



# Monument Boulevard/I-680 Bicycle and Pedestrian Improvement Feasibility Study

May 2022

*Prepared for:*  
TRANSPAC  
CCTA

*Prepared by:*  
Fehr & Peers  
Alta Planning + Design  
Mark Thomas

# CONTENTS

---

PROJECT BACKGROUND

REGIONAL CONNECTIONS

SITE ANALYSIS

PEDESTRIAN COMFORT

PEDESTRIAN SAFETY

PEDESTRIAN CONVENIENCE

PREVIOUS PLANNING EFFORTS & DESIGN GUIDANCE

COMMUNITY ENGAGEMENT

ALTERNATIVE DESIGNS

PERFORMANCE EVALUATION

PREFERRED ALTERNATIVE

FUNDING OPPORTUNITIES

NEXT STEPS

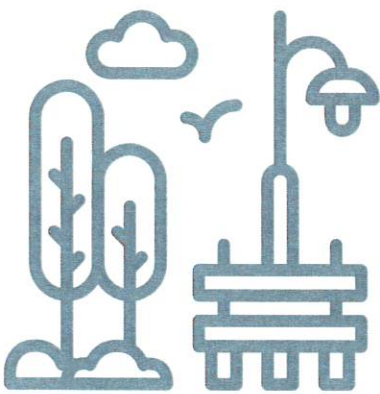
APPENDICES

A. TRAFFIC OPERATIONS TECHNICAL MEMORANDUM

B. COST ESTIMATE

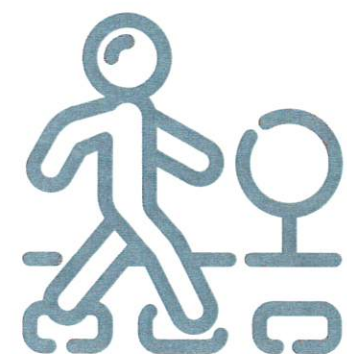
C. COMMENTS RECEIVED FROM ONLINE ENGAGEMENT

Infrastructure for walking and biking  
should be



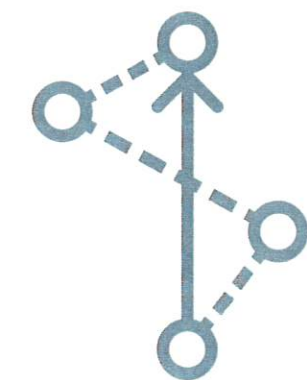
## COMFORTABLE

**30 minutes** of walking per day  
can reduce anxiety and the risk  
of depression.<sup>1</sup>



## SAFE

Streets designed with  
pedestrian travel in mind by  
installing raised medians and  
redesigning intersections and  
sidewalks reduced pedestrian  
risk by **28 percent**.<sup>2</sup>



## CONVENIENT

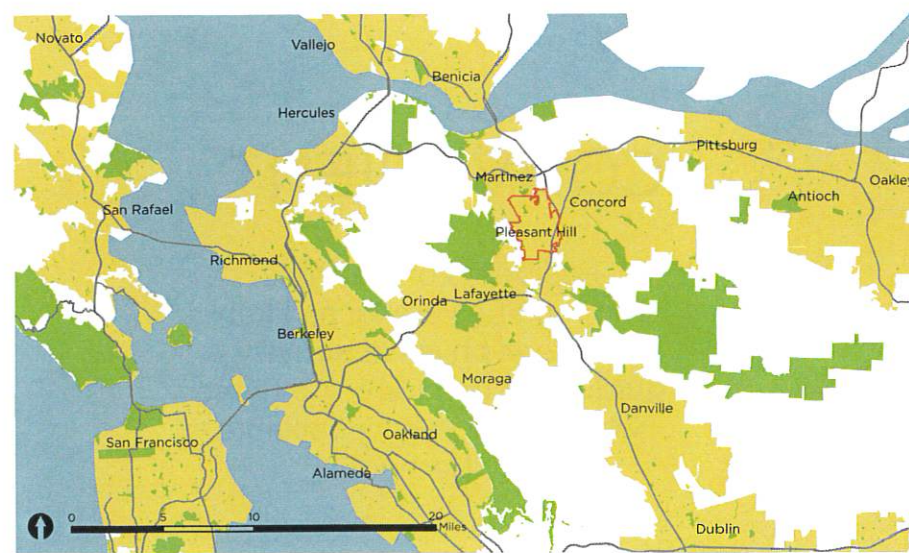
Residents of walkable  
communities are **2x as likely  
to meet physical activity  
guidelines** compared to those  
who do not live in walkable  
neighborhoods.<sup>3</sup>

1. Sharma, A., Madaan, V. & Petty, F.D. (2006). Exercise for Mental Health. Primary Care Companion to the Journal of Clinical Psychiatry, 8 (2), 106.  
2. King, Pedestrian Safety through a Raised Median and Redesigning Intersections. TRB 2003 Paper 03-3135. 2003.  
3. Frank LD, Schmid TL, Sallis JF, Chapman J, Saelens BE. (2005) Linking Objectively Measured Physical Activity with Objectively Measured Urban Form: Findings from SMARTRAQ. Am J Prev Med, 28(252).



## PROJECT BACKGROUND

This document serves to inform a feasibility study for specific improvements to the bicycle and pedestrian connections on the Monument Boulevard corridor where it continues underneath I-680. This area, an identified gap in the Countywide Bike Plan, would provide for an improved east-west connection in this area. The study is envisioned to develop conceptual bicycle and pedestrian related improvements in the study area and identify scope, cost, and delivery strategy information that could be used to pursue additional project funding.



*The project area is located in Pleasant Hill, Contra Costa County, California.*

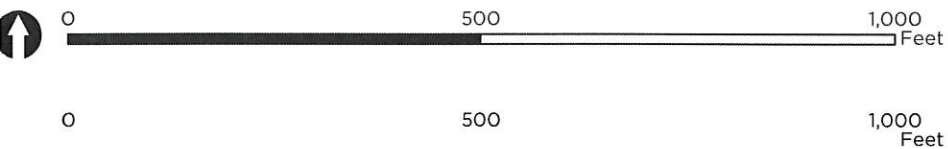


## REGIONAL CONNECTIONS

The Monument Boulevard corridor represents a critical east-west connection for transportation in the region. I-680 currently presents a major barrier to pedestrian and bicycle mobility. There are few non-interchange crossings of I-680. Interchanges like Monument Boulevard are characterized by high speed vehicle traffic and unprotected pedestrian and bicycle infrastructure.

Improvements to active transportation infrastructure within the project area would create a key connection between the regional Iron Horse Trail at the eastern reach and Downtown Pleasant Hill at the western reach. Connecting pedestrians and cyclists to the Iron Horse Trail further connects them to the Pleasant Hill BART Station and the Contra Costa Canal Trail.





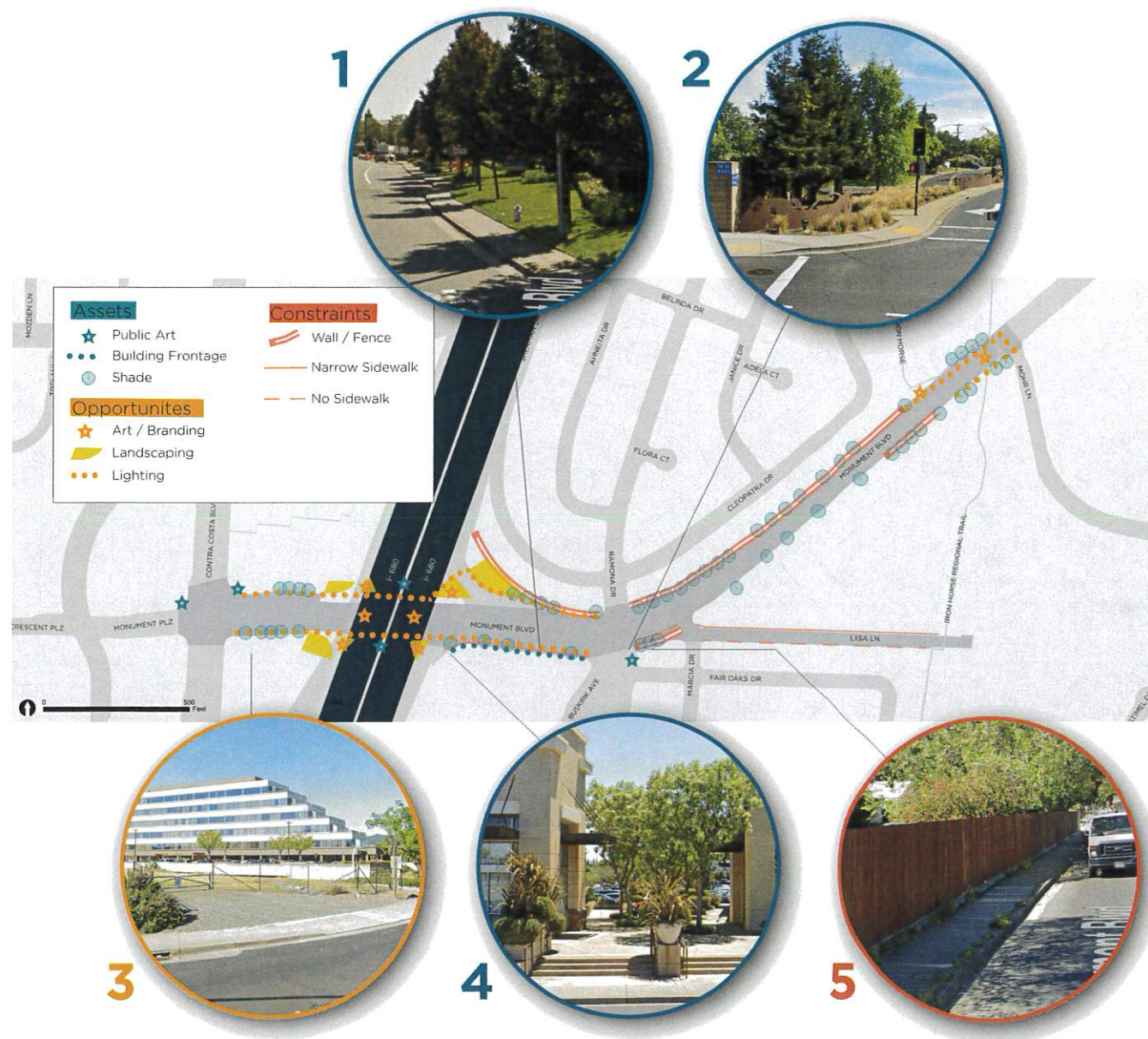
# SITE ANALYSIS

The study area includes Lisa Lane and Monument Boulevard between downtown Pleasant Hill (Contra Costa Boulevard) and the Iron Horse Trail (Iron Horse Trail and Mohr Lane).

Monument Boulevard is an autocentric and predominantly commercial corridor with adjacent residential neighborhoods separated from the roadway by a soundwall. The I-680 interchange presents a major barrier to pedestrian and

bicycle mobility. The following analysis identifies assets, opportunities, and constraints for pedestrian comfort, safety, and convenience within the project area. The goal of this analysis is to inform the design of a desirable pedestrian and bicycling environment and, in turn, to promote walking and cycling as healthy, active alternatives to driving.





## COMFORT

The visual and spatial character of a corridor plays a large role in the overall comfort level that a pedestrian or cyclist experiences. Existing assets that contribute to comfort include public art (**Image 2**); building frontages that engage with the street (**Image 4**); and shade provided by street trees and landscaping (**Image 1**). There are additional opportunities along this corridor to em-

ploy public art and placemaking; green infrastructure and landscape (**Image 3**); and human-scale lighting. Features like walls, fences, narrow sidewalks do not contribute to a comfortable environment for people (**Image 5**). Further, the use of the curb lane for fast moving vehicle traffic makes walking and biking uncomfortable (**Image 5**).

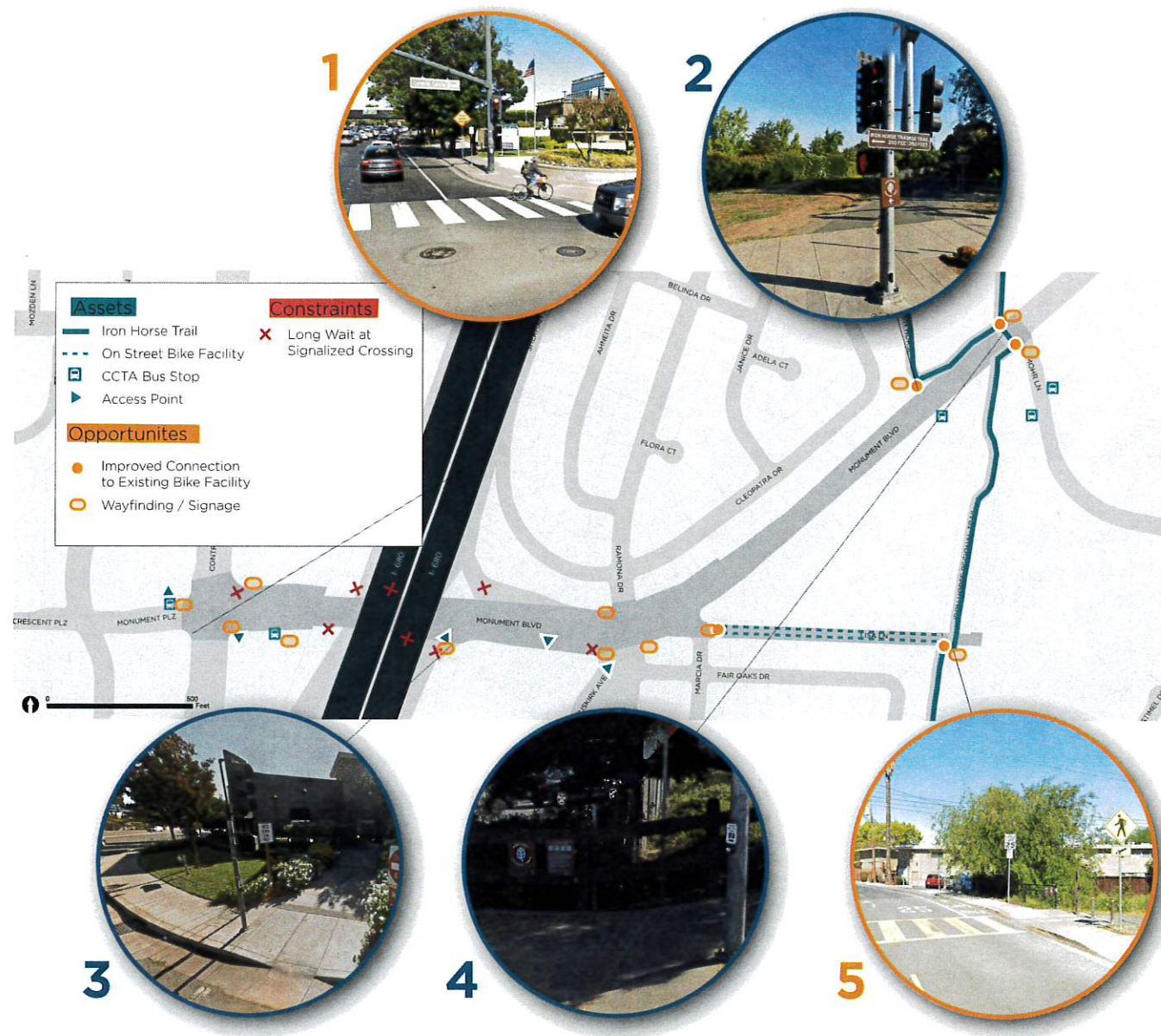


## SAFETY

Providing a safe environment for pedestrians and cyclists is a high priority for this corridor. The most significant threats today to pedestrian and bicycle safety are conflicts with vehicles. Large commercial driveways and turning vehicles increase pedestrian and bicycle vulnerability (**Image 5**). Crossings with long pedestrian delays (**Image 3**) and indirect pedestrian routes (**Images 1 and 2**) enforce the prioritization of

vehicular traffic over all other modes. A lack of designated bicycle facilities (**Image 4**) forces cyclists to choose between vehicle lanes and sidewalks, both of which are unsafe options.



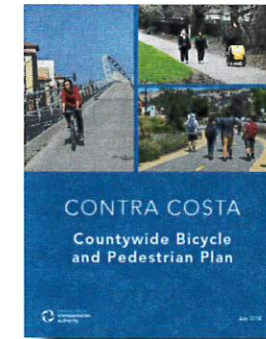


## CONVENIENCE

A corridor that is comfortable, safe, and convenient will naturally attract more people to walk and bike. Connections to existing bike/ped infrastructure (**Image 2**), transit facilities, and local businesses (**Image 3**) all contribute to the ease of mobility. Clear and intuitive signage and wayfinding systems (**Image 4**) help people of all ages and abilities navigate the community. The project area has several opportunities

for improved connections (**Image 1**) and wayfinding (**Image 5**). Currently, signal timing presents a barrier to convenience, as pedestrians and cyclists experience long waits at signalized crossings. A pedestrian or cyclist must cross several signalized crossings to traverse I-680.

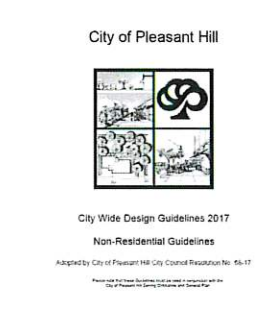
## PREVIOUS PLANNING EFFORTS & DESIGN GUIDANCE



### Contra Costa Countywide Bicycle & Pedestrian Plan (2018)

#### KEY INSIGHTS:

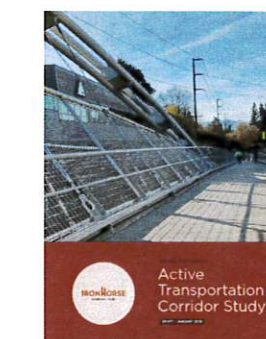
- Walking can be encouraged by improvements such as safer crossings, traffic calming, direct connections between destinations, and streetscape improvements
- Bicycling can be improved by building networks of low-stress facilities separated from fast-moving traffic and developing connections across barriers (e.g. interchanges)



### City of Pleasant Hill Citywide Design Guidelines (2017)

#### KEY INSIGHTS:

- Streets serve many purposes including connecting people and places, providing buffers between uses, and serving as a recreation and exercise facility for runners and cyclists
- Design choices should contribute to a positive physical image and identity and preserve the surrounding environment



### Iron Horse Trail Active Transportation Corridor Study (2020, Draft)

#### KEY INSIGHTS:

- The Iron Horse trail can serve as an active transportation spine that supports the region's mobility goals
- Improving the trail crossing at Monument Boulevard is identified as a high priority project



# COMMUNITY ENGAGEMENT

## Walking Audit

A walking audit to tour existing conditions on the corridor was held on February 18, 2020. Attendees included representatives from the City of Pleasant Hill, the City of Concord, CCTA, Caltrans, and representatives from Bike East Bay and Monument Impact.

Overall, attendees noted a number of locations where conditions for pedestrian and bicyclists were challenging. This included difficulties with navigating crossings at the I-680 on and off ramps, a lack of low-stress connectivity be-

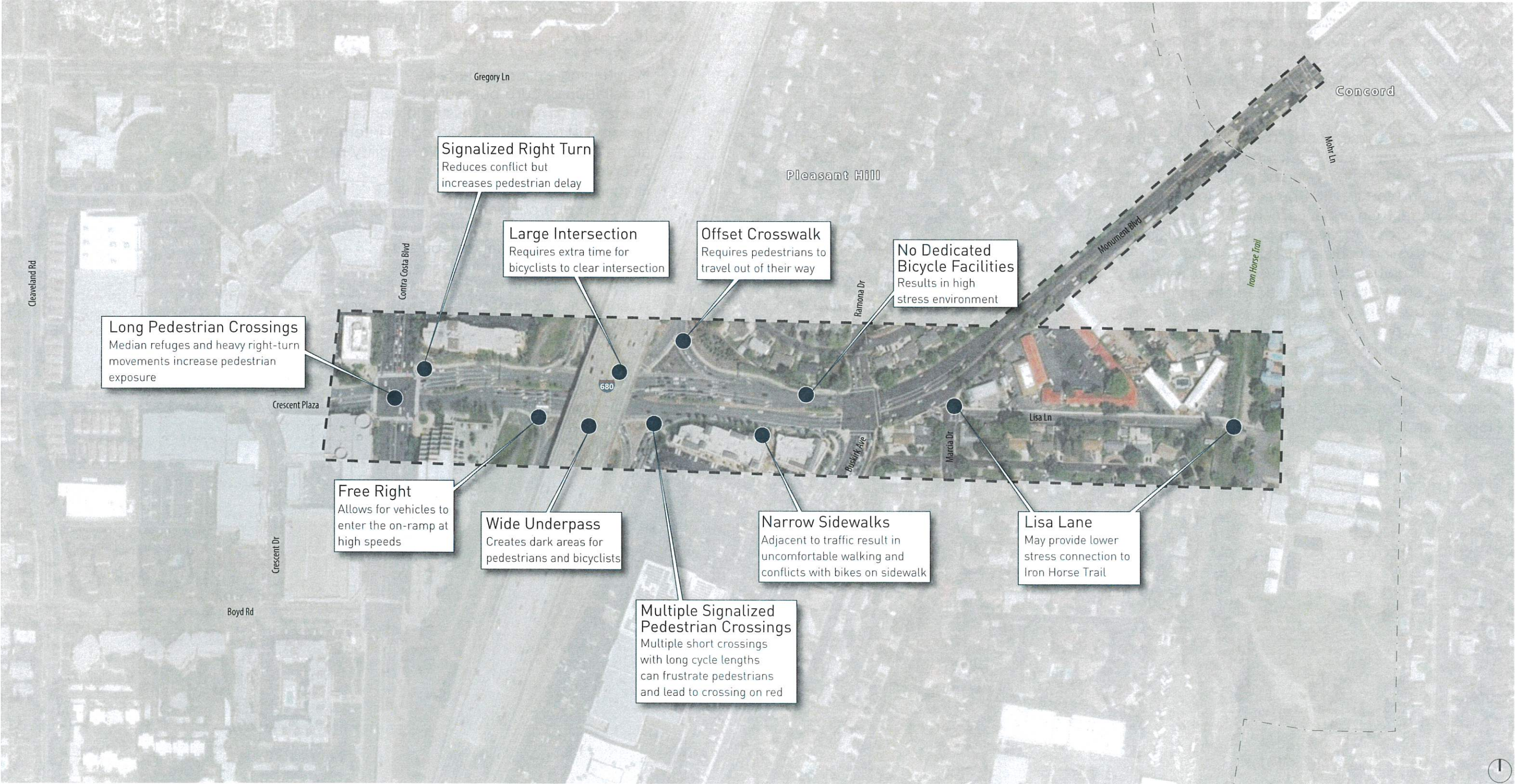
tween Pleasant Hill and the Iron Horse Trail, and concerns about fast moving traffic near sidewalks and bicycle facilities.

An online web tool was available for attendees to document their comments, take photos, and note destinations where they either currently or wanted to bike and walk. The map was also available for the broader public to participate. A full list of comments received via the online tool is shown in Appendix 3.

This page intentionally left blank



# Bicycle and Pedestrian Connectivity Challenges





# ALTERNATIVE DESIGNS

Three alternative design concepts were created for Monument Boulevard between Contra Costa Boulevard and the Iron Horse Trail. The designs were informed by collision trends and hotspots, the need for improving access to destinations along the corridor, community input, and discussions with staff from the City of Pleasant Hill and the City of Concord.

To respond to these needs, the City could either install a two-way cycle track bicycle facility (Class IV) or a shared-use bicycle and pedestrian facility (Class I) on Monument Boulevard. Both options include pedestrian enhancements at intersections to shorten crossing distances, improve visibility, and slow turning vehicles. Each option also presents opportunities for improved transit reliability as well as streetscape and placemaking improvements to beautify the corridor with landscaping, street trees, and pedestrian scale lighting. In addition to the improvements to Monument Boulevard, each alternative proposes a cycle track on Lisa Lane, providing a safe route to Fair Oak Elementary School and closing the gap to the Iron Horse Trail.

## Alternative A

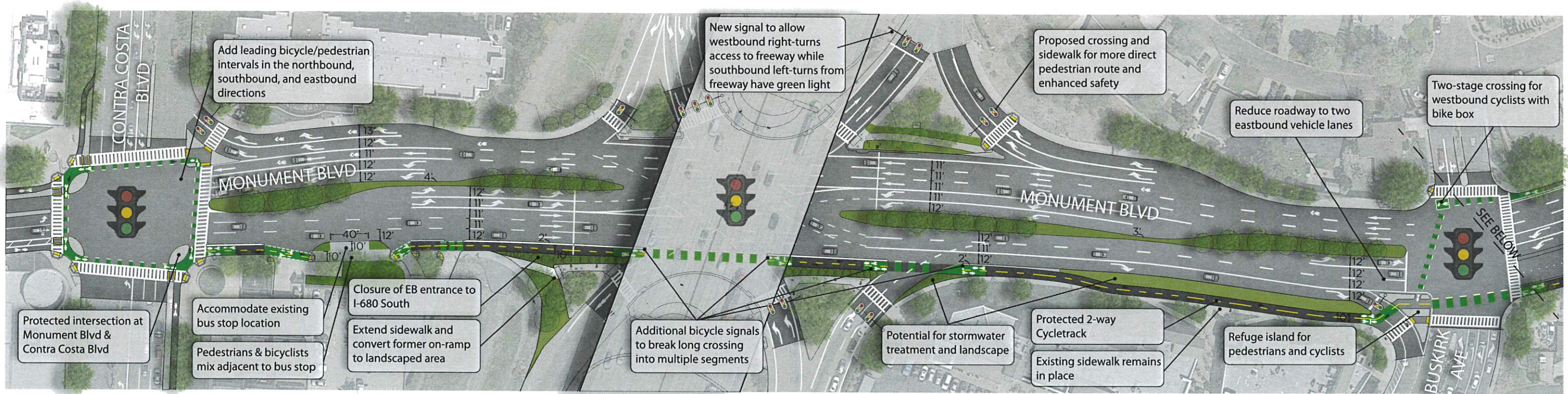
The first alternative proposes installing a Class IV protected bikeways between Contra Costa Boulevard and Lisa Lane. The cycle-track continues along Lisa Lane, providing a safe route to Fair Oaks Elementary School and the Iron Horse Trail. Additional key changes include:

- Maintaining existing sidewalks
- Installation of curb bulbouts at Contra Costa Boulevard to reduce crossing distances
- Leading bicycle/pedestrian signal interval along the corridor to improve visibility of people walking and biking
- High visibility crosswalk markings
- Bus Stop Bulbout on Monument Boulevard
- Conversion of I-680 Southbound on-ramp (EB direction) to a landscape area
- Removal of an eastbound lane between I-680 Northbound off-ramp and Buskirk Avenue to accommodate two-way cycle track

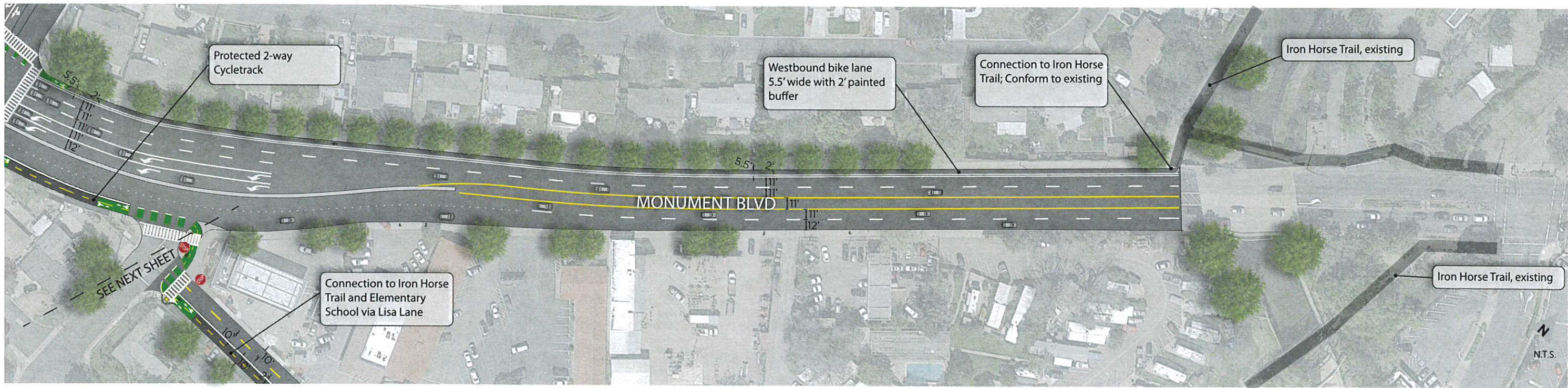




ALTERNATIVE A



ALTERNATIVE A - MONUMENT BLVD



N.T.S.



ALTERNATIVE A



ALTERNATIVE A - LISA LANE



**Alternative B**

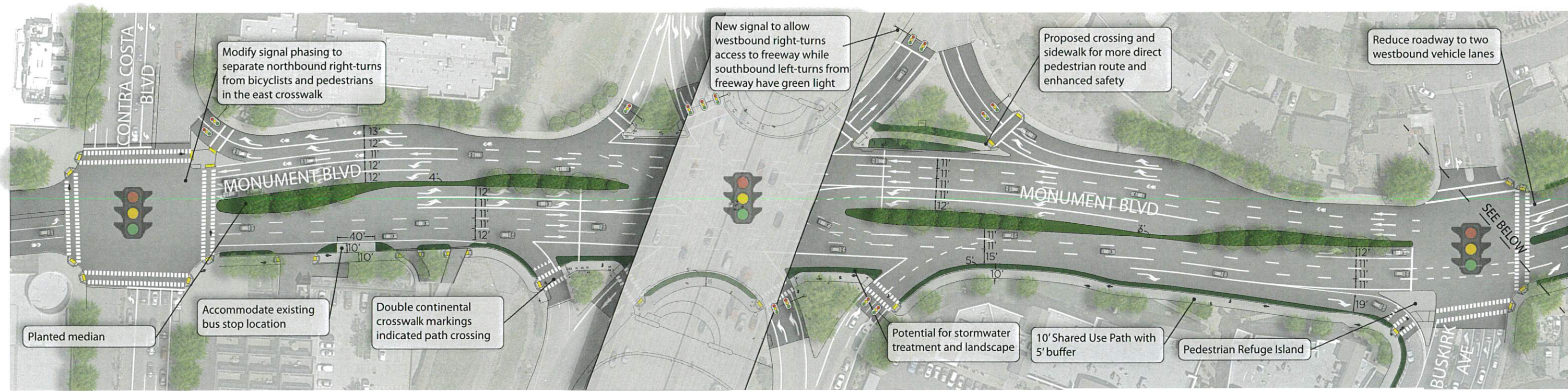
The second alternative proposes installing a 10' Class I shared-use facility between Contra Costa Boulevard and Lisa Lane. The shared-use facility would continue on Lisa Lane, providing a safe route to Fair Oaks Elementary School and the Iron Horse Trail. This alternative would maintain existing lane configurations except for removing a westbound vehicle lane between Mohr Lane and Buskirk Avenue. Signal phasing and timing would be modified to reduce potential conflicts between vehicles and people walking and biking. Unlike Alternative A, this alternative would not remove a lane in the eastbound direction of Buskirk Avenue. Instead, this alternative proposes removing a westbound vehicle lane between Mohr Lane and Buskirk Avenue.



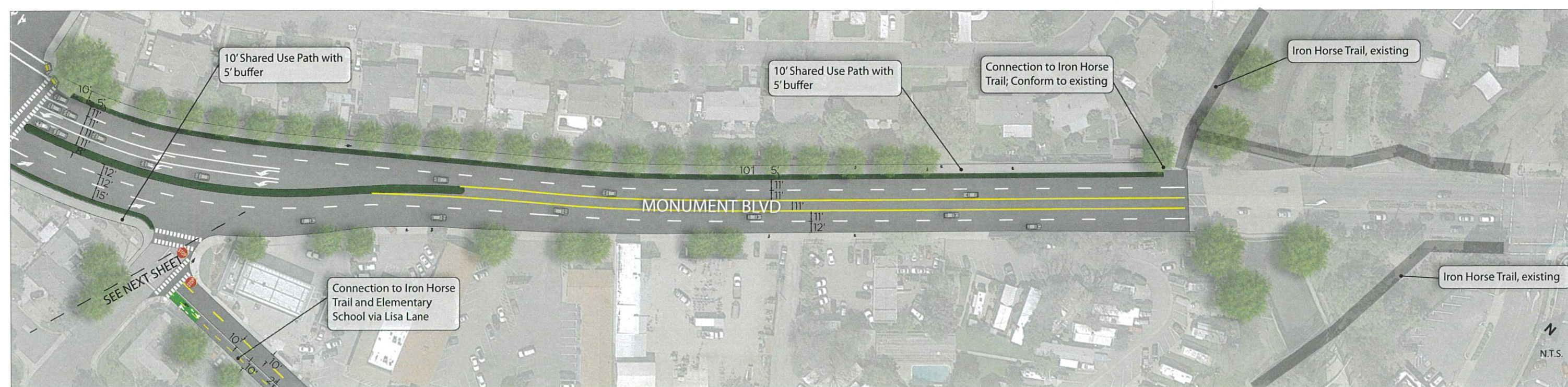
This page intentionally left blank



ALTERNATIVE B



ALTERNATIVE B - MONUMENT BLVD





ALTERNATIVE B



ALTERNATIVE B - LISA LANE



**Alternative C**

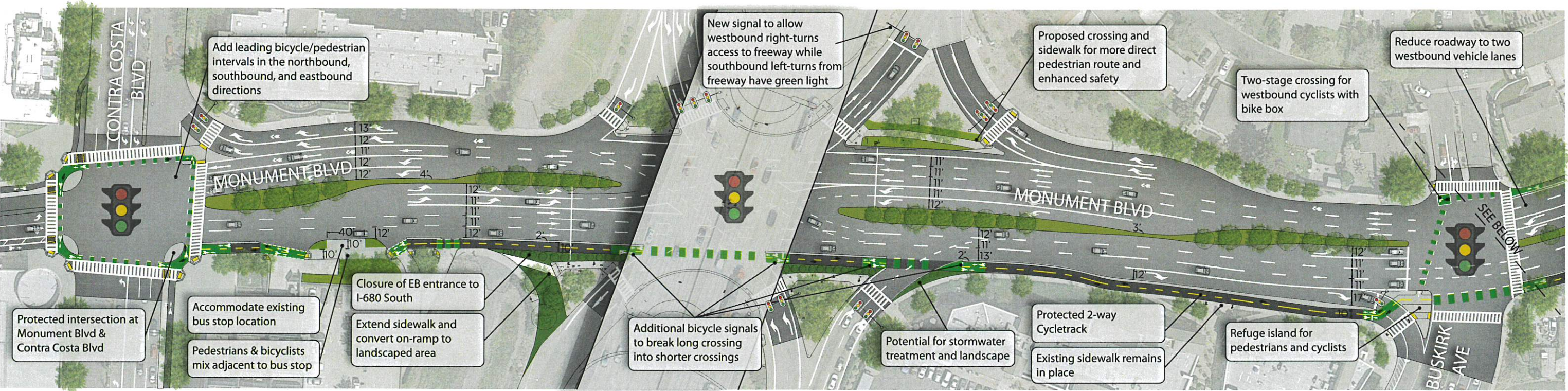
The third alternative is like the first alternative, proposing a Class IV protected bikeways between Contra Costa Boulevard and Lisa Lane. The cycle-track continues along Lisa Lane, providing a safe route to Fair Oaks Elementary School and the Iron Horse Trail. Unlike Alternative A, this alternative would not remove a lane in the eastbound direction of Buskirk Avenue. Instead, this alternative proposes removing a westbound vehicle lane between Mohr Lane and Buskirk Avenue.



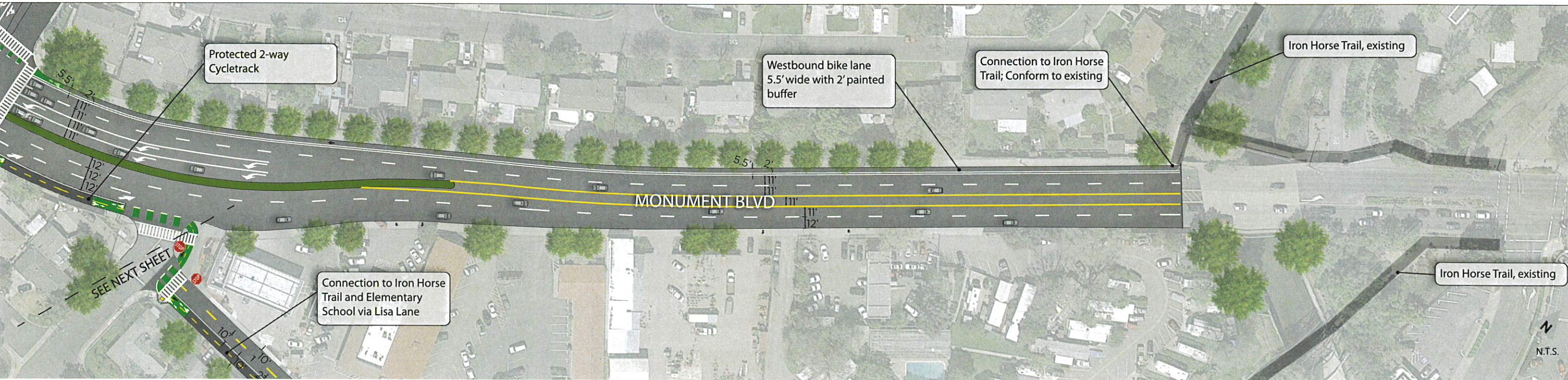
This page intentionally left blank



ALTERNATIVE C

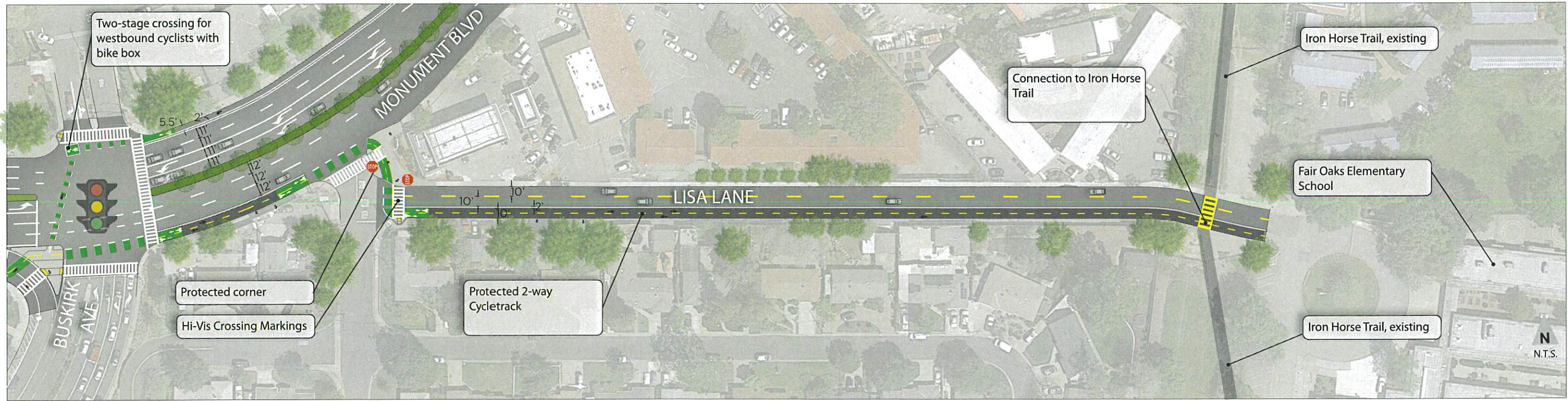


ALTERNATIVE C - MONUMENT BLVD





ALTERNATIVE C



ALTERNATIVE C - LISA LANE



# EVALUATION

Category	MoE	Baseline	Alternative A	Alternative B	Alternative C
Pedestrian	Turning Vehicle Speed	<ul style="list-style-type: none"><li>• Large curb return radii allow for higher speed turns at Contra Costa Boulevard</li><li>• Channelized right turn onto I-680 SB On-Ramp (yield control)</li><li>• Channelized right turn onto Buskirk Avenue</li></ul>	<ul style="list-style-type: none"><li>• Protected Intersection at Contra Costa Boulevard requires vehicles to slow down when turning due to smaller curb radii</li><li>• Leading Pedestrian Interval at Contra Costa Boulevard increases pedestrian visibility for turning vehicles</li><li>• Closing I-680 SB On-Ramp eliminates channelized right turn with yield control</li></ul>	<ul style="list-style-type: none"><li>• Large curb return radii allow for higher speed turns at Contra Costa Boulevard</li><li>• Leading Pedestrian Interval at Contra Costa Boulevard increases pedestrian visibility for turning vehicles</li><li>• Channelized right turn onto I-680 SB On-Ramp (yield control)</li><li>• Channelized right turn onto Buskirk Avenue</li></ul>	<ul style="list-style-type: none"><li>• Protected Intersection at Contra Costa Boulevard requires vehicles to slow down when turning due to smaller curb radii</li><li>• Leading Pedestrian Interval at Contra Costa Boulevard increases pedestrian visibility for turning vehicles</li><li>• Closing I-680 SB On-Ramp eliminates channelized right turn</li></ul>
	Crossing Distance	<ul style="list-style-type: none"><li>• Large curb return radii increase crossing distance for pedestrians at Contra Costa Boulevard and Buskirk Avenue</li><li>• Pork-chop islands provides refuge for pedestrians while crossing Buskirk Avenue</li><li>• Crosswalk across I-680 NB On-Ramp requires pedestrians to travel up ramp to reach crosswalk</li></ul>	<ul style="list-style-type: none"><li>• Smaller curb return radii reduce the crossing distance</li><li>• Pork-chop island provides refuge for pedestrians while crossing Buskirk Avenue</li><li>• Moving crosswalk at the I-680 NB On-Ramp south provides direct route for pedestrians</li></ul>	<ul style="list-style-type: none"><li>• Large curb return radii increase crossing distance for pedestrians at Contra Costa Boulevard and Buskirk Avenue</li><li>• Islands provide refuge for pedestrians while crossing Buskirk Avenue</li><li>• Moving crosswalk at the I-680 NB On-Ramp south provides direct route for pedestrians</li></ul>	<ul style="list-style-type: none"><li>• Smaller curb return radii reduce the crossing distance</li><li>• Pork-chop island provides refuge for pedestrians while crossing Buskirk Avenue</li><li>• Moving crosswalk at the I-680 NB On-Ramp south provides direct route for pedestrians</li></ul>
	Yield Compliance	<ul style="list-style-type: none"><li>• Right-turning vehicles must yield for pedestrians at Contra Costa Boulevard, I-680 SB On-Ramp, and Northbound Buskirk Avenue</li></ul>	<ul style="list-style-type: none"><li>• Closing I-680 NB On-Ramp eliminates potential conflict between high-speed vehicles and pedestrians</li><li>• Right-turning vehicles must yield for pedestrians at Contra Costa Boulevard and Northbound Buskirk Avenue</li></ul>	<ul style="list-style-type: none"><li>• Right-turning vehicles must yield for pedestrians at Contra Costa Boulevard, I-680 SB On-Ramp, and Northbound Buskirk Avenue</li><li>• Signal Modifications at Contra Costa Boulevard prevent conflict between people walking and biking and right-turning vehicles</li><li>• Continental Crosswalk Markings increase visibility and presence of crosswalk</li></ul>	<ul style="list-style-type: none"><li>• Closing I-680 NB On-Ramp eliminates potential conflict between high-speed vehicles and pedestrians</li><li>• Right-turning vehicles must yield for pedestrians at Contra Costa Boulevard, I-680 SB On-Ramp, and Northbound Buskirk Avenue</li></ul>
Bicyclist	Presence of Bicycle Facility	<ul style="list-style-type: none"><li>• Shared facility with motor vehicles with "Sharrow" provided on Monument Boulevard approaching Buskirk Avenue</li></ul>	<ul style="list-style-type: none"><li>• Two-Way separated bikeway provides separation from vehicles and pedestrians</li></ul>	<ul style="list-style-type: none"><li>• Shared-Use path separates people biking from vehicular traffic but not from pedestrians</li></ul>	<ul style="list-style-type: none"><li>• Two-Way separated bikeway provides separation from vehicles and pedestrians</li></ul>



Category	MoE	Baseline	Alternative A	Alternative B	Alternative C
Vehicle	Access & Connectivity	<ul style="list-style-type: none"> <li>Lack of separated and dedicated bicycle facility does not provide adequate bicycle access to area destinations such as the Iron Horse Trail, Fair Oaks Elementary, and Downtown Pleasant Hill</li> </ul>	<ul style="list-style-type: none"> <li>Two-way Cycle Track provides bicycle access to Iron-Horse Trail, Fair Oaks Elementary, and Downtown Pleasant Hill</li> </ul>	<ul style="list-style-type: none"> <li>Shared Use facility provides bicycle access to Iron-Horse Trail, Fair Oaks Elementary, and Downtown Pleasant Hill</li> </ul>	<ul style="list-style-type: none"> <li>Two-way Cycle Track provides bicycle access to Iron-Horse Trail, Fair Oaks Elementary, and Downtown Pleasant Hill</li> </ul>
	Comfort	<ul style="list-style-type: none"> <li>Lack of separated and dedicated bicycle facility on a high-speed, high-volume arterial discourages cycling along Monument Boulevard</li> </ul>	<ul style="list-style-type: none"> <li>Two-way Cycle Track separates people biking from high-speed motor vehicles</li> <li>Closing I-680 NB On-Ramp reduces ramp crossing in the vicinity of I-680</li> </ul>	<ul style="list-style-type: none"> <li>Shared-use bicycle and pedestrian facility separates people biking from high-speed motor vehicles</li> </ul>	<ul style="list-style-type: none"> <li>Two-way Cycle Track separates people biking from high-speed motor vehicles</li> <li>Closing I-680 NB On-Ramp reduces ramp crossing in the vicinity of I-680</li> </ul>
	Travel Times	<ul style="list-style-type: none"> <li>5 minutes to travel westbound from Mohr Lane to Contra Costa Boulevard during the morning peak hour</li> <li>4.5 minutes to travel eastbound from Contra Costa Boulevard to Mohr Lane during the evening peak hour</li> </ul>	<ul style="list-style-type: none"> <li>5 minutes to travel westbound from Mohr Lane to Contra Costa Boulevard during the morning peak hour</li> <li>5 minutes to travel eastbound from Contra Costa Boulevard to Mohr Lane during the evening peak hour</li> </ul>	<ul style="list-style-type: none"> <li>5 minutes to travel westbound from Mohr Lane to Contra Costa Boulevard during the morning peak hour</li> <li>4.5 minutes to travel eastbound from Contra Costa Boulevard to Mohr Lane during the evening peak hour</li> </ul>	<ul style="list-style-type: none"> <li>5 minutes to travel westbound from Mohr Lane to Contra Costa Boulevard during the morning peak hour</li> <li>5 minutes to travel eastbound from Contra Costa Boulevard to Mohr Lane during the evening peak hour</li> </ul>
	User Delay	<ul style="list-style-type: none"> <li>Intersections operating at or just below capacity</li> </ul>	<ul style="list-style-type: none"> <li>User delay increases in the vicinity of Contra Costa Boulevard and I-680 Ramps</li> </ul>	<ul style="list-style-type: none"> <li>Intersections operating at or just below capacity</li> </ul>	<ul style="list-style-type: none"> <li>Intersections operating at or just below capacity</li> </ul>
	Vehicle Queues	<ul style="list-style-type: none"> <li>Peak-hour queues extend beyond adjacent intersections around the I-680 Ramps</li> </ul>	<ul style="list-style-type: none"> <li>Peak-hour queues extend beyond adjacent intersections around the I-680 Ramps.</li> <li>Peak-hour queues increase at the southbound left and eastbound thru movements at Contra Costa Boulevard</li> </ul>	<ul style="list-style-type: none"> <li>Peak-hour queues extend beyond adjacent intersections around the I-680 Ramps</li> </ul>	<ul style="list-style-type: none"> <li>Peak-hour queues extend beyond adjacent intersections around the I-680 Ramps</li> </ul>
	In-lane stopping	<ul style="list-style-type: none"> <li>In the eastbound direction east of Contra Costa Boulevard, bus must pull out of and re-enter traffic when making a stop</li> <li>Potentially conflicts with bicyclists using the roadway</li> </ul>	<ul style="list-style-type: none"> <li>In the eastbound direction east of Contra Costa Boulevard, bus would stop in the third vehicle lane, reducing bus dwell time</li> <li>Conflict with bicyclists is removed by providing a separated bikeway</li> </ul>	<ul style="list-style-type: none"> <li>In the eastbound direction east of Contra Costa Boulevard, bus would stop in the third vehicle lane, reducing bus dwell time</li> <li>Conflict with bicyclists is removed by providing a separated bikeway</li> </ul>	<ul style="list-style-type: none"> <li>In the eastbound direction east of Contra Costa Boulevard, bus would stop in the third vehicle lane, reducing bus dwell time</li> <li>Conflict with bicyclists is removed by providing a separated bikeway</li> </ul>
Transit	Bus stop amenities	<ul style="list-style-type: none"> <li>No passenger amenities at stop</li> <li>Passengers must cross landscape strip to access bus</li> </ul>	<ul style="list-style-type: none"> <li>Bus island provides space to wait for and board bus with ADA compliant access</li> </ul>	<ul style="list-style-type: none"> <li>Bus island provides space to wait for and board bus with ADA compliant access</li> </ul>	<ul style="list-style-type: none"> <li>Bus island provides space to wait for and board bus with ADA compliant access</li> </ul>



# PREFERRED ALTERNATIVE

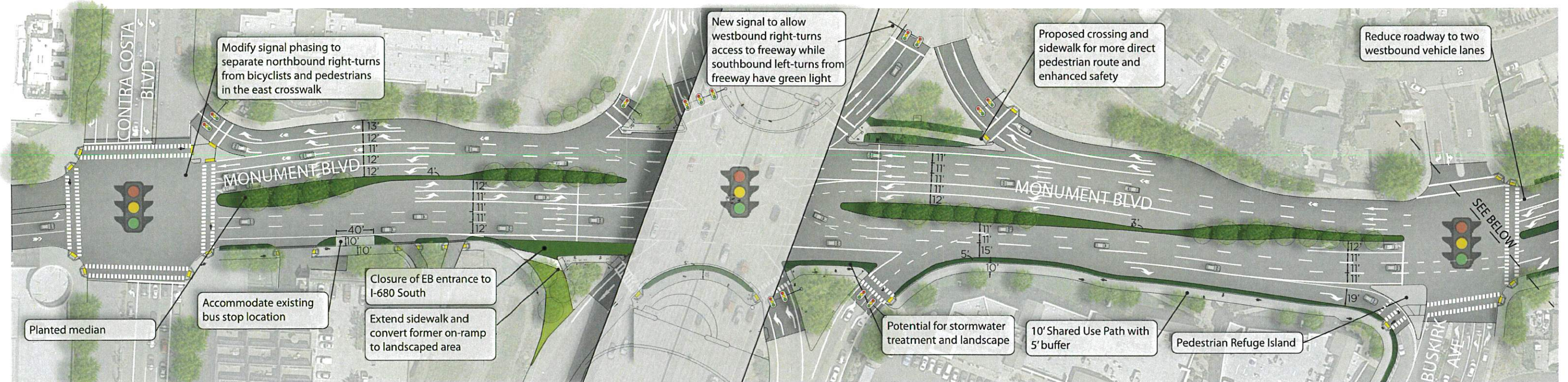
Based on discussions with project stakeholders, including TRANSPAC and the Cities of Pleasant Hill and Concord, a fourth alternative was developed that incorporated elements of the previous three alternatives to best meet the goals of the project. First, Alternative B was chosen for its inclusion of a Class I shared use path on the south side of Monument Boulevard between Contra Costa Boulevard and Buskirk Avenue, and on the north side of Monument Boulevard between Buskirk Avenue and the Iron Horse Trail. A Class 1 path was chosen to maximize the space available to both pedestrians and bicyclists, and for consistency with trails in the vicinity like the Iron Horse Trail and Contra Costa Canal Trail.

Additional features carried into this preferred alternative include closing the eastbound Monument Boulevard to southbound I-680 slip lane, similar to Alternative A and included a Class 1 path on the north side of Lisa Lane instead of a two-way Class IV separated bikeway on the south side. This was chosen to maximize the space available for pedestrians and bicyclists, provide consistency with the rest of the project, and to avoid the existing utility poles along the southside.

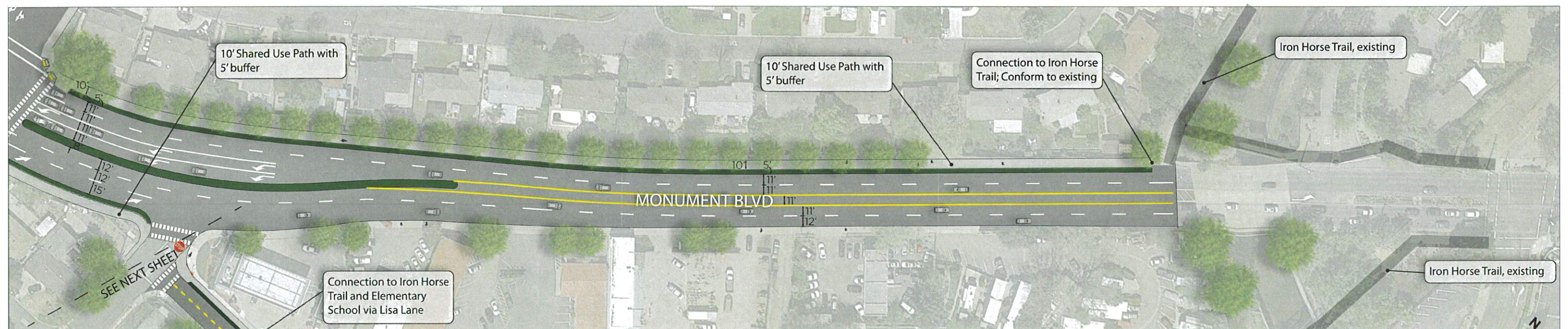
This page intentionally left blank



## PREFERRED ALTERNATIVE



## PREFERRED ALTERNATIVE - MONUMENT BLVD





PREFERRED ALTERNATIVE



PREFERRED ALTERNATIVE - LISA LANE



# FUNDING OPPORTUNITIES

Given the project's active transportation safety and access focus, and potential for regional connectivity, a wide variety of local, state, and federal funding may be available.

## SB 1 Funding

California's Senate Bill 1 (SB 1), also known as the Road Repair and Accountability Act of 2017, is a landmark transportation investment to rebuild California by fixing neighborhood streets, freeways, and bridges in communities across California and targeting funding toward transit and congested trade and commute corridor improvements.

The largest portion of SB 1 funding goes to California's state-maintained transportation infrastructure. With this funding, Caltrans has a goal of repairing or replacing 17,000 miles of pavement in 10 years, spending \$250 million annually for congestion solutions, over \$700 million for better transit commutes, and supporting freight improvements. The other portion of SB 1 funding will go to local roads, transit agencies, and expanding the state's pedestrian and cycle routes. SB 1 funds various grant programs.

### Local Partnership Program (LPP)

The Local Partnership Program's purpose is to provide local and regional transportation agencies that have passed sales tax measures, developer fees, or other imposed transportation fees, with a funding of \$200 million annually from the Road Maintenance and Rehabilitation Account to fund aging infrastructure, road conditions, active

transportation, and health and safety benefits projects. LPP funds are distributed through a 50% statewide competitive component and a 50% formulaic component. Both programs are eligible to jurisdictions with voter approved taxes, tolls, and fees dedicated solely to transportation and the competitive program.

### Local Streets and Roads Program (LSRP)

California has dedicated approximately \$1.5 billion per year appointed by the State Controller (Controller) to cities and counties for basic road maintenance, rehabilitation, and critical safety projects on the local streets and roads system. Cities and counties must submit a proposed projects list adopted at a regular meeting by their board or council that is then submitted to the California Transportation Commission (Commission). Once reviewed and adopted by the Commission, eligible cities and counties receive funding from the Controller and an Annual Project Expenditure Report is sent to the Commission to be transparent with program funding received and expended.

### Active Transportation Program (ATP) Funding

The Active Transportation Program (ATP) was created by Senate Bill 99 to encourage increased use of active modes of transportation such as walking and biking. The goals of the ATP include, but are not limited to, increasing the proportion of trips accomplished by walking and biking, increasing the safety and mobility of non-motorized users,

advancing efforts of regional agencies to achieve greenhouse gas reduction goals, enhancing public health, and providing a broad spectrum of projects to benefit many types of users, including disadvantaged communities. SB 1 directs \$100 million annually to the ATP, with more than 400 of the funded projects being Safe Routes to School projects and programs that encourage a healthy and active lifestyle throughout students' lives.

### Safe Routes to School (SRTS) Funding

Safe Routes to School (SRTS) is a program promoting walking and bicycling to school through infrastructure improvements, tools, safety education, and incentives to encourage these modes of travel. Nationally, 10% to 14% of car trips during the morning rush hour are for school travel. SRTS can be implemented at the state, community, or local school district level. Competitive federal funding is available through the Fixing America's Surface Transportation Act (FAST Act). Depending on the existing infrastructure, SRTS may require that education, transportation, public safety, and city planning agencies coordinate their effort.

## Transportation Development Act (TDA)

Article 3 TDA Article 3 is perhaps the most readily available source of local funding for bicycle projects. TDA funds are derived from a statewide quarter-cent retail sales tax. This tax is returned to the county of origin and distributed to the cities and county on a population basis. Under TDA Article 3, two percent of each entity's TDA allocation is set aside for pedestrian and bicycle projects; this generates approximately \$3 million in the Bay Area annually. Eligible projects include the design and construction of walkways, bicycle paths and bicycle lanes, and safety education programs. According to MTC Resolution 875, these projects must

be included in an adopted general plan or bicycle plan and must have been reviewed by County's bicycle advisory committee.

## California Cap-and-Trade Funding

The Global Warming Solutions Act of 2006 (AB 32) directed the California Air Resources Board (ARB) to institute programs to reduce greenhouse gas (GHG) emissions. The Cap-and-Trade Program, a key element of the ARB's plan to reduce emissions, funds several programs that support the goals of AB 32. Several of these programs relate to transportation and mode shift. The Affordable Housing and Sustainable Communities Program (AHSC), for one, provides funding to support active transportation and complete streets initiatives, among other project types.

## California State Parks Recreational Trails Program (RTP)

The Recreational Trails Program (RTP) provides funds for recreational trails and trails-related projects, including Class I Bicycle Paths. The program is administered at the state level by the California Department of Parks and Recreation (DPR) and the Caltrans Active Transportation Program (ATP).

## Transformative Climate Communities (TCC) Program

The TCC Program funds community-led development and infrastructure projects that strive to make major advances in environmental, health, and economic benefits in California's most disadvantaged communities. Eligible improvements for this funding source include active transportation and public transit projects, transit ridership programs and passes for low-income riders, and encouraging education and planning activities to promote increased use of active modes of transportation.



### **Transportation for Livable Communities**

MTC created the Transportation for Livable Communities (TLC) program in 1998. MTC uses this program to finance pedestrian, bicycle and streetscape improvements near public transit in cities around the Bay Area. The purpose of TLC is to support community-based transportation projects that bring new vibrancy to downtown areas, commercial cores, neighborhoods and transit corridors, making them places where people want to live, work and visit. Pedestrian- and transit-friendly developments are hallmarks of the program. The TLC program has been incorporated into the One Bay Area Grant (OBAG) program.

### **Transportation Fund for Clean Air (TFCA)**

TFCA is a grant program administered by the Bay Area Air Quality Management District (BAAQMD) and funded through a surcharge on motor vehicles registered in the Bay Area. The Air District offers funding to public agencies for trip reduction, bikeways and bicycle parking, and clean air vehicle projects. A subprogram of the TFCA is the Bikeways, Roads, Lanes and Paths program, which offers funding for bicycle parking and bikeway projects (Class I-IV). Funding will be offered on a first-come, first-served basis until the funds are spent. Bicycle projects may also be funded through the TFCA's County Program Manager Fund. Under this subprogram, 40% of TFCA revenues collected in each Bay Area county is returned to that county's congestion management agency (CMA) for allocation. Applications are made directly to the CMAs, but must also be approved by the BAAQMD.

### **One Bay Area Grants (OBAG)**

Currently preparing for January 2022 adoption of its third funding round, OBAG uses federal STBG and CMAQ funds to maintain MTC's commitments to regional transportation priorities while also advancing the Bay Area's land-use and housing goals. Cities and counties can use these OBAG funds to invest in bicycle and pedestrian improvements, Safe Routes to School projects, TLC projects and planning for Priority Development Areas among other uses. MTC distributes OBAG funds to county Congestion Management Agencies in each Bay Area County. The CMAs are then responsible for selecting eligible projects within each county.

### **Measure J**

In November 2004, Contra Costa voters approved Measure J, which extended Measure C (approved 1988), the county's half-percent sales tax for transportation, until 2034. The most explicit source of funding for pedestrian and bicycle projects is through Measure J's Pedestrian, Bicycle and Trail Facilities (PBTF) program, which funds projects identified in the CBPP. The Measure J Transportation for Livable Communities (TLC) program also supports mixed-use, walkable and transit-accessible development and projects that encourage walking and bicycling as its primary goals. The measure also encourages jurisdictions to fund bicycle and pedestrian facilities through other Measure J programs including their shares of the 18% return to-source funds. Measure J also requires local jurisdictions comply with the County's Growth Management Program (GMP), which is described below, to be eligible for funding through two of the measure's programs.

Measure J requires that local jurisdictions comply with CCTA's Growth Management Program (GMP) to be eligible for funding through two of the Measure's programs. Among the requirements of the GMP is that each jurisdiction "incorporate policies and standards into its development approval process that support transit, bicycle and pedestrian access in new developments." The Authority has been implementing the GMP since the adoption of Measure C in 1988. The GMP requires jurisdictions to work together to address regional and countywide transportation issues. CCTA works with RTPCs to implement a Regional Transportation Mitigation Program, which is built from the fees and impact programs adopted by individual RTPCs. CCTA requires jurisdictions to adopt standards for evaluating the impacts of new development on walking, bicycling and transit and also develops and maintains computer models and develops methodologies for analyzing the effects of land use changes and transportation improvements.

### **VMT Mitigation Fees**

Robust and safe active transportation networks are necessary to increase walking and bicycling to existing destinations and new development. A VMT impact fee is an option to ensure new developments are paying their fair share for improvements needed to create these networks. This fee could be based on vehicle trip generation, trip length, and the share of new trips per land use type. This fee could provide a local source of funding and contribute to the local match required for various funding sources. For some projects, alternatives to reducing VMT may be limited, and a fee benefiting active transportation projects may be a viable option to offset VMT increases.



# NEXT STEPS

With the finalization of this Study, there are four immediate next steps that TRANS-PAC and the City of Pleasant Hill can take to continue to move this project forward:

- 1. Identify and apply for grants with deadlines in 2022 that can fund environmental, design, and construction elements
- 2. Coordinate internally with upcoming roadway improvement projects and development projects that may provide local funding
- 3. Engage communities along the corridor on an ongoing basis to provide regular updates on project progress
- 4. Engage Caltrans for project coordination to continue to move the project through the permitting process

# Appendix 1

## Traffic Operations Technical Memorandum



# Appendix 2

## Cost Estimates



**Active Transportation Planning Level Estimate**

**Monument Boulevard/I-680 Bike & Ped Study  
Alternative A**

**Project Location:**

Monument Boulevard, City of Pleasant Hill, City of Concord

**Contra Costa Blvd/Monument Blvd Intersection**

- Protected intersection design that includes the following improvements:
- Protected bike facilities on the north and south approaches of the intersection
- A lane drop and new eastbound buffered bike lane in the east approach of the intersection
- Leading bicycle and pedestrian intervals
- Enlargement of the existing pork chop island in the northeast corner of the intersection

**Monument Blvd/I-680 Ramp Interchange**

- Additional signal head at the northbound on-ramp to allow for the phase associated with the westbound right-turn to overlap with the southbound left-turn phase
- Re-striping of Hi-vis crosswalks
- Optimization of pedestrian crossings phases/timings
- Additional bicycle signals installed as part of the new class IV bicycle facility to break up long crossings within the intersection
- Full closure of the existing eastbound ramp entrance to I-680 South
- Landscaping improvements within the existing intersection islands

**Monument Blvd/Buskirk Ave Intersection**

- Reconstruction of the eastbound right-turn slip lane, including a lane drop in the eastbound direction through the intersection, in order to accommodate new class IV facility
- Enlargement of the existing pork chop island in the southwest corner of the intersection
- Separation of the bicycle and pedestrian crossings across the southern leg of the intersection, including the striping of a new crossbike

**Work Description:**

- New Hi-vis crosswalk striping
- New two-stage left turn box for to enable westbound cyclists access to the new class IV facility along the south side of the corridor
- Extension of the existing eastbound right turn lane to become a trap-lane, starting from the adjacent upstream interchange

**Marcia Dr/Lisa Ln**

- Protected corner design at the Monument Blvd/Marcia Dr intersection, along with Hi-vis crossings to connect the two proposed class IV facilities along Monument Blvd and Lisa Ln
- New class IV bicycle facility along the south side of Lisa Ln, connecting the new facilities along Monument Blvd to the regional Iron Horse Trail

**Monument Blvd Corridor**

- Restriping along the entire corridor due to realignment and lane width reduction of several travel lanes
- Median reconstruction and landscape improvements
- New two-way protected cycle track along the south side of the corridor
- Re-design of the existing bus stop on the south side of the corridor between the intersections of Contra Costa Blvd and I-680
- New westbound Class II buffered bike lane along the north side of the corridor beginning the Iron horse Trail connection near the Mohr Lane intersection, and ending at the westbound approach of the Buskirk Ave intersection

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
<b>General Construction</b>					
1	Mobilization (Including Water Pollution Control Plan)	LS	1	\$283,000	\$283,000
2	Traffic Control & Construction Area Signs	LS	1	\$283,000	\$283,000
3	Miscellaneous Construction	LS	1	\$142,000	\$142,000
					\$708,000
<b>Monument Boulevard/Contra Costa Boulevard Intersection</b>					
1	Remove Existing Pavement Delineation	400	LF	\$1	\$400
2	Remove Existing Thermoplastic Pavement Marking	3900	SF	\$10	\$39,000
3	Remove Median	450	SF	\$10	\$4,500
4	Signal Modification	1	LS	\$200,000	\$200,000
5	Curb Ramp	13	EA	\$7,500	\$97,500
6	Median Treatment	3500	SF	\$8	\$28,000
7	Median Curb	1000	LF	\$35	\$35,000
8	Drainage Improvements	1	LS	\$30,000	\$30,000
9	Crosswalk (Hi-vis)	410	LF	\$30	\$12,300
10	Bikeway Skip Stripe	320	LF	\$28	\$8,800
11	Green Class IV Striping	1100	SF	\$8	\$8,800
12	Mixed-Use Pavement Marking	11	EA	\$112	\$1,300
13	Thermoplastic Traffic Stripe	1450	LF	\$2	\$2,900
14	Thermoplastic Pavement Marking	140	SF	\$4	\$600
					\$468,700
<b>Segment 1 - Contra Costa Boulevard to I-680 SB Ramps</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	300	LF	\$50	\$15,000
2	Remove Existing Pavement Delineation	2600	LF	\$1	\$2,600
3	Remove Existing Thermoplastic Pavement Marking	1075	SF	\$10	\$10,800
4	Thermoplastic Traffic Stripe	2600	LF	\$2	\$5,200
5	Thermoplastic Pavement Marking	1075	SF	\$4	\$4,300
6	Bikeway Skip Stripe	20	LF	\$28	\$600
7	Sidewalk	750	SF	\$30	\$22,500



8	Curb Ramp	5	EA	\$7,500	\$37,500
9	Landscaping	9500	SF	\$15	\$142,500
10	Median Treatment	6000	SF	\$8	\$48,000
11	Median Curb	1400	LF	\$35	\$49,000
12	Remove Median	1400	SF	\$10	\$14,000
13	Drainage Improvements	1	LS	\$50,000	\$50,000
14	Green Class IV Striping	1285	SF	\$8	\$10,300
15	Mixed-Use Pavement Marking	6	EA	\$112	\$700
16	Roadway Pavement	4000	SF	\$10	\$40,000
					\$453,000
<b>Monument Boulevard &amp; I-680 Interchange Intersection</b>					
1	Remove Existing Pavement Delineation	3500	LF	\$1	\$3,500
2	Signal Modification	1	LS	\$250,000	\$250,000
3	Curb Ramp	2	EA	\$7,500	\$15,000
4	Median Treatment	450	SF	\$8	\$3,600
5	Median Curb	400	LF	\$35	\$14,000
6	Sidewalk	750	SF	\$30	\$22,500
7	Landscaping	19050	SF	\$15	\$285,800
8	Drainage Improvements	1	LS	\$15,000	\$15,000
9	Crosswalk (Hi-vis)	250	LF	\$30	\$7,500
10	Bikeway Skip Stripe	200	LF	\$28	\$5,500
11	Green Class IV Striping	385	SF	\$8	\$3,100
12	Mixed-Use Pavement Marking	6	EA	\$112	\$700
13	Thermoplastic Traffic Stripe	3100	LF	\$2	\$6,200
14	Roadway Pavement	4000	SF	\$10	\$40,000
					\$672,400
<b>Segment 2 - I-680 NB Ramps to Buskirk Avenue</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	300	LF	\$50	\$15,000
2	Remove Existing Pavement Delineation	4000	LF	\$1	\$4,000
3	Remove Existing Thermoplastic Pavement Marking	700	SF	\$10	\$7,000
4	Thermoplastic Traffic Stripe	3300	LF	\$2	\$6,600
5	Thermoplastic Pavement Marking	650	SF	\$4	\$2,600
6	Landscaping	12500	SF	\$15	\$187,500
7	Median Treatment	200	SF	\$8	\$1,600
8	Median Curb	2150	LF	\$35	\$75,300
9	Remove Median	7500	SF	\$10	\$75,000
10	Drainage Improvements	1	LS	\$100,000	\$100,000
11	Green Class IV Striping	1000	SF	\$8	\$8,000
12	Mixed-Use Pavement Marking	4	EA	\$112	\$500
13	Roadway Pavement	4500	SF	\$10	\$45,000
					\$528,100
<b>Monument Boulevard/Buskirk Avenue Intersection</b>					
1	Remove Existing Pavement Delineation	850	LF	\$1	\$900
2	Remove Median	800	SF	\$10	\$8,000
3	Signal Modification	1	LS	\$250,000	\$250,000
4	Curb Ramp	5	EA	\$7,500	\$37,500
5	Median Treatment	1300	SF	\$8	\$10,400
6	Median Curb	200	LF	\$35	\$7,000
7	Crosswalk (Hi-vis)	300	LF	\$30	\$9,000
8	Bikeway Skip Stripe	250	LF	\$28	\$6,900
9	Green Class IV Striping	130	SF	\$8	\$1,100
10	Mixed-Use Pavement Marking	2	EA	\$112	\$300
11	Thermoplastic Traffic Stripe	400	LF	\$2	\$800
					\$331,900
<b>Segment 3 - Monument Boulevard, East of Buskirk Avenue</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	75	LF	\$50	\$3,800
2	Remove Existing Pavement Delineation	4500	LF	\$1	\$4,500
3	Remove Existing Thermoplastic Pavement Marking	300	SF	\$10	\$3,000
4	Thermoplastic Traffic Stripe	7000	LF	\$2	\$14,000
5	Thermoplastic Pavement Marking	300	SF	\$4	\$1,200
6	Bikeway Skip Stripe	75	LF	\$28	\$2,100
7	Median Treatment	2000	SF	\$8	\$16,000
8	Median Curb	1000	LF	\$35	\$35,000
9	Remove Median	3000	SF	\$10	\$30,000
10	Drainage Improvements	1	LS	\$15,000	\$15,000
11	Green Class IV Striping	950	SF	\$8	\$7,600
12	Mixed-Use Pavement Marking	6	EA	\$112	\$700
13	Roadway Pavement	1600	SF	\$10	\$16,000
					\$148,900
<b>Segment 4 - Marcia Drive &amp; Lisa Lane</b>					
1	Remove Existing Pavement Delineation	2700	LF	\$1	\$2,700
2	Remove Existing Thermoplastic Pavement Marking	150	SF	\$10	\$1,500
3	Thermoplastic Traffic Stripe	850	LF	\$2	\$1,700
4	Thermoplastic Pavement Marking	150	SF	\$4	\$600
5	Bikeway Skip Stripe	50	LF	\$28	\$1,400
6	Sidewalk	1000	SF	\$30	\$30,000
7	Curb Ramp	3	EA	\$7,500	\$22,500
8	Median Treatment	1900	SF	\$8	\$15,200
9	Median Curb	1750	LF	\$35	\$61,300
10	Green Class IV Striping	550	SF	\$8	\$4,400
11	Mixed-Use Pavement Marking	4	EA	\$112	\$500



12	Roadway Pavement	9000	SF	\$10	\$90,000
					\$231,800
<b>Estimated Construction Cost Subtotal</b>					<b>\$3,543,200</b>
Contingencies (25% of Estimated Construction Cost Subtotal)					\$886,000
<b>ESTIMATED CONSTRUCTION COST TOTAL</b>					<b>\$5,137,200</b>
Planning/Environmental (7% of Estimated Construction Cost Total)					\$514,000
Design (15% of Estimated Construction Cost Total)					\$771,000
Construction Administration (10% of Estimated Construction Cost Total)					\$514,000
<b>ENGINEERING AND ADMINISTRATION TOTAL</b>					<b>\$1,799,000</b>
<b>TOTAL ESTIMATED PROJECT COST:</b>					<b>\$6,936,200</b>



**Active Transportation Planning Level Estimate**

**Monument Boulevard/I-680 Bike & Ped Study  
Alternative B**

**Project Location:**

Monument Boulevard, City of Pleasant Hill, City of Concord

**Contra Costa Blvd/Monument Blvd Intersection**

- New trail crossing-type striped crosswalks
- Modified signal phasing to separate northbound right-turns from bicyclists and pedestrians in the east crosswalk
- Enlargment of the existing pork chop island in the northeast corner of the intersection

**Monument Blvd/I-680 Ramp Interchange**

- Additional signal head at the northbound on-ramp to allow for the phase associated with the westbound right-turn to overlap with the southbound left-turn phase
- New trail crossing-type striped crosswalks along south side of the corridor
- Optimization of pedestrian crossings phases/timings
- Landscaping improvements within the existing intersection islands

**Monument Blvd/Buskirk Ave Intersection**

- Reconstruction of the eastbound right-turn slip lane, in order to accommodate new class II facility
- Enlargment of the existing pork chop island in the southwest corner of the intersection
- New trail crossing-type crosswalk striping
- Lane drop reduces the westbound approach from three to two through-lanes for vehicles
- Reconstruction of the east leg median to accommodate lane drop

**Work Description:**

**Marcia Dr/Lisa Ln**

- Protected corner design at the Monument Blvd/Marcia Dr intersection, along with trail crossing-type striping to connect the two proposed bicycle and pedestrian facilities along Monument Blvd and Lisa Ln
- New class IV bicycle facility along the south side of Lisa Ln, connecting the new facilities along Monument Blvd to the regional Iron Horse Trail

**Monument Blvd Corridor**

- Restriping along the entire corridor due to realignment and lane width reduction of several travel lanes
- Median reconstruction and landscape improvements
- New curb/gutter, sidewalk along the southern side of the corridor in order to incorporate a new buffered, separated class I mixed-use path
- Re-design of the existing bus stop on the south side of the corridor between the intersections of Contra Costa Blvd and I-680
- New westbound Class II buffered bike lane along the north side of the corridor beginning the Iron horse Trail connection near the Mohr Lane intersection, and ending at the westbound approach of the Buskirk Ave intersection

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
<b>General Construction</b>					
1	Mobilization (Including Water Pollution Control Plan)	LS	1	\$375,000	\$375,000
2	Traffic Control & Construction Area Signs	LS	1	\$375,000	\$375,000
3	Miscellaneous Construction	LS	1	\$188,000	\$188,000
					\$938,000
<b>Monument Boulevard/Contra Costa Boulevard Intersection</b>					
1	Remove Existing Pavement Delineation	220	LF	\$1	\$300
2	Remove Existing Thermoplastic Pavement Marking	3750	SF	\$10	\$37,500
3	Remove Median	450	SF	\$10	\$4,500
4	Signal Modification	1	LS	\$75,000	\$75,000
5	Curb Ramp	9	EA	\$7,500	\$67,500
6	Median Treatment	1000	SF	\$8	\$8,000
7	Median Curb	200	LF	\$35	\$7,000
8	Drainage Improvements	1	LS	\$30,000	\$30,000
9	Crosswalk (Trail Crossing)	450	LF	\$30	\$13,500
10	Thermoplastic Traffic Stripe	220	LF	\$2	\$500
					\$243,500
<b>Segment 1 - Contra Costa Boulevard to I-680 SB Ramps</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	350	LF	\$50	\$17,500
2	Remove Existing Pavement Delineation	2900	LF	\$1	\$2,900
3	Remove Existing Thermoplastic Pavement Marking	1075	SF	\$10	\$10,800
4	Thermoplastic Traffic Stripe	2800	LF	\$2	\$5,600
5	Thermoplastic Pavement Marking	1075	SF	\$4	\$4,300
6	Crosswalk (Trail Crossing)	50	LF	\$30	\$1,500
7	Sidewalk	3500	SF	\$30	\$105,000
8	Curb Ramp	7	EA	\$7,500	\$52,500
9	Landscaping	6750	SF	\$15	\$101,300
10	Median Treatment	5500	SF	\$8	\$44,000
11	Median Curb	900	LF	\$35	\$31,500
12	Remove Median	900	SF	\$10	\$9,000
13	Drainage Improvements	1	LS	\$50,000	\$50,000
					\$435,900
<b>Monument Boulevard &amp; I-680 Interchange Intersection</b>					
1	Remove Existing Pavement Delineation	3500	LF	\$1	\$3,500
2	Signal Modification	1	LS	\$200,000	\$200,000
3	Curb Ramp	10	EA	\$7,500	\$75,000
4	Concrete Curb & Gutter (includes pervious surfaces)	400	LF	\$50	\$20,000
5	Sidewalk	4000	SF	\$30	\$120,000



6	Landscaping	13000	SF	\$15	\$195,000
7	Drainage Improvements	1	LS	\$15,000	\$15,000
8	Crosswalk (Trail Crossing)	150	LF	\$30	\$4,500
9	Thermoplastic Traffic Stripe	3100	LF	\$2	\$6,200
					\$639,200
<b>Segment 2 - I-680 NB Ramps to Buskirk Avenue</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	800	LF	\$50	\$40,000
2	Remove Existing Pavement Delineation	3400	LF	\$1	\$3,400
3	Remove Existing Thermoplastic Pavement Marking	700	SF	\$10	\$7,000
4	Thermoplastic Traffic Stripe	4000	LF	\$2	\$8,000
5	Thermoplastic Pavement Marking	650	SF	\$4	\$2,600
6	Landscaping	10250	SF	\$15	\$153,800
7	Median Treatment	7000	SF	\$8	\$56,000
8	Median Curb	1250	LF	\$35	\$43,800
9	Remove Median	7000	SF	\$10	\$70,000
10	Drainage Improvements	1	LS	\$100,000	\$100,000
11	Sidewalk	7000	SF	\$30	\$210,000
					\$694,600
<b>Monument Boulevard/Buskirk Avenue Intersection</b>					
1	Remove Existing Pavement Delineation	600	LF	\$1	\$600
2	Remove Median	800	SF	\$10	\$8,000
3	Signal Modification	1	LS	\$150,000	\$150,000
4	Curb Ramp	7	EA	\$7,500	\$52,500
5	Median Treatment	1500	SF	\$8	\$12,000
6	Median Curb	200	LF	\$35	\$7,000
7	Crosswalk (Trail Crossing)	200	LF	\$30	\$6,000
8	Concrete Curb & Gutter (includes pervious surfaces)	175	LF	\$50	\$8,800
9	Thermoplastic Traffic Stripe	400	LF	\$2	\$800
					\$245,700
<b>Segment 3 - Monument Boulevard, East of Buskirk Avenue</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	1500	LF	\$50	\$75,000
2	Remove Existing Pavement Delineation	5250	LF	\$1	\$5,300
3	Remove Existing Thermoplastic Pavement Marking	400	SF	\$10	\$4,000
4	Thermoplastic Traffic Stripe	5000	LF	\$2	\$10,000
5	Thermoplastic Pavement Marking	400	SF	\$4	\$1,600
6	Sidewalk	15600	SF	\$30	\$468,000
7	Median Treatment	3850	SF	\$8	\$30,800
8	Median Curb	1000	LF	\$35	\$35,000
9	Remove Median	3000	SF	\$10	\$30,000
10	Drainage Improvements	1	LS	\$15,000	\$15,000
11	Landscaping	10750	SF	\$15	\$161,300
					\$836,000
<b>Segment 4 - Marcia Drive &amp; Lisa Lane</b>					
1	Remove Existing Pavement Delineation	2700	LF	\$1	\$2,700
2	Remove Existing Thermoplastic Pavement Marking	150	SF	\$10	\$1,500
3	Thermoplastic Traffic Stripe	850	LF	\$2	\$1,700
4	Thermoplastic Pavement Marking	150	SF	\$4	\$600
5	Crosswalk (Trail Crossing)	150	LF	\$30	\$4,500
6	Curb Ramp	3	EA	\$7,500	\$22,500
7	Concrete Curb & Gutter (includes pervious surfaces)	950	LF	\$50	\$47,500
8	Sidewalk	9500	SF	\$30	\$285,000
9	Landscaping	3800	SF	\$15	\$57,000
10	Drainage Improvements	1	LS	\$15,000	\$15,000
11	Roadway Pavement	22000	SF	\$10	\$220,000
					\$658,000
<b>Estimated Construction Cost Subtotal</b>					<b>\$4,691,200</b>
Contingencies (25% of Estimated Construction Cost Subtotal)					\$1,173,000
<b>ESTIMATED CONSTRUCTION COST TOTAL</b>					<b>\$6,802,200</b>
Planning/Environmental (7% of Estimated Construction Cost Total)					\$681,000
Design (15% of Estimated Construction Cost Total)					\$1,021,000
Construction Administration (10% of Estimated Construction Cost Total)					\$681,000
<b>ENGINEERING AND ADMINISTRATION TOTAL</b>					<b>\$2,383,000</b>
<b>TOTAL ESTIMATED PROJECT COST:</b>					<b>\$9,185,200</b>



Active Transportation Planning Level Estimate

**Monument Boulevard/I-680 Bike & Ped Study  
Alternative C**

**Project Location:**

Monument Boulevard, City of Pleasant Hill, City of Concord

**Contra Costa Blvd/Monument Blvd Intersection**

- Protected intersection design that includes the following improvements:
- Protected bike facilities on the north and south approaches of the intersection
- A lane drop and new eastbound buffered bike lane in the east approach of the intersection
- Leading bicycle and pedestrian intervals
- Enlargement of the existing pork chop island in the northeast corner of the intersection

**Monument Blvd/I-680 Ramp Interchange**

- Additional signal head at the northbound on-ramp to allow for the phase associated with the westbound right-turn to overlap with the southbound left-turn phase
- Re-striping of Hi-vis crosswalks
- Optimization of pedestrian crossings phases/timings
- Additional bicycle signals installed as part of the new class IV bicycle facility to break up long crossings within the intersection
- Full closure of the existing eastbound ramp entrance to I-680 South
- Landscaping improvements within the existing intersection islands

**Monument Blvd/Buskirk Ave Intersection**

- Reconstruction of the eastbound right-turn slip lane, in order to accommodate new class IV facility
- Enlargement of the existing pork chop island in the southwest corner of the intersection
- Separation of the bicycle and pedestrian crossings across the southern leg of the intersection, including the striping of a new crossbike

**Work Description:**

- New Hi-vis crosswalk striping
- New two-stage left turn box for to enable westbound cyclists access to the new class IV facility along the south side of the corridor
- Lane drop reduces the westbound approach from three to two through-lanes for vehicles
- Reconstruction of the east leg median to accommodate lane drop

**Marcia Dr/Lisa Ln**

- Protected corner design at the Monument Blvd/Marcia Dr intersection, along with Hi-vis crossings to connect the two proposed class IV facilities along Monument Blvd and Lisa Ln
- New class IV bicycle facility along the south side of Lisa Ln, connecting the new facilities along Monument Blvd to the regional Iron Horse Trail

**Monument Blvd Corridor**

- Restriping along the entire corridor due to realignment and lane width reduction of several travel lanes
- Median reconstruction and landscape improvements
- New two-way protected cycle track along the south side of the corridor
- Re-design of the existing bus stop on the south side of the corridor between the intersections of Contra Costa Blvd and I-680
- New westbound Class II buffered bike lane along the north side of the corridor beginning the Iron horse Trail connection near the Mohr Lane intersection, and ending at the westbound approach of the Buskirk Ave intersection

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
<b>General Construction</b>					
1	Mobilization (Including Water Pollution Control Plan)	LS	1	\$287,000	\$287,000
2	Traffic Control & Construction Area Signs	LS	1	\$287,000	\$287,000
3	Miscellaneous Construction	LS	1	\$144,000	\$144,000
					\$718,000
<b>Monument Boulevard/Contra Costa Boulevard Intersection</b>					
1	Remove Existing Pavement Delineation	400	LF	\$1	\$400
2	Remove Existing Thermoplastic Pavement Marking	3900	SF	\$10	\$39,000
3	Remove Median	450	SF	\$10	\$4,500
4	Signal Modification	1	LS	\$200,000	\$200,000
5	Curb Ramp	13	EA	\$7,500	\$97,500
6	Median Treatment	3500	SF	\$8	\$28,000
7	Median Curb	1000	LF	\$35	\$35,000
8	Drainage Improvements	1	LS	\$30,000	\$30,000
9	Crosswalk (Hi-vis)	410	LF	\$30	\$12,300
10	Bikeway Skip Stripe	320	LF	\$28	\$8,800
11	Green Class IV Striping	1100	SF	\$8	\$8,800
12	Mixed-Use Pavement Marking	11	EA	\$112	\$1,300
13	Thermoplastic Traffic Stripe	1450	LF	\$2	\$2,900
14	Thermoplastic Pavement Marking	140	SF	\$4	\$600
					\$468,700
<b>Segment 1 - Contra Costa Boulevard to I-680 SB Ramps</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	300	LF	\$50	\$15,000
2	Remove Existing Pavement Delineation	2600	LF	\$1	\$2,600
3	Remove Existing Thermoplastic Pavement Marking	1075	SF	\$10	\$10,800
4	Thermoplastic Traffic Stripe	2600	LF	\$2	\$5,200
5	Thermoplastic Pavement Marking	1075	SF	\$4	\$4,300
6	Bikeway Skip Stripe	20	LF	\$28	\$600
7	Sidewalk	750	SF	\$30	\$22,500
8	Curb Ramp	5	EA	\$7,500	\$37,500



9	Landscaping	9500	SF	\$15	\$142,500
10	Median Treatment	6000	SF	\$8	\$48,000
11	Median Curb	1400	LF	\$35	\$49,000
12	Remove Median	1400	SF	\$10	\$14,000
13	Drainage Improvements	1	LS	\$50,000	\$50,000
14	Green Class IV Striping	1285	SF	\$8	\$10,300
15	Mixed-Use Pavement Marking	6	EA	\$112	\$700
16	Roadway Pavement	4000	SF	\$10	\$40,000
					\$453,000
<b>Monument Boulevard &amp; I-680 Interchange Intersection</b>					
1	Remove Existing Pavement Delineation	3500	LF	\$1	\$3,500
2	Signal Modification	1	LS	\$250,000	\$250,000
3	Curb Ramp	2	EA	\$7,500	\$15,000
4	Median Treatment	450	SF	\$8	\$3,600
5	Median Curb	400	LF	\$35	\$14,000
6	Sidewalk	750	SF	\$30	\$22,500
7	Landscaping	19050	SF	\$15	\$285,800
8	Drainage Improvements	1	LS	\$15,000	\$15,000
9	Crosswalk (Hi-vis)	250	LF	\$30	\$7,500
10	Bikeway Skip Stripe	200	LF	\$28	\$5,500
11	Green Class IV Striping	385	SF	\$8	\$3,100
12	Mixed-Use Pavement Marking	6	EA	\$112	\$700
13	Thermoplastic Traffic Stripe	3100	LF	\$2	\$6,200
14	Roadway Pavement	4000	SF	\$10	\$40,000
					\$672,400
<b>Segment 2 - I-680 NB Ramps to Buskirk Avenue</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	300	LF	\$50	\$15,000
2	Remove Existing Pavement Delineation	4000	LF	\$1	\$4,000
3	Remove Existing Thermoplastic Pavement Marking	700	SF	\$10	\$7,000
4	Thermoplastic Traffic Stripe	3900	LF	\$2	\$7,800
5	Thermoplastic Pavement Marking	650	SF	\$4	\$2,600
6	Landscaping	7500	SF	\$15	\$112,500
7	Median Treatment	9000	SF	\$8	\$72,000
8	Median Curb	2400	LF	\$35	\$84,000
9	Remove Median	7500	SF	\$10	\$75,000
10	Drainage Improvements	1	LS	\$100,000	\$100,000
11	Green Class IV Striping	1000	SF	\$8	\$8,000
12	Mixed-Use Pavement Marking	4	EA	\$112	\$500
13	Roadway Pavement	4500	SF	\$10	\$45,000
					\$533,400
<b>Monument Boulevard/Buskirk Avenue Intersection</b>					
1	Remove Existing Pavement Delineation	850	LF	\$1	\$900
2	Remove Median	800	SF	\$10	\$8,000
3	Signal Modification	1	LS	\$250,000	\$250,000
4	Curb Ramp	5	EA	\$7,500	\$37,500
5	Median Treatment	1200	SF	\$8	\$9,600
6	Median Curb	200	LF	\$35	\$7,000
7	Crosswalk (Hi-vis)	300	LF	\$30	\$9,000
8	Bikeway Skip Stripe	250	LF	\$28	\$6,900
9	Green Class IV Striping	130	SF	\$8	\$1,100
10	Mixed-Use Pavement Marking	2	EA	\$112	\$300
11	Thermoplastic Traffic Stripe	400	LF	\$2	\$800
					\$331,100
<b>Segment 3 - Monument Boulevard, East of Buskirk Avenue</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	75	LF	\$50	\$3,800
2	Remove Existing Pavement Delineation	5250	LF	\$1	\$5,300
3	Remove Existing Thermoplastic Pavement Marking	400	SF	\$10	\$4,000
4	Thermoplastic Traffic Stripe	7500	LF	\$2	\$15,000
5	Thermoplastic Pavement Marking	400	SF	\$4	\$1,600
6	Bikeway Skip Stripe	75	LF	\$28	\$2,100
7	Median Treatment	4500	SF	\$8	\$36,000
8	Median Curb	1400	LF	\$35	\$49,000
9	Remove Median	3000	SF	\$10	\$30,000
10	Drainage Improvements	1	LS	\$15,000	\$15,000
11	Green Class IV Striping	950	SF	\$8	\$7,600
12	Mixed-Use Pavement Marking	6	EA	\$112	\$700
13	Roadway Pavement	1600	SF	\$10	\$16,000
					\$186,100
<b>Segment 4 - Marcia Drive &amp; Lisa Lane</b>					
1	Remove Existing Pavement Delineation	2700	LF	\$1	\$2,700
2	Remove Existing Thermoplastic Pavement Marking	150	SF	\$10	\$1,500
3	Thermoplastic Traffic Stripe	850	LF	\$2	\$1,700
4	Thermoplastic Pavement Marking	150	SF	\$4	\$600
5	Bikeway Skip Stripe	50	LF	\$28	\$1,400
6	Sidewalk	1000	SF	\$25	\$25,000
7	Curb Ramp	3	EA	\$7,500	\$22,500
8	Median Treatment	1900	SF	\$8	\$15,200
9	Median Curb	1750	LF	\$35	\$61,300
10	Green Class IV Striping	550	SF	\$8	\$4,400
11	Mixed-Use Pavement Marking	4	EA	\$112	\$500
12	Roadway Pavement	9000	SF	\$10	\$90,000



--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



**Active Transportation Planning Level Estimate**

**Monument Boulevard/I-680 Bike & Ped Study  
Preferred Alternative**

**Project Location:** Monument Boulevard, City of Pleasant Hill, City of Concord

**Contra Costa Blvd/Monument Blvd Intersection**

- New trail crossing-type striped crosswalks
- Modified signal phasing to separate northbound right-turns from bicyclists and pedestrians in the east crosswalk
- Enlargement of the existing pork chop island in the northeast corner of the intersection

**Monument Blvd/I-680 Ramp Interchange**

- Additional signal head at the northbound on-ramp to allow for the phase associated with the westbound right-turn to overlap with the southbound left-turn phase
- New trail crossing-type striped crosswalks along south side of the corridor
- Optimization of pedestrian crossings phases/timings
- Landscaping improvements within the existing intersection islands

**Monument Blvd/Buskirk Ave Intersection**

- Reconstruction of the eastbound right-turn slip lane, in order to accommodate new class II facility
- Enlargement of the existing pork chop island in the southwest corner of the intersection
- New trail crossing-type crosswalk striping
- Lane drop reduces the westbound approach from three to two through-lanes for vehicles
- Reconstruction of the east leg median to accommodate lane drop

**Work Description:**

**Marcia Dr/Lisa Ln**

- Protected corner design at the Monument Blvd/Marcia Dr intersection, along with trail crossing-type striping to connect the two proposed bicycle and pedestrian facilities along Monument Blvd and Lisa Ln
- New class IV bicycle facility along the south side of Lisa Ln, connecting the new facilities along Monument Blvd to the regional Iron Horse Trail

**Monument Blvd Corridor**

- Restriping along the entire corridor due to realignment and lane width reduction of several travel lanes
- Median reconstruction and landscape improvements
- New curb/gutter, sidewalk along the southern side of the corridor in order to incorporate a new buffered, separated class I mixed-use path
- Re-design of the existing bus stop on the south side of the corridor between the intersections of Contra Costa Blvd and I-680
- New westbound Class II buffered bike lane along the north side of the corridor beginning the Iron horse Trail connection near the Mohr Lane intersection, and ending at the westbound approach of the Buskirk Ave intersection

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	TOTAL
<b>General Construction</b>					
1	Mobilization (Including Water Pollution Control Plan)	LS	1	\$403,000	\$403,000
2	Traffic Control & Construction Area Signs	LS	1	\$403,000	\$403,000
3	Miscellaneous Construction	LS	1	\$201,000	\$201,000
					\$1,007,000
<b>Monument Boulevard/Contra Costa Boulevard Intersection</b>					
1	Remove Existing Pavement Delineation	220	LF	\$1	\$300
2	Remove Existing Thermoplastic Pavement Marking	3750	SF	\$10	\$37,500
3	Remove Median	450	SF	\$10	\$4,500
4	Signal Modification	1	LS	\$150,000	\$150,000
5	Curb Ramp	9	EA	\$7,500	\$67,500
6	Median Treatment	1000	SF	\$8	\$8,000
7	Median Curb	200	LF	\$35	\$7,000
8	Drainage Improvements	1	LS	\$30,000	\$30,000
9	Crosswalk (Trail Crossing)	450	LF	\$30	\$13,500
10	Thermoplastic Traffic Stripe	220	LF	\$2	\$500
					\$318,500
<b>Segment 1 - Contra Costa Boulevard to I-680 SB Ramps</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	450	LF	\$50	\$22,500
2	Remove Existing Pavement Delineation	2900	LF	\$1	\$2,900
3	Remove Existing Thermoplastic Pavement Marking	1075	SF	\$10	\$10,800
4	Thermoplastic Traffic Stripe	2800	LF	\$2	\$5,600
5	Thermoplastic Pavement Marking	1075	SF	\$4	\$4,300
6	Crosswalk (Trail Crossing)	0	LF	\$30	\$0
7	Sidewalk	3700	SF	\$30	\$111,000
8	Curb Ramp	6	EA	\$7,500	\$45,000
9	Landscaping	10000	SF	\$15	\$150,000
10	Median Treatment	5500	SF	\$8	\$44,000
11	Median Curb	900	LF	\$35	\$31,500
12	Remove Median	900	SF	\$10	\$9,000
13	Drainage Improvements	1	LS	\$50,000	\$50,000
					\$486,600
<b>Monument Boulevard &amp; I-680 Interchange Intersection</b>					
1	Remove Existing Pavement Delineation	3500	LF	\$1	\$3,500
2	Signal Modification	1	LS	\$200,000	\$200,000
3	Curb Ramp	9	EA	\$7,500	\$67,500
4	Concrete Curb & Gutter (includes pervious surfaces)	400	LF	\$50	\$20,000
5	Sidewalk	4000	SF	\$30	\$120,000



6	Landscaping	13000	SF	\$15	\$195,000
7	Drainage Improvements	1	LS	\$15,000	\$15,000
8	Crosswalk (Trail Crossing)	150	LF	\$30	\$4,500
9	Thermoplastic Traffic Stripe	3100	LF	\$2	\$6,200
					\$631,700
<b>Segment 2 - I-680 NB Ramps to Buskirk Avenue</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	800	LF	\$50	\$40,000
2	Remove Existing Pavement Delineation	3400	LF	\$1	\$3,400
3	Remove Existing Thermoplastic Pavement Marking	700	SF	\$10	\$7,000
4	Thermoplastic Traffic Stripe	4000	LF	\$2	\$8,000
5	Thermoplastic Pavement Marking	650	SF	\$4	\$2,600
6	Landscaping	10250	SF	\$15	\$153,800
7	Median Treatment	7000	SF	\$8	\$56,000
8	Median Curb	1250	LF	\$35	\$43,800
9	Remove Median	7000	SF	\$10	\$70,000
10	Drainage Improvements	1	LS	\$100,000	\$100,000
11	Sidewalk	7000	SF	\$30	\$210,000
					\$694,600
<b>Monument Boulevard/Buskirk Avenue Intersection</b>					
1	Remove Existing Pavement Delineation	600	LF	\$1	\$600
2	Remove Median	800	SF	\$10	\$8,000
3	Signal Modification	1	LS	\$150,000	\$150,000
4	Curb Ramp	7	EA	\$7,500	\$52,500
5	Median Treatment	1500	SF	\$8	\$12,000
6	Median Curb	200	LF	\$35	\$7,000
7	Crosswalk (Trail Crossing)	200	LF	\$30	\$6,000
8	Concrete Curb & Gutter (includes pervious surfaces)	175	LF	\$50	\$8,800
9	Thermoplastic Traffic Stripe	400	LF	\$2	\$800
					\$245,700
<b>Segment 3 - Monument Boulevard, East of Buskirk Avenue</b>					
1	Concrete Curb & Gutter (includes pervious surfaces)	1500	LF	\$50	\$75,000
2	Remove Existing Pavement Delineation	5250	LF	\$1	\$5,300
3	Remove Existing Thermoplastic Pavement Marking	400	SF	\$10	\$4,000
4	Thermoplastic Traffic Stripe	5000	LF	\$2	\$10,000
5	Thermoplastic Pavement Marking	400	SF	\$4	\$1,600
6	Sidewalk	15600	SF	\$30	\$468,000
7	Median Treatment	3850	SF	\$8	\$30,800
8	Median Curb	1000	LF	\$35	\$35,000
9	Remove Median	3000	SF	\$10	\$30,000
10	Drainage Improvements	1	LS	\$25,000	\$25,000
11	Landscaping	10750	SF	\$15	\$161,300
					\$846,000
<b>Segment 4 - Marcia Drive &amp; Lisa Lane</b>					
1	Remove Existing Pavement Delineation	2700	LF	\$1	\$2,700
2	Remove Existing Thermoplastic Pavement Marking	150	SF	\$10	\$1,500
3	Thermoplastic Traffic Stripe	850	LF	\$2	\$1,700
4	Thermoplastic Pavement Marking	150	SF	\$4	\$600
5	Crosswalk (Trail Crossing)	150	LF	\$30	\$4,500
6	Curb Ramp	3	EA	\$7,500	\$22,500
7	Concrete Curb & Gutter (includes pervious surfaces)	950	LF	\$50	\$47,500
8	Sidewalk	9500	SF	\$30	\$285,000
9	Landscaping	3800	SF	\$15	\$57,000
10	Drainage Improvements	1	LS	\$50,000	\$50,000
11	Roadway Pavement	22000	SF	\$15	\$330,000
					\$803,000
<b>Estimated Construction Cost Subtotal</b>					<b>\$5,033,400</b>
Contingencies (25% of Estimated Construction Cost Subtotal)					\$1,259,000
<b>ESTIMATED CONSTRUCTION COST TOTAL</b>					<b>\$7,299,400</b>
Planning/Environmental (7% of Estimated Construction Cost Total)					\$730,000
Design (15% of Estimated Construction Cost Total)					\$1,095,000
Construction Administration (10% of Estimated Construction Cost Total)					\$730,000
<b>ENGINEERING AND ADMINISTRATION TOTAL</b>					<b>\$2,555,000</b>
<b>TOTAL ESTIMATED PROJECT COST:</b>					<b>\$9,854,400</b>



# Appendix 3

## Comments Received from Online Engagement

An online web tool was available for attendees of the walking audit to document their comments, take photos, and note destinations where they either currently or wanted to bike and walk. The map was also available for the broader public to participate. A full list of comments received via the online tool is shown in the table on the following page.



Type	Comment
I bike here	The traffic signals need to prioritize allowing pedestrians and bicyclists to cross the ramps of the freeway. Currently, once the button is pushed, it is a L-O-N-G time until the traffic signal allows the pedestrian or bicyclist to cross the street.
I want to bike here	Iron Horse Trail to Down town PH is not a ride I will do on the street. from the south much safer to go Cogins/Oak Park to EBMUD trail gets you to either Cleveland Rd. or W. Hookston Rd.
I drive here	This intersection is way too big and is unsafe to navigate. Obviously this needs to be studied but restricting the left turns from the offramps and onto the onramps might help reduce conflict points if you were to put in a bike lane. Remember, we need to
I bike here	The crossing of the I-680 freeway on Monument Boulevard needs some improvement. I am OK with using a 10-foot wide sidewalk. A sidewalk needs to be on EACH side of the street. The sidewalk needs to be actually 10-feet wide. I need to stress that th
I walk here	Onramp traffic comes very fast, feels unsafe. Have to walk half way up the nb ramp to cross second leg
I want to bike here	We need a protected bike lane here.
I bike here	This intersection is awful to navigate for everyone. Needs to be protected for bikes THROUGH the intersection in both directions. There's no excuse not to provide a high quality facility when there are five lanes to use. You'd be connecting neighborhoods
I walk here	Narrow sidewalk is very close to fast moving traffic. Doesn't feel comfortable.
I bike here	We need a safe pathway to the Iron Horse Trail.
I walk here	Double right turn makes crossing unsafe
I walk here	Double right turn makes crossing unsafe
I walk here	Narrow sidewalk is very close to fast moving traffic. Doesn't feel comfortable.
I want to bike here	I want to bike everywhere in this area but I currently don't because I'm scared I'm going to die.
I bike here	No safe route from Pleasant Hill onto any of the three trails at this location.
I walk here	Onramp traffic comes very fast, feels unsafe. Have to walk half way up the nb ramp to cross second leg
I walk here	Double right turn makes crossing unsafe
I want to bike here	Extremely wide intersection feels dangerous to cross, add bulb outs and protected bike lane along CC Boulevard to shorten the crossing distance. There are three lanes of traffic on CC Boulevard and FIVE at the intersection; more than enough space to convert a thro
I bike here	A concrete K-rail should be installed along the sidewalk between the traffic lane and the sidewalk between the Walnut Creek Flood Channel and Contra Costa Boulevard. The sidewalk should/must be 10 feet wide . . . clear. Remove any barricades in the sid
I bike here	Once the bicyclist gets to Contra Costa Boulevard or Mohr Lane, he or she needs bicycle facilities to continue to the north or south, east or west. Just ending the lanes or wide sidewalk at the edge of the study area does not help with continuity for th
I bike here	The curb cuts along the sidewalk on the north side of Monument Boulevard as it is in the I-680 interchange need attention. Each curb cut should be as wide as the crosswalk. (Each crosswalk should be zebra striped.) The asphalt has a bad habit of "rol