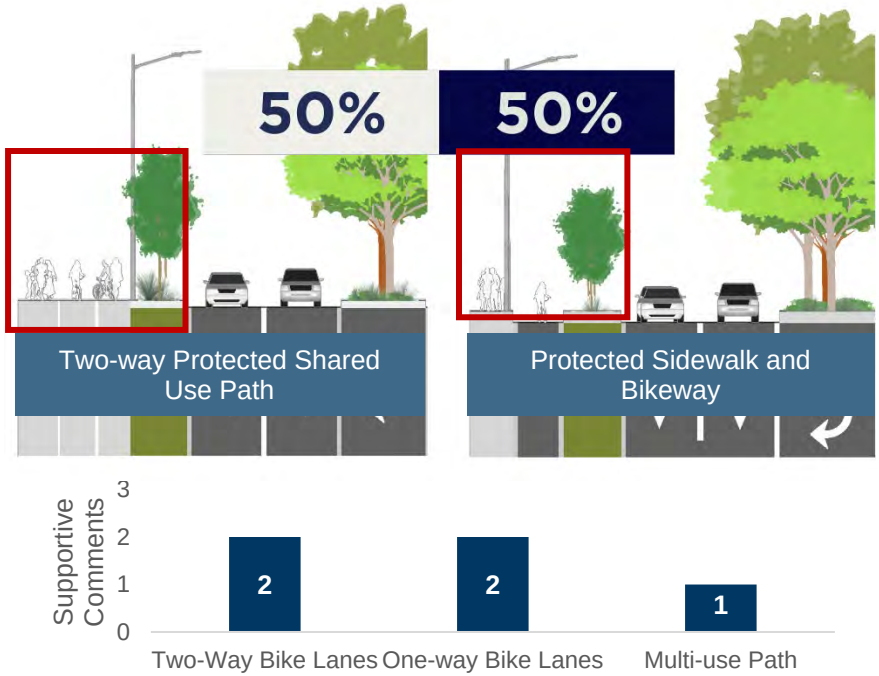


Attendees of the workshop were also asked what vision they wanted to prioritize for the corridor, with participants showing interest in a community streetscape (pedestrian amenities, greenspace, wayfinding) a green accessible corridor (green infrastructure, multi-use paths, access to recreation), and a multimodal boulevard (micro-mobility, electric vehicle charging, multi-use facilities).



At the second Workshop 2, attendees were presented with a variety of pedestrian and bicycle design options along the corridor. Between Harbor Boulevard and Jefferson Boulevard/Kegle Drive, participants indicated equal interest both a shared use path where bicyclists and pedestrians would share the space, and a protected sidewalk and bikeway where the pedestrian and bicycle paths were distinguished from one another.

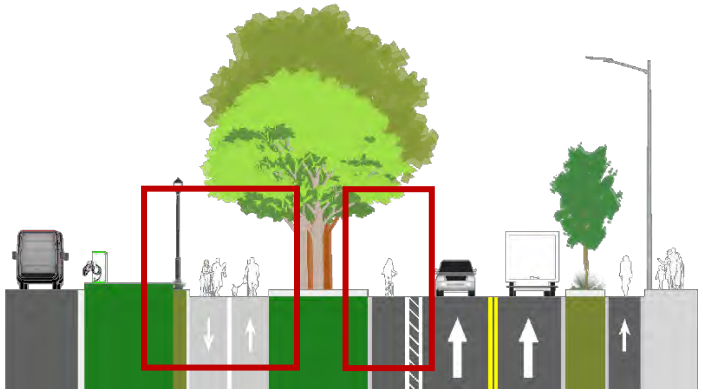
Attendees were asked what additional facilities should be included in the Plan, and respondents favored two-way and one-way bicycle lanes. Participants also indicated an interest in an accessible green corridor that prioritizes tree coverage and green infrastructure, off street paths, and connections to riverfront trails.



With a strong interest in an improved pedestrian experience as well as an emphasis on bicycling and commuting, it was important to prioritize a network that addresses the needs of different road users. A separated, elevated cycle track with improved landscaping allows for commuters, families, and recreators to all enjoy Sacramento Avenue at their own pace, reduce conflict between road users and provide a park-like feel the community has prioritized throughout the engagement process. To address access to recreational facilities, a two-way,

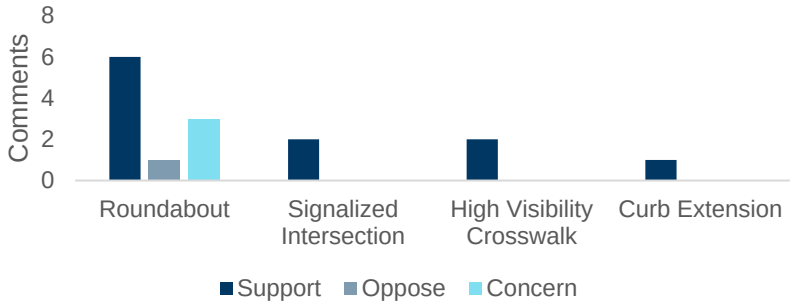
elevated cycle track is recommended between Solano Street and Bryte Street to connect users to a future recreational trail.

To further prioritize community interest in a green corridor, the Plan proposes to elevate the existing green space at Elkhorn Plaza by recommending a bidirectional shared-use path, on-street buffered bicycle facilities, electric vehicle charging and improved crossings. Eight attendees indicated support for the design concept for Elkhorn Plaza design. The concept continues to create space for commuters through the buffered Class II bicycle pathway while adding a shared-use path the community voiced support for.

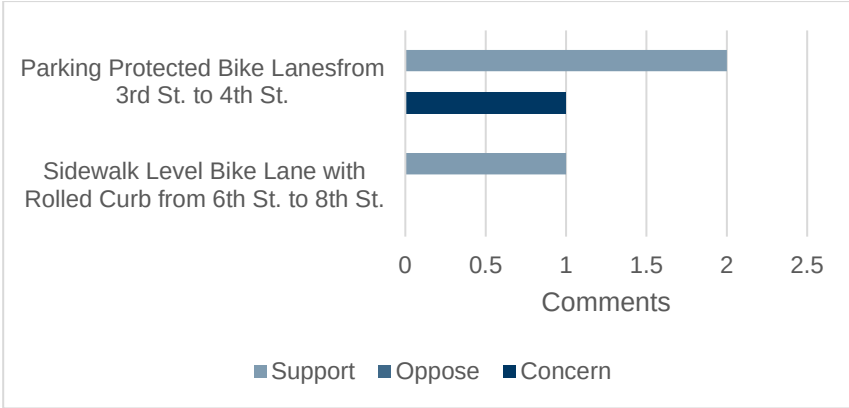


At Jefferson Boulevard/Kegle Drive, attendees voiced support for a roundabout, although they had concerns about emergency vehicle access, proper signage, and future increases in traffic volume. The roundabouts proposed will be mountable for emergency vehicles and large trucks. Signage directing all road users how to navigate the roundabout is recommended as well. Roundabouts are designed to mitigate queuing at intersections; as traffic volumes increase, the roundabout will relieve wait times and keep traffic flowing, while also prioritizing bicycle and pedestrian safety.

At C Street and 5th Street, one participant commented that pedestrian and bicycle traffic should be protected at the intersection. Attendees also showed support for high visibility crosswalks and curb extensions throughout the corridor.



The community has indicated support for protected bicycle facilities throughout the community engagement process. In some segments of Sacramento Avenue, the roadway is narrower and requires alternatives to the landscaped buffers recommend throughout the rest of the corridor. Sidewalk level bike lanes with rolled curbs received support from the community, shown below, as well as parking protected bicycle lanes.



Benefit-Cost Analysis

In addition to the benefits discussed in previous sections, benefits that could be translated to a monetized value were also analyzed to complete a benefit-cost assessment. Many grant funding programs either require a benefit-cost assessment, or the grant application is seen as more competitive when a return on investment can be shown vis-à-vis a benefit-cost analysis.

The benefits expected to result from the recommended improvement concept are estimated based on various methodologies described in additional detail in this section. Benefits described here were monetized based on the societal cost information presented in the Caltrans 2020 Economic Parameters.

All project benefits are reported in annualized and projected 20-Year life cycle costs. To identify a benefit-cost ratio, the monetized benefits are divided by planning-level costs, reported in 2023 dollars. The benefit-cost ratio reflects a return-on-investment (ROI), which is important to consider when assessing project selection in competitive grant funding programs.

Improvement Costs

The cost estimates for the proposed corridor improvements are shown below by segment and the corridor as a whole. As shown in Table 13, the entire corridor is estimated to have a total cost of almost $57 million.

There are several projects along the Sacramento Avenue corridor that are already planned and programmed for funding by the City of West Sacramento. These projects include HSIP improvements at several intersections along the corridor, and the 5th Street Road Diet & C Street Improvements. HSIP projects are planned at the intersections of Sacramento Avenue with Sunset Avenue, Solano Street, and Simon Terrace, as well as C Street / 6th Street. The 5th Street Road Diet project extends north from C Street / 5th Street to Lighthouse Dr, while the C Street Improvements include recommendations east of C Street / 6th Street to the eastern end of the corridor study area. Costs associated with improvements recommended above may overlap with the costs associated with this Plan. Additional information on the overlap between previously planned projects and the improvement concepts recommended in this Plan can be found in Chapter 6: Improvement Concepts.

Detailed cost estimates are provided in the Appendix. Note that the Improvement costs presented in Table 13 do not include the utility undergrounding costs that are included in the detailed cost estimates provided in the Appendix. The utility undergrounding costs were not included for the purposes of the benefit-cost assessment, because this does not directly relate to benefits of complete street improvements, the improvements do not necessitate utility undergrounding, and the degree to which the City would be responsible for undergrounding is not entirely clear at this stage of the planning process.

Table 13 Improvement Costs

Corridor Location	Cost Estimate
Segment 1	$14,438,000
Segment 2	$9,231,000
Segment 3	$18,960,000
Segment 4	$4,735,000
Segment 5	$4,770,000
Segment 6	$4,772,000
Entire Corridor	$56,906,000

Estimated Bicycle Benefits

Based on research cited in the National Cooperative Highway Research Program (NCHRP) Report 552, *Guidelines for Analysis of Investment in Bicycle Facilities,* bicycle facilities proposed in the Plan may result in induced bicycling demand for new facilities among both existing and new bicyclists. The NCHRP 552 methodology describes an approach for estimating the induced demand associated with a given bicycle facility and translates the demand to the monetized benefit categories described below.

- **Mobility Benefits** represent the time cost associated with a shift to a new bicycle facility based on the time bicycle commuters are willing to spend to access an improved facility.
- **Health Benefits** represent the annual per-capita health cost savings from physical activity benefits associated with a new bicycle facility.
- **Recreation Benefits** represent the time cost that new bicyclists induced by a new bicycle facility are willing to spend on a typical recreation day.
- **Decreased Auto Use Benefits** represent the user cost savings associated with reduced congestion and air pollution.

This analysis quantifies the induced bicycling demand expected to be associated with the proposed improvements and monetizes the annualized mobility, health, recreation and decreased auto use benefits provided by the projected induced bicycling demand at high, moderate, and low estimates based on Census population and commuter pattern data and average bicycling trip length estimates from 2021 Replica data. The methodology is based on several assumptions:

- Existing bicyclists near a new facility will shift from the existing nearby facility to the new facility.
- The new facility will result in an induced number of bicyclists as a function of the number of existing bicyclists, relative to the attractiveness of the proposed facility (i.e., Class I shared-use path vs. Class II bicycle lanes).
- People are more likely to ride a bicycle if they live within 1.5 miles of a facility than if they live outside that distance.

The NCHRP 552 methodology suggests that existing bicycle commute mode share can be utilized to estimate the number of existing and future bicycle ridership based on low, moderate, and high likelihood multipliers and the population within 1.5-mile, 1-mile, and 0.5-mile buffers that surround a given bicycle facility. According to the NCHRP 522 research, the total rate of adult bicycling ranges from a low estimate, based on the Census bicycling commute mode share, to a high estimate, based on 0.6 percent plus three times the Census commute share.[13]

Moreover, the highest likelihood of a member of the population using the facility exists if they live within a 0.5-mile buffer around the facility. Thus, demand is calculated at low, medium, and high estimates for the populations at each buffer distance. Each buffer area—at 0.5-, 1- and 1.5-mile distances from a proposed bicycle improvement is created using a network-based analysis in a GIS environment.

Based on the high-estimate likelihood multiplier, it is estimated that new bicycling trips induced by the improvements along Sacramento Avenue could include roughly 35,000 commute trips, almost 220,000 adult non-commute trips, and almost 5,000 trips by children annually. The annual monetized benefits, as well as the 20-year life cycle benefits associated with induced bicycling demand is shown in Table 14.

Of the overall corridor bicycle benefits, approximately 20 percent is associated with Segment 3, while the remaining segments account for between 14 to 18 percent of the overall benefits.

[13] *U.S. Census Bicycle Commute Mode Share Estimates, American Community Survey (ACS) 2021 5-Year Estimates, Table S0801 Commuting Characteristics By Sex*

Table 14 Induced Bicycling Demand Benefits

Annual Bicycle Facility Benefits	Annualized Monetized Benefits	20 -Year Benefits
Mobility Benefits		
Separated Bikeway	$560,457	$8,338,181
On-Street Bike Lane	$124,289	$1,849,112
Health Benefits		
High Estimate	$77,581	$1,154,210
Moderate Estimate	$40,406	$601,144
Low Estimate	$39,299	$584,664
Recreation Benefits		
High Estimate	$1,944,826	$28,934,101
Moderate Estimate	$884,765	$13,163,072
Low Estimate	$853,178	$12,693,130
Decreased Auto Use Benefit	$12,802	$190,465
Total Annual Benefits		
High Estimate	*$2,719,955*	*$40,466,069*
Moderate Estimate	*$1,622,720*	*$24,141,974*
Low Estimate	*$1,590,025*	*$23,655,552*

Estimated Safety Benefits

Safety benefits associated with the improvements proposed by the Plan were estimated by calculating the expected reduction in collisions associated with improvements proposed along the corridor at locations with a history of collisions, using the methodology described in the Highway Safety Manual, 1st Edition (AASHTO 2010). Crash modification factors (CMFs) from the California Local Roadway Safety Manual (LRSM) (version 1.6, April 2022) were utilized to estimate reduction in collisions. Because the LRSM states the CMF associated with converting an intersection to a roundabout varies, the Highway Safety Improvement Program (HSIP) Analyzer published by Caltrans was used to estimate benefits for the two proposed roundabout locations. The following countermeasures from the LRSM were applied along the corridor:

Non-Signalized Intersections

- NS01: Add intersection lighting
- NS13: Install splitter-islands on the minor road approaches
- NS14: Install raised median on approaches
- NS20PB: Install pedestrian crossing at uncontrolled locations (signs and markings only)
- NS21PB: Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)

Signalized Intersections

- S02: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number
- S16: Convert intersection to roundabout (from signal)
- S20PB: Install advance stop bar before crosswalk (Bicycle Box)
- S21PB: Modify signal phasing to implement a Leading Pedestrian Interval (LPI)

Roadway Segments

- R01: Add Segment Lighting
- R08: Install raised median
- R33PB: Install Separated Bike Lanes
- R34PB: Install sidewalk/pathway (to avoid walking along roadway)

Because collision reduction and safety benefits can be calculated only where there is a history of collisions, some corridor locations did not result in a safety benefit and are not included here. Table 15 summarizes the applied countermeasures by corridor location that resulted in a monetized safety benefit at intersections and along segments, respectively. The total crashes, per location, and resulting monetized safety benefit are presented in Table 16 and for intersections and roadway segments. The safety benefit is presented in 20-year life-cycle benefit amounts.

Table 15 Safety Countermeasures Resulting in Benefit

Corridor Location	Countermeasure 1	2	3
Intersections			
Harbor Blvd/Reed Ave	S16	-	-
Oak St	NS01	NS20PB	-
Sunset Ave	NS13	-	-
Solano Street	NS14	-	-
Yolo St (North Leg)	NS20PB	-	-
Bryte Ave	S02	S20PB	S21PB
Todhunter Ave	S02	S20PB	S21PB
Simon Terrace	NS01	NS14	NS21PB
Jefferson Blvd / Kegle Dr	S16	-	-
Douglas St	NS21PB	-	-
Rueter Dr	NS01	-	-
6th St / C St	NS01	NS21PB	-
5th St / C St	S02	S20PB	S21PB
Segments			
Harbor Blvd to Solano St	R08	-	-
Solano St to Todhunter Ave	R08	-	-
Todhunter Ave to Jefferson Blvd /Kegle Dr	R08	R33PB	R34PB
Jefferson/Kegle Dr to Douglas St	R08	R33PB	R34PB
Douglas St to California St	R01	-	-
California St to 5th St & C St	R01	-	-

Table 16 Crash History & Safety Benefits

Corridor Location	Crashes (2017-21) All	P & B	Safety Benefit
Intersections			
Harbor Blvd/Reed Ave	32	-	$15,503,847
Oak St	3	1	$103,790
Sunset Ave	5	-	$472,800
Solano Street	8	-	$325,300
Yolo St (North Leg)	4	1	$5,588
Bryte Ave	10	2	$254,608
Todhunter Ave	11	3	$5,270,048
Simon Terrace	5	2	$594,600
Jefferson Blvd / Kegle Dr	39	2	$18,925,920
Douglas St	9	2	$447,720
Rueter Dr	7	-	$47,680
6th St / C St	8	1	$465,820
5th St / C St	15	2	$352,276
Total Safety Benefit			**$ 42,769,996**
Segments			
Harbor Blvd/Reed Ave	2	-	$29,800
Oak St	3	-	$120,700
Sunset Ave	6	2	$1,454,266
Solano Street	5	2	$1,496,178
Yolo St (North Leg)	2	-	$223,860
Bryte Ave	10	-	$41,720
Total Safety Benefit			**$ 3,366,524**

Estimated Operational Benefits

Vehicular operations benefits associated with the proposed plan were based on AM and PM peak hour delay at study intersections. The savings between the No Build (future conditions without project) and Build conditions (future conditions with project) were used to estimate benefits. The cost per person hour of delay was based on the following societal cost parameters in which the 2020 Caltrans Economic Parameters were used as a base and then grown by one percent per year to 2023:

- Automobile: $18.33 per hour per person
- Truck: $32.96 per hour per person
- A weighed average rate was calculated using the corridor's average two percent truck percentage:
- Blended: $18.08 per hour per person
- Benefits were calculated by converting average intersection delay per vehicle into hours of delay per person, assuming a vehicle occupancy rate of 1.15. Annualization was based on 260 working days. Benefits are summarized in Table 17 below.

Table 17 Operational Benefits

Scenario	Person Hours of Delay		
	No Build	Build	Savings
AM Peak	54	38	16
PM Peak	78	60	18
Combined Peak Hours	132	98	34
Annualized	34,275	25,430	8,845
Annual Benefit			**$159,961**
20-Year Benefit			**$2,379,813**

Estimated Air Quality / Emissions Benefits

Air quality and emissions benefits were calculated for the two proposed roundabouts and the proposed bicycle facilities separately. Emissions reduction benefits associated with the proposed roundabouts were calculated using outputs from Sidra traffic modelling software. The SB-1 Emissions Calculator, a component of the Cal-B/C Suite developed by Caltrans' Transportation Economic Branch, was used to calculate the benefits associated with the proposed bicycle facilities.

Study corridor travel speed inputs were generated from Sidra to inform the emissions calculator. Study corridor VMT was estimated using existing and future ADT by segment, multiplied by segment length. The VMT reductions associated with the proposed bicycle facilities were calculated using NCHRP 552 bicycle mode shift methodology described in the Bicycle Benefits section, which were applied to the "plus project" scenario.

Table 18 presents the reductions in emissions and benefit associated with the proposed plan's effect on VMT and travel delays along the corridor.

Table 18 Air Quality & Emissions Benefits

Emission	Emissions Reductions (in Short Tons)		Emissions Reduction Benefit Value	
	Annual	20-Years	Annual	20-Years
CO (Carbon Monoxide)	0.543	10.861	$35.76	$715.28
CO_2 (Carbon Dioxide)	375.331	7,506.629	$14,343.69	$286,873.77
NO_X (Nitrous Oxides)	0.246	4.919	$3,004.56	$60,091.30
PM_{10} and $PM_{2.5}$ (Particulate Matter)	0.006	0.126	$673.53	$13,470.53
SO_X (Sulfur Oxides)	0.004	0.074	$192.57	$3,851.50
VOC (Volatile Organic Compounds)	0.080	1.597	$73.34	$1,466.87
Total Emissions Benefit			**$18,323**	**$366,469**

Livability Benefits (Non-Monetized)

In addition to the monetized benefits discussed previously, the improvements proposed as part of the Plan offer a variety of livability benefits associated with the implementation of street trees that are not directly monetizable. These are described in the sections below.

Street Trees

While street trees come at a cost with regards to maintenance, the benefits associated with street trees outweigh these costs. Street trees can improve safety, provide green infrastructure, storm mitigation, energy savings and health benefits, as well as provide economic benefits to a given neighborhood or a jurisdiction more broadly.

Research suggests that street trees can improve safety, reducing crashes and injuries on urban roadways. Features such as street trees and urban planters along a roadway have been found to be associated with a reduction in midblock crashes, with the crash reduction decreasing between 5 and 20 percent. "While the cause for these reductions is not clear, the author suggests that the presence of a well-defined roadside edge may be leading drivers to exercise greater caution."[14] Street trees physically separate vehicle and pedestrian spaces more clearly, creating a more defined street edge and assisting drivers in distinguishing the street from bicycling and walking areas. Speed reduction and more context-appropriate urban traffic speeds have been found to be associated with treed streets. Traffic speed reductions of between 5 and 15 mph have been found to be associated with a well-developed tree canopy, contributing to a safer, more walkable, and bikeable environment.

The "urban heat island" effect is known to occur when natural land cover is replaced by concentrations of pavement, building, and other surface types that absorb and retain heat. "This effect increases energy costs, air pollution levels, and heat-related illness and mortality. "[15] Temperature rises of between three and seven degrees, which result in energy cost increases and the presence of ozone and other harmful gases.

Shade provided by street trees reduces energy costs by up to 35 percent. Moreover, California studies have shown that tree shade can extend the life of street surfaces by up to 60 percent, reducing maintenance costs over time. This is due to the reduction in daily temperature fluctuations between heating and cooling pavement and concrete, which cause damaging expansion and contraction of street surfaces.

Street trees can provide health, environmental and stormwater benefits. Trees provide health and environmental benefits by converting the pollutants associated with vehicle exhaust, which contribute to poor air quality, and health and climate impacts, into oxygen. "A single urban street tree converts enough carbon monoxide and carbon dioxide to meet the oxygen needs of two people for a full year."[16] Street trees can reduce stormwater runoff and flooding, and when properly designed, landscaped areas can serve as stormwater management areas, or bioswales.

The presence of street trees can also provide economic development benefits, such as increased property values and retail sales. According to the U.S. Forest Service, "the presence of street trees increases adjacent home values by an average of $13,000," while the National Main Street Center asserts "that a good tree canopy can increase retail sales by 12 cents on the dollar in large cities and 9 cents on the dollar in smaller ones"[17]

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[14] Dumbaugh, Eric (2005) "Safe streets, livable streets." Journal of the American Planning Association, Vol. 71, No. 3, pp 283–300
[15] Environmental Protection Agency (EPA). Green Infrastructure. "Reduce Urban Heat Island Effect,"

[16], [17] AARP Livability Fact Sheets - Street Trees, AARP Livable Communities | Walkable and Livable Communities Institute, 2014.

Benefit-Cost Results

Based on the results of the benefit assessment and the monetization of the benefits, a total corridor benefit for the proposed plan was calculated at more than $90 million. Using the planning-level cost estimates for the proposed improvements, and the total monetized benefits, a benefit/cost ratio of 1.58 was calculated. This demonstrates a positive return on investment for the proposed corridor plan.

The total corridor benefit and benefit-cost ratio is shown in Table 19.

Benefit-Cost by Segment

The benefit-cost by corridor segment is shown in Table 20. The benefit-cost results by segment do not account for air quality or emissions benefits, which are calculated on a corridor basis only.

Table 19 Corridor Benefit-Cost

Benefit Type	Annualized Benefit	20-Year Benefit
Bicycle Mode Shift	$2,719,955	$40,466,069
Operations/Delay	$159,961	$2,379,813
Safety	-	$46,136,520
Air Quality/Emissions	$18,323	$366,469
Total Benefit	**$2,898,240**	**$89,348,871**
Total Cost		**$56,906,000**
Benefit-Cost Ratio		**1.57**

Table 20 Benefit-Cost by Segment

Benefit Type	Segment Location					
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6
Bicycle Mode Shift	$6,722,887	$6,217,455	$7,944,935	$5,563,031	$6,630,836	$7,386,925
Operations / Delay	$1,126,539	$-	$2,190,780	$(441,520)	$-	$(495,986)
Safety	$16,435,537	$5,650,943	$20,974,786	$1,943,898	$271,540	$859,816
Air Quality/Emissions	$61,078	$61,078	$61,078	$61,078	$61,078	$61,078
Total Benefit	**$24,346,041**	**$11,929,476**	**$31,171,580**	**$7,126,487**	**$6,963,454**	**$7,811,834**
Total Cost	**$14,438,000**	**$9,231,000**	**$18,960,000**	**$4,735,000**	**$4,770,000**	**$4,772,000**
Benefit-Cost Ratio	**1.69**	**1.29**	**1.64**	**1.51**	**1.46**	**1.64**

8 Implementation & Prioritization

Implementation Plan

This chapter presents a strategy to implement the Sacramento Avenue design concepts and recommended projects outlined in Chapter 6. Included are locations evaluated, criteria used to evaluate each location, and federal, state, and local funding opportunities that may fund implementation.

The intent of evaluating projects is to create a flexible matrix to guide implementation of improvements as compatible opportunities arise. Over time as development occurs or funding sources issue calls for projects, this matrix can be used to evaluate remaining segments or improvements and continue to pursue implementation of the complete corridor.

Corridor Sub-Segments

Sacramento Avenue was divided into three geographic areas based on surrounding lane use characteristics, which were then separated into segments, as described in Chapter 6. Evaluation criteria will be applied by segments. The average score for all segments in each phase will be used to determine the area score. The area with the highest score should be prioritized when considering implementation.

A. Western Area

- Segment 1 – Harbor Boulevard to Solano Street
- Segment 2 – Solano Street to Todhunter Avenue
- Segment 3 – Todhunter Avenue to Jefferson Boulevard/Kegle Drive

B. Central Area

- Segment 4 – Jefferson Boulevard/Kegle Drive to Douglas Street
- Segment 5 – Douglas Steet to 6th Street

C. Eastern Area

- Segment 6 – California to 2nd Street

Evaluation Criteria

Improvements proposed for Sacramento Avenue have been evaluated by segment and by improvement type to general an implementation matric design to support funding and construction.

Evaluation criteria are primarily aligned with the three goals outlined in Chapter 5 of this Plan. A fourth criteria evaluates deliverability of specific projects, weighing access to local funds, degree of delivery readiness, complexity, and opportunities for partnerships.

For each criterion, a score of 0, 1, or 2, was awarded, typically these scores mean:

- A score of 0 indicates the segment is not likely to impact the criterion.
- A score of 1 indicates the segment is expected to have a moderate impact on the criterion.
- A score of 2 indicates the segment is expected to have a significant impact on the criterion.

Additional information on evaluation criteria and analyses that informed scoring is provided on subsequent pages. The evaluation matrix provides scores for these metrics by segment and sub-segment.

GREEN CORRIDOR

Implement active transportation green infrastructure

» Successfully integrating landscaping into roadway facilities that support active transportation.

Implement infrastructure for storm water management

» Incorporate green infrastructure to address storm water management and roadway runoff.

Create connections to recreation and river front trails

» Create pathways to future recreation connections and prioritize a park-like feel within the corridor for recreators to access.

Provide shade along the corridor

» Create a canopy with native and drought tolerant trees to combat the heat island effect.

COMMUNITY STREETSCAPE

Improve commercial opportunities Improve retail and dining opportunities with cohesive built form character zones.

Enhance pedestrian experience

» Enhance the experience along and across the corridor with pedestrian scale and oriented design.

Provide active transportation amenities to improve comfort in public spaces

» Create clearly defined public spaces at key locations along the corridor through inviting streetscapes with a variety of amenities, such as seating, water fountains, landscape, and art.

Support community identity through placemaking improvements.

» Foster civic identity and community pride through placemaking.

MULTIMODAL BOULEVARD

Integrate mobility hubs along the corridor

» Integrate mobility hubs along the corridor, consistent with the Mobility Action Plan, to increase accessibility and convenience of mobility options.

Implement accessible multimodal infrastructure to support transit and shared mobility

» Support access to transit and shared-mobility services with continuous and universally accessible multimodal infrastructure that accommodates a wide range of users.

Close gaps in the pedestrian network

» Provide continuous walkways, close network gaps, and provide frequent, well- designed pedestrian crossings that provide access to local destinations.

Lower LTS for bicyclists through physically separated bike infrastructure

» Provide comfortable bicycle infrastructure that lowers LTS and encourages a wide range of users to bike. Provide physical separation between bicyclists and motor vehicles via painted buffers and/or vertical elements.

Improve pedestrian and bicycle safety at intersections and crossings

» Improve bicyclist and pedestrian safety by enhancing visibility at intersections and creating easily navigable dedicated paths of travel. Improvements include recommendations that aim to lower collision risk.

DELIVERABILITY

Suitability for external funding sources

» Projects with a high potential for competitive grant eligibility such those that provide benefits to higher severity DACs and safe routes to school connections.

Ease of project delivery

» Projects well-understood to be within existing public right-of-way and that pose minimal utility conflicts.

Cost Effectiveness

» Projects or project components that have a higher benefit to cost ratio demonstrate return on investment and are more likely to be funded.

Are well suited for partnerships

» Projects or project components that are well suited for public-private partnerships and/or multi-agency partnerships.

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Overall Scores

Table 21 below shows the overall scores for each area and sub-segment based on each of the criterion listed above. Overall scores for each sub-segment are the sum of the four evaluation criteria scores. Overall scores for each area are the averages of their respective sub-segment scores. Overall scores are listed below:

- Western Area: 24
- Central Area: 28
- Eastern Area: 22

While these average scores were somewhat close, the Central Area and its sub-segment, Segment 5, scored slightly higher than other segments.

Table 21 Overall Scores

	Green Corridor	Implement green infrastructure to support active transportation	Implement green infrastructure for storm water management	Create connections to recreation and river front trails	Provide shade using native and drought-tolerant trees	**Multimodal Boulevard**	Integrate mobility hubs along the corridor	Add accessible multimodal facilities to support transit/shared mobility	Close gaps in the pedestrian network	Lower LTS through physically separated bike infrastructure	Improve pedestrian/bicycle safety at intersections and crossings	**Community Streetscape**	Improve commercial opportunities	Enhance pedestrian experience with pedestrian oriented design	Provide amenities to improve comfort in public spaces	Support community identity through place making	**Deliverability**	Suitability for external funding sources	Ease of project delivery	Cost Effectiveness	Well-suited for partnerships	**Overall Score**
Western Area	**6**	**2**	**2**	**1**	**2**	**8**	**1**	**2**	**2**	**2**	**2**	**5**	**1**	**2**	**1**	**1**	**5**	**1**	**1**	**1**	**1**	**24**
Segment 1 – Harbor Boulevard to Solano Street	**6**	2	2	0	2	**8**	0	2	2	2	2	**3**	1	2	0	0	**3**	1	1	1	0	20
Segment 2– Solano Street to Todhunter Avenue	**5**	1	1	2	1	**9**	2	2	2	2	1	**7**	1	2	2	2	**6**	2	2	1	1	27
Segment 3 – Todhunter Avenue to Jefferson Boulevard/Kegle Drive	**6**	2	2	0	2	**8**	0	2	2	2	2	**5**	1	2	0	2	**5**	1	1	2	1	24
Central Area	**6**	**2**	**2**	**1**	**2**	**9**	**2**	**2**	**2**	**2**	**1**	**8**	**2**	**2**	**2**	**2**	**6**	**1**	**2**	**1**	**2**	**28**
Segment 4 – Jefferson Boulevard/Kegle Drive to Douglas Street	**5**	2	1	0	2	**8**	2	2	2	2	1	**8**	2	2	2	2	**6**	1	2	1	2	27
Segment 5 – Douglas Street to California Street	**6**	1	2	2	1	**9**	2	2	2	2	1	**8**	2	2	2	2	**5**	1	1	1	2	28
Eastern Area	**2**	**0**	**0**	**2**	**0**	**7**	**2**	**1**	**1**	**1**	**2**	**7**	**1**	**2**	**2**	**2**	**6**	**1**	**2**	**2**	**1**	**22**
Segment 6 – California Street to 2nd Street	**2**	0	0	2	0	**7**	2	1	1	1	2	**7**	1	2	2	2	**6**	1	2	2	1	22

VMT-Weighted Scores

While the overall scores provided in the previous table offer a helpful comparison of segments across the corridor, these scores do not account for the variation in area and segment length and traffic volume on a given day.

Although the recommended improvements serve to address the priorities and opportunities unique to each segment, a VMT-based weighting methodology was developed to adjust the relative benefit of each segment in proportion to its length and average daily traffic (ADT). Segment length and estimated existing traffic volumes on each segment were used to calculate the average VMT, which is a suitable proxy for assessing the relative level of traffic stress and exposure, safety and access associated with each segment.

As shown in Table 22 below, a proportional "weight" relative to the entire corridor was established based on each segment's length, ADT, and average VMT. This weighting was applied to the overall scores reported in Table 21 to calculate a VMT-weighted score.

Table 22 VMT-Weighted Scores

	Overall Unweighted Score	Existing Average Daily Traffic (ADT)	Segment Length (mi)	Averaged Daily Vehicle Miles Traveled (VMT)	Weighting Factor	VMT-Weighted Score
Western Area	**24**	**14,464**	**1.00**	**14,464**	**0.63**	**15.0**
Segment 1 – Harbor Boulevard to Solano Street	20	**14,464**	**0.30**	**4,339**	**0.19**	**3.8**
Segment 2– Solano Street to Todhunter Avenue	27	**14,464**	**0.35**	**5,062**	**0.22**	**6.0**
Segment 3 – Todhunter Avenue to Jefferson Boulevard/Kegle Drive	24	**14,464**	**0.35**	**5,062**	**0.22**	**5.3**
Central Area	**28**	**7,840**	**0.75**	**5,880**	**0.26**	**7.2**
Segment 4 – Jefferson Boulevard/Kegle Drive to Douglas Street	27	**7,840**	**0.35**	**2,744**	**0.12**	**3.4**
Segment 5 – Douglas Street to California Street	28	**7,840**	**0.40**	**3,136**	**0.14**	**3.8**
Eastern Area	**22**	**10,100**	**0.25**	**2,525**	**0.11**	**2.4**
Segment 6 – California Street to 2nd Street	22	**10,100**	**0.25**	**2,525**	**0.11**	**2.4**

Funding Sources

State and Federal Programs

Active Transportation Program

The Active Transportation Program funds projects that aim to increase the proportion of trips accomplished by walking and biking, increase the safety and mobility of non-motorized users, advance efforts of regional agencies to achieve GHG reduction goals, enhance public health, provide a broad spectrum of projects to benefit many types of users including disadvantaged communities, and more.

The ATP was created by Senate Bill 99 and annually receives $123 million from a combination of state and federal funds. As of 2017 following the passage of SB 1 (the Road Repair and Accountability Program), $100 million is directed annually from the Road Maintenance and Rehabilitation Account to the ATP. Funding recipients are not required to provide matching funds. Funding cycles and application for the ATP open every two years. The call for Cycle 7 ATP applications begins March 21st, 2024, and applications are due June 17, 2024.

Projects that score highly on pedestrian collision reduction, community support, and disadvantaged community benefit are likely to be competitive for funding through the ATP. The ATP funds five project types, including:

- Infrastructure projects
- Plans
- Non-infrastructure (NI) projects (education and encouragement programs)
- Infrastructure and NI combination projects (capital projects with an educational component)
- Quick-build projects (temporary capital projects with low to moderate costs that last from one to five years)

Affordable Housing Sustainable Communities Program

The Affordable Housing Sustainable Communities (AHSC) Program funds land-use, housing, transportation, and land preservation projects to support infill and compact development that reduce GHG emissions. The program assists project areas by providing grants and/or loans, or any combination thereof, that will achieve GHG emissions reductions and benefit Disadvantaged Communities through increasing accessibility of affordable housing, employment centers, and key destinations via low-carbon transportation resulting in fewer vehicle miles traveled through shortened or reduced trip length or mode shift from single occupancy vehicle use to transit, bicycling, or walking. The three Project Area types include:

- Transit Oriented Development Project Areas
- Integrated Connectivity Project Areas
- Rural Innovation Project Areas

The program allocates funds annually and is on its eighth funding cycle, for which applications are due in March 2024. The maximum AHSC Program loan or grant award or combination thereof is $50 million with a minimum award of at least $10 million in all Project Area types.

The “Road Repair and Accountability Act” of 2017 (SB 1) invests $54 billion over a decade to repair roads, improve traffic safety, and expand public transit systems across California, with funds split equally between state and local investments.

SB 1 directs $100 million annually to the ATP to fund infrastructure projects, program implementation, and plan development to increase bicycling and walking. SB1 funds come to the City either directly or through one of several competitive programs. SB1 also created the Local Partnership Program (LPP), which continuously appropriates $200 million annually from the Road maintenance and Rehabilitation Account to local and regional transportation agencies that have sought and received voter approval of taxes or that have imposed fees, which taxes or fees are dedicated solely for transportation improvements, to improve active transportation, aging infrastructure, road conditions, and other benefits.

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned roads and roads on tribal land. The HSIP requires a data-driven,

strategic approach to improving highway safety on all public roads with a focus on performance.

Projects that score highly on safety and collision reduction and have a high benefit cost ratio are likely to be competitive for funding through the Highway Safety Improvement Program (HSIP).

To apply for HSIP funding, an agency must prepare a Local Road Safety Plan (LRSP) or an LRSP equivalent, like a comprehensive safety action plan through the Safe Streets and Roads for All Program, a Systemic Safety Analysis Report, or a Vision Zero Action Plam. An LRSP provides a framework for organizing stakeholders to identify, analyze, and prioritize roadway safety improvements on local and rural roads. Funding is no longer available for the Local Road Safety Plan, but funding for equivalents is still available.

Safe Streets and Roads for All Program

The Safe Street and Roads for All (SS4A) Program funds safety projects, safety planning, and demonstration activities driven at the local level to improve safety and help prevent deaths and serious injuries on the nation's roadways.

Two types of grants are available through SS4A:

- Planning and demonstration grants that can be used to develop a comprehensive safety action plan or supplemental planning/demonstration activities that inform the development of a new or existing Action Plan. The Department encourages including demonstration activities in an application.
- Implementation grants that can be used on infrastructure, behavioral, and/or operational activities. In order to receive implementation grant funding, a jurisdiction must have an adopted safety action plan, and the projects for which a jurisdiction is seeking funding must be included in the action plan.

SS4A has $5 billion in appropriated funds to be awarded over five years, between 2022 and 2026. Over $3 billion is available for future funding rounds. The third funding cycle opened in February 2024. The City was awarded funding for a planning grant in the 2023 cycle and is underway with developing a Comprehensive Safety Action Plan.

Sustainable Transportation Planning Grants

Caltrans Sustainable Transportation Planning Grants are available to communities for planning, study, and design work to identify and evaluate projects, including conducting outreach or improving pilot projects. Communities are typically required to provide an 11.47 percent local match, with staff time or in-kind donations eligible to be used towards the match.

Funding for Sustainable Transportation Planning grants are awarded annually. Over the last three years, funding for projects ranged between $21.5 million to $41.6 million per year, with an addition $12.5 million in Sustainable Communities Formula grants to further their Regional Transportation Plan/Sustainable Communities Strategy.

Three types of grants are available through this program, including sustainable communities grants, strategic partnerships grants, and climate adaptation planning grants.

Reconnecting Communities and Neighborhoods Program

The Reconnecting Communities and Neighborhoods (RCN) Program combines two Federal funding opportunities: the Reconnecting Communities Pilot (RCP) and the Neighborhood Access and Equity (NAE) Program. Both programs address transportation barriers that have negatively impacted connectivity and access to resources in disadvantaged communities.

The RCN Program will allocate $1 billion over 5 years between 2022 and 2026. Each year, around $50 million is available for planning and technical assistance grants, and $150 million for capital construction grants. There are three grant types available through the RCN Program: RCP Planning Grants, RCP Capital Construction Grants, and NAE Community Planning, Capital Construction, and Regional Partnership Challenge Grants. The maximum award for RCP Community Planning Grants is 80 percent, with a 20 percent minimum recipient match. The maximum award for RCP Capital Construction Grants is 50 percent, with a 20 percent minimum recipient match and opportunity to fund the rest with other federal moneys. The maximum award for NAE Grants is 80 percent, with a 20 percent minimum recipient match, unless the community is disadvantaged or underserved, for which the local match requirement is waived.

Funding supports planning grants and capital construction grants, as well as technical assistance, to restore community connectivity through the removal, retrofit, mitigation, or replacement of eligible transportation infrastructure facilities, including active transportation improvements.

Active Transportation Infrastructure Investment Program

The Active Transportation Infrastructure Investment Program (ATIIP) is a new competitive grant program created by the BIL to construct projects to provide safe and connected active transportation facilities in active transportation networks or active transportation spines. In 2023, FHWA received $45 million in funding for ATIIP from the Consolidated Appropriations Act, 2023 (Pub. L. 117-328), the first funds appropriated for this program.

Two types of grants are available through ATIIP:

- Planning and Design Grants can be used to develop plans for active transportation networks and active transportation spines. Projects seeking Planning and Design grants must have planning and design costs of at least $100,000 to be eligible.
- Construction Grants can be used to construct projects to provide safe and connected active transportation facilities in an active transportation network or active transportation spine. Projects seeking Construction grants must have total costs of at least $15 million to be eligible.

The maximum award of the ATIIP grant is 80 percent of the total project cost with a 20 percent minimum recipient match, except for eligible projects serving communities with a poverty rate of over 40 percent based on the majority of census tracts served by the eligible project, the local match may be waived.

Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Grants

The BIL includes $8.7 billion over 5 years (2022-2026) to create the PROTECT discretionary grant program with the purpose of helping local agencies improve the resiliency of their on-system transportation infrastructure. The program provides Federal funding to projects to help communities address vulnerabilities due to weather, natural disasters, and climate change. The program also provides funds to plan transportation improvements and emergency response strategies to address those vulnerabilities. Vulnerabilities the program addresses include, but are not limited to, current and future weather events, increasing frequency and magnitude of natural disasters, and changing climate conditions, including sea level rise. PROTECT grants include resilience improvement grants, community resilience and evacuation route grants, and at-risk coastal infrastructure grants. The PROTECT program funds are distributed Federally and by formula and competitive grants.

Congestion Mitigation and Air Quality Improvement (CMAQ) Program

The BIL allocates $13.2 billion over 5 years to the CMAQ program. The CMAQ Program funds state and local projects that support the goals of the Clean Air Act and that aim to reduce vehicle emissions and congestion. Eligible applicants include state and local governments that have projects in areas both currently or formerly identified by the US Environmental Protection Agency (EPA) as non-attainment or maintenance of the national ambient air quality standards for ozone, carbon monoxide, and/or other particulate matter. The program includes funding for electric vehicles and charging stations, diesel engine replacements and retrofits, transit improvements, bicycle and pedestrian facilities, shared micromobility projects and more. Additional goals the CMAQ Program supports include improving access to transportation services, safety, and application of new technologies.

Extreme Heat and Community Resilience Program

The Extreme Heat and Community Resilience Program is a new state grant program that funds and supports local, regional, and tribal efforts to reduce the impacts of extreme heat. The Extreme Heat and Community Resilience Program coordinates the state's efforts to address extreme heat and the urban heat island effect.

The program will fund projects including, but not limited to the creation of extreme heat action plans, providing mechanical or natural shade, increasing building and surface reflectance, providing passive or low-energy cooling strategies, and promoting evaporative cooling.

Potential Future Opportunities

As of December 2023, the programs below have not yet been renewed for another funding cycle but may be relevant in the future.

Clean California Local Grant Program

The Clean California Local Grant Program funds projects that beautify and improve local streets and roads, tribal lands, parks, pathways, and transit centers. The program aims to fund projects that reduce waste and debris within public rights of way, parks, transit centers, etc., enhances and beautifies public spaces, mitigate the heat island effect, enhance public health, cultural connection, and placemaking, and advance equity for underserved communities.

Sustainable Transportation Equity Project

The Sustainable Transportation Equity Project (STEP) funds projects that increase transportation equity by addressing community-identified transportation needs and increasing access to key destinations and services without increasing GHG emission and vehicle miles traveled.

Local and Regional Programs

Regional Active Transportation Program (ATP)

The Regional ATP program provides funding to plans and project for a few agencies, including SACOG, that increase walking and biking trips, increase safety and mobility of non-motorized users, advance regional active transportational and greenhouse gas reduction goals, enhance public health, provide equitable benefits for disadvantaged communities, and more. Eligible projects must meet State ATP requirements and be consistent with the MTP/SCS. Specific bicycle and pedestrian projects included in the Regional Transportation Plans (RTPs) for EDCTC or PCTPA are also eligible.

The regional ATP awards funds every two years, allocating $17.3 million in 2023 for pedestrian and bicycle projects. The next round of funding for the Regional ATP will likely open in Summer 2024. Funding recipients are required to provide at least 11.47 percent of non-ATP funding for selected projects.

Local Transportation Funds

Local transportation funds (LTF) are county funds derived from a ¼ cent of the general sales tax collected statewide. The State Board of Equalization, based on sales tax collected in each county, returns the general sales tax revenues to each county's LTF. Each county then apportions the LTF funds within the country based on population.

City Sales Tax Measures

There are four separate one-quarter cent sales tax measures approved by West Sacramento voters over the last 20 years that support a variety of municipal programs and projects related to public safety. Community development, capital improvements and community innovation. These include Measures N, E, K (Formerly Measure J), and V. Of these measures. Each measure is associated with annual revenue of between $4 million and $5 million and allows for year-to-year rollover of unused funds. Measure V is the only measure with an expiration date, which is March 31, 2033, while the other three measures are permanent. There are different use categories associated with each measure, and projects must submit sufficient justification and nexus between the project and the sales tax measure.

Tax Increment Financing

Measure G

Effective in 2012, Measure G is a property tax measure created to direct revenue the City received from the dissolution of its Redevelopment Agency to continue funding community investment projects such as streets, bridges, transportation, parks, and public infrastructure.

The City implements Measure G funding using criteria consistent with the City's Community Investment Action Plan, prioritizing a project's potential to leverage outside public and private funding, realize increases in long-term City revenues (e.g., sales and use tax, property tax, transient occupancy tax), facilitates the development of the City's General Plan, and more. The City conducts an assessment against these criteria before recommending this funding source for projects.

Enhanced Infrastructure Finance District No. 1 (EIFD No. 1)

In 2017, West Sacramento was the first city in California to establish an EIFD, which is a return to utilizing tax increment financing to foster economic development. EIFD No.1 consists of fourteen subareas within the City representing 4,144 acres, or 25 percent of the City, where current and future development is expected. EIFD No.1 is an important tool for the City to continue its efforts to transition many areas of the City from heavy industrial use to mixed-use areas that celebrate the City's waterfront location, to enhance the City's transportation network, and enhance the quality of public facilities for residents, businesses, and visitors. EIFD No.1 will be funded from property tax increment, a portion of existing Redevelopment Property Tax Trust Fund (RPTTF) revenues that are generated by growth within EIFD No.1 and allocated to the City.

Projects funded from EIFD No. 1 will be consistent with the City's adopted General Plan 2035 which provides a vision for how the City will grow and change in the future. The expenditure of EIFD No. 1 revenues would provide community-wide benefits while incorporating public investment goals defined in the Infrastructure Finance Plan. To implement the General Plan 2035, it is anticipated that EIFD No. 1 expenditures will be used on projects that have community-wide benefit in implementation of master plans, specific plans, capital projects (including the City's 5-year Capital Improvement Plan budgets), development agreements, and development projects.

IMPACT FEES

Traffic Impact Fees

West Sacramento's traffic impact fee collects funds from new development in the City to fund regional transportation improvements that result from the traffic generated by the new development. The Traffic Impact Fee Program is currently supported by the 2005 Traffic Impact Fee Study, which identified and estimated the cost of 26 capital improvement program projects to mitigate future traffic impacts.

A focus on "regional improvement" may leave a funding gap for projects of local/community significance, such as neighborhood streets that provide connections to key destinations and improve health through increased traffic safety, physical activity, and social connections. Many California cities use development impact fees to support projects that offset the transportation impacts of new development within the community, along with projects that may be considered regional transportation improvements. These projects may include complete street improvements, or neighborhood walkway and crossing improvements near schools along the city's corridor network. As the City of West Sacramento updates their traffic impact fee in the future, the City may consider how projects like this might fit into the City's Traffic Impact Fee Program.

Citywide VMT Mitigation Fee Program

On June 28, 2023, the West Sacramento City Council approved a budget to initiate development of a Citywide VMT Mitigation Fee Program. The program will determine fees based on how a project will affect changes in VMT. The program will also allow for the pooling of development mitigation contributions to pay for larger and more effective VMT reduction strategies that are not feasible for individual projects.

The VMT mitigation fee will be developed in collaboration with updates to the 2005 Traffic Impact Fee (TIF) and 2006 Traffic Impact Analysis (TIA) Guidelines in cooperation among the Finance, Economic Development & Housing, Community Development, and Capital Projects Departments. VMT Mitigation Fees could be used for implementing complete street improvements if those improvements conclusively demonstrate reduction of VMT. It would be highly dependent upon the location, surrounding land uses, and extent of the improvements needed to ensure cost/benefit.

The City of Los Angeles established a Transportation Impact Assessment Fee in 2019, authorized by the Coastal Transportation Corridor Specific Plan and West Los Angeles Transportation Improvement and Mitigation Specific Plan, to fund transportation improvements that reduce VMT per capita, enhance multimodal connectivity, and increase transportation options. These improvements may be physical infrastructure or programmatic.

COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM

The Community Development Block Grant (CDBG) Program is a flexible federal funding program that provides communities with resources to address a wide range of unique community needs. These funds are provided through the U.S. Department of Housing and Urban

Development (HUD). These funds are allocated to the State annually and can be used for capital projects that remove barriers to accessibility. The City of West Sacramento became a CDBG entitlement jurisdiction in 2016 and receives an annual allocation of CDBG funds directly from HUD.

Implementation Opportunities

Implementation opportunities include CEQA streamlining, coordination between development projects and construction, and study of utility and form-based code to align projects proposed as part of the Plan with in-fill housing opportunities and minimize construction impacts over time. This is discussed in further detail in the sections below.

Environmental Considerations

The City anticipates that the Sacramento Avenue Complete Street Plan (Plan) will be exempt from CEQA under SB 922 Statutory Exemption as written into CEQA Statute Section 21080.20 (Transportation Plans, Pedestrian Plans, and Bicycle Transportation Plans). The Plan is an active transportation plan with a key focus on expanding access and connectivity for non-vehicular modes of transportation.

The Plan's Corridor Strategies and Concept Design provide safer and more comfortable transportation options, including walking, biking, and rolling for people of all ages and abilities. Per SB 922 and CEQA Statute Section 21080.20(a)(3), individual projects that are part of the active transportation plan or pedestrian plan remain subject to the requirements of CEQA unless those projects are exempt by another provision of law. Subsequent individual projects may be evaluated for statutory or categorical CEQA exemption under sections including (but not limited to):

- CEQA Statute Section 21080.19 (Restriping of Streets or Highways; Application of Division),
- CEQA Statute Section 21080.25(b):
  - (1) Pedestrian and bicycle facilities that improve safety, access, or mobility, including new facilities, within the public right-of-way.
  - (2) Projects that improve customer information and wayfinding for transit riders, bicyclists, or pedestrians within the public right-of-way.
  - (3) Transit prioritization projects.
  - (7) The maintenance, repair, relocation, replacement, or removal of any utility infrastructure associated with a project identified in paragraphs (1) to (6), inclusive.
  - (8) A project that consists exclusively of a combination of any of the components of a project identified in paragraphs (1) to (7), inclusive.
- CEQA Guidelines Section 15301 (Existing Facilities)
- CEQA Guidelines Section 15302 (Replacement or Reconstruction)
- CEQA Guidelines Section 15304 (Minor Alterations to Land)

Implementation of Plan would result in improved safety for both non-vehicular and vehicular modes of transportation. Anticipated benefits include but are not limited to substantial crash reduction factors, improved pedestrian and bicycle connectivity and crossing safety, improved bicycle level of stress scores, improved vehicle operations through the corridor with associated air quality and greenhouse gas reductions, and overall reduction in VMT. The Plan would not increase the vehicle capacity of Sacramento Avenue or otherwise result in increased vehicle use of the corridor.

Utility and Form-Based Code Study

As part of a recent Green Means Go grant awarded to the City of West Sacramento, the city is proactively studying utility infrastructure along Sacramento Avenue to minimize the impacts of construction over time. This grant effort provides the opportunity to accelerate production of in-fill and affordable housing, which includes reviewing the regulatory environment, including zoning code and assessing opportunities for form-based code. Also, as part of this effort, the city is mapping underground and overhead utilities and assessing infrastructure needs needed to support additional housing development.

Development Considerations

As development occurs, the city should look for opportunities to construct the improvements recommended by the Plan to reduce construction costs and maximize benefits.

What Happens Next

The Sacramento Avenue Complete Street Plan marks the beginning of creating a safe, connected corridor for all road users to enjoy.

Additional approvals, updates to planning documents and securing funding sources are required before this Plan can be implemented and made a reality. Some improvements may be prioritized over others, as more opportunities arise. Although this is not an exhaustive list, some action items toward implementation include the following:

- Seek opportunities to complete environmental clearance for the corridor project (anticipated CEQA document is IS/MND).
- Include recommendations from this Plan in the City's Bicycle, Pedestrian and Trails Master Plan.
- Include recommendations from this Plan in the Washington Specific Plan Update.
- Continue utility and form-based code study as part of Green Means Go grant effort.
- Seek funding through competitive grant programs, regional partnerships, and developer contributions.

Moreover, additional analysis and study may be necessary to assess feasibility of the proposed improvements as the City moves forward with implementation of the Plan, including but not limited to:

- Detailed life-cycle cost analysis and/or economic impact analysis, consistent with funding sources the City decides to pursue.
- Study feasibility, including funding, design, construction, and maintenance of pocket park identified at pocket park opportunity site.
- Estimate cost of maintenance of landscaping elements in relation to myriad livability benefits identified in the Plan.
- Further coordinate with Fire Department on fire access needs, as needed.
- Further coordinate with Caltrans on proposed truck route changes.
- Continued coordination with YoloTD on bus routes and stops.
- Continued coordination on utility undergrounding to determine appropriate design changes.