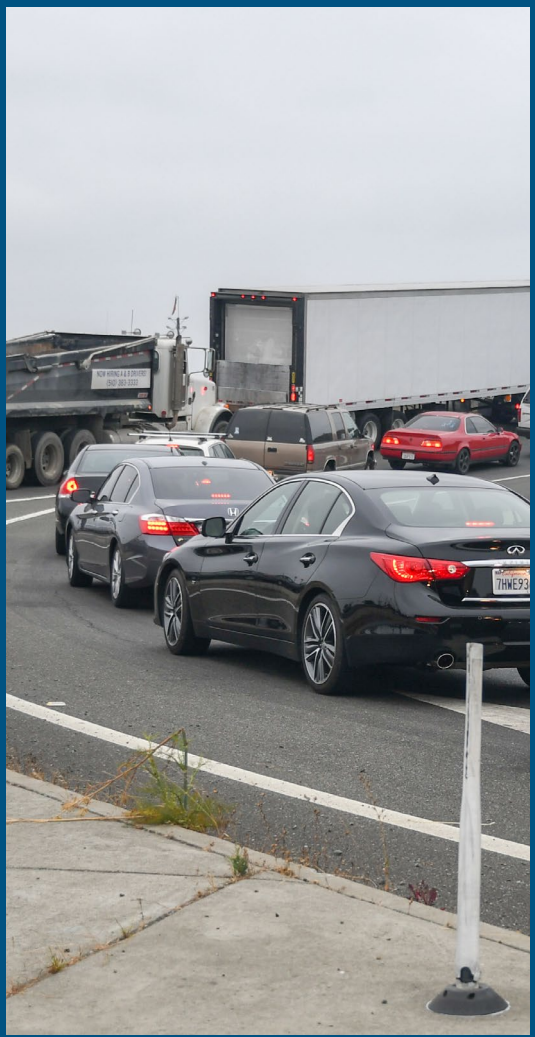
# RICHMOND PARKWAY
## Transportation Plan

**Study funded by Caltrans Sustainable Communities Grant**


**FINAL DRAFT PLAN**
**DECEMBER 2024**

Caltrans

WCCTC WEST CONTRA COSTA TRANSPORTATION COMMISSION

# ACKNOWLEDGEMENTS

**Study funded by Caltrans Sustainable Communities Grant #74A1366**

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*Intersection with wide turn radius at Richmond Parkway and Lakeside Drive.*

CHAPTER 1

# Introduction

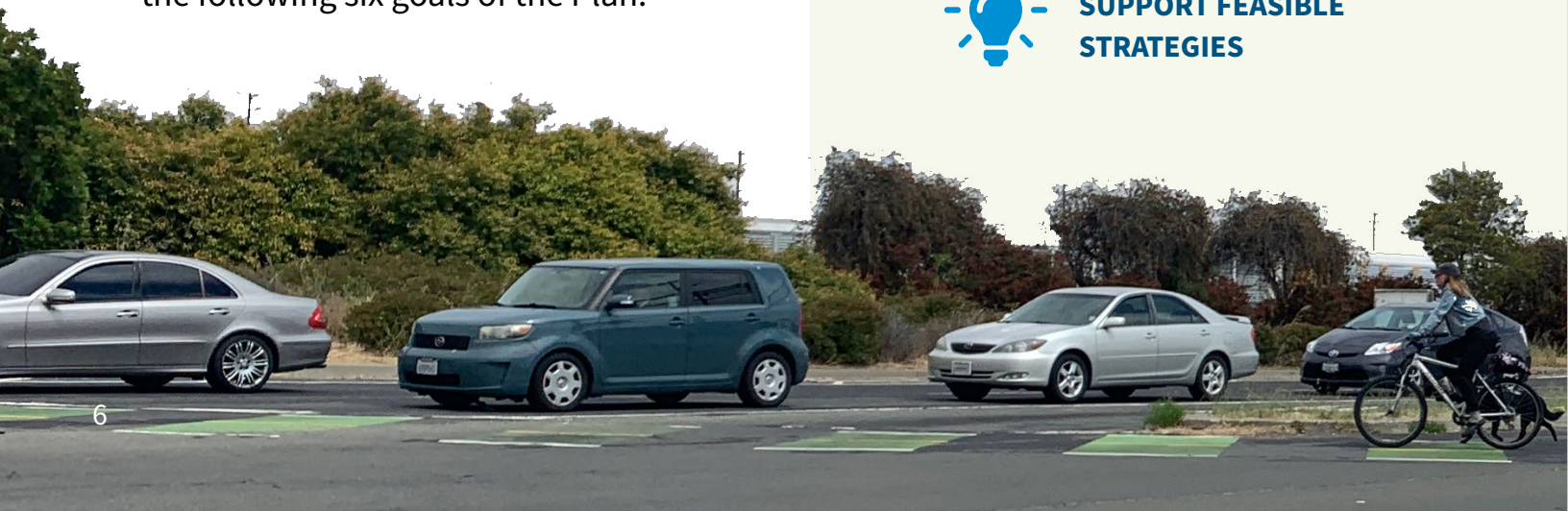
# ABOUT THIS PLAN

**THE RICHMOND PARKWAY TRANSPORTATION PLAN ("PLAN") DEVELOPS A STRATEGIC VISION FOR THE FUTURE OF THIS MAJOR MULTI-JURISDICTIONAL ROADWAY BETWEEN I-580 AND I-80, EXTENDING TO FITZGERALD AVENUE.**

The focus of the plan is a set of targeted strategies for WCCTC and partner agencies to advance in the next 10 years. The strategies were developed in close collaboration with project partners, technical advisors, and members of the public and are responsive to both the Plan-identified transportation needs (summarized in **Chapter 2**) and feedback received via public engagement (summarized in **Chapter 3**). The strategies (summarized in **Chapter 4**) are projects, programs, and policies that collectively aim to address the following six goals of the Plan:

## Plan Goals

- **IMPROVE SAFETY FOR ALL USERS**
- **ADVANCE PLACEMAKING**
- **INCREASE ACCESS TO KEY DESTINATIONS**
- **ENHANCE TRAVEL TIME RELIABILITY AND EFFICIENCY**
- **IMPROVE HEALTH**
- **SUPPORT FEASIBLE STRATEGIES**



Of the full list of strategies, ten are considered priority strategies for WCCTC and partner agencies to implement. These priority strategies best align with the Plan goals and reflect engagement participant preferences. The priority strategies are described in **Chapter 5**, including the lead implementation agency, goals alignment, benefits, and graphics of the top strategies. **Chapter 6** introduces the implementation time frame and funding sources for the priority strategies.

**Figure 1** shows the project timeline, which spanned nearly two years between March 2023 and January 2025.

**Figure 1: Plan Timeline**

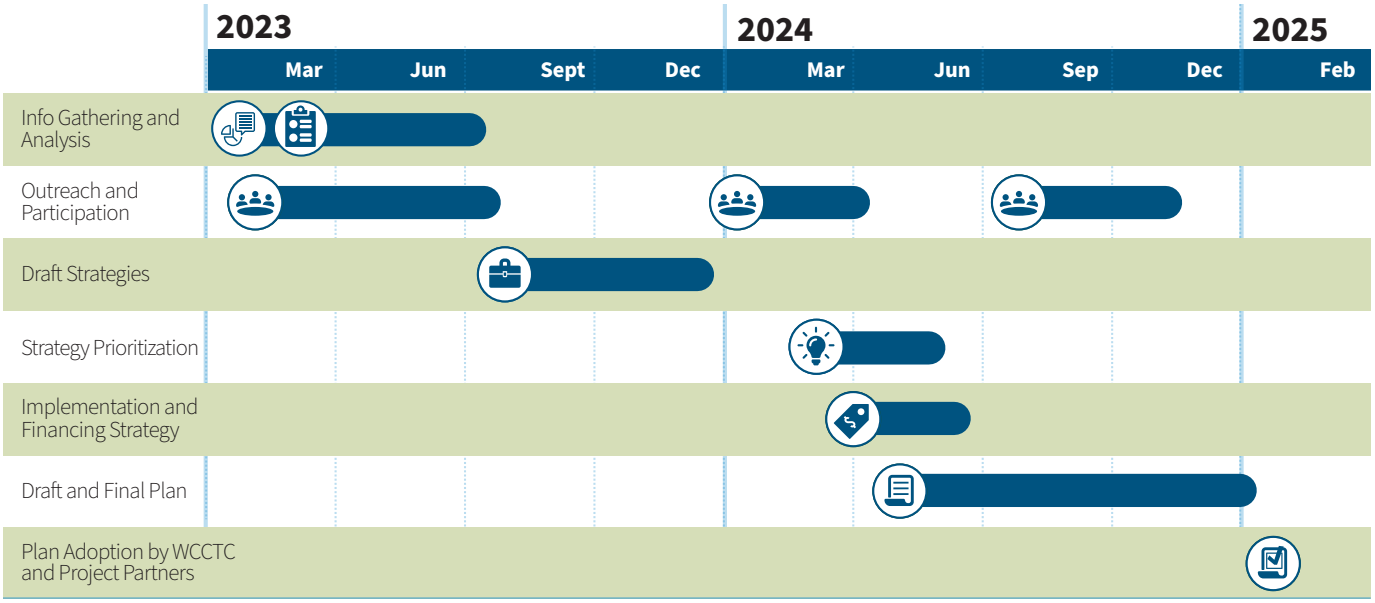



***Photo: Bicyclists crossing the wide intersection at Richmond Parkway and W Ohio Avenue.***

# THE STUDY AREA

Richmond Parkway is a major road linking I-80 and I-580 and a primary route connecting to the the Richmond-San Rafael Bridge. The Parkway is located in both the City of Richmond and unincorporated Contra Costa County (North Richmond), as shown in **Figure 2**. Combined with Castro Street, a parallel roadway at the southern end of the corridor, the study corridor is approximately nine miles in length. At the northeastern end in the City of Pinole, Richmond Parkway becomes Fitzgerald Avenue.

It serves many functions of regional and local importance: a goods movement (truck and rail) corridor connecting to the Port of Richmond and local industrial uses, a regional commuter corridor, a critical segment of the San Francisco Bay Trail—a 500-mile long regional walking and biking path network looping around San Francisco Bay—and a connector to the Richmond Parkway Transit Center served by AC Transit and WestCAT.

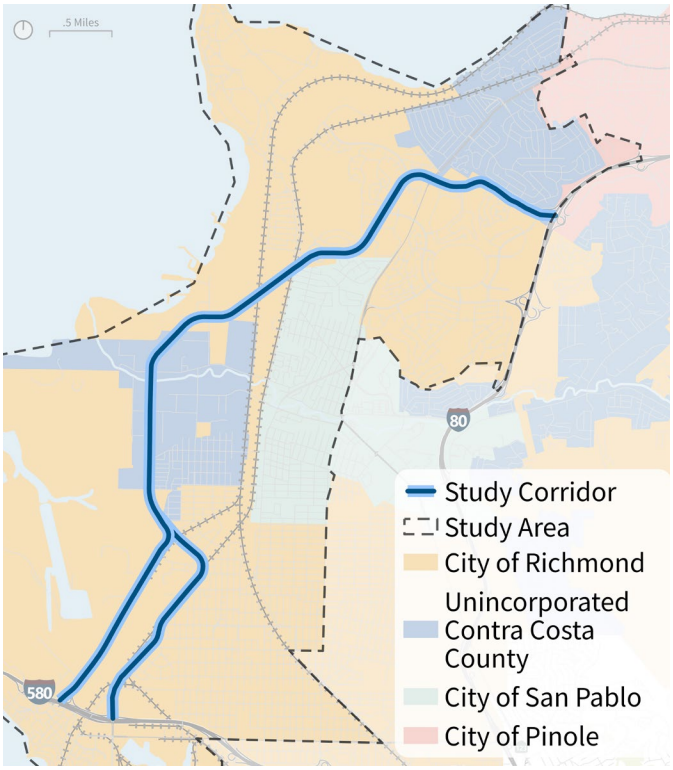
Richmond Parkway and Castro Street travel through the City of Richmond and unincorporated Contra Costa County for

**9 MILES.**

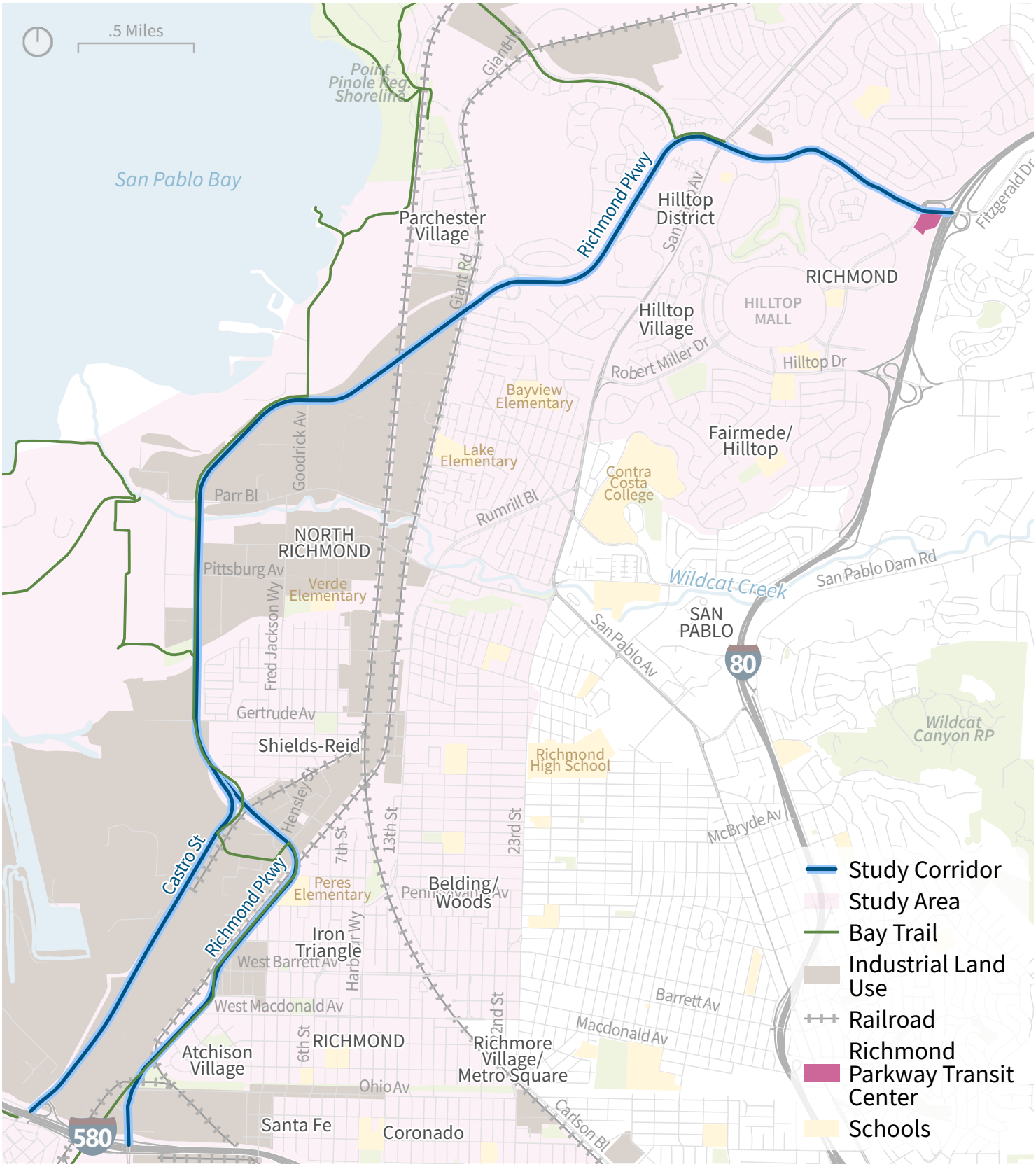
A third of the corridor is adjacent to the Bay Trail.

Richmond Parkway intersects Wildcat Creek and is adjacent to several nearby schools and parks, including Point Pinole Regional Park. As shown in **Figure 3**, industrial land uses line most of the corridor, particularly along Castro Street and along the Parkway in North Richmond. The Parkway also serves residential areas in Atchison Village, Iron Triangle, North Richmond, and nearby Hilltop. As new industrial and residential growth continues along the Parkway, this Plan presents an opportunity to design for better corridor access and mobility before existing challenges are exacerbated.

**Figure 2: Jurisdictions in Study Area**



## Figure 3: Map of Study Corridor




Source: Fehr & Peers (2023).



***1. Community engagement at the North Richmond Earth Day Festival.***

***2. Cars traveling along the Parkway at RIchmond Parkway and San Pablo Ave.***

***3. Community engagement at the North Richmond Flea Market.***


*Signage along the Bay Trail at Richmond Parkway and Gertrude Avenue.*

CHAPTER 2

# Existing Conditions

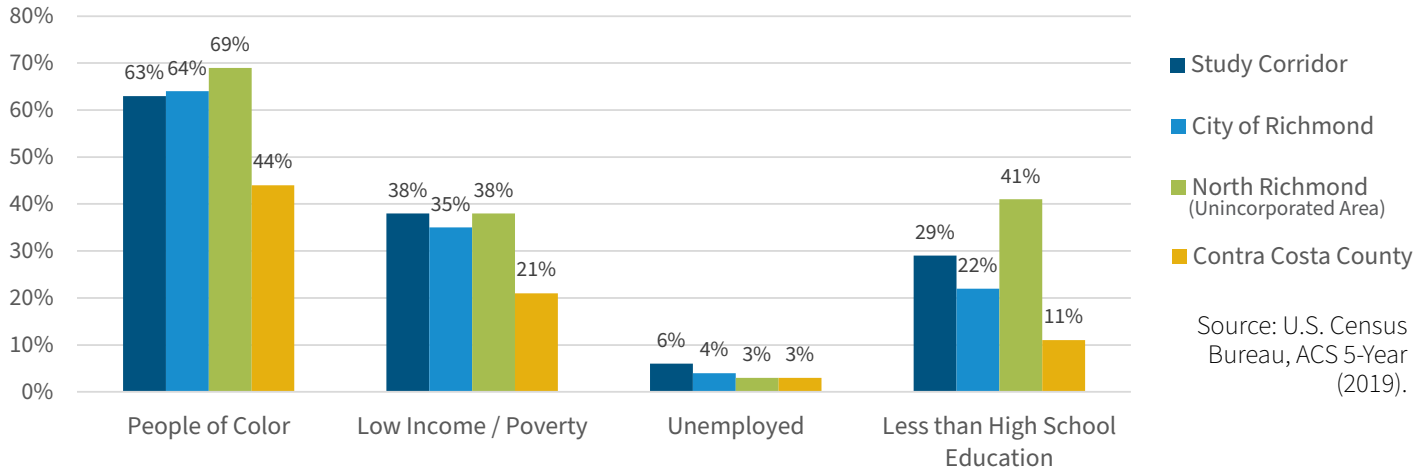
This chapter introduces how Richmond Parkway is used today and the wide range of existing challenges for all types of users. On average, 25,000 vehicles use the Parkway every day to reach local destinations, including as a connection between I-580 and I-80 and to the Richmond-San Rafael Bridge. Residents living near the corridor are largely Hispanic/Latino with lower incomes and are exposed to the large volumes of traffic, vehicle emissions, pollution, and noise. Despite the availability of the Bay Trail, many sections can feel uncomfortable for pedestrians and bicyclists, particularly when crossing the Parkway. Speeding is a major concern and is the most common collision factor.

# CORRIDOR COMMUNITIES

Compared to the Contra Costa County population as a whole, residents living in the study area tend to have higher rates of unemployment and lower education attainment, as seen in **Figure 4**. The majority of residents living near the corridor are Hispanic/Latino, 16% have limited English proficiency, and nearly 38% are below the federal poverty level (US Census, ACS 5-Year Estimates, 2019).

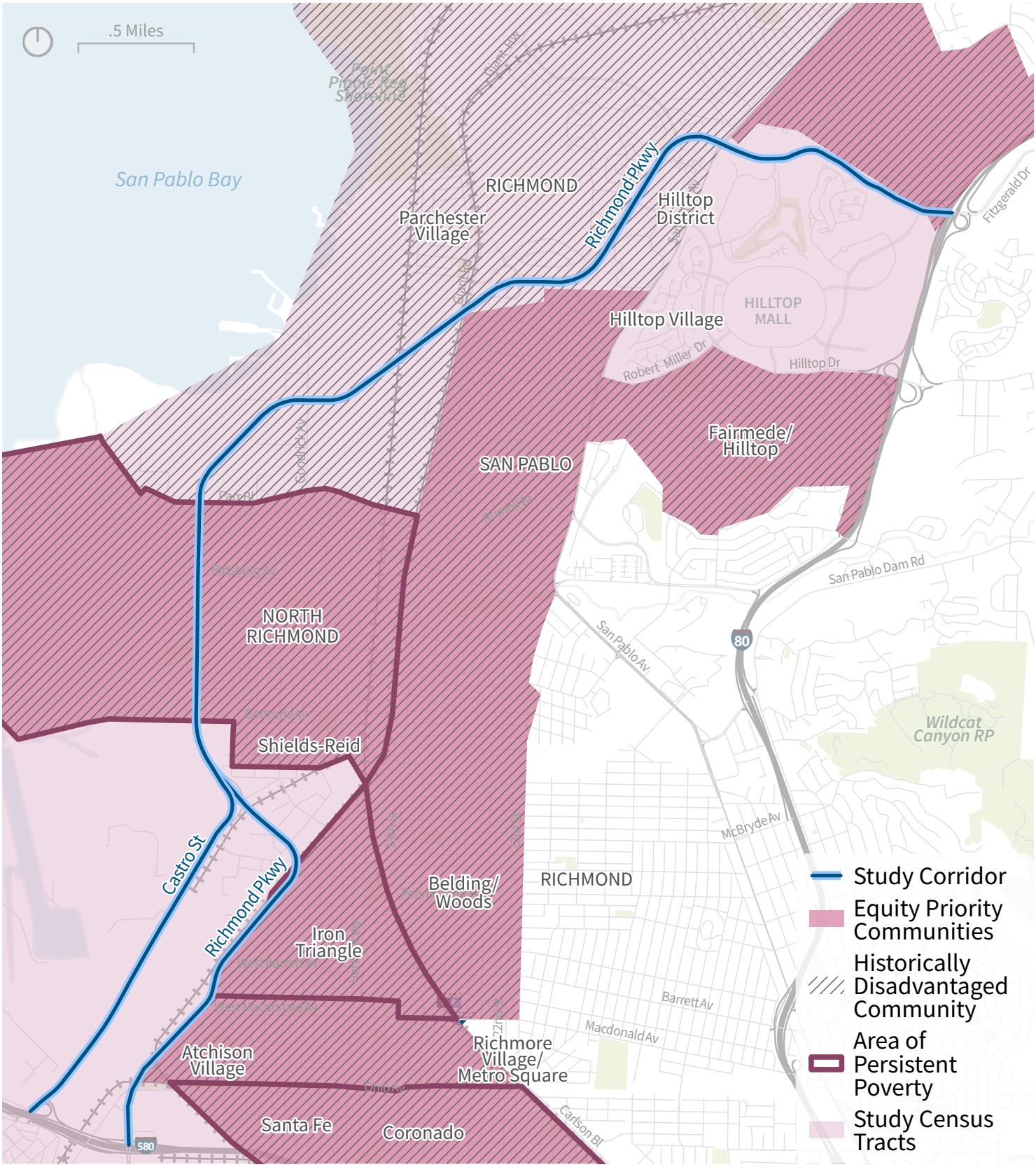
Overall, these groups have less access to opportunities and are at greater risk of displacement (ESA, 2023; Urban Displacement Project, 2015). Given that people living near the study corridor reflect demographics of historically underserved populations, most census tracts within the study area fall within regionally or federally-defined equity priority areas, including MTC Equity Priority Communities, USDOT Historically Disadvantaged Communities, and USDOT Areas of Persistent Poverty (**Figure 5**). Chapter 3 presents outreach methods for engaging historically marginalized populations during the planning process.

**Figure 4: Corridor Population Characteristics**




Source: U.S. Census Bureau, ACS 5-Year (2019).

## Figure 5: Map of Equity Priority Areas in Study Area




Source: Fehr & Peers (2023); MTC (2018), USDOT (2021).

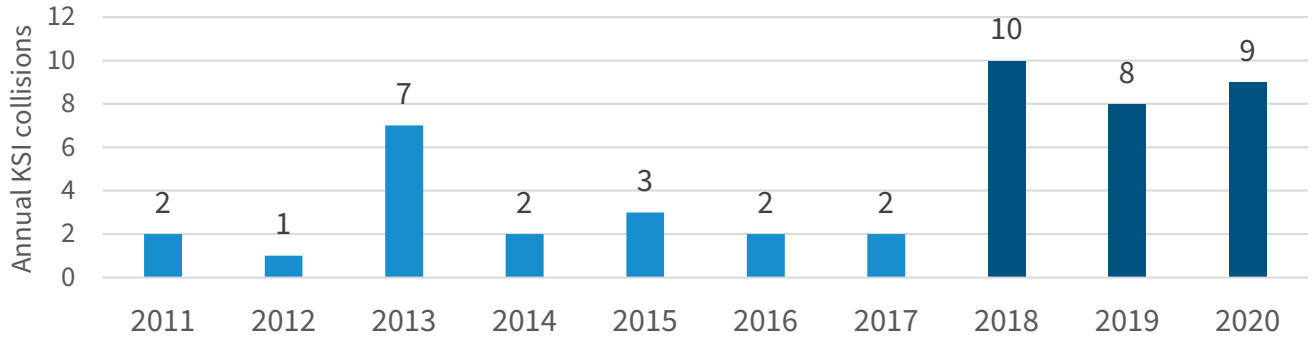
# SAFETY FOR ALL ROAD USERS

## Collisions on the Parkway

From 2011 to 2020, there were 322 traffic collisions on the corridor that resulted in injury, including 46 Killed and Severe Injury (KSI) collisions. Of these KSI collisions, 21 resulted in a severe injury and 25 resulted in a fatality (Transportation Injury Mapping System (TIMS), 2011-2020). This is an average of 4-5 KSI collisions per year, and collisions are increasing—between 2011 and 2017, there was an average of 3 KSI collisions per year, however, the average jumped to 9 between 2018 and 2020 (**Figure 6**).

There were increases in KSI collisions involving unsafe speeds, traffic signal and sign violations, driving under the influence, and driver violations of the pedestrian right-of-way. Concentrations of collisions occur in areas along the corridor that have higher intersection density, near railroad crossings, and at major arterials where there is more interaction between vehicles and Bay Trail users. Considering these locations for redesign can reduce collisions and are considered in Strategies (**Chapter 4**).

**Figure 6: KSI Collisions by Year, 2011-2020**




Source: TIMS, 2011 – 2020

*Photo: Students crossing the Richmond Parkway and Lakeside Drive intersection next to Make Waves Academy.*

## Unsafe Speeds

Unsafe speed is the most common primary collision factor making up 45% of all injury collisions and 28% of KSI collisions. The next most common factors in KSI collisions are failure to obey traffic signals and signs (15%) and driver violations of the pedestrian right-of-way (15%).

Although the posted speed limit on the Parkway is typically 45 miles per hour (mph), most of the corridor sees off-peak 85th percentile speeds over 50 miles per hour as shown in **Figure 7** (Wejo, 2019). The maximum observed speeds during this period rise to nearly 100 mph along the elevated segment of the Parkway between North Richmond and Hilltop.

## Nighttime Collisions

While only 32% of all injury collisions occurred at night, 52% of all KSI collisions and 75% of pedestrian KSI collisions occurred in dark conditions. Although existing street lights were reported at most of these KSI collision locations, reducing unsafe speeds and improving pedestrian-scale lighting and crosswalk striping could address these types of collisions.

## Bicyclists and Pedestrians

KSI collision locations are shown in **Figure 8**. Although bicycle and pedestrian collisions represent only 6% of all injury collisions, they make up 20% of all KSI collisions and 24% of fatal collisions, highlighting the safety disparity for more vulnerable bicyclists and pedestrians along the corridor. Studies show that for vulnerable users, collisions have a higher likelihood of serious injury or death, particularly at high speeds.

**45%**

of collisions on the Parkway are caused by unsafe speed.

**24%**

of fatal collisions on the Parkway involved a bicyclist or a pedestrian compared to only 6% of all injury collisions.

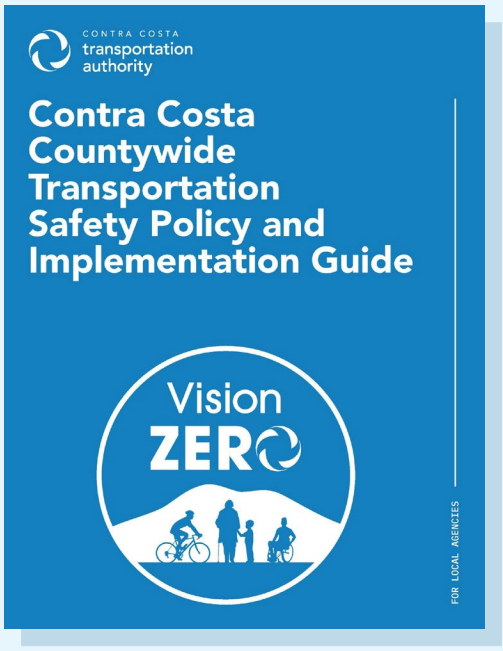

***Photo: Vehicles on Richmond Parkway crossing San Pablo Avenue.***

## Figure 7: Map of 85th Percentile 7PM-6AM Weekday Speeds


Source: Wejo (2019).

## Figure 8: Map of KSI Collisions


Source: TIMS (2011 – 2020).

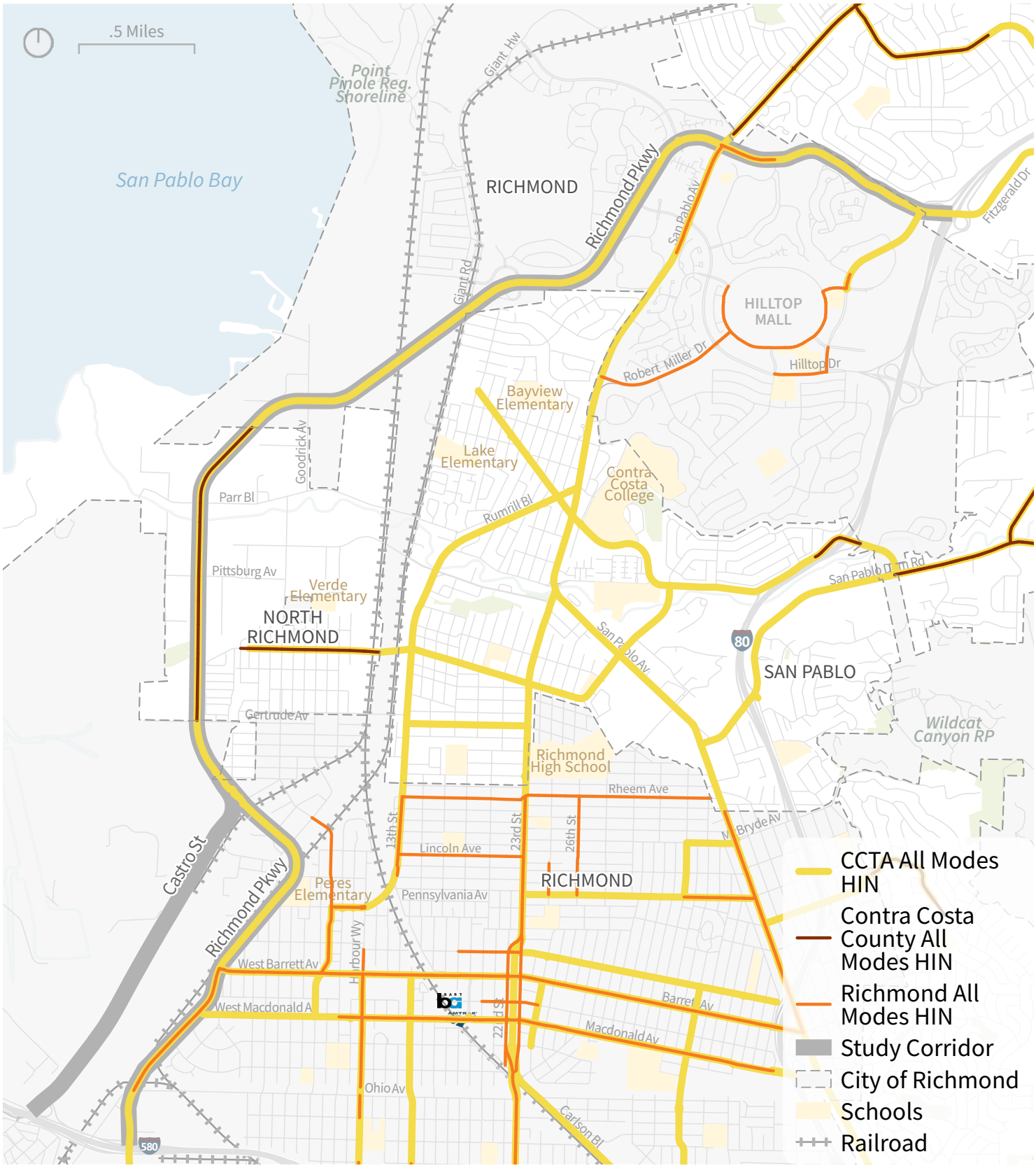


## Previous Safety Studies

The Contra Costa Transportation Authority (CCTA) Contra Costa Countywide Transportation Safety Policy and Implementation Guide (2021), Contra Costa County Vision Zero (2022), and City of Richmond Local Roadway Safety Plan (2022) have all identified Richmond Parkway as a corridor on the High-Injury Network (HIN).

This means that Richmond Parkway sees higher concentrations of KSI collisions as compared to other areas of Richmond and Contra Costa County. However, Castro Street is not included on the HIN. **Figure 9** maps the HIN of each agency.

## Figure 9: Map of High Injury Networks




Source: Contra Costa Transportation Authority (2021); Contra Costa County (2022); City of Richmond (2022).

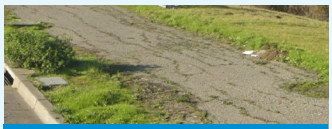
# BIKING AND WALKING

Poor pavement quality, gaps, proximity to fast-moving traffic, long infrequent pedestrian crossings, and lack of shade, lighting, signage, and vegetation buffers make Richmond Parkway unwelcoming to walk or bike on today. There is a range of opportunities to improve the comfort of people using the Bay Trail, bikeways, sidewalks, and crossings.

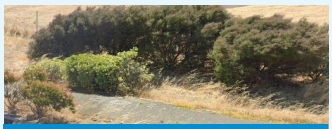
## The Bay Trail

The Bay Trail is a critical regional path that generally traverses the Parkway's west side from the southern end to Goodrick Avenue in North Richmond. The Bay Trail is on the east side of the corridor between Hensley Street and Gertrude Avenue, and the City of Richmond has proposed to realign this section to the west side for better connectivity. While the Bay Trail connects users to destinations like Point Pinole, Point Richmond, and beyond, there are few crossing locations and they lack basic safety enhancements. Many parts of the Bay Trail along the study corridor are in need of repair, with cracked and uneven pavement and overgrown landscaping. Regular maintenance to remove trash and vegetative overgrowth to improve user experience is needed. The Bay Trail also has limited lighting, wayfinding signage, and shade, and a narrow or nonexistent buffer from fast-moving traffic on the Parkway. The Bay Trail also connects to Wildcat Creek Trail, which crosses beneath the Parkway and floods several times throughout the year.

## Biking and Walking Experience along the Parkway



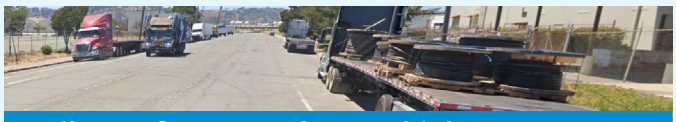
Poor Bay Trail pavement quality



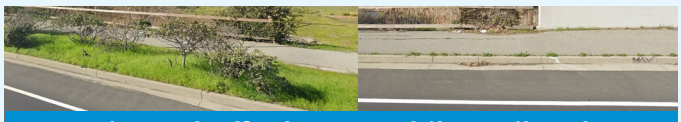
Limited shade in hot conditions

Lack of trail lighting

No signage indicating shared-use path



Trail gaps force people onto high-stress routes like Hensley Street

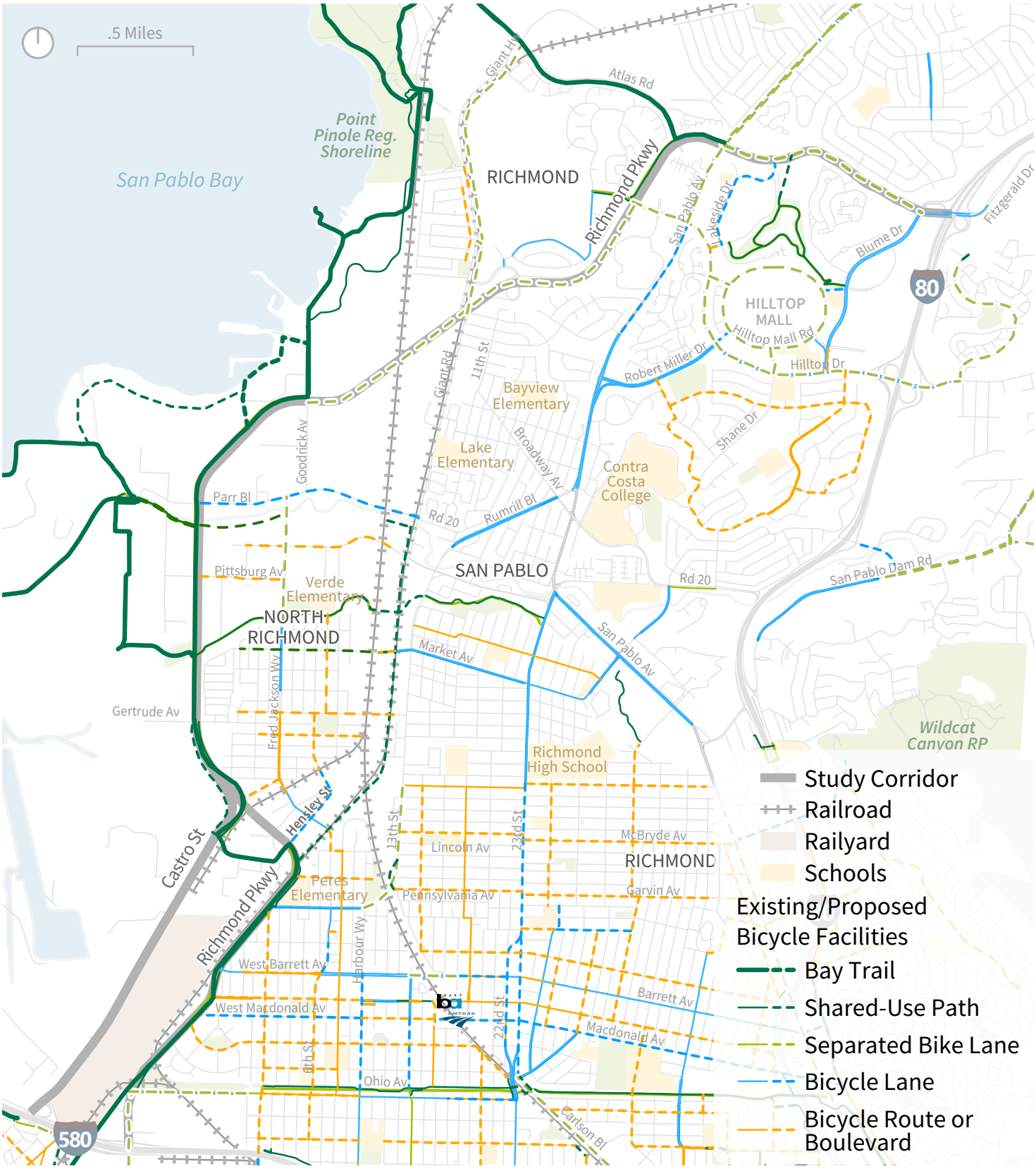


Inconsistent buffer between bike trail and roadway

Small buffer between sidewalk and fast traffic

Missing sidewalks near more active land uses

## Figure 10: Map of Existing and Proposed Bikeways




Source: Fehr & Peers (2023); Richmond BPAP (2023); Contra Costa County ATP (2022); CCTA Countywide Bicycle and Pedestrian Plan (2018)

## Closing the Gaps

There are also several gaps in the bikeway and walkway infrastructure on the corridor. **Figure 10** (previous page) identifies the existing and proposed bikeways. There are currently about three miles of bikeway gaps along the Parkway where there are no plans for the Bay Trail and no bicycle facilities exist. Though there are no active fronting land uses consistently across the corridor, there are 2.6 miles of sidewalk gaps on the west side of the corridor and 3.4 miles on the east side.

**3**

miles of new bikeways are needed.

**67%**

of intersections along the Parkway are missing pedestrian countdown signals.

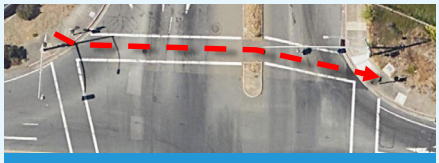
## Safety at Intersections

Most intersections are large in size with curb radii that enable turns at high speeds and make for long pedestrian and bicycle crossing distances.

About 70% of the signalized intersections do not have bicycle detection and 65% are missing pedestrian countdown timers, leaving pedestrians unsure of how much time is left to safely cross the street. Both bicycle detection and pedestrian countdown timers are state requirements per the California Manual on Uniform Traffic Control Devices (MUTCD).

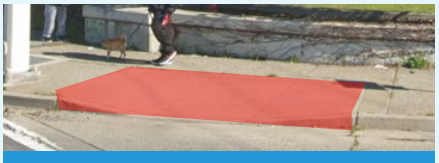
These gaps in pedestrian and bikeway infrastructure along the corridor are critical to address given safety and speeding concerns along the corridor.

## Example Safety Improvement Needs



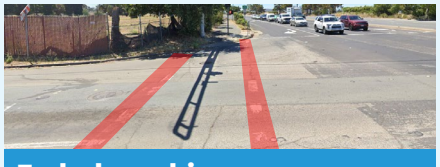
Bent crosswalks

Corner sight distance issues

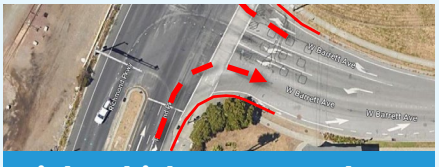


ADA non-compliant ramps

Outdated push buttons



Faded markings



High vehicle turn speeds

# DRIVING AND GOODS MOVEMENT

Richmond Parkway is a major road linking I-80 and I-580 and serves industrial truck traffic, regional commuters, and local trips. The Parkway carries between 19,000 and 37,000 vehicles every weekday, 7% of which are trucks. Truck volumes are highest along the southern section of Richmond Parkway and Castro Street, ranging between 5%-13% of total daily vehicle volumes. Truck volumes on San Pablo Avenue in Contra Costa County, a comparable arterial, range only between 2%-3% of total daily volumes (Caltrans, 2022). Many of these vehicle and truck trips serve regional destinations along the corridor, such as the Contra Costa Landfill, UPS and Amazon distribution centers, Whole Foods Market Food Distribution Center, and the Chevron Refinery.

## Speeds and Signals

Along most of the corridor, signals are not coordinated. This negatively impacts air quality and does not optimize vehicle flow. Slowdowns are worst in the northbound direction in the afternoon commute period with average speeds around 30 mph as shown in **Figure 11** (Wejo, 2019). The slowest segment is north of the Castro Street and Richmond Parkway merge where speeds are less than 25 mph for nearly a mile. To keep traffic moving, green times along the Parkway can be 30 seconds longer compared to other signals in Richmond, which results in more delay for all users entering or crossing the Parkway. Travel times are expected to double in the future, given planned and anticipated growth along the corridor. On average, traffic volumes are expected to grow about 50%-60% by 2040.

Up to

**37,000**

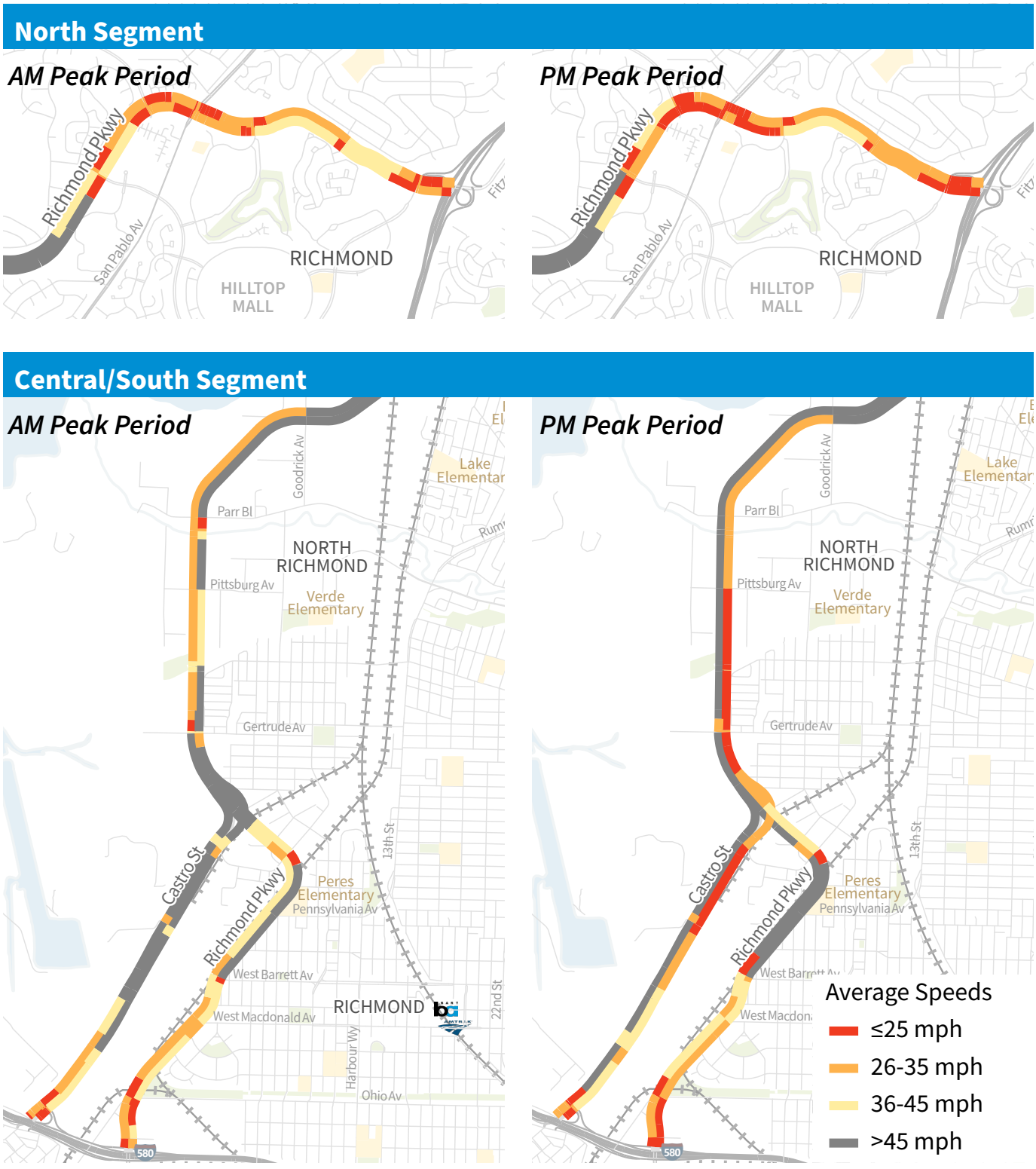
vehicles take the Parkway on weekdays.

**7%**

of vehicles are trucks.

***Photo: Congestion causing queue spillover at San Pablo Avenue and and Richmond Parkway.***

**Figure 11: Map of Slowdowns During 7-9AM and 4-6PM Peak Periods**




Source: Wejo (2019).

## Travel Patterns

Drivers typically use the Parkway for trips that start or end in the study area rather than as a freeway-to-freeway connector. In the afternoon peak period, less than a third of northbound car drivers travel from the I-580 interchange and get onto I-80 (Streetlight, 2022). This pattern is similar for daily truck trips.

Over 60% of trucks getting onto the Parkway from I-80 or I-580 travel to destinations along the corridor. These destinations are often sources of regional economic activity and services, and include the aforementioned distribution centers, landfill and recycling yards, hazardous waste disposal plants, water reclaim plants, and more. For northbound trucks that stop along the corridor, the most popular destinations are in North Richmond via Parr Boulevard, Pittsburg Avenue, and Hensley Street, as shown in **Figure 12**. Southbound truck trips are more dispersed, with 21% continuing on to the Port of Richmond as shown in **Figure 13**.

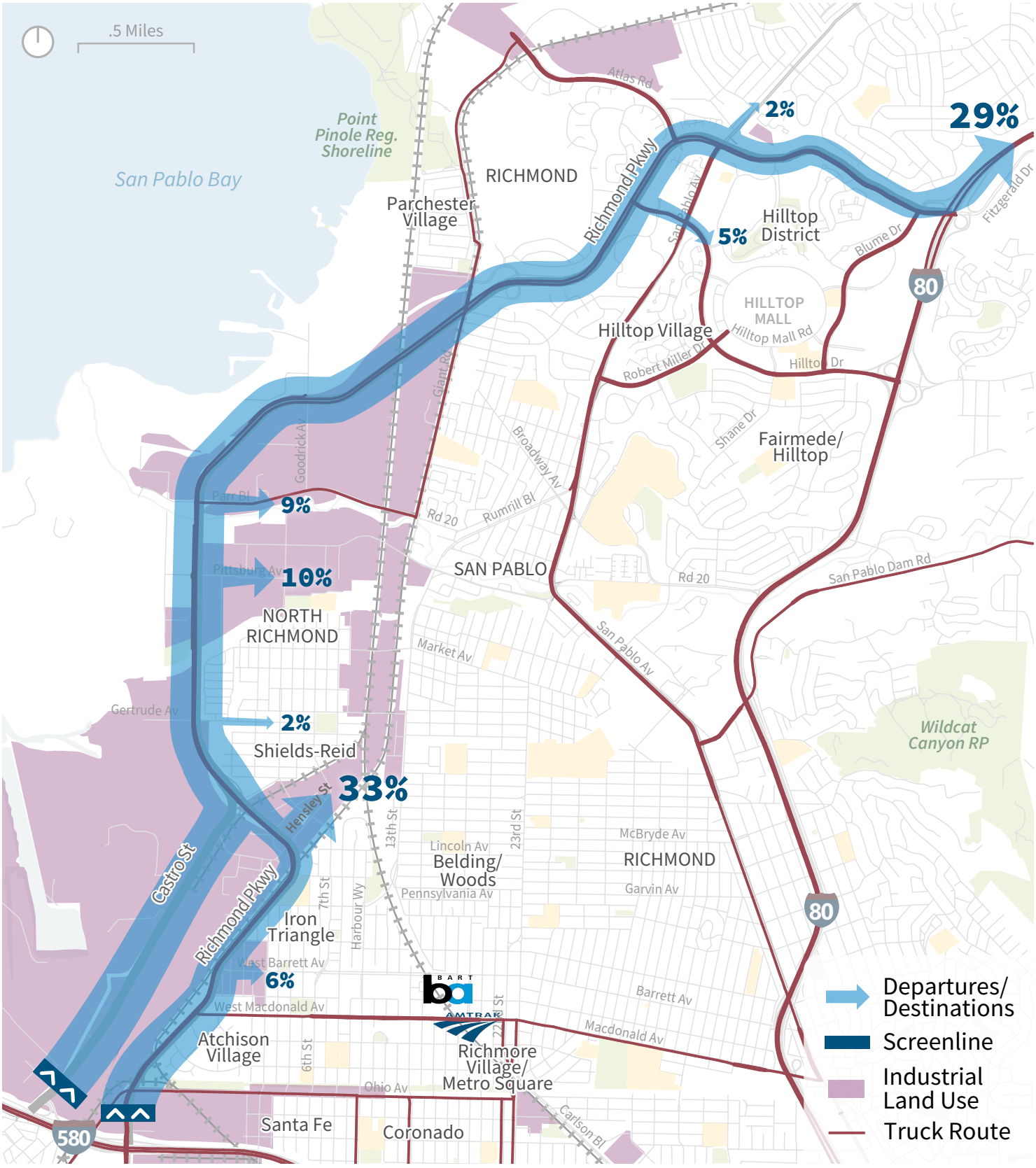
Over

**50%**

of northbound trucks turn off the Parkway into North Richmond, most of which use Hensley Street.

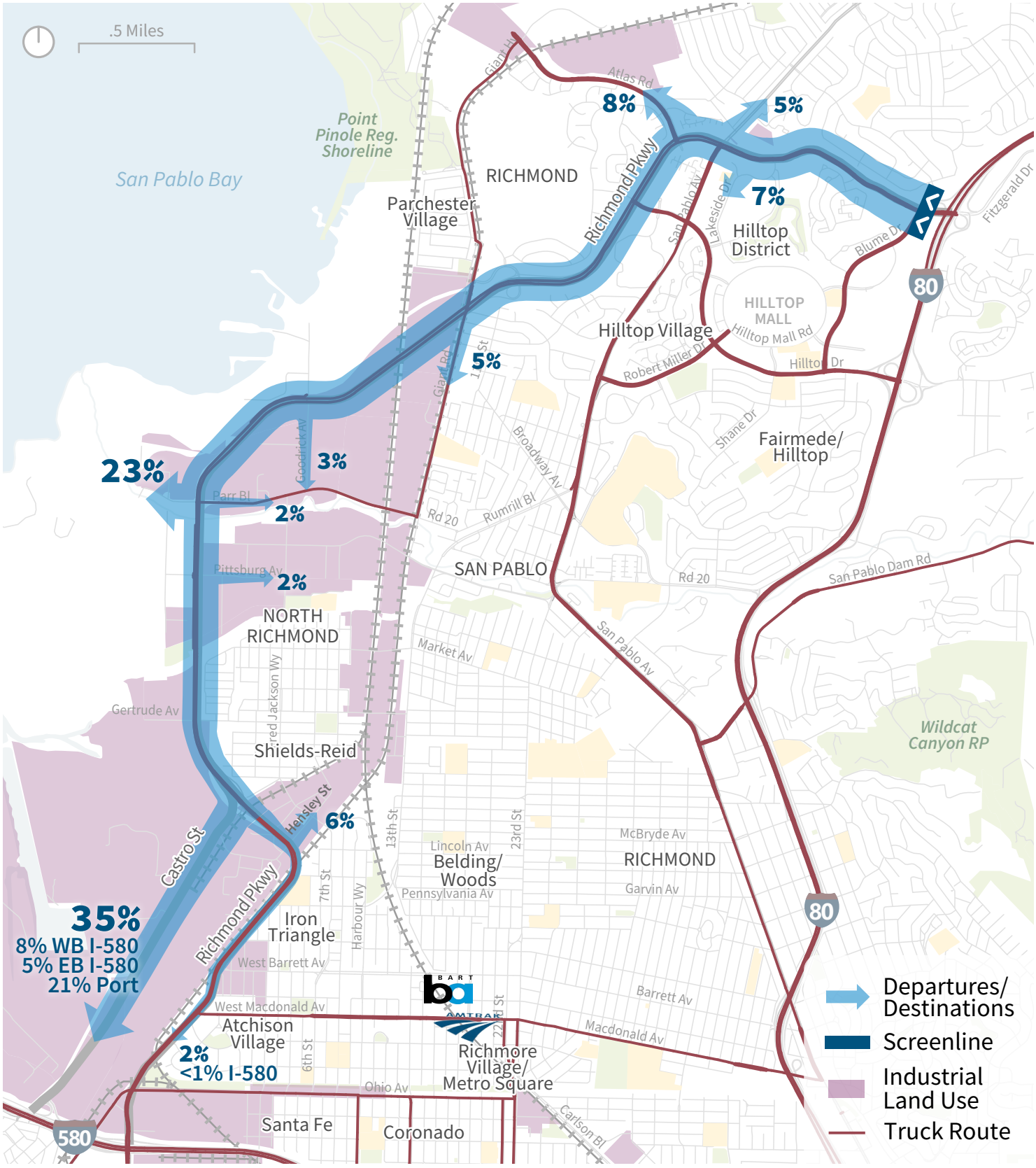

***Photo: Truck turning close to the sidewalk at Atlas Road and Richmond Parkway.***

## Figure 12: Map of Northbound Daily Truck Distribution




Source: Streetlight (2022).

## Figure 13: Map of Southbound Daily Truck Distribution




Source: Streetlight (2022).

# PUBLIC HEALTH

Local and regional sources of pollution, noise, and increasing threat from climate change hazards affect public health and environmental quality for communities along the corridor.

## Pollution

Diesel particulate matter (diesel PM), is a carcinogenic air contaminant produced by the exhaust of trucks, trains, ships, and equipment with diesel engines. Given the industrial and goods movement uses along Richmond Parkway, diesel PM concentrations near the corridor range from 0.08 to 0.98 tons per year. This is greater than 78% of communities statewide (California Office of Health Hazard Assessment, 2021).

Some census tracts adjacent to Richmond Parkway have diesel particulate matter concentrations higher than

**78%**

of all census tracts in California.

## Climate

Increasing concentrations of greenhouse gas (GHG) emissions are the primary cause of global warming. This change in the earth's climate systems will increase the severity, frequency, and duration of climate hazards, including extreme heat, wildfire, drought, and sea level rise. Forecasts anticipate up to 12 inches of sea level rise by 2050, and 36 inches by 2100, directly affecting the area west of the corridor (Adapting to Rising Tides, Bay Area Sea Level Rise Analysis and Mapping Project, 2017). This would increase flood risk, affecting roadways, property, utilities and critical infrastructure, emergency services, and evacuations.

Vulnerable populations and neighborhoods subject to GHG emissions will be disproportionately affected by climate change, including people of color, children, seniors, individuals with disabilities, and households without access to a vehicle (Contra Costa County Local Hazard Mitigation Plan, 2018; Fehr and Peers, 2023; ESA, 2023). The burden of pollution can be visualized through the CalEnviroScreen tool, as shown in **Figure 14**.

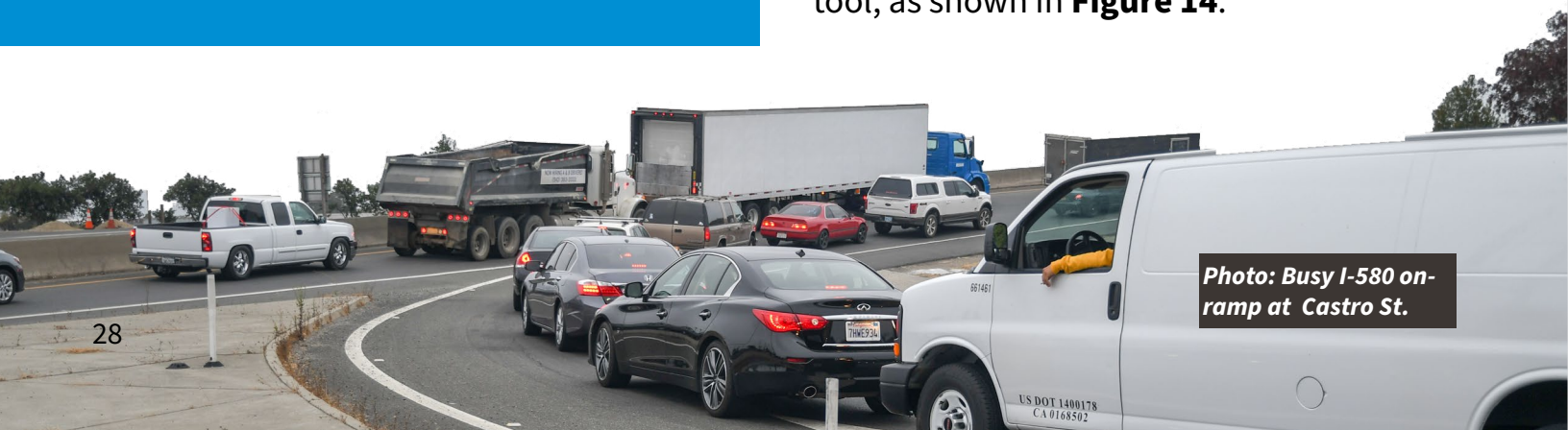
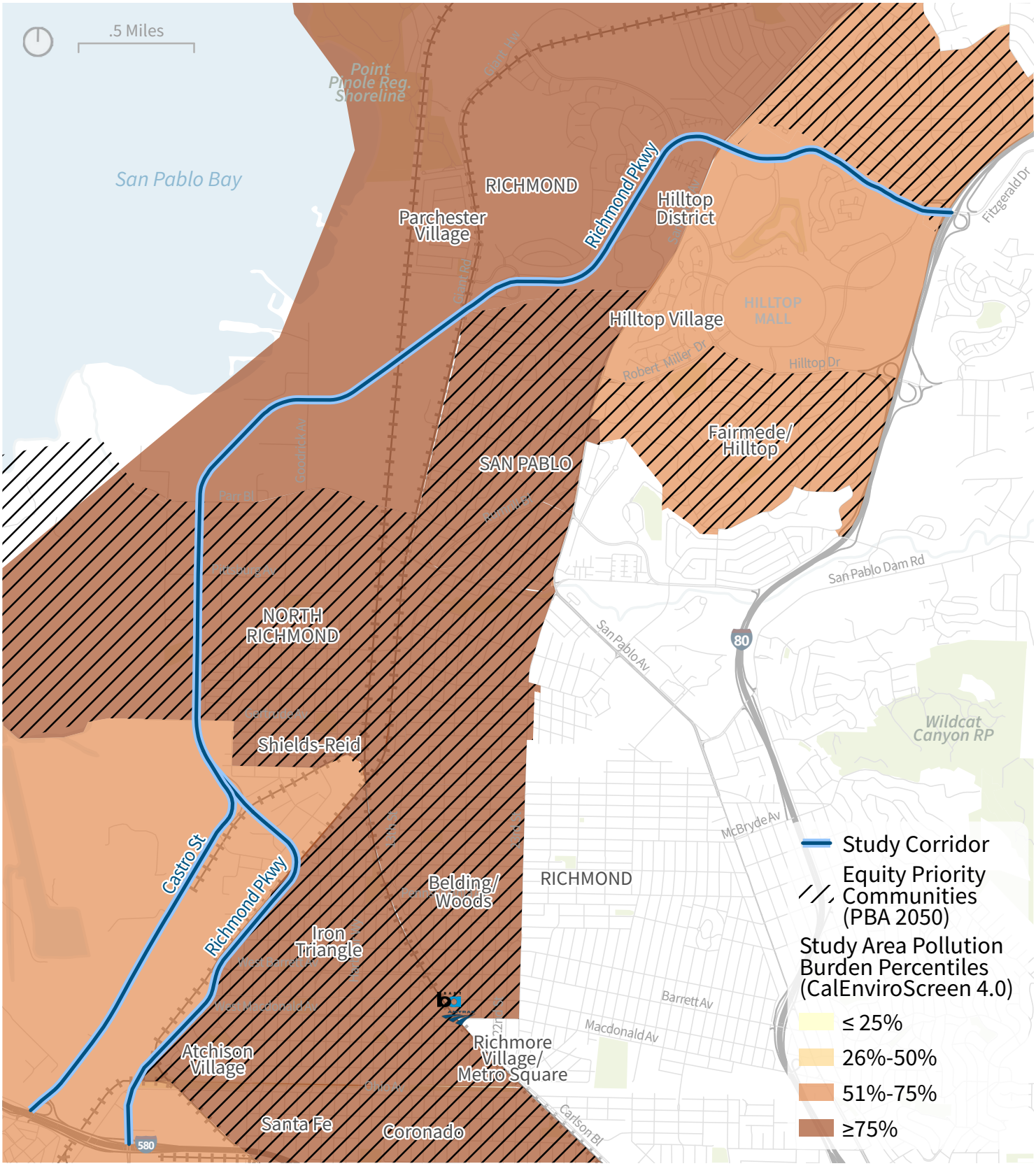


*Photo: Busy I-580 on-ramp at Castro St.*

## Figure 14: Map of Pollution Burden in Study Area




Source: California Office of Environmental Health Hazard Assessment (2021).

## Health Impacts

Poor environmental conditions contribute to public health issues, including asthma, cardiovascular disease, cancer, and low birth weight. The highest rates of asthma attacks based on Emergency Room admissions near the corridor are in North Richmond and the Iron Triangle neighborhood.

The asthma rate in Iron Triangle is greater than 99% of other census tracts statewide, and North Richmond's rate is greater than 98% of other census tracts statewide as shown in **Figure 15** (California Office of Environmental Health Hazard Assessment, 2021).

Iron Triangle has an asthma rate higher than

**99%**

of all census tracts in California.

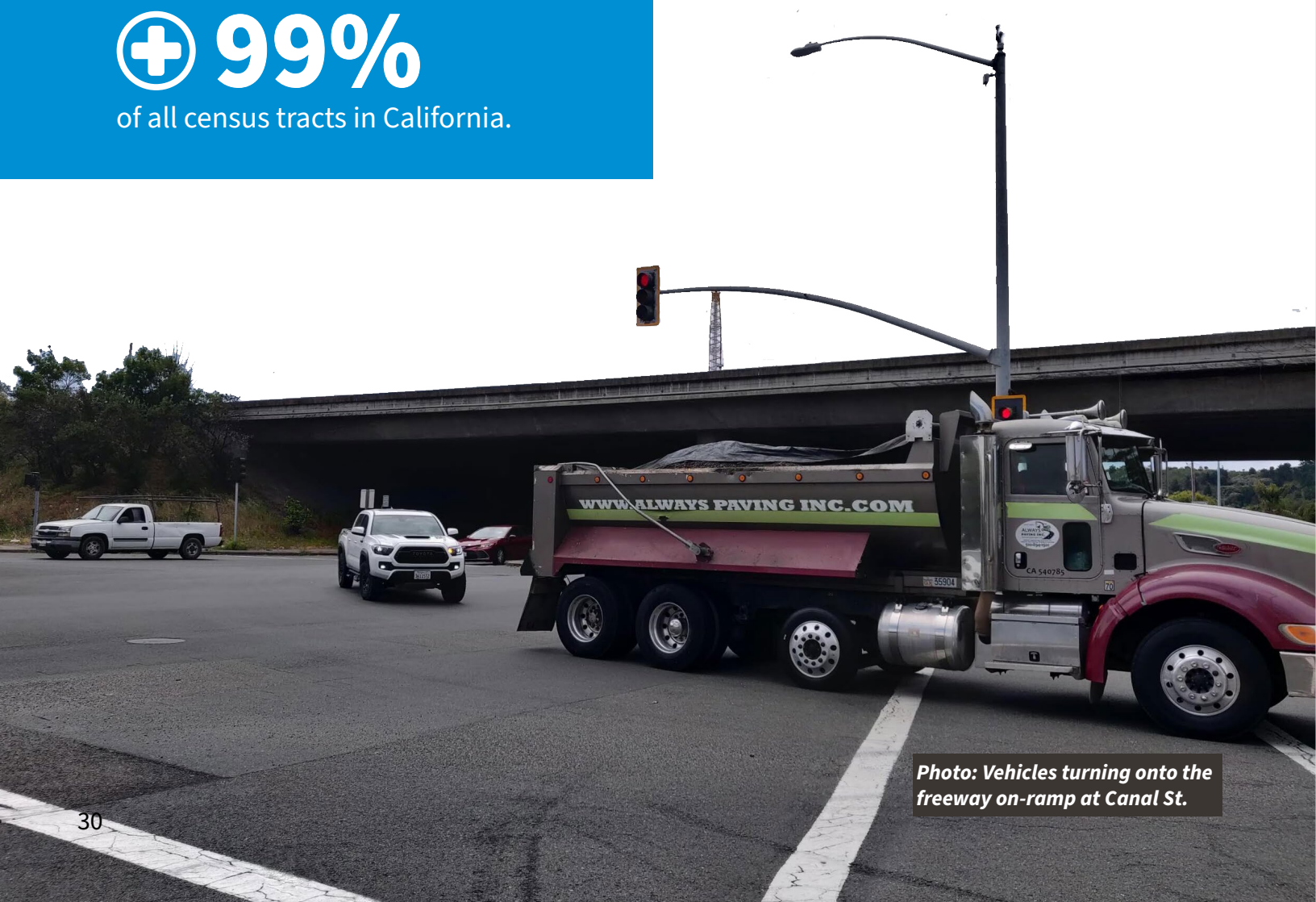
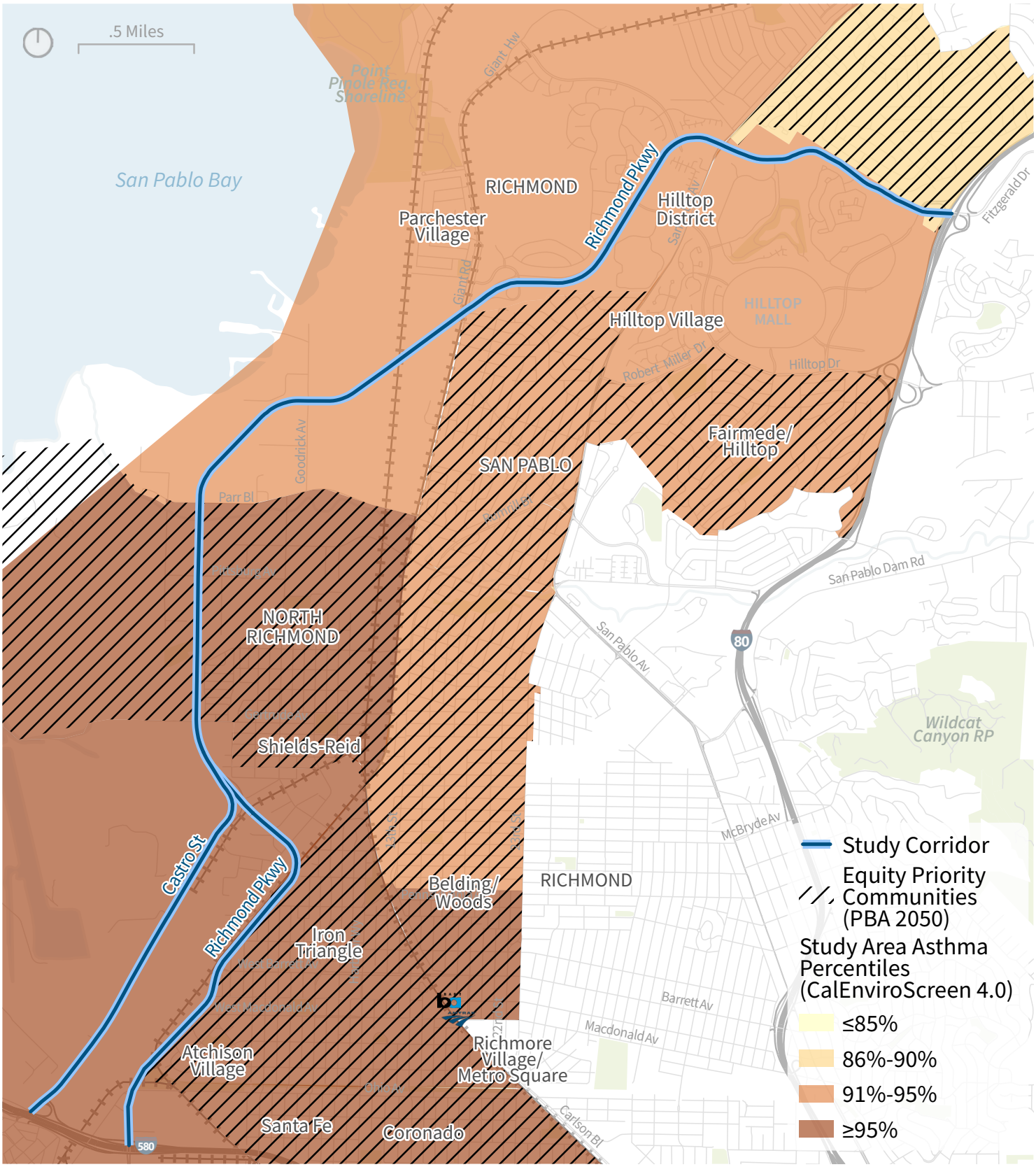



*Photo: Vehicles turning onto the freeway on-ramp at Canal St.*

## Figure 15: Map of Asthma Rate in Study Area




Source: California Office of Environmental Health Hazard Assessment (2021).

# TRANSIT SERVICE

Limited transit service operates on the corridor. Although there are 11 local and regional routes, they only travel on the northern and southern sections of the Parkway, including at the Richmond Parkway Transit Center (RPTC), but none run along the full length of the corridor. Study area routes and community destinations like schools, hospitals, and supermarkets are shown in **Figure 16**. Many transit routes that serve corridor residents run through residential neighborhoods and to community destinations instead of directly on the Parkway, which has fewer active uses.

**9%**

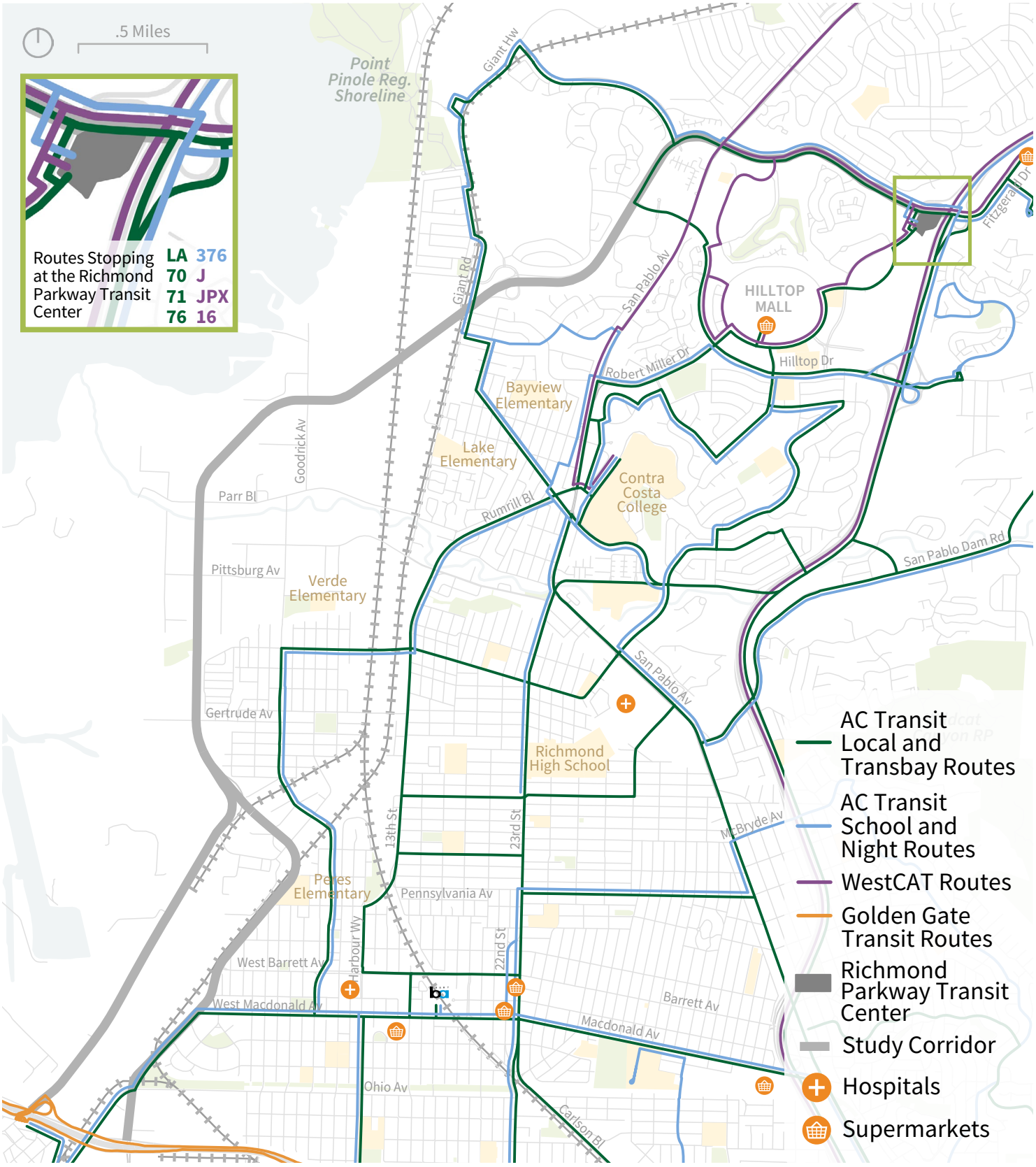
of households in the study area do not own a car, compared to 5% across Contra Costa County.

## Bus Connections

About 28% of total morning peak period trips starting in the study area use the Richmond-San Rafael Bridge in the westbound direction. While there are several bus routes that take riders north and south of Richmond, there is only one route that takes riders across the Richmond-San Rafael Bridge: the Golden Gate Transit 580 Route that stops at Tewksbury Avenue and Castro Street. Today, there are limited connections between the study area and this bus stop via the 607 and 72M. The 607 is a school route with only one run on weekdays, and the 72M only connects residents living in the southern portion of the corridor. Many lines run about every 30 minutes, providing limited service to hospitals, supermarkets, and connections like the Richmond BART station.

*Photo: Buses waiting at the Richmond Parkway Transit Center.*

## Figure 16: Map of Transit Routes in Study Area

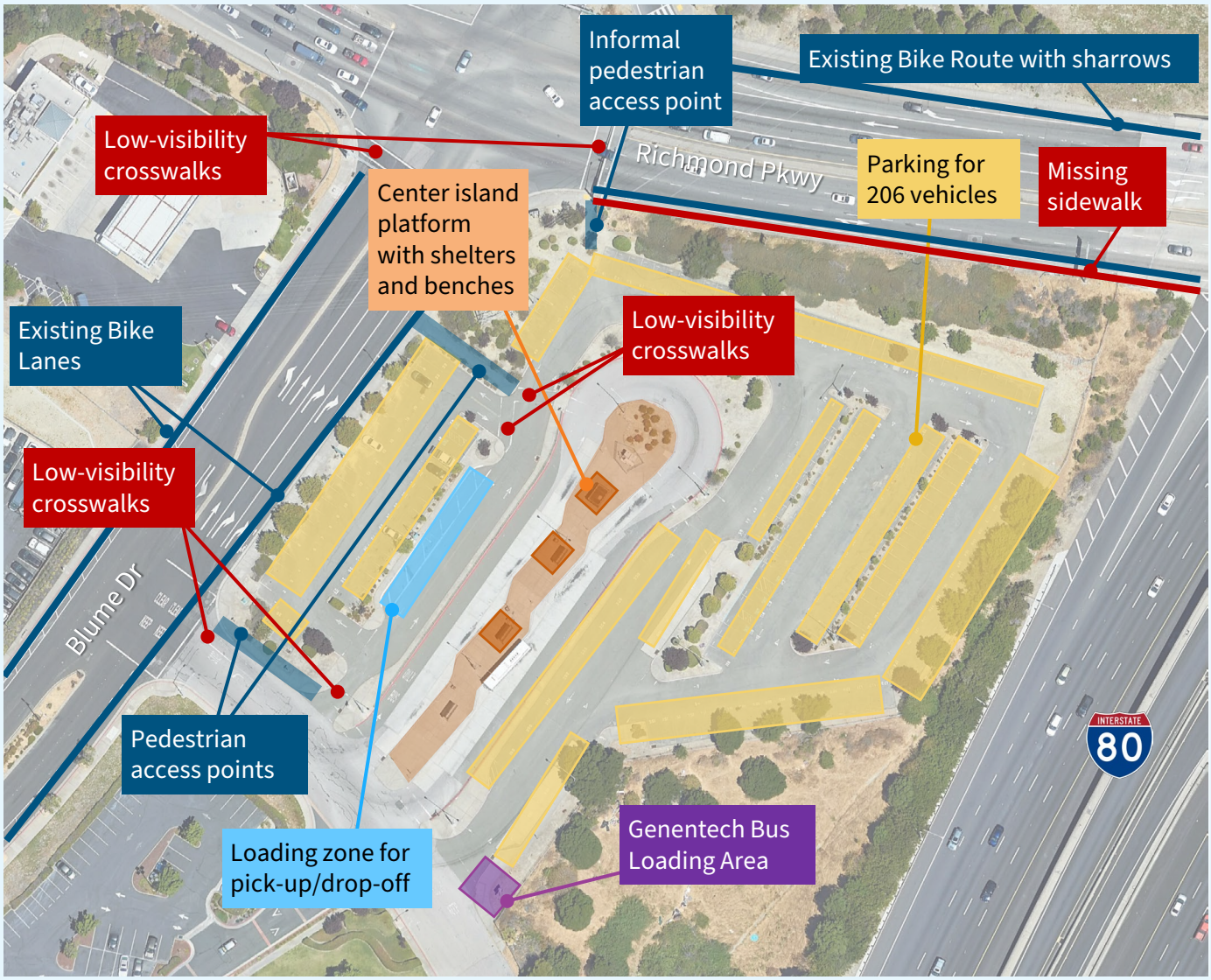



Source: AC Transit (2023); WestCAT (2023); Golden Gate Bridge Highway & Transportation District (2023).

# Richmond Parkway Transit Center

The RPTC includes a park-and-ride lot and serves five AC Transit and three WestCat bus routes that connect West County communities to Richmond, Hercules, San Pablo, El Cerrito, and Downtown San Francisco. However, the layout of the Transit Center requires several minutes of diversion time, which adds up to over 13,000 annual rider hours for WestCAT express routes. There is also limited bicycle and pedestrian infrastructure connecting to the transit center as shown in **Figure 17**.

**Figure 17: Map of Richmond Parkway Transit Center Existing Conditions**




Source: Richmond Parkway Transit Center Existing Conditions Review (AC Transit, 2011); Fehr & Peers (2023).


*Community engagement at the North Richmond Flea Market.*

CHAPTER 3

# Engagement

A robust community engagement process provided critical input to the Plan's recommendations. This chapter summarizes the stakeholder groups, engagement methods, and feedback received. **Appendix A** contains the engagement approach and feedback summaries.

# STAKEHOLDER GROUPS

WCCTC engaged a variety of stakeholder groups, ranging from project partners who will help deliver the Plan's recommendations to members of the public. Key stakeholder groups were:

### General Public

Residents and users of the Parkway were reached through in-person and online activities. To ensure engagement from marginalized residents living within the study area, in-person methods focused on presenting at community meetings and tabling at events/pop-ups in adjacent neighborhoods, including North Richmond, Parchester Village, and Iron Triangle. To get the word out, opportunities were advertised through social media ads and flyers and engagement information was distributed to all members of the WCCTC Board, PAG, and Technical Advisory Committee. Because over 48% of people living in the area speak Spanish at home, Spanish-speaking staff attended each pop-up event and interactive boards, flyers, and social media ads were translated into Spanish. Online engagement was conducted through an online platform that enabled translation into any language.

### Public Advisory Group (PAG)

The PAG served as community liaisons to review and confirm the Public Engagement Plan, share information with community members, and provide input on the strategies. The Public Advisory Group consisted of representatives from the Port of Richmond, Richmond

Neighborhood Coordinating Council, Trails for Richmond Action Committee, Urban Tilth, Watershed Project, Groundwork Richmond, Bike East Bay, North Richmond Municipal Advisory Council, Community Housing Development Corporation, Bay Area Outreach and Recreation Program, and the California Trucking Association. Four PAG meetings were convened through the process.

### WCCTC Board

The Board was continually updated throughout the project and provided strategic direction on the Plan. Board members consisted of elected officials representing the cities of Hercules, Pinole, Richmond, San Pablo, and El Cerrito, as well as AC Transit, BART, WestCAT, and Contra Costa County.

### Project Partners

WCCTC partnered with the City of Richmond and Contra Costa County to deliver this Plan. Project partners participated in project management team meetings on a bi-weekly basis and were involved in key decisions throughout the study. Their feedback is foundational to this Plan, as agencies that operate the local right-of-way will ultimately deliver many of the strategies and recommendations included in this Plan.

### Technical Advisory Committee (TAC)

The Technical Advisory Committee (TAC) facilitated coordination among various agencies and organizations, allowing key stakeholders to provide input and technical guidance. The TAC included representatives from the cities of Hercules, Pinole, Richmond, and San Pablo, as well as AC Transit, BART, WestCAT, Contra Costa County, the Metropolitan Transportation Commission, the East Bay Regional Parks District, and the West County Wastewater District.

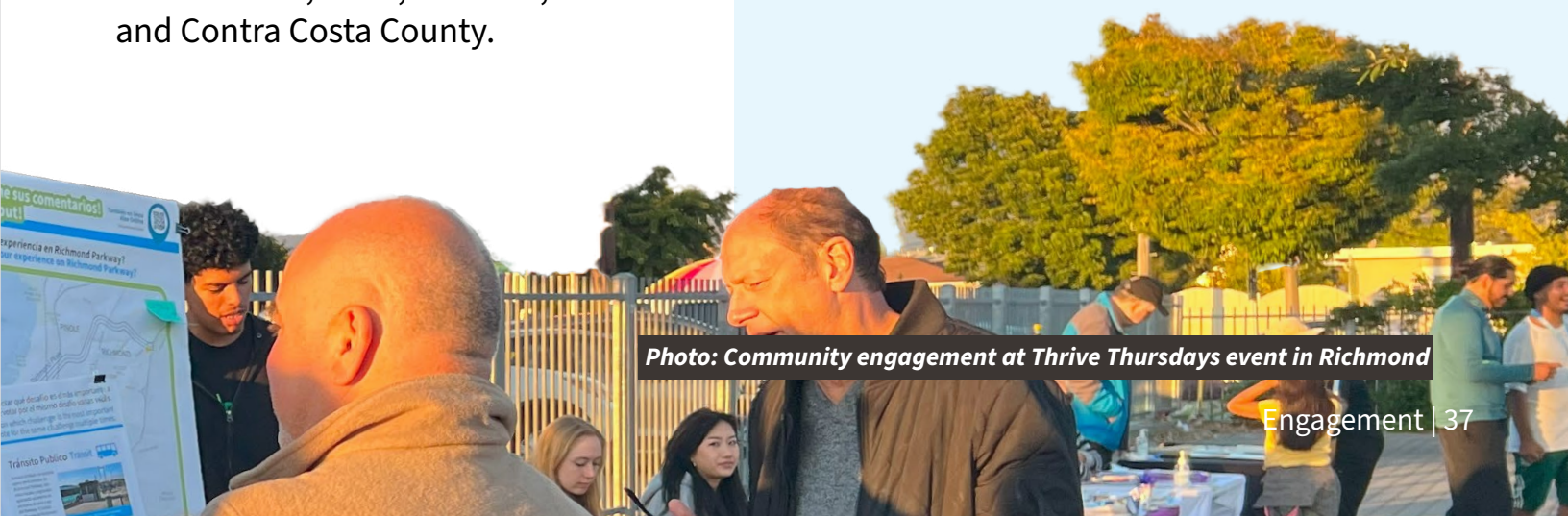


*Photo: Community engagement at Thrive Thursdays event in Richmond*

# ENGAGEMENT SUMMARY

The public engagement plan was developed with input from the PAG. After the first engagement phase was completed, the PAG confirmed the rest of the engagement plan was on-track.

Engagement efforts resulted in...

- **5 POP-UPS**
  - WITH **142** PEOPLE PROVIDING FEEDBACK
  - **71** PEOPLE WERE SPANISH SPEAKERS
- **3 ONLINE ENGAGEMENT TOOLS**
  - WITH **268** RESPONSES
  - FROM **235** CONTRIBUTORS
- **7 COMMUNITY MEETINGS**
- **4 PAG MEETINGS**
- **5 TAC MEETINGS**
- **4 WCCTC BOARD MEETINGS**

## 1. Understand Needs

**The first engagement phase focused on identifying needs and vision for the Parkway and confirming understanding of existing challenges and experiences using the Richmond Parkway.**

### Pop-Up Engagement

- August 6, 2023: North Richmond Flea Market (North Richmond)
- August 10, 2023: Thrive Thursdays (Coronado)
- August 19, 2023: Walmart (Hilltop)

### Community Meetings

- September 5, 2023: North Richmond Municipal Advisory Council
- September 12, 2023: Parchester Village Neighborhood Council
- September 20, 2023: Iron Triangle Neighborhood Council

### Online Webmap

- June 15 through September 4, 2023

### PAG Meetings

- June 8, 2023
- September 21, 2023

### WCCTC Board Meetings

- May 26, 2023
- September 29, 2023

## 2. Explore Strategies

**Then, stakeholders provided input on draft strategies responding to identified needs and issues. Community priorities for solutions were identified.**

### Pop-Up Engagement

- March 24, 2024: North Richmond Flea Market
- April 20, 2024: North Richmond's Earth Day Festival

### Community Meetings

- March 12, 2024: Parchester Village Neighborhood Council
- April 2, 2024: North Richmond Municipal Advisory Council
- April 6, 2024: City of Richmond District 2
- April 17, 2024: Iron Triangle Neighborhood Council

### Online Survey

- March 11 through April 29, 2024

### PAG Meeting

- February 22, 2024

### WCCTC Board Meeting

- March 22, 2024

## 3. Refine Solutions

**Comments on the priority strategies and Draft Plan were collected.**

### Public Draft Online Survey

- November 4th through November 29th, 2024

### PAG Meeting

- October 9, 2024

### WCCTC Board Meeting

- October 25, 2024

### Richmond Council Meeting

- November 19, 2024

### Contra Costa County Board of Supervisors Transportation, Water, and Infrastructure Committee (TWIC)

- December 9, 2024

# PHASE 1: UNDERSTAND NEEDS

To kick off the Plan, WCCTC asked participants to share their challenges and experiences using the Richmond Parkway via an online webmap of the corridor and by providing input in-person. Participants provided feedback on experiences related to safety, public health, transit, biking and walking, and vehicles and goods movement.



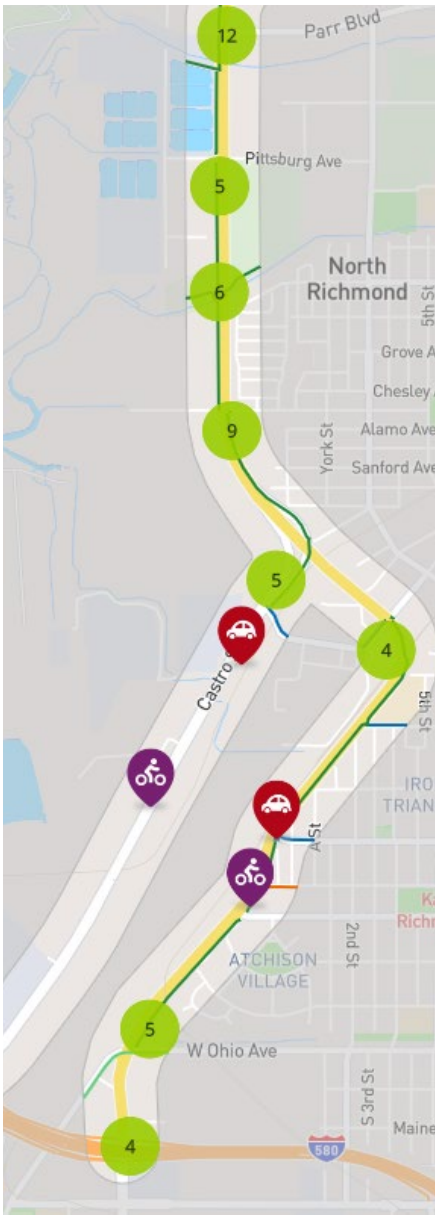




*Photo of Phase 1 pop-up at North Richmond Flea Market, 2024, and images of Phase 1 online webmap and social media ads.*

# What We Heard

Respondents cited safety as their top concern, particularly related to speeding along the Parkway. Nearly a third of all responses related to biking and walking, a majority of which noted comfort and safety challenges while using the Parkway and the Bay Trail. Biking and walking comments also indicated concerns about existing infrastructure, such as missing sidewalks and curb ramps and poor accessibility to trails. Participants also brought up peak period congestion throughout the corridor, with specific issues at intersections like San Pablo Avenue, Giant Road, and Castro Street. Maintenance was an important theme, specifically concerning deteriorating pavement, illegal dumping, and overgrown trees. The distribution of need-related topics heard can be seen in **Figure 18.**

Feedback on needs and desired improvements was used as a basis for the development of draft strategies presented in **Chapter 4.**

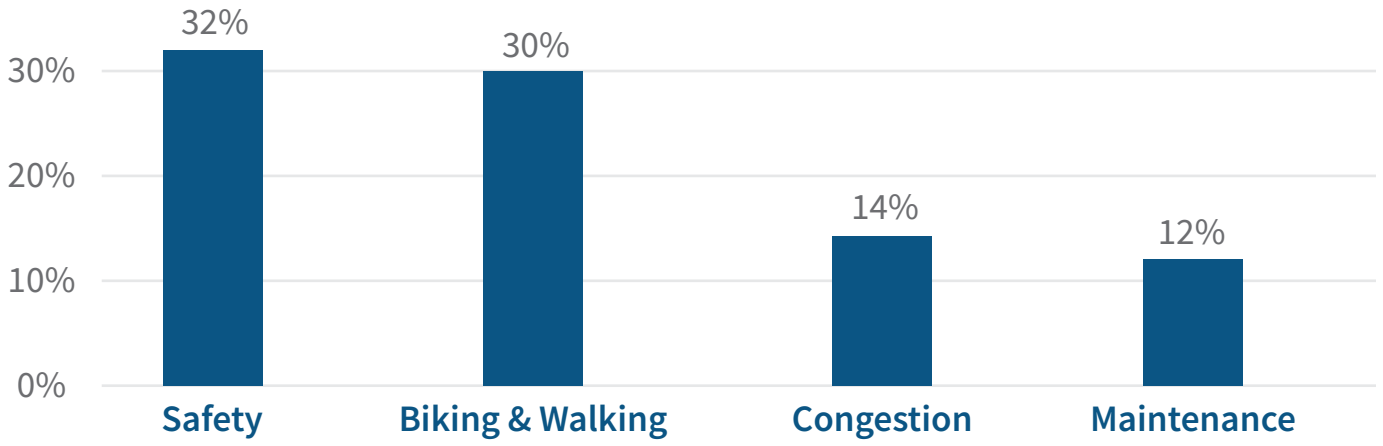
"Walking across the Parkway is super scary."

"The stretch where Parkway opens up from 2 lanes to 4 is crazy! It turns into a speedway!"

"Making the Parkway look like it's being cared for will go a long way towards making people feel safe."

"It's a deadly rat race road that I prefer not to drive on anymore."

**Figure 18: Distribution of Need-Related Topics Heard**




Note: Percentages add up to more than 100% due to the open-ended nature of comments received. More than one topic could be discussed in each comment.

# PHASE 2: EXPLORE STRATEGIES

A list of over 30 strategies, organized into six different overarching topics, was developed to address the issues previously identified through existing conditions analysis, existing plans and policies, and engagement. Stakeholders reviewed each strategy and provided a sense of relative priority.

## Strategy Categories

### Public Health

Strategies that reduce neighborhood truck traffic and reduce or mitigate vehicle emissions.

### Safety

Strategies that reduce speeding and expand emergency vehicle access.

### Walking and Biking

Strategies that improve walking and biking experience on the Richmond Parkway and the Bay Trail.

### Driving and Goods Movement

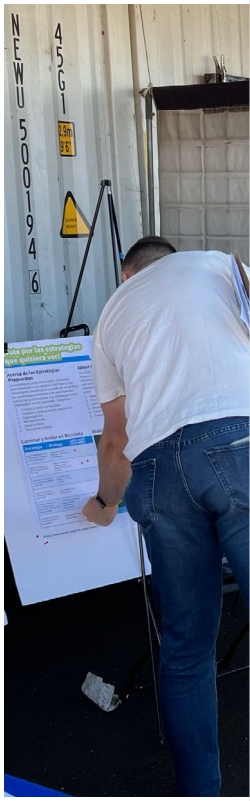
Strategies that address congestion and improve wayfinding.

### Maintenance

Strategies that address corridor and trail maintenance and illegal dumping.

### Transit

Strategies that address transit reliability, service, comfort, and access.



In this phase of engagement, participants were asked to provide feedback on the draft strategies. Participants ranked strategies via an online survey, in-person verbally, or in-person on interactive boards. Participants could also provide open-ended feedback on the draft strategies or suggest strategies that they felt were missing. Since the Parkway is also a regional facility serving a broader community whose preferred solutions may look different from residents living along the corridor, it was important to supplement the results of digital engagement strategy with in-person feedback from nearby residents.

*Photo of Phase 2 pop-up at North Richmond Earth Day Festival, 2024.*

## Categories of Strategies

**What categories of solutions are you most interested in? Please select at least two (2).** Required

Walking and Biking

Driving and Goods Movement


Safety

Public Health

Maintenance

Transit

*Photo of Phase 2 pop-up at North Richmond Flea Market, 2024.*

## Safety

The Safety category includes draft strategies aimed at improving safety for all roadway users on the Parkway.

Click **here** to see example images of the strategies below.

**Please rank the four (4) Safety strategies in order of preference from greatest to least.** Required

S-1 Install safety improvements at intersections along the Parkway, such as high-visibility crosswalks and curb bulb-outs

S-2 Deploy an Emergency Vehicle Preemption and Transit Priority system at signalized intersections

S-3 Implement measures to reduce speeding and lower the speed limit

S-4 Install physical treatments to prevent misuse of right turn lane

S-5 Install intersection monitoring systems for speeding, red light running, etc. at high-risk intersections

1

2

3

4

5

*Images of Phase 2 Online Survey.*

# What We Heard

**Figure 19** summarizes the pop-up and online survey results, and highlights the top strategy categories identified. The top four draft strategy categories were public health, safety, maintenance, and walking and biking. Top strategies were ranked within each category based on the level of support.

The top strategy categories differed between online survey respondents and pop-up participants. Pop-up participants more strongly represented Equity Priority Communities living along the corridor compared to online survey respondents, who represented the broader community of regional Parkway users. Almost half of pop-up interactions occurred in Spanish. Pop-up participants ranked public health as the top strategy, followed by maintenance and safety, while online respondents ranked walking and biking as their top strategy, followed by safety and maintenance.

Public health strategies that received the most support were strategies restricting trucks from driving through neighborhoods and parking or idling near sensitive land uses, as well as the strategy to mitigate emissions through urban greening. Safety strategies, particularly measures to reduce speeding and address high risk intersections, were desired. Under maintenance, strategies addressing ongoing roadway maintenance and illegal dumping received support from all audiences. Popular strategies related to walking and biking included upgrading on-street bikeways and sidewalks and constructing a new crossing for Wildcat Creek Trail.

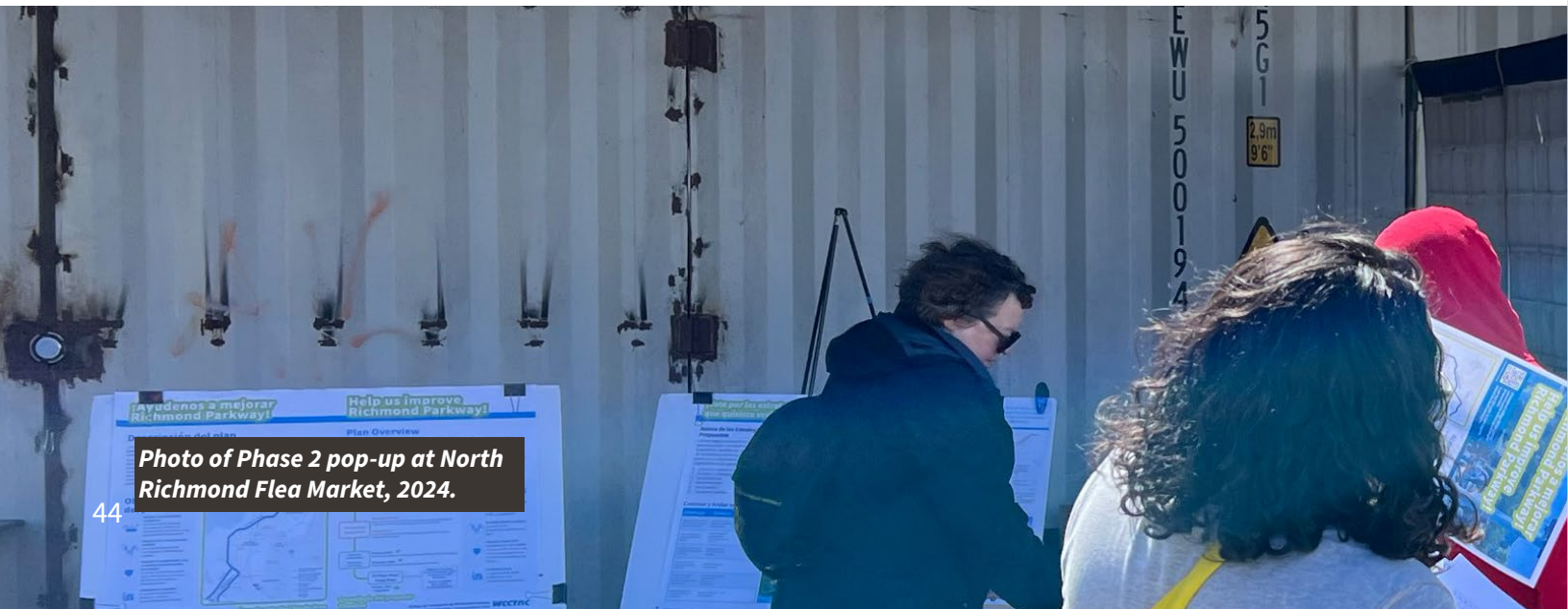
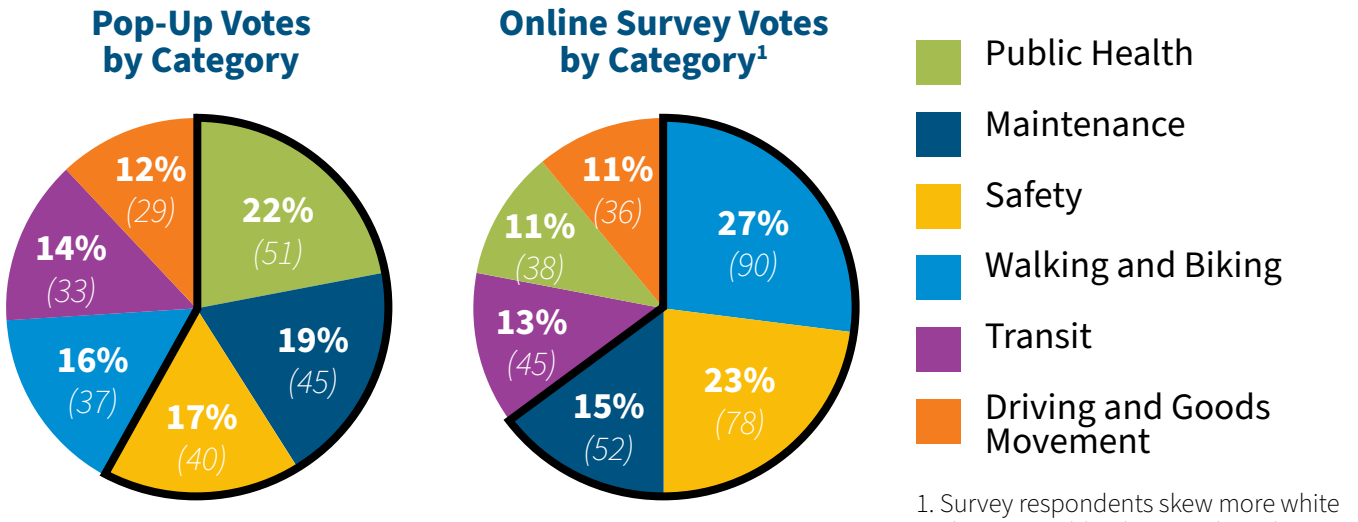



*Photo of Phase 2 pop-up at North Richmond Flea Market, 2024.*

Feedback received during this phase confirmed the responsiveness of draft strategies to community needs and identified the top strategies for implementation.

Strategies in the highest-ranking categories were given greater consideration during the identification of Priority Strategies described in **Chapter 5**.

**Figure 19: Distribution of Draft Strategy Category Votes**




Public Health, Maintenance, Safety, and Walking & Biking were the most popular strategy categories.

1. Survey respondents skew more white and more wealthy than residents living along the Parkway.

Note: Pop-Up events were held on March 24, 2024 and April 20, 2024. The Online Survey was open from March 11 through April 29, 2024.

# PHASE 3: REFINE SOLUTIONS

A subset of ten priority strategies were identified based on their ability to fulfill the Plan's six goals outlined in **Chapter 1**, issues identified in **Chapter 2**, and feedback from previous community engagement phases. Details about the priority strategies can be found in **Chapter 5**.

In this phase of engagement, the Draft Plan was disseminated to the public, project partners, PAG, TAC, WCCTC Board, Richmond City Council, and the Contra Costa County Board of Supervisors Transportation, Water, and Infrastructure Committee. In an online survey, participants were asked to provide feedback on the responsiveness of all the strategies to participant needs and which priority strategy they wanted to see advanced first. Participants could also provide open-ended feedback on the Draft Plan. The ranking of community priority strategies is listed in **Figure 20**.

Feedback heard during the PAG and public meetings confirmed the importance of implementing the priority strategies in response to existing needs and challenges along the corridor, while also identifying sources of funding that acknowledge the regional benefit of the Parkway. The regional-serving nature of the Parkway is described in **Appendix B**.

The feedback on the Draft Plan was incorporated into the Final Draft Plan, which was recirculated to project partners. The adoption of the Final Plan by WCCTC, the City of Richmond, and Contra Costa County is expected to occur in early 2025. Social media ads will be used to share the Final Plan.

**Figure 20: Top Five Priority Strategies Survey Ranking**

**WB-1** ☑ **18 VOTES**
Upgrade bikeways and connect sidewalk gaps

**S-1** ☑ **11 VOTES**
Safety improvements at intersections

**PH-2** **8 VOTES**
Trees and green infrastructure

**S-2** ☑ **7 VOTES**
Reduce speeding

**M-1** ☑ **7 VOTES**
Implement cross-jurisdictional maintenance program

**92%**
of survey respondents **agreed or strongly agreed** that the Plan strategies responded to their needs and challenges along the corridor.


*Photo of Phase 2 pop-up at North Richmond Flea Market, 2024.*

CHAPTER 4

# Strategies

A major outcome of this Plan is a recommended list of strategies that represent projects, policies, or programs related to transportation or transportation impacts along the corridor for WCCTC and project partners to advance.

# IDENTIFYING STRATEGIES

The Plan identifies 29 final strategies that address the Plan's six goals, issues identified through existing conditions analysis (**Chapter 2**), and community engagement feedback (**Chapter 3**). The strategies are organized into six categories described in **Figure 21** below.

**Figure 21: Strategy Categories**


**Public Health**
Strategies that reduce truck cut-through traffic and reduce or capture vehicle emissions.


**Safety**
Strategies that reduce vehicle speeds, address intersection conflict points, and prioritize emergency vehicle access.

**Walking and Biking**
Strategies that support comfortable walking and biking on the Parkway and the Bay Trail.


**Driving and Goods Movement**
Strategies that encourage carpooling, optimize signal timing, and improve wayfinding for drivers.

**Maintenance**
Strategies that holistically address corridor and Bay Trail maintenance and reduce illegal dumping.


**Transit**
Strategies that improve access and circulation at the Richmond Parkway Transit Center and support and encourage transit ridership.

Implementing these strategies will require coordination between WCCTC and partner agencies and organizations. The top 10 are identified as Priority Strategies (**Chapter 5**) to be advanced first. WCCTC and partner agencies may draw from the larger list of strategies as conditions change or as new funding or capacity opportunities arise.

To measure the Plan's performance, each strategy was evaluated against the Plan's goals, as shown in **Table 1**. Consideration of equity was incorporated by more heavily weighting goals that would have a disproportionate benefit to Equity Priority Communities living along the corridor. **Appendix C** lists the effectiveness of each strategy in meeting the Plan's goals.

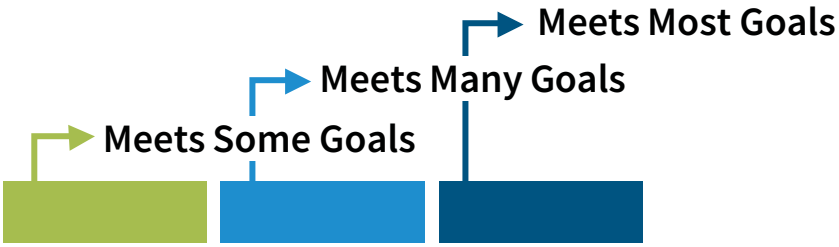
Based on the goal alignment metrics, each strategy met **Some Goals**, **Many Goals**, or **Most Goals**, as pictured in **Figure 22.** The full list of 29 strategies is presented in **Table 2**.

**Table 1: Qualitative Goal Alignment Metrics**

| Goal | Metric |
|---|---|
| Improve Safety for All Users* | **1a** Reduce severe and fatal injury collisions |
| Increase Access to Key Destinations* | **2a** Increase quality of connections<br>**2b** Expand connectivity to key destinations |
| Improve Health* | **3a** Decrease emissions<br>**3b** Reduce cut-through traffic |
| Advance Placemaking* | **4a** Improve maintenance and street beautification<br>**4b** Address key topics heard during engagement |
| Enhance Travel Time Reliability and Efficiency | **5a** Reduce vehicle delay<br>**5b** Increase vehicle occupancy |
| Support Feasible Strategies | **6a** Advance already adopted strategies<br>**6b** Near- to Medium-term implementation |

*Goal weighted more heavily given disproportionate benefit to local Equity Priority Communities.

**Figure 22: Goals Alignment Ranking**




All strategies meet at least some of the Plan's goals, and **63%** meet many or most goals.

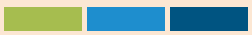
## Table 2: Full List of Strategies

| ID | Topic | Subtopic | Strategy Name | Goals Alignment |
|---|---|---|---|---|
| PH-1* | Public Health | Trucks | Implement new truck routes in North Richmond | |
| PH-2* | Public Health | Urban Greening | Trees and green infrastructure | |
| PH-3* | Public Health | Air Quality | Prohibit truck parking and idling in neighborhoods | |
| PH-4 | Public Health | Trucks | Encourage clean trucks | |
| PH-5 | Public Health | EV/AV Adoption | Encourage private electric vehicle adoption and usage | |
| PH-6 | Public Health | Noise | Improve sound wall | |
| PH-7 | Public Health | Air Quality | Air filtration systems at sensitive locations | |
| S-1* | Safety | Street Design | Safety improvements at intersections | |
| S-2* | Safety | Speeding | Reduce speeding | |
| S-3 | Safety | Monitoring | Monitor high-risk intersections for speeding, red light running, etc. | |

*Priority Strategies with an implementation plan in Chapter 5.

| Description |
| --- |
| Update designated truck routes in North Richmond, which is surrounded by industrial use, to ensure connections between truck-generating uses and the Parkway avoid residential neighborhoods to the extent feasible. Install cameras for legal automated monitoring and enforcement of heavy vehicles exceeding vehicle size limits. |
| Incorporate trees and green infrastructure into all capital projects where feasible. |
| Place no truck parking and no idling zones judiciously to reinforce but not overburden truck operations. Install signs in strategic locations such as residential areas and near sensitive receptors (schools, hospitals, parks) indicating no-idling zones and displaying the associated fines. |
| Encourage clean trucks to the maximum extent feasible through new development requirements. |
| Add electric vehicle charging infrastructure for vehicles and provide education on electric vehicle (EV) subsidy or rebate/incentive programs. |
| Improve the sound wall by increasing size or effectiveness of the sound barrier. |
| Identify publicly-owned buildings within the study area exposed to emissions levels beyond the Bay Area Air Quality Management District thresholds of significance and prioritize these locations for installation and regular maintenance of high-quality air filtration systems. |
| Install safety treatments per the Intersection Safety Recommendations in **Chapter 5**. These treatments include but are not limited to:<br>• Lighting, which includes roadway lighting, visiblity of signage, reflectivity, and lighting of pedestrians and bicyclists; ensure bike lanes and intersections are adequately illuminated, particularly in high-traffic areas<br>• High-visibility crosswalks, curb ramps, and curb extensions<br>• Conflict zone markings for bicycle crossings<br>• Geometric changes<br>• Accessible pedestrian push buttons, pedestrian countdown signals, and bicycle detection at signalized intersections |
| Add speed limit signs and radar speed feedback signs at high speed locations. Study opportunity to follow through on the legal process for speed limit reduction. When legalized, implement pilot of speed safety cameras. |
| Install monitoring systems for near-miss events, speeding, red light running, etc. at high-risk intersections. |

## Table 2: Full List of Strategies (cont.)

| ID | Topic | Subtopic | Strategy Name | Goals Alignment |
|---|---|---|---|---|
| WB-1* | Walking and Biking | Street Design | Upgrade bikeways and connect sidewalk gaps |  |
| WB-2* | Walking and Biking | Wildcat Creek Trail Crossing | On-street Wildcat Creek Trail crossing |  |
| WB-3 | Walking and Biking | New Technology | Test innovative bicycle and pedestrian detection at intersections |  |
| WB-4 | Walking and Biking | Shared Mobility | Expand electric bike share program |  |
| DG-1* | Driving and Goods Movement | Cycle Length | Upgrade and coordinate traffic signals |  |
| DG-2 | Driving and Goods Movement | Congestion | Add carpool lane on segments with high congestion |  |
| DG-3 | Driving and Goods Movement | Street Design | Redesign Richmond Parkway/ Castro Street merge |  |
| DG-4 | Driving and Goods Movement | Signage/ Wayfinding | Signage for blind turns |  |
| DG-5 | Driving and Goods Movement | Signage/ Wayfinding | Install wayfinding for drivers |  |

*Priority Strategies with an implementation plan in Chapter 5.

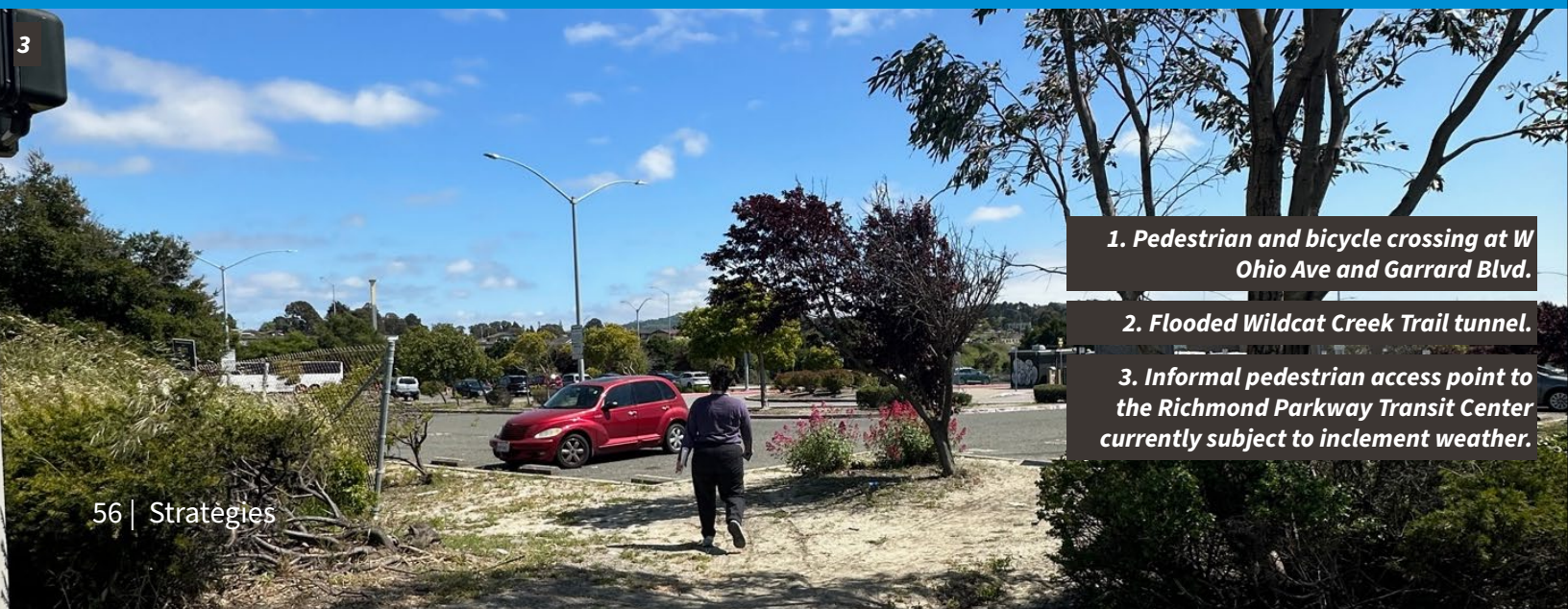
| Description |
| --- |
| Upgrade the Bay Trail to align with Bay Trail Design Guidelines, including adding clear and visible signage, particularly where the Bay Trail transitions to bikeways on Richmond Parkway. Realign Bay Trail between Hensley St and Gertrude Ave to western side of Castro St and Richmond Parkway. Create buffers to physically separate bicyclists from motor vehicle traffic using landscaping to enhance bicyclist comfort and safety. Coordinate with the San Francisco Bay Restoration Authority on the Living Levy project plans to improve pedestrian and operations access along Pittsburg Ave. |
| Install bike facilities, independent of the Bay Trail, with physical buffers to separate bicyclists from motor vehicles and improve bicyclist comfort and safety. Ensure bike lanes and intersections are adequately illuminated, particularly in high-traffic areas. |
| Install new sidewalks to close sidewalk gaps. Where sidewalk is missing on one side of the street along inactive land uses, condition future developers to install sidewalks. |
| Develop at-grade signalized multi-use crossing of Wildcat Creek Trail, install lighting, and add wayfinding signage to indicate distance traveled or what facilities are provided/nearby. In the long-term, consider a grade-separated overcrossing for the Wildcat Creek Trail over the Richmond Parkway. |
| Test new technologies (e.g. LiDAR, AI) that can help a traffic signal predict the arrival of a bicyclist or pedestrian and maintain signal protection until they have exited the intersection. |
| Support expansion of Richmond's bikeshare program. |
| Implement signal coordination along the Parkway in the peak period and optimize corridor-wide cycle lengths. Consider signal operations, pedestrian delay, and impact on speed. Install a connected battery backup system and a central signal management system. Upgrade signal hardware and software to allow automated traffic signal performance measures. Investigate, test, and deploy a system that allows for emergency vehicle preemption and transit prioritization at signalized intersections. Consider an adaptive traffic signal system. |
| Study the conversion of the northbound right turn lane into a high-occupancy vehicle (HOV) lane for bus, carpool, and right turn only in the afternoon peak period. Implement recommendations in MTC's I-580 Richmond Parkway Interchange Operational Improvements project. |
| Study reallocating merge capacity through restriping Richmond Parkway at the Castro Street merge to be one lane or introduce metering on Castro Street to control queues. Improve guidance for drivers through signage and striping. |
| Add a yield or prepare to stop sign/signal ahead of blind turns. |
| Install gateway and wayfinding signage directing drivers on which lanes to use to access key destinations. |

## Table 2: Full List of Strategies (cont.)

| ID | Topic | Subtopic | Strategy Name | Goals Alignment |
|---|---|---|---|---|
| M-1* | Maintenance | Roadway | Implement cross-jurisdictional maintenance program | |
| M-2 | Maintenance | Encampments | Keep sidewalks and paths clear near encampments | |
| M-3 | Maintenance | Illegal Dumping | Discourage illegal dumping | |
| T-1* | Transit | Richmond Parkway Transit Center | Improve access to the Richmond Parkway Transit Center | |
| T-2 | Transit | Transit Bus/Shuttle | Improve bus stop comfort | |
| T-3 | Transit | Transit Bus/Shuttle | New transit service to Marin County | |
| T-4 | Transit | Transit Bus/Shuttle | Increase bus frequency | |
| T-5 | Transit | Transit Bus/Shuttle | On-demand shuttle service | |
| T-6 | Transit | Parking | Parking lot for transit to Marin County | |
| T-7 | Transit | Accessibility | Publicize transit options/ information | |

*Priority Strategies with an implementation plan in Chapter 5.

| Description |
| --- |
| Implement a consistent management program assigned to upkeep the Parkway and provide a plan on what maintenance is, how it is performed, how it can be budgeted, and why it is needed. County and the City to approve an MOU for advancement by providing a statement of staff time commitments, legal resources, actual support from elected officials, and review process. Identify a cross-jurisdictional maintenance manager to implement the program to rehabilitate and maintain pavement quality and striping along the corridor, as well as maintenance to extend the service life of shared use path pavement. This program would also apply to signage, tree, debris, and signal maintenance. |
| Partner with advocacy group for unhoused, such as SOS Richmond and Contra Costa Health, Housing and Homeless Services, to encourage people experiencing homeless to keep sidewalks and paths clear. |
| Reduce illegal dumping on the corridor via fencing and provide education on how to properly dispose of waste. |
| Develop formal pedestrian connection between the northwest corner of the Richmond Parkway Transit Center and Richmond Parkway. Upgrade faded crosswalk markings within the Transit Center. Install bike lockers at the Richmond Parkway Transit Center consistent with the Association of Pedestrian & Bicycle Professionals guidance. Install bus pullout stops to allow buses to directly serve the Transit Center from the Parkway as recommended in the WCCTC Express Bus Implementation Plan (2020). |
| Enhance bus stops with features like seating, shelters, lighting, and real-time displays. |
| Study a bus line that connects Central/North Richmond and Hilltop to Marin across the Richmond-San Rafael Bridge. |
| Increase frequencies of AC Transit buses serving the corridor subject to AC Transit's Realign Plan. |
| Support continued operation and expansion of Richmond Moves on-demand shuttle, including to jobs centers. |
| To serve the large number of residents in the corridor commuting to the North Bay, study park-and-ride opportunities supporting transit service into Marin County. |
| Make transit schedules more accessible, expand education for Clipper Card usage, and publicize different transit options. |

*1. Pedestrian and bicycle crossing at W Ohio Ave and Garrard Blvd.*

*2. Flooded Wildcat Creek Trail tunnel.*

*3. Informal pedestrian access point to the Richmond Parkway Transit Center currently subject to inclement weather.*


*One of the priority strategies is to implement safety treatments at intersections, such as protected right-turn phases at Richmond Parkway and Ohio Avenue.*

CHAPTER 5

# Priority Strategies

The Plan identifies ten priority strategies to advance first based on their ability to address the Plan's six goals outlined in **Chapter 1**, issues identified in **Chapter 2**, and community engagement feedback in **Chapter 3**. All the priority strategies shown in **Table 3** meet many or most goals and received the most support through the online survey, pop-ups, and community meetings on the strategies. This chapter provides cutsheets describing the strategies' associated actions, benefits, timeframes, lead and coordinating agencies, and cost ranges shown below. Cost ranges of each priority strategy are included in the subsequent cutsheets. Funding and implementation are further discussed in **Chapter 6**.

$$ = <$1M

$$$ = $1M-5M

$$$$ = $6M-$10M

$$$$ = $11M+

**Table 3: Priority Strategies**

| ID | Topic | Strategy Name | Goals Alignment |
|---|---|---|---|
| PH-1 | Public Health | Implement new truck routes in North Richmond | |
| PH-2 | Public Health | Trees and green infrastructure | |
| PH-3 | Public Health | Prohibit truck parking and idling in neighborhoods | |
| S-1 | Safety | Safety improvements at intersections | |
| S-2 | Safety | Reduce speeding | |
| WB-1 | Walking and Biking | Upgrade bikeways and connect sidewalk gaps | |
| WB-2 | Walking and Biking | On-street Wildcat Creek Trail crossing | |
| DG-1 | Driving and Goods Movement | Upgrade and coordinate traffic signals | |
| M-1 | Maintenance | Implement cross-jurisdictional maintenance program | |
| T-1 | Transit | Improve access to the Richmond Parkway Transit Center | |

= Meets Many Goals = Meets Most Goals

PH-1 PUBLIC HEALTH

$$$$

# Implement new truck routes in North Richmond

**Goals Alignment**
Meets Most Goals

**Lead Agency**
Contra Costa County: Planning, Public Works

**Coordinating Agency**
WCCTC, CHP, CalTrans, City of San Pablo, City of Richmond

**Completion Timeframe**
0 to 2 years

## Actions

### Update designated truck routes

Update designated truck routes in North Richmond, where there are large industrial-use generators, to ensure connections between truck-generating uses and the Parkway avoid residential neighborhoods to the extent feasible.

### Enforce designated truck routes

Install cameras for legal automated monitoring and enforcement of heavy vehicles exceeding vehicle size limits.

## Benefits

### Improved neighborhood sound quality

Reducing truck-related noise pollution, which can be damaging above **85 decibels 50 feet** away, can decrease stress and improve sleep quality.[1]

### Reduced exposure to emissions

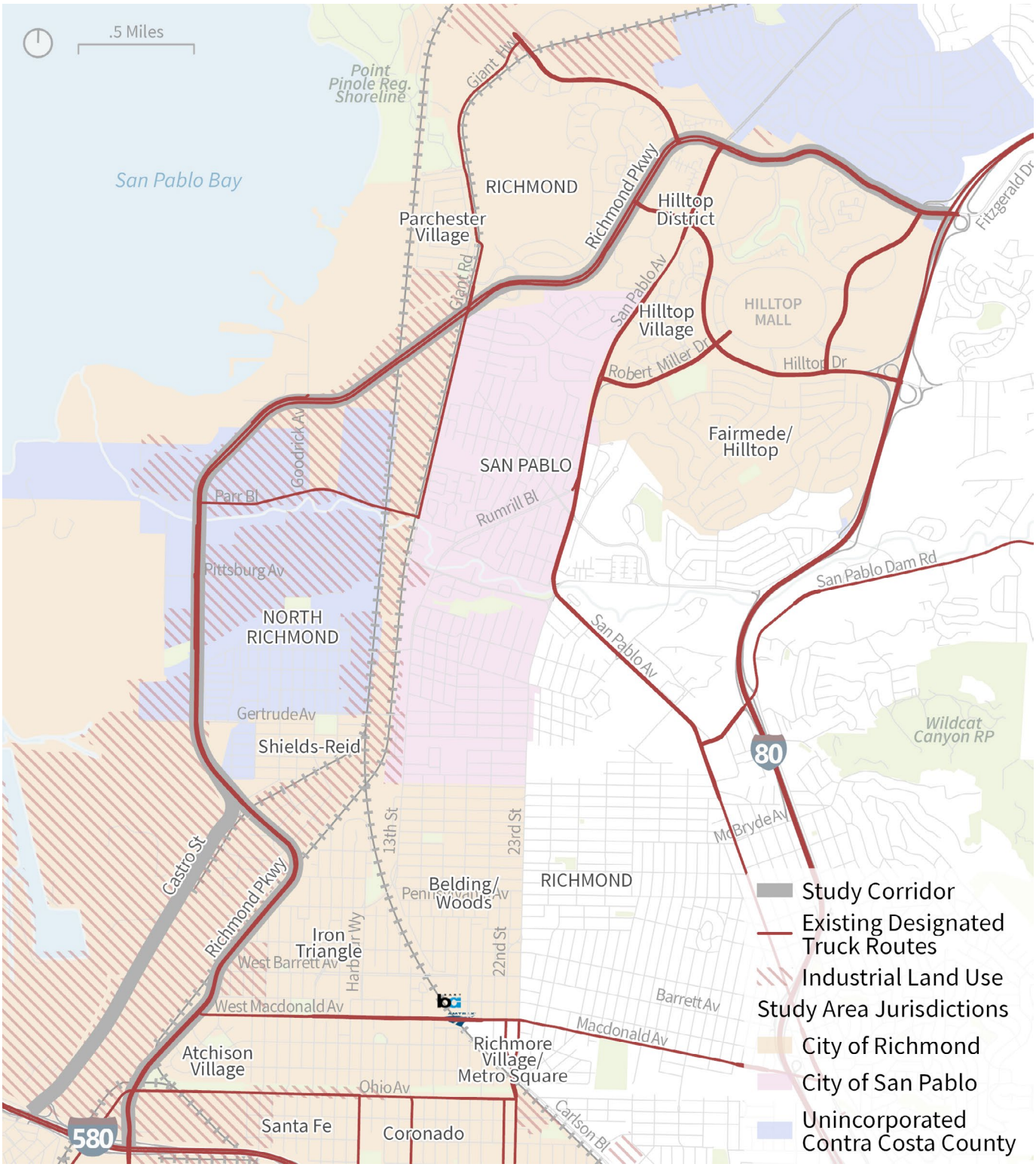
Trucks emit pollutants at a rate of **1.15 times** more than passenger vehicles, which contributes to respiratory and cardiovascular diseases.[2] Redirecting truck traffic from sensitive sites and residential neighborhoods reduces exposure to these emissions, leading to **better air quality and fewer health issues**, such as asthma.[3]

1. Community and Environmental Defense Services, "Truck Stops & Neighborhood Quality of Life," 2024.
2. EPA, US EPA Archive Document on Idling Reduction; EPA, 2024.
3. OEHHA, 2021.

**Figure 23:**

## Map of Existing Designated Truck Routes

PH-1




Source: Richmond General Plan 2030, 2016. Industrial land use areas include land that is used for the manufacturing, storage, processing, or packaging of goods and materials.

PH-2 PUBLIC HEALTH

$$$$

# Trees and green infrastructure

**Goals Alignment**
Meets Most Goals

**Lead Agency**
City of Richmond: Public Works, Contra Costa County: Public Works

**Coordinating Agency**
Groundwork Richmond, Contra Costa County: Planning

**Completion Timeframe**
Ongoing

## Actions

### Incorporate trees and green infrastructure

Incorporate trees and green infrastructure, such as bioretention planters, into all capital projects where feasible.

## Benefits

### Improved air quality

Planting trees along sections of the nine-mile corridor would improve local air quality by capturing **213.6 metric tons** of CO2 by 2050, the equivalent of removing **46 cars** from the road driving a combined **529 thousand miles** annually.[1]

### Increased tree cover and lower temperatures

Adding about 800 trees to the tree cover will provide shade along the entire corridor. This strategy can lower surface temperatures by up to **11 degrees Fahrenheit**, which has the potential to save lives as climate change increases the frequency of extreme heat episodes.[2]

### Improved drainage and water quality

Bioretention planters provide, on average, **56% to 89% stormwater volume reduction** and are proven to **filter pollutants** from stormwater, reducing flooding along the corridor and improving water quality.[3]

1. ESA, 2024.
2. Rx FOR HOT CITIES, 2023.
3. EPA, NPDES: Stormwater Best Management Practice—Bioretention (Rain Gardens), 2021.

# Additional Details

PH-2

## Street trees

Increased tree cover improves air quality by removing particulate matter, and reduces surface temperatures by providing shade and increasing moisture in the air. Trees also help manage runoff, reduce erosion caused by rain, and promote infiltration, which all work to reduce potential flooding.[1]

Public domain image.

## Bioretention planters

Installing bioretention planters helps manage stormwater runoff by capturing, treating, and absorbing runoff from the street, while recharging the local groundwater supply.

Image source: City of Raleigh.

1. ESA, " Soak Up the Rain: Trees Help Reduce Runoff," 2024.

PH-3 PUBLIC HEALTH

$$$$

# Prohibit truck parking and idling in neighborhoods

**Goals Alignment**
Meets Many Goals

**Lead Agency**
Contra Costa County: Planning, City of Richmond: Public Works, BAAQMD

**Coordinating Agency**
City of Richmond: Planning, Contra Costa County: Planning, CHP

**Completion Timeframe**
0 to 2 years

## Actions

### Install signage prohibiting truck activity

Place no truck parking and no idling zones judiciously to reinforce but not overburden truck operations. Install signs in strategic locations such as residential areas and near sensitive receptors (e.g. schools, hospitals, parks) indicating no-idling zones and displaying the associated fines.

## Benefits

### Improved air quality

Trucks idle at a rate of **1 gallon of diesel** per hour on average, which releases more than **500 pounds of CO2 emissions** per day.[1] This strategy would reduce local exposure to these truck emissions.

### Reduced health risks

Higher CO2 levels contribute significantly to the prevalence of asthma and the risk of heart and lung disease. Reducing emissions will positively affect the **99th and 98th percentile asthma rates** near the Parkway in the North Richmond and the Iron Triangle neighborhoods.[2]

1. EPA, US EPA Archive Document on Idling Reduction; EPA, 2024.
2. California Office of Environmental Health Hazard Assessment, 2021.

## Additional Details

### No-idling signage

No-idling signs are enforcement signs regarding truck parking or idling and can include associated fines. Detering this truck activity can improve the local air quality.


Image source: Traffic Signs.

S-1 SAFETY

$$$$

# Safety improvements at intersections

**Goals Alignment**
Meets Most Goals

**Lead Agency**
Contra Costa County: Public Works, City of Richmond: Public Works

**Coordinating Agency**
Caltrans, MTC, West County Wastewater, CCTA, BNSF

**Completion Timeframe**
6 to 10 years

## Actions

### Install safety enhancements

Install safety treatments per the following Intersection Safety Recommendations pages. These treatments include but are not limited to: high visibility crosswalks, curb ramps and curb extensions/ bulbouts, turn delineators to slow down left turn speeds, conflict zone markings for bicycle crossings, pedestrian refuge islands, removing slip lanes, and lighting (overhead lighting, pedestrian- and bicyclist-scale lighting, bus stop lighting, visiblity and reflectivity of signage). Ensure bike lanes and intersections are adequately illuminated, particularly in high-traffic areas.

### Improve safety at signalized intersections

Install safety treatments per the following Intersection Safety Recommendations pages. These treatments include but are not limited to: accessible pedestrian push buttons, pedestrian countdown signals, bicycle detection, striped trail crossings, and No Right Turn on Red signage.

## Benefits

### Safer streets for all

This strategy could lead to a **7% reduction** in all collisions.[1]

### Safer streets for bicyclists and pedestrians

This strategy could lead to a **43% reduction** in injury collisions involving bicyclists or pedestrians.[1]

1. Caltrans, Local Roadway Safety Manual, 2024; City of Richmond Bicycle and Pedestrian Action Plan, 2023; City of Richmond General Plan, 2012; City of Richmond Local Road Safety Plan, 2023; Contra Costa County General Plan, 2005; Fehr and Peers, 2024; FHWA, CMF Clearinghouse, 2024; San Pablo General Plan, 2011.

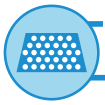
**Figure 24:**

# Intersection Safety Recommendations

## TREATMENTS AT EVERY INTERSECTION

### HIGH-VISIBILITY CROSSWALKS

Mark all crosswalks with high-visibility striping and advance stop bars to improve pedestrian crossing visibility.



### ACCESSIBLE CURB RAMPS

Install directional ADA curb ramps.

### ACCESSIBLE PEDESTRIAN SIGNALS

Install audible pedestrian signals and accessible push buttons at crossings.

### REFLECTIVE BACKPLATES

Install reflective backplates on signals to enhance the visibility of traffic signals.

### BIKE DETECTION

Install bike detection at signalized intersections.

### LIGHTING AND REFLECTIVITY

Improve overhead, pedestrian-scale, and bus stop lighting to increase visibility of all road users. Increase visibility and reflectivity of all signage.

## TREATMENTS AS NEEDED

### STRAIGHTEN CROSSWALKS

Straighten crosswalks to improve sightlines and shorten pedestrian crossing distances.

### TIGHTEN CURB RADII

Reduce curb radii to slow down vehicle turning speeds, shorten pedestrian and bicyclist crossing distances, and provide more sidewalk space for pedestrians and bicyclists.

### RAISED CROSSWALKS

Install a raised crosswalk in the right-turn slip lane to reduce turning speeds.

### INSTALL PORKCHOP ISLAND WITH RAISED CROSSWALK

Where large vehicles must turn, install a porkchop island to reduce crossing distances and provide a raised crosswalk to reduce speeds.

### MAJOR BIKE INTERSECTION IMPROVEMENTS

Install protected intersection to support bicyclist turning movements and create slower interactions and clear sightlines.

### MINOR BIKE INTERSECTION IMPROVEMENTS

Enhance or create new active transportation connection between bike facility and the Parkway with lighting and maintenance.


### ENFORCE RIGHT-TURN ONLY LANES

Promote self-enforcement of right-turn only lane by installing a far-side bulbout and enhancing related signage.


### NO RIGHT-TURN ON RED

Prohibit vehicle right-turn on red at path and separated bikeway crossings of the minor street to reduce conflicts.

### PROTECTED RIGHT-TURN PHASE

Provide protected right-turn phase to remove vehicle-bike and vehicle-pedestrian conflicts in time.

### PEDESTRIAN COUNTDOWN SIGNALS

Install pedestrian countdown timers to display the crossing time remaining.

### MEDIAN REFUGE ISLANDS

Provide pedestrians a place to wait if they are unable to finish crossing an intersection.

### RAILROAD CROSSING ARMS

Install railroad crossing arms for pedestrian and bicyclist safety.

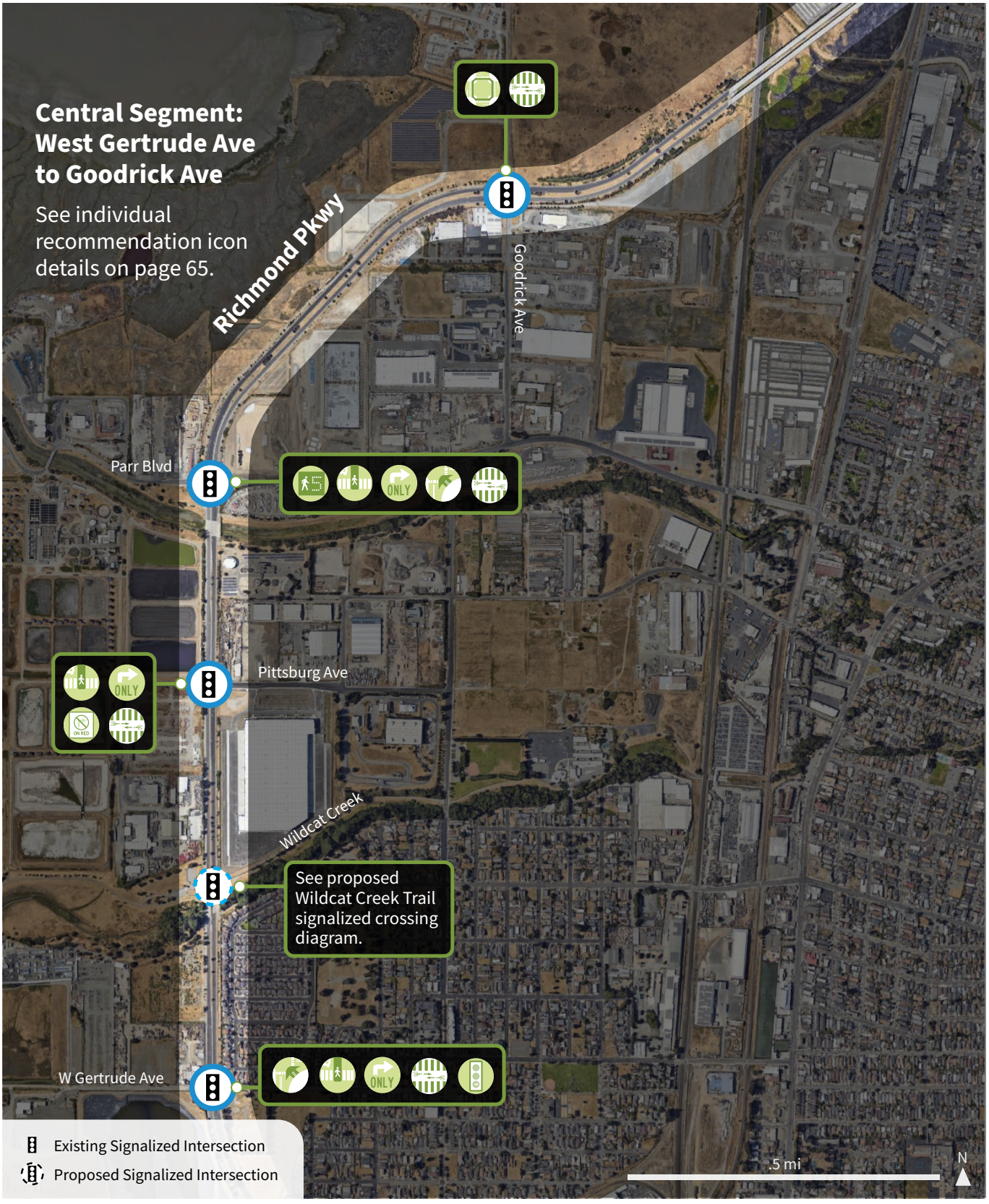
### STRIPE TRAIL CROSSING

Stripe crosswalk to indicate trail crossing and improve user visibility.

**Figure 25:**

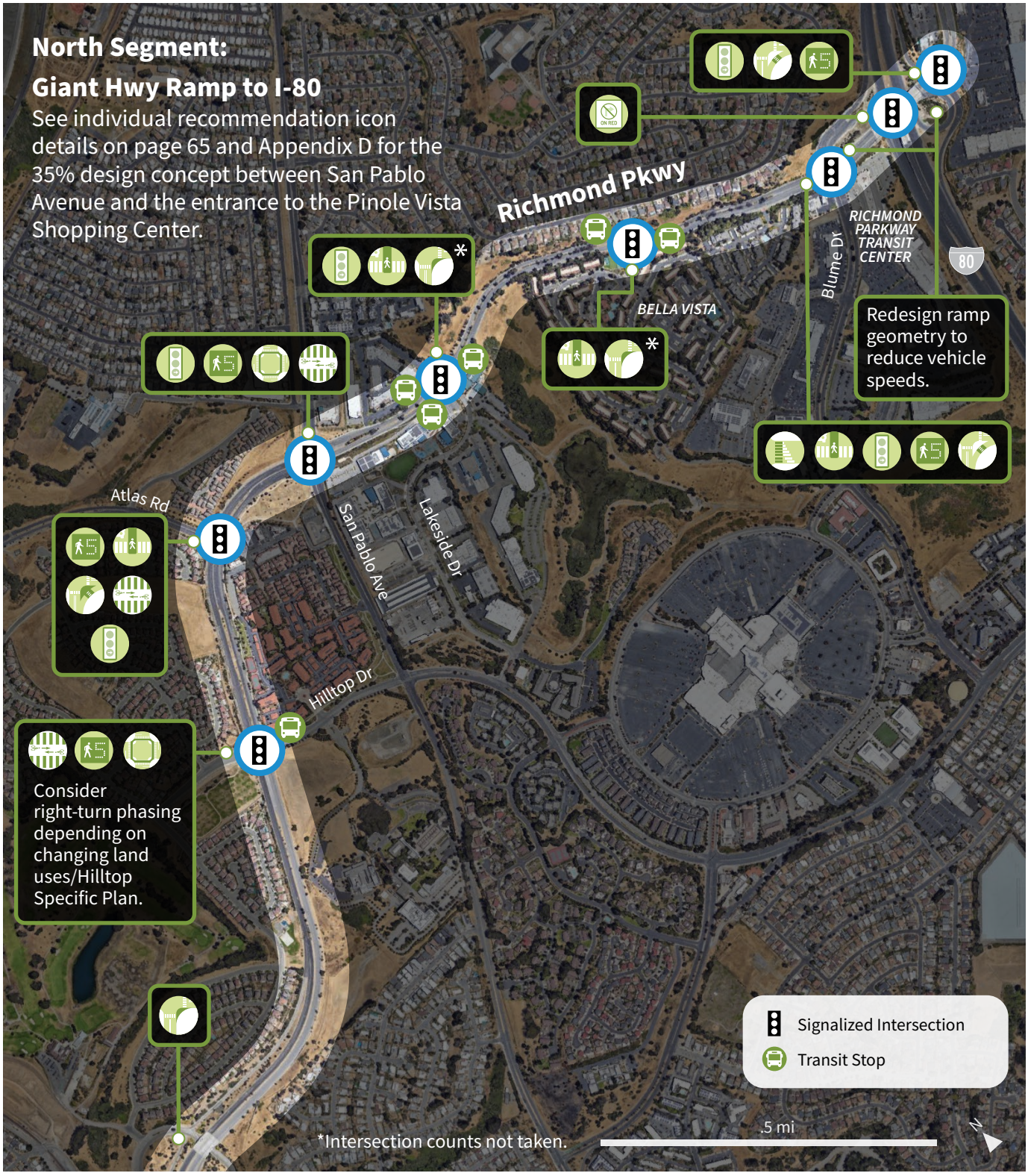
## Intersection Safety Recommendations (Cont.)

S-1


Central Segment:
West Gertrude Ave
to Goodrick Ave
See individual recommendation icon details on page 65.
Richmond Pkwy
Goodrick Ave
Parr Blvd
Pittsburg Ave
Wildcat Creek
See proposed Wildcat Creek Trail signalized crossing diagram.
W Gertrude Ave
ONLY
Existing Signalized Intersection
Proposed Signalized Intersection
.5 mi
N

# Intersection Safety Recommendations (Cont.)

S-1



S-2 SAFETY

$$$$

# Reduce speeding

**Goals Alignment**
Meets Many Goals

**Lead Agency**
City of Richmond: Public Works, Contra Costa County: Public Works

**Coordinating Agency**
City of Richmond: PD; California Highway Patrol

**Completion Timeframe**
3 to 5 years

## Actions

### Install speed-monitoring systems

Add radar speed feedback signs or implement pilot of speed cameras at high speeding locations. Speed cameras are currently not allowed under state law, but legislation passed in 2023, Assembly Bill 645, authorizes six designated cities across California to implement a speed camera pilot program.

### Indicate speed limits

Add speed limit signs and lower the speed limit throughout the Parkway if allowed under state law.

## Benefits

### Safer streets for all

This strategy could lead to a **20% reduction** in all collisions.[1]

1. Caltrans, Local Roadway Safety Manual, 2024; FHWA, CMF Clearinghouse, 2024.

## Additional Details

### Radar speed signs

Radar speed feedback signs are cost-effective traffic calming solutions that reduce average vehicle speeds and slow speeding drivers.

Image Source: Trafficalm.

WB-1 WALKING AND BIKING

$$$$

# Upgrade bikeways and connect sidewalk gaps

**Goals Alignment**
Meets Most Goals

**Lead Agency**
City of Richmond: Public Works, Contra Costa County: Public Works

**Coordinating Agency**
MTC, CCTA, WCCTC, City of Pinole, EBRPD

**Completion Timeframe**
6 to 10 years

## Actions

### Upgrade Bay Trail facilities

Upgrade the Bay Trail to align with Bay Trail Design Guidelines, including adding clear and visible signage, particularly where the Bay Trail transitions to bikeways on Richmond Parkway. Realign Bay Trail between Hensley St and Gertrude Ave to western side of Castro St and Richmond Parkway. Create buffers to physically separate bicyclists from motor vehicle traffic using landscaping to enhance bicyclist comfort and safety. Coordinate with the San Francisco Bay Restoration Authority on the Living Levy project plans to improve pedestrian and operations access along Pittsburg Ave.

### Install high-quality on-street bikeways

Install bike facilities, independent of the Bay Trail, with physical buffers to separate bicyclists from motor vehicles and improve bicyclist comfort and safety. Ensure bike lanes and intersections are adequately illuminated, particularly in high-traffic areas.

### Close sidewalk gaps

Install new sidewalks to close sidewalk gaps. Where sidewalk is missing on one side of the street along inactive land uses, condition future developers to install sidewalks.

## Benefits

### Increased access for pedestrians

Creates a more direct and usable path for pedestrians along the entire Parkway, improving connections to bus stops, Richmond Parkway Transit Center, nearby parks, schools, and community services.

### Increased access for bicyclists[1]

Within 20 minutes, residents near the North segment would be able to access up to...

**2x more amenities[2]**
**3x more jobs**
**3x more park area by biking**

Within 20 minutes, residents near the Central segment would be able to access up to...

**5x more amenities[2]**
**2.5x more jobs**
**4x more park area by biking**

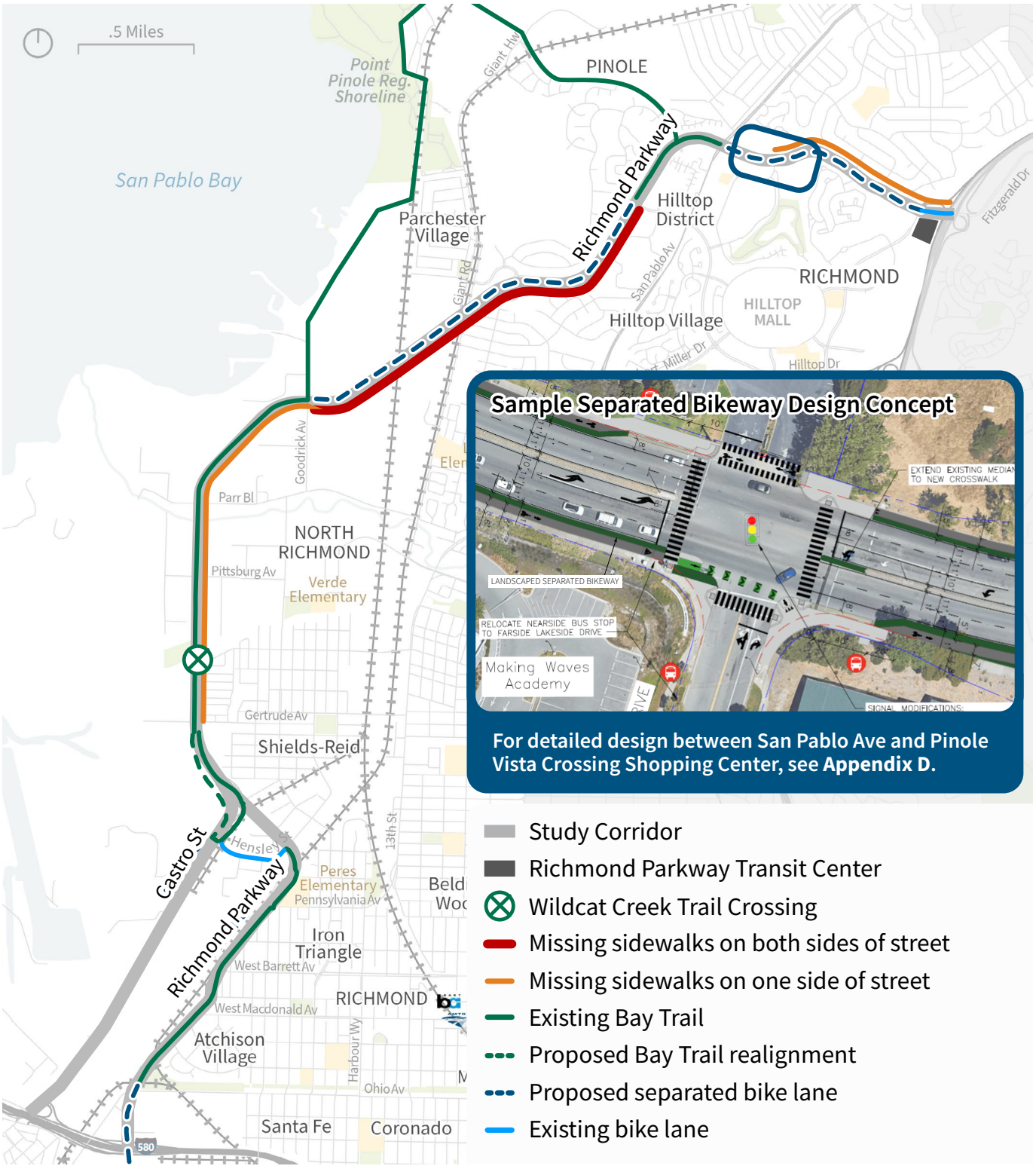
Within 20 minutes, residents near the South segment would be able to access up to...

**10% more amenities[2]**
**20% more jobs**
**5% more park area by biking**

1. ESA, 2024; TravelAccess+, Fehr and Peers, 2024; LEHD, 2023. North segment includes areas east of San Pablo Ave and north of El Portal Dr, covering Tara Hills, Hilltop Village, Hilltop District, and Rollingwood. Central segment includes areas west of San Pablo Ave and north of Gertrude Ave/Costa Ave, covering San Pablo, North Richmond, and Parchester Village. South segment includes areas south of Gertrude Ave/Costa Ave, including Shields-Reid, Iron Triangle and Santa Fe.
2. Amenities include day cares, hospitals, schools, supermarkets and emergency services.

**Figure 26:**

## Sidewalk Gaps and Recommended Bikeways




Source: Richmond Bicycle and Pedestrian Action Plan, 2023.

WB-2 WALKING AND BIKING

$$$$

# On-street Wildcat Creek Trail crossing

**Goals Alignment**
Meets Many Goals

**Lead Agency**
Contra Costa County: Public Works

**Coordinating Agency**
EBRPD, City of Richmond: Public Works, MTC, West County Wastewater, WCCTC

**Completion Timeframe**
3 to 5 years

## Actions

### Add a signalized crossing

Develop at-grade signalized multi-use crossing of Wildcat Creek Trail, install lighting, add signage along Wildcat Creek Trail to indicate distance traveled or what facilities are provided/nearby.

## Benefits

### Increased multimodal access

Improving the Wildcat Creek Trail Crossing through near-term improvements would connect nearly 1 mile of trail east of the Parkway with 1.4 miles of trail west of the Parkway when the underpass is flooded, resulting in a total of **2.2 miles of low stress bicycle facilities**.[1]

### Improved crossing usage and experience

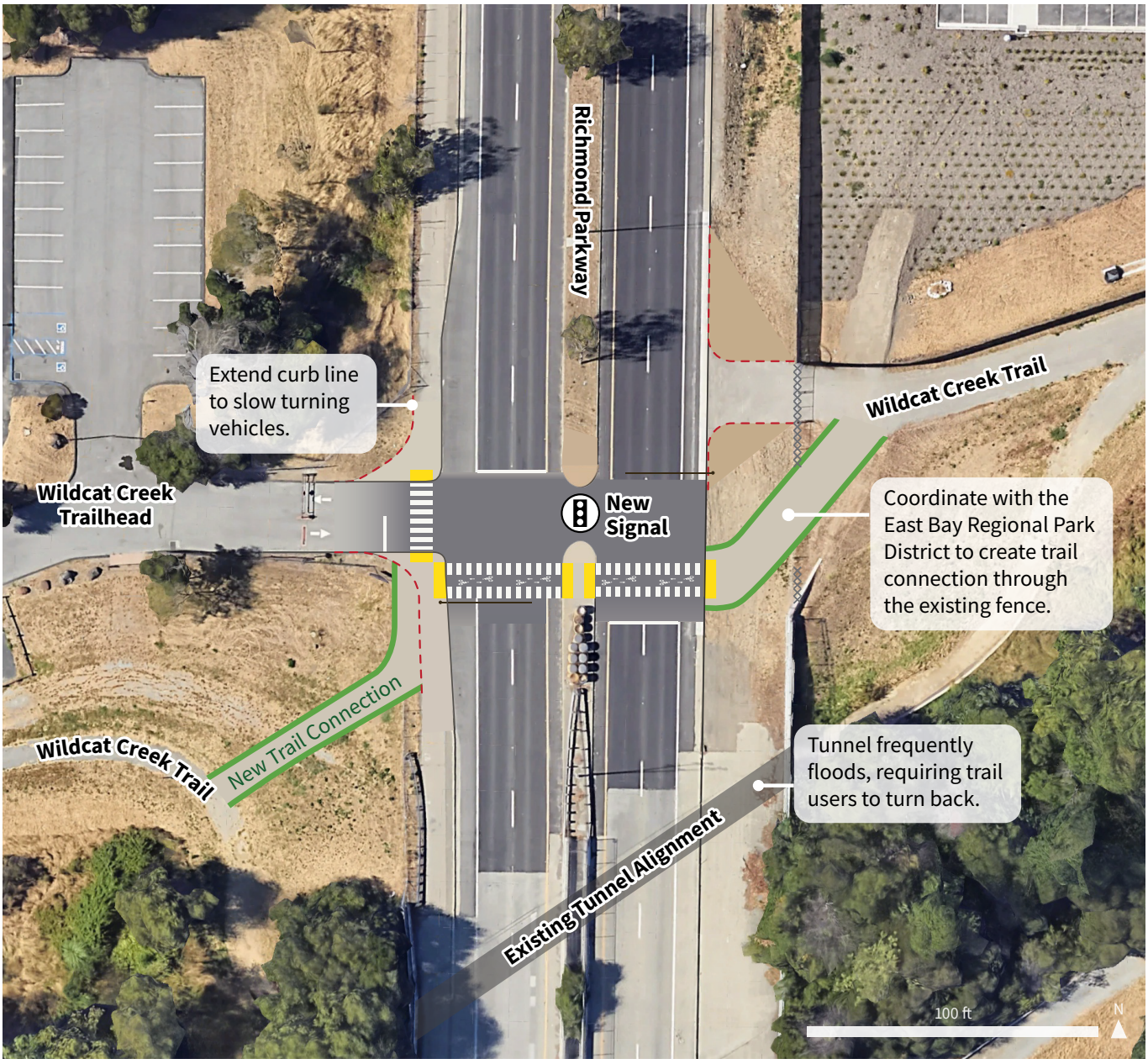
Provides a **functioning, year-round crossing** resilient to sea level rise effects and resolves the current flooding of the existing tunnel.

1. Fehr & Peers, 2024.

Previous planning efforts, such as the **San Francisco Estuary Partnership's Restoring Wildcat Creek: Community-Led Watershed Health Update and Priority Project Implementation** project, have identified a community desire for a grade-separated crossing at this location. The Richmond Parkway Transportation Plan recommends installing a signalized crossing to improve conditions in the nearer term as overcrossing costs are significant and will require a longer time horizon to fund and construct.

**Figure 27:**

## Proposed Signalized Crossing at Wildcat Creek Trail



DG-1 DRIVING AND GOODS MOVEMENT

$$$$

# Upgrade and coordinate traffic signals

**Goals Alignment**
Meets Many Goals

**Lead Agency**
City of Richmond: Public Works; Contra Costa County: CCTA

**Coordinating Agency**
Caltrans, MTC

**Completion Timeframe**
3 to 5 years

## Actions

### Implement signal coordination

Implement signal coordination along the Parkway in the peak period and optimize corridor-wide cycle lengths. Consider signal operations, pedestrian delay, and impact on speed.

### Upgrade signal infrastructure

Install a connected battery backup system and a central signal management system. Upgrade signal hardware and software to allow automated traffic signal performance measures. Investigate, test, and deploy a system that allows for emergency vehicle preemption and transit prioritization at signalized intersections. Consider an adaptive traffic signal system.

## Benefits

### Travel time savings[1]

Coordinating the signals along the Parkway could save drivers up to...

**13 minutes**
in the **northbound** direction in the **afternoon** peak period.

**3 minutes**
in the **southbound** direction in the **morning** peak period.

### Reduced idling

Time travel savings may reduce vehicle **emissions and driver frustrations** from sitting at lights, improving local air quality and discouraging dangerous driving actions such as running red lights, speeding, and driving on the shoulder lane.

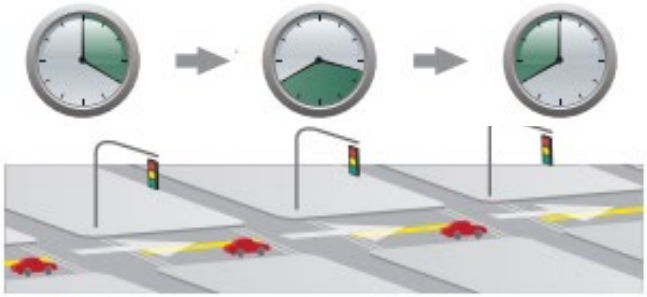
### Improved emergency services and bus reliability

Signal priority for emergency services or transit at signalized intersections can **improve the speed** of emergency responders in reaching a scene and **increase the time available** for making critical decisions, as well as improve or increase **bus reliability** along the corridor.

1. Fehr & Peers, SimTraffic Model, 2024. Travel time savings are greater in the northbound direction since it is more heavily impacted by existing traffic congestion, particularly during the evening commute period as discussed in Chapter 2.

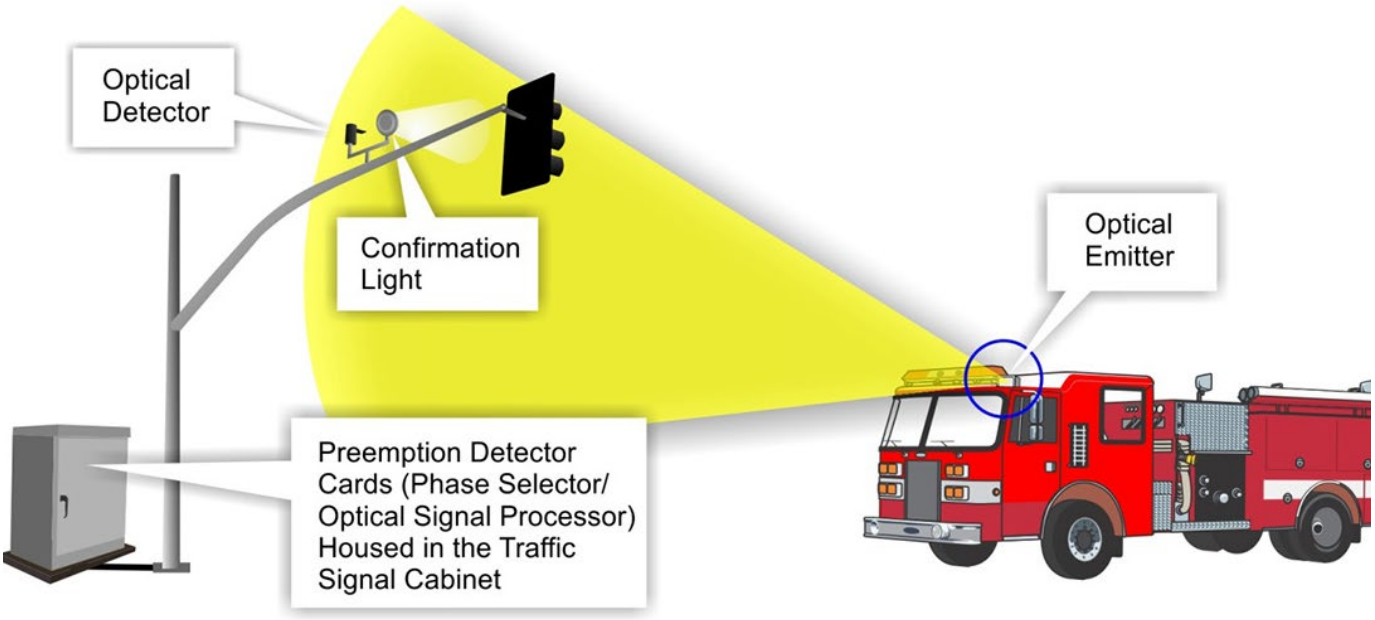
## Additional Details

### Traffic signal coordination



Coordinating traffic signals synchronizes the timing of multiple intersections to improve traffic flow and reduce delays. This can result in less braking, improve goods movement efficiency, and discourage neighborhood cut-through traffic. Contra Costa Transportation Authority (CCTA) is currently leading a Smart Signals Project to upgrade and coordinate traffic signals at over 300 intersections throughout the county to optimize traffic flow and reduce congestion, providing a potential avenue for traffic signal funding on the Parkway.

Image source: UDOT.




### Emergency vehicle preemption (EVP) technology

EVP technologies allow signals to modify their signal timing to provide a green light as soon as possible for an approaching emergency vehicle.

Image source: Maripoca Association of Governments.

M-1 MAINTENANCE

$$$$

# Implement cross-jurisdictional maintenance program

**Goals Alignment**
Meets Most Goals

**Lead Agency**
Contra Costa County: Public Works, City of Richmond: Public Works

**Coordinating Agency**
CCTA, WCCTC

**Completion Timeframe**
2 to 4 years

## Actions

### Implement a corridor-wide maintenance program with a maintenance manager

Implement a consistent management program assigned to upkeep the Parkway and provide a plan on what maintenance is, how it is performed, how it can be budgeted, and why it is needed. The County and the City first need to approve an MOU for advancement by providing a statement of staff time commitments, legal resources, actual support from elected officials, and review process.

The program will need to determine the feasible maintenance level, associated analyses, and implementation costs for, but not limited to, the following items: roadway pavement, striping, shared use path pavement, signage life, signals, street lights, street sweeping, drainage systems, and vegetation. Following program development, which may be developed with the assistance of a maintenance consultant, identify a cross-jurisdictional maintenance manager for implementation.

## Benefits

### Reduced emissions and costs to drivers

Improved pavement conditions could save drivers up to **4%-10%** of fuel consumption, repair and maintenance, and tire wear. Reducing fuel consumption and tire wear reduces emissions and microplastics, improving air and water quality and protecting the environment by reducing the use of natural resources.[1,2]

### Improved safety

Improved pavement friction at intersections provides numerous benefits: improved driver control, reduced stopping distances, reduced skidding, and a **20% reduction** in total intersection crashes.[3]

### Improved coordination and response

Consolidating maintenance responsibilities under one central manager allows for improved coordination between agencies, cost savings due to consolidation, and a **more timely response** to concerns.

1. SMOOTHNESS MATTERS, Asphalt Pavement Alliance, 2008.

2. Reynolds, R. L., Molden, N., Kokaly, R. F., Lowers, H., Breit, G. N., Goldstein, H. L., et al. (2024). Microplastic and associated black particles from road-tire wear: Implications for radiative effects across the cryosphere and in the atmosphere. Journal of Geophysical Research: Atmospheres, 129, e2024JD041116.

3. How Pavement and Bridge Conditions Affect Transportation System Performance, FHWA, 2023.

# Additional Details

## Pavement Condition Index (PCI) Scores

Consistent pavement maintenance helps extend the useful life of pavement. PCI scores measure the health of a road's pavement, ranging from 0 (worst) to 100 (best). A PCI score of at least 70 is desired. Factors that affect a PCI score include the age of the pavement/when the roadway was last paved, climate and precipitation, traffic loads, and available maintenance funding. Keeping the Parkway in good pavement condition will require more constant maintenance due to consistent heavy truck traffic; this may include pavement milling and overlaying with digouts, slurry sealing, and practices that better accommodate the weight of trucks. Regularly maintaining the roadway is less costly than major pavement reconstruction.

MTC's StreetSaver software includes network PCI data as well as projected PCI information, assuming various maintenance scenarios, to help jurisdictions make maintenance decisions. The current PCI scores across different segments of Richmond Parkway range from 3 to 92. Segments with low PCI scores would require reconstruction of the pavement surface whereas segments with a high PCI score could be treated with a slurry seal.

Castro Street approaching Richmond Lane in good pavement condition (high PCI score) in 2013.

Image source: AA Roads, 2013.

T-1 TRANSIT

$$$$

# Improve access to the Richmond Parkway Transit Center

**Goals Alignment**
Meets Many Goals

**Lead Agency**
AC Transit, City of Richmond: Public Works, MTC[1]

**Coordinating Agency**
Caltrans, CCTA, WestCAT, WCCTC

**Completion Timeframe**
3 to 5 years

## Actions

### Support transit access

Install bus pullout stops on Richmond Parkway for Richmond Parkway Transit Center (RPTC) routes and shift eastbound bikeway south of the bus stops. These bus bays would allow southbound buses traveling from I-80 or eastbound buses from Richmond Parkway to serve riders without turning onto Blume Drive and circulating within the Transit Center, saving a significant amount of time (northbound or westbound buses would still be required to enter the Transit Center).[1]

### Support pedestrian access

Develop formal pedestrian connection between the northwest corner of the RPTC and Richmond Parkway. Upgrade faded crosswalk markings within the Transit Center.

### Provide bicycle storage

Install bike lockers at the RPTC consistent with the Association of Pedestrian & Bicycle Professionals guidance.

## Benefits

### Improve transit reliability

Access enhancements would reduce travel time delays associated with buses circulating within the RPTC, saving approximately **13,000 annual rider hours** for WestCAT express routes. Time travel savings across operators would be greater.[2]

### Support potential mode shift

Providing secure bicycle lockers for **long term parking (2+ hours)** encourages bicycle owners to bike to transit as a first/last mile connection.[3]

### Improve pedestrian experience

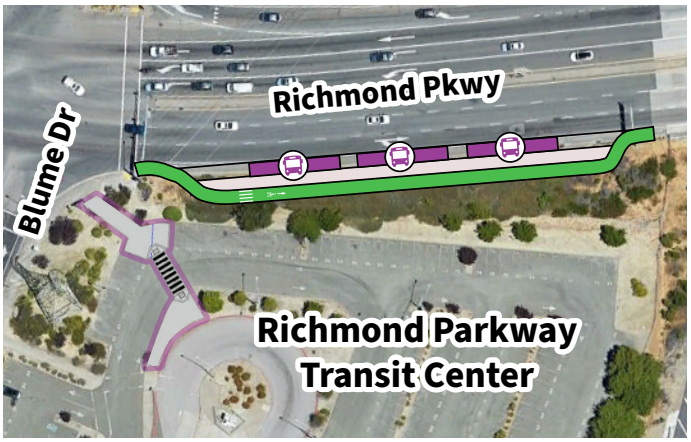
Creating a direct formal pedestrian connection from the Parkway would **enhance comfort and access** for users who currently walk through landscaping or take a less direct route from Blume Drive to enter the RPTC. Providing a marked crosswalk will also **improve visibility** of these pedestrians.

## Additional Details

### Richmond Parkway Transit Center Access Enhancement

Improvements would install three new curbside bus stops, a rerouted separated bikeway, and a direct pedestrian connection for users coming in and out of the RPTC.

Source: West Contra Costa County Express Bus Implementation Plan, WCCTC, 2020.

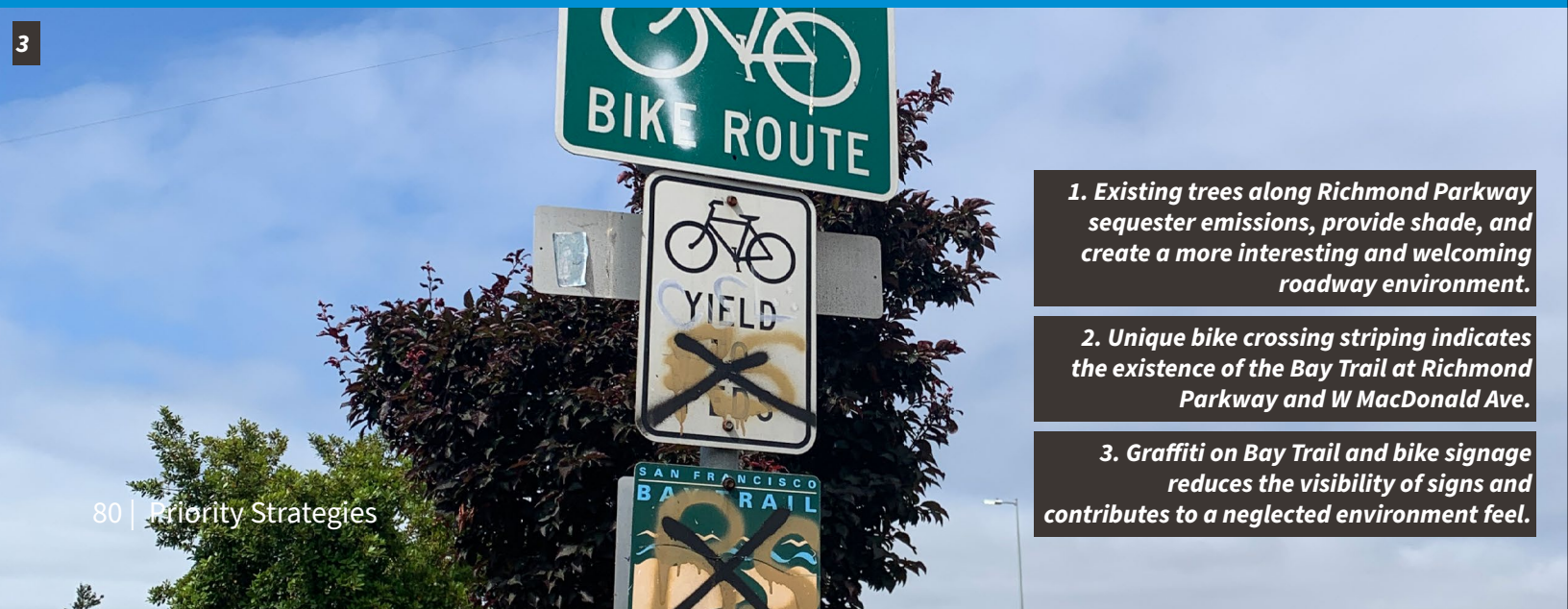



### Bike lockers

Providing bike lockers will provide safe storage areas for people to store their bicycles, supporting a potential mode shift, as secure bicycle storage does not currently exist at the Richmond Parkway Transit Center.


1. MTC is considering the implementation of this strategy as part of its Bay Bridge Forward work along I-80.
2. West Contra Costa County Express Bus Implementation Plan, WCCTC, 2020.
3. Bicycle and Transit Integration, A Practical Transit Agency Guide to Bicycle Integration and Equitable Mobility, APTA, 2018.






*1. Existing trees along Richmond Parkway sequester emissions, provide shade, and create a more interesting and welcoming roadway environment.*

*2. Unique bike crossing striping indicates the existence of the Bay Trail at Richmond Parkway and W MacDonald Ave.*

*3. Graffiti on Bay Trail and bike signage reduces the visibility of signs and contributes to a neglected environment feel.*


*Additional funding is needed to upgrade the Bay Trail along Richmond Parkway to align with Bay Trail Design Guidelines, as outlined in the priority strategies.*

CHAPTER 6

# Implementation and Funding

# IMPLEMENTING THE PRIORITY STRATEGIES

Given the regional and economic importance and 9-mile span of the Parkway, implementation will require multi-jurisdictional efforts and substantial funding. **Table 4** highlights partnership opportunities and jurisdictional responsibility for each of the priority strategies introduced in **Chapter 5**. For each priority strategy, lead agencies, coordinating agencies, cost estimates, and completion timeframes for delivering the strategy are listed.

**Table 4: Priority Strategies Implementation Plan**

| Category | ID | Strategy Name | Lead Agencies |
|---|---|---|---|
| Public Health | PH-1 | Implement new truck routes in North Richmond | Contra Costa County: Planning, Public Works |
| | PH-2 | Incorporate trees and green infrastructure | City of Richmond: Public Works; Contra Costa County: Public Works |
| | PH-3 | Prohibit truck parking and idling in neighborhoods | Contra Costa County: Planning; City of Richmond: Public Works |
| Safety | S-1 | Install safety improvements at intersections | Contra Costa County: Public Works; City of Richmond: Public Works |
| | S-2 | Reduce speeding | City of Richmond: Public Works; Contra Costa County: Public Works |
| Walking and Biking | WB-1 | Upgrade bikeways and connect sidewalk gaps | City of Richmond: Public Works; Contra Costa County: Public Works |
| | WB-2 | Install on-street Wildcat Creek Trail crossing | Contra Costa County: Public Works |
| Driving and Goods Movement | DG-1 | Upgrade and coordinate traffic signals | City of Richmond: Public Works; CCTA |
| Maintenance | M-1 | Implement cross-jurisdictional maintenance program | Contra Costa County: Public Works; City of Richmond: Public Works |
| Transit | T-1 | Improve access to the Richmond Parkway Transit Center | AC Transit; City of Richmond: Public Works; MTC |

Completion timeframe covers program development. Additional costs will vary depending on program development.
1. Assumes a 4% inflation rate with construction occurring in 2030. Some costs may be duplicated across strategies, such as landscaping under PH-2 and landscape separated bikeways under WB-1. 2. See **Appendix F** for more details on cost estimates.
3. Funding already secured via CNRA Urban Greening Grant for tree planting along Richmond Parkway adjacent to Atchison Village

Agencies identified as lead are charged with advancing the assigned strategies and ensuring adequate funding and staffing for implementation. Coordinating agencies may have prior planning knowledge or funding streams valuable for implementation, be working on similar efforts or efforts affected by the strategy, or have a role in post-implementation operation. For example, MTC and East Bay Regional Parks District (EBRPD) could have a role in identifying funding for Bay Trail improvements in strategy WB-1. These priority strategies will bring substantial improvements to the corridor and lead agencies can look for opportunities to initiate these strategies immediately regardless of target completion timeframe.

| Coordinating Agencies | Cost Estimate[1,2] | Completion Timeframe Target |
|---|---|---|
| WCCTC, CHP, Caltrans, City of San Pablo, City of Richmond | Planning: $40,000<br>Truck monitoring/enforcement camera: $30,000 per location | 0-2 years |
| Groundwork Richmond, Contra Costa County: Planning | $2,900,000 to $7,420,000 per mile[3] | Ongoing |
| BAAQMD, City of Richmond: Planning, Contra Costa County: Planning, CHP | Planning: $5,000<br>Sign installation: $700 per sign | 0-2 years |
| Caltrans, MTC, West County Wastewater, CCTA | $1,100,000 per intersection | 6-10 years |
| City of Richmond: PD, CHP | Speed limit study: $10,000<br>Speed signs: $55,000 total[4] | 0-2 years |
| MTC, CCTA, WCCTC, City of Pinole, EBRPD | Sidewalks: $4,400,000 per mile<br>Separated Bikeways: $18,000,000 per mile<br>Bay Trail: $7,960,000[5] | 6-10 years |
| EBRPD, City of Richmond: Public Works, MTC, West County Wastewater, WCCTC | $2,560,000 | 3-5 years |
| Caltrans | $5,500,000 for the corridor (23 intersections) | 3-5 years |
| CCTA, WCCTC | Pavement treatment: $32,790,000<br>General maintenance: $483,100 annually | 2-4 years |
| Caltrans, CCTA, WestCAT, WCCTC | Parkway bus stops and pedestrian connection: $1,297,000<br>Bicycle lockers: $55,500 | 3-5 years |

and in North Richmond. Other segments require funding. Low end of range assumes general landscaping only, while high end of range assumes bioretention with landscaping. 4. Speed cameras currently not permitted under state law. Costs to be determined when legalized. 5. Includes cost of Bay Trail realignment between Gertrude Avenue and Hensley Street and path widening between Parr Boulevard and Gertrude Avenue.

To advance the priority strategies in the near-term, **Table 5** includes immediate next steps for lead agencies to undertake as well as future steps. WCCTC and CCTA may assist with preparing grant applications, but lead agencies should also consider short-term mitigation measures for safety and accessibility through existing City/County programs. Due to the length of the corridor, capital improvement strategies should be grouped by corridor segment and assembled as packages for funding applications. For example, **Appendix D** includes a 35% design concept for a landscape separated bikeway on the northern segment of Richmond Parkway, which incorporates multiple priority strategies. Lead agencies can use the design concept to pursue funding in the near-term to address several existing challenges on this segment, including a concentration of speed-related injury collisions, absence of separated bikeways connecting to the Richmond Parkway Transit Center (RPTC), and an indirect bus connection to the RPTC.

**Table 5: Priority Strategies Implementation Next Steps**

| Action | Priority Strategy ID | Next Steps | Future Steps |
|---|---|---|---|
| **Advance 35% design concept for northern segment of Richmond Parkway**[1] | PH-2, S-1, S-2, WB-1, WB-2, T-1 | Pursue grant funding sources that cover multiple strategy categories, such as RAISE Grant, RM3, and OBAG, to finalize design and construct project.[2] | Pursue funding for concept development for remaining segments of the Parkway and Bay Trail. |
| **Implement new truck routes in North Richmond** | PH-1 | Given low implementation cost, assess existing staffing capacity and City/County funding sources to advance planning component. | Apply for funding if needed.[2] |
| **Prohibit truck parking and idling** | PH-3 | | |
| **Upgrade and coordinate traffic signals** | DG-1 | Confirm previously-studied recommendations from the 2019 Program for Arterial System Synchronization (PASS) Report. | Apply for funding[2] and advocate for inclusion in CCTA's Countywide Smart Signals Project. |
| **Implement Roadway Pavement and Maintenance Management Program** | M-1 | Confirm the City and County's interest in pursuing the action by approving an MOU to advance the program. | Negotiate agreement and determine guidelines for program development. |

1. Segment includes Richmond Parkway between San Pablo Avenue and the entrance to the Pinole Vista Shopping Center. The segment carries multiple bus routes and bike lanes, connects to the Richmond Parkway Transit Center, and borders Equity Priority Community census tracts. See **Appendix D** for the 35% design concept. 2. List of potential funding sources by priority strategy is provided in **Appendix E.** WCCTC and CCTA may assist with preparing grant applications.

# POTENTIAL CURRENT FUNDING SOURCES

To fully implement the many strategies in this plan, substantial funding will be needed. A full list of potential funding sources is provided in **Appendix E**. A sample of current federal, state, and regional funding sources that are aligned with multiple priority strategy categories are presented below. Changes in presidential administrations may effect the availability of some funding sources.

## Rebuilding American Infrastructure with Sustainability and Equity Grant Program (RAISE)

RAISE grants are awarded to surface transportation projects that are consistent with the Department's strategic goals and will have significant local or regional impact.

**Next Cycle:** FY2025

**When to Apply:** Early 2025

**Maximum Amount:** $25M per project

**Funding Source:**

**Federal**



State



Regional

**Administered By:**

U.S. Department of Transportation Office of the Secretary

**Lead Agencies:**

Contra Costa County

City of Richmond

**Applicable Strategies:**

S-1 WB-1 DG-1 T-1

*Bay Trail at the intersection of Hilltop Drive and Richmond Parkway.*

## Local Highway Safety Improvement Program (HSIP)

The HSIP Program funds work on any public road or publicly owned bicycle or pedestrian pathway or trail, or on tribal lands for general use of tribal members, that improves the safety for its users.

**Next Cycle:** Cycle 13

**When to Apply:** As early as May 2026

**Maximum Amount:** $10M per project

**Funding Source:**

Federal **State** Regional

**Administered By:**

Caltrans Division of Local Assistance

**Lead Agencies:**

Contra Costa County

City of Richmond

**Applicable Strategies:**

S-1 S-2 WB-1

## Regional Measure 3 (RM3)

RM3 provides funding for a comprehensive suite of highway and transit improvements through an increase of tolls on the San Francisco Bay Area's seven state-owned toll bridges. RM3 has about $10 million that could be allocated to the priority strategies.

**Next Cycle:** Monthly

**When to Apply:** Monthly

**Maximum Amount:** $160M for Goods Movement, $150M for Bay Trail and Safe Routes to Transit

**Funding Source:**

Federal State **Regional**

**Administered By:**

Metropolitan Transportation Commission

**Lead Agencies:**

Contra Costa County

Contra Costa Transportation Authority

City of Richmond

**Applicable Strategies:**

PH-1 S-1 WB-1

WB-2 DG-1 T-1

## Local Partnership Program Formula & Competitive Programs (LPP)

The LPP Program provides funding to local and regional agencies to improve aging infrastructure, road conditions, active transportation, transit and rail, and health and safety benefits.

**Next Cycle:** 2026

**When to Apply:** Fall 2026

**Maximum Amount:** $25M per project

**Funding Source:**


**Administered By:**

Caltrans Division of Local Assistance

California Transportation Commission

**Lead Agencies:**

Contra Costa Transportation Authority

City of Richmond

**Applicable Strategies:**

S-1 WB-1 WB-2 M-1 T-1

## One Bay Area Grant Program (OBAG)

The One Bay Area Grant (OBAG), now in its third iteration, distributes federal transportation funding from the Federal Highway Administration to projects and programs that improve safety, spur economic development and help the Bay Area meet climate change and air quality improvement goals.

**Next Cycle:** OBAG 4

**When to Apply:** As early as 2026

**Maximum Amount:** $47.3M for Contra Costa County for 2023-2026

**Funding Source:**


**Administered By:**

Metropolitan Transportation Commission

Contra Costa Transportation Authority

**Lead Agencies:**

Contra Costa County

Contra Costa Transportation Authority

City of Richmond

**Applicable Strategies:**

PH-2 S-1 WB-1 WB-2 DG-1 T-1

# POTENTIAL FUTURE FUNDING SOURCES

Since the Richmond Parkway is a regional facility, funding streams paid for by regional users should be considered. Potential future funding sources may include a new sales tax, regional measure, Enhanced Infrastructure Financing District (EIFD), and/or Benefit Assessment District. These options are described on the following pages. These tools could provide long-term, stable funding sources for priority strategies that require ongoing efforts, such as maintenance. Electeds and staff at the City of Richmond, Contra Costa County, and WCCTC will need to continue to advocate for project inclusion in future expenditure plans.


*Faded crosswalk and degraded pavement at Goodrick Avenue and Richmond Parkway.*

## Transportation Sales Tax

A new Contra Costa transportation sales tax would generate stable funding for capital and operating uses laid out in an Expenditure Plan. Approval of the sales tax requires a ballot measure with two-thirds voter support.

**Potential Sponsors:**

Contra Costa Transportation Authority

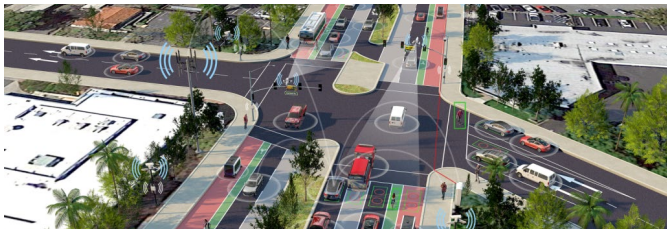
City of Richmond

**Applicable Strategy Categories:**

Public Health | Safety | Walking and Biking | Driving and Goods Movement | Maintenance | Transit

### Contra Costa County Measure J

In November 2004, Contra Costa voters approved Measure J with a 71% vote. The measure provided for the continuation of the county's half-cent transportation sales tax for 25 more years beyond the original expiration date of 2009. The tax revenues fund a voter-approved Expenditure Plan of transportation programs and projects. Measure C, the precursor to Measure J passed in 1988, was used to construct the Parkway.



Source: Smart Signal Project, Contra Costa Transportation Authority (2024)

## Regional Measures

A new Bay Area-wide regional measure such as a sales tax, property tax, or increased tolls could fund transportation projects included in an Expenditure Plan.

**Potential Sponsors:**

Metropolitan Transportation Commission

Contra Costa Transportation Authority

**Applicable Strategy Categories:**

Safety | Maintenance | Walking and Biking | Transit | Driving and Goods Movement

### Potential Regional Transportation Measure for 2026

A new transportation revenue measure for the Bay Area is being crafted and may be on a future ballot as early as November 2026. The measure is expected to generate at least $1 billion annually and is currently considering a wide range of options for its revenue source.


Source: Toll station, East Bay Times (2023)

## Enhanced Infrastructure Financing District (EIFD)

EIFDs allow for a separate government entity to be created by a city and/or county within a defined area to finance infrastructure projects with community-wide benefits. EIFDs use tax increment financing to reallocate a portion of future property taxes to fund infrastructure projects, meaning this option does not increase taxes or require voter approval. Further analysis is needed to understand the costs and benefits of this funding option.

**Potential Sponsors:**

Contra Costa County

City of Richmond

**Applicable Strategy Categories:**

Public Health | Walking and Biking | Maintenance | Transit

### City of Placentia/County of Orange EIFD

The City of Placentia and County of Orange formed the first city and county partnership EIFD in 2019. The EIFD was formed to fund transit-supportive and housing-supportive infrastructure in the communities to the north and south of the upcoming Placentia Metrolink Station.

Source: Placentia Metrolink Station rendering, City of Placentia EIFD StoryMap, SCAG (2024)

## Benefits Assessment Districts

Benefit Assessment Districts are established for a specific geographic area that receives a special benefit from public improvements and services, such as lighting and landscaping. Districts are funded through a property assessment and as a result require majority voter approval from impacted property owners.

**Potential Sponsors:**

City of Richmond

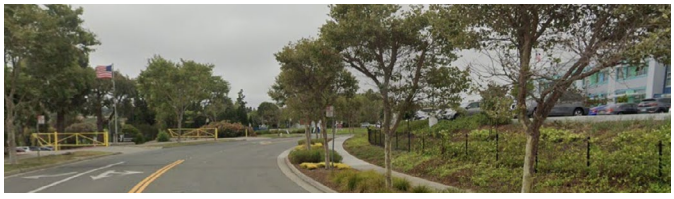
Contra Costa County

**Applicable Strategy Categories:**

Public Health | Maintenance

### Hilltop Landscape Maintenance Assessment District

The City of Richmond's Hilltop Landscape Maintenance Assessment District provides maintenance and servicing of landscaping in three zones located in the northern area of Richmond. This section of Lakeside Drive just south of Richmond Parkway is part of the District and serviced by this Benefit Assessment District.



Source: Lakeside Drive, Google Maps (2022)

# Appendix A:

## Community Engagement Summary Notes

# Memorandum

Date: October 19, 2023

To: Leah Greenblat, WCCTAC

From: Karina Schneider and Minnie Chen, Fehr & Peers

**Subject: RPTP Phase 1 Engagement Summary**

*OK23-0506*

Phase 1 of the Richmond Parkway Transportation Plan (RPTP) engagement focused on identifying and confirming needs. The goals of this phase were to:

- Share information about the RPTP's purpose, process, and desired outcomes
- Connect with Equity Priority Community residents who live near or use Richmond Parkway
- Confirm understanding of existing challenges and experiences using Richmond Parkway
- Hear concerns and new ideas from members of the public

This phase consisted of both in-person and digital strategies to reach a range of community members along the corridor between August and September 2023. This memorandum provides an overview of the Phase 1 engagement process and summarizes the feedback received.

## Phase 1 Engagement Overview

Phase 1 Engagement consisted of the following strategies:

1. Pop-Ups (3)
2. Neighborhood Council Meetings (3)
3. Online Webmap (1)
4. Public Advisory Group (PAG) Meeting (2)
5. WCCTAC Board Meeting (2)

The project team also considered hosting a bike ride along the Bay Trail to collect feedback, however, MTC and Rich City Rides led a total of three bike rides in this area on April 30th, May 28th, and August 17th, 2023. Given the number of rides already hosted in the area, the project

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www.fehrandpeers.com

team elected to forgo the ride activity and requested that MTC and Rich City Rides share feedback received.

To publicize the engagement opportunities #1-3 above, the project team developed social media ads through WCCTAC's Facebook page in both English and Spanish, sent emails to the Technical Advisory Committee, PAG members, and neighborhood council contacts, and released a notice to the Executive Director Reports for the WCCTAC Board. The strategies and community members reached are described in further detail below.

## Pop-Up Events

The RPTP project team coordinated and attended three pop-up events during this Phase. The following includes a description of each pop-up event:

- **North Richmond Flea Market** (North Richmond)
    - Location: 716 W Gertrude Avenue
    - Date/Time: Sunday August 6, 2023, 10:30a-2:30p
    - Total Attendance: 38, 89% Spanish
    - Total Comments: 68
- **Thrive Thursdays** (Coronado)
    - Location: Martin Luther King, Jr. Park at Harbour Way and Virginia Avenue
    - Date/Time: Thursday, August 10, 2023, 6:30PM – 8:00 PM
    - Total Attendance: 12, 25% Spanish
    - Total Comments: 41
- **Wal-Mart Pop-Up** (Hilltop)
    - Location: 1400 Hilltop Mall Rd, Richmond, CA 94806
    - Date/Time: Saturday August 19, 2023, 12p-4p (when foot traffic is highest)
    - Total Attendance: 34, 17.6% Spanish
    - Total Comments: 61

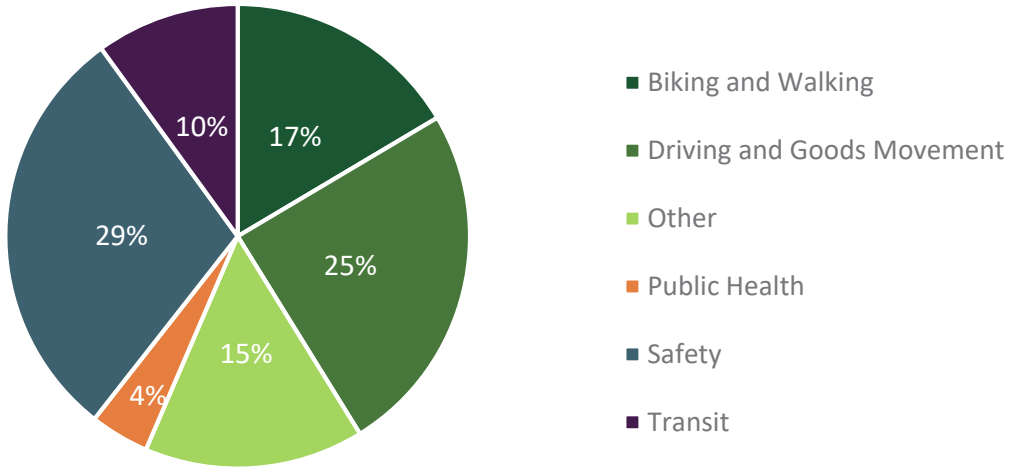
Three boards were utilized for pop-up engagement to visualize existing conditions findings and to collect feedback from community members. Overall, the project team connected with 84 people and collected 170 comments. At least one Spanish-speaking staff was present at each event and just over half (51%) of participants were Spanish speakers.

### *Responses Breakdown*

The RPTP team collected feedback during the pop-up events and found that most comments received were related to safety or driving/goods movement. One of the top sub-categories for driving/goods movement was congestion, whereas biking and walking comments primarily concerned wayfinding and signage. Of the "Other" category, the most common sub-category comments were related to cleanliness and landscaping along the Parkway. Regarding public health, air quality was the most common sub-category while speed management was the top

sub-category for safety. Finally, transit related comments expressed a common desire for more transit service and connections. **Figure 1** shows the overall distribution of the different categories of comments received at pop-ups.

**Figure 1: Distribution of Pop-up Comments by Category**




Source: Fehr & Peers, 2023.

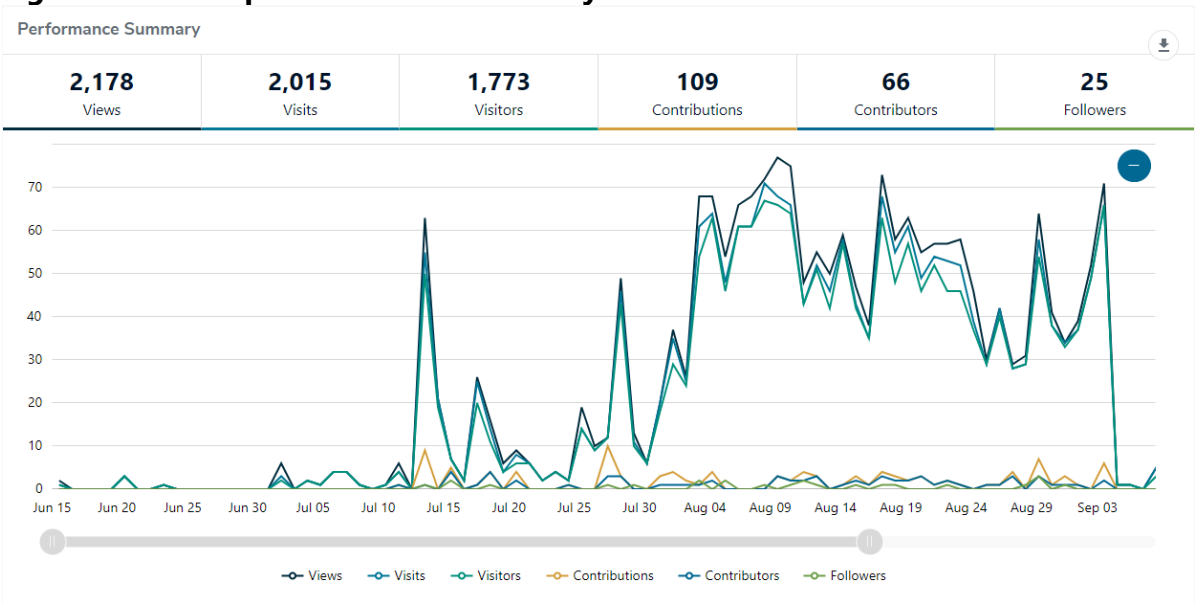
## Webmap

The webmap was hosted on Social Pinpoint between June 15th and September 4th, 2023. Users could drop pins in the webmap and leave a location-specific comment related to the following categories:

- Biking
- Walking
- Driving
- Transit
- Other

A total of 87 people provided 129 comments digitally. As seen in **Figure 2**, 109 comments were received on the webmap, while the remaining comments were collected from responses left on the Facebook ad post.

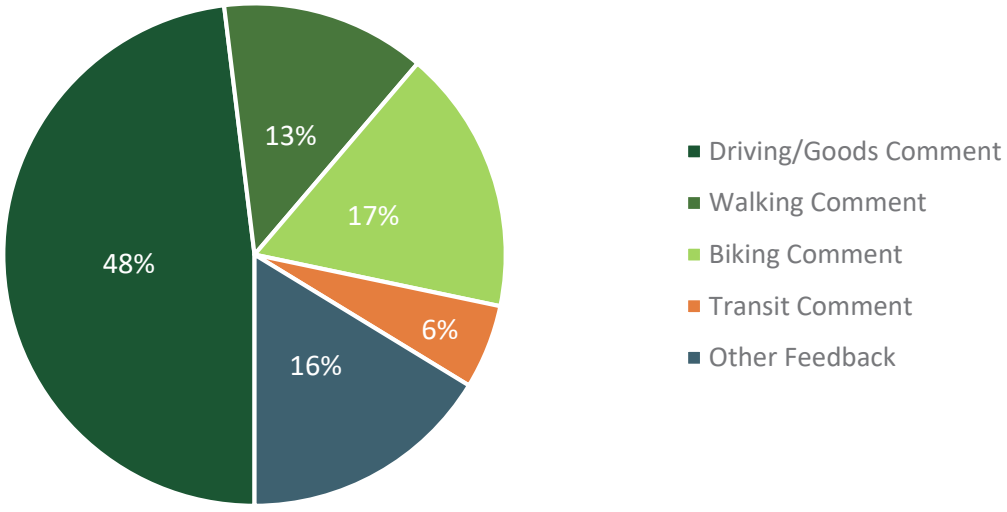
**Figure 2: Webmap Performance Summary**




### *Responses Breakdown*

Nearly half of the comments were driving/truck related, of which approximately a third of the comments regarded general safety and speeding. More than a fourth of all comments relate to roadway conditions/comfort using the Parkway. Multiple landscaping comments mention trees blocking signals and creating hard braking incidents. **Figure 3** shows the distribution of Webmap comments by category.

**Figure 3: Distribution of Webmap Comments by Category**




Source: Fehr & Peers, 2023.

## Community Meeting Events

The RPTP project team presented at three community meetings in neighborhoods near/along Richmond Parkway. These include:

- **North Richmond Municipal Advisory Council** (North Richmond)
  - Location: North Richmond Senior Center, 515 Silver Avenue, Richmond CA 94801
  - Date/Time: Tuesday, September 5, 2023, 5:00p-7:00p
- **Parchester Village Neighborhood Council** (Parchester Village)
  - Virtual over Zoom
  - Date/Time: Tuesday, September 12, 2023, 7:00p
- **Iron Triangle Neighborhood Council Meeting** (Iron Triangle)
  - Location: 598 Nevin Avenue, Richmond, CA 94801
  - Date/Time: Wednesday, September 20, 2023, 5:30p-7:30p

There were comments regarding debris on sidewalks and roadways, as well as calls for infrastructure that improve biking and pedestrian connectivity, increased signage, and better signal coordination. Many comments expressed concern about speeding cars and unsafe driving behavior along the Parkway. Congestion was brought up as another issue along the Parkway, especially due to the large truck volumes. Aside from collision safety, public health impacts from toxic diesel were stated as equally problematic. In regard to project implementation, residents suggested hiring local residents.

## Public Advisory Group

The Public Advisory Group (PAG) meeting for Phase 1 was held on September 21, 2023, though the group previously met once in Phase 0 in June 2023 to provide guidance on the draft Public Engagement Plan. While the Phase 1 meeting focused on existing conditions, feedback relevant to potential strategies was received in both meetings. In Phase 1, following a presentation on existing and future conditions findings, PAG members primarily discussed topics related to safety, maintenance, truck volumes, and community-serving solutions. Regarding trucking impacts, participants noted that a transition to electric fleets would require electrification infrastructure, such as charging stations, along the corridor. One member shared that despite a grant to invest in this, there is difficulty in acquiring the necessary equipment due to material shortages. Another member expressed the community's concern of trucks cutting through the neighborhoods and briefly touched upon approved projects that involve truck electrification and truck-specific routes to encourage use of Parkway. The topic of electrification also brought about discussion of addressing pollution as a public health concern, to which green infrastructure and planting trees were suggested as mitigation strategies that could also contribute to beautification of the Parkway. Regarding safety, there were suggestions of adjusting signal cycle lengths to curb impatient driving behavior and discussion of methods of slow vehicle speeds. Light indications for crosswalks and blinking pavement lights were suggested for pedestrian safety. Safety and public health were identified as the highest priorities by several members, with maintenance and

beautification suggested as good strategies to consider in the process of addressing these priorities.

Relevant feedback heard in Phase 0 included concerns about gaps in the pedestrian and bicycle networks due to a lack of facilities and outdated equipment. Regarding trucking, there were suggestions to request fair share contributions from distribution centers. Discussion of enforcing clean vehicle requirements also suggested a need for charging stations along the corridor to support truck electrification.

### WCCTAC Board

The project team presented to the Board with updates on existing and future conditions findings during Phase 1 on September 29, 2023, though the group previously met once in Phase 0 in May 2023. While the Phase 1 meeting focused on existing conditions and potential strategies, feedback relevant to potential strategies was received in both meetings. Members of the board discussed trucking impacts, safety, and maintenance. Director Bana revealed plans to write to the legislature about banning newer, heavier trucks, while Director Tave suggested exploring time period limits for truck deliveries to reduce truck traffic during peak times. Director Bana added that although electrification could reduce future emissions, there should also be strategies to address existing contaminants from pollution. To address safety related to speed management, Chair Paul Fadelli (City of El Cerrito) suggested looking into lowering vehicle speeds through policies such as adjusting speed limits or designing to lower speeds. Director Cesar Zepeda (City of Richmond) emphasized the importance of bicycle safety as he shared that the Parkway experiences a high volume of fatal bicycle collisions, and that most of them are due to speeding vehicles. Director Bana also reminded the audience that beautification is a priority for Richmond. There were suggestions to incorporate more trees in the design, which could contribute to both beautification and public health efforts.

Relevant comments heard in Phase 0 included feedback from Director John Gioia (Contra Costa County) who shared that increased trucking is expected due to recent approval of new fulfillment centers. He added that recent studies reveal trucks leaving the congested Parkway to travel through local roads, so there are efforts to design new facilities that produce direct routes to the Parkway. Pavement damage was another trucking concern highlighted by Director Soheila Bana (City of Richmond) and Director Chris Kelley (City of Hercules). Director H.E. Christian Peeples (AC Transit) shared that special pavement for trucks and heavy vehicles can be used to address pavement damage. Director Eduardo Martinez (City of Richmond) additionally suggested passing an extra charge on distribution companies to help with the mitigation of truck impacts. On the topic of safety, Director Anthony Tave (City of Pinole) hoped to see efforts to address pedestrian safety through signage and crosswalk repair and Director Kelley hoped to see protected bikeways and consideration for electric bikes. Director Bana and Gioia also shared hopes of bringing the Parkway up to Caltrans standard so that the corridor could be adopted by Caltrans. Due to funding constraints, they would like to see costs incorporated in the evaluation of priorities in this project.

## Phase 1 Feedback

Most comments received from the public referenced four topic areas:

1. Safety
    a. 29% of pop-up comments
    b. 37% of online comments
2. Biking & Walking
    a. 26% of pop-up comments
    b. 35% of online comments
3. Congestion
    a. 13% of pop-up comments
    b. 16% of online comments
4. Maintenance & Street Beautification
    a. 12% of pop-up comments
    b. 13% of online comments

A summary of feedback received on these topics is described below.

### Safety

Safety was the top safety concern amongst pop-up and online engagement comments, and comments specifically related to speeding were common (15% of pop-up comments and 13% of online comments). PAG and Board members also expressed the desire to prioritize addressing preventable collisions.

Residents cited speeding through intersections and red lights as frequent occurrences. Some specifically pointed out that the stretch of Parkway opening from two lanes to four lanes near Giant Rd often sees speeding. Other speeding hotspots noted include the North Richmond area near Parr Blvd and by I-580 and I-80. Racing has also been reported to be an issue, especially at night, between Hilltop Dr and San Pablo Ave. Furthermore, there is a noticeable lack of police presence or cameras to discourage speeding. On the other hand, drivers remarked on unsafe driving conditions due to faded or nonexistent lane striping, which made lane demarcation barely visible, especially at night.

During peak period congestion, residents pointed out that drivers misuse turning lanes as a route to circumvent traffic. Some suggestions to address speed management include speed limit signs, speed bumps, and rectangular rapid flashing beacons (RRFBs). Chair Fadelli suggested adjusting the speed limit and providing better traffic enforcement. Other comments by pedestrians and bicyclists similarly were concerned about bad driving behavior and insufficient traffic enforcement. As a result, they felt that trails, bike lanes, and crosswalks were inadequate in addressing this.

## Biking & Walking

The majority of comments related to biking and walking reflected a need for better comfort and safety while using the Parkway and the Bay Trail. Participants mentioned infrastructure issues such as missing sidewalks and curb ramps, poor accessibility to trails, and lack of signage. Director Zepeda's comment on ADA improvements further underscores the lack of existing disability accommodations. The community found crossing the Parkway to be difficult and would like to see better crossing conditions, especially on Parr Blvd and Goodrick Ave.

Bicyclists also desire better bikeway connectivity to the Parkway and to connecting streets. There was strong interest in addressing unreliable access to the Wildcat Creek tunnel. Due to the tunnel's tendency to flood, there were requests to investigate strategies that eliminate flooding, or building an overpass that would maintain the trail's connection across the Parkway. Sidewalk and trail repair was also requested as potholes and railroads tracks on the Bay Trail near Hensley St make it hazardous to bike over. Bicyclists stated that adding more protected and separate lanes on the Parkway, Canal Blvd, and Castro St would make them feel much safer and comfortable. Director Zepeda also emphasized the importance of addressing bicyclist safety as he called attention to the numerous crash memorials along the Parkway.

Lighting was also noted to be absent or unreliable and the community asked for signalized crossing to have longer crossing times. Several members of the public stated that homeless encampments block portions of the Bay Trail and sidewalk, making walking and biking difficult. These concerns contributed to an overall sense of feeling unsafe while walking or biking along the Parkway.

## Congestion

Congestion during peak periods was reported to be consistent on various intersections throughout the Parkway, including San Pablo Avenue, Giant Road, Canal Blvd, and 23rd Street. Comments state that congestion is particularly bad during 4:00-7:00PM and identified the signals at the San Pablo Ave intersection to be problematic and a source of traffic back up. There were suggestions to improve and adjust signals for congestion, such as better detection, coordination, and shorter signal cycle lengths. As a result of congestion, residents stated they sometimes take local roads instead.

The community and WCCTAC board would also like to see truck traffic in the area addressed. Discouraging trucks from cutting through neighborhoods was desired, as well as reducing the public health impacts from trucks. The Board offered a variety of solutions, including truck-specific routes, hour restrictions for trucks, and passing extra charges on distribution companies. Truck electrification was discussed extensively during the WCCTAC Board and PAG meetings as methods of emissions reductions in the future. A recurring suggestion throughout these meetings is incorporation of trees in design to mitigate air quality impacts to nearby residential areas from congestion.

### Maintenance

There were strong desires to improve street maintenance as pedestrians, bicyclists, and drivers all experience hindrances that prevent comfortable navigation of the Parkway. Garbage and overgrown landscaping on the sidewalks and bike lanes pose safety hazards for people walking and biking. Additional trees and greening could also allow for better shade and contribute to overall beautification of the Parkway, which Director Bana and Zepeda confirmed was one of Richmond's priorities. Director Bana added that this could be a good way to capture diesel pollutants. Drivers requested overgrown trees to be cut back as they block traffic signals and street lights or obstruct view of the intersection corners, contributing to hard braking incidents. Faded and missing lane striping on the Parkway also make it difficult for drivers to stay in their lanes. Commenters further noted that trucks contribute significantly to poor pavement conditions and discussed the possibility of special pavement as a mitigation method.

### Other

Transit was not one of the most common topics, but some commenters suggested providing better transit frequency and improving transit reliability on the Parkway. A few participants also noted the poor conditions of bus stops on and near the Parkway.

Members of the public have expressed frustration that despite multiple planning efforts, there is a lack of project implementation. Additionally, at the Iron Triangle Neighborhood Council meeting, several public speakers and council members expressed strong interest in requiring local hiring for any project implementation.

# Memorandum

Date: May 24, 2024

To: Leah Greenblat, WCCTAC

From: Karina Schneider and Minnie Chen, Fehr & Peers

**Subject: RPTP Phase 2 Engagement Summary**

*OK23-0506*

Phase 2 of the Richmond Parkway Transportation Plan (RPTP) engagement focused on receiving feedback on the draft strategies, including which strategies to prioritize. The goals of this phase were to:

- Share information about the RPTP's purpose, process, and desired outcomes
- Connect with Equity Priority Community residents who live near or use Richmond Parkway
- Confirm draft strategies respond to existing challenges and experiences using Richmond Parkway
- Hear preferences about which strategies to prioritize

This phase consisted of both in-person and digital strategies to reach a range of community members along the corridor between March and April 2024. This memorandum provides an overview of the Phase 2 engagement process and summarizes the feedback received.

## Phase 2 Engagement Overview

Phase 2 Engagement consisted of the following engagement methods:

1. Public Advisory Group (PAG) Meeting (1)
2. WCCTAC Board Meeting (1)
3. Pop-Ups (2)
4. Community Meetings (4)
5. Online Survey (1)

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To publicize the engagement opportunities #3-5 above, the project team developed social media ads through WCCTAC's Facebook page in both English and Spanish and posted the details on the project webpage. For each engagement method the strategies were presented in the following categories:

1. **Driving and Goods Movement:** Strategies that encourage carpooling, optimize signal timing, and improve wayfinding for drivers.
2. **Maintenance:** Strategies that holistically address corridor and Bay Trail maintenance and reduce illegal dumping.
3. **Public Health:** Strategies that reduce truck cut-through traffic and reduce or capture vehicle emissions.
4. **Safety:** Strategies that reduce vehicle speeds, address intersection conflict points, and prioritize emergency vehicle access.
5. **Transit:** Strategies that improve access and circulation at the Richmond Parkway Transit Center and support and encourage transit ridership.
6. **Walking and Biking:** Strategies that support comfortable walking and biking on the Parkway and the Bay Trail.

The strategies and community members reached are described in further detail below.

### Public Advisory Group

The 3rd Public Advisory Group (PAG) meeting was held on February 22, 2024 as part of Phase 2 Engagement. Following a presentation on the draft strategies and Phase 2 Engagement Plan, the RPTP team requested feedback from participants. The PAG members primarily discussed strategies related to trucking and bicycling.

Although the PAG members generally expressed support for the draft strategies, members believed some trucking strategies would need to be implemented thoughtfully. One member shared that rerouting truck traffic is difficult and would need the City and County involvement to vet truck route updates. Another concern was the possibility of increased truck traffic when converting from diesel to electric trucks.

Some members expressed strong support for the walking and biking strategies as they currently found these modes to be uncomfortable on the Parkway. Another member hoped that proposed upgrades to on-street bikeways would go beyond striping and painting and incorporate physical buffers. The City of Richmond's new e-bike bikeshare program was also suggested to be incorporated into the strategies. Members would also like to receive updates on available grants that the City and County could secure.

### WCCTAC Board

The 3rd WCCTAC Board meeting presentation occurred on March 22, 2024 and focused on the draft strategies. Members of the board wanted to see strategies in the Safety, Driving and Goods

Movement, and Public Health categories prioritized and discussed the feasibility and funding of various strategies. Board members highlighted Safety as a very important category due to speeding on the Parkway and several WCCTAC Directors expressed strong interest in enforcement against speeding, especially speed cameras.

Driving and Goods Movement discussion centered around the enforcement of carpool lanes. A WCCTAC Director shared they may not be effective without proper enforcement and that in person enforcement can be dangerous on a road with such high speeds. There were also suggestions to add lighting to vehicle-oriented wayfinding signage due to low visibility at night. Another WCCTAC Director supported the strategy to coordinate signals during the peak period and further suggested leaving the signals uncoordinated during off-peak periods due to high speeds during this time.

Comments related to Public Health primarily focused on trucking and incorporation of electric vehicle infrastructure. To help fund ongoing maintenance, a WCCTAC Director raised the possibility of enforcing a special tax on trucks based on their size or weight. There was also interest in new electric vehicle technology involving pad charging stations, which also received support from Director Peeples (AC Transit), as they are expecting to run battery electric buses in the future. Finally, for the topic of Transit strategies, a WCCTAC Director emphasized the importance of improving access to the Richmond Parkway Transit Center for pedestrians and bicyclists.

Some board members emphasized how the Wildcat Creek Trail overpass strategy (as opposed to the on-street crossing alternative) would be costly, although members of the public, including Urban Tilth and the North Richmond Shoreline Levy Project, indicated heavy interest in this strategy due to flooding in that area. For Walking and Biking, Director Peeples (AC Transit) also asked for consideration of paratransit access when proposing separated bikeways and suggested using AC Transit's guidelines on multi-modal design as a reference.

The board members also shared feedback on how the strategies should be prioritized. A WCCTAC Director agreed with the goals alignment levels assigned to the strategies and suggested prioritization of strategies based on that assignment. Another WCCTAC Director noted that cost of projects should be considered as part of the prioritization process to favor strategies that can be implemented with fewer resources. There were further suggestions to prioritize strategies with the greatest effectiveness in the near-term and can be accomplished in the next five to ten years. Another WCCTAC Director recommended investigating relevant ongoing projects that could incorporate some strategies, allowing these strategies to be immediately started and providing a funding source. An example provided was the incorporation of the urban greening strategy into an existing landscaping project led by a special assessment district for a section of the Richmond Parkway.

## Pop-Up Events

The RPTP project team coordinated and attended two pop-up events during this Phase. The following includes a description of each pop-up event:

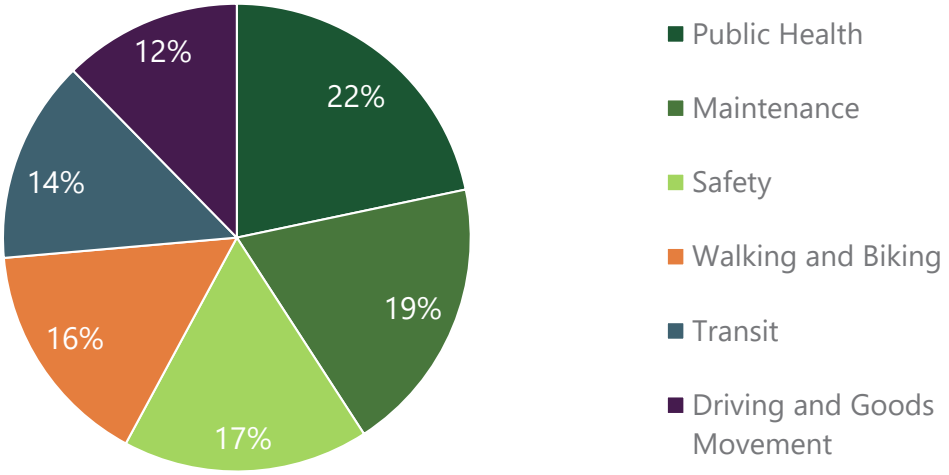
- **North Richmond Flea Market**
  - Location: 716 W Gertrude Avenue
  - Date/Time: Sunday March 24, 2024, 10:30AM-2:30PM
  - Total Attendance: 23, 78% Spanish
- **North Richmond's Earth Day Festival**
  - Location: Shields-Reid Park, 1410 Kelsey Street
  - Date/Time: Saturday, April 20, 2024, 8:30AM – 12:30 PM
  - Total Attendance: 35, 29% Spanish

Three boards were utilized for pop-up engagement to visualize draft strategies and collect votes for draft strategies that the participants would most like to see. Participants were asked to vote for their top five strategies and could vote for the same strategy more than once. They were also able leave comments about any strategies that they felt were missing. Overall, the project team connected with 58 people and received a total of 235 votes. At least one Spanish-speaking staff was present at each event and nearly half (48%) of participants were Spanish speakers.

### *Responses Breakdown*

**Figure 1** shows the overall distribution of strategy votes by category. The top three strategy categories based on the votes received were Public Health, Maintenance, and Safety. Within the Public Health category, the most popular strategies included expanding urban greening and prohibiting truck parking and idling in neighborhoods. Maintenance strategies that were most popular pertained to illegal dumping, formalizing a cross-jurisdictional roadway maintenance program, and incorporating the latest signal technology. Under Safety, the voting results indicated a preference for reducing speeding and monitoring high-risk intersections for unsafe driving behavior. Top voted strategies in other categories included upgrading on-street facilities for walking and biking, improving biking and walking access to the Richmond Parkway Transit Center, and coordinating traffic signals.

**Figure 1: Distribution of Pop-Up Votes by Category**




Source: Fehr & Peers, 2024.

In addition to strategy voting, participants were able to leave open comments. Most open comments suggested a strategy regarding improved lighting conditions, though lighting would be incorporated into existing strategies related to intersection- and segment-level design improvements. A few other comments expressed support for the draft strategies, particularly for speed reduction and maintenance as they either pointed out specific locations experiencing the problems that these strategies addressed or expressed desire for continued maintenance efforts. A few comments also noted support for Transit strategies, particularly improved bus comfort and publicizing transit information.

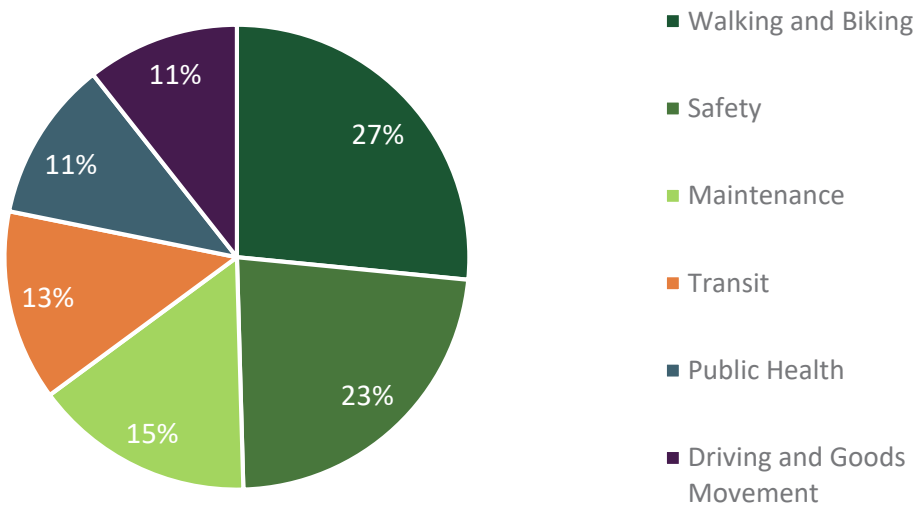
## Online Survey

The survey was hosted on Social Pinpoint between March 11th and April 29th, 2024. Users could select categories that they were most interested in and rank strategies in the selected categories. The survey received a total of 124 responses.

### *Responses Breakdown*

Participants were asked to select a minimum of two out of six strategy categories that they were most interested in. Based on the responses to this question, the top three categories selected were: Walking and Biking (27%), Safety (23%), and Maintenance (15%). **Figure 3** shows this distribution of votes by category.

**Figure 3: Distribution of Survey Votes by Category**




Source: Fehr & Peers, 2024

Participants were also asked to rank strategies in the categories they selected. For Walking and Biking, the top strategies included upgrading on-street walking and bicycling facilities, spot improvements to the Bay Trail, and construction of a Wildcat Creek Trail overpass. The top Safety strategies were installation of intersection safety improvements and speed reduction measures. Maintenance was selected by 15% of the responses, of which the top strategies included cross-jurisdictional management programs for roadway maintenance and the Bay Trail.

Although Transit, Public Health, and Driving and Goods Movement category were in the bottom three categories of interest, the top strategies in these categories included upgrading bus stop features for Transit, urban greening for Public Health, and coordinating signals for Driving and Goods Movement.

### *Survey Demographics*

Optional demographic questions were included at the end of the survey. Nearly 70% of survey respondents provided at least one response to these questions. Most respondents live in Richmond/North Richmond (60%) or San Pablo (11%). Over 65% of respondents have a household income of $100,000 or more. Additionally, nearly 70% of respondents identified as White and 16% identified as Hispanic or Latino. Given that 56% of the residents along the study corridor are Hispanic or Latino and 38% are low-income[1], the survey results are not representative of residents living adjacent to the corridor. However, the Parkway is also a regional facility serving a broader community whose preferred solutions may look different from residents living along the corridor. Thus, it is important to supplement the results of this digital engagement strategy

[1] Low income is defined as 200% of the federal poverty level or below

with in-person feedback from nearby residents to ensure balanced recommendations that accommodate all users of the Parkway while reducing harm to equity priority populations along the corridor.

## Community Meetings

The RPTP project team presented at four community meetings in neighborhoods near/along Richmond Parkway. These include:

- **Parchester Village Neighborhood Council** (Parchester Village)
  - Virtual over Zoom
  - Date/Time: Tuesday, March 12, 2024, 7:00PM
- **North Richmond Municipal Advisory Council** (North Richmond)
  - Location: North Richmond Senior Center, 515 Silver Avenue, Richmond CA 94801
  - Date/Time: Tuesday, April 2, 2024, 5:00PM-7:00PM
- **City of Richmond District 2 Meeting** (Santa Fe)
  - Location: Bridge Art Space, 23 Maine Avenue, Richmond CA 94804
  - Date/Time: Saturday, April 6, 2024, 10:00AM-12:00PM
- **Iron Triangle Neighborhood Council Meeting** (Iron Triangle)
  - Location: 598 Nevin Avenue, Richmond, CA 94801
  - Date/Time: Wednesday, April 17, 2024, 5:30PM-7:30PM

Feedback received in the community meetings revealed the following categories to be highest priority: Safety, Maintenance, and Public Health. Community members were concerned about safety related to speeding and wanted traffic calming on the Parkway. Another Safety concern related to personal safety with requests for improved lighting and camera enforcement. For Maintenance, participants discussed the need for roadway repaving and sidewalk repair. For Public Health, truck impacts were a common topic, including negative impacts to roadway pavement, traffic, driving safety, and air quality. Community members in North Richmond asked to be continually included in the discussion of all truck-related strategies, such as location of truck routes and truck enforcement. Additionally, the Wildcat Creek Trail Overpass strategy was repeatedly emphasized as a heavily desired project in multiple meetings. Community members in Iron Triangle added concerns regarding personal safety when using the overpass. They suggested locking up entrances at night and/or adding an emergency button, but felt that this would be insufficient with slow response time.

Strategy voting was conducted at the District 2 meeting, which produced results suggesting Maintenance, Transit, and Driving and Goods Movement as top categories. Maintenance received one-fourth of the votes while the other two categories each received 17% of the votes. Within the Maintenance category, there were equal votes for upgrading signal technology, discouraging illegal dumping, and implementation of a roadway maintenance management program. The top

Transit strategy was publicizing transit options and information while the top Driving and Goods Movement strategy was coordination of traffic signals.

## Phase 2 Feedback

Based on a review of feedback received across all engagement opportunities, the top four draft strategy categories include Public Health, Safety, Maintenance, and Walking and Biking. The distribution of votes from the pop-ups and online survey were both considered, though greater weight was given to the pop-up votes given the feedback from equity priority populations living along the corridor. Due to the open-ended nature of the WCCTAC Board and Community Meetings, the results of these discussions were qualitatively measured in terms of level of support.[2] The draft strategy categories, ranked in order of greatest preference to least based on all engagement activities, were:

1. Public Health
    a. 22% of votes at pop-ups
    b. 11% of votes on online survey
    c. Strong support from the WCCTAC Board
    d. Strong support at Community Meetings
2. Safety
    a. 17% of votes at pop-ups
    b. 23% of votes on online survey
    c. Strong support from the WCCTAC Board
    d. Strong support at Community Meetings
3. Maintenance
    a. 19% of votes at pop-up
    b. 15% of votes on online survey
    c. Moderate support from the WCCTAC Board
    d. Moderate support at Community Meetings
4. Walking and Biking
    a. 16% of votes at pop-ups
    b. 27% of votes on online survey
    c. Limited discussion from the WCCTAC Board
    d. Moderate support at Community Meetings
5. Transit
    a. 14% of votes at pop-ups
    b. 13% of votes on online survey
    c. Limited discussion from the WCCTAC Board
    d. Limited discussion at Community Meetings

[2] Attendees at the City of Richmond District 2 meeting were able to vote on strategies via boards. These votes are taken into account when assessing the most popular strategy categories across Community

6. Driving and Goods Movement
    a. 12% of votes at pop-ups
    b. 11% of votes on online survey
    c. Strong support from WCCTAC Board
    d. Limited discussion at Community Meetings

A summary of feedback received on these categories is described below.

### Public Health

Public Health was the top category at pop-ups and received 11% of the survey votes in online engagement. This category was also repeatedly discussed at community meetings, the PAG meeting, and the Board meeting. Conversations on Public Health typically focused on truck-related strategies. Participants at community meetings were interested in reducing truck traffic in neighborhoods and reducing emissions. PAG members were interested in these strategies but noted potential difficulties in implementing them. Board members were particularly interested in electric vehicle infrastructure and briefly discussed the issue of truck traffic as truck-generating uses continue to develop along the Parkway. Aside from trucking, urban greening was also a strategy that received support across most engagement events. It was the top Public Health strategy at pop-ups and was strongly supported by a member of the WCCTC Board.

### Safety

Safety was the third most popular category in strategy voting at pop-ups and received support from 23% of the survey respondents in online engagement. The Board stated that Safety is a priority category, as they echoed the same concerns as the public regarding speeding and other dangerous driving behavior along Richmond Parkway. Two strategies that stood out in online engagement and pop-up events were speed reduction measures and monitoring of high-risk intersections. The Board discussed methods of enforcing these strategies, specifically installation of cameras and other automated methods. A WCCTAC Director also highlighted the importance of the Emergency Vehicle Preemption strategy. Members at the Iron Triangle community meeting shared concerns of personal safety due to criminal activity and requested improved lighting, which was also a popular comment at the community meeting in Parchester Village and pop-ups.

### Maintenance

Maintenance was the second most popular category at pop-up events and received 15% of the votes in the online survey. Recurring strategies that received the most support was implementation of cross-jurisdictional management programs for roadway maintenance and the Bay Trail. Discouraging illegal dumping received a substantial amount of support at pop-ups and there were multiple open comments from the participants asking for continued maintenance of the roadway and abandoned buildings on and near the Parkway. Maintenance, particularly roadway maintenance, received significant support at community meetings. A WCCTAC Director

also shared that the illegal dumping was a strong concern due to how costly it is and would like stronger enforcement to discourage this.

### Walking and Biking

Walking and Biking was the fourth most popular category at pop-up events and received votes from 27% of the online survey respondents. PAG members strongly supported this category as they expressed how uncomfortable it is for pedestrians and bicyclists on Richmond Parkway and the Bay Trail. They asked for improved walking and biking infrastructure and suggested that City of Richmond's newly launched e-bike bikeshare program could be incorporated. The strategies that received the most votes across all engagement events included upgrades to on-street facilities and the Bay Trail as well as the Wildcat Creek Trail overpass. While the Wildcat Creek Trail overpass received a lot of support from the public, the Board expressed concerns over its cost and thus preferred the signalized crossing improvements strategy instead.

### Transit

The Transit category did not appear to be a priority category based on limited input and discussion via online engagement, pop-ups, and community meetings. However, the transit strategy to improve bicycling and walking access to the Richmond Parkway Transit Center received support from pop-up engagements and a member of the WCCTAC Board. The strategy to improve bus stop comfort was another transit strategy that received support from pop-up and online engagement.

### Driving and Goods Movement

While engagement participants did discuss the impacts of trucks at pop-ups and Community Meetings (e.g. neighborhood emissions, pavement quality, etc.), strategies that support the movement of trucks and vehicles under the Driving and Goods Movement category received limited input from most engagement events. However, the Board discussed this topic at length. Coordinating traffic signals was a strategy that received consistent support across all engagement events and the WCCTAC Board provided some feedback how to implement this strategy. Redesigning the merge at the intersection of Richmond Parkway with Castro Street received some support in pop-ups and online engagement. The strategy to add carpool lanes in areas of high congestion was also supported by a WCCTAC Director, but the Board discussed the difficulties of enforcing these lanes.

# Memorandum

Date: December 23, 2024

To: Leah Greenblat, WCCTC

From: Karina Schneider, Fehr & Peers

**Subject: RPTP Phase 3 Engagement Summary**

*OK23-0506*

Phase 3 of the Richmond Parkway Transportation Plan (RPTP) engagement focused on receiving feedback on the priority strategies and the Draft Plan. The goals of this phase were to:

- Confirm priority strategies respond to key challenges using Richmond Parkway
- Understand concerns and preferences related to funding and implementation

This phase consisted of both in-person and digital strategies to reach community members and policy makers between October and December 2024. This memorandum provides an overview of the Phase 3 engagement process and summarizes the feedback received.

## Phase 3 Engagement Overview

Phase 3 Engagement consisted of the following engagement meetings and methods:

1. Public Advisory Group Meeting: October 9, 2024
2. WCCTC Board Meeting: October 25, 2024
3. Richmond City Council Meeting: November 19, 2024
4. Contra Costa County Board of Supervisors Transportation, Water, and Infrastructure Committee Meeting: December 9, 2024
5. Online Survey: November 4, 2024 through November 29, 2024

Presentations given to groups listed under #1 through #4 above focused on the priority strategies in the Draft Plan, suggested next steps for implementation, and an overview of different potential funding sources.

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## Phase 3 Engagement Feedback

Feedback received during this phase generally supported the Draft Plan priority strategies with suggestions on how to implement and fund them. A summary of feedback provided by community members and policy makers is described below.

### Public Advisory Group

The 4th Public Advisory Group (PAG) meeting was held on October 9, 2024. Following a presentation, the project team requested feedback from participants on the priority projects and implementation strategies. The PAG members primarily discussed strategies related to trucking and active transportation.

PAG members were appreciative to see strategies addressing truck-related impacts included in the priority strategy list as truck impacts continue to be a consistent topic raised in community discussions. Members noted that North Richmond community leaders would like to be involved during the implementation phase of the truck-related strategies.

Some members expressed strong support for the walking and biking strategies, specifically the strategy to realign the Bay Trail between Hensley Street and Gertrude Avenue. One member noted that they supported the signalized Wildcat Creek Trail crossing strategy as an alternative to a grade separated bicycle and pedestrian crossing recommended in previous planning efforts, which would be more expensive and difficult to implement. They noted the importance of going after grant funding to advance these types of strategies.

### WCCTC Board

The 4th WCCTAC Board meeting presentation occurred on October 25, 2024. Some members of the board supported the near-term implementation of less expensive strategies, such as the truck route update strategy and signal coordination, and strategies that could be implemented through ongoing efforts like tree planting to be able to communicate early wins with the public. Other members noted the importance of strategies that aim to protect vulnerable roadway users, like safety improvements at intersections, but recognize the relatively high cost and longer implementation horizon for these infrastructure strategies. They expressed the desire to identify opportunities to implement these types of strategies in batches and in conjunction with other strategies where feasible.

Specific funding and implementation feedback recommended tapping into Regional Measure 3 funding with approximately $10M dedicated to Richmond Parkway projects. A Board member also recommended looking into Measure X to support implementation of public health strategies.

One public comment was received from Bike East Bay representative Robert Prinz. Prinz recommended focusing roadway safety improvements on high demand or high collision areas

and incorporating safety improvements into repaving projects. He also noted a potential need for more commuter bus service to support congestion relief in the area.

### Richmond City Council Meeting

The project team presented to the Richmond City Council on November 19, 2024. While Councilmembers generally supported the strategies in the Draft Plan, some noted concerns with putting too much implementation responsibility on the City of Richmond given the regional-serving nature of the corridor and existing staff capacity constraints. Councilmembers discussed the desire for County and WCCTC staff to support the City in identifying, pursuing, and managing funding sources for strategy implementation. No public comment was received.

### Contra Costa County Board of Supervisors Transportation, Water, and Infrastructure Committee Meeting

The project team presented to the Contra Costa County Board of Supervisors Transportation, Water, and Infrastructure Committee (TWIC) Meeting on December 9, 2024. The TWIC members consist of Supervisor Diane Burgis of District III and Supervisor Candace Andersen of District II. The Supervisors supported the strategies recommended in the Plan, but did not provide specific recommendations or changes to the strategies given that the study area falls outside of their districts in District I. They discussed that an important next step would be for WCCTC, City of Richmond, and County staff to identify which strategies to fund and implement first. No public comments was received.

### Online Survey

The survey was hosted on SurveyMonkey between November 4th and November 29th, 2024. Users responded to the following four questions:

1. What's your zip code?
2. The Draft Plan's strategies respond to your needs and challenges on the corridor. *(Multiple choice)*
    a. Strongly Agree
    b. Agree
    c. Somewhat Agree
    d. Disagree
    e. Strongly Disagree
3. Which of the priority strategies do you want to see advanced first? *(Choose up to 3)*
    a. Public Health: Incorporate trees and greening into all infrastructure projects on the corridor
    b. Public Health: Update designated truck routes in North Richmond to avoid residential areas to the extent feasible

   c. Public Health: Implement no truck idling or parking zones near sensitive land uses
   d. Safety: Install safety treatments at intersections along the corridor
   e. Safety: Implement measures to reduce speeding and conduct a study to lower the speed limit
   f. Walking and Biking: Upgrade bikeways and the Bay Trail and connect sidewalk gaps
   g. Walking and Biking: Install on-street signalized Wildcat Creek Trail crossing
   h. Maintenance: Implement a cross-jurisdictional Roadway Pavement and Maintenance Management Program
   i. Driving and Goods Movement: Upgrade and coordinate traffic signals along the Parkway
   j. Transit: Improve biking and walking access to the Richmond Parkway Transit Center
4. Is there any other feedback you would like to share about the Draft Plan? (*Open ended—optional)*

The survey received a total of 24 responses. Over half (63%) of survey responders live in zip codes that overlap the study area.

### *Responses Breakdown*

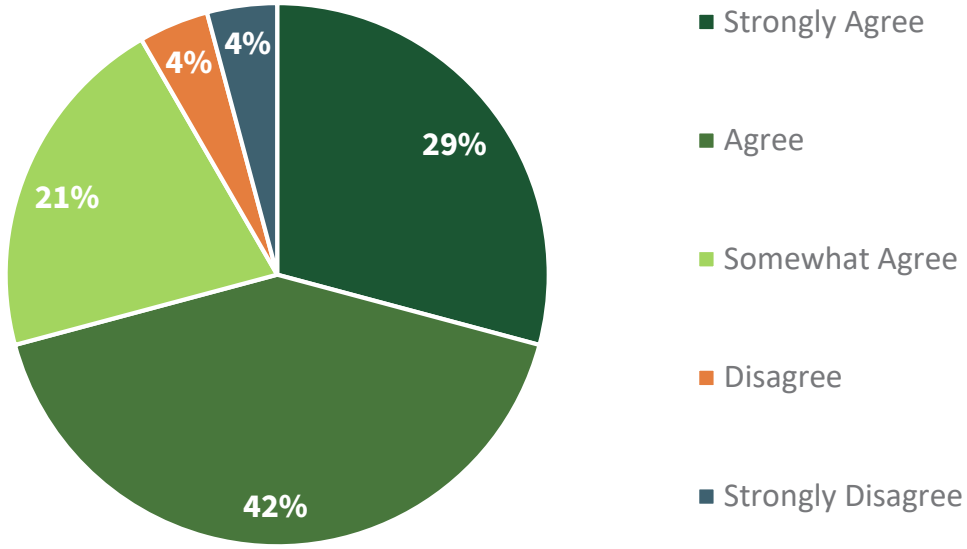
Participants were asked to provide feedback on the responsiveness of all the strategies to participant needs and which priority strategies they wanted to see advanced first. Based on the responses to Question #2, over 70% of respondents agreed or strongly agreed that the Draft Plan strategies respond to their needs and challenges on the corridor, as seen in **Figure 1**.

Based on the responses to Question #3, the top five priority strategies selected were:

1. **WB-1:** Upgrade bikeways and connect sidewalk gaps (n=18)
2. **S-1:** Safety improvements at intersections (n=11)
3. **PH-2:** Trees and green infrastructure (n=8)
4. **S-2:** Reduce speeding (n=7)
5. **M-1:** Implement cross-jurisdictional maintenance program (n=7)

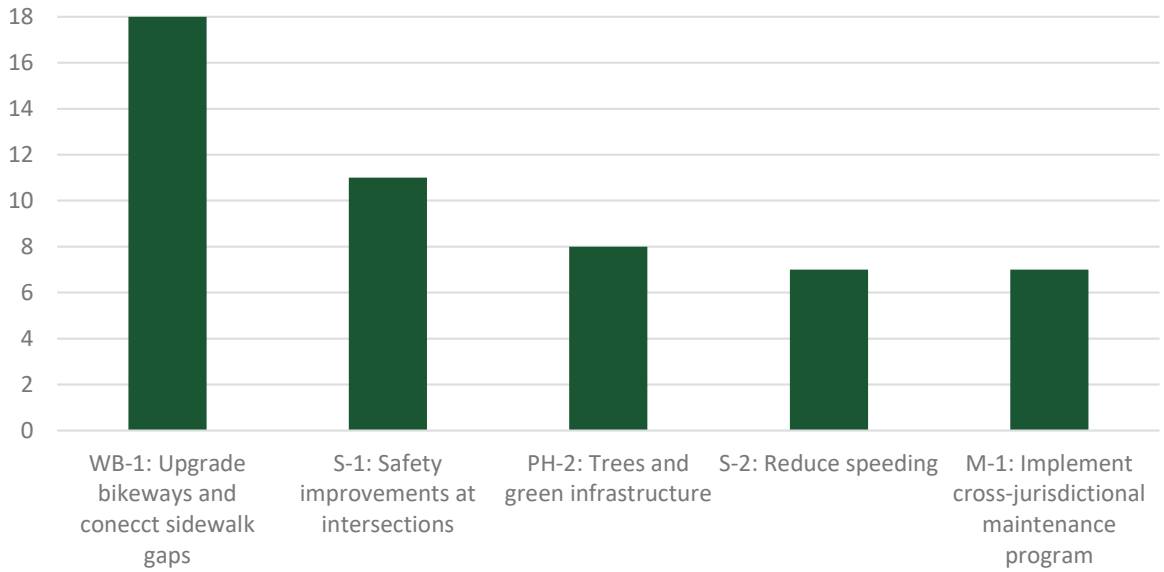
**Figure 2** show the distribution of results for Questions #3.

**Figure 1: Survey Response to Q2 The Draft Plan's strategies respond to your needs and challenges on the corridor.**




Source: Fehr & Peers, 2024

**Figure 2: Top 5 Survey Responses to Q3 Which of the priority strategies do you want to see advanced first?**




Source: Fehr & Peers, 2024

Most open response comments reiterated the need for the strategies recommended in the Plan with major themes related to improving maintenance of the Parkway, supporting bicyclist protection along the corridor, and retiming signals.


**Photo of pop-up event during Phase 1 of engagement in the Coronado neighborhood.**

# Appendix B:
## Overview of Regional Influence

Appendix B

# Overview of Regional Influence

Richmond Parkway is an important transportation corridor in the San Francisco Bay Area with state and national significance for commerce. The Parkway facilitates access to the Port of Richmond, railroads, distribution centers, and a multitude of other regional utilities, establishing physical connections that enable services well beyond the local area.

## Key Connection Enabling Regional Economic Hubs and Services

The Parkway links parts of Richmond to I-580, I-80, and the Richmond-San Rafael Bridge, providing crucial access to regional destinations such as San Francisco, San Rafael, Oakland, North Richmond, unincorporated Contra Costa County, and other parts of the East Bay.

Richmond Parkway provides direct access to the Port of Richmond and regional-serving warehouse distribution centers, facilitating regional trade. The Port of Richmond ranks #1 in liquid bulk and automobile tonnage among the five ports on San Francisco Bay, and in 2019 alone, trade totaled $9.51 billion for the five city-owned terminals and ten privately-owned terminals.[1] The Port is also served by the two largest transcontinental railroads, BNSF Railway and Union Pacific, which hold a duopoly on freight rail lines in the Western, Midwestern and West South Central United States.

Other major employment hubs and industrial sites that draw workers from throughout the region and are accessed via Richmond Parkway include the following:

- Richmond Chevron Refinery;
- UPS and Amazon distribution centers near Point Pinole;
- Landfill and recycling yards, which serve the region;
- Hazardous waste disposal plants;
- Water reclaim plants;
- West County Wastewater in North Richmond;
- Tow yards and tire recycling centers;
- Iron manufacturers;
- Building materials distribution centers;
- Large-scale construction equipment rental centers; and
- Future developments, including over 1.2 million square feet of manufacturing and warehouse space and 537,000 square feet of office space.

As a transportation backbone for these sites and services, Richmond Parkway supports significant vehicle and truck traffic that serves not only the local area but the entire region, state, and country. The Parkway carries between 19,000 and 37,000 vehicles every weekday, with 7% being truck traffic along the corridor. Truck volumes along the southern segments of Richmond Parkway and Castro Street range between 5%-13% of total daily vehicle volumes while truck volumes on San Pablo Avenue, a comparable

1. California Association of Port Authorities, 2024, https://californiaports.org/ports/port-of-richmond/.

arterial, range between 2%-3% in Contra Costa County.[2] Truck traffic causes significant wear to the road that requires consistent proactive maintenance for pavement upkeep.

Despite the corridor's wide-reaching importance, maintenance responsibilities fall solely on the City and County. The constant flow of heavy trucks accelerates wear and tear on the roadway, yet current maintenance funding is insufficient to keep it at an appropriate level of care. Without additional support, the City and County face challenges in meeting the maintenance needs to ensure the Parkway remains reliable and safe for its users.

Originally intended to be constructed as a Caltrans facility, the Parkway was developed by local officials when the state did not implement it. However, a lack of funds and the urgency to build the Parkway sooner rather than later has resulted in a facility that would require hundreds of millions of dollars to bring to a condition required for Caltrans to adopt into its network.

## Regional Multimodal Access and Public Health Effects

### Walking and Biking

The Bay Trail, a 360 mile-long bicycle and pedestrian trail that travels along the shoreline of San Francisco Bay, partially travels along Richmond Parkway. The corridor connects to the Richmond-San Rafael (I-580) Bridge path, the Richmond Greenway, and major recreational destinations, including Point Richmond, Point Pinole Regional Shoreline, and Wildcat Canyon Regional Park. Existing limited and poor east-west access points should be enhanced to allow residents in and around the Parkway better access to the Bay Trail and regional recreational facilities.

### Transit

Richmond Parkway provides a direct connection to the Richmond Parkway Transit Center and 11 transit routes stop on the corridor. This access to public transit enhances mobility for individuals without cars, as 9% of households near the study corridor do not own vehicles. Additionally, express bus service to job centers along the corridor significantly improves access to employment opportunities for low-income residents and Equity Priority Communities. Furthermore, the Parkway facilitates access to the Richmond Ferry and BART, further connecting residents to vital regional transportation options and enhancing overall mobility in the area.

### Regional Public Health Effects

Given the industrial and goods movement uses along Richmond Parkway, diesel PM concentrations near the corridor range from 0.08 to 0.98 tons per year. This is greater than 78% of communities statewide. Exposure to emissions contributes to public health issues, including asthma, cardiovascular disease, cancer, and low birth weight.[3] The negative health impacts of these emissions is exacerbated when trucks avoid using the Parkway; the lack of timed signals push trucks to take "cut through" shortcuts through local neighborhoods for more efficient routes. Coordinating signals along the Parkway would dissuade this behavior as well as reduce unsafe speeding rooted in driver frustrations with signals, improving health and safety for the region.

2. Caltrans Traffic Census Program, AADT Truck Volumes, 2022.

3. California Office of Health Hazard Assessment, 2021.

Photo of pop-up event during Phase 1 of engagement in the Hilltop neighborhood.

# Appendix C:

## Plan Strategies Goals Alignment

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**Table C-1: Strategies Evaluation Framework**

Each strategy was qualitatively assessed against metrics associated with each goal as described in Table C-1. Each strategy was assigned a High, Medium, or Low goal alignment assessment.

| Goal | Metric | Qualitative Evaluation Method (High, Medium, Low) |
|---|---|---|
| Improve Safety for All Users[1,2] | • Reduce severe and fatal injury collisions | H = Includes substantial active transportation improvements (e.g. crossing visibility, sidewalk bulb-outs, protected bikeway, etc.) OR strategy that slows down speeding vehicles<br>M = All other road safety improvement strategies<br>L = All other strategies |
| Increase Access to Key Destinations[1] | • Increase quality of connections<br>• Expand connectivity to key destinations | H = Close an active transportation gap between existing facilities with Class I or Class IV bikeway OR increase access through transit frequency/reliability<br>M = Improve quality of sidewalks, crossings, bus stops, or Bay Trail OR provide access through/over a barrier<br>L = All other strategies |
| Improve Health[1] | • Decrease in GHG emissions and other pollutants<br>• Reduce cut-through traffic | H = Strategies that reduce neighborhood cut-through traffic OR that promote ZE technology or GHG reduction OR support active travel<br>M = Multimodal and transit strategies<br>L = All other strategies |
| Advance Placemaking[1] | • Maintenance and street beautification<br>• Community support | H = Strategy with placemaking elements (e.g. public art, beautification, greening, lighting, traffic calming, etc) and maintenance (e.g. removing litter, improving pavement/markings, reducing illegal dumping) OR reduce truck throughput and parking in residential areas<br>M = Addresses other key concern raised during Phase 1 community engagement process (i.e. safety, biking and walking, and congestion)<br>L = All other strategies |
| Enhance Travel Time Reliability and Efficiency | • Reduce vehicle delay<br>• Increase vehicle occupancy | H = HOV/Express lane strategies OR Transit-priority strategies (e.g. bus lane, signal priority)<br>M = Signal or capacity efficiency improvements OR all other transit service strategies<br>L = All other strategies |
| Support Feasible Strategies | • Advance feasible strategies<br>• Develop cost-effective transportation solutions | H = Strategy can be delivered in the the next 5 years depending on staffing and priority levels (includes first phase of capital projects or quick-build version of strategies where applicable) OR recommended in an adopted plan<br>M = Strategy can be delivered in the next 6-10 years<br>L = All other strategies |

1. Goal identified as one that would disproportionately benefit Equity Priority Communities along the corridor. These goals are given greater weight in total goal alignment assessment.
2. Note that the entire corridor is on the CCTA High Injury Network. Typically safety projects located on the HIN may score higher, but in this case, that would be the entire corridor.

**Table C-2: Strategy Goals Alignment Assessment**

| ID | Topic | Subtopic | Strategy Name |
|---|---|---|---|
| DG-1* | Driving and Goods Movement | Signals | Upgrade and coordinate traffic signals |
| DG-2 | Driving and Goods Movement | Congestion | Add carpool lane on segments with high congestion |
| DG-3 | Driving and Goods Movement | Street Design | Redesign Richmond Parkway/Castro Street merge |
| DG-4 | Driving and Goods Movement | Signage/Wayfinding | Signage for blind turns |
| DG-5 | Driving and Goods Movement | Signage/Wayfinding | Install wayfinding for drivers |
| M-1* | Maintenance | Roadway | Implement cross-jurisdictional maintenance program |
| M-2 | Maintenance | Encampments | Keep sidewalks and paths clear near encampments |
| M-3 | Maintenance | Illegal Dumping | Discourage illegal dumping |
| PH-1* | Public Health | Trucks | Implement new truck routes in North Richmond |
| PH-2* | Public Health | Urban Greening | Trees and Green Infrastructure |
| PH-3* | Public Health | Air Quality | Prohibit truck parking and idling in neighborhoods |
| PH-4 | Public Health | Trucks | Encourage clean trucks |
| PH-5 | Public Health | EV/AV adoption | Encourage private electric vehicle adoption and usage |
| PH-6 | Public Health | Noise | Improve sound wall |
| PH-7 | Public Health | Air Quality | Air Filtration Systems at sensitive locations |

*Priority Strategies with an implementation plan in Chapter 5.

| | 1. Improve Safety for All Users | 2. Increase Access to Key Destinations | 3. Improve Health | 4. Advance Placemaking | 5. Enhance Travel Time Reliability and Efficiency | 6. Support Feasible Strategies | Goals Alignment |
|---|---|---|---|---|---|---|---|
| | M | L | L | M | M | H | Meets Many Goals |
| | L | H | H | M | H | M | Meets Most Goals |
| | L | L | L | M | M | H | Meets Some Goals |
| | M | L | L | M | L | H | Meets Some Goals |
| | L | L | L | H | L | H | Meets Some Goals |
| | M | M | H | H | L | H | Meets Most Goals |
| | M | M | H | H | L | H | Meets Most Goals |
| | L | L | L | H | L | H | Meets Some Goals |
| | M | L | H | H | L | H | Meets Most Goals |
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| | L | L | H | H | L | H | Meets Many Goals |
| | L | L | H | L | L | H | Meets Some Goals |
| | L | L | H | L | L | M | Meets Some Goals |
| | L | L | L | L | L | L | Meets Some Goals |
| | L | L | H | L | L | M | Meets Some Goals |

**Table C-2: Strategy Goals Alignment Assessment (continued)**

| ID | Topic | Subtopic | Strategy Name |
|---|---|---|---|
| S-1* | Safety | Street Design | Safety improvements at intersections |
| S-2* | Safety | Speeding | Reduce speeding |
| S-3 | Safety | Monitoring | Monitor high-risk intersections |
| T-1* | Transit | Richmond Parkway Transit Center | Improve access to the Richmond Parkway Transit Center |
| T-2 | Transit | Bus/Shuttle | Improve bus stop comfort |
| T-3 | Transit | Bus/Shuttle | New transit service to Marin County |
| T-4 | Transit | Service | Increase bus frequency |
| T-5 | Transit | Bus/Shuttle | On-demand shuttle service |
| T-6 | Transit | Parking | Parking lot for transit to Marin County |
| T-7 | Transit | Accessibility | Publicize transit options/information |
| WB-1* | Walking and Biking | Street Design | Upgrade bikeways and connect sidewalk gaps |
| WB-2* | Walking and Biking | Wildcat Creek Trail Crossing | On-street Wildcat Creek Trail crossing |
| WB-3 | Walking and Biking | New Technology | Test innovative bicycle and pedestrian detection at intersections |
| WB-4 | Walking and Biking | Shared Mobility | Expand electric bike share program |

*Priority Strategies with an implementation plan in Chapter 5.

| | 1. Improve Safety for All Users | 2. Increase Access to Key Destinations | 3. Improve Health | 4. Advance Placemaking | 5. Enhance Travel Time Reliability and Efficiency | 6. Support Feasible Strategies | Goals Alignment |
|---|---|---|---|---|---|---|---|
| | H | M | H | M | L | M | Meets Most Goals |
| | H | L | L | H | L | M | Meets Many Goals |
| | H | L | L | M | L | M | Meets Some Goals |
| | L | H | H | M | L | M | Meets Many Goals |
| | L | H | M | H | L | H | Meets Most Goals |
| | L | H | M | M | M | H | Meets Most Goals |
| | L | H | M | M | M | H | Meets Most Goals |
| | L | H | M | M | M | H | Meets Most Goals |
| | L | H | M | L | M | M | Meets Many Goals |
| | L | L | M | M | L | H | Meets Some Goals |
| | H | H | H | M | L | M | Meets Most Goals |
| | H | M | H | M | L | L | Meets Many Goals |
| | H | L | H | M | L | L | Meets Many Goals |
| | L | L | H | L | L | H | Meets Some Goals |


**Photo of community meeting during Phase 2 of engagement in the Santa Fe neighborhood.**

# Appendix D:

## Separated Bikeway 35% Design Concept for Northern Segment of Richmond Parkway

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# Richmond Parkway 35% Plans

## Key Improvement Types

The following treatments are detailed in the 35% plan set and will be critical for project success on the corridor.

*Carrall Street, Vancouver, Canada*

**Separated bike lanes** will be elevated to the sidewalk level to physically separate bicyclists from motor vehicle traffic, enhance bicyclist comfort and safety, and provide new landscaping and/or bioretention opportunities in the buffer.

*Walnut Avenue, Fremont*

**Raised driveways** at private intersections will provide a continuous, flat surface for pedestrians and cyclists. Where driveways are within the public right-of-way or where future driveways are developed, signs and design features will alert drivers that they are crossing a pedestrian/bike facility.

*El Portal Drive, San Pablo*

**Bioretention facilities** may be installed in the roadway buffers or landscaping. The next design phase will determine appropriate treatments.

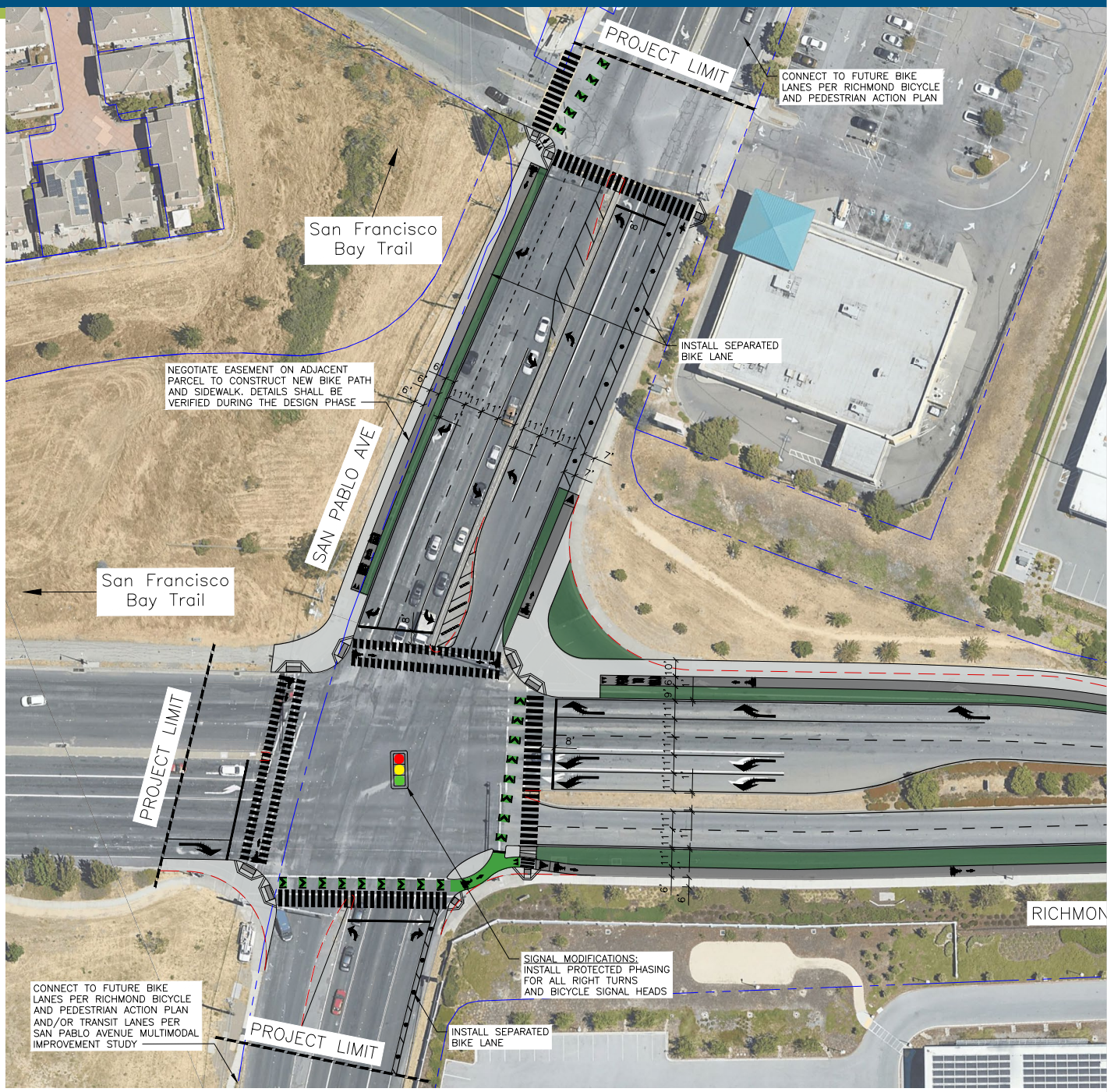
*Webster Street, Alameda*

*Walnut Avenue, Fremont*

**Protected intersections** are designed to keep bicyclists fully separate from vehicles until the intersection, enhancing visibility and safety by reducing right-turning vehicle speeds and giving bicyclists a head start in crossing the street. These will be combined with protected right-turn signal phasing for vehicles to enhance safety for cyclists and pedestrians by separating them in time from conflicting vehicle traffic.

*Telegraph Avenue, Oakland*

**Bus boarding islands** separate waiting riders from the separated bike lane, which is routed behind the island to reduce bike/pedestrian conflicts.




## GENERAL NOTES:

1. AT ALL SIGNALIZED INTERSECTIONS, INSTALL PEDESTRIAN COUNTDOWN SIGNALS.
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3. ALL EXISTING AND PROPOSED STRIPING AND CURBS ARE SHOW AS APPROXIMATE. A FURTHER AND MORE IN-DEPTH EVALUATION SHALL BE MADE TO VERIFY LENGTHS SHOWN.
4. THE CURB RAMPS ARE SHOWN GENERICALLY AS SINGLE DIRECTIONAL RAMPS AND GRADING DESIGN SHALL BE VERIFIED DURING THE DESIGN PHASE.
5. REMOVE ANY EXISTING CONFLICTING STRIPING, PAVEMENT MARKERS, MARKINGS, AND DELINEATORS.
6. ALL STRIPES AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
7. REPAVING AND DRAINAGE CONSIDERATIONS SHALL BE VERIFIED DURING THE DESIGN PHASE.
8. ADD STOP SIGN AND BIKE/PED WARNING SIGNAGE TO EXITS OF UNSIGNALIZED PRIVATE DRIVEWAYS.

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- INSTALL NEW TYPE II (B) ARROW
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- INSTALL NEW TYPE IV (L)/(R) ARROW
- INSTALL NEW TYPE VII (L)/(R) ARROW
- BIKE PER
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- INSTA (ASPH
- INSTA OR L

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.


LANE ARROW AND BIKE LANE SYMBOL CALTRANS STD PLANS A24A AND A24C

LL NEW BIKE LOOP DETECTOR SYMBOL CALTRANS STD PLAN A24C.

LL NEW YIELD MARKINGS

LL NEW GREEN THERMOPLASTIC ING

LL RAISED SEPARATED BIKE LANE IALT)

LL GREEN INFRASTRUCTURE AND/ ANDSCAPING WITH STREET TREES

INSTALL NEW CONCRETE SIDEWALK

INSTALL NEW STAMPED CONCRETE

REMOVE EXISTING CURB

PARCEL LINES

EXISTING SIGNALS TO BE MODIFIED

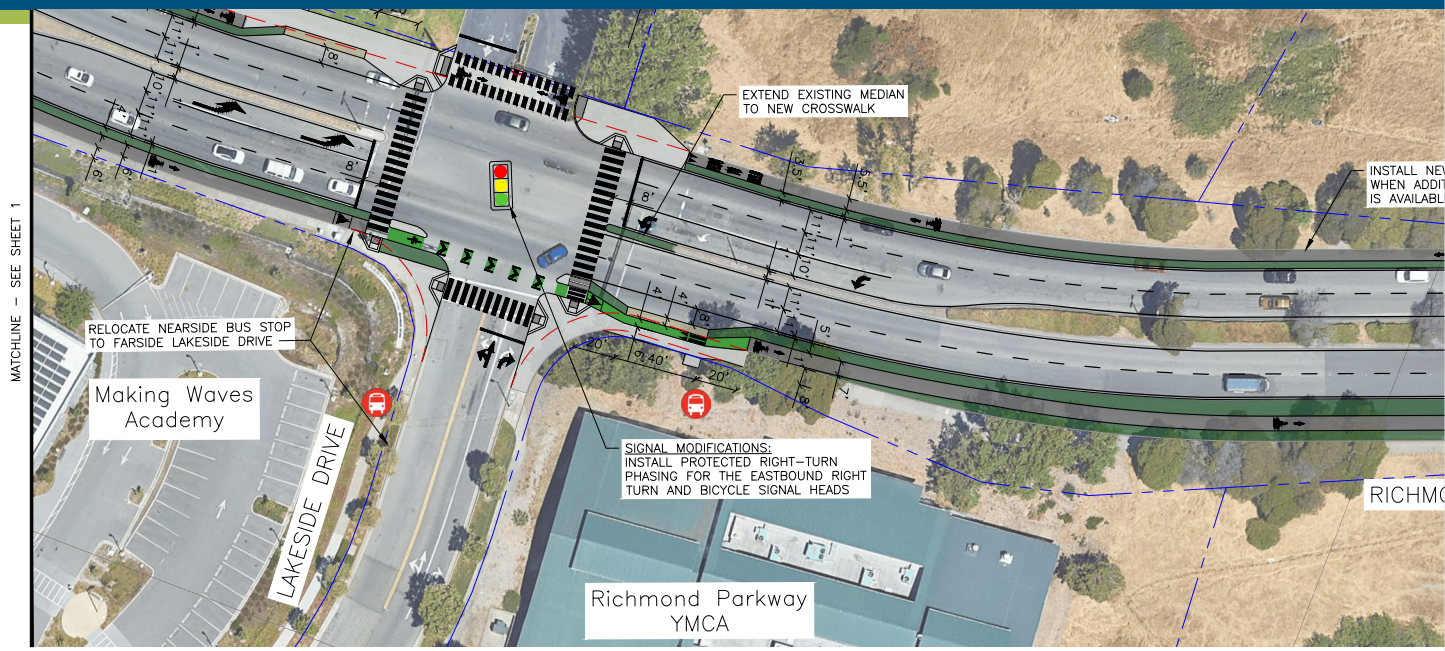
INSTALL NEW SPEED BUMP

INSTALL NEW PLASTIC POST

BUS STOP

Sheet 1 of 4

Richmond Parkway
San Pablo Avenue to Fitzgerald Drive
Bikeway Concept Plan





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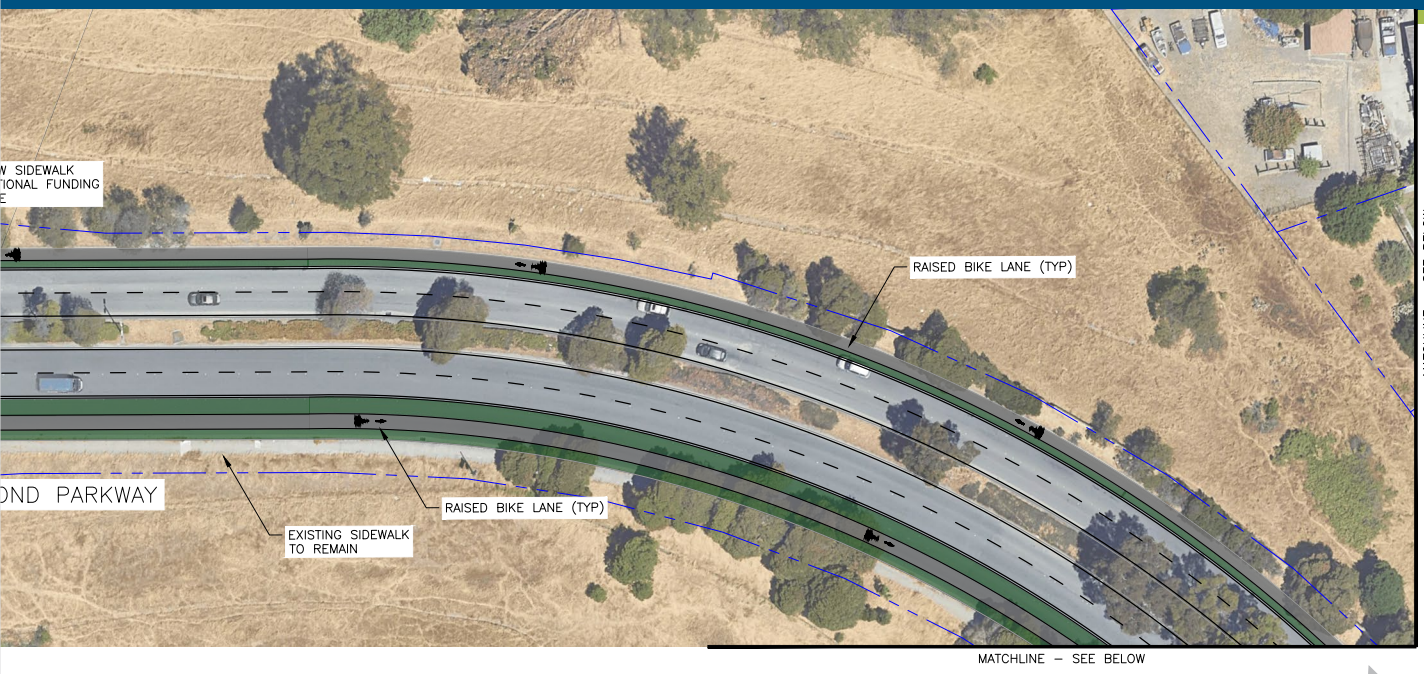


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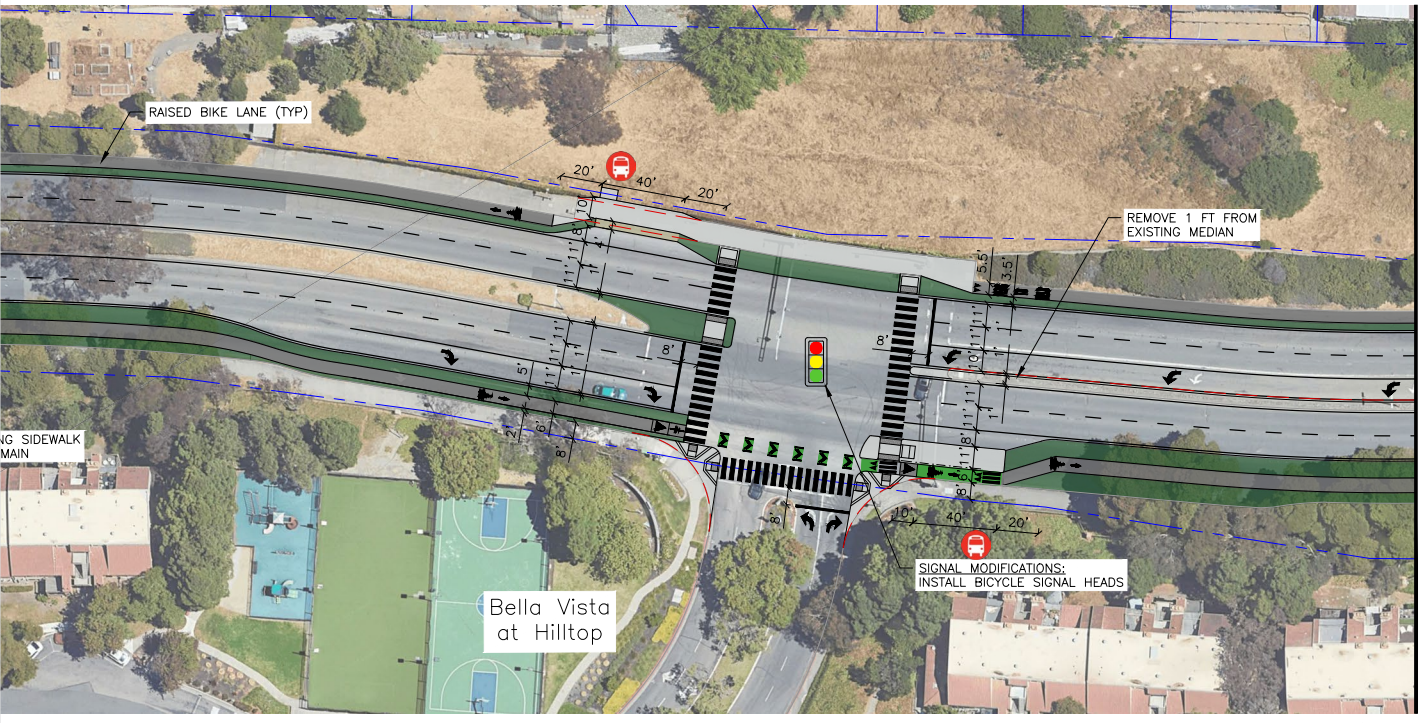


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BUS STOP

Sheet 2 of 4

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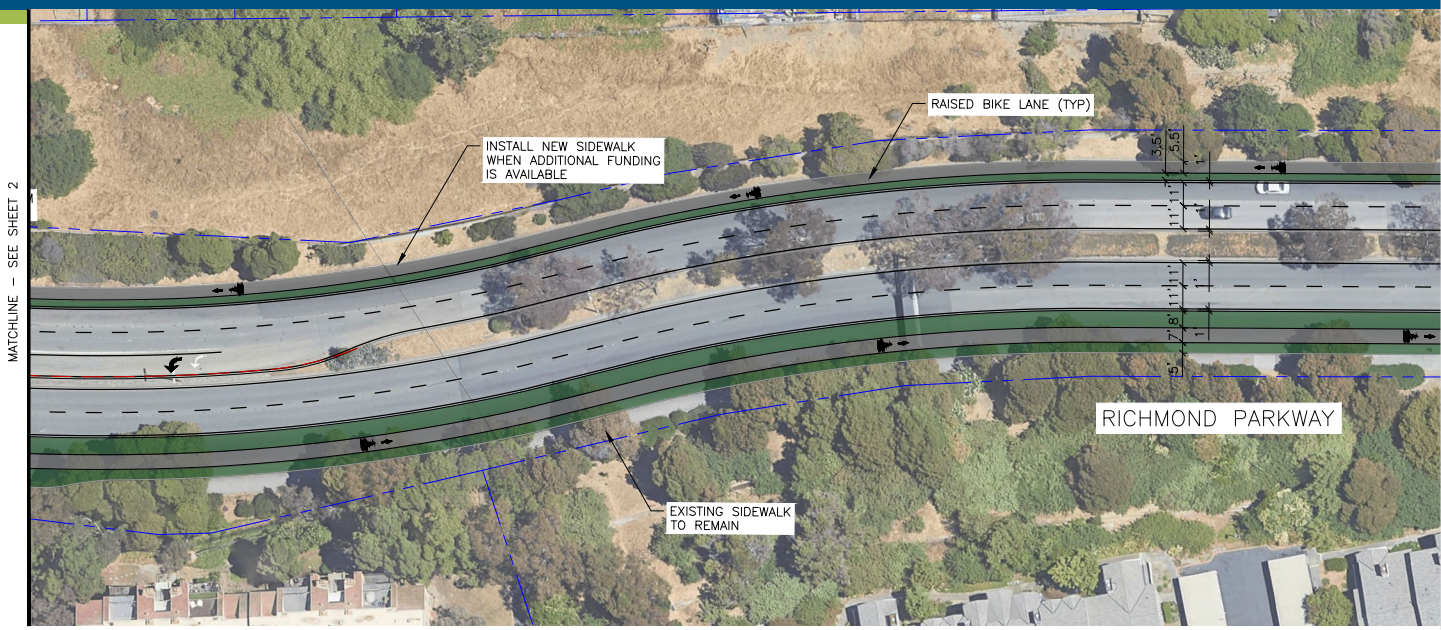
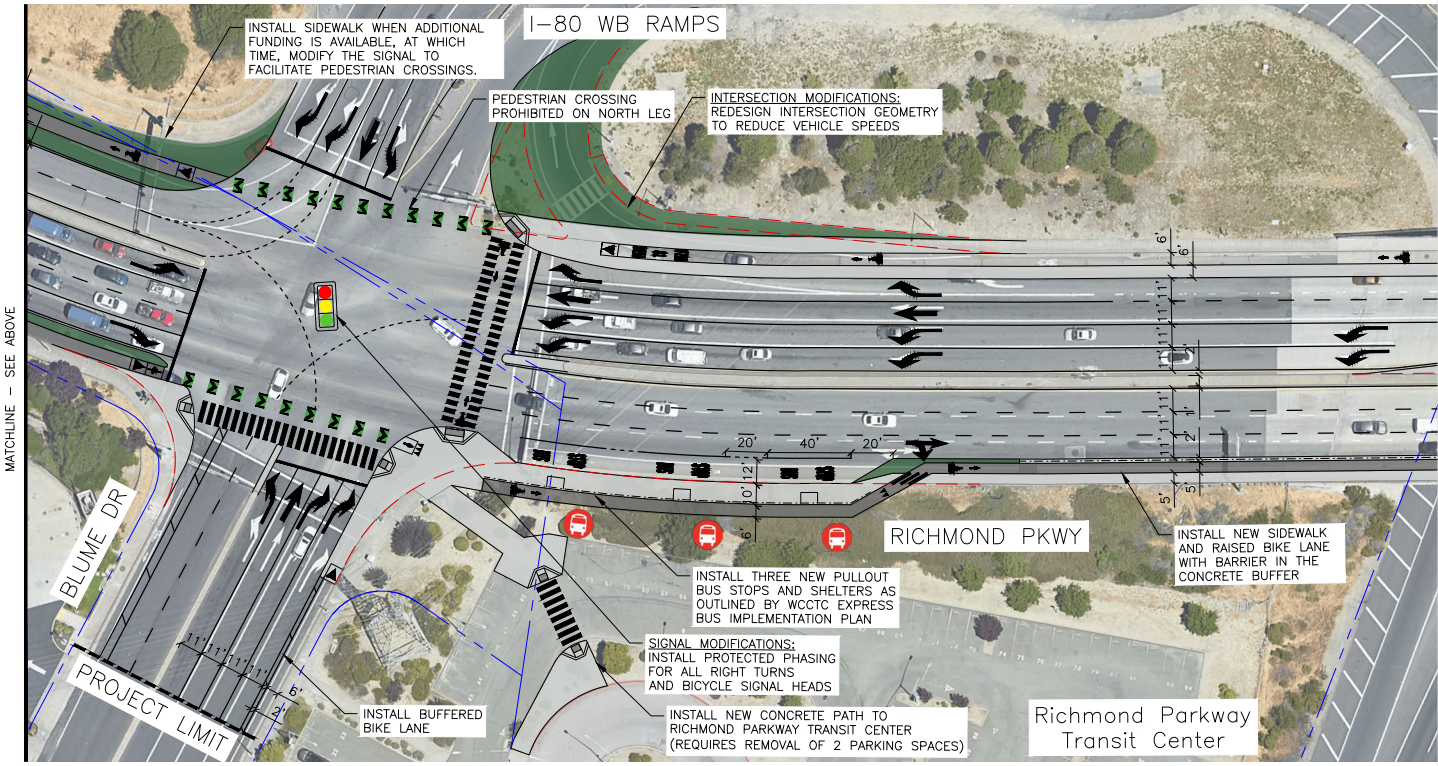
San Pablo Avenue to Fitzgerald Drive
Bikeway Concept Plan

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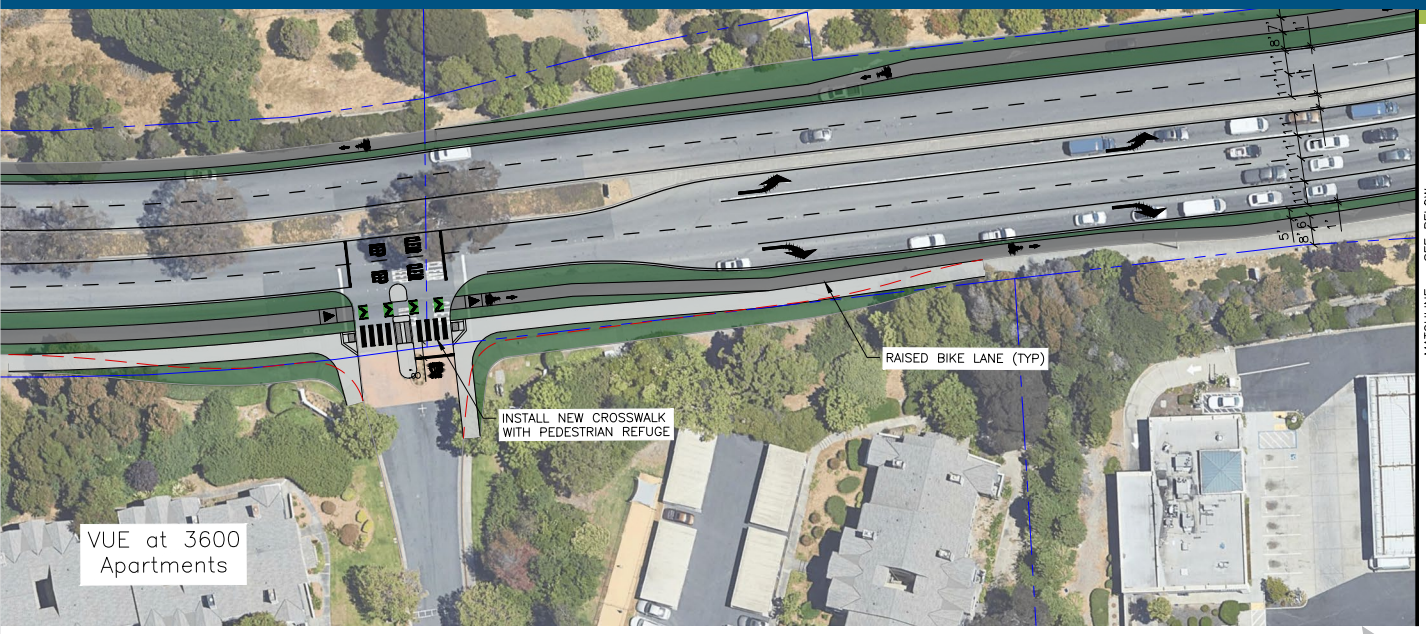


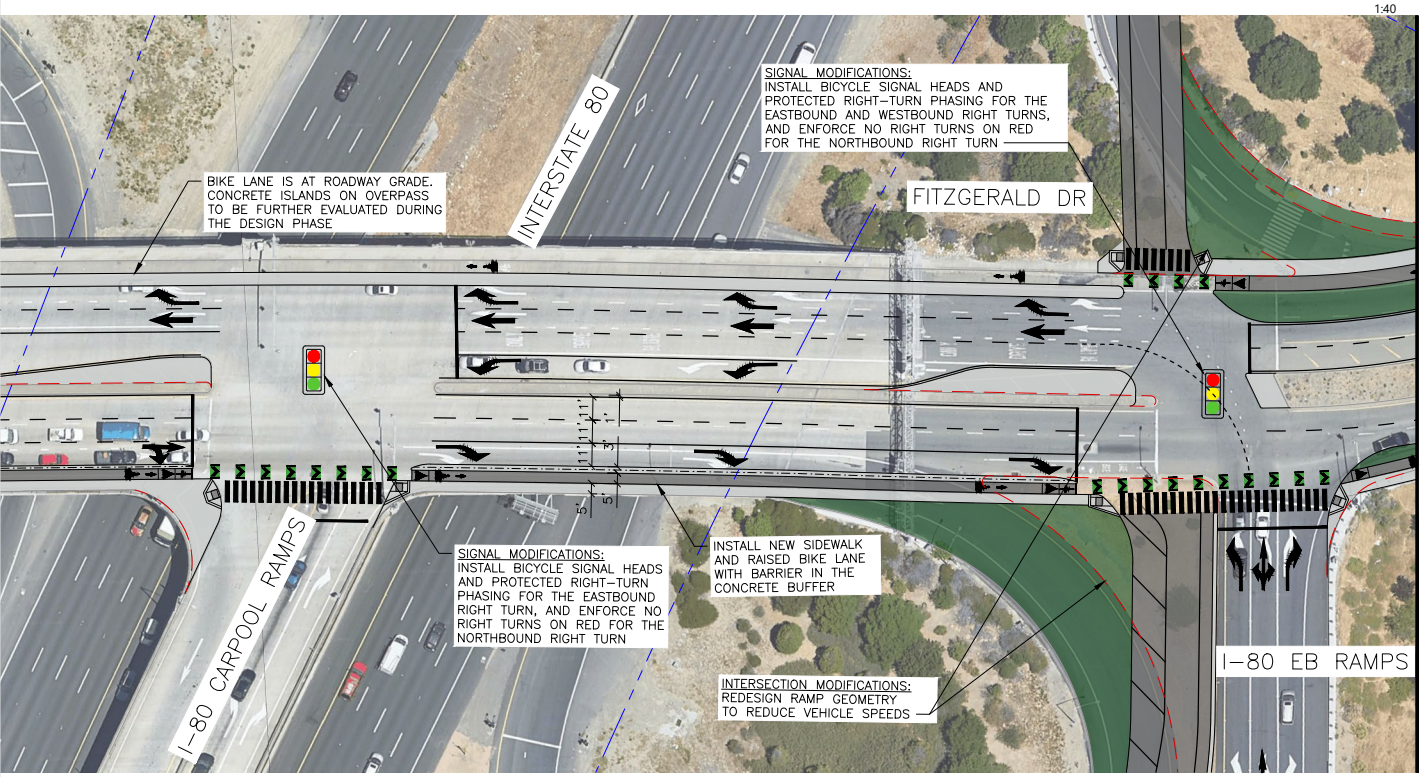


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Sheet 3 of 4

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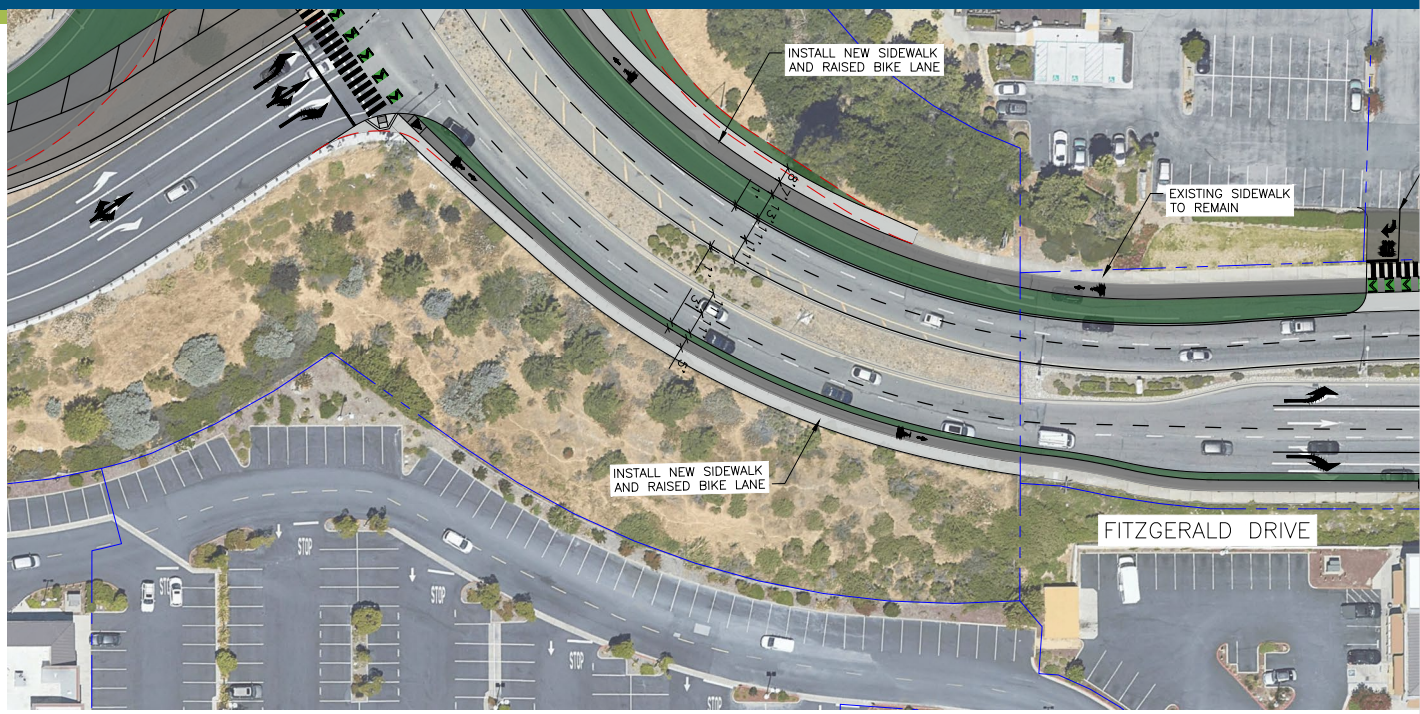
Bikeway Concept Plan

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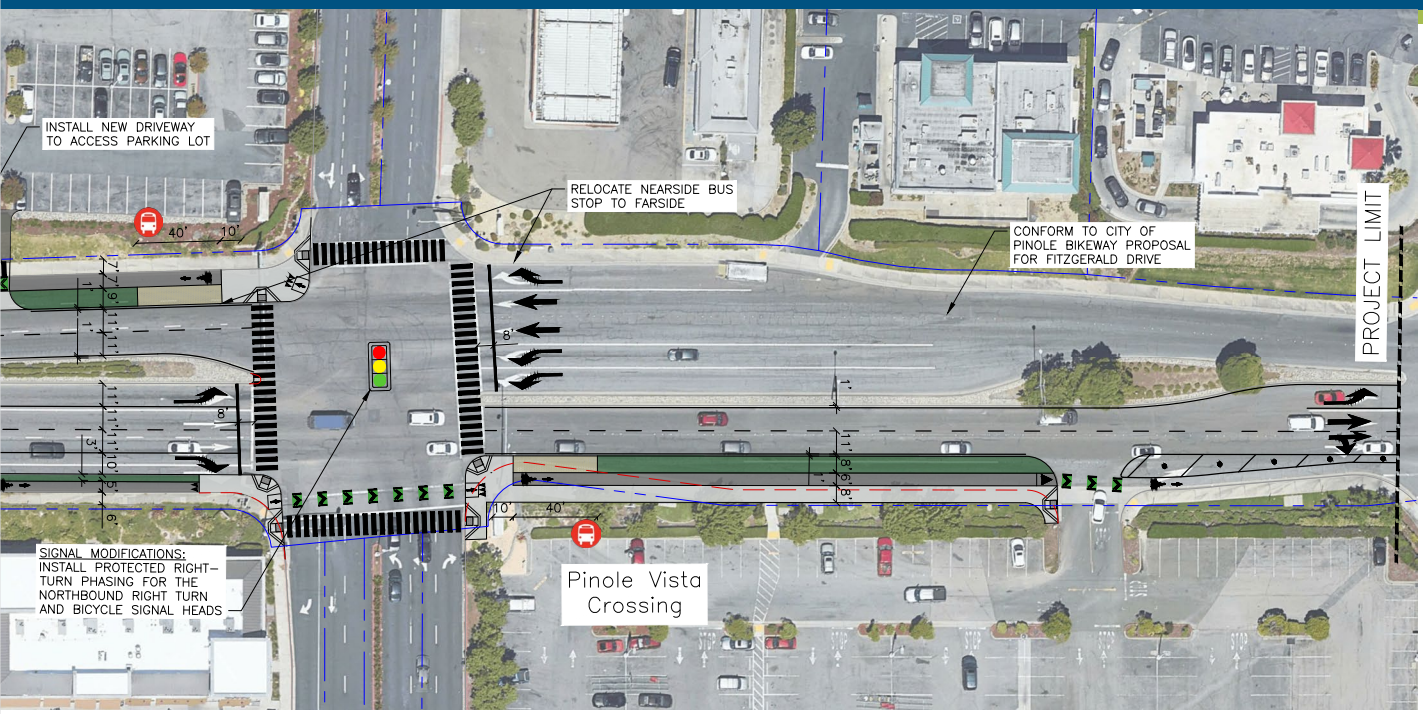


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INSTALL NEW PLASTIC POST

BUS STOP

Sheet 4 of 4

Richmond Parkway
San Pablo Avenue to Fitzgerald Drive
Bikeway Concept Plan

Photo of Earth Day pop-up event during Phase 2 of engagement in North Richmond.

# Appendix E:

## Existing Funding Sources for Priority Strategies

| ID | Program Funding Source | Acronym | WB-1 | WB-2 | DG-1 | S-1 | S-2 | M-1 | PH-1 | PH-2 | PH-3 | T-1 | Administering Agency Type | Administering Agency | Programming Authority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Strengthening Mobility and Revolutionizing Transportation Grants | SMART | | | 1 | | | | | | | | Federal | Office of Secretary USDOT | Infrastructure Investment and Jobs Act (IIJA) |
| 2 | RAISE Grant | RAISE | 1 | | 1 | 1 | | | | | | 1 | Federal | Office of Secretary USDOT | U.S. Department of Transportation |
| 3 | Active Transportation Program | ATP | 1 | 1 | | 1 | | | | | | | State | Caltrans | Senate Bill 99, California Assembly Bill 101 |
| 4 | Urban Greening Grant | | | | | | | | | 1 | | | State | CA Natural Resources Agency | Cap and Trade |
| 5 | Clean Transportation Incentives (various programs including Electric Bicycle Incentives Project) | | 1 | | | | | | 1 | 1 | | | State | CARB | California Air Resources Board |
| 6 | Transformative Climate Communities | TCC | 1 | 1 | | 1 | | | | | | | State | Strategic Growth Council and CA Department of Conservation | Greenhouse Gas Reduction Fund (GGRF) |

| Eligible Applicants | Purpose and Eligibility | Website | Maximum Amount Available |
|---|---|---|---|
| State, Cities, Counties, MPO, public transit agency/authority, public toll authority | Demonstration Projects Utilizing Innovative Technology to Improve Transportation Efficiency and Safety. In general, a Strengthening Mobility and Revolutionizing Transportation grant may be used to carry out a project that demonstrates at least one of the following: Coordinate Automation Connected Vehicles; Intelligent, sensor-based infrastructure; Systems integration; Commerce delivery and logistics; Leveraging use of innovative aviation technology; Smart grid; Smart technology traffic signals. | https://www.whitehouse.gov/wp-content/uploads/2022/05/BUILDING-A-BETTER-AMERICA-V2.pdf#page=65 https://www.transportation.gov/sites/dot.gov/files/2024-05/SMART%20FY24%20Stage%20 | Max award for each stage are - Stage 1: $2M; Stage 2: $15M |
| Cities, Counties, transit operators, public agency, special district or public authority with a transportation function or multijurisdictional group of entities that are separately eligible | Road, rail, transit and port projects that promise to achieve national objectives. Projects should leverage development and help to build and repair critical pieces of our freight and passenger transportation networks. Eligible projects for RAISE grants are:<br><br>Relevant capital projects include but are not limited to: highway, bridge, or other road projects; public transportation projects; passenger and freight rail transportation projects; port infrastructure investments; intermodal projects; and any other surface transportation infrastructure project that the Secretary considers to be necessary to advance the goals of the program.<br><br>Planning projects which include planning, preparation, or design (for example - environmental analysis, equity analysis, community engagement, feasibility studies, benefit cost analysis (BCA), and other pre-construction activities) of eligible surface transportation capital projects that will not result in construction with RAISE FY 2024 | https://www.transportation.gov/RAISEgrants https://www.transportation.gov/sites/dot.gov/files/2024-02/FY%202024%20RAISE%20NOFO%20Amendment%201.pdf | Max award for capital and planning grants: $25M |
| Local, regional, or state agencies, Caltrans, Transit Agencies, Natural Resources or Public Land Agencies, schools, tribal governments, nonprofits, any other entity with oversight of transportation/recreational trails | Funds safe routes to to school, pedestrian, bicycle, and trail projects. Disadvantaged communities must receive at least 25 percent of the program's funding. California Transportation Commission oversees guidelines and programming. | https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/active-transportation-program | Total Funding Available in Cycle 7 = $568M made up of Federal, State SB1, and State Highway Account (SHA) funding<br>No specific maximum amount provided. Minimum request is $250,000. The Program anticipates application for Large projects with total project cost of greater than $10M, Medium projects between $3.5M to $10M, etc. |
| City, county, special district, nonprofit org, or agency/entity formed pursuant to the Joint Exercise of Powers Act | The Program supports the development of green infrastructure projects that reduce GHG emissions and provide multiple benefits. Must include at least one of the following:<br>• Sequester and store carbon by planting trees<br>• Reduce building energy use by strategically planting trees to shade buildings<br>• Reduce commute vehicle miles traveled by constructing bicycle paths, bicycle lanes or pedestrian facilities that provide safe routes for travel between residences, workplaces, commercial centers, and schools.<br><br>Gives priority to, projects that are located within and benefit the State's disadvantaged communities and those communities facing the most significant threat from extreme heat. | https://resources.ca.gov/grants/urban-greening/ | No max or min grant amounts. 80% of awarded funds to disadvantaged and low income communities (AB 1550)<br>Approx. $47.5M available in 2021. |
| varies by program; but previous investments suggest largely state agencies | Annual budget appropriation guided by the priorities in the Cap and Trade Auction Proceeds Investment Plan<br>• Facilitate greenhouse gas reductions<br>• Benefit priority populations<br>• Maximize health, environmental, economic co-benefits<br>• Continue investments in existing programs<br>• Provide funding certainty over multiple years when possible<br>• Support job training and apprenticeship opportunities | https://ww2.arb.ca.gov/our-work/programs/low-carbon-transportation-investments-and-air-quality-improvement-program/low-1 | Varies by program |
| CBOs, local governments, nonprofit orgs, philanthropic orgs/foundations, faith-based orgs, coalitions or associations of nonprofits, community dev finance institutions, community dev corporations, joint powers authority, CA native american tribes | The Program funds community-led development and infrastructure projects that achieve major environmental, health, and economic benefits in California's most disadvantaged communities. (California Climate Investments)<br>Eligible Types:<br>• Bicycle and pedestrian facilities<br>• Bike share programs (However must be part of a larger placebased strategy) | http://www.sgc.ca.gov/programs/tcc/ | Based on Round 5 TCC Program included 3 grant types: 1) implementation grants could be requested for up to $29.5M, 2) project development grants could be requested up to $5M, and 3) planning grants could be requested up to $300,000. |

| ID | Program Funding Source | Acronym | WB-1 | WB-2 | DG-1 | S-1 | S-2 | M-1 | PH-1 | PH-2 | PH-3 | T-1 | Administering Agency Type | Administering Agency | Programming Authority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | Sustainable Transportation Equity Project | STEP | 1 | 1 | | 1 | | | | | | 1 | State | CARB | Greenhouse Gas Reduction Fund (GGRF) |
| 8 | Highway Safety Improvement Program | HSIP | 1 | | | 1 | 1 | | | | | | State | Caltrans Local Assistance | Caltrans |
| 9 | Low Carbon Transit Operations Program (LCTOP) | LCTOP | | | | | | | | | | 1 | State | Caltrans | Greenhouse Gas Reduction Fund (GGRF) |
| 10 | Local Partnership Program (LPP) Formula & Competitive Programs | LPP | 1 | 1 | | 1 | | 1 | | | | 1 | State | CTC | State Senate Bill 1 |
| 11 | One Bay Area Grant Program - Regional and County | OBAG 3 | 1 | 1 | 1 | 1 | | | | 1 | | 1 | Regional | MTC, CCTA | Federal Highway Administration |
| 12 | Transportation Development Act Article 3 | TDA 3 | 1 | 1 | | 1 | | | | | | 1 | Regional | MTC, Contra Costa County | Transportation Development Act (TDA) |
| 13 | Regional Transportation Improvement Program | RTIP | 1 | 1 | | 1 | | | | | | | Regional | MTC, CCTA | State Transportation Improvement Program (STIP) |
| 14 | Transportation Fund for Clean Air | TFCA | 1 | | | | | | | 1 | 1 | | Regional | BAAQMD, CCTA | BAAQMD Clean Air Plan |

| Eligible Applicants | Purpose and Eligibility | Website | Maximum Amount Available |
|---|---|---|---|
| Lead applicants: CBO, tribal governments, local governments, school<br>Sub applicants: CBOs, consultants, higher education institutions, joint powers authorities, local governments, non-profits, philanthropic orgs/foundations, private companies, schools, small businesses transit agencies, tribal govs, utilities and community choice aggregators, other public agencies | Planning and capacity building grants. Funding is intended to help low-income and disadvantaged communities identify residents' transportation needs and prepare to implement clean transportation and land use projects. The Program makes $20 million available for 1-3 implementation block grants to fund clean transportation and land use projects in disadvantaged communities. Funded projects will work together to increase community residents' access to key destinations so they can get where they need to go without the use of a personal vehicle.<br>Eligible Types:<br>• Bike or pedestrian facilities<br>• Active Transportation Plan<br>• Safe Routes to School Plan<br>• Capacity Building (NI Programs– education, engagement, demo projects, campaigns)<br>• Publicly-accessible bike parking, storage, and repair infrastructure (e.g., bike racks, bike lockers, bike repair kiosks)<br>• New walkways that improve mobility/access/safety of pedestrians (non-motorized users)<br>• Street crossing enhancements, including accessible pedestrian signals | https://ww2.arb.ca.gov/lcti-step | Max available for each grant type -<br>Planning and Capacity Building grant max: $750,000<br>CMIS and STEP grant: $15M |
| local public agency that owns, operates and maintains public roadways in CA, includes city, county or tribal government | The Program funds work on any public road or publicly owned bicycle or pedestrian pathway or trail, or on tribal lands for general use of tribal members, that improves the safety for its users. Project maximum funding- $10M. Solicitation varies from annually to semi-annually<br>Eligible Types:<br>• Safety projects on Bike facilities<br>• Safety projects on Ped facilities | https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program<br>https://dot.ca.gov/-/media/dot-media/programs/local-assistance/documents/lapg/g09.p | Max amount an agency can review varies by calls-for-projects, but Cycle 12 max is $10M. |
| transit operators and transportation planning agencies | Operating and capital assistance for transit agencies to reduce GHG emissions and improve mobility with a priority on serving disadvantaged communities; new or expanded intermodal transit facilities; operational expenditures that increase transit mode share. | http://www.dot.ca.gov/drmt/splctop.html | Varies depending on auction proceeds |
| CCTA, Cities (Jurisdictions with voter approved taxes, tolls, or fees, which are dedicated solely to transportation improvements or that have imposed fees, including uniform developer fees, which are dedicated solely to transportation improvements.) | Improvements to state highways, transit facilities and local roads; acquisition, retrofit or rehab of rolling stock, buses or other transit equipment including facilities; improvements to bicycle and pedestrian safety; environmental mitigation projects, soundwalls, road maintenance, and rehabilitation projects.<br>The primary objective of this program is to provide funding to counties, cities, districts, and regional transportation agencies in which voters have approved fees or taxes dedicated solely to transportation improvements or that have imposed fees, including uniform developer fees, dedicated solely to transportation improvements. Improve aging Infrastructure, Road Conditions, Active Transportation, Transit and rail, Health and Safety Benefits. | https://catc.ca.gov/programs/sb1/local-partnership-program | Competitive Program funding request has maximum of $25M per project nomination.<br><br>The 2022 Local Partnership Program will include two years of programming with $400 million in funds ($40 million formulaic incentive funding set aside; $216 million via Formulaic; and $144 million via Competitive) covering Fiscal Years 2023-24 and 2024-25. |
| cities, counties, transit agencies, federally-recognized Tribal governments, and CTAs | Maintain MTC's commitments to regional transportation priorities while also advancing the Bay Area's land-use and housing goals. Contra Costa County is focusing efforts on around encouraging active transportation like bicycling and walking, supporting safe routes to schools, implementing complete streets, and upgrading the countywide traffic signal system to "smarter" signals that can prioritize transit and emergency vehicles and hlep improve safety for people walking/biking at intersections. | https://mtc.ca.gov/funding/federal-funding/federal-highway-administration-grants/one-bay-area-grant-obag-3<br>https://ccta.net/planning/one-bay-area-grant-3/<br>https://mtc.ca.gov/sites/default/files/documents/2024-05/RES-4505_approved_0.pdf | Total available for Contra Costa County: $47.3 million between 2023-2026 |
| Cities, counties | 2% of County TDA funds are set aside for bicycle and pedestrian projects through Article 3. MTC oversees program. Funding is allocated by formula according to population in each jurisdiction, and jurisdictions may spend funds or roll them over to a future year. Some counties competitively select projects, while other counties distribute the funds to jurisdictions based on population. Each County determines program of projects through review process. Each local jurisdiction receive funds that can roll over to accomplish local priorities. | | Amount varies by jurisdiction based on formula |
| transit operators, cities, counties | The STIP is the biennial five-year plan adopted by the Commission for future allocations of certain state transportation funds for state highway improvements, intercity rail, and regional highway and transit improvements. Local agencies should work through their Regional Transportation Planning Agency (RTPA), County Transportation Commission, or Metropolitan Planning Organization (MPO), as appropriate, to nominate projects for inclusion in the STIP. | https://mtc.ca.gov/tags/rtip | Individual project limit not found. 2025 TIP awarded total of $345M for 49 projects in Contra Costa County. Countywide Smart Signals is one TIP project with a cost of $30M. |
| Public agencies, CCTA subregions | Funds eligible projects that reduce on-road motor vehicle emissions | http://www.baaqmd.gov/funding-and-incentives/public-agencies/regional-fund<br>https://www.alamedactc.org/funding/fund-sources/transportation-fund-for-clean-air/ | For the TFCA 40% Fund Policy, WCCTC is allocated 22.2% of the Program, and CCTA annually distributes $1.5M in total, giving a maximum allocation of $333,000 to WCCTC. For the remaining 60%, each public agency may be awarded up to total award of $5,500,000 per agency per fiscal year. |

| ID | Program Funding Source | Acronym | WB-1 | WB-2 | DG-1 | S-1 | S-2 | M-1 | PH-1 | PH-2 | PH-3 | T-1 | Administering Agency Type | Administering Agency | Programming Authority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15a | Regional Measure 3 - Safe Routes to Transit and Bay Trail Program | RM3 - SR2TBT | 1 | | | 1 | | | | | | 1 | Regional | MTC, BATA | RM3 |
| 15b | Regional Measure 3 - Goods Movement and Mitigation | RM3 | | | 1 | | | | 1 | | | | Regional | MTC, ACTC | RM3 |
| 15c | Regional Measure 3 - Corridor-specific Projects | RM3 | 1 | 1 | 1 | | | | | | | | Regional | MTC | MTC |
| 16 | Innovative Deployments to Enhance Arterials through Transit Signal Priority (IDEA TSP) | | | | 1 | | | | | | | | Regional | MTC | MTC |
| 17 | Measure J Programs | | 1 | 1 | | 1 | 1 | | | | | 1 | Regional | CCTA | CCTA |
| 23 | Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation | PROTECT | | 1 | | | | | | | | | Federal | FHWA | Infrastructure Investment and Jobs Act (IIJA) |
| 32 | Reconnecting Communities Grant Program | RCP | 1 | 1 | | | | | | | | | Federal | FHWA | Infrastructure Investment and Jobs Act (IIJA) |
| 33 | Advanced Transportation Technologies and Innovative Mobility Deployment | ATTAIN | | | 1 | | | | | | | | Federal | FHWA | Infrastructure Investment and Jobs Act (IIJA) |
| 34 | Active Transportation Infrastructure Investment Program | ATIIP | 1 | 1 | | 1 | | | | | | 1 | Federal | FHWA | Infrastructure Investment and Jobs Act (IIJA) |

| Eligible Applicants | Purpose and Eligibility | Website | Maximum Amount Available |
|---|---|---|---|
| City, County, transit agencies, school districts, community colleges and universities | Improve bicycle and pedestrian access on and near the region's toll bridges connecting to rail transit stations and ferry terminals. Access improvements include sidewalks, bike paths, traffic signal improvements, clearer signage and secure bicycle parking. The improvements will be funded via an increase in bridge tolls on all Bay Area toll bridges except the Golden Gate Bridge. | https://mtc.ca.gov/funding/regional-funding/regional-measure-3 https://planbayarea.org/sites/default/files/meetings/attachm | Per expenditure plan, $150M available for Bay Trail/Safe Routes to Transit over 3 cycles. |
| City, County, countywide transportation agencies, rail operators, and the Port of Oakland | Reduce traffic congestion and improve transportation options throughout the SF Bay Area's state-owned toll bridge corridors. The improvements will be funded via an increase in bridge tolls on all Bay Area toll bridges except the Golden Gate Bridge. Eligible projects include, but are not limited to, improvements in the County of Alameda to enable more goods to be shipped by rail, access improvements on Interstate 580, Interstate 80, and Interstate 880, and improved access to the Port of Oakland. | https://mtc.ca.gov/funding/regional-funding/regional-measure-3 https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=SHC&sectionNum=30914.7 https://mtc.ca.gov/sites/default/files/documents/2024-02/__03_04_2024%20Full%20Agenda%20Packet%20RM3%20Independent%20Oversight%20Committee_v4.pdf https://mtcdrive.app.box.com/s/x35lm2ocq0qw147fo7qpxchbvfb59l70 | Per expenditure plan, $160M for Goods Movement and Mitigation |
| BATA, CCTA | Richmond-San Rafael Bridge Access Improvements. Fund eastbound and westbound improvements in the Richmond-San Rafael Bridge corridor, including westbound access and operational improvements in the vicinity of the toll plaza east of the bridge in Contra Costa County, and Richmond Parkway interchange improvements. | https://mtc.ca.gov/funding/regional-funding/regional-measure-3 | $75M for projects in Contra Costa County |
| cities, counties, and transit agencies; multi-jurisdictional partnerships will receive priority | This Call for Technical Assistance dedicates $2 million to further the project-readiness of conceptual Transit Priority Projects by developing them into shovel-ready projects that would be more competitive for capital implementation funding. MTC's has over $20 million reserved for near-term capital Transit Priority projects through its BusAID (Bus Accelerated Infrastructure Delivery) and IDEA programs, and anticipates funding opportunities in the future. | https://abag.ca.gov/technical-assistance/idea-tsp-transit-signal-priority#:~:text=The%20Innovative%20Deployments%20to%20Enhance,transit%20faster%20and%20more%20reliable. | Maximum award of $1M |
| Contra Costa County Subregions | Richmond Parkway is allocated $16 million as one of the Capital Improvement Projects in Measure J's Expenditure Plan. The objective/reason for this allocation is detailed as follows: Upgrade the Richmond Parkway to facilitate transfer of ownership to the California Department of Transportation, including potential intersection and interchange upgrades, and/or provide funds to maintain the roadway. The Richmond Parkway is the priority project for this funding; however, funds not expended for this project may be reprogrammed at the City of Richmond's request for Richmond ferry service. | https://ccta.net/about-us/funding/ https://ccta.net/wp-content/uploads/2018/10/5297b121d5964.pdf | Allocated $16M in total |
| States, MPOs, local governments, special districts or public authorities with a transportation function, tribal governments, and federal land management agencies | Formula funding to states to support planning, resilience improvements, community resilience and evacuation routes, and at-risk coastal infrastructure. Includes transit, highways, and certain port projects. Additional competitive funding available. | https://www.whitehouse.gov/wp-content/uploads/2022/05/BUILDING-A-BETTER-AMERICA-V2.pdf#page=272 https://www.fhwa.dot.gov/bipartisan-infrastructure-law/fact_sheets.cfm | No max grant amount but expected distrbution of up to $7.3B total over 2022-2026. |
| States, units of local government, Tribal governments, Metropolitan Planning Organizations, and non-profit organizations. | The purpose of the RCP Program is to reconnect communities by removing, retrofitting, or mitigating transportation facilities, like highways or rail lines, that create barriers to community connectivity, including to mobility, access, or economic development. The program funds planning and capital construction to address infrastructure barriers, reconnect communities, and improve peoples' lives. | https://www.transportation.gov/reconnecting | $150 million for planning, $457 million for construction in FY24 |
| State Governments; Local Governments; Planning and Project Organizations; Academic and Research Institutions; U.S. Territories | Provides funding to deploy, install, and operate advanced transportation technologies to improve safety, mobility, efficiency, system performance, intermodal connectivity, and infrastructure return on investment. | https://www.transportation.gov/rural/grant-toolkit/advanced-transportation-technologies-and-innovative-mobility-deployment | $12 million |
| State Governments; Local Governments; Federally Recognized Tribes and Affiliated Groups; Planning and Project Organizations; U.S. Territories | ATIIP projects will help improve the safety, efficiency, and reliability of active transportation networks and communities; improve connectivity between active transportation modes and public transportation; enhance the resiliency of on- and off-road active transportation infrastructure; help protect the environment; and improve quality of life in disadvantaged communities through the delivery of connected active transportation networks and expanded mobility opportunities | https://www.transportation.gov/rural/grant-toolkit/active-transportation-infrastructure-investment-program-atiip | $15 million |


Photo of Earth Day pop-up event during Phase 2 of engagement in North Richmond.

# Appendix F:
## Priority Strategy Cost Estimates

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## Strategy PH-2

| STRATEGY PH-2 - TREE PLANTING AND LANDSCAPING (NON-BIORETENTION) | | | | | |
|---|---|---|---|---|---|
| | UNIT | UNIT COST | QUANTITY PER 100 LF | COST PER 100 LF | COST PER MILE |
| Clear and Grubbing | SF | $ 3 | 1600 | $ 4,800 | $ 253,440 |
| Irrigation | LS | $ 10,000 | 1 | $ 10,000 | $ 528,000 |
| Shrub Planting - 5 Gal. | EA | $ 50 | 28 | $ 1,400 | $ 73,920 |
| Tree Planting - 15 Gal. | EA | $ 250 | 25 | $ 6,250 | $ 330,000 |
| Mulch | SF | $ 1 | 1600 | $ 1,600 | $ 84,480 |
| GRAND TOTAL | | | | | |
| | | | | 2024 CONSTRUCTION COST | $ 1,270,000 |
| | | | | 2030 TOTAL COST WITH GENERAL COST FACTORS (3) | $ 2,900,000 |

Assumptions

1. Labor is included in the cost of plant materials.
2. Topsoil not included.
3. Assume approximately 16 ft planting width.
4. Assume all plants will be hand watered within an establishment period of one year with maintenance and monitoring by others.
5. Assume that after a one year establishment period, plants will be drought tolerant native plants with no irrigation requirements.

| STRATEGY PH-2 - BIORETENTION WITH LANDSCAPING | | | | | |
|---|---|---|---|---|---|
| DESCRIPTION | QUANTI | COST/SF | | COST/LF | COST/MILE |
| BIORETENTION BASIN (4') | 4 | $180 | | $720 | $3,258,514 |
| | | | | 2024 CONSTRUCTION COST | $3,258,514 |
| | | | | 2030 TOTAL COST WITH GENERAL COST FACTORS (3) | $ 7,430,000 |

## Strategy S-1

| Location | Proposed High Vis Crosswalks (per Crossing) | Proposed Directional Ramps (per Each) | Proposed PPB (per Intersection) | Proposed Reflective Backplates (per | Proposed Bike Video Detection (per | Proposed Ped Scale Lighting (per Intersection) | Proposed Ped Countdown Signal (per |
|---|---|---|---|---|---|---|---|
| I80 WB ramp/Blume Dr/Richmond Parkway | $47,374 | $109,324 | $39,858 | $0 | $113,879 | $207,259 | $0 |
| I580 WB ramps & Castro Street | $47,374 | $127,544 | $19,929 | $0 | $113,879 | $207,259 | $0 |
| I80 HOV off-ramp & Richmond Pkwy | $0 | $0 | $0 | $14,576 | $0 | $0 | $13,665 |
| I80 EB ramp & Richmond Pkwy/Fitzgerald Dr | $0 | $0 | $0 | $0 | $0 | $207,259 | $13,665 |
| Mills Street & Castro Street | $47,374 | $145,765 | $39,858 | $14,576 | $113,879 | $207,259 | $13,665 |
| Castro Street & Richmond Lane | $47,374 | $145,765 | $39,858 | $14,576 | $113,879 | $207,259 | $13,665 |
| Hensley Street & Castro Street | $47,374 | $145,765 | $39,858 | $14,576 | $113,879 | $207,259 | $13,665 |
| W Ohio Avenue/Garrard Street & Richmond Pa | $23,687 | $127,544 | $19,929 | $14,576 | $113,879 | $207,259 | $13,665 |
| MacDonald Avenue & Richmond Parkway | $47,374 | $145,765 | $19,929 | $14,576 | $113,879 | $207,259 | $13,665 |
| W Barrett Avenue & Richmond Parkway | $47,374 | $145,765 | $39,858 | $14,576 | $113,879 | $207,259 | $13,665 |
| Hensley Street & Richmond Parkway | $47,374 | $145,765 | $39,858 | $14,576 | $0 | $207,259 | $13,665 |
| Gertrude Avenue & Richmond Parkway | $47,374 | $145,765 | $19,929 | $14,576 | $113,879 | $207,259 | $0 |
| Pittsburgh Avenue & Richmond Parkway | $47,374 | $109,324 | $0 | $14,576 | $113,879 | $207,259 | $0 |
| Parr Boulevard & Richmond Parkway | $47,374 | $127,544 | $19,929 | $14,576 | $113,879 | $207,259 | $13,665 |
| Goodrick Ave & Richmond Parkway | $47,374 | $145,765 | $19,929 | $14,576 | $0 | $207,259 | $0 |
| Hilltop Drive & Richmond Parkway | $47,374 | $145,765 | $19,929 | $14,576 | $113,879 | $207,259 | $13,665 |
| Atlas Rd & Richmond Parkway | $47,374 | $145,765 | $19,929 | $14,576 | $0 | $207,259 | $13,665 |
| San Pablo Ave & Richmond Parkway | $47,374 | $182,206 | $19,929 | $14,576 | $113,879 | $207,259 | $13,665 |
| Lakeside Drive & Richmond Parkway | $35,530 | $109,324 | $19,929 | $14,576 | $0 | $207,259 | $0 |
| Bella Vista & Richmond Parkway | $35,530 | $109,324 | $19,929 | $14,576 | $0 | $207,259 | $13,665 |
| Canal Blvd & I580 WB ramps | $0 | $163,985 | $19,929 | $0 | $113,879 | $207,259 | $6,833 |
| Canal Blvd & I580 EB ramps | $0 | $163,985 | $0 | $14,576 | $113,879 | $207,259 | $13,665 |
| Castro St/Standard Ave & Chevron Wy I580 EB | $11,843 | $36,441 | $19,929 | $0 | $113,879 | $207,259 | $0 |
| **TOTAL** | | | | | | | |

## Strategy S-2

| STRATEGY S-2 - SPEED FEEDBACK AND LIMIT SIGNS | | | |
|---|---|---|---|
| | QUANTITY | UNIT COST | TOTAL COST |
| Speed Feedback Signs | 4 | $5,000 | $20,000 |
| Speed Limit Signs | 6 | $700 | $4,200 |
| GRAND TOTAL | | | |
| 2024 CONSTRUCTION COST | | | $ 24,200 |
| 2030 TOTAL COST WITH GENERAL COST FACTORS (3) | | | $ 55,117 |

Assumptions

1. Speed Feedback Signs will be spaced about 5 miles apart and speed limit signs will be spaced about 3 miles apart.
2. See General Cost Factors below.

General Cost Factors

| | |
|---|---|
| Mobilization, Demobilization, Environmental Protection, Traffic Control | 1.20 |
| Engineering, Design, and Construction Management | 1.20 |
| Inflation | 1.22 |
| Contingency | 1.30 |
| TOTAL - Combined Cost Factor | 2.28 |

| Straighten Crosswalks (per Crosswalk) | SUBTOTALS Tighten Curb Radii (per corner) | Raised Crosswalks (per Each) | Porkchop Island with Raised Crosswalk | Major Bike Intersection Improvements (per | Minor Bike Intersection Improvements (per | Enforce Right-Turn Only Lane (per | NRTOR (per Intersection) | Protected Right-Turn Phase (per Intersection) | Median Refuge Islands (per Intersection) | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| $0 | $0 | $49,218 | $0 | $0 | $0 | $0 | $0 | $77,438 | $84,270 | $728,619 |
| $0 | $271,031 | $49,218 | $91,354 | $0 | $0 | $0 | $0 | $0 | $84,270 | $1,011,858 |
| $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9,110 | $0 | $0 | $37,352 |
| $0 | $0 | $49,218 | $0 | $0 | $0 | $0 | $0 | $77,438 | $0 | $347,581 |
| $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $582,376 |
| $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $582,376 |
| $0 | $271,031 | $0 | $182,707 | $0 | $120,028 | $0 | $9,110 | $0 | $84,270 | $1,249,523 |
| $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9,110 | $77,438 | $0 | $607,087 |
| $0 | $135,516 | $0 | $0 | $0 | $0 | $0 | $0 | $77,438 | $0 | $775,400 |
| $0 | $0 | $0 | $182,707 | $0 | $0 | $0 | $0 | $77,438 | $0 | $842,520 |
| $0 | $542,063 | $0 | $0 | $0 | $0 | $0 | $0 | $77,438 | $0 | $1,087,997 |
| $0 | $0 | $0 | $365,414 | $0 | $0 | $120,711 | $0 | $77,438 | $84,270 | $1,196,615 |
| $0 | $0 | $0 | $0 | $0 | $0 | $120,711 | $9,110 | $0 | $84,270 | $706,504 |
| $0 | $0 | $0 | $365,414 | $0 | $0 | $120,711 | $0 | $0 | $84,270 | $1,114,622 |
| $0 | $0 | $0 | $0 | $2,751,765 | $0 | $0 | $0 | $0 | $0 | $3,186,668 |
| $0 | $0 | $0 | $0 | $2,751,765 | $0 | $0 | $0 | $77,438 | $0 | $3,391,650 |
| $0 | $0 | $0 | $365,414 | $0 | $0 | $0 | $0 | $77,438 | $0 | $891,420 |
| $0 | $0 | $0 | $0 | $2,751,765 | $0 | $0 | $0 | $77,438 | $0 | $3,428,091 |
| $0 | $271,031 | $0 | $0 | $0 | $0 | $0 | $0 | $77,438 | $84,270 | $819,357 |
| $0 | $271,031 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $84,270 | $755,585 |
| $0 | $271,031 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $782,916 |
| $0 | $271,031 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $784,397 |
| $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $389,351 |
| | | | | | | | | | | $25,299,864 |

## Strategy WB-1

| STRATEGY WB-1- ROADWAY TYPICAL SECTION COSTS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | TONS/LF | | | |
| SECTION COMPONENTS | PAVEMENT | DESCRIPTION | QUANTITY | AC | AB | | COST/LF | COST/MILE |
| | | ROADWAY (8" AC/23" AB) | 48 | 2.64 | 7.084 | | $1,157 | $6,110,016 |
| | | BIKEWAY (3" AC/12" AB) | 12 | 0.2475 | 0.924 | | $134 | $710,028 |
| | | COST ($/TON) | | $170 | $100 | | | |
| | CONCRETE WITH GREEN ELEMENTS | DESCRIPTION | QUANTITY | COST/SF | | | COST/LF | COST/MILE |
| | | SIDEWALK (LF) | 12 | $30 | | | $360 | $1,900,800 |
| | | BIORETENTION BASIN (4') | 4 | $180 | | | $720 | $3,258,514 |
| | | PLANTER STRIP (4') | 4 | $25 | | | $100 | $603,429 |
| | | CENTER PLANTER/MEDIAN | 14 | $25 | | | $350 | $1,848,000 |
| | OTHER ASSUMED COSTS | DESCRIPTION | QUANTITY | COST | | | COST/LF | COST/MILE |
| | | RUMBLE STRIPS | 4 | $2 | PER LF | | $8 | $42,240 |
| | | LANE STRIPING | 6 | $1 | PER LF | | $6 | $31,680 |
| | | SD INLET RELOCATIONS | 1 | $10,000 | PER EACH | | $15 | $80,000 |
| | | SD CXN TO EXISTING (15" RCP) | 6 | $530 | PER LF | | $5 | $25,440 |
| | | HARDSCAPE BUFFER (2', AT EXISTING BRIDGE) | 2 | $100 | PER LF | | $200 | $1,056,000 |
| CASES | NEW SIDEWALKS | | | | | TOTAL, 2024 CONSTRUCTION COST | $366 | $1,932,480 |
| | | | | | | TOTAL, WITH GENERAL COST FACTORS*, 2030 | $834 | $4,401,367 |
| | NEW BIKEWAYS WITH PLANTERS | | | | | TOTAL, 2024 CONSTRUCTION COST | $988 | $4,751,331 |
| | | | | | | TOTAL, WITH GENERAL COST FACTORS*, 2030 | $2,251 | $10,821,509 |
| | ONE SIDE FULL SECTION: TWO NEW LANES, BIKE LANE WITH PLANTER, AND SIDEWALK | | | | | TOTAL, 2024 CONSTRUCTION COST | $1,253 | $6,381,073 |
| | | | | | | TOTAL, WITH GENERAL COST FACTORS*, 2030 | $2,853 | $14,533,368 |
| | SPECIAL CASE: EXISTING BRIDGE. HARDSCAPE SHARED USE PATH BUFFER AND RESTRIPE | | | | | TOTAL, 2024 CONSTRUCTION COST | $206 | $1,087,680 |
| | | | | | | TOTAL, WITH GENERAL COST FACTORS*, 2030 | $469 | $2,477,272 |
| | FULL SECTION - ALL NEW CONSTRUCTION INCLUDING MEDIAN | | | | | TOTAL, 2024 CONSTRUCTION COST | $2,856 | $14,610,147 |
| | | | | | | TOTAL, WITH GENERAL COST FACTORS*, 2030 | $6,504 | $33,275,694 |
| TOTAL, WITH GENERAL COST FACTORS*, 2030 RANGE: $3M - $33M PER MILE (Median of $18M) | | | | | | | | |

*General Cost Factors

1.20 Mobilization, Demobilization, Environmental Protection, Traffic Control
1.20 Engineering, Design, and Construction Management
1.22 Inflation
1.30 Contingency
2.28 TOTAL - Combined Cost Factor

C3 Estimates per mile

| | |
|---|---|
| Total Impervious of Cross Section | 75 LF |
| Total Impervious Area | 396000 SF |
| 4% = Required Area of Treatment | 15840 SF |
| LF of 4' nominal width of bioretention planter (3.5') | 4526 LF |
| Remaining planter, non bioretention basin | 6034 LF |

Assumptions

Does not take into account ROW acquisitions or agency coordination.
Existing mulitiuse paths will remain and not be replaced.

## Strategy WB-1 (cont.)

| BAY TRAIL REALIGNMENT (GERTRUDE TO HENSLEY) | | | | |
|---|---|---|---|---|
| | UNIT | QUANTITY | UNIT COST | TOTAL COST |
| **GERTRUDE AVE INTERSECTION IMPROVEMENTS** | | | | |
| DIRECTIONAL CURB RAMPS | EA | 2 | $ 8,000 | $ 16,000 |
| SIDEWALK | SF | 200 | $ 30 | $ 6,000 |
| HIGH VIS CROSSWALK | LF | 100 | $ 40 | $ 4,000 |
| BOLLARDS | EA | 2 | $ 2,000 | $ 4,000 |
| TRAFFIC SIGNAL RELOCATION | EA | 1 | $ 50,000 | $ 50,000 |
| TRAFFIC SIGNAL PED UPGRADES | LS | 1 | $ 27,000 | $ 27,000 |
| UTILITY COORDINATION | LS | 1 | $ 50,000 | $ 50,000 |
| **TRAIL** | | | | |
| ASPHALT FOR TRAIL | TONS | 690 | $ 170 | $ 117,300 |
| AGGREGATE BASE FOR TRAIL | TONS | 2590 | $ 100 | $ 259,000 |
| PLANTER/FLOW THROUGH | SF | 15400 | $ 25 | $ 385,000 |
| BIOSWALE | SF | 1400 | $ 100 | $ 140,000 |
| WAYFINDING SIGNS | EA | 10 | $ 1,000 | $ 10,000 |
| PATH LIGHTING | LF | 2800 | $ 125 | $ 350,000 |
| **HENSLEY ST INTERSECTION IMPROVEMENTS** | | | | |
| DIRECTIONAL CURB RAMPS | EA | 2 | $ 8,000 | $ 16,000 |
| MEDIAN REFUGE ISLAND | EA | 1 | $ 15,000 | $ 15,000 |
| SIDEWALK | SF | 200 | $ 30 | $ 6,000 |
| HIGH VIS CROSSWALK | LF | 100 | $ 40 | $ 4,000 |
| BOLLARDS | EA | 2 | $ 2,000 | $ 4,000 |
| TRAFFIC SIGNAL PED UPGRADES | LS | 1 | $ 27,000 | $ 27,000 |
| **TOTAL, 2024 CONSTRUCTION COST** | | | | $ 1,490,300 |
| **TOTAL, WITH GENERAL COST FACTORS*, 2030** | | | | $ 3,394,269 |

**Assumptions**
1. Pavement section is 3" hot mix asphalt over 12" aggregate base.
2. Trail is 12' wide and planter is 6' wide and does not require new curb.
3. Trail length is approximately 2,800 feet.
4. No right of way acquisition.
5. Utility coordination is with West County Waste Water (facility on SW corner of Gertrude/Richmond Pkwy) and others.
6. Path lighting does not necessarily illuminate the roadway.

| WIDEN PATH TO 12' (PARR TO GERTRUDE) | | | | |
|---|---|---|---|---|
| | UNIT | QUANTITY | UNIT COST | TOTAL COST |
| ASPHALT FOR TRAIL | TONS | 1210 | $ 170 | $ 205,700 |
| AGGREGATE BASE FOR TRAIL | TONS | 4530 | $ 100 | $ 453,000 |
| PLANTER | SF | 29400 | $ 25 | $ 735,000 |
| PATH LIGHTING | LF | 4900 | $ 125 | $ 612,500 |
| **TOTAL, 2024 CONSTRUCTION COST** | | | | $ 2,006,200 |
| **TOTAL, WITH GENERAL COST FACTORS*, 2030** | | | | $ 4,569,269 |
| **TOTAL FOR REALIGNMENT AND WIDENING** | | | | **$ 7,963,538** |

**Assumptions**
1. Does not take into account ROW acquisitions or agency coordination.
2. No work will be performed on bridges.
3. Existing mulitiuse paths will remain and not be replaced.
4. C.3 requirements not applicable (<1 contiguous acre).

***General Cost Factors**

| | |
|---|---|
| Mobilization, Demobilization, Environmental Protection, Traffic Control | 1.20 |
| Engineering, Design, and Construction Management | 1.20 |
| Inflation | 1.22 |
| Contingency | 1.30 |
| TOTAL - Combined Cost Factor | 2.28 |

## Strategy WB-2

| STRATEGY WB-2 - WILDCAT CREEK TRAIL CROSSING | | | | |
|---|---|---|---|---|
| | UNIT | QUANTITY | UNIT COST | TOTAL COST |
| NEW PAVEMENT - ROAD (1) | | | | |
| MILLING (3" DEPTH) | SY | 510 | $ 10 | $ 5,100 |
| HOT MIX ASPHALT | TON | 130 | $ 170 | $ 22,100 |
| AGGREGATE BASE | TON | 80 | $ 100 | $ 8,000 |
| NEW PAVEMENT - TRAIL CONNECTIONS (2) | | | | |
| GRADING | CY | 320 | $ 80 | $ 25,600 |
| HOT MIX ASPHALT | TON | 60 | $ 170 | $ 10,200 |
| AGGREGATE BASE | TON | 230 | $ 100 | $ 23,000 |
| CONCRETE | | | | |
| CONCRETE (SIDEWALKS, CURB & GUTTER, CURB RAMPS, MEDIANS/PED ISLANDS, MEDIAN NOSES) | SF | 1700 | $ 30 | $ 51,000 |
| CURB RAMPS (EACH, EXTRA COSTS, FORMWORK, DWS) | EA | 5 | $ 5,000 | $ 25,000 |
| ELECTRIC | | | | |
| NEW SIGNAL (INCL. TRAFFIC SIGNALS, PED LIGHTED CROSS/STOP SIGNAGE, VIDEO DETECTION, EMS OVERRIDE, ETC.) | LUMP SUM | 1 | $ 800,000 | $ 800,000 |
| STRIPING AND SIGNAGE | | | | |
| HIGH VISIBILITY CROSSWALK | LF | 100 | $ 100 | $ 10,000 |
| PAVEMENT MARKINGS | LUMP SUM | 1 | $ 10,000 | $ 10,000 |
| HARDSCAPE | | | | |
| FENCES | LF | 30 | $ 100 | $ 3,000 |
| GATES | EA | 2 | $ 3,000 | $ 6,000 |
| REMOVABLE BOLLARDS | EA | 4 | $ 2,000 | $ 8,000 |
| OTHER | | | | |
| ENVIRONMENTAL PROTECTION (~2% CONSTRUCTION COSTS) | LUMP SUM | 1 | $ 21,000 | $ 21,000 |
| COORDINATION WITH EBRPD | LUMP SUM | 1 | $ 100,000 | $ 100,000 |
| GRAND TOTAL | | | | |
| 2024 CONSTRUCTION COST | | | | $ 1,122,900 |
| 2030 TOTAL COST WITH GENERAL COST FACTORS (3) | | | | $ 2,557,488 |

Assumptions

1. Road section is 4,600 sf of 3" mill and overlay, plus 500 sf of new roadway section, which is 8" asphalt over 23" aggregate base.
2. Trail section is 3" asphalt over 12" aggregate base.
3. See General Cost Factors below.

General Cost Factors

| | |
|---|---|
| Mobilization, Demobilization, Environmental Protection, Traffic Control | 1.20 |
| Engineering, Design, and Construction Management | 1.20 |
| Inflation | 1.22 |
| Contingency | 1.30 |
| TOTAL - Combined Cost Factor | 2.28 |

## Strategy DG-1

| STRATEGY DG - 1 -- SIGNALS COSTS | | |
|---|---|---|
| **Signal Strategy Component** | ***Cost per Intersection*** | ***Total Cost*** |
| Signal coordination | $ 4,400 | $ 101,200 |
| Connected battery backup system | $ 13,750 | $ 123,750 |
| Central signal management system | $ 141,900 | $ 1,844,700 |
| Signal hardware and software update | $ 30,000 | $ 690,000 |
| Emergecy vehicle preemption/transit signal priority | | $ 200,000 |
| Adaptive traffic signal system | $ 45,000 | $ 855,000 |
| Connected Vehicle Roadside Unit | $ 5,000 | $ 115,000 |
| | | |
| Subtotal - hardware and software | | $ 3,929,650 |
| Design (15%) | | $ 589,448 |
| Construction Management (10%) | | $ 392,965 |
| Contingency (15%) | | $ 589,448 |
| **Grand Total (2024 Estimate)** | | **$ 5,501,510** |

## Strategy M-1 - Pavement

| Year | StreetID | Street Name | SectionID | From | To |
|---|---|---|---|---|---|
| 2030 | RPKYEB | RICHMOND PKWY EB | 010 | N/O CASTRO | N/O REDWOOD |
| 2030 | RPKYEB | RICHMOND PKWY EB | 020 | N/O REDWOOD | N/O MILLS |
| 2030 | RPKYEB | RICHMOND PKWY EB | 030 | N/O MILLS | N/O GENERAL CHEMICAL ENTR |
| 2030 | RPKYEB | RICHMOND PKWY EB | 040 | N/O GENERAL CHEMICAL ENTR | N/O HENSLEY |
| 2030 | RPKYEB | RICHMOND PKWY EB | 050 | N/O HENSLEY | 2,277' @ CASTRO MERGE |
| 2030 | RPKYEB | RICHMOND PKWY EB | 060 | 2,277' @ CASTRO MERGE | N/O GERTRUDE |
| 2030 | RPKYEB | RICHMOND PKWY EB | 080 | CITY LIMIT @ 1400' W/O GOODRICK AVE | W/O GOODRICK AVE |
| 2030 | RPKYEB | RICHMOND PKWY EB | 090 | W/O GOODRICK | W/O PKWY BRIDGE |
| 2030 | RPKYEB | RICHMOND PKWY EB | 100 | W/O PKWY BRIDGE | E/O PKWY BRIDGE |
| 2030 | RPKYEB | RICHMOND PKWY EB | 110 | E/O PKWY BRIDGE | S/O HILLTOP |
| 2030 | RPKYEB | RICHMOND PKWY EB | 120 | S/O HILLTOP | S/O ATLAS |
| 2030 | RPKYEB | RICHMOND PKWY EB | 130 | S/O ATLAS | W/O SAN PABLO |
| 2030 | RPKYEB | RICHMOND PKWY EB | 140 | W/O SAN PABLO | WIDTH CHANGE (630' E/O SAN PABLO) |
| 2030 | RPKYEB | RICHMOND PKWY EB | 150 | WIDTH CHANGE (630' E/O SAN PABLO) | E/O LAKESIDE |
| 2030 | RPKYEB | RICHMOND PKWY EB | 160C | E/O LAKESIDE | W/O BLUME |
| 2030 | RPKYWB | RICHMOND PKWY WB | 020C | E/O SIERRA RIDGE | E/O LAKSIDE DRIVE |
| 2030 | RPKYWB | RICHMOND PKWY WB | 040 | E/O LAKESIDE DRIVE | WIDTH CHANGE (630' E/O SAN PABLO) |
| 2030 | RPKYWB | RICHMOND PKWY WB | 050 | WIDTH CHANGE (630' E/O SAN PABLO) | W/O SAN PABLO |
| 2030 | RPKYWB | RICHMOND PKWY WB | 060 | W/O SAN PABLO | S/O ATLAS |
| 2030 | RPKYWB | RICHMOND PKWY WB | 070 | S/O ATLAS | S/O HILLTOP |
| 2030 | RPKYWB | RICHMOND PKWY WB | 080 | S/O HILLTOP | E/O PKWY BRIDGE |
| 2030 | RPKYWB | RICHMOND PKWY WB | 090 | E/O PKWY BRIDGE | W/O PKWY BRIDGE |
| 2030 | RPKYWB | RICHMOND PKWY WB | 100 | W/O PKWY BRIDGE | W/O GOODRICK |
| 2030 | RPKYWB | RICHMOND PKWY WB | 110 | W/O GOODRICK AVE | CITY LIMIT @ 1500' W/O GOODRICK AVE |
| 2030 | RPKYWB | RICHMOND PKWY WB | 140 | N/O GERTRUDE | 1,350' @ ROAD SPLIT |
| 2030 | RPKYWB | RICHMOND PKWY WB | 145 | 1,350' @ ROAD SPLIT | N/O HENSLEY |
| 2030 | RPKYWB | RICHMOND PKWY WB | 150 | N/O HENSLEY | END PCC |
| 2030 | RPKYWB | RICHMOND PKWY WB | 155 | END PCC | PENNSYLVANIA |
| 2030 | RPKYWB | RICHMOND PKWY WB | 160 | N/O GENERAL CHEMICAL ENTR | N/O MILLS |
| 2030 | RPKYWB | RICHMOND PKWY WB | 170 | N/O MILLS | 400 N/O REDWOOD |
| 2030 | RPKYWB | RICHMOND PKWY WB | 180 | 400 N/O REDWOOD | N/O REDWOOD |
| 2030 | RPKYWB | RICHMOND PKWY WB | 190 | N/O REDWOOD | N/O CASTRO |
| 2030 | GARRNB | RICHMOND PKWY EB | 010 | W OHIO | MACDONALD |
| 2030 | GARRNB | RICHMOND PKWY EB | 020 | MACDONALD | BARRETT |
| 2030 | GARRNB | RICHMOND PKWY EB | 040 | S/O BARRETT | N/O PENNSYLVANIA / COP |
| 2030 | GARRSB | RICHMOND PKWY WB | 010 | N/O PENNSYLVANIA | S/O BARRETT |
| 2030 | GARRSB | RICHMOND PKWY WB | 020 | BARRETT | N/O MACDONALD |
| 2030 | GARRSB | RICHMOND PKWY WB | 040 | MACDONALD | W OHIO |

**Maintenance Cost Notes:**
1) The cost table attached shows the maintenance treatment and costs both in 2024 and 2030 (2030 based on when this project may actually be constructed) and assumes a 4% inflation rate.
2) The treatments shown are based on the projected 2030 pavement condition index (PCI) with an assumed deterioration of 3 PCI points per year.

| Area (SY) | Current PCI | 2030 PCI | Treatment | PCI After Treatment | 2024 Unit Cost ($/SY) | 2024 Cost | 2030 Unit Cost ($/SY) | 2030 Cost |
|---|---|---|---|---|---|---|---|---|
| 2,951 | 85 | 67 | THIN OVERLAY W/DIGOUTS | 100 | $ 55.00 | $ 162,000 | $ 70.00 | $ 207,000 |
| 6,490 | 55 | 37 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 594,000 | $ 116.00 | $ 753,000 |
| 12,280 | 42 | 24 | RECONSTRUCT SURFACE (AC) | 100 | $ 148.00 | $ 1,817,000 | $ 187.00 | $ 2,296,000 |
| 7,957 | 56 | 38 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 728,000 | $ 116.00 | $ 923,000 |
| 8,594 | 55 | 37 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 786,000 | $ 116.00 | $ 997,000 |
| 6,773 | 37 | 19 | RECONSTRUCT SURFACE (AC) | 100 | $ 148.00 | $ 1,002,000 | $ 187.00 | $ 1,267,000 |
| 5,444 | 47 | 29 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 498,000 | $ 116.00 | $ 632,000 |
| 8,089 | 60 | 42 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 740,000 | $ 116.00 | $ 938,000 |
| 9,396 | 90 | 72 | Do Nonthing - PCC | | $ - | $ - | | $ - |
| 28,722 | 59 | 41 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 2,628,000 | $ 116.00 | $ 3,332,000 |
| 9,778 | 49 | 31 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 895,000 | $ 116.00 | $ 1,134,000 |
| 7,233 | 41 | 23 | RECONSTRUCT SURFACE (AC) | 100 | $ 148.00 | $ 1,070,000 | $ 187.00 | $ 1,353,000 |
| 2,660 | 91 | 73 | SLURRY SEAL | 79 | $ 3.50 | $ 9,000 | $ 4.50 | $ 12,000 |
| 2,418 | 91 | 73 | SLURRY SEAL | 79 | $ 3.50 | $ 8,000 | $ 4.50 | $ 11,000 |
| 17,991 | 69 | 51 | THIN OVERLAY W/DIGOUTS | 100 | $ 55.00 | $ 990,000 | $ 70.00 | $ 1,259,000 |
| 10,550 | 69 | 51 | THIN OVERLAY W/DIGOUTS | 100 | $ 55.00 | $ 580,000 | $ 70.00 | $ 739,000 |
| 2,342 | 46 | 28 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 214,000 | $ 116.00 | $ 272,000 |
| 4,340 | 57 | 39 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 397,000 | $ 116.00 | $ 503,000 |
| 7,233 | 50 | 32 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 662,000 | $ 116.00 | $ 839,000 |
| 8,800 | 47 | 29 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 805,000 | $ 116.00 | $ 1,021,000 |
| 24,288 | 62 | 44 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 2,222,000 | $ 116.00 | $ 2,817,000 |
| 9,396 | 90 | 72 | Do Nonthing - PCC | | $ - | $ - | | $ - |
| 8,089 | 44 | 26 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 740,000 | $ 116.00 | $ 938,000 |
| 5,833 | 36 | 18 | RECONSTRUCT SURFACE (AC) | 100 | $ 148.00 | $ 863,000 | $ 187.00 | $ 1,091,000 |
| 6,300 | 89 | 71 | SLURRY SEAL | 77 | $ 3.50 | $ 22,000 | $ 4.50 | $ 28,000 |
| 8,178 | 50 | 32 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 748,000 | $ 116.00 | $ 949,000 |
| 3,025 | 82 | 64 | THIN OVERLAY W/DIGOUTS | 100 | $ 55.00 | $ 166,000 | $ 70.00 | $ 212,000 |
| 2,383 | 92 | 74 | SLURRY SEAL | 80 | $ 3.50 | $ 8,000 | $ 4.50 | $ 11,000 |
| 11,169 | 20 | 2 | RECONSTRUCT SURFACE (AC) | 100 | $ 148.00 | $ 1,653,000 | $ 187.00 | $ 2,089,000 |
| 5,067 | 27 | 9 | RECONSTRUCT SURFACE (AC) | 100 | $ 148.00 | $ 750,000 | $ 187.00 | $ 948,000 |
| 3,300 | 42 | 24 | RECONSTRUCT SURFACE (AC) | 100 | $ 148.00 | $ 488,000 | $ 187.00 | $ 617,000 |
| 3,504 | 3 | 0 | RECONSTRUCT SURFACE (AC) | 100 | $ 148.00 | $ 519,000 | $ 187.00 | $ 655,000 |
| 8,462 | 86 | 68 | THIN OVERLAY W/DIGOUTS | 100 | $ 55.00 | $ 465,000 | $ 70.00 | $ 592,000 |
| 3,911 | 70 | 52 | THIN OVERLAY W/DIGOUTS | 100 | $ 55.00 | $ 215,000 | $ 70.00 | $ 274,000 |
| 7,076 | 61 | 43 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 647,000 | $ 116.00 | $ 821,000 |
| 7,076 | 64 | 46 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 647,000 | $ 116.00 | $ 821,000 |
| 3,911 | 61 | 43 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 358,000 | $ 116.00 | $ 454,000 |
| 8,462 | 52 | 34 | THICK MILL AND OVERLAY W/DIGOUTS | 100 | $ 91.50 | $ 774,000 | $ 116.00 | $ 982,000 |
| | | | | | **2024 Total** | **$ 25,870,000** | **2030 Total** | **$ 32,787,000** |

3) Total costs include the section of Castro Street which was the former Richmond Parkway and is labeled as part of the Richmond Parkway in the City's StreetSaver database. The sections of Castro are at the end of the spreadsheet and are separated by a darker line. If you wanted to take out these sections from the 2030 costs would be about $4 million less.

## Strategy M-1 - General

| STRATEGY M-1 -- MAINTENANCE (GENERAL) | | |
|---|---|---|
| | **Public Works Division** | **Annual Cost** |
| Street sweeping | Streets Maintenance Division | $160,431.84 |
| Weed abatement, removal of illegal dumping, graffiti abatement, encampments (West Ohio to Giant Road) | Abatement Division, Parkway | $102,831.00 |
| Weed abatement, removal of illegal dumping, encampments (Castro – Hensley to Pt. Richmond, Parkway – Giant Road to HWY I-80, Parkway – West Ohio to Pt. Richmond). | Abatement Division, Parkway | $219,792.40 |
| **GRAND TOTAL (2024 Estimate)** | | **$483,055.24** |

## Strategy T-1

| STRATEGY T-1 - TRANSIT STRATEGY (Bus/Walking Improvements) | | | | |
|---|---|---|---|---|
| | UNIT | QUANTITY | UNIT COST | TOTAL COST |
| STRUCTURAL - RETAINING STRUCTURES | | | | |
| RETAINING WALLS | LF | 250 | $ 600 | $ 150,000 |
| NEW PAVEMENT - SHARED USE PATH | | | | |
| GRADING | CY | 370 | $ 80 | $ 29,600 |
| HOT MIX ASPHALT | TON | 40 | $ 170 | $ 6,800 |
| AGGREGATE BASE | TON | 150 | $ 100 | $ 15,000 |
| CONCRETE | | | | |
| CONCRETE (SIDEWALKS, CURB & GUTTER, CURB RAMPS, MEDIANS/PED ISLANDS, MEDIAN NOSES) | SF | 2800 | $ 40 | $ 112,000 |
| CONCRETE BUS PAD | SF | 1500 | $ 60 | $ 90,000 |
| CURB RAMPS (EACH, EXTRA COSTS, FORMWORK, DWS) | EA | 2 | $ 5,000 | $ 10,000 |
| STRIPING AND SIGNAGE | | | | |
| PAVEMENT MARKINGS AND SIGNAGE | LUMP SUM | 1 | $ 40,000 | $ 40,000 |
| OTHER | | | | |
| DEMOLITION (GENERAL) | SF | 6600 | $ 10 | $ 66,000 |
| BUS SHELTERS, BENCHES, ETC. | LUMP SUM | 1 | $ 50,000 | $ 50,000 |
| GRAND TOTAL | | | | |
| | | | 2024 CONSTRUCTION COST | $ 569,400 |
| | | | 2030 TOTAL COST WITH GENERAL COST FACTORS (3) | $ 1,296,851 |

Assumptions

1. See General Cost Factors below.
2. Assume the retaining structures will be less than 4' tall.
3. Trail section is 3" asphalt over 12" aggregate base.
4. Demolition (General) includes work to clear the site and remove roadway material and existing concrete improvements.

| STRATEGY T-1 - TRANSIT STRATEGY (Bike lockers) | | | | |
|---|---|---|---|---|
| BIKE LOCKER PRODUCTS & SERVICES | UNIT | QUANTITY | UNIT COST | TOTAL COST |
| EQUIPMENT | | 4 | $ 9,880 | $ 39,520 |
| ACCESS HUB EQUIPMENT AND SERVICE | | 2 | $ 1,995 | $ 3,990 |
| DELIVERY | | 1 | $ 1,000 | $ 1,000 |
| INSTALLATION | LOCKER SPACE | 7 | $ 375 | $ 2,625 |
| ANNUAL SERVICE AND OPERATIONS AGREEMENT | YEAR | 5 | $ 840 | $ 4,200 |
| | | | SUBTOTAL | $ 51,335 |
| | | | TAX | $ 4,117 |
| 2024 BIKE LOCKER INSTALLATION COST | | | | $ 55,452 |

| TOTAL COST FOR STRATEGY T-1 - TRANSIT STRATEGY | $ 1,352,303 |
|---|---|

General Cost Factors

| | |
|---|---|
| Mobilization, Demobilization, Environmental Protection, Traffic Control | 1.20 |
| Engineering, Design, and Construction Management | 1.20 |
| Inflation | 1.22 |
| Contingency | 1.30 |
| TOTAL - Combined Cost Factor | 2.28 |