



City of Richmond

Bicycle and Pedestrian Action Plan

DRAFT - OCTOBER 2022

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Acknowledgments

to be completed for FINAL VERSION OF THE DOCUMENT

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Glossary

ADA – Americans with Disabilities Act

ATP – Active Transportation Program

BAAQMD – Bay Area Air Quality Management District

BART – Bay Area Rapid Transit

BPAC – Bicycle and Pedestrian Advisory Committee

BPAP – Bicycle and Pedestrian Action Plan

CA HCD – California Department of Housing and Community Development

CA DPR – California

CA OTS – California Office of Traffic Safety

CALTRANS – California Department of Transportation

CBO – Community Based Organization

CCTA CBPP – Contra Costa Transportation Authority Countywide Bicycle and Pedestrian Plan

CCTA – Contra Costa Transportation Authority

CIP – Capital Improvement Project

HSIP – Highway Safety Improvement Program

LRSP – Local Road Safety Plan

MPH – Miles Per Hour

MTC – Metropolitan Transportation Commission

MUTCD – Manual on Uniform Traffic Control Devices

OTS – Office of Traffic Safety

PHB – Pedestrian Hybrid Beacon

RAISE – Rebuilding American Infrastructure with Sustainability and Equity Grant Program

RNCC – Richmond Neighborhood Coordinating Council

RRFB – Rectangular Rapid Flashing Beacon

SRTCP – South Richmond Transportation Connectivity Plan

TIMS – [University of California Berkeley] Transportation Injury Mapping System

USDOT – United States Department of Transportation

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Executive Summary

The 2022 Bicycle and Pedestrian Action Plan (BPAP) provides a set of short-term infrastructure recommendations and actions for the City of Richmond to quickly and effectively improve biking, walking, and rolling (i.e., micromobility device, wheelchairs, etc.). The recommendations recognize that funding and resources will incrementally build upon these improvements over time. The primary goal of this document is to guide Richmond towards a balanced transportation system that is safe, comfortable, accessible, and equitable for people of all ages and abilities. The plan lays out a strategy to develop comprehensive bicycling and walking networks that provide access to transit, schools, parks, trails, the waterfront, and downtown. Project recommendations were developed based on a detailed needs analysis, safety analysis, and community engagement process. This document also provides a strategy to design and construct new infrastructure through prioritization and phasing to ensure implementation is manageable and fundable.

This Plan is designed to work in conjunction with the City's Local Road Safety Plan (LRSP), created in tandem as part of the Travel Safe Richmond initiative. The LRSP identified traffic safety trends and developed



Richmond Residents bicycling along Bay Trail.

systemic recommendations to fund and implement infrastructure countermeasure to help address safety issues. The two plans work together to create unified policies and infrastructure recommendations for improving roadway safety and comfort for roadway users of all ages and abilities.

The chapters included in the BPAP include:

1. An introduction to the plan and process
2. An overview of community engagement
3. Bicycle project recommendations
4. Pedestrian project recommendations
5. Directions for implementation.

A set of appendices were also developed and include an update to the City's bicycle facility design guidelines and a list of available sources of funding to jump-start the implementation progress.

The recommendations included in this plan are designed to provide short-term infrastructure improvements with focus on decreasing the risk of collisions for people walking, biking, rolling, and driving across Richmond. Data on bicycle- and pedestrian-involved collisions provided insight into locations and roadways representing the biggest safety challenges.

Richmond has a rich history of community-driven planning projects (i.e., neighborhood and corridor plans) guiding bicycle and pedestrian planning. This BPAP consolidates and sets those ideas into a prioritized set of feasible, immediate actions. Further, the Plan combines past planning efforts, existing guidance, and documentation to create a set of achievable objectives and projects for the City of Richmond to implement.



Richmond resident walking along the Bay Trail. – Image: City of Richmond.

The Bicycle and Pedestrian Action Plan included a multifaceted community engagement process: The City used multiple engagement methods and partnerships to further the reach and effectiveness of the engagement opportunities. Community engagement included three community workshops; three pop-up events, the development of a project website with an interactive webmap; coordination with the City's Bicycle and Pedestrian Advisory Committee (BPAC); and, numerous meetings with neighborhood councils. The City partnered with [Rich City Rides](#) to lead community engagement with Richmond's

neighborhood councils. Over the project's life, the community provided over 500 interactions (workshop or pop-up attendance and online interactions) with community members and stakeholders.

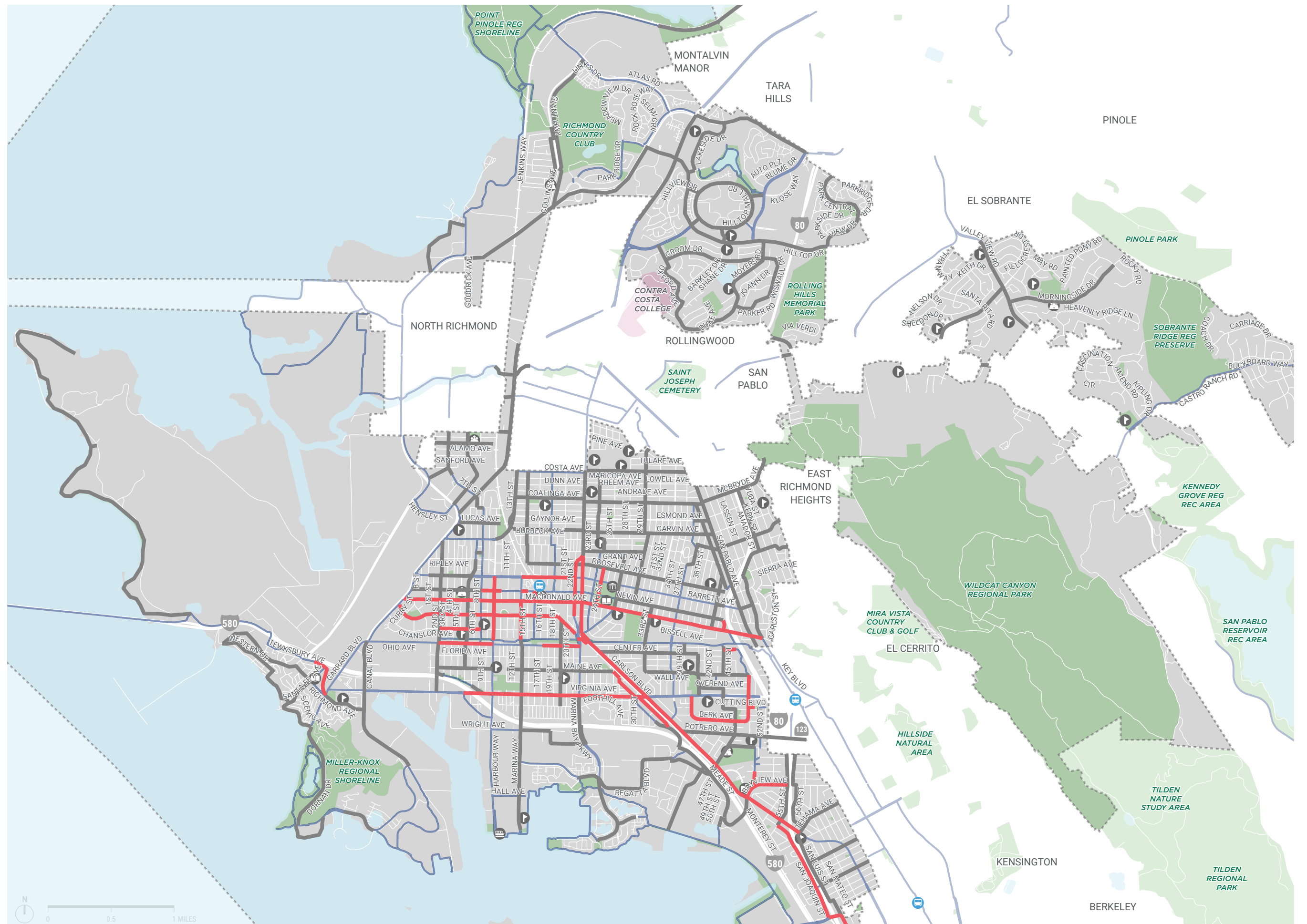
The plan recommends over 84 miles of new or improved bicycle facilities as well as pedestrian spot improvements at 105 locations. Recommendations include projects from other Richmond corridor and specific plans and the recently approved Local Road Safety Plan (LRSP). The recommended improvements directly respond to safety concerns and community feedback.

Four categories drove the recommendation of projects:

- Safety
- Health and Equity
- Connectivity
- Community Support

The plan sets forth 72 high priority projects, 103 medium priority projects, and 105 opportunity projects. These can be found in the tables and figures included in the following pages. The prioritized list of projects is not intended to be a hardened order of projects but rather a guide to support City of Richmond staff in selecting projects that can fill a variety of grants, repaving, or opportunistic situations.

The maps and tables on the following pages summarize the High-priority bicycle and pedestrian projects. These facility improvements have been proposed to help formulate a strategic list to guide project implementation. However, as development occurs or other changes to the City's transportation network take place the framework can be used to reevaluate remaining projects and continue pursuing the plan's implementation. The full prioritization breakdown can be found in **Chapter 5**.

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Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Table 01 High-Priority Bicycle Improvement Projects (corridor).

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE
Carlson Blvd	Richmond Greenway	Broadway	Class I - Shared-Use Path	0.07	81
23rd St Overcrossing	Richmond Greenway	Richmond Greenway	Class I - Shared-Use Path	0.11	80
Central Ave	Jacuzzi St	Pierce St	Class I - Shared-Use Path	0.10	79
16th St	Macdonald Ave	Livingston Ln	Class IV - Separated Bikeway	0.01	77
16th St	Nevin Plaza	Richmond Greenway	Class IIIB - Bicycle Boulevard	0.08	77
Harbour Way	Richmond Greenway	Macdonald Ave	Class II - Bicycle Lane	0.31	77
Macdonald Ave	Harbour Way	16th St	Class III - Bicycle Route	0.32	77
Nevin Ave	Marina Way	15th St	Class IIIB - Bicycle Boulevard	0.05	76
23rd St	Broadway	Brooks Ave	Class II - Bicycle Lane	0.61	75
Espee Ave	Bisell Ave	Trail south of Chanslor Ave	Class IIIB - Bicycle Boulevard	0.19	75
Marina Way	Macdonald Ave	Richmond Greenway	Class II - Bicycle Lane	0.30	75
Pierce St	Central Ave	Cerrito Creek	Class IV - Separated Bikeway	0.23	75
S 49th St	Wall Ave	Cutting Blvd	Class IIIB - Bicycle Boulevard	0.17	75
Carlson Blvd	Bayview Ave	Broadway	Class IV - Separated Bikeway	1.81	73
Barrett Ave	19th St	Marina Way	Class IV - Separated Bikeway	0.21	72
Bayview Ave	Seaport Ave	S 55th St	Class IIB - Buffered Bicycle Lane	0.36	72
Carlson Blvd	Bayview Ave	Tehama Ave	Class IIB - Buffered Bicycle Lane	0.49	72
Ohio Ave	Harbour Way	2nd St	Class IIIB - Bicycle Boulevard	0.42	72
Plaza Way	S 49th St	S 50th St	Class IIIB - Bicycle Boulevard	0.05	72
Barrett Ave	19th St	22nd St	Class II - Bicycle Lane	0.20	71
Harbour Way	Macdonald Ave	Barrett Ave	Class II - Bicycle Lane	0.19	71

Table 01 High-Priority Bicycle Improvement Projects (corridor) (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE
Nevin Ave	8th St	11th St	Class IIIB - Bicycle Boulevard	0.15	70
New Shared-Use Path	S 28th St	S 29th St	Class I - Shared-Use Path	0.07	70
San Joaquin St	Central Ave	Imperial Ave	Class III - Bicycle Route	0.83	69
22nd St	Brooks Ave	Bissell Ave	Class II - Bicycle Lane	0.49	68
Berk Ave - S 49th St	Cutting Blvd	Cutting Blvd	Class IIIB - Bicycle Boulevard	0.78	68
Spring St	S 29th St	Regatta Blvd	Class IIIB - Bicycle Boulevard	0.52	68
Tewksbury Ave	Santa Fe Ave	Washington Ave	Class IV - Separated Bikeway	0.10	68
Chanslor Ave	2nd St	8th St	Class IIIB - Bicycle Boulevard	0.32	67
Cutting Blvd	Hoffman Blvd	Carlson Blvd	Class IV - Separated Bikeway	1.43	67
Macdonald Ave	Richmond Parkway	Harbour Way	Class II - Bicycle Lane	0.70	67
Bissell Ave	Richmond Parkway	Espee Ave	Class IIIB - Bicycle Boulevard	1.29	66
BNSF Easement near Railroad Ave (not acquired yet)	Richmond Ave	Washington Ave	Class I - Shared-Use Path	0.23	66
25th St	Macdonald Ave	Roosevelt Ave	Class IIIB - Bicycle Boulevard	0.30	65
45th St	Nevin Ave	Macdonald Ave	Class IIIB - Bicycle Boulevard	0.08	65
Ells St	Flemino Ave	Bayview Ave	Class IIIB - Bicycle Boulevard	0.11	65
Macdonald Ave	16th St	Key Blvd	Class II - Bicycle Lane	1.80	65
Miraflores Greenbelt - Ohio Connection	S 45th St	Miraflores Greenbelt	Class I - Shared-Use Path	0.10	65
Ohio Ave	17th St	23rd St	Class II - Bicycle Lane	0.30	65

HIGH PRIORITY
PEDESTRIAN SPOT
IMPROVEMENTS

TRAVEL SAFE
RICHMOND

PROPOSED
PEDESTRIAN PROJECTS

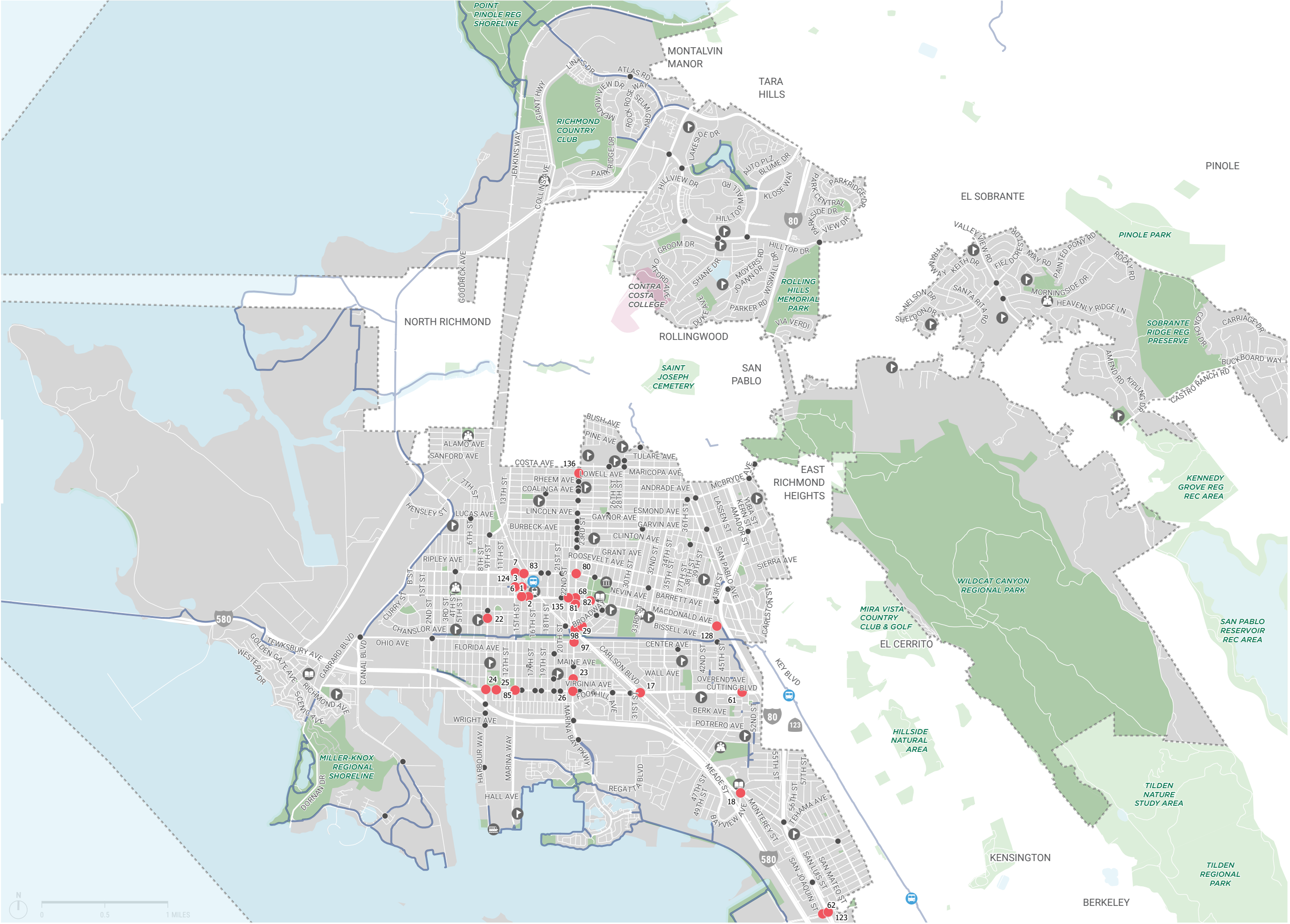
- Prioritization Category
- High Priority Project
 - Medium Priority and Opportunity Projects

EXISTING
PEDESTRIAN PROJECTS

- Class I Shared-Use Path

BOUNDARIES +
DESTINATIONS

- 🚇 BART Station
- 🚆 Amtrak Station
- 🚢 Ferry Terminal
- 🎓 School
- 🏛️ City Hall
- 📖 Library
- 🏠 Community Center
- 🌳 Park
- 🎓 Contra Costa College
- 🗺️ City Boundary



Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Figure ii High-Priority Pedestrian Spot Improvement Projects.

Table 02 High-Priority Pedestrian Spot Improvements

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT TYPE	RECOMMENDATION	PRIORITIZATION SCORE
26	Broadway	23rd St	Intersection Upgrade	Widen, lengthen, and channelize median islands. Restripe crosswalks as high-visibility crosswalks.	81
2	Macdonald Ave	15th St	Crossing Improvement	Consider constructing a raised intersection or raised crosswalk at the eastern approach. Construct curb extensions at all four corners. Install high-visibility crosswalks at the eastern and western approaches on top of decorative paving.	81
31	S 49th St	Cutting Blvd	Lighting	LRSP high-injury intersection,: install intersection lighting.	81
32	San Joaquin St	Central Ave	Intersection Upgrade	LRSP high-injury intersection: construct bulb outs and install advanced warning signs.	81
67	Broadway	24th St	Crossing Improvement	Construct curb extensions at all corners.	80
92	Central Ave	I-80	Crossing Improvement	Coordinate with Caltrans to upgrade all crosswalks to high-visibility crosswalks and provide leading pedestrian intervals for all crossing phases. Extend bicycle conflict markings on Central through the Jacuzzi intersection and interchange. Long term, construct curb extensions to tighten radii and square up approaches.	80
19	Harbour Way	300' north of Chanslor Ave	Crossing Improvement	Install a high-visibility midblock crosswalk with a median refuge island.	80
37	25th St	Macdonald Ave	Crossing Improvement	LRSP high-injury intersection: Upgrade all crosswalks to high-visibility. Consider installing RRFB or PHB. Construct curb extensions at all corners.	79
51	23rd St	Exchange Pl	Crossing Improvement	Construct a median refuge island and install an RRFB for a crossing of 23rd Street. .	78
93	Nevin Ave	Marina Way	Crossing Improvement	Upgrade all crosswalks to high-visibility crosswalks and provide a leading pedestrian interval for call crossing phases. Long term, consider converting the intersection to a raised intersection.	78
66	Ohio Ave	S 23rd St	Crossing Improvement	Construct curb extensions at all corners.	78
15	Carlson Blvd	Bayview Ave	Intersection Upgrade	Install intersection improvements including curb extensions and a median nose.	77
1	Macdonald Ave	16th St	Intersection Upgrade	Consider scramble phase or otherwise don't allow permitted left turns to conflict with pedestrians in the crosswalk. Create LPI. Consider parklet on southwest corner	77
20	S 23rd St	Virginia Ave	Crossing Improvement	Consider installation of a pedestrian refuge island and install pedestrian scale lighting.	77
6	15th St	Nevin Ave	Other	Provide a ramp to allow bicycle access to/from plaza.	76

Table 02 High-Priority Pedestrian Spot Improvements (continued).

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT TYPE	RECOMMENDATION	PRIORITIZATION SCORE
104	22nd St	Macdonald Ave	Crossing Improvement	Install curb extensions at the northwest and northeast corners. Install a pedestrian count display at the southwest corner. When next repaved, reduce the intersection's crown and conform asphalt to the gutter pan.	76
49	23rd St	Barrett Ave	Crossing Improvement	Implement improvement in CCTA CSSA.	76
50	23rd St	Macdonald Ave	Crossing Improvement	Implement improvement in CCTA CSSA.	76
52	Barrett Ave	BART Tracks	Sidewalk	Widen sidewalk on northern side through underpass (Requires road diet).	76
14	Carlson Blvd	Cutting Blvd	Intersection Upgrade	Construct intersection improvements including: formalized curb extensions, widened sidewalk, and additional sidewalks.	76
54	Cutting Blvd	S 12th St	Crossing Improvement	Install high-visibility crosswalks at all approaches.	76
21	Harbour Way	Cutting Blvd	Intersection Upgrade	Install curb extensions, directional ramps and high-visibility crosswalks, and median crossing islands.	76
97	Macdonald Ave	45th St	Crossing Improvement	Upgrade all crosswalks to high-visibility crosswalks and install advance yield markings. Install an RRFB for the Macdonald crosswalks. On the south side of the street, widen the sidewalk and provide a connection to the "Target Path."	76
7	Marina Way	Barrett Ave	Intersection Upgrade	Install a curb extension at the northwest and southwest corners. Provide a leading pedestrian interval and adjust pedestrian phase length to provide sufficient crossing times. Realign the southern crosswalk several feet south and install high-visibility crosswalks at the north and eastern approaches. Consider installing bicycle lane conflict markings and a two-stage bike turn box for NB-WB bike movements.	76
22	Marina Way	Cutting Blvd	Intersection Upgrade	Install curb extensions, directional ramps and high-visibility crosswalks and median crossing islands.	76
3	Nevin Ave	15th St	Crossing Improvement	Consider constructing a median refuge or traffic circle to accommodate direct pedestrian path of travel.	76
23	S 23rd St	Cutting Blvd	Intersection Upgrade	Restripe crosswalks as high-visibility crosswalks. Install curb extensions at all corners with directional ramps. Construct median crossing islands.	76
105	23rd St	Rheem Ave	Crossing Improvement	Upgrade all curb ramps to current best practices; specifically, replace the southwest corner ramp with a "parallel" ramp and "centered" ramps at the two eastern corners. Adjust pedestrian signal heads as needed. Provide a leading pedestrian interval for all crossing phases.	60



Chapter

01

Introduction



Travel Safe Richmond

In 2021 the City embarked in a two-pronged approach to improving safety for all roadway users. Travel Safe Richmond, as the initiative was named, included a Local Roadway Safety Plan (LRSP) and a complementary Bicycle and Pedestrian Action Plan (BPAP). Both components of Travel Safe Richmond work together to create unified policies and infrastructure recommendations for improving roadway safety and comfort for roadway users of all ages and abilities. This chapter describes those efforts and details how the Bicycle and Pedestrian Action Plan was developed.

The BPAP covers: 1) an introduction to the plan and process, 2) an overview of community engagement, 3) bicycle project recommendations, 4) pedestrian project recommendations, and 5) directions for implementation. Additionally, the appendices include an update to the City's bicycle facility design guidelines and a list of available sources of funding to jump-start the implementation progress.

Local Roadway Safety Plan Vision and Goals

Traffic safety impacts the health and comfort of all who live and travel in Richmond. The City of Richmond's Local Roadway Safety Plan (LRSP) identified traffic safety trends and developed systemic recommendations to fund and implement infrastructure countermeasure to help address safety issues. Implementing the LRSP is a step toward making Richmond's transportation network safer and more equitable for all users.

The LRSP's primary goals included:

- Reduce fatal and serious injury collisions
- Ensure equitable traffic safety investments in the neighborhoods that need them most
- Support safe travel for people walking and biking, especially near schools and other high-demand areas
- Encourage safe driving through roadway design and outreach
- Prepare for the future with climate-resilient transportation safety infrastructure
- Improve emergency vehicle response and access

The Richmond City Council adopted the Local Roadway Safety Plan on July 19, 2022. The recommendations from the LRSP have been incorporated into the BPAP's recommendations.



The City of Richmond Local Road Safety Plan, adopted July 2022.

Bicycle and Pedestrian Action Plan

The Bicycle and Pedestrian Action Plan (BPAP) works toward building a balanced transportation system that is safe, comfortable, and accessible for all users with a focus on improving conditions for people walking, biking, and rolling (i.e., on wheelchairs, skateboards, scooters, and other emerging micromobility options). The Plan lays out a strategy to develop comprehensive bicycling and walking networks that provide access to transit, schools, parks, trails, downtown, and other community destinations. As part of this effort, the City developed a set of project recommendations based on thorough needs analysis and community engagement processes. The BPAP serves as the blueprint for improving walking and bicycling conditions in Richmond for the next five years. The document presents a short-term set of actions and projects recognizing that funding and resources will incrementally build upon these improvements over time. The document also provides a plan to ensure implementation is manageable and fundable. Input from City stakeholders and community members played a critical role in the development of this plan.

This BPAP consolidates safety recommendations derived from the LRSP and other past planning efforts including

corridor plans and studies, to provide comprehensive near-term bicycle and pedestrian infrastructure improvements. It is the hope of the City that the proposed improvements will make walking, biking, rolling, transit access, and driving throughout Richmond safer, easier, and more practical. Goals for the Bicycle and Pedestrian Action Plan included:

- Develop a list of near-term (1-5 year) infrastructure projects focusing on bicycle and pedestrian safety and comfort.
- Develop a recommended bicycle and pedestrian networks that build on Richmond's existing assets and focus on closing existing gaps.
- Develop a general set of design guidelines for implementing new or improved bicycle facilities and off-street paths (**Appendix B**).
- Develop an implementation strategy that identifies potential funding opportunities and applies those to each project (**Appendix C**).



Richmond Wellness Trail Wayfinding

Making Streets Safe for All Users

Natural and infrastructure barriers (ex. water features, railroads, highways) can limit connectivity, alter travel behavior, and directly affect modal access. To understand how safely and comfortably residents are able to access important neighborhood destinations using low-stress routes, as well as to understand deficiencies in the network for people biking and walking, the study team completed a demand analysis. The project team then overlaid these high-demand areas with collision

density to better comprehend where safety improvements could benefit the most people. By understanding these deficiencies and barriers, the project team developed recommendations for providing safe and convenient access to community destinations and activity centers, both vital elements to the physical and mental well-being of community members.

The project team also embarked on an analysis of collision data to understand where and how collisions were happening throughout the City. Using available data from the University of California Berkeley

Transportation Injury Mapping System (TIMS) for the antecedent five years (2015-2019), the project team identified where bicycle or pedestrian collisions occurred in Richmond. Several corridors exhibited a high concentration of pedestrian/bicycle-involved collisions. The LRSP identified corridors with elevated collision levels and grouped them to create a multimodal high-injury network, shown in **Figure 1**.

Past Efforts Focused on Making City Streets Safer

Over the past several years, the City has developed numerous citywide plans that set safety-focused policies and goals. Richmond has also advanced corridor plans that include multimodal access and safety recommendations for specific corridors, as well as area plans that prioritize improvements across broader regions. The Contra Costa Transportation Authority (CCTA) has also developed and begun implementing countywide plans that support the City of Richmond's efforts and work towards unified regional connectivity at the county level. In general, many of the documents reviewed for the development of this plan emphasize the need for a transportation system that supports safe, comfortable, and equitable transportation networks for vulnerable users (e.g., people walking, biking, and rolling – especially youth, seniors, and those with limited physical mobility or limited mobility options).



A Richmond resident biking through a protected intersection on Central Avenue.

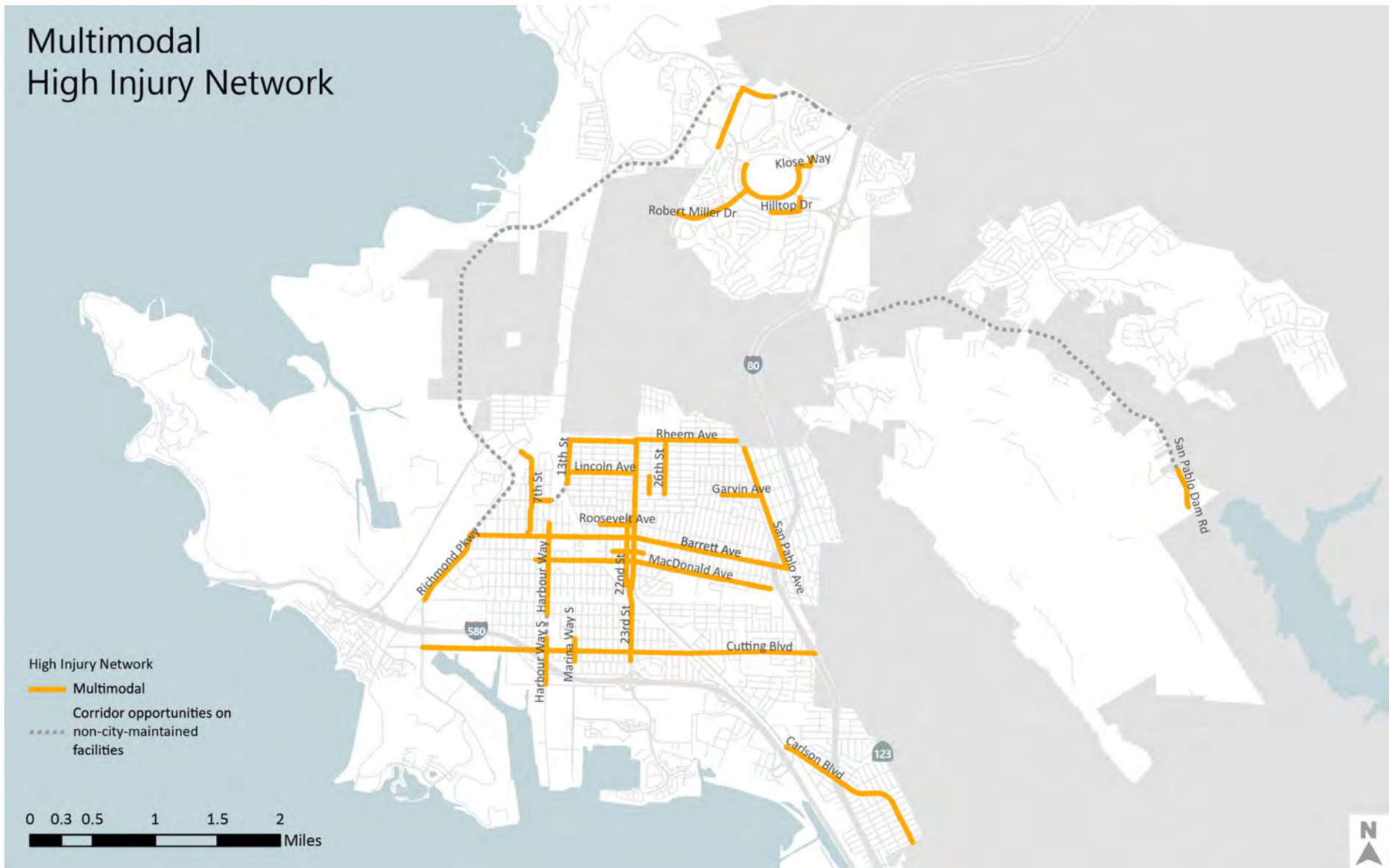


Figure 01 Multimodal High Injury Network (LRSP)

Major themes throughout the documents reviewed included:

- Need for improving safety and comfort of all users
- Need for improving connectivity and access to multimodal transportation networks under a more equitable approach
- Need to enhance connectivity to neighboring jurisdictions
- Need to standardize implementation of Active Transportation facilities and networks
- Need to improve quality of life by focusing on improving health (personal, environmental, and economic)
- Commitment to encourage and promote walking and bicycling as viable modes of transportation

The recommendations included in this document consider these key themes and the previous infrastructure recommendations made in the plans reviewed. Additional information about the plans reviewed can be found in **Appendix A**.

Health and Equity

Historically disadvantaged and vulnerable populations may rely more on walking and bicycling to meet daily needs. Safe, healthy, affordable, and convenient transportation options are not always available to the disadvantaged populations that need them most. These low-income and unserved communities have historically been left out of past conversations about transportation and planning, leading to systemic underinvestment and conditions where pedestrians and bicyclists are over-represented in collisions. A lack of high-quality walking, biking, and transit infrastructure can result in long, unhealthy, unaffordable, and riskier (people bicycling and walking are overrepresented in collisions) travel for some of Richmond's most vulnerable populations.

Uneven distribution of active transportation infrastructure also results in health, safety, mobility, and economic benefits accruing to those who are more socio-economically fortunate while increasing hardships for Richmond's most vulnerable and disadvantaged populations.

By prioritizing active transportation infrastructure for these disadvantaged

populations, more Richmond residents will be able to physically and fiscally navigate the City they call home. With this in mind, the City embarked on an analysis of equity and health deficiencies based on available data.

Why Did We Complete This Analysis?

Research indicates that communities with higher health risk factors tend to have less access to roadway infrastructure that promotes walking and biking.¹ Walking, bicycling, and other forms of physical activity benefit community members' physical and mental health. Increasing physical activity can help people reduce their risk of coronary heart disease, stroke, diabetes, and other chronic diseases. That can also lower health care costs and improve the quality of life for people of all ages, particularly children and seniors with more limited mobility options. By prioritizing active transportation infrastructure for these populations, the City can help improve safety, and residents can reduce their transportation costs and healthcare burden. **Figure 2** shows the weighted variables that compose the equity and health index analysis.

To understand which neighborhoods experience the highest rate of health-

1. Mahmoudi, J. "Health impacts of nonmotorized travel behavior and the built environment: Evidence from the 2017 National Household Travel Survey." (2022). *Journal of Transport & Health*, 26. Maizlish, N. "Increasing walking, cycling, and transit: Improving Californians' health, saving costs, and reducing greenhouse gases." (2016). California Department of Public Health: Office of Health Equity.

How Do We Compile the Index?

Eight variables relating different dimensions of health and equity are aggregated to census block group geographies and are then compiled into a composite index.



Figure 02 Health and Equity Analysis Process

related issues, the project team completed a multi-variate health analysis. This analysis included four variables:

- Life expectancy
- High blood pressure
- Heart disease
- Diabetes

These four variables were combined into an index to provide a holistic understanding areas of the City experiencing the highest impacts of health related issues. As shown in **Figure 3**, the areas with the highest health burdens include the central core, including the Richmore Village, Pullman, Santa Fe, and Coronado neighborhoods, and the southern portion of the City between I-80 and I-580 including the Parkview, Southwest Annex neighborhoods. Other areas of the City disproportionately impacted by health burdens include the Fairmede/Hilltop, Hilltop Green, and May Valley neighborhoods.

To complement the health multivariate analysis, the project team completed a socio-economic analysis or equity index. This analysis used the following statistics to understand where the highest concentration of socio-economically burdened residents is within the City:

- Low-income households
- Population over age 75
- Rent-burdened population
- Zero-vehicle households

The indexed analysis is noted in **Figure 4**.

The areas of Richmond with the highest equity needs include the central part of the City between Cutting Boulevard and Macdonald Avenue and the Iron Triangle area. The combined health and equity index indicates the communities with the greatest needs include the North and East, Richmore Village, Park Plaza, Coronado, Park Plaza, and Cortez/Stege neighborhoods.

Figure 5 shows the combined health and equity index scores for the entire City.

How Did We Use These Analyses?

The recommendations put forth in this plan were informed by the health and equity analyses and reflect where the most need in the community is. The results of these analyses were integral to the prioritization and ranking for proposed projects for improving the bicycle and pedestrian networks in the City. Health and equity scores comprised 25% of the cumulative Quantitative Corridor Score which drove project prioritization (see **Chapter 5** for details). Following score calculations, improvements were sorted into high, medium, and low priority categories based on the distribution of scores. These data can inform quick, effective changes Richmond can more readily implement to make tangible differences in the community.

HEALTH INDEX

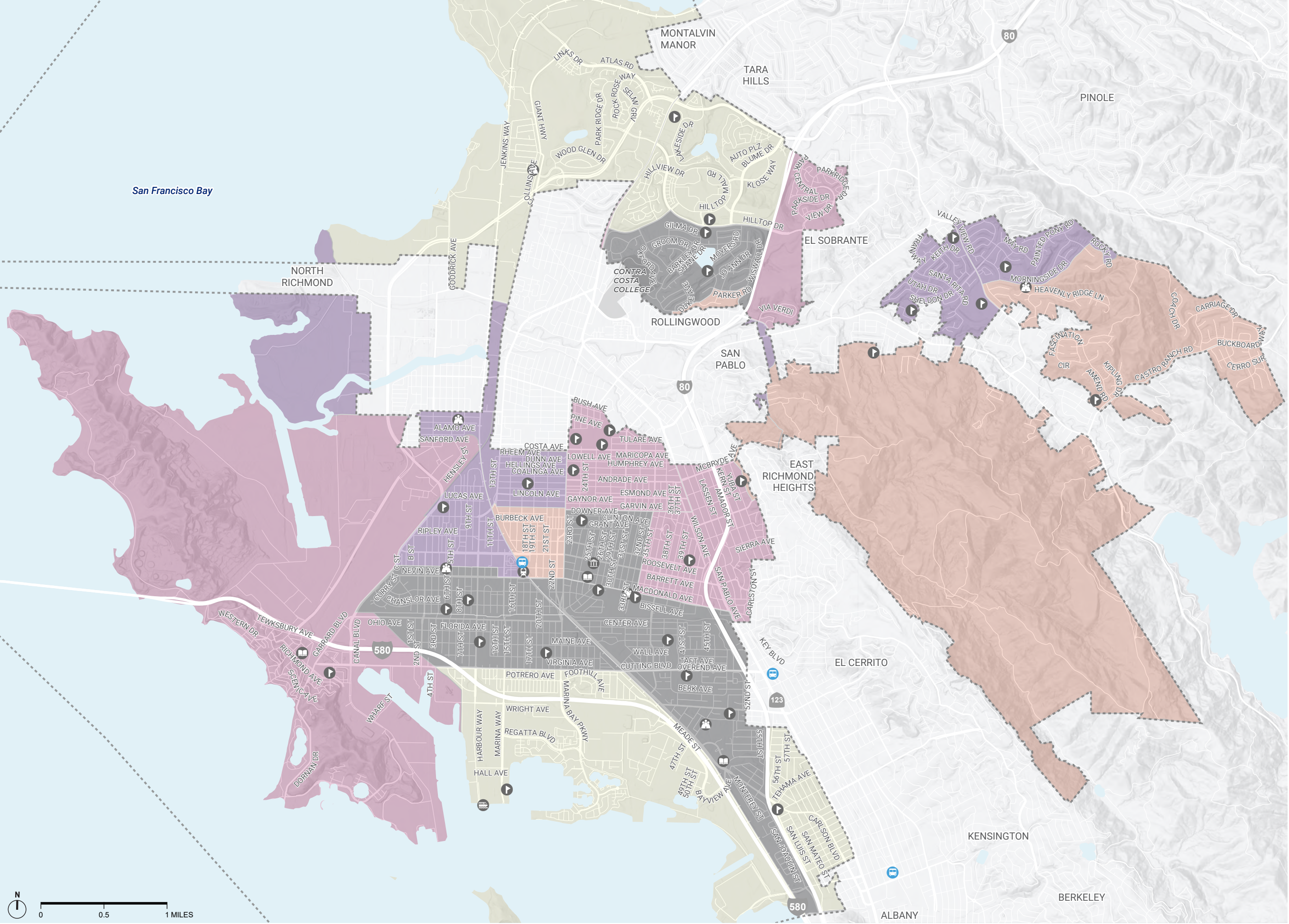
TRAVEL SAFE
RICHMOND

HEALTH INDEX

- Top Quintile (Highest Need)
- Second Highest Quintile
- Middle Quintile
- Second Lowest Quintile
- Lowest Quintile (Lowest Need)

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Contra Costa College
- City Boundary



Sources: City of Richmond, MTC, Caltrans, Ecopia, and Contra Costa County. Document: N:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 11/23/2021



Figure 03 Health Index Score Map

EQUITY INDEX

TRAVEL SAFE
RICHMOND

EQUITY INDEX

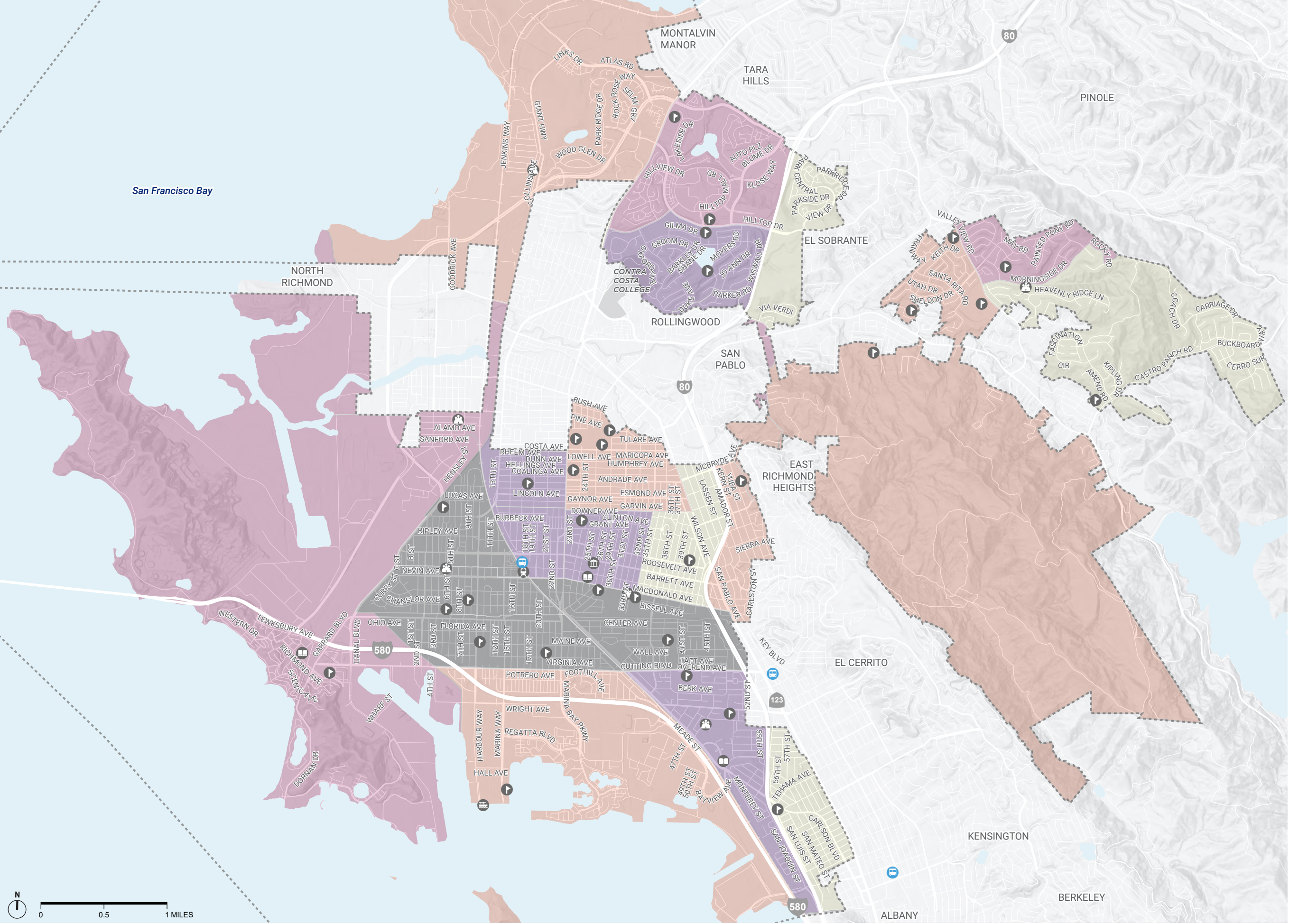
- Top Quintile (Highest Need)
- Second Highest Quintile
- Middle Quintile
- Second Lowest Quintile
- Lowest Quintile (Lowest Need)

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Contra Costa College
- City Boundary



Figure 04 Equity Index Score Map



Sources: City of Richmond, MTC, Caltrans, Ecopia, and Contra Costa County. Document: N:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 11/23/2021

HEALTH + EQUITY INDEX

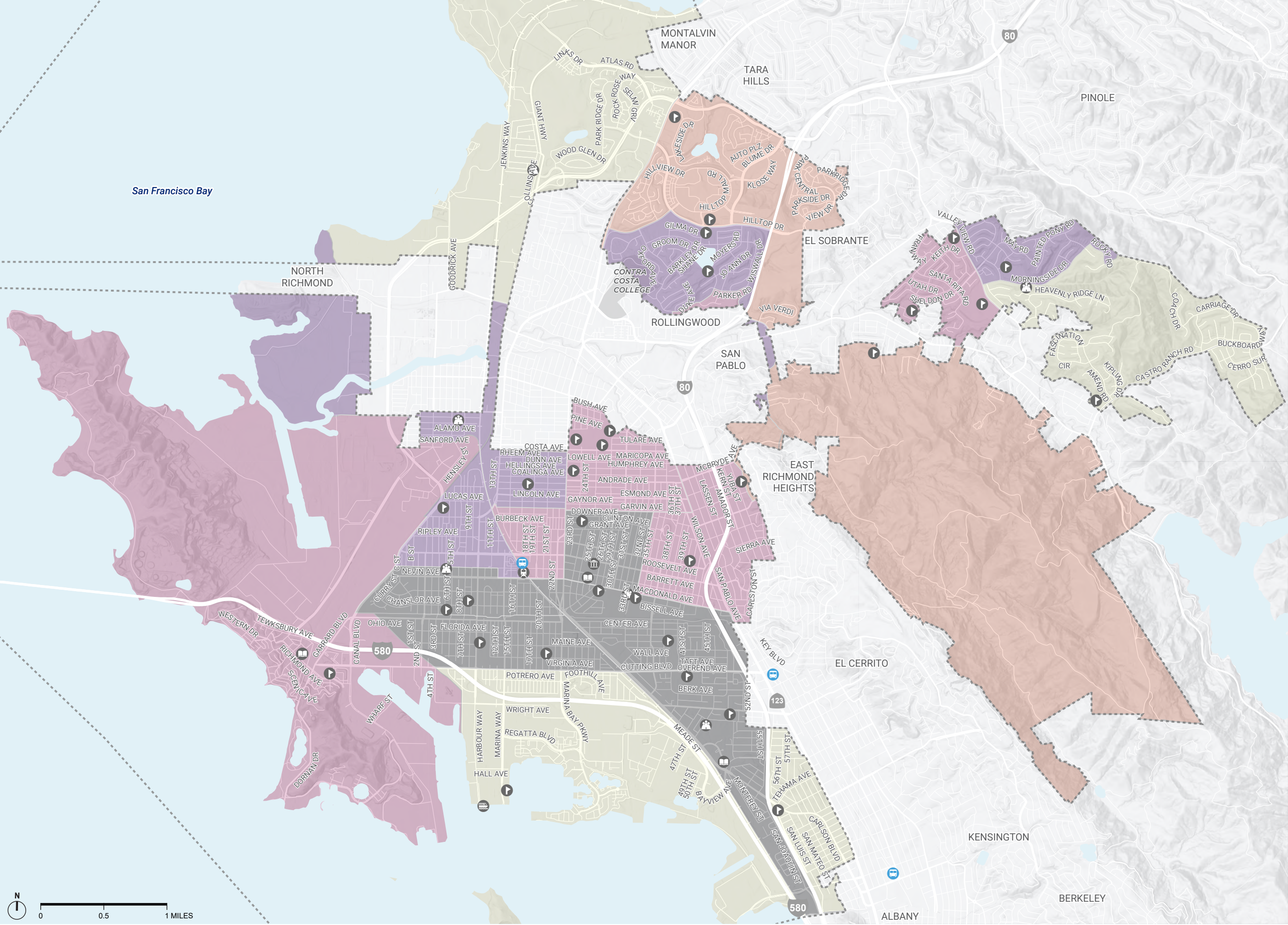
TRAVEL SAFE RICHMOND

HEALTH + EQUITY INDEX

- Top Quintile (Highest Need)
- Second Highest Quintile
- Middle Quintile
- Second Lowest Quintile
- Lowest Quintile (Lowest Need)

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Contra Costa College
- City Boundary



Sources: City of Richmond, MTC, Caltrans, Ecopia, and Contra Costa County. Document: N:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 11/23/2021



Figure 05 Health and Equity Combined Index Map

Chapter

02

Community Engagement



Community Engagement

Overview

The Bicycle and Pedestrian Action Plan included a multifaceted community engagement process which included multiple engagement methods and partnerships to further the reach and effectiveness of the engagement events. Community engagement included three community workshops, three pop-up events, a project website with an interactive webmap, coordination with the City's Bicycle and Pedestrian Advisory Committee (BPAC), and twelve meetings with neighborhood councils. Richmond partnered with Rich City Rides, a local non-profit focused on creating opportunities to improve health and economics in the City by promoting cycling as a social, sustainable and green mode of transportation. Rich City Rides helped lead community engagement with the City's neighborhood councils. The Plan's engagement process lasted the entire length of Plan development from November 2021 to November 2022. The project team led community engagement in three phases:

1. Existing conditions
2. Project recommendations
3. Draft BPAP



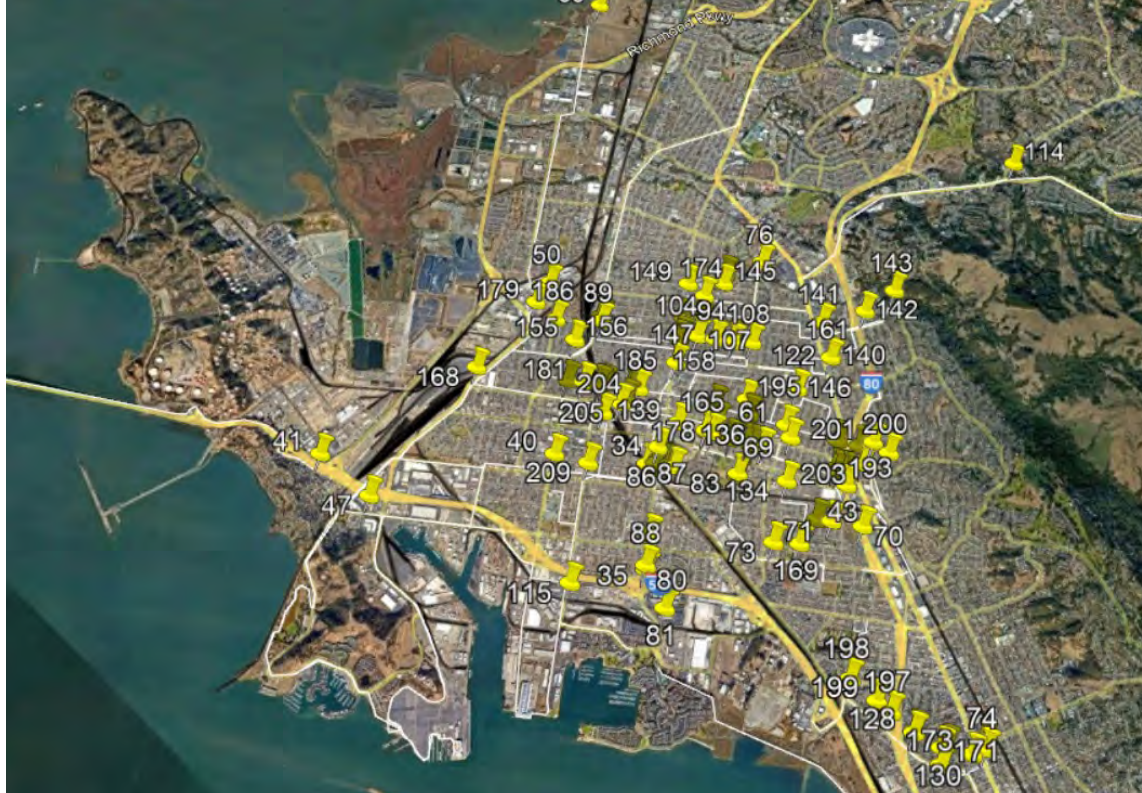
The Travel Safe Richmond website homepage.

During the existing conditions phase, community members provided comments on walking, bicycling, rolling, and any transportation safety issues within Richmond. The project team used the feedback and information gathered from this phase to help inform the recommendations included in the LRSP and BPAP.

The second engagement phase enabled community members to provide input on draft walking and bicycling recommendations included in this plan. Recommendations were revised based on comments received in this engagement phase.

The third engagement phase presented revised project recommendations and the draft Bicycle and Pedestrian Action Plan. Changes were incorporated into the final draft Plan before presentation to the BPAC and City Council.

Details on individual events and activities are provided below. Overarching lessons and themes from the community engagement process are detailed in the subsequent section.



This Map shows the locations of community member comments on the phase one interactive webmap.

Community Engagement Activities

Phase 1: Existing Condition (Fall 2021–Winter 2021-22)

Project Website and Interactive Webmap

As previously noted, the City promoted community engagement for the LRSP and BPAP projects under the unified Travel Safe Richmond project. The project website, TravelSafeRichmond.org, provided an overview of both planning projects and their shared goals. The website promoted events for both initiatives. The website launched in September 2021 and remained active throughout the project's life through the end of 2022. The website also included an interactive webmap requesting input from community members on where and how they bike. The webmap allowed community members to provide location-specific comments on existing walking and bicycling facilities and other locations throughout Richmond where they had safety, access, or connectivity feedback. During the first engagement phase,

users provided 209 comments on the webmap, as well as 240 likes/dislikes from fellow community members. Over 1,100 community members visited the website in Phase 1.

BPAC Meetings

Throughout the development of the BPAP, City staff provided regular updates on the progress of the Plan and coordinated feedback between the BPAC and the Plan team. In addition to periodic updates, the project team presented to the Committee during their January 2022 meeting. The team presented the health and equity analysis and shared feedback heard at the first community workshop.

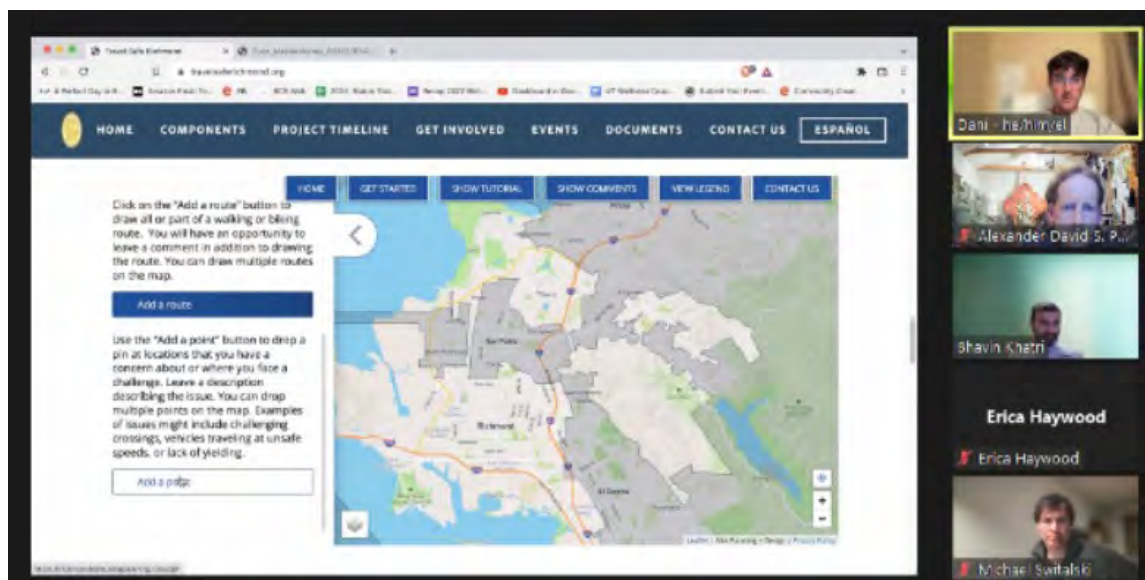
Neighborhood Council Meetings

Rich City Rides was brought on as a member of the project's community engagement team to help support the City's efforts to deepen community engagement. Leveraging their deep ties to the Richmond community and other local organizations, Rich City Rides led the coordination and engagement with 12 neighborhood councils.

During Phase 1 of public engagement, Rich City Rides met with five neighborhood councils. Rich City Rides met with the following groups:

- Laurel Park Neighborhood Council
- Santa Fe Neighborhood Council
- Park Plaza Neighborhood Council
- Coronado Neighborhood Council
- Hilltop Neighborhood Council

These meetings promoted awareness of the project and encouraged community members to visit the project website to leave their comments on the webmap or contact form.



Rich City Rides conducting a demonstration of the interactive webmap for the Hilltop Neighborhood Council in April 2022



Dani Lanis from Rich City Rides presenting to Coronado Neighborhood Council in April 2022.

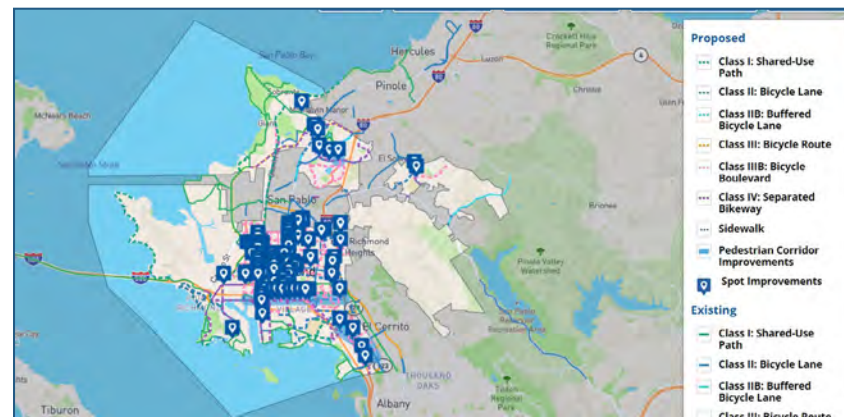
Phase 2: Project Recommendations (Winter 2021/22–Summer 2022)

Project Website and Interactive Webmap

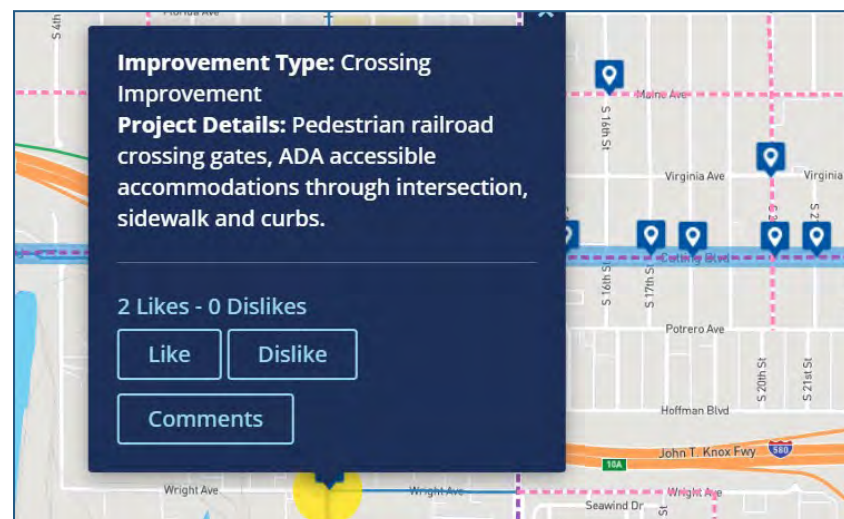
Following the development of draft recommended improvements, the project team updated the website to show draft pedestrian and bicycle recommendations. Community members and local stakeholders were asked to comment on, like, or dislike draft project recommendations. Interactive map users were also asked to indicate additional locations for the project team to consider for improvements to the existing bicycle and pedestrian networks. In phase two, project recommendations were liked and disliked 171 times and were commented on 20 times. Thirty-five additional comments for additional projects were left on the webmap by the community. Over 600 people visited the website in Phase 2.

BPAC Meetings

City staff continued to provide regular updates to the Bicycle and Pedestrian Advisory Committee (BPAC) on the BPAP and LRSP projects throughout this engagement phase. During the BPAC's April 2022 meeting, the project team presented draft project recommendations and requested feedback from the committee on ways to improve/enhance the proposed improvements. The project team was also available to answer any questions by members of the BPAC on the recommended network. The City used feedback received from BPAC members to enhance the proposed improvements.



The interactive webmap with draft project recommendations. The map shows bicycle lanes (colored lines) and spot improvements (blue points).



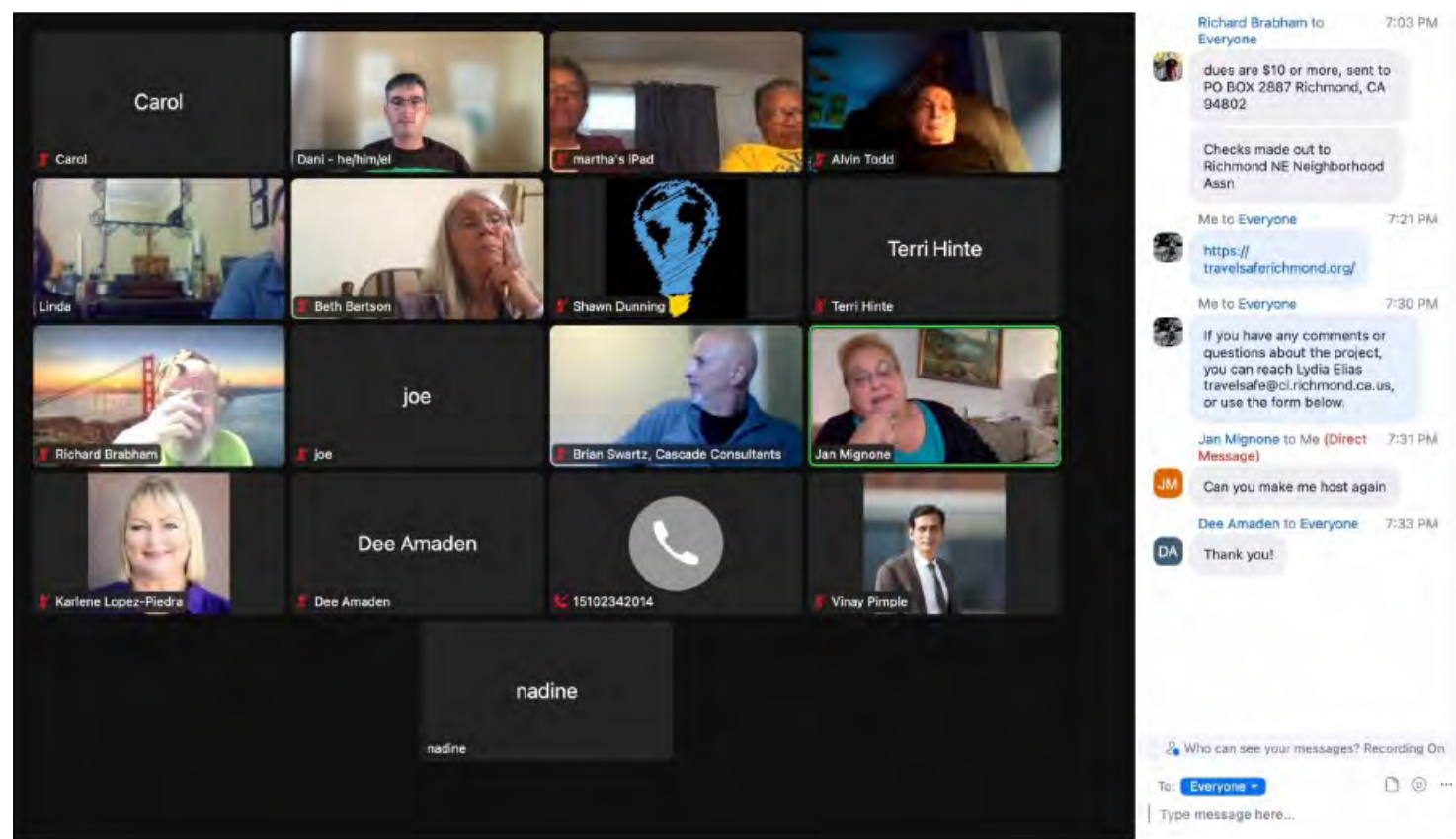
This spot recommendation on Harbour Way has two likes from community members.

Neighborhood Council Meetings

Rich City Rides continued to meet with neighborhood councils in Phase Two of the engagement portion of the project. These meetings continued to raise awareness of the project and focused on soliciting feedback on draft project recommendations through the interactive webmap. As Rich City Rides could not meet with every Neighborhood Council, the project team prioritized meeting with the Richmond

Neighborhood Coordinating Council (RNCC) as an opportunity to help spread the word about Travel Safe Richmond to every council. Rich City Rides met with the following Neighborhood Councils during Phase 2:

- Richmond Neighborhood Coordinating Council
- North and East Neighborhood Council



Rich City Rides presenting to the North and East Neighborhood Council in May 2022.

Pop-Up Events

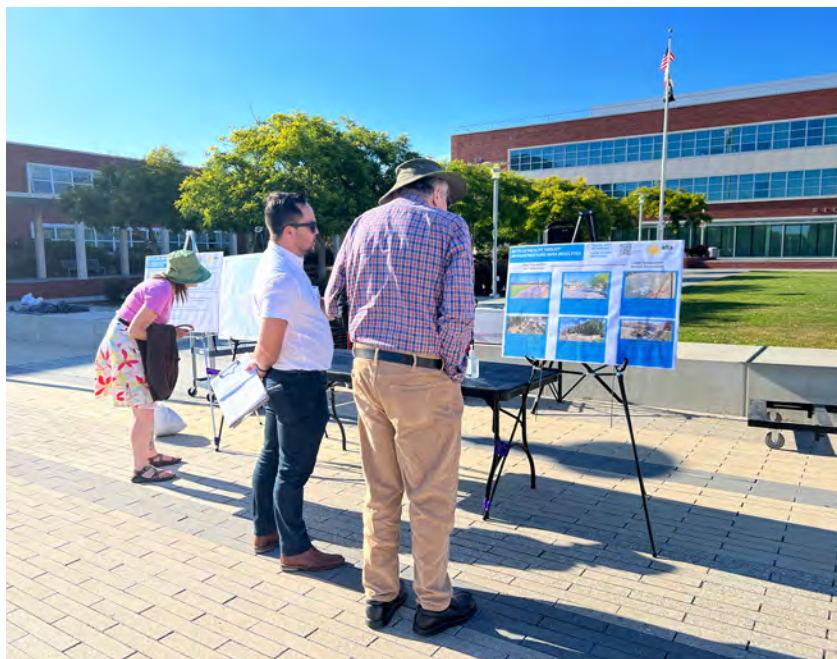
The BPAP was promoted at two pop-up events during engagement phase two. The pop-up events were:

- 23rd Street Bridge Project, April 2022 (Design charette).
- Unity Park Earth Day Event, April 2022 (Shared event with RichCityRides)

The Earth Day event also included large plotted maps with project recommendations and informational boards that community members could comment on.

Community Workshop

On the evening of Wednesday, May 18, 2022, the City hosted an in-person, outdoor community workshop at Richmond Civic Center Plaza. The workshop was hosted in the central plaza and was organized around several stations. Stations included welcome/check-in, bicycle recommendations, pedestrian recommendations, project prioritization, and the LRSP. Attendees reviewed informational boards and other project materials and provided comments on project recommendations, proposed project prioritization, and the draft LRSP. Ten community members attended the workshop, and provided over 30 comments.



Workshop attendees provided feedback on draft pedestrian recommendations at the May 2022 outdoor workshop.

Phase 3: Draft Plan–Fall-Winter 2022 (UPCOMING)

The City is currently conducting the final phase of public outreach which will include updates to the website including an online interactive comment tool, five additional neighborhood council meetings, and a virtual community workshop.

What We Heard

Across all community engagement phases and events, comments and feedback from community members generally fell into four categories:

- Safety
- Connectivity
- Safe routes to school
- Maintenance

A summary of the feedback for each theme is provided below:

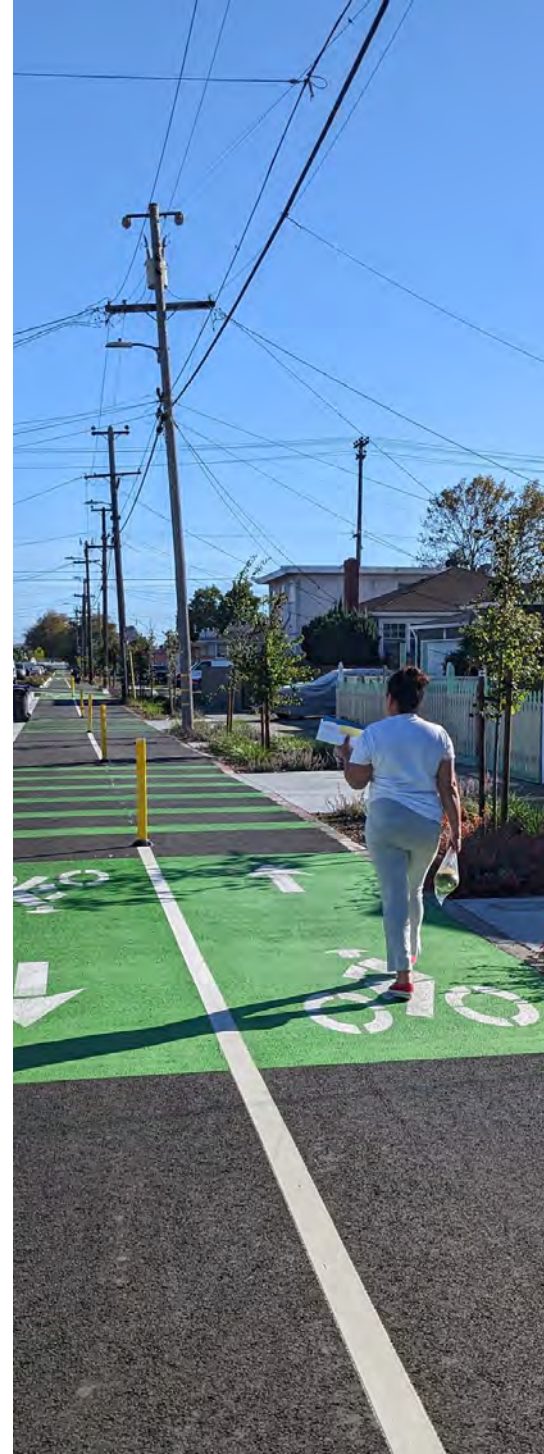
Safety

- Reducing the speed of vehicular traffic across the City.
- Implementing traffic calming on residential streets would improve safety for all, especially for people walking, biking, and rolling.
- Highway interchanges represent a significant safety and connectivity barrier.

- Routes to community destinations like parks and schools need to be safe for people of all ages and abilities
- Street lighting needs to be improved across the City.
 - » Improved lighting can improve both traffic safety and perceptions of personal safety.
 - » Improved lighting can also benefit trails and trail users.
- Reducing the likeliness of multi-threat collisions (i.e., crossing multilane roads at uncontrolled locations) will significantly improve the safety and comfort of people crossing large arterial or collector streets.

Connectivity

- Richmond residents believe the City feels disconnected, and there is a lack of comfortable north-south routes to cross the City.
- Major arterial streets and freeways (ex., San Pablo Avenue, Carlson Boulevard, Giant Highway, I-580, I-80) act as barriers and limit connections across them.
- Community members want safer, more comfortable, and easier access to local community-serving destinations, including parks, schools, libraries, the waterfront/trails, and transit like BART.



City resident walking along Wellness Trail



Richmond Wellness Trail

Safe Routes to Schools

- Improving walking, rolling, and bicycling access to schools should be a priority.
- Coordination with school stakeholders, parents, and staff to provide a more holistic approach to safe routes to schools should be a focus.

Maintenance

- Sidewalks should be kept clean and repaired when needed.
- Trails and walking paths should be kept clear of debris and obstructions.
- Trails should be kept clear of dumping sites.

Corridors and Intersections

In addition to these four themes, community members provided comments and suggestions for improvements along and across roads in Richmond. Across all engagement methods, community members consistently nominated several corridors and intersections for safety improvements. Those corridors included:

- 23rd Street
- Barrett Avenue
- Carlson Boulevard
- Cutting Boulevard
- Macdonald Avenue
- Richmond Wellness Trail
- San Pablo Avenue

The most frequently noted intersections by the community were:

- 23rd Street/Carlson Boulevard/Broadway
- 23rd Street/Garvin Avenue
- Richmond Greenway Gap Closure
- I-580/Marina Bay Parkway



Chapter

03

Bicycle Recommendations



Bicycle Recommendations

Richmond's proposed network provides increased connectivity between destinations through low-stress facilities that are comfortable for all ages and abilities. The proposed improvements include shared-use paths (Class I), bicycle lanes (Class II) and buffered bike lanes (Class IIB), bicycle routes (Class III), bicycle boulevards (Class IIIB) and separated bikeways (Class IV). The proposed network focuses on providing increased connectivity and safety with particular attention to areas surrounding schools, key community destinations and increased connectivity to BART and other regional destinations.

Based on the needs, opportunities, and challenges identified through the existing conditions analysis, the project team developed recommendations through an iterative process with both City staff, local stakeholders, and the community. This chapter describes recommended bicycle projects and provides informational toolkits describing the recommended infrastructure. The proposed improvements included in this plan serve as a foundation to create successful, well-used, and safe spaces for people bike and roll.

The recommendations in this chapter are for planning purposes only. Recommendations may be altered depending on opportunities, constraints, and/or roadway changes. Feasibility determination, final design, accessibility, funding, and implementation of any recommended improvements is the responsibility of the appropriate governing agency.

Bicycle Facility Toolkit

This toolkit includes brief descriptions of recommended facility types within the Travel Safe Richmond Bicycle and Pedestrian Action Plan. The treatments offered herein offer a range of options stemming from current best practices and established guidance at the state and national levels. This toolkit intends to serve as a flexible menu of options for developing and refining project recommendations. For more detailed information and specific design guidance, see the Design Guidelines technical document in **Appendix B**.



A shared-use path (trail) that is part of the Bay Trail.

Class I – Shared-use Path

Dedicated paths for walking and bicycling that are completely separated from the roadway.



A bike lane on 37th Street.

Class II – Bicycle Lane

Striped lanes for bicyclists located against the curb or next to a parking lane.



Buffered bike lane on 37th Street.

Class IIB – Buffered Bicycle Lane

Bicycle lanes with a striped “buffer” area either between the bicycle lane and the travel lane or between the bicycle lane and parked cars (sometimes in both places).



Bicycle route markings on Key Boulevard.

Class III – Bicycle Route

Signed routes for bicyclists where lanes are shared with motorists. Streets are designated as bike routes because they are suitable for sharing with motor vehicles and/or provide better (or needed) connectivity than other streets. Routes are marked with signs and/or shared lane bicycle pavement markings (also known as “sharrows”) to alert motorists to expect to share this roadway with bicyclists. The placement of the sharrow marking delineates the position in the lane where bicyclists are expected to be so they are clear of car door zones and other potential conflict areas.



Bicycle boulevard pavement markings on Nevin Avenue.

Class IIIB – Bicycle Boulevard

Bicycle routes on low-speed, low-volume streets that are further enhanced with traffic calming features or other treatments to prioritize bicyclist comfort. Slowing vehicles down and improving intersection safety also makes walking and rolling on these streets a more comfortable and enjoyable experience.

Bicycle Boulevard Toolkit

Unlike other classifications of bicycle facilities, bicycle boulevards are unique in that there are no specific standards or treatments. Bicycle boulevards can be implemented in various ways to achieve streets where bicycle travel is more comfortable sharing with cars. There are three primary categories of improvements:

- Signs and pavement markings
- Vehicle speed management
- Vehicle volume reduction

Individual projects will be analyzed to determine the treatments that best reflect the solutions that will bring about the highest increase in bicyclist comfort and safety while respecting and coordinating with the needs and desires of nearby residents and stakeholders. Treatments will vary from simple signage and striping only to more advanced intersection redesigns. This plan does not provide specific infrastructure treatment recommendations for the individual bicycle boulevard recommendations.

Additional details on the three treatment categories previously mentioned can be found in the following pages.



Bicycle Boulevard pavement markings on Nevin Avenue.

Signs and Pavement Markings

Pavement Markings

Bicycle boulevards can have unique “BIKE BLVD” pavement markings to reinforce that the street is a shared space for bicycles and vehicles. These pavement markings can also include high-visibility green backing to increase driver visibility and awareness further.

Wayfinding Signs

Wayfinding is an essential component of the overall bicycle network (discussed in a subsequent section) but plays an even more significant role on bicycle boulevards. Bicycle boulevards can weave through neighborhoods, increasing the importance of the signs to help users complete their trips on the network. Wayfinding can also raise awareness of the presence of the bicycle boulevard, potentially generating new users.

Vehicle Speed Management

Reduce Speed Limit

In some areas, especially around schools, reducing the speed limit below 25 MPH may be a helpful strategy in slowing cars and making bicyclists and pedestrians more comfortable in the corridor.

Neighborhood Traffic Circle

Neighborhood traffic circles are an alternative intersection treatment to a signal or stop sign, and traffic circles can regulate traffic flow while adding a calming element.

Curb Extensions

These improvements extend the curb into the street and improve visibility at intersections, slow vehicular turning speeds, and providing additional, consolidated queueing space. When implemented on streets with bicycle facilities, they should be designed with slot to accommodate the bicycle lane.

Chicanes

Chicanes add gentle curves to otherwise straight streets. Adding curves to the road can slow car traffic by narrowing the travel lane and force drivers to slow down going around corners. The lane adjustments can be created with striping or offset curb extensions/landscaping.



A painted curb extension with separated space for bicyclists next to lake Merritt BART.



A chicane on a Berkeley bicycle boulevard.



Bicycle boulevard wayfinding signs on the 18th Street and 19th Street bike boulevards.

Pinch Points

A pinch point narrows available roadway width with two curb extensions. Limiting the available width creates a narrow road environment where drivers drive slower. Installing trees in these areas can further narrow the profile of the road.

Speed Bumps/Speed Humps/Speed Cushions

Speed bumps (and similar devices) are undulations that span the width of the roadway and encourage cars to slow down. Speed bumps can be designed with slots for emergency vehicles to use.

Vehicle Volume Reduction

Partial street closures, diagonal diverters, and median diverters are variations of ways to partially close off streets to vehicles while maintaining pedestrian and bicycle access. These can be useful for forcing drivers to stay on arterial and collector streets, reducing cut-through traffic.

Class IV Separated Bikeways

On-street bicycle facilities with a physical vertical barrier between the bicycle space and motor vehicle lanes, including bollards, curbs, or parking.



A partial pinch point on Nevin Ave near City Hall.



A diagonal diverter at Virginia/15th Street.



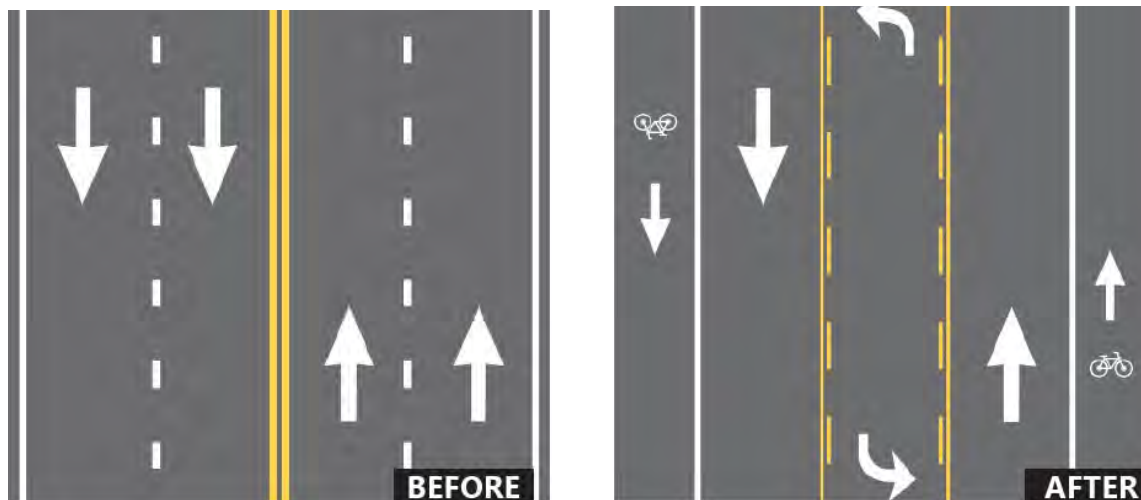
A two-way separated bikeway on Ohio Avenue.

Road Diets

A road diet is generally described as a reconfiguration of travel lanes to utilizing the space for other uses and travel modes. This usually requires the removal of a travel lane which allows the roadway cross section to be reallocated for other uses such as bike lanes, pedestrian refuge islands, transit uses, and/or parking. These roadway reconfigurations offer many high-level benefits including enhanced safety, mobility, and access for all road users, and create a complete streets environment along the corridor. These benefits include:²

- Crash reduction rates between 19-47%
- Reduced vehicle speeds
- Improved mobility and access for all road users
- Better integration of the roadway into surrounding land uses

Conflicts between high-speed through traffic, left-turning vehicles, and other road users that are more prevalent on traditional multilane roadways can lead to relatively higher crash frequencies compared to roadways that have been reconfigured. These reconfigurations allow cities to integrate additional pedestrian and bicycle facilities along these corridors.



An example of a typical 3-to-4 lane conversion road diet. Image: FHWA.

Right-sizing roads with excess space, can create a solution that addresses safety concerns and benefits for all road users. These reconfigurations can also be cost-effective when combined with already planned roadway reconstruction or overlay (repaving and restriping) projects. Changing a road's configuration can sometimes impact neighboring streets. During the design phase of a road diet project, project elements can be added to reduce and mitigate impacts on neighboring streets to reduce and control cut-through and other diverted traffic.

Several recommended improvements included in this Plan will require some form of lane reconfiguration due to existing roadway and environmental constraints. Please note implementation of any road diets will require additional engineering study and community engagement before moving forward. Impacts to local traffic patterns should also be assessed when considering these roadway reconfigurations.

2. Evaluation of Lane Reduction "Road Diet" Measures on Crashes, FHWA-HRT-10-053, (2010).

Recommended Improvements

This plan recommends over 80 miles of new or upgraded bicycle facilities across Richmond, building on the existing 114.1-mile network. **Table 3** provides an overview of existing and recommended bicycle facilities by bikeway classification, and **Table 4** (page 34) lists individual projects. Recommendations are shown in **Figures 6-8** on the following pages.

These improvements focus on closing existing gaps in the City of Richmond's network; providing key access to local and regional community destinations (schools, parks, transit, etc.); and improving the health,

equity, and safety of Richmond. A clear pattern emerged around certain hubs of activity, and this plan strives to make those getting to those destinations safer, more accessible, and more comfortable for people of varying ages and abilities.

Multiple factors were considering in the development of recommended bicycle improvements for a specific corridor. Some of these factors, presence of schools and collision history for example, were considered when recommending facilities that provide increased modal separation and traffic calming. Other factors like

traffic volumes and roadway widths which negatively impact people bicycling, were also considered. Based on an examination of these factors, many of the recommended improvements include Class IIB bicycle boulevards and Class IV separated bikeways. While sometimes more challenging to implement, these two bikeway types provide the greatest comfort and safety benefits for people biking. These recommendations create a connected lower-stress network with facilities that serve people of all ages and abilities.

Table 03 Existing and Proposed Bikeways

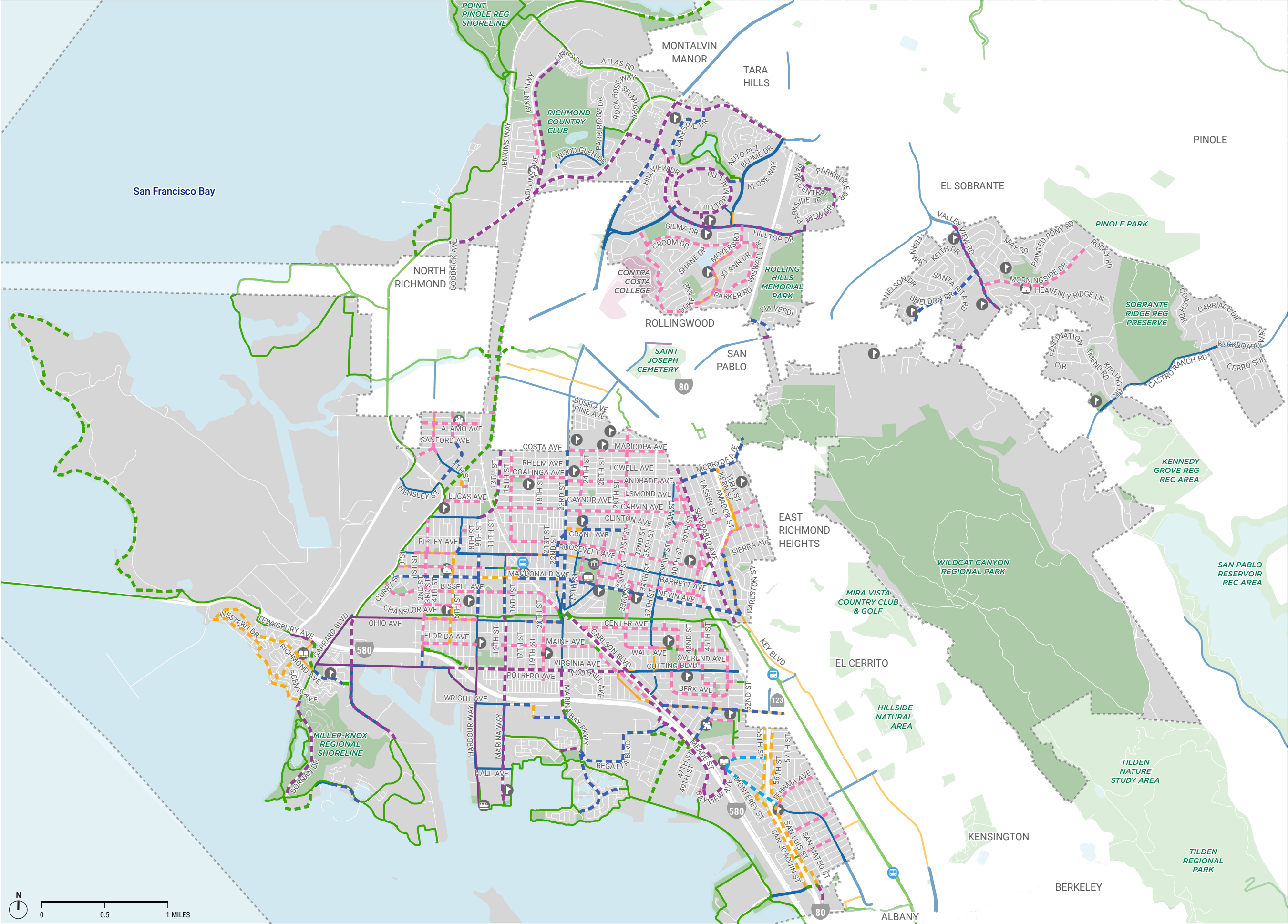
BIKEWAY CLASSIFICATION	EXISTING (MI)	PROPOSED (MI)	TOTAL (MI)
Class I - Shared-use Path	49.9	10.2	63.9
Class II - Bicycle Lane	40.7	14.0	49.3
Class IIB - Buffered Bicycle Lane	6.1	0.9	6.5
Class III - Bicycle Route	10.1	7.1	7.2
Class IIIB - Bicycle Boulevard	3.4	31.5	41.8
Class IV - Separated Bikeway	3.9	20.6	24.7
Total	114.1	84.3	189.6

Note: Total miles account for 11.6 miles of upgraded facilities.

PROPOSED BIKEWAYS TRAVEL SAFE RICHMOND

- PROPOSED BICYCLE FACILITIES
- Class I Shared-Use Path
 - Class II Bicycle Lane
 - Class IIB Buffered Bicycle Lane
 - Class III Bicycle Route
 - Class IIIB Bicycle Boulevard
 - Class IV Separated Bikeway
- EXISTING BICYCLE FACILITIES
- Class I Shared-Use Path
 - Class II Bicycle Lane
 - Class III Bicycle Route
 - Class IV Separated Bikeway

- BOUNDARIES + DESTINATIONS
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Figure 06 Proposed Bicycle Improvements

PROPOSED BIKEWAYS

CENTRAL CORE

TRAVEL SAFE
RICHMOND

PROPOSED BICYCLE FACILITIES

- Class I Shared-Use Path
- Class II Bicycle Lane
- Class IIB Buffered Bicycle Lane
- Class III Bicycle Route
- Class IIIB Bicycle Boulevard
- Class IV Separated Bikeway

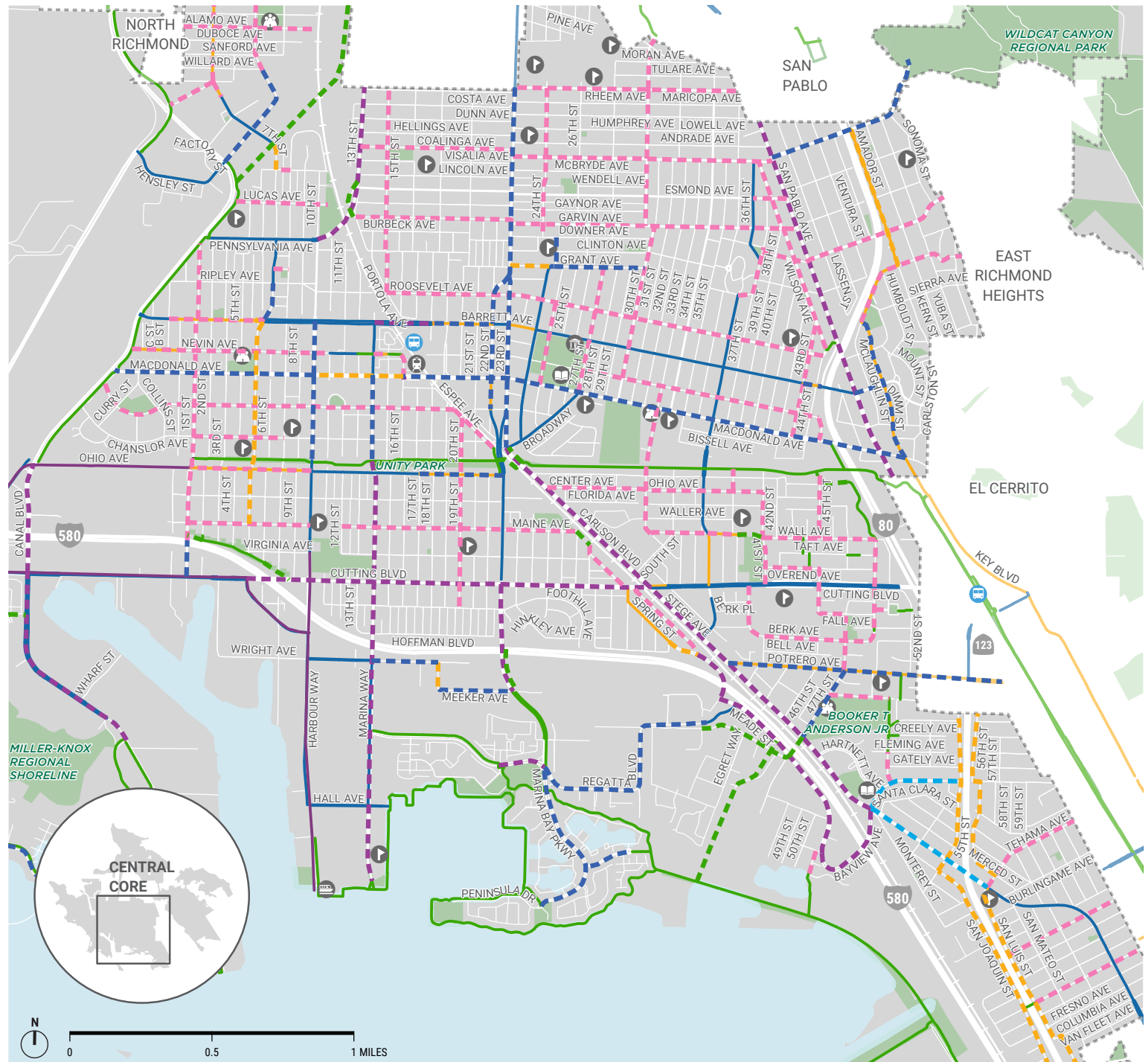
EXISTING BICYCLE FACILITIES

- Class I Shared-Use Path
- Class II Bicycle Lane
- Class III Bicycle Route
- Class IV Separated Bikeway

BOUNDARIES + DESTINATIONS

- BART Station
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Figure 07 Proposed Bicycle Improvements (central core)

PROPOSED BIKEWAYS

NORTH RICHMOND

TRAVEL SAFE RICHMOND

PROPOSED BICYCLE FACILITIES

- Class I Shared-Use Path
- Class II Bicycle Lane
- Class IIB Buffered Bicycle Lane
- Class III Bicycle Route
- Class IIIB Bicycle Boulevard
- Class IV Separated Bikeway

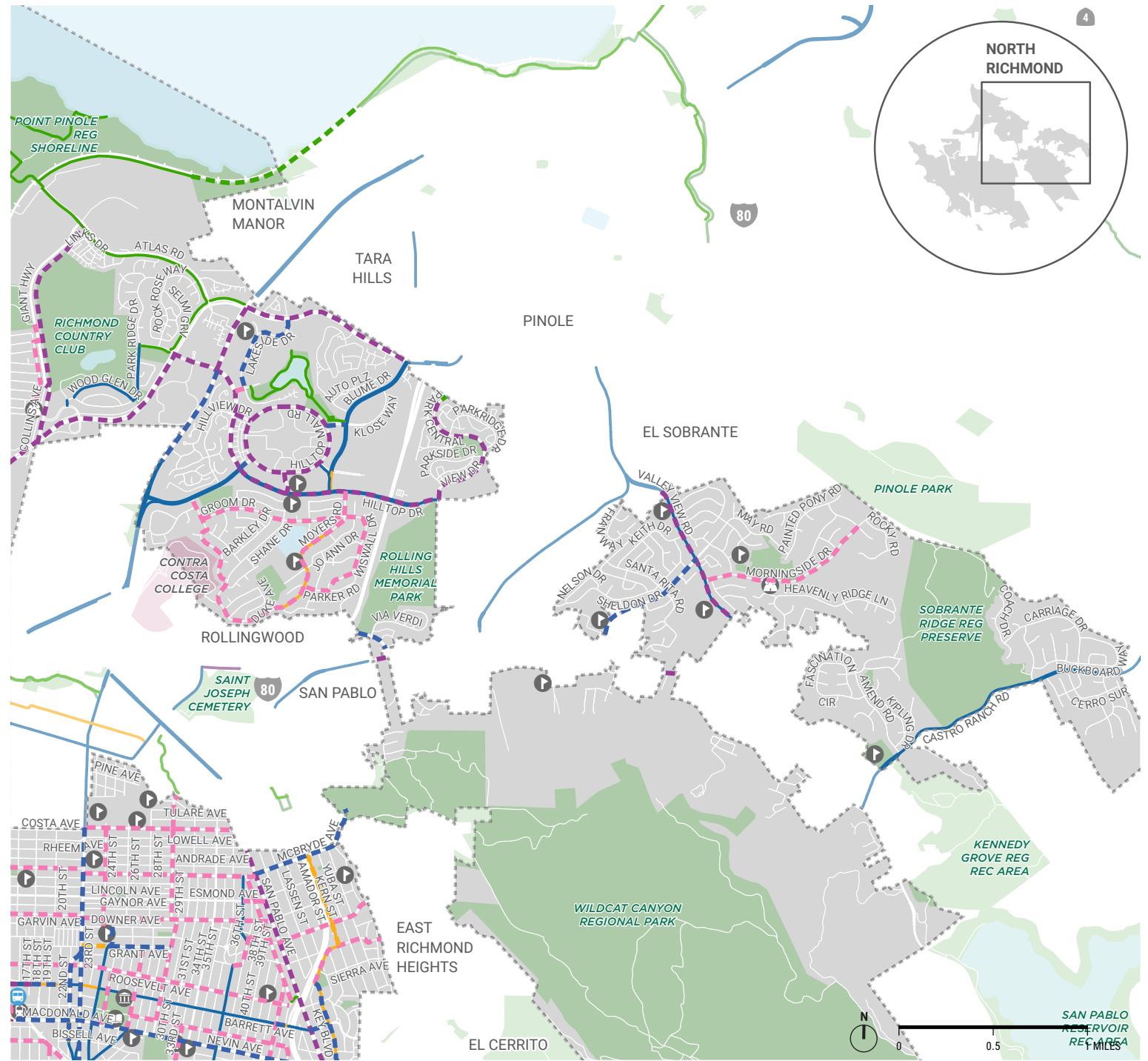
EXISTING BICYCLE FACILITIES

- Class I Shared-Use Path
- Class II Bicycle Lane
- Class III Bicycle Route
- Class IV Separated Bikeway

BOUNDARIES + DESTINATIONS

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Figure 08 Proposed Bicycle Improvements (North Richmond)

Table 04 Bicycle Recommendations (alphabetical order)

STREET	START	END	RECOMMENDED FACILITY	MILES
13th St	Harbour Way	Costa Ave / City Boundary	Class IV Separated Bikeway	0.60
15th St	Roosevelt Ave	Costa Ave	Class IIIB Bicycle Boulevard	0.72
16th St	Macdonald Ave	Livingston Ln	Class IV Separated Bikeway	0.01
16th St	Nevin Plaza	Richmond Greenway	Class IIIB Bicycle Boulevard	0.08
20th St	Espee Ave	Potaro Ave	Class IIIB Bicycle Boulevard	0.67
22nd St	Brooks Ave	Bissell Ave	Class II Bicycle Lane	0.49
23rd St	Brooks Ave	Maricopa Ave	Class II Bicycle Lane	0.66
23rd St	Broadway	Brooks Ave	Class II Bicycle Lane	0.61
23rd St Overcrossing	Richmond Greenway	Richmond Greenway	Class I Shared-Use Path	0.11
24th St	Maricopa Ave	Downer Ave	Class IIIB Bicycle Boulevard	0.53
25th St	Grant Ave	Downer Ave	Class II Bicycle Lane	0.12
25th St	Macdonald Ave	Roosevelt Ave	Class IIIB Bicycle Boulevard	0.30
27th St	Broadway	Grant Ave	Class IIIB Bicycle Boulevard	0.45
29th St	Howard St	Garvin Ave	Class IIIB Bicycle Boulevard	0.66
2nd/ S 2nd St	I-580	Pennsylvania Ave	Class IIIB Bicycle Boulevard	1.05
30th St	Garvin Ave	Nevin Ave	Class IIIB Bicycle Boulevard	0.55
43rd St	Macdonald Ave	Wilson Ave	Class IIIB Bicycle Boulevard	0.42
45th St	Nevin Ave	Macdonald Ave	Class IIIB Bicycle Boulevard	0.08
6th St	Maine Ave	Ripley Ave	Class III Bicycle Route	0.73
7th St	7th St bike lane	Lincoln Ave	Class III Bicycle Route	0.10
7th St	Barrett Ave	Ripley Ave	Class II Bicycle Lane	0.13
Alamo Ave	Cherry St	City Boundary (North Richmond)	Class IIIB Bicycle Boulevard	0.45

Table 04 Bicycle Recommendations (alphabetical order) (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES
Amador Street	McBryde Ave	Clinton Ave	Class III Bicycle Route	0.51
Barrett Ave	19th St	22nd St	Class II Bicycle Lane	0.20
Barrett Ave	19th St	Marina Way	Class IV Separated Bikeway	0.21
Barrett Ave	San Pablo Ave	Key Blvd	Class II Bicycle Lane	0.11
Barrett Ave	43rd St	45th St	Class II Bicycle Lane	0.07
Barrett Ave	A St	7th St	Class IIIB Bicycle Boulevard	0.34
Bay Trail Extension: Point Pinole - San Pablo Bay Regional Shoreline	Existing Bay Trail	Existing Bay Trail	Class I Shared-Use Path	1.02
Bay Trail Extension: Miller-Knox Regional Shoreline	Existing Bay Trail near Dornan Dr	Existing Bay Trail near Brickyard Cove Rd	Class I Shared-Use Path	0.40
Bayside Dr	Marina Bay Pkwy	Traffic circle	Class II Bicycle Lane	0.15
Bayview Ave	Seaport Ave	S 55th St	Class IIB Buffered Bicycle Lane	0.36
Bayview Ave	Seaport Ave	S 55th St	Class IV Separated Bikeway	0.36
Berk Ave - S 49th St	Cutting Blvd	Cutting Blvd	Class IIIB Bicycle Boulevard	0.78
Bissell Ave	Richmond Parkway	Espee Ave	Class IIIB Bicycle Boulevard	1.29
BNSF Easement near Railroad Ave (not acquired yet)	Richmond Ave	Washington Ave	Class I Shared-Use Path	0.23
Brickyard Cove Rd	Dornan Dr	Sandpiper Spit	Class II Bicycle Lane	0.30
Canal Blvd	Cutting Blvd	Seacliff Dr	Class IV Separated Bikeway	0.76
Canal Blvd	Ohio Ave	Cutting Blvd	Class IV Separated Bikeway	0.38
Carlson Blvd	Richmond Greenway	Broadway	Class I Shared-Use Path	0.07
Carlson Blvd	Bayview Ave	Broadway	Class IV Separated Bikeway	1.81
Carlson Blvd	Bayview Ave	Tehama Ave	Class IIB Buffered Bicycle Lane	0.49

Table 04 Bicycle Recommendations (alphabetical order) (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES
Center Ave	Carlson Blvd	S 41st St	Class IIIB Bicycle Boulevard	0.76
Central Ave	Jacuzzi St	Pierce St	Class I Shared-Use Path	0.10
Central Ave	Existing Bay Trail	Rydin Rd	Class I Shared-Use Path	0.02
Cerrito Ave - 38th St	37th St	Solano Ave	Class IIIB Bicycle Boulevard	0.22
Chanslor Ave	2nd St	8th St	Class IIIB Bicycle Boulevard	0.32
Chesley Ave	UPRR	BNSF	Class IIIB Bicycle Boulevard	0.10
Clinton Ave	Key Blvd	City Boundary	Class IIIB Bicycle Boulevard	0.50
Coalinga Ave	13th St	23rd St	Class IIIB Bicycle Boulevard	0.54
Cutting Blvd	Hoffman Blvd	Carlson Blvd	Class IV Separated Bikeway	1.43
Cypress Ave	S 47th St	Ells St	Class IIIB Bicycle Boulevard	0.21
Doran Dr	Western Dr	Brickyard Cove Rd	Class IV Separated Bikeway	0.87
E Richmond Ave	Gerrard Blvd	Canal Blvd Parking Lot Cut Through	Class II Bicycle Lane	0.27
El Portal Dr	Near I-80	Near San Pablo Dam Rd	Class II Bicycle Lane	0.18
Ells St	Flemino Ave	Bayview Ave	Class IIIB Bicycle Boulevard	0.11
Elm St	7th St	8th St	Class IIIB Bicycle Boulevard	0.05
Esmond Ave	San Pablo Ave	37th St	Class IIIB Bicycle Boulevard	0.12
Espee Ave	Bisell Ave	Trail south of Chanslor Ave	Class IIIB Bicycle Boulevard	0.19
Filbert St	Chesley Ave	Existing Class II	Class IIIB Bicycle Boulevard	0.34
Garvin Ave	Portola Ave	San Pablo Ave	Class IIIB Bicycle Boulevard	1.57
Giant Hwy	Atlas Rd	Griffin Dr	Class IV Separated Bikeway	0.95
Giant Hwy	Collins Ave	Richmond Parkway	Class IV Separated Bikeway	0.33
Golden Gate Ave	Ocean Ave	Washington Ave	Class III Bicycle Route	0.86

Table 04 Bicycle Recommendations (alphabetical order) (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES
Grant Ave	24th St	30th St	Class II Bicycle Lane	0.32
Grant Ave	23rd St	24th St	Class III Bicycle Route	0.14
Groom Dr - Wiswal Dr - Parker Rd	Oxford Ave	Movers Rd	Class IIIB Bicycle Boulevard	1.48
Harbour Way	Richmond Greenway	Macdonald Ave	Class II Bicycle Lane	0.31
Harbour Way	Macdonald Ave	Barrett Ave	Class II Bicycle Lane	0.19
Hensley St	Willard Ave	Richmond Parkway	Class II Bicycle Lane	0.40
Hilltop Dr	Richmond Parkway	Robert Miller Dr	Class IV Separated Bikeway	0.84
Hilltop Dr	Robert Miller Dr	Park Central St	Class IV Separated Bikeway	1.11
Hilltop Mall Rd	Hilltop Mall Rd	Hilltop Mall Rd	Class IV Separated Bikeway	1.28
Hillview Dr	Hilltop Mall Rd	Hilltop Dr	Class IV Separated Bikeway	0.09
Kelsey St	Chesley Ave	Willard Ave	Class IIIB Bicycle Boulevard	0.25
Key Blvd	Macdonald Ave	Clinton Ave	Class II Bicycle Lane	0.51
Klose Way	Hilltop Mall Rd	Blume Dr	Class II Bicycle Lane	0.10
Lakeside Dr	Richmond Parkway	Research Dr	Class II Bicycle Lane	0.54
Lincoln Ave	8th St	7th St	Class IIIB Bicycle Boulevard	0.05
Lucas Ave	Richmond Parkway	Lucas Park	Class IIIB Bicycle Boulevard	0.32
Macdonald Ave	16th St	Key Blvd	Class II Bicycle Lane	1.80
Macdonald Ave	Richmond Parkway	Harbour Way	Class II Bicycle Lane	0.70
Macdonald Ave	Harbour Way	16th St	Class III Bicycle Route	0.32
Maine Ave	S 12th St	S 28th St	Class IIIB Bicycle Boulevard	0.82
Maine Ave	S 2nd St	Harbour Way	Class IIIB Bicycle Boulevard	0.43
Maricopa Ave	23rd St	36th St	Class IIIB Bicycle Boulevard	0.77

Table 04 Bicycle Recommendations (alphabetical order) (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES
Marina Bay Parkway	Regatta Blvd	Peninsula Dr	Class II Bicycle Lane	0.63
Marina Bay Pkwy	Cutting Blvd	Meeker Ave	Class IV Separated Bikeway	0.39
Marina Bay Pkwy	I-580	Meeker Ave	Class I Shared-Use Path	0.16
Marina Way	Richmond Greenway	Waterfront / Lucretia Edwards Park	Class IV Separated Bikeway	1.48
Marina Way	Macdonald Ave	Richmond Greenway	Class II Bicycle Lane	0.30
Market Ave	San Pablo city limit	North Richmond city limit	Class IIIB Bicycle Boulevard	0.07
May Rd	Laurel Ln	Valley View Rd	Class II Bicycle Lane	0.66
McBryde Ave	San Pablo Ave	Wildcat Canyon Parking Lot	Class II Bicycle Lane	0.65
McBryde Ave	23rd St	San Pablo Ave	Class IIIB Bicycle Boulevard	0.91
McGlothen Way - Phanor Dr - Giant Hwy	Williams Dr	Point Pinole Regional Shoreline Park	Class IIIB Bicycle Boulevard	0.44
Meade St	Regatta Blvd	Seaport Ave	Class IV Separated Bikeway	0.72
Meeker Ave	S 19th St	Marina Bay Parkway	Class II Bicycle Lane	0.26
Miraflores Greenbelt - Ohio Connection	S 45th St	Miraflores Greenbelt	Class I Shared-Use Path	0.10
Molate Point Bay Trail Extension	Stenmark Dr	Bridge Trail	Class I Shared-Use Path	2.39
Morningside Dr	Valley View Rd	Full Moon Dr/ Thunderhead Ct	Class IIIB Bicycle Boulevard	0.93
Moyers Rd - Oxford Ave - Birmingham Dr	Hilltop Dr	Hilltop Dr	Class IIIB Bicycle Boulevard	1.89
N Castro St	Bay Trail	Filbert St	Class IIIB Bicycle Boulevard	0.17
Nevin Ave	27th St	45th St	Class IIIB Bicycle Boulevard	0.85
Nevin Ave	Richmond Parkway	8th St	Class IIIB Bicycle Boulevard	0.54
Nevin Ave	8th St	11th St	Class IIIB Bicycle Boulevard	0.15
Nevin Ave	Marina Way	15th St	Class IIIB Bicycle Boulevard	0.05

Table 04 Bicycle Recommendations (alphabetical order) (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES
New Shared-Use Path	Lincoln Ave	Garvin Ave	Class I Shared-Use Path	0.14
New Shared-Use Path	Bay Trail	Meade St	Class I Shared-Use Path	0.58
New Shared-Use Path	S 28th St	S 29th St	Class I Shared-Use Path	0.07
New Shared-Use Path	Brookside Dr	Richmond Parkway	Class I Shared-Use Path	1.47
Ohio Ave	17th St	23rd St	Class II Bicycle Lane	0.30
Ohio Ave	Harbour Way	2nd St	Class IIIB Bicycle Boulevard	0.42
Park Central St	Hilltop Dr	Park Central Ct	Class IV Separated Bikeway	0.86
Park Central St Shopping Center Access	Park Central Ct	Shopping Center	Class I Shared-Use Path	0.03
Pierce St	Central Ave	Cerrito Creek	Class IV Separated Bikeway	0.23
Plaza Way	S 49th St	S 50th St	Class IIIB Bicycle Boulevard	0.05
Point Pinole Bay Trail spur	Existing Bay Trail	Existing Bay Trail	Class I Shared-Use Path	0.60
Point Richmond Bike Boulevard	Ocean Ave	Garrard Blvd	Class III Bicycle Route	1.17
Point San Pablo Bay Trail extension	Molate Point Bay Trail extension	Point San Pedro	Class I Shared-Use Path	1.63
Potrero Ave	Carlson Blvd	San Pablo Ave (beyond City limit)	Class II Bicycle Lane	0.97
Regatta Blvd	Regatta Blvd Trail	Julia Wood St/Spring St	Class IV Separated Bikeway	0.20
Regatta Blvd	S 32nd St	Robin Dr	Class II Bicycle Lane	0.44
Regatta Blvd	Marina Bay Pkwy	S 32nd St	Class II Bicycle Lane	0.37
Regatta Blvd	Bay Trail / Marina Park & Green	Marina Bay Parkway	Class IV Separated Bikeway	0.17
Regatta Blvd	Spring St	Julia Woods St	Class III Bicycle Route	0.11
Research Dr	Hilltop Dr	Lakeside Dr	Class IIIB Bicycle Boulevard	0.05
Richmond Ave - Canal Blvd connector	Richmond Ave	Canal Blvd	Class I Shared-Use Path	0.06

Table 04 Bicycle Recommendations (alphabetical order) (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES
Richmond Pkwy	Goodrick Ave	Hilltop Dr	Class IV Separated Bikeway	1.76
Richmond Pkwy	San Pablo Ave	Blume Dr	Class IV Separated Bikeway	0.94
Robert Miller Dr	Hilltop Mall Rd	Hilltop Dr	Class II Bicycle Lane	0.08
Robin Dr	Regatta Blvd	Meade St	Class I Shared-Use Path	0.34
Roosevelt Ave	Portola Ave	44th St	Class IIIB Bicycle Boulevard	1.56
S 19th St	Wright Ave	Meeker Ave	Class III Bicycle Route	0.10
S 2nd St	I-580	Cutting Blvd	Class II Bicycle Lane	0.13
S 33rd St	Wall Ave	Nevin Ave	Class IIIB Bicycle Boulevard	0.53
S 39th St	Center Ave	Richmond Greenway	Class IIIB Bicycle Boulevard	0.08
S 41st St	Center Ave	Cutting Blvd	Class IIIB Bicycle Boulevard	0.33
S 45th St	Richmond Greenway	Wall Ave	Class IIIB Bicycle Boulevard	0.22
S 47th St	Potrero Ave	Carlson Blvd	Class II Bicycle Lane	0.28
S 47th St - Fall Ave - S 45th St - Overend Ave - JFK Park	Wall Ave	Potrero Ave	Class IIIB Bicycle Boulevard	0.64
S 47th St - I-580 Overpass	Carlson Blvd	Meade St	Class I Shared-Use Path	0.08
S 49th St	Wall Ave	Cutting Blvd	Class IIIB Bicycle Boulevard	0.17
S 51st St	Seaport Ave	Bay Trail	Class IIIB Bicycle Boulevard	0.08
S 55th St	San Joaquin St	Creely Ave / City Boundary	Class III Bicycle Route	0.58
S 56th St	Tehama Ave	Carlos Ave / City Boundary	Class III Bicycle Route	0.64
Sacramento Ave	San Pablo Ave	San Luis St	Class IIIB Bicycle Boulevard	0.41
San Joaquin St	Central Ave	Imperial Ave	Class III Bicycle Route	0.83
San Luis St	Central Ave	Carlson Blvd	Class III Bicycle Route	0.75

Table 04 Bicycle Recommendations (alphabetical order) (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES
San Pablo Ave	Natalie Ct (City Boundary)	Macdonald Ave (City Boundary)	Class IV Separated Bikeway	1.34
San Pablo Ave	Hilltop Dr	La Puerta Dr	Class II Bicycle Lane	0.57
San Pablo Ave	Hilltop Dr	Richmond Pkwy	Class IV Separated Bikeway	0.37
San Pablo Dam Rd	Near Martins Ln	Near Martins Ln	Class IV Separated Bikeway	0.06
San Pablo Dam Rd	El Portal Dr	City Limits	Class IV Separated Bikeway	0.07
Shane Dr	Hilltop Mall Rd	Hilltop Dr	Class IV Separated Bikeway	0.12
Solano Ave	38th Ave	City Boundary	Class IIIB Bicycle Boulevard	0.71
Southside Park Trail extension	S 7th St	Cutting Blvd	Class I Shared-Use Path	0.11
Southside Park Trail west extension	S 3rd St	S 2nd St	Class I Shared-Use Path	0.06
Spring St	S 29th St	Regatta Blvd	Class IIIB Bicycle Boulevard	0.52
Sutter Ave	San Luis St	San Pablo city limit	Class IIIB Bicycle Boulevard	0.42
Tehama Ave	Carlson Blvd	City Boundary (El Cerrito)	Class IIIB Bicycle Boulevard	0.40
Tewksbury Ave	Santa Fe Ave	Washington Ave	Class IV Separated Bikeway	0.10
Valley View Rd	City Boundary (El Sobrante)	Pine Hill Dr	Class IV Separated Bikeway	0.78
Wall Ave	S 41st St	S 49th St	Class IIIB Bicycle Boulevard	0.40
Wall Ave	S 39th St	S 41st St	Class I Shared-Use Path	0.09
Wall Ave	S 33rd St	John F. Kennedy Park	Class IIIB Bicycle Boulevard	0.34
Washington Ave	Casey Dr	Richmond Ave	Class III Bicycle Route	0.25
Wildcat Creek Trail Gap Closure	Existing trail (North Richmond)	Existing trail (near Hubert Park - San Pablo)	Class I Shared-Use Path	0.34
Wilson Ave	McBryde Ave	44th St	Class IIIB Bicycle Boulevard	0.70
Wright Ave	Marina Way	S 19th St	Class II Bicycle Lane	0.24

A person in a dark coat and light-colored shoes is pushing a black stroller across a crosswalk. A young child is sitting in the stroller, looking back over their shoulder. The crosswalk has white stripes on a dark asphalt surface. In the background, there is a concrete curb and a metal post.

Chapter

04

Pedestrian Recommendations

Pedestrian Recommendations

Based on the needs, opportunities, and challenges identified through the existing conditions analysis, pedestrian recommendations were developed through an iterative process with both City staff, partner agency stakeholders, and the community. This chapter describes recommended pedestrian projects and provides informational toolkits describing the recommended infrastructure. Recommendations described in this Plan serve as a foundation to create successful, well-used, and safe spaces for people to walk and roll. In addition to projects identified in this plan, Richmond can install pedestrian enhancements on other routes as appropriate.

Pedestrian Facilities Toolkit

The toolkit below includes brief descriptions of the pedestrian improvements provided within the Bicycle and Pedestrian Action Plan. The treatments offered herein offer a range of options stemming from current best practices and established guidance at the state and national levels. This toolkit intends to serve as a flexible menu of options for developing and refining project recommendations. For more detailed information and specific design guidance,

see the Design Guidelines technical document in **Appendix B**.

This Plan's toolkit provides pedestrian infrastructure that falls into six general categories:

- Pavement markings
- Pedestrian-actuated beacons
- Street furniture
- Sidewalks, trails, and medians
- Intersection and street design
- Projects that require additional studies

A short description of infrastructure components from each of the categories is provided in the toolkit below. The toolkit is not an exhaustive list of potential solutions. Exact solutions for each location should be selected based on engineering and planning judgment and best practices to maximize safety and pedestrian accessibility

The recommendations in this chapter are for planning purposes only. Recommendations may be altered depending on opportunities, constraints, and/or roadway changes. Feasibility determination, final design, accessibility, funding, and implementation of any recommended improvements is the responsibility of the appropriate governing agency.

Pavement Markings

Advance Stop & Advance Yield Markings

Advance yield pavement markings, also referred to as “shark’s teeth,” are markings placed on the roadway before a mid-block crosswalk or before a crosswalk at an intersection approach without a signal or stop sign.

Stop lines are solid white lines extending across approach lanes, indicating the point behind which vehicles must stop in compliance with a STOP sign or some other traffic control device that requires vehicles to stop. Advanced stop lines should be placed the roadway 20-50 feet before a mid-block crosswalk or 4-30 feet before a crosswalk at an intersection. These can help improve the visibility of pedestrians to people driving.

Crosswalks

All crosswalk recommendations are subject to a pedestrian needs analysis to determine the safest, most efficient location to install the crosswalk.



A freshly painted high-visibility crosswalk on Marina Way.

High-Visibility Crosswalks

High-Visibility crosswalks are marked with thick bars, drawing additional attention and awareness to the crossing. In school zones, these crossings are yellow instead of the standard white color.

Decorative Crosswalks

Decorative crosswalks can add a placemaking element to the street while still serving a marked crosswalk’s primary visibility and awareness objectives. Decorative crosswalks can be themed to reflect the surrounding neighborhood or nearby destinations. Decorative crosswalks must meet specific design parameters to remain compliant with state and federal standards; most importantly, they include the white transverse markings around any decorative pavement treatment.



A decorative crosswalk out of San Leandro BART.



A raised crosswalk in front of Hayward's Public Library main branch.

Raised Crosswalks

A raised crosswalk is a modification of a speed table. Speed tables reduce vehicle speeds by elevating the entire wheelbase of a vehicle (unlike a speed bump that raises each axle individually). Speed tables can be designed to include a mid-block raised crosswalk; in these cases, the height of the speed table matches the sidewalk. This treatment can help slow traffic while increasing pedestrian visibility to approaching motorists.



Signs and pavement markings on the Richmond Parkway Trail.

Trail Markings

Paved trails can include striping to demarcate separate areas for pedestrians and bicyclists. Especially on crowded trails with high pedestrian usage, encouraging spatial separation can reduce conflicts and improve the efficiency and consistency of travel.

Pedestrian-Actuated Beacons

Rectangular Rapid Flashing Beacons

Rectangular Rapid Flashing Beacons (RRFBs) are user-activated flashing lights used at unsignalized intersections or mid-block crossings. These beacons alert motorists to the presence of people in the crosswalk.

Pedestrian Hybrid Beacons

A pedestrian hybrid beacon (PHB) is a signal designed to increase safety for pedestrians crossing at non-signalized locations on multilane roadways. Thresholds for installation vary based on the posted speed limit, crossing distance, vehicular volumes, and volumes of pedestrian crossings.

Scramble Pedestrian Crossings

A scramble pedestrian crossing, also called “exclusive pedestrian phasing” is a pedestrian-only signal phase to allow for people walking at an intersection to walk and cross in any direction or approach. During this exclusive pedestrian phase, all motorists cars have a red light during the scramble and right-turns-on-red are typically prohibited at these intersections. The diagonal pedestrian crossing is often marked at these intersections.



A RRFB across Grand Avenue in Oakland.



A newly install pedestrian hybrid beacon installed as part of the Yellow Brick Road project at Barrett Avenue/8th Street.



A pedestrian scramble in Oakland's Chinatown.

Street Furniture

Signage

Signs serve many uses, from prohibiting movements, limiting parking, or providing advance notice of school zones or crosswalks.

Street Furniture/Amenities

Street furniture includes benches, transit shelters, trash cans, newsstands, and other items within the public right-of-way. Street

furnishings provide important amenities for pedestrians by adding functionality and vitality to the pedestrian realm and add placemaking elements to the street. They announce that pedestrians are welcome and that the street is a comfortable place to be. These amenities provide a functional service to people walking and provide visual detail and interest.

Lighting

Pedestrian-scale lighting improves visibility for people walking and driving, particularly at intersections. These lights focus on illuminating the sidewalk, not the roadway. Lighting can be achieved on one light pole (with one light for the road and one for the sidewalk) or on separate poles. Lighting is also an essential consideration along trails.



Street furniture on Nevin Avenue, including benches, tables, trash and recycling cans, and pedestrian lighting.

Sidewalks, Trails and Medians

Sidewalks

Sidewalks provide dedicated space for pedestrians to walk. Sidewalks are raised from the roadway, and some have a planting strip for increased separation from the street. Obstructions like utility boxes, signs, and poles can sometimes limit available sidewalk width.

Shared-Use Paths

Dedicated paths for walking and bicycling completely separated from the roadway. When paved with asphalt or concrete, trails can include markings to encourage the separation of modes.

Curb Extensions

Curb extensions extend the curb into the street. Curb extensions can provide several valuable traffic calming and safety benefits. They shorten the crossing distance for people walking, provide improved visibility at intersections, make pedestrians more visible to motorists, and provide additional pedestrian queueing space. They can be installed at intersections or mid-block. Curb extensions can be constructed with permanent materials like cement, pavement markings, and bollards.

Curb Ramps

Curb ramps allow for smooth transitions between the sidewalk and street level. Curb ramps are essential for those with special mobility needs, strollers, and many other users. Ramps must be built to current accessibility standards.



A curb extension with green, stormwater infrastructure near the Richmond BART.

Intersection and Street Design

Intersection Redesign

Intersections are not always symmetrical and can take on confusing designs when multiple streets come together or when two streets come together at acute angles. Design components like curb extensions, painted buffer areas, and medians make intersections more inviting and less stressful for active transportation users.

Free-Right Turn Lane/Slip Lane Removal

Free-right turn lanes facilitate increased vehicle throughput and faster turns at intersections at the expense of pedestrian and bicyclist safety and movement.

Traffic Calming

Traffic calming is the implementation of roadway changes to slow down vehicle traffic. Engineers can consider many tools to slow vehicle traffic, including speed bumps, chicanes, speed feedback signs, and other items. Traffic calming is also an essential component of bicycle boulevards.

Projects That Require Additional Studies

Stop Signs

A stop sign is a traffic control device used to regulate traffic through an intersection, and one or multiple intersection approaches can be stop-controlled. In general, the implementation of stop control is regulated by the CA-MUTCD and requires that a technical analysis be conducted.

Complex Intersections/Situations

While most of the locations examined for the Plan have recommendations, some will require additional study and traffic analysis to develop recommendations for those locations.



A free-right turn lane, located at the northwest corner, at the intersection of San Pablo Avenue/ Macdonald Avenue. Image: Google



Recommended Improvements

This plan recommends 105 spot improvements to improve intersection crossing, trail, and sidewalk safety, access, and comfort for people walking, biking, and rolling. **Table 5** (page 54) lists the location, type, and brief description of each recommended improvement. Project recommendations include projects from prior community and corridor

plans in addition to new recommendations. The location of each spot improvement can be seen in **Figures 9-11** on the following pages. Projects are shown with an ID number that corresponds to the ID column in **Table 5**.

PROPOSED
PEDESTRIAN SPOT
IMPROVEMENTS

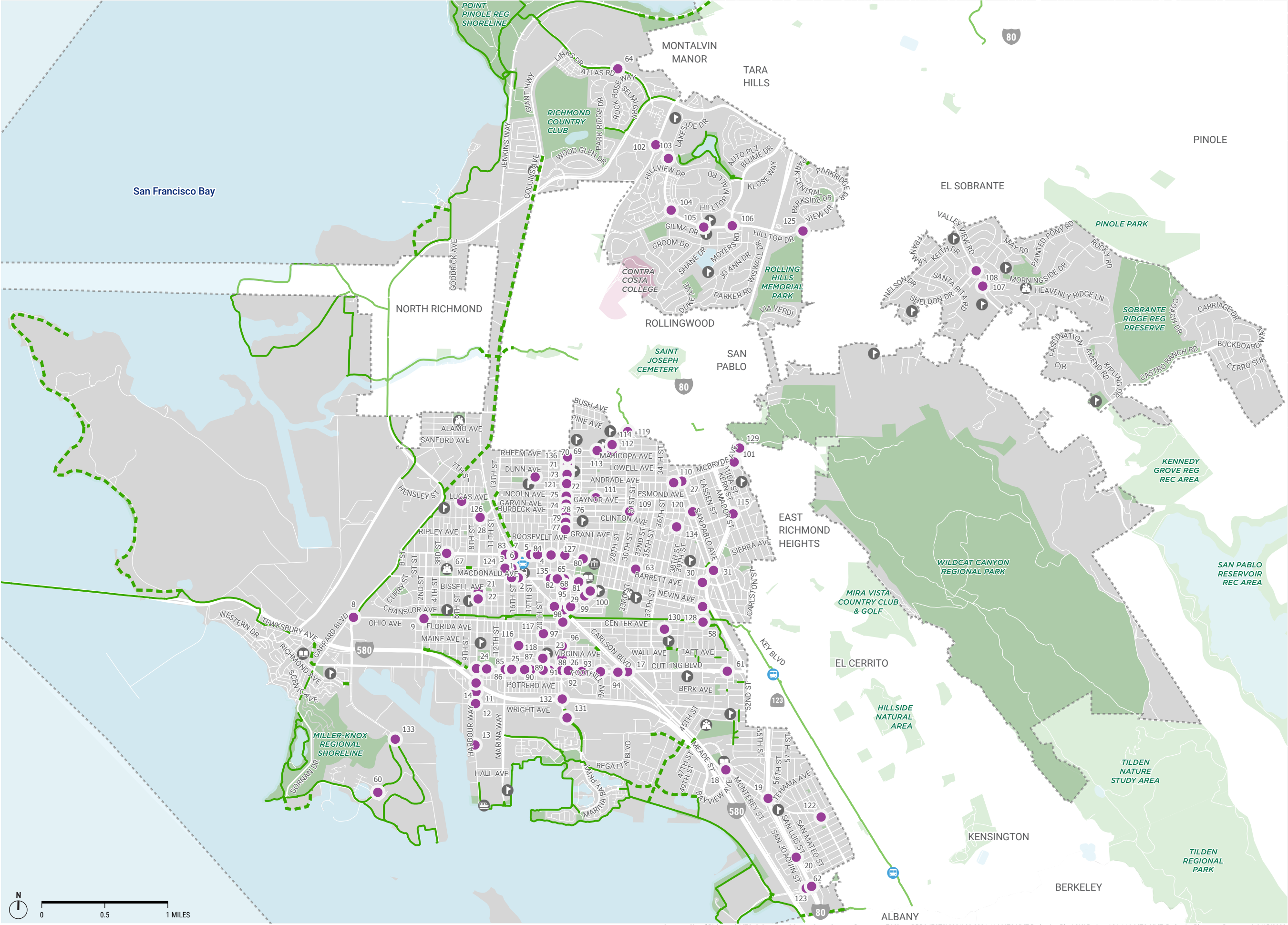
TRAVEL SAFE
RICHMOND

PROPOSED
PEDESTRIAN PROJECTS

- Spot Improvement
- Class I Shared-Use Path

BOUNDARIES +
DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Park
- Contra Costa College
- City Boundary



Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 9/15/2022.

Figure 09 Proposed Spot Improvements

PROPOSED PEDESTRIAN SPOT IMPROVEMENTS CENTRAL CORE

TRAVEL SAFE
RICHMOND

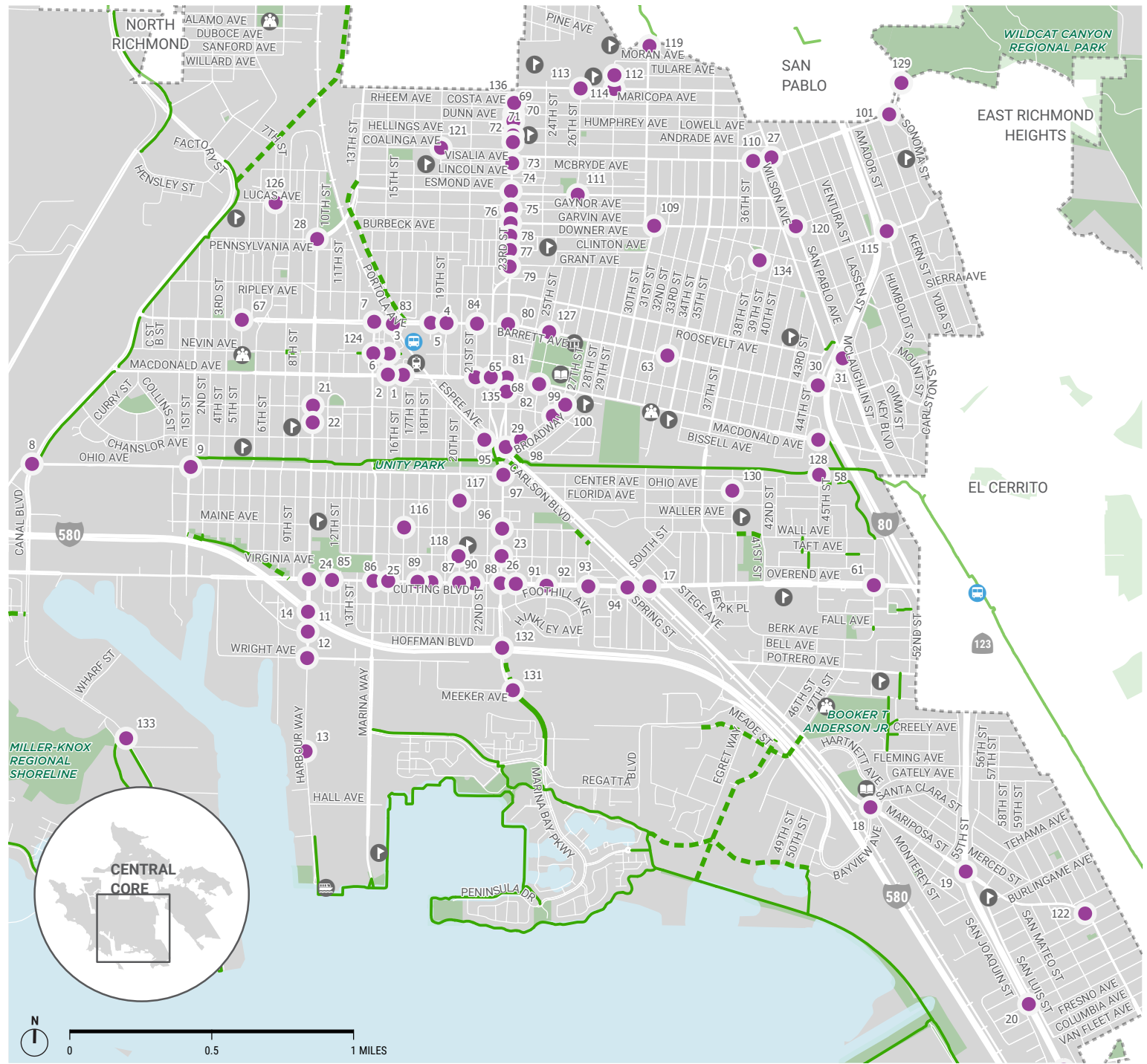
PROPOSED PEDESTRIAN PROJECTS

- Spot Improvement
- Class I Shared-Use Path

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Park
- Contra Costa College
- City Boundary

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Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 9/15/2022.

Figure 10 Proposed Spot Improvements (Central Core)

PROPOSED PEDESTRIAN SPOT IMPROVEMENTS NORTH RICHMOND

TRAVEL SAFE
RICHMOND

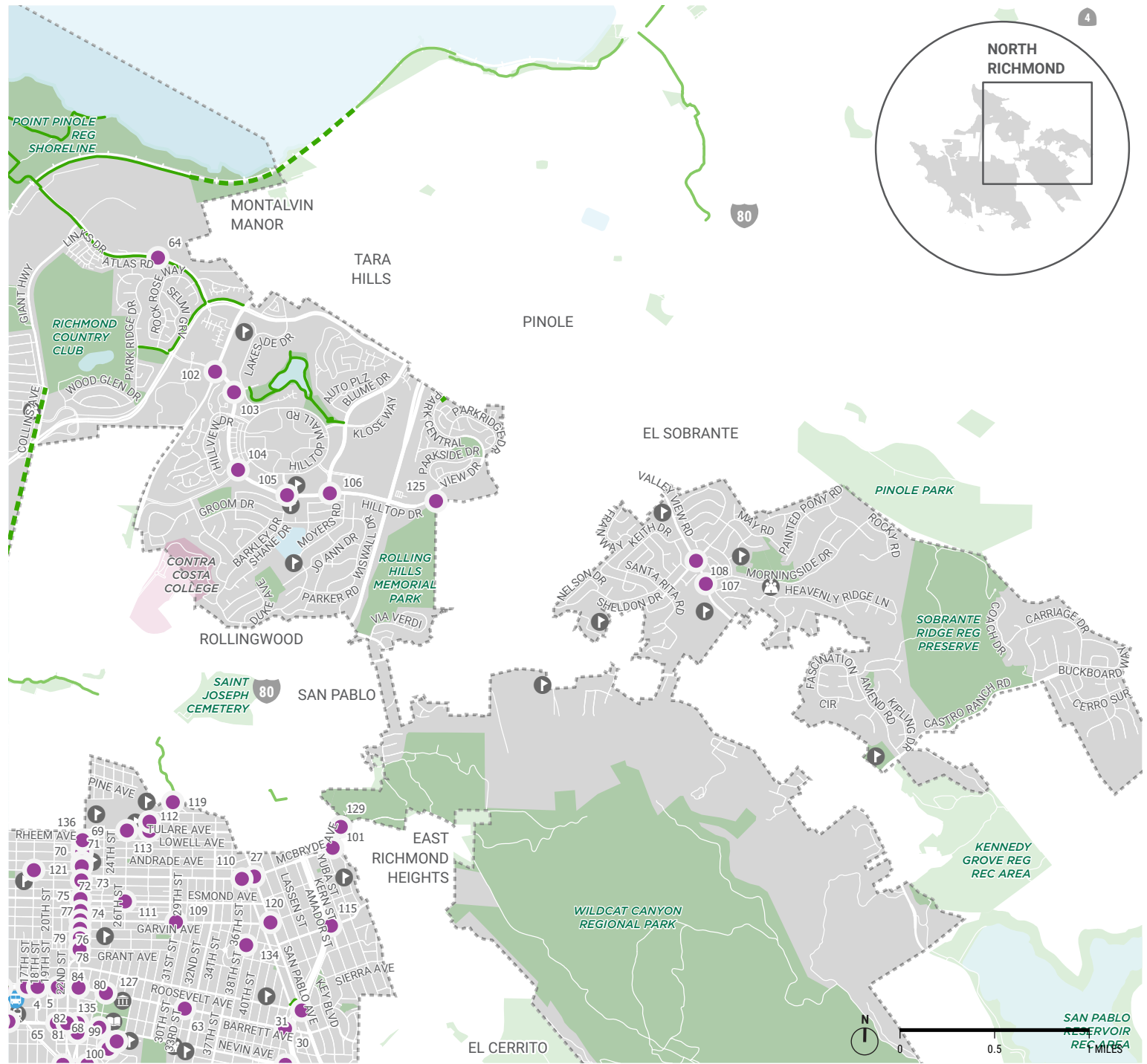
PROPOSED PEDESTRIAN PROJECTS

- Spot Improvement
- Class I Shared-Use Path

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Park
- Contra Costa College
- City Boundary

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Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 9/15/2022.

Figure 11 Proposed Spot Improvements (North Richmond)

Table 05 Spot Improvement Recommendations

ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION
1	Macdonald Ave	16th St	Intersection Upgrade	Consider scramble phase or otherwise don't allow permitted left turns to conflict with pedestrians in the crosswalk. Create LPI. Consider parklet on southwest corner
2	Macdonald Ave	15th St	Crossing Improvement	Consider constructing a raised intersection or raised crosswalk at the eastern approach. Construct curb extensions at all four corners. Install high-visibility crosswalks at the eastern and western approaches on top of decorative paving.
3	Nevin Ave	15th St	Crossing Improvement	Consider constructing a median refuge or traffic circle to accommodate direct pedestrian path of travel.
4	Barrett Ave	18th St	Crossing Improvement	Install the north, south, and west crosswalk legs as high-visibility. Install an RRFB or PHB for Barrett crossings (based on warrants). Add appropriate signs and advance pavement markings based on selected actuated crossing beacon.
5	Barrett Ave	19th St	Crossing Improvement	Stripe fourth crosswalk leg and upgrade traffic signal to include pedestrian countdown.
6	15th St	Nevin Ave	Other	Provide a ramp to allow bicycle access to/from plaza.
7	Marina Way	Barrett Ave	Intersection Upgrade	Install a curb extension at the northwest and southwest corners. Provide a leading pedestrian interval and adjust pedestrian phase length to provide sufficient crossing times. Realign the southern crosswalk several feet south and install high-visibility crosswalks at the north and eastern approaches. Consider installing bicycle lane conflict markings and a two-stage bike turn box for NB-WB bike movements.
8	Ohio Ave	Canal Blvd	Crossing Improvement	Refresh existing intersection markings, upgrade remaining crosswalks to high-visibility and provide a leading pedestrian interval.
9	Ohio Ave	S 2nd St	Crossing Improvement	Potential for bike and pedestrian intersection improvements.
10	Hoffman Blvd	Harbour Way	Intersection Upgrade	Install high-visibility crosswalks and install curb extensions.
11	Wright Ave	Harbour Way	Crossing Improvement	Implement ADA accessible accommodations throughout the intersection, sidewalk and curbs.
12	1000' north of Hall Ave	Harbour Way	Crossing Improvement	Coordinate with railroad operator to install pedestrian railroad crossing gates, Implement ADA accessible accommodations throughout the intersection, sidewalk, and curbs.
13	Harbour Way	I-580 On and Off Ramps	Intersection Upgrade	Coordinate with Caltrans install high-visibility crosswalks and curb extensions at all corners.
14	Carlson Blvd	Cutting Blvd	Intersection Upgrade	Construct intersection improvements including: formalized curb extensions, widened sidewalk, and additional sidewalks.
15	Carlson Blvd	Bayview Ave	Intersection Upgrade	Install intersection improvements including curb extensions and a median nose.

Table 05 Spot Improvement Recommendations) (continued).

ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION
16	Carlson Blvd	I-80 Undercrossing	Intersection Upgrade	Construct intersection improvements including: median refuge islands and curb extensions.
17	Sacramento Ave	San Luis St	Crossing Improvement	Path crossing improvements: upgrade crosswalk to high-visibility and install advance yield markings. Consider installing RRFB.
18	Harbour Way	Bissell Ave	Intersection Upgrade	Install curb extensions at all corners and re-stripe crosswalks as high-visibility.
19	Harbour Way	300' north of Chanslor Ave	Crossing Improvement	Install a high-visibility midblock crosswalk with a median refuge island.
20	S 23rd St	Virginia Ave	Crossing Improvement	Consider installation of a pedestrian refuge island and install pedestrian scale lighting.
21	Harbour Way	Cutting Blvd	Intersection Upgrade	Install curb extensions, directional ramps and high-visibility crosswalks, and median crossing islands.
22	Marina Way	Cutting Blvd	Intersection Upgrade	Install curb extensions, directional ramps and high-visibility crosswalks and median crossing islands.
23	S 23rd St	Cutting Blvd	Intersection Upgrade	Restripe crosswalks as high-visibility crosswalks. Install curb extensions at all corners with directional ramps. Construct median crossing islands.
24	San Pablo Ave	McBryde Ave	Intersection Upgrade	Install curb extensions and ramps, and construct curb extensions so that streets intersect at right angles.
25	Harbour Way	Pennsylvania Ave/13th St	Intersection Upgrade	Install high-visibility crosswalks, and construct medians/channelized islands/curb extensions and advance stop bars. Consider slip lane removal.
26	Broadway	23rd St	Intersection Upgrade	Widen, lengthen, and channelize median islands. Restripe crosswalks as high-visibility crosswalks.
27	Barrett Ave	I-80 Undercrossing	Intersection Upgrade	Coordinate with Caltrans to consider reconfiguring the through and turn lanes around the interchange. Coordinate with Caltrans to remove/trim vegetation around the off-ramp that blocks visibility of pedestrians in the north crosswalk. Install a high-visibility crosswalk across the eastern approach.
28	San Pablo Ave	Roosevelt Ave	Intersection Upgrade	Install curb extensions to tighten turn radii, and shorten crossing distances, Coordinate with Caltrans to study removing double right turn lane from San Pablo onto I-80 on-ramp.
29	S 45th St	Richmond Greenway Trail connection	Trail Access	Improve connections to trail connector ramp from 45th St
30	Seacliff Dr	Seaview Dr	Crossing Improvement	LRSP high-injury intersection. Install crosswalk on northeast leg of intersection to connect to Class I path. Consider installing yield markings and radar speed feedback signs.
31	S 49th St	Cutting Blvd	Lighting	LRSP high-injury intersection,: install intersection lighting.

Table 05 Spot Improvement Recommendations) (continued).

ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION
32	San Joaquin St	Central Ave	Intersection Upgrade	LRSP high-injury intersection: construct bulb outs and install advanced warning signs.
33	33rd St	Barrett Ave	Crossing Improvement	LRSP high-injury intersection. Construct curb extensions and install advanced warning signs and markings.
34	Atlas Rd	Oakmont Dr	Crossing Improvement	LRSP high-injury intersection. Construct curb extensions and install advanced warning signs and markings. Consider installing an RRFB or PHB for the Atlas Road crossing.
35	Macdonald Ave	21st St	Crossing Improvement	LRSP high-injury intersection. Upgrade all crosswalks to high-visibility. Consider installing an RRFB or PHB. Construct curb extensions at all corners.
36	5th St	Barrett Ave	Crossing Improvement	LRSP high-injury intersection. Upgrade crosswalks to high-visibility. Consider installing an RRFB or PHB. Construct curb extensions.
37	25th St	Macdonald Ave	Crossing Improvement	LRSP high-injury intersection: Upgrade all crosswalks to high-visibility. Consider installing RRFB or PHB. Construct curb extensions at all corners.
38	23rd St	Lowel Ave	Crossing Improvement	Implement improvement in CCTA CSSA.
39	23rd St	Dunn Ave	Crossing Improvement	Construct median refuge island and install an RRFB.
40	23rd St	Hellings Ave	Crossing Improvement	Install high-visibility crosswalks and install an RRFB for the 23rd Street crossing.
41	23rd St	Andrade Ave	Crossing Improvement	Construct median refuge island and install RRFB.
42	23rd St	Visalia Ave	Crossing Improvement	Install a new high-visibility crosswalk across 23rd Street. Install an RRFB at the crossing.
43	23rd St	Esmond Ave	Crossing Improvement	Construct median refuge island and install an RRFB.
44	23rd St	Gaynor Ave	Crossing Improvement	Install high-visibility crosswalks and an RRFB for the crossing of 23rd.
45	23rd St	Garvin Ave	Crossing Improvement	Improve accessibility features (push buttons, curb ramps, etc.) at all corners (more details in the CSSA). Install curb extensions at all corners and crosswalk landings. Upgrade crosswalks to high-visibility.
46	23rd St	Downer Ave	Crossing Improvement	Install a new high-visibility crosswalk across 23rd Street with an RRFB.
47	23rd St	Clinton Ave	Crossing Improvement	Construct a median refuge island and install an RRFB for the 23rd crossing.
48	23rd St	Grant Ave	Crossing Improvement	Install high-visibility crosswalks at all approaches.
49	23rd St	Barrett Ave	Crossing Improvement	Implement improvement in CCTA CSSA.

Table 05 Spot Improvement Recommendations) (continued).

ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION
50	23rd St	Macdonald Ave	Crossing Improvement	Implement improvement in CCTA CSSA.
51	23rd St	Exchange Pl	Crossing Improvement	Construct a median refuge island and install an RRFB for a crossing of 23rd Street. .
52	Barrett Ave	BART Tracks	Sidewalk	Widen sidewalk on northern side through underpass (Requires road diet).
53	Barrett Ave	21st St	Crossing Improvement	Install a new high-visibility crosswalk at the western approach.
54	Cutting Blvd	S 12th St	Crossing Improvement	Install high-visibility crosswalks at all approaches.
55	Cutting Blvd	S 15th St	Crossing Improvement	Install high-visibility crosswalks at all approaches.
56	Cutting Blvd	S 18th St	Crossing Improvement	Install high-visibility crosswalks at all approaches.
57	Cutting Blvd	S 21st St	Crossing Improvement	Upgrade all crosswalks to high-visibility.
58	Cutting Blvd	S 17th St	Crossing Improvement	Install high-visibility crosswalks at all approaches.
59	Cutting Blvd	20th St	Crossing Improvement	Restripe the existing high-visibility crosswalks.
60	Cutting Blvd	S 24th St	Crossing Improvement	Construct a pedestrian refuge island; and install RRFB/PHB.
61	Cutting Blvd	S 26th St	Crossing Improvement	Construct pedestrian refuge island with an RRFB/PHB.
62	Cutting Blvd	S 29th St	Crossing Improvement	Construct pedestrian refuge island and install RRFB/PHB.
63	Cutting Blvd	S 31st St	Crossing Improvement	Construct a pedestrian refuge island and install an RRFB/PHB.
64	Chanslor Ave	Espee Ave	Crossing Improvement	Install curb extensions at the two western corners to square up the intersection.
65	Maine Ave	S 23rd St	Crossing Improvement	Install high-visibility crosswalks at all approaches and construct curb extensions at all corners.
66	Ohio Ave	S 23rd St	Crossing Improvement	Construct curb extensions at all corners.
67	Broadway	24th St	Crossing Improvement	Construct curb extensions at all corners.
68	Broadway	Bissell Ave	Crossing Improvement	Install curb extensions at the northern corners to square-up the intersection. Realign and upgrade all crosswalks to high-visibility crosswalks.
69	Broadway	26th St	Crossing Improvement	Install high-visibility crosswalks at all approaches.
70	Mcbryde Ave	Sonoma St	Crossing Improvement	Construct curb extensions.

Table 05 Spot Improvement Recommendations) (continued).

ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION
71	Hilltop Dr	San Pablo Ave	Crossing Improvement	Construct curb extensions.
72	Hilltop Dr	Research Dr	Crossing Improvement	Construct curb extensions at all corners.
73	Hilltop Dr	Robert Miller Dr	Intersection Upgrade	Study removal free right turn lanes.
74	Hilltop Dr	Shane Dr	Intersection Upgrade	Study removal of free right turn lanes.
75	Hilltop Dr	Blumer Dr	Intersection Upgrade	Study removal of free-right turn lane.
76	Morningside Dr	Valley View Rd	Crossing Improvement	Install high-visibility crosswalks.
77	May Rd	Valley View Rd	Crossing Improvement	Upgrade crosswalks to high-visibility and install curb extensions.
78	Garvin Ave	30th St	Crossing Improvement	Install high-visibility crosswalks and an RRFB for a crossing of Gavin Avenue.
79	Mcbryde Ave	37th St	Crossing Improvement	Install curb extensions at all corners.
80	Esmond Ave	26th St	Crossing Improvement	Install high-visibility crosswalks.
81	Maricioa Ave	28th St	Crossing Improvement	Install high-visibility crosswalks.
82	Maricopa Ave	26th St	Crossing Improvement	Install high-visibility crosswalks.
83	Tulare Ave	28th St	Crossing Improvement	Install high-visibility crosswalks.
84	Solano Ave	Amador St	Crossing Improvement	Install curb extensions at all corners.
85	Maine Ave	S 16th St	Bicycle Access	Install bicycle cutthrough in traffic divertor.
86	Florida Ave	S 20th St	Bicycle Access	Install bicycle cutthrough in traffic divertor.
87	Virginia Ave	S 20th Street	Bicycle Access	Install a bicycle cutthrough in traffic divertor.
88	29th St/Vale Rd	Howard St/ Salesian Ave	Crossing Improvement	Study locations for a marked crossing of 29th/Vale, including one block south at Moran Avenue. Coordinate with City of San Pablo as necessary.
89	Garvin Ave	San Pablo Ave	Crossing Improvement	Install high-visibility crosswalks at all intersection approaches. Provide a leading pedestrian interval with all crossing phases. Install bicycle conflict markings.

Table 05 Spot Improvement Recommendations) (continued).

ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION
90	Coalinga Ave	18th St	Crossing Improvement	Upgrade the two existing crosswalks to high-visibility and install high-visibility crosswalks at the northern and eastern approaches. Install advance stop markings at all approaches. Study intersection traffic control options with the design of the Coalinga Avenue bicycle boulevard.
91	Sutter Ave	Carlson Blvd	Crossing Improvement	SRTCP: Upgrade the existing southern crosswalk to high-visibility and install advance yield markings. Install transverse crosswalks at the eastern and western approaches with advance stop markings. Install an RRFB for the Carlson (southern) crosswalk. Consider building a refuge islands from the existing median.
92	Central Ave	I-80	Crossing Improvement	Coordinate with Caltrans to upgrade all crosswalks to high-visibility crosswalks and provide leading pedestrian intervals for all crossing phases. Extend bicycle conflict markings on Central through the Jacuzzi intersection and interchange. Long term, construct curb extensions to tighten radii and square up approaches.
93	Nevin Ave	Marina Way	Crossing Improvement	Upgrade all crosswalks to high-visibility crosswalks and provide a leading pedestrian interval for call crossing phases. Long term, consider converting the intersection to a raised intersection.
94	Park Central St	Hilltop Dr	Crossing Improvement	Study intersection design changes to improve pedestrian crossings and accessibility. Improvements should include high-visibility crosswalks and curb extensions. Coordinate with property owners and other jurisdictions as required.
95	Lucas Ave	7th St	Crossing Improvement	Upgrade the two existing crosswalks to high-visibility and install high-visibility crosswalks at the northern and eastern approaches. Build out the northeast corner to square up the intersection. Construct curb extensions at all corners.
96	Barrett Ave	25th St	Crossing Improvement	Upgrade the three existing crosswalks to high-visibility crosswalks and provide a leading pedestrian interval for all crossing phases. Install bicycle conflict markings through the intersection and consider other intersection treatments like bicycle boxes.
97	Macdonald Ave	45th St	Crossing Improvement	Upgrade all crosswalks to high-visibility crosswalks and install advance yield markings. Install an RRFB for the Macdonald crosswalks. On the south side of the street, widen the sidewalk and provide a connection to the "Target Path."
98	McBryde Ave/Park Ave	Marin Ave	Crossing Improvement	Study intersection redesign options to improve driver and pedestrian visibility at all intersection approaches. Study should look at crossing, visibility/site lines, and intersection control changes.
99	Center Ave	S 39th St	Wayfinding	Add wayfinding signs directing people walking and biking to the Richmond Greenway trailhead off of 39th Street.
100	Meeker Ave	Marina Bay Pkwy	Crossing Improvement	Install a leading pedestrian interval for all crossing phases. Study removal of the free-right turn lane from the northwest corner. If removed, realign the west crosswalk to be parallel to Marina Bay Parkway. Due to the asymmetrical intersection and challenging site lines, consider providing a protected turn phase for northbound left traffic.

Table 05 Spot Improvement Recommendations) (continued).

ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION
101	I-580	Marina Bay Pkwy	Crossing Improvement	Coordinate with Caltrans to upgrade all crosswalks to high-visibility. At signalized crossings, provide a leading pedestrian interval for all crossing phases. At uncontrolled crossings, install RRFBs.
102	Sea Cliff Dr	Canal Blvd	Crossing Improvement	Trim vegetation around stop sign to improve visibility. Consider adding street lighting to this intersection. Upgrade the existing crosswalk to high-visibility. Coordinate with the Port to trim vegetation along Sea Cliff Drive.
103	38th St	Boyd Ave/ Solano Ave	Crossing Improvement	Upgrade all crosswalks to high-visibility crosswalks. Install advance yield/stop marks where appropriate. Long term, study additional park access improvements include converting Boyd to one-way, curb extensions, and other traffic calming measures.
104	22nd St	Macdonald Ave	Crossing Improvement	Install curb extensions at the northwest and northeast corners. Install a pedestrian count display at the southwest corner. When next repaved, reduce the intersection's crown and conform asphalt to the gutter pan.
105	23rd St	Rheem Ave	Crossing Improvement	Upgrade all curb ramps to current best practices; specifically, replace the southwest corner ramp with a "parallel" ramp and "centered" ramps at the two eastern corners. Adjust pedestrian signal heads as needed. Provide a leading pedestrian interval for all crossing phases.

A black and white photograph of a residential street. In the foreground, a new concrete median runs diagonally across the frame, separating a newly paved road from an existing one. The road has white painted arrows pointing forward. A silver car is parked on the right side of the road. In the background, there are houses and trees. The sky is clear.

Chapter

05

Implementation

Implementation

This chapter outlines the potential next steps to move the recommended projects toward implementation. Recommended pedestrian and bicycle projects were prioritized to help City staff select which project (or groups of projects) to implement first. This section also provides information on funding sources (i.e., competitive grants and formulaic funding opportunities) that the City and partner agencies can use to design and build projects. The chapter also provides a summary of maintenance policies that Richmond should strive to follow to maintain a state of good repair and improve safety. The “Quick-Build” section describes how some projects may be implemented using a more streamlined and cost-effective implementation strategy. Lastly, the chapter describes the potential next steps after this Action Plan and briefly discuss aspects of the implementation process that influence project development like funding, staff time, and multijurisdictional coordination.

Project Prioritization

The approach to enhancing and expanding Richmond’s active transportation network must consider what is realistic given historical and anticipated funding while also providing the City with the flexibility

to respond to changing conditions and project opportunities that may arise. The prioritization of proposed projects helps formulate a strategic list to guide project implementation. Over time as development occurs or other changes to land uses and the City’s transportation network take place, this framework can be used to re-evaluate remaining projects and continue pursuing the plan’s implementation. For example, an opportunity-priority spot improvement may be completed ahead of a high-priority corridor project due to immediate funding opportunities as part of a redevelopment or larger project. Similarly, a high-priority project may require additional study and funding, extending the time it takes to implement. Prioritization results should be considered flexible concepts that serve as project selection guidelines.

Prioritization Methodology

Recommended projects were evaluated using four overarching criteria. Each evaluation criterion was given a normalized score as listed in the table below: the higher the number, the higher ranking an individual project received based on the criteria. The scores were combined for each corridor and spot improvement; each project has a Quantitative Corridor Score ranging from

0–100, with 100 being the highest ranked.

Table 6 outlines the criteria and provides details about each input of the prioritization score. Following score calculations, improvements were sorted into high, medium, and opportunity priority categories based on the distribution of scores. High-priority projects should start to move forward within two years. Medium priority projects should begin to progress within two to four years. Opportunity projects should start implementation after five years or when opportunities like repaving or development projects occur.

Table 06 Prioritization Criteria

CRITERIA	CRITERIA DEFINITION	DATA USED	SCORING	POINTS AVAILABLE
Safety	A bicycle or pedestrian collision occurred at the project intersection or along the identified project segment.	Collision Data (TIMS 2015-2019)	Weighted Density Based on Severity	25
Health and Equity	The project improves active transportation networks in areas with a high density of residents experiencing health risks, low income, and low vehicle access.	<ul style="list-style-type: none"> Longitudinal Employer-Household Dynamics Data (Census Tract) Metropolitan Transportation Commission (MTC) Equity priority communities 	Calculate each indicator (i.e., health and equity) and buffer every network segment by 500ft, taking the proportional average of each indicator and percentile. Indicators: <ul style="list-style-type: none"> Composite health (density of) <ul style="list-style-type: none"> High Blood Pressure Coronary Heart Disease Diabetes Composite Equity (density of) <ul style="list-style-type: none"> Low-income workers per acre Severely rent-burdened population Zero Vehicle Household 	25
Connectivity	The project improves connections to destinations, including schools, recreation, transit, regional trails, and commercial centers. Project overcomes major barriers (i.e., major arterials and rail lines).	City Data <ul style="list-style-type: none"> School locations Parks Transit hubs Regional Trails Commercial Areas Roadways Railways 	Proximity Analysis (within 1,000 ft) 5 points per destination type, within 1,000 ft	35
Community Support	The project reflects the most commonly identified needs or barriers received by community input.	Public Input Map comments and BPAC comments	Public support density percentile tool	15
Total				100



Bicycle Parking at the Richmond Ferry Terminal

Bicycle Project Prioritization Results

Out of 100 possible points, recommended bicycle project prioritization scores ranged between 24 and 81 points. The average project score was 53. Bicycle Project Prioritization results are shown in **Table 7** below.

Table 8 lists each project with its prioritization score and category.

Figures 12-14 below show the category of each recommended bicycle project.

Figures 15-17 in the following pages highlight the high-priority projects.

Table 07 Bicycle Prioritization Summary

PRIORITIZATION CATEGORY	POINT RANGE	NUMBER OF PROJECTS
High priority	65-100	44
Medium priority	48-64	63
Opportunity priority	0-47	68

BICYCLE PROJECT PRIORITIZATION

TRAVEL SAFE RICHMOND

PROPOSED BICYCLE FACILITIES

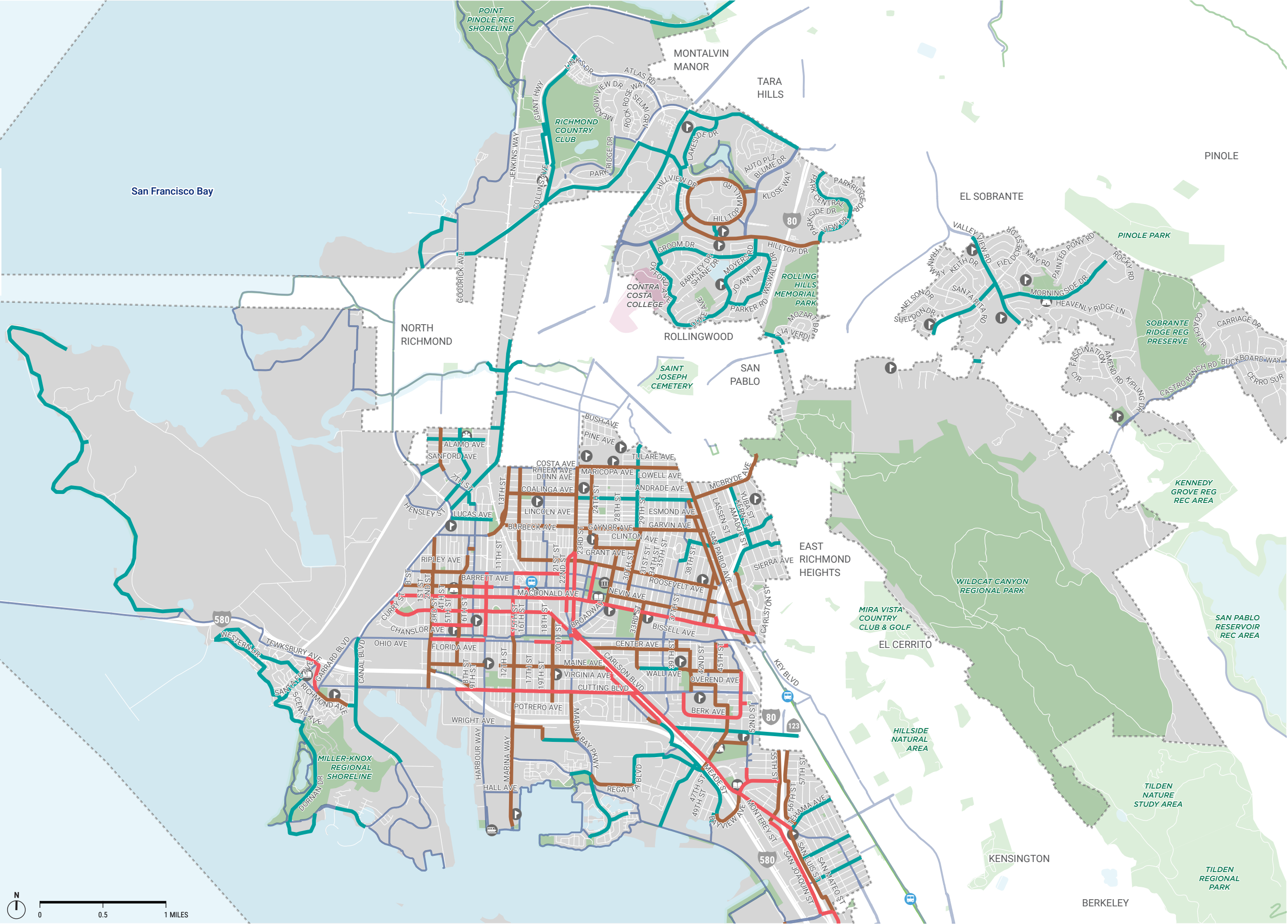
- Prioritization Category
- High Priority Project
 - Medium Priority Project
 - Opportunity Project

EXISTING BICYCLE FACILITIES

- Existing Bicycle Facilities

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Park
- Contra Costa College
- City Boundary



Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Figure 12 Proposed Bicycle Improvements by Prioritization Category

BICYCLE PROJECT PRIORITIZATION

CENTRAL CORE
TRAVEL SAFE
RICHMOND

PROPOSED BICYCLE FACILITIES

Prioritization Category

High Priority Project

Medium Priority Project

Opportunity Project

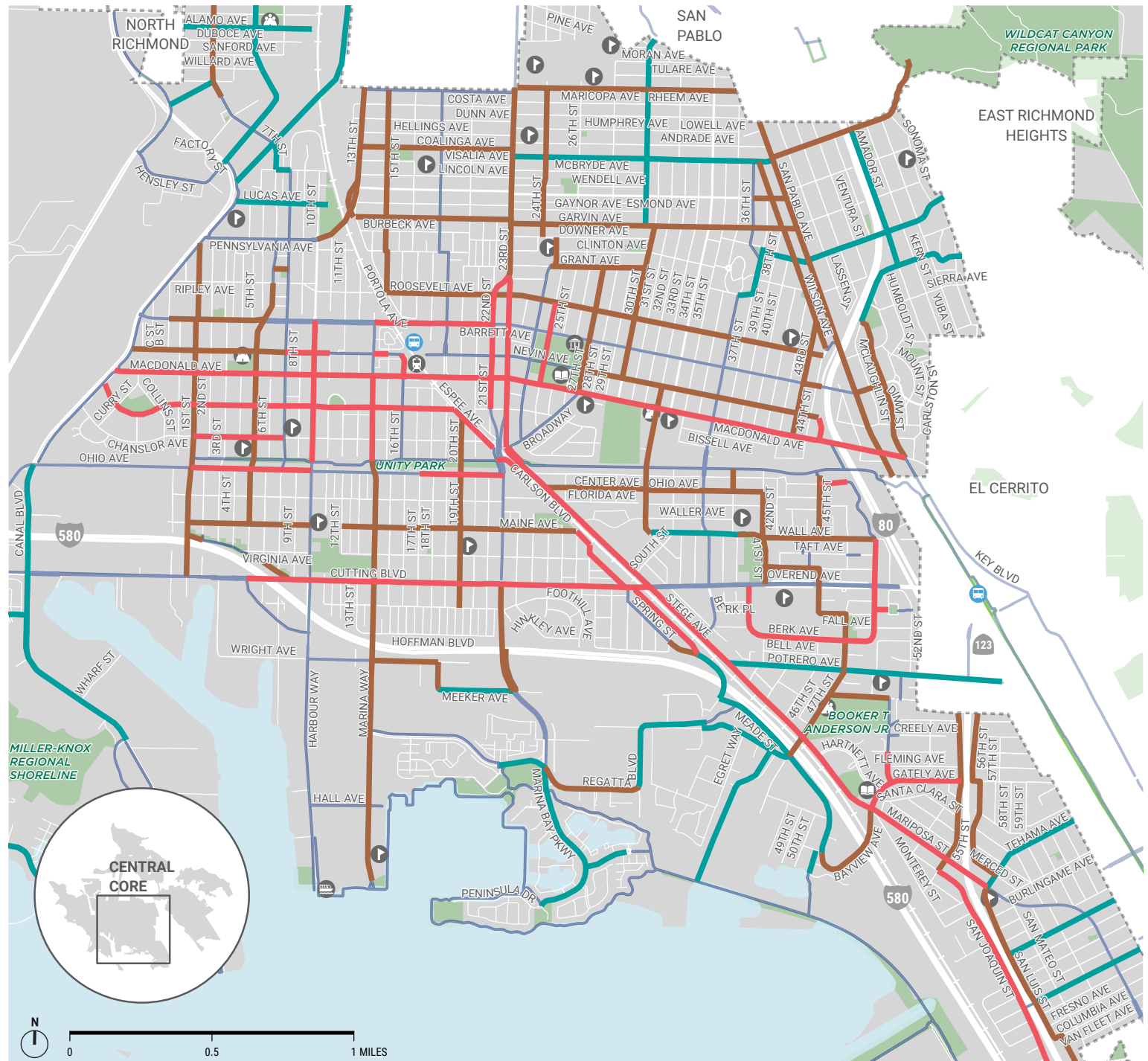
EXISTING BICYCLE FACILITIES

Existing Bicycle Facilities

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Park
- Contra Costa College
- City Boundary

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Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Figure 13 Proposed Bicycle Improvements by Prioritization Category (Central Core)

BICYCLE PROJECT PRIORITIZATION

NORTH RICHMOND
TRAVEL SAFE
RICHMOND

BICYCLE PROJECT PRIORITIZATION

- High Priority Project
- Medium Priority Project
- Opportunity Project

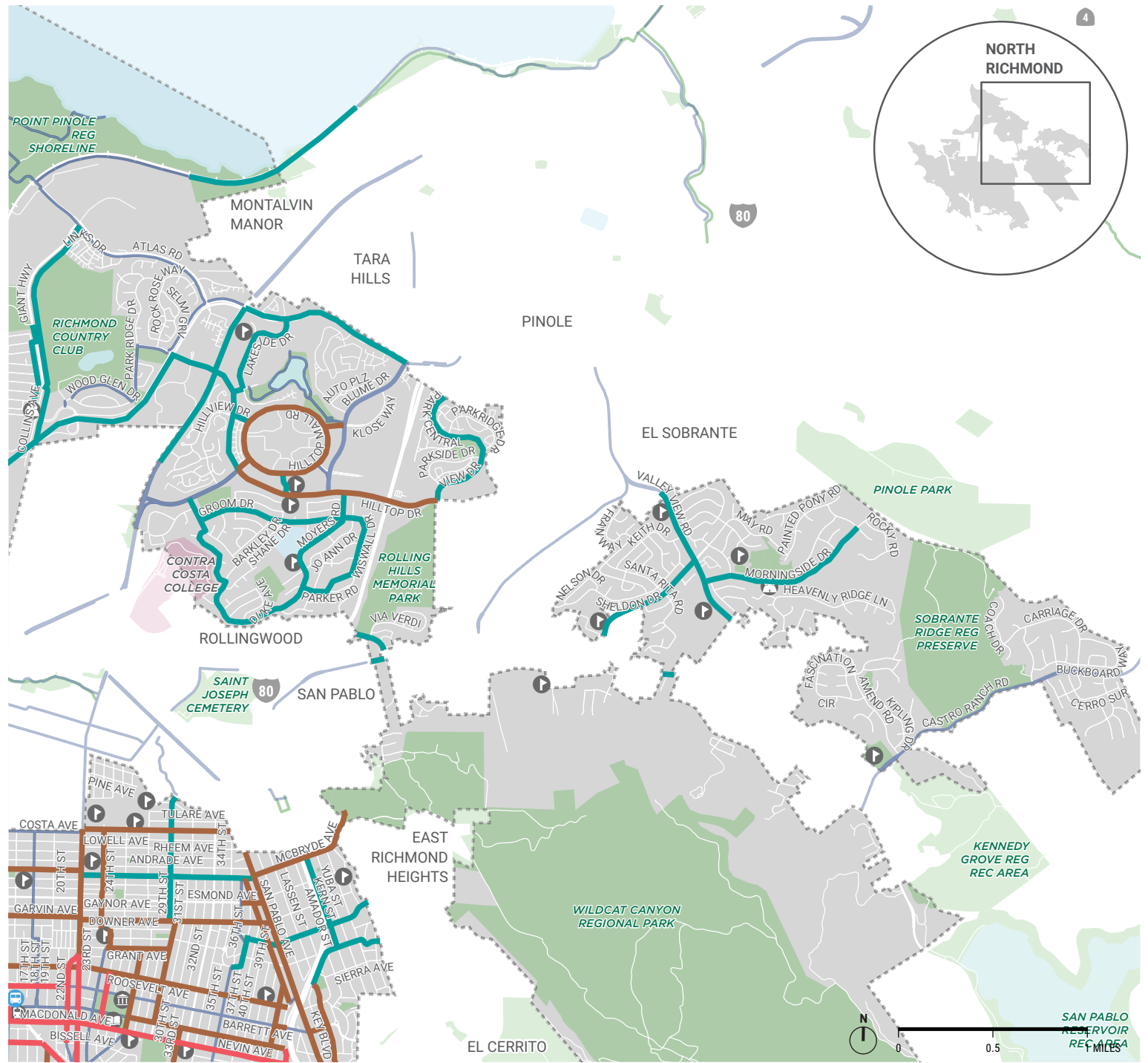
EXISTING BICYCLE FACILITIES

- Existing Bicycle Facilities

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Park
- Contra Costa College
- City Boundary

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Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Figure 14 Proposed Bicycle Improvements by Prioritization Category (North Richmond)

HIGH PRIORITY
BICYCLE
PROJECTS

TRAVEL SAFE
RICHMOND

PROPOSED BICYCLE
FACILITIES

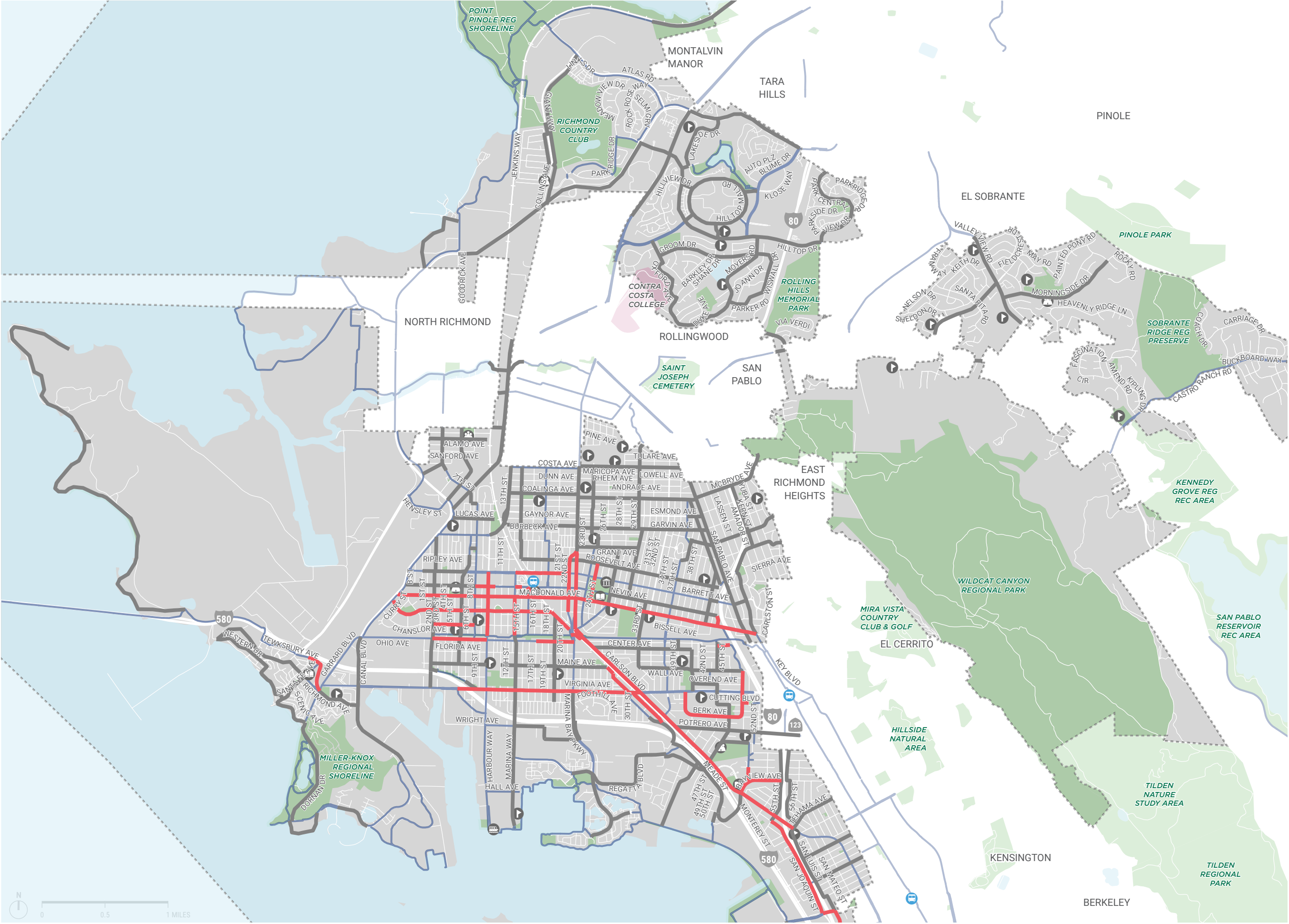
- High Priority Project
- Medium Priority and Opportunity Project

EXISTING BICYCLE
FACILITIES

- Existing Bicycle Facilities

BOUNDARIES +
DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Park
- Contra Costa College
- City Boundary



Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Figure 15 High Priority Bicycle Improvement Projects

HIGH PRIORITY BICYCLE PROJECTS

CENTRAL CORE
TRAVEL SAFE
RICHMOND

PROPOSED BICYCLE FACILITIES

- High Priority Project
- Medium Priority and Opportunity Project

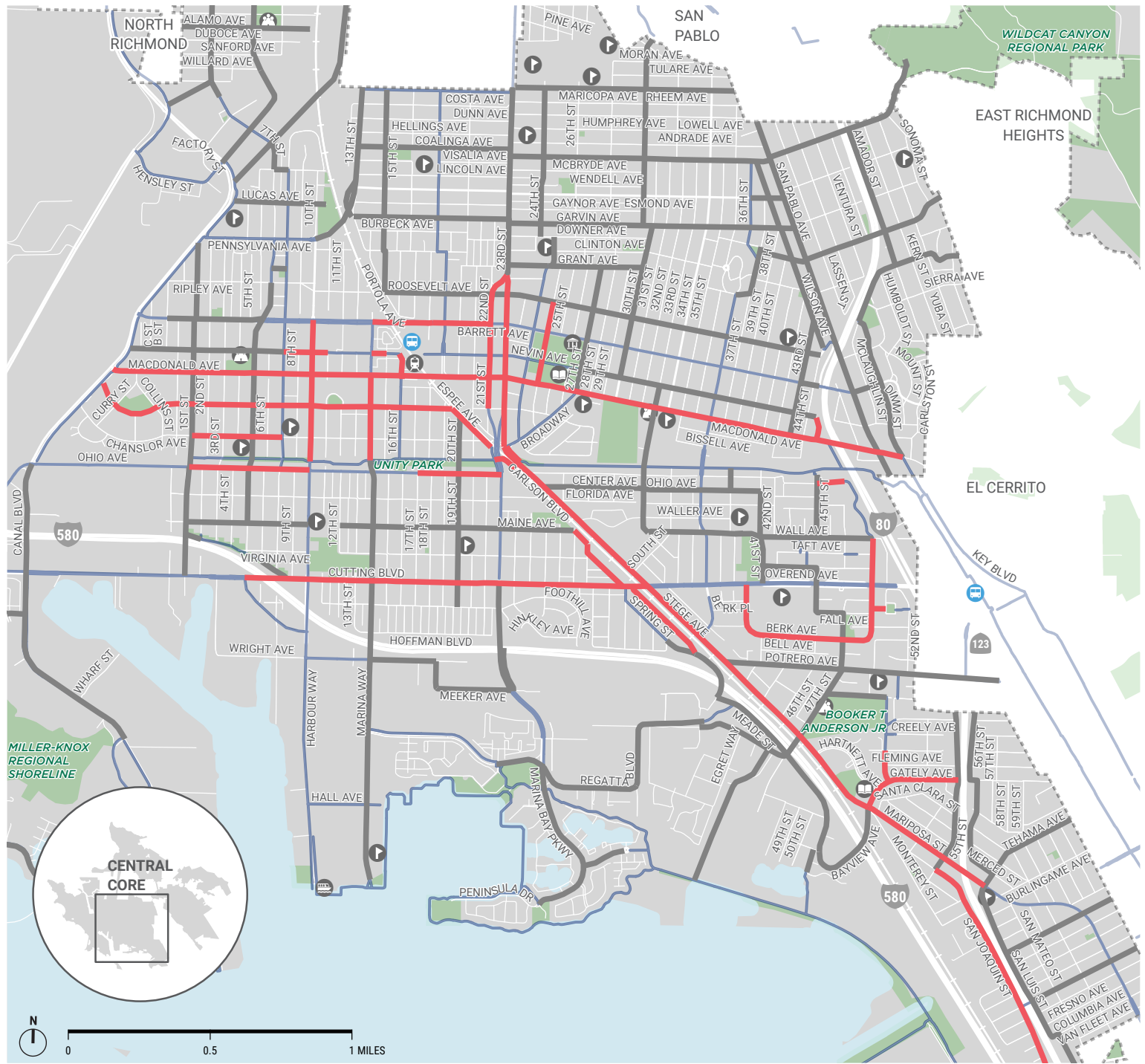
EXISTING BICYCLE FACILITIES

- Existing Bicycle Facilities

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
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Figure 16 High Priority Bicycle Improvement Projects (Central Core)

HIGH PRIORITY BICYCLE PROJECTS

NORTH RICHMOND
TRAVEL SAFE
RICHMOND

BICYCLE PROJECT PRIORITIZATION

- High Priority Project
- Medium Priority and Opportunity Project

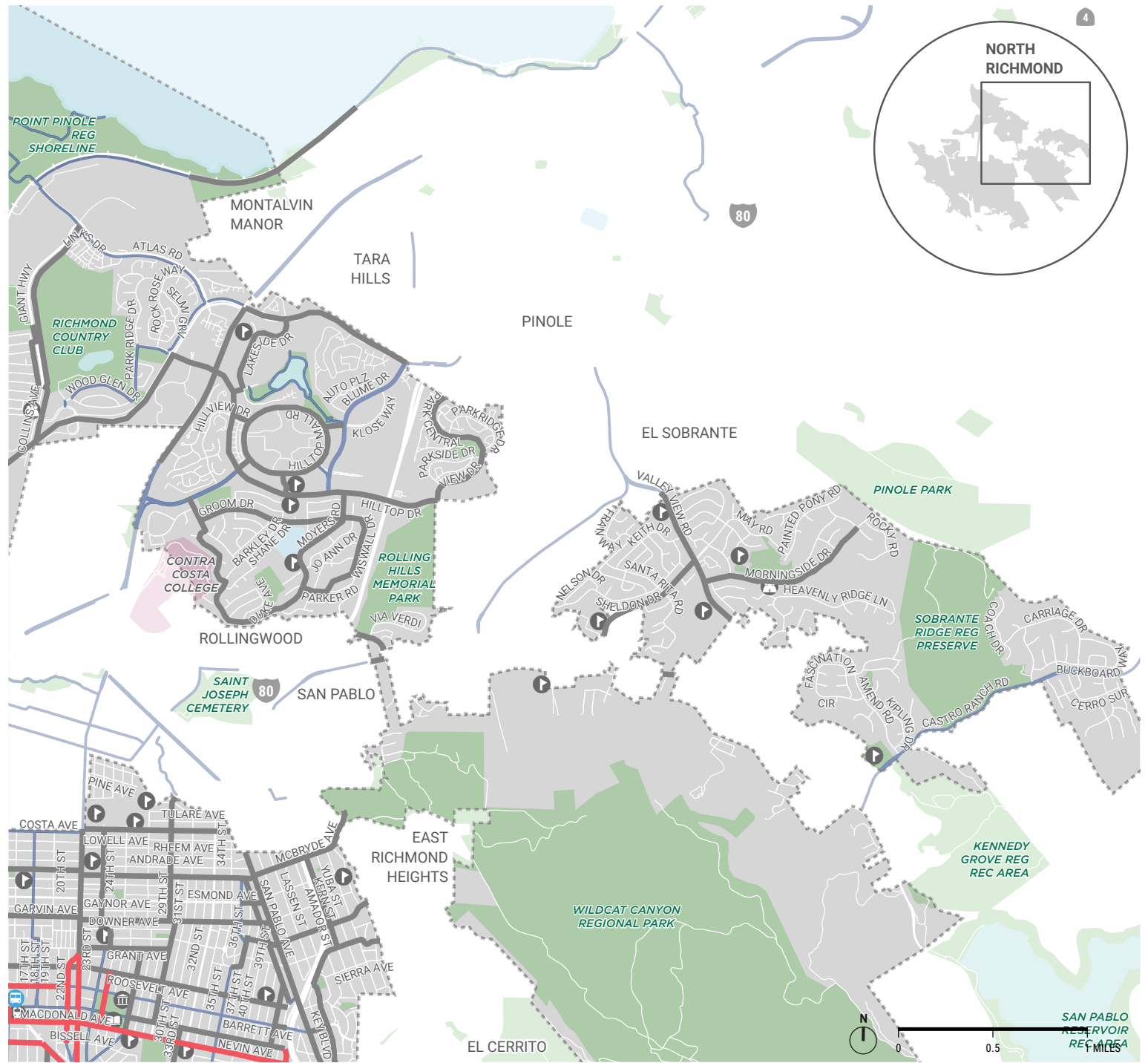
EXISTING BICYCLE FACILITIES

- Existing Bicycle Facilities

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
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Figure 17 High Priority Bicycle Improvement Projects (North Richmond)

Table 08 Bicycle Projects by Prioritization Scores

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
Carlson Blvd	Richmond Greenway	Broadway	Class I Shared-Use Path	0.07	81	High-Priority
23rd St Overcrossing	Richmond Greenway	Richmond Greenway	Class I Shared-Use Path	0.11	80	High-Priority
Central Ave	Jacuzzi St	Pierce St	Class I Shared-Use Path	0.10	79	High-Priority
Harbour Way	Richmond Greenway	Macdonald Ave	Class II Bicycle Lane	0.31	77	High-Priority
16th St	Macdonald Ave	Livingston Ln	Class IV Separated Bikeway	0.01	77	High-Priority
Macdonald Ave	Harbour Way	16th St	Class III Bicycle Route	0.32	77	High-Priority
16th St	Nevin Plaza	Richmond Greenway	Class IIIB Bicycle Boulevard	0.08	77	High-Priority
Nevin Ave	Marina Way	15th St	Class IIIB Bicycle Boulevard	0.05	76	High-Priority
Pierce St	Central Ave	Cerrito Creek	Class IV Separated Bikeway	0.23	75	High-Priority
Marina Way	Macdonald Ave	Richmond Greenway	Class II Bicycle Lane	0.30	75	High-Priority
S 49th St	Wall Ave	Cutting Blvd	Class IIIB Bicycle Boulevard	0.17	75	High-Priority
23rd St	Broadway	Brooks Ave	Class II Bicycle Lane	0.61	75	High-Priority
Espee Ave	Bisell Ave	Trail south of Chanslor Ave	Class IIIB Bicycle Boulevard	0.19	75	High-Priority
Carlson Blvd	Bayview Ave	Broadway	Class IV Separated Bikeway	1.81	73	High-Priority
Carlson Blvd	Bayview Ave	Tehama Ave	Class IIB Buffered Bicycle Lane	0.49	72	High-Priority
Bayview Ave	Seaport Ave	S 55th St	Class IIB Buffered Bicycle Lane	0.36	72	High-Priority
Barrett Ave	19th St	Marina Way	Class IV Separated Bikeway	0.21	72	High-Priority
Plaza Way	S 49th St	S 50th St	Class IIIB Bicycle Boulevard	0.05	72	High-Priority
Ohio Ave	Harbour Way	2nd St	Class IIIB Bicycle Boulevard	0.42	72	High-Priority
Barrett Ave	19th St	22nd St	Class II Bicycle Lane	0.20	71	High-Priority

Table 08 Bicycle Projects by Prioritization Scores (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
Harbour Way	Macdonald Ave	Barrett Ave	Class II Bicycle Lane	0.19	71	High-Priority
New Shared-Use Path	S 28th St	S 29th St	Class I Shared-Use Path	0.07	70	High-Priority
Nevin Ave	8th St	11th St	Class IIIB Bicycle Boulevard	0.15	70	High-Priority
San Joaquin St	Central Ave	Imperial Ave	Class III Bicycle Route	0.83	69	High-Priority
Berk Ave - S 49th St	Cutting Blvd	Cutting Blvd	Class IIIB Bicycle Boulevard	0.78	68	High-Priority
Spring St	S 29th St	Regatta Blvd	Class IIIB Bicycle Boulevard	0.52	68	High-Priority
Tewksbury Ave	Santa Fe Ave	Washington Ave	Class IV Separated Bikeway	0.10	68	High-Priority
22nd St	Brooks Ave	Bissell Ave	Class II Bicycle Lane	0.49	68	High-Priority
Chanslor Ave	2nd St	8th St	Class IIIB Bicycle Boulevard	0.32	67	High-Priority
Macdonald Ave	Richmond Parkway	Harbour Way	Class II Bicycle Lane	0.70	67	High-Priority
Cutting Blvd	Hoffman Blvd	Carlson Blvd	Class IV Separated Bikeway	1.43	67	High-Priority
BNSF Easement near Railroad Ave (not acquired yet)	Richmond Ave	Washington Ave	Class I Shared-Use Path	0.23	66	High-Priority
Bissell Ave	Richmond Parkway	Espee Ave	Class IIIB Bicycle Boulevard	1.29	66	High-Priority
Ells St	Flemino Ave	Bayview Ave	Class IIIB Bicycle Boulevard	0.11	65	High-Priority
Macdonald Ave	16th St	Key Blvd	Class II Bicycle Lane	1.80	65	High-Priority
Miraflores Greenbelt - Ohio Connection	S 45th St	Miraflores Greenbelt	Class I Shared-Use Path	0.10	65	High-Priority
45th St	Nevin Ave	Macdonald Ave	Class IIIB Bicycle Boulevard	0.08	65	High-Priority
Ohio Ave	17th St	23rd St	Class II Bicycle Lane	0.30	65	High-Priority
25th St	Macdonald Ave	Roosevelt Ave	Class IIIB Bicycle Boulevard	0.30	65	High-Priority

Table 08 Bicycle Projects by Prioritization Scores (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
2nd/ S 2nd St	I-580	Pennsylvania Ave	Class IIIB Bicycle Boulevard	1.05	64	Medium Priority Project
Nevin Ave	Richmond Parkway	8th St	Class IIIB Bicycle Boulevard	0.54	64	Medium Priority Project
6th St	Maine Ave	Ripley Ave	Class III Bicycle Route	0.73	64	Medium Priority Project
Southside Park Trail extension	S 7th St	Cutting Blvd	Class I Shared-Use Path	0.11	64	Medium Priority Project
23rd St	Brooks Ave	Maricopa Ave	Class II Bicycle Lane	0.66	63	Medium Priority Project
New Shared-Use Path	Lincoln Ave	Garvin Ave	Class I Shared-Use Path	0.14	63	Medium Priority Project
Wilson Ave	McBryde Ave	44th St	Class IIIB Bicycle Boulevard	0.70	63	Medium Priority Project
S 41st St	Center Ave	Cutting Blvd	Class IIIB Bicycle Boulevard	0.33	63	Medium Priority Project
Bayview Ave	Seaport Ave	S 55th St	Class IV Separated Bikeway	0.36	63	Medium Priority Project
43rd St	Macdonald Ave	Wilson Ave	Class IIIB Bicycle Boulevard	0.42	63	Medium Priority Project
13th St	Harbour Way	Costa Ave / City Boundary	Class IV Separated Bikeway	0.60	62	Medium Priority Project
Maine Ave	S 2nd St	Harbour Way	Class IIIB Bicycle Boulevard	0.43	62	Medium Priority Project
Barrett Ave	A St	7th St	Class IIIB Bicycle Boulevard	0.34	62	Medium Priority Project
S 47th St - Fall Ave - S 45th St - Overend Ave - JFK Park	Wall Ave	Potrero Ave	Class IIIB Bicycle Boulevard	0.64	61	Medium Priority Project
Nevin Ave	27th St	45th St	Class IIIB Bicycle Boulevard	0.85	61	Medium Priority Project
7th St	Barrett Ave	Ripley Ave	Class II Bicycle Lane	0.13	61	Medium Priority Project
San Luis St	Central Ave	Carlson Blvd	Class III Bicycle Route	0.75	60	Medium Priority Project
S 55th St	San Joaquin St	Creely Ave / City Boundary	Class III Bicycle Route	0.58	60	Medium Priority Project

Table 08 Bicycle Projects by Prioritization Scores (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
Maine Ave	S 12th St	S 28th St	Class IIIB Bicycle Boulevard	0.82	60	Medium Priority Project
San Pablo Ave	Natalie Ct (City Boundary)	Macdonald Ave (City Boundary)	Class IV Separated Bikeway	1.34	60	Medium Priority Project
Barrett Ave	San Pablo Ave	Key Blvd	Class II Bicycle Lane	0.11	60	Medium Priority Project
S 47th St - I-580 Overpass	Carlson Blvd	Meade St	Class I Shared-Use Path	0.08	60	Medium Priority Project
Central Ave	Existing Bay Trail	Rydin Rd	Class I Shared-Use Path	0.02	59	Medium Priority Project
S 47th St	Potrero Ave	Carlson Blvd	Class II Bicycle Lane	0.28	59	Medium Priority Project
Southside Park Trail west extension	S 3rd St	S 2nd St	Class I Shared-Use Path	0.06	59	Medium Priority Project
Grant Ave	23rd St	24th St	Class III Bicycle Route	0.14	58	Medium Priority Project
Center Ave	Carlson Blvd	S 41st St	Class IIIB Bicycle Boulevard	0.76	57	Medium Priority Project
S 2nd St	I-580	Cutting Blvd	Class II Bicycle Lane	0.13	57	Medium Priority Project
Barrett Ave	43rd St	45th St	Class II Bicycle Lane	0.07	57	Medium Priority Project
20th St	Espee Ave	Potero Ave	Class IIIB Bicycle Boulevard	0.67	57	Medium Priority Project
Klose Way	Hilltop Mall Rd	Blume Dr	Class II Bicycle Lane	0.10	57	Medium Priority Project
S 33rd St	Wall Ave	Nevin Ave	Class IIIB Bicycle Boulevard	0.53	56	Medium Priority Project
Esmond Ave	San Pablo Ave	37th St	Class IIIB Bicycle Boulevard	0.12	56	Medium Priority Project
Cypress Ave	S 47th St	Ells St	Class IIIB Bicycle Boulevard	0.21	55	Medium Priority Project
15th St	Roosevelt Ave	Costa Ave	Class IIIB Bicycle Boulevard	0.72	55	Medium Priority Project
Coalinga Ave	13th St	23rd St	Class IIIB Bicycle Boulevard	0.54	55	Medium Priority Project
Robert Miller Dr	Hilltop Mall Rd	Hilltop Dr	Class II Bicycle Lane	0.08	55	Medium Priority Project
S 45th St	Richmond Greenway	Wall Ave	Class IIIB Bicycle Boulevard	0.22	54	Medium Priority Project

Table 08 Bicycle Projects by Prioritization Scores (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
24th St	Maricopa Ave	Downer Ave	Class IIIB Bicycle Boulevard	0.53	54	Medium Priority Project
Grant Ave	24th St	30th St	Class II Bicycle Lane	0.32	54	Medium Priority Project
Marina Bay Pkwy	Cutting Blvd	Meeker Ave	Class IV Separated Bikeway	0.39	53	Medium Priority Project
Elm St	7th St	8th St	Class IIIB Bicycle Boulevard	0.05	53	Medium Priority Project
Wright Ave	Marina Way	S 19th St	Class II Bicycle Lane	0.24	53	Medium Priority Project
E Richmond Ave	Gerrard Blvd	Canal Blvd Parking Lot Cut Through	Class II Bicycle Lane	0.27	53	Medium Priority Project
Roosevelt Ave	Portola Ave	44th St	Class IIIB Bicycle Boulevard	1.56	53	Medium Priority Project
30th St	Garvin Ave	Nevin Ave	Class IIIB Bicycle Boulevard	0.55	53	Medium Priority Project
25th St	Grant Ave	Downer Ave	Class II Bicycle Lane	0.12	53	Medium Priority Project
S 19th St	Wright Ave	Meeker Ave	Class III Bicycle Route	0.10	53	Medium Priority Project
27th St	Broadway	Grant Ave	Class IIIB Bicycle Boulevard	0.45	53	Medium Priority Project
Marina Way	Richmond Greenway	Waterfront / Lucretia Edwards Park	Class IV Separated Bikeway	1.48	52	Medium Priority Project
Wall Ave	S 41st St	S 49th St	Class IIIB Bicycle Boulevard	0.40	52	Medium Priority Project
McBryde Ave	San Pablo Ave	Wildcat Canyon Parking Lot	Class II Bicycle Lane	0.65	51	Medium Priority Project
Maricopa Ave	23rd St	36th St	Class IIIB Bicycle Boulevard	0.77	50	Medium Priority Project
Regatta Blvd	Marina Bay Pkwy	S 32nd St	Class II Bicycle Lane	0.37	50	Medium Priority Project
Key Blvd	Macdonald Ave	Clinton Ave	Class II Bicycle Lane	0.51	50	Medium Priority Project
Garvin Ave	Portola Ave	San Pablo Ave	Class IIIB Bicycle Boulevard	1.57	49	Medium Priority Project
Marina Bay Pkwy	I-580	Meeker Ave	Class I Shared-Use Path	0.16	49	Medium Priority Project

Table 08 Bicycle Projects by Prioritization Scores (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
Hilltop Mall Rd	Hilltop Mall Rd	Hilltop Mall Rd	Class IV Separated Bikeway	1.28	49	Medium Priority Project
Regatta Blvd	Spring St	Julia Woods St	Class III Bicycle Route	0.11	49	Medium Priority Project
S 39th St	Center Ave	Richmond Greenway	Class IIIB Bicycle Boulevard	0.08	49	Medium Priority Project
S 56th St	Tehama Ave	Carlos Ave / City Boundary	Class III Bicycle Route	0.64	48	Medium Priority Project
Hilltop Dr	Robert Miller Dr	Park Central St	Class IV Separated Bikeway	1.11	48	Medium Priority Project
Filbert St	Chesley Ave	Existing Class II	Class IIIB Bicycle Boulevard	0.34	48	Medium Priority Project
Wall Ave	S 39th St	S 41st St	Class I Shared-Use Path	0.09	47	Medium Priority Project
Wall Ave	S 33rd St	John F. Kennedy Park	Class IIIB Bicycle Boulevard	0.34	47	Opportunity Project
Alamo Ave	Cherry St	City Boundary (North Richmond)	Class IIIB Bicycle Boulevard	0.45	47	Opportunity Project
Shane Dr	Hilltop Mall Rd	Hilltop Dr	Class IV Separated Bikeway	0.12	47	Opportunity Project
7th St	7th St bike lane	Lincoln Ave	Class III Bicycle Route	0.10	46	Opportunity Project
Amador Street	McBryde Ave	Clinton Ave	Class III Bicycle Route	0.51	46	Opportunity Project
Tehama Ave	Carlson Blvd	City Boundary (El Cerrito)	Class IIIB Bicycle Boulevard	0.40	45	Opportunity Project
Meade St	Regatta Blvd	Seaport Ave	Class IV Separated Bikeway	0.72	45	Opportunity Project
Clinton Ave	Key Blvd	City Boundary	Class IIIB Bicycle Boulevard	0.50	45	Opportunity Project
Kelsey St	Chesley Ave	Willard Ave	Class IIIB Bicycle Boulevard	0.25	45	Opportunity Project
Regatta Blvd	Regatta Blvd Trail	Julia Wood St/Spring St	Class IV Separated Bikeway	0.20	45	Opportunity Project
Richmond Pkwy	San Pablo Ave	Blume Dr	Class IV Separated Bikeway	0.94	45	Opportunity Project
Sacramento Ave	San Pablo Ave	San Luis St	Class IIIB Bicycle Boulevard	0.41	44	Opportunity Project

Table 08 Bicycle Projects by Prioritization Scores (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
Potrero Ave	Carlson Blvd	San Pablo Ave (beyond City limit)	Class II Bicycle Lane	0.97	44	Opportunity Project
Marina Bay Parkway	Regatta Blvd	Peninsula Dr	Class II Bicycle Lane	0.63	44	Opportunity Project
Solano Ave	38th Ave	City Boundary	Class IIIB Bicycle Boulevard	0.71	44	Opportunity Project
Lucas Ave	Richmond Parkway	Lucas Park	Class IIIB Bicycle Boulevard	0.32	44	Opportunity Project
Hilltop Dr	Richmond Parkway	Robert Miller Dr	Class IV Separated Bikeway	0.84	44	Opportunity Project
McBryde Ave	23rd St	San Pablo Ave	Class IIIB Bicycle Boulevard	0.91	44	Opportunity Project
29th St	Howard St	Garvin Ave	Class IIIB Bicycle Boulevard	0.66	44	Opportunity Project
Regatta Blvd	Bay Trail / Marina Park & Green	Marina Bay Parkway	Class IV Separated Bikeway	0.17	44	Opportunity Project
Chesley Ave	UPRR	BNSF	Class IIIB Bicycle Boulevard	0.10	44	Opportunity Project
Robin Dr	Regatta Blvd	Meade St	Class I Shared-Use Path	0.34	43	Opportunity Project
McGlothen Way - Phanor Dr - Giant Hwy	Williams Dr	Point Pinole Regional Shoreline Park	Class IIIB Bicycle Boulevard	0.44	43	Opportunity Project
Groom Dr - Wiswal Dr - Parker Rd	Oxford Ave	Movers Rd	Class IIIB Bicycle Boulevard	1.48	43	Opportunity Project
Lincoln Ave	8th St	7th St	Class IIIB Bicycle Boulevard	0.05	43	Opportunity Project
S 51st St	Seaport Ave	Bay Trail	Class IIIB Bicycle Boulevard	0.08	42	Opportunity Project
Meeker Ave	S 19th St	Marina Bay Parkway	Class II Bicycle Lane	0.26	41	Opportunity Project
Canal Blvd	Ohio Ave	Cutting Blvd	Class IV Separated Bikeway	0.38	41	Opportunity Project
San Pablo Ave	Hilltop Dr	Richmond Pkwy	Class IV Separated Bikeway	0.37	41	Opportunity Project
Sutter Ave	San Luis St	San Pablo city limit	Class IIIB Bicycle Boulevard	0.42	41	Opportunity Project

Table 08 Bicycle Projects by Prioritization Scores (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
New Shared-Use Path	Brookside Dr	Richmond Parkway	Class I Shared-Use Path	1.47	40	Opportunity Project
N Castro St	Bay Trail	Filbert St	Class IIIB Bicycle Boulevard	0.17	40	Opportunity Project
Washington Ave	Casey Dr	Richmond Ave	Class III Bicycle Route	0.25	40	Opportunity Project
Lakeside Dr	Richmond Parkway	Research Dr	Class II Bicycle Lane	0.54	40	Opportunity Project
Research Dr	Hilltop Dr	Lakeside Dr	Class IIIB Bicycle Boulevard	0.05	39	Opportunity Project
Park Central St	Hilltop Dr	Park Central Ct	Class IV Separated Bikeway	0.86	39	Opportunity Project
Golden Gate Ave	Ocean Ave	Washington Ave	Class III Bicycle Route	0.86	39	Opportunity Project
Richmond Ave - Canal Blvd connector	Richmond Ave	Canal Blvd	Class I Shared-Use Path	0.06	38	Opportunity Project
Moyers Rd - Oxford Ave - Birmingham Dr	Hilltop Dr	Hilltop Dr	Class IIIB Bicycle Boulevard	1.89	38	Opportunity Project
Valley View Rd	City Boundary (El Sobrante)	Pine Hill Dr	Class IV Separated Bikeway	0.78	38	Opportunity Project
Hensley St	Willard Ave	Richmond Parkway	Class II Bicycle Lane	0.40	38	Opportunity Project
Doran Dr	Western Dr	Brickyard Cove Rd	Class IV Separated Bikeway	0.87	38	Opportunity Project
El Portal Dr	Near I-80	Near San Pablo Dam Rd	Class II Bicycle Lane	0.18	38	Opportunity Project
Hillview Dr	Hilltop Mall Rd	Hilltop Dr	Class IV Separated Bikeway	0.09	38	Opportunity Project
Richmond Pkwy	Goodrick Ave	Hilltop Dr	Class IV Separated Bikeway	1.76	37	Opportunity Project
San Pablo Dam Rd	El Portal Dr	City Limits	Class IV Separated Bikeway	0.07	37	Opportunity Project
Cerrito Ave - 38th St	37th St	Solano Ave	Class IIIB Bicycle Boulevard	0.22	36	Opportunity Project
Canal Blvd	Cutting Blvd	Seacliff Dr	Class IV Separated Bikeway	0.76	36	Opportunity Project

Table 08 Bicycle Projects by Prioritization Scores (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
Point Richmond Bike Boulevard	Ocean Ave	Garrard Blvd	Class III Bicycle Route	1.17	35	Opportunity Project
Bay Trail Extension: Miller-Knox Regional Shoreline	Existing Bay Trail near Dornan Dr	Existing Bay Trail near Brickyard Cove Rd	Class I Shared-Use Path	0.40	35	Opportunity Project
Park Central St Shopping Center Access	Park Central Ct	Shopping Center	Class I Shared-Use Path	0.03	34	Opportunity Project
Wildcat Creek Trail Gap Closure	Existing trail (North Richmond)	Existing trail (near Hubert Park - San Pablo)	Class I Shared-Use Path	0.34	34	Opportunity Project
San Pablo Ave	Hilltop Dr	La Puerta Dr	Class II Bicycle Lane	0.57	34	Opportunity Project
Brickyard Cove Rd	Dornan Dr	Sandpiper Spit	Class II Bicycle Lane	0.30	34	Opportunity Project
Molate Point Bay Trail Extension	Stenmark Dr	Bridge Trail	Class I Shared-Use Path	2.39	33	Opportunity Project
Morningside Dr	Valley View Rd	Full Moon Dr/ Thunderhead Ct	Class IIIB Bicycle Boulevard	0.93	33	Opportunity Project
May Rd	Laurel Ln	Valley View Rd	Class II Bicycle Lane	0.66	33	Opportunity Project
Giant Hwy	Collins Ave	Richmond Parkway	Class IV Separated Bikeway	0.33	33	Opportunity Project
Market Ave	San Pablo city limit	North Richmond city limit	Class IIIB Bicycle Boulevard	0.07	32	Opportunity Project
New Shared-Use Path	Bay Trail	Meade St	Class I Shared-Use Path	0.58	31	Opportunity Project
Bayside Dr	Marina Bay Pkwy	Traffic circle	Class II Bicycle Lane	0.15	31	Opportunity Project
Giant Hwy	Atlas Rd	Griffin Dr	Class IV Separated Bikeway	0.95	31	Opportunity Project
Point Pinole Bay Trail spur	Existing Bay Trail	Existing Bay Trail	Class I Shared-Use Path	0.60	26	Opportunity Project

Table 08 Bicycle Projects by Prioritization Scores (continued).

STREET	START	END	RECOMMENDED FACILITY	MILES	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
Point San Pablo Bay Trail extension	Molate Point Bay Trail extension	Point San Pedro	Class I Shared-Use Path	1.63	25	Opportunity Project
Bay Trail Extension: Point Pinole - San Pablo Bay Regional Shoreline	Existing Bay Trail	Existing Bay Trail	Class I Shared-Use Path	1.02	25	Opportunity Project
Regatta Blvd	S 32nd St	Robin Dr	Class II Bicycle Lane	0.44	25	Opportunity Project
San Pablo Dam Rd	Near Martins Ln	Near Martins Ln	Class IV Separated Bikeway	0.06	24	Opportunity Project



Pedestrian Project Prioritization Results

Out of 100 possible points, recommended pedestrian project prioritization scores ranged between 27 and 81 points. The average project score was 61. Spot improvement projects broke down into the categories shown in **Table 9**.

Figures 18-20 below show the category of each recommended bicycle project.

Figures 21-23 in the following pages highlight the high-priority projects.

Table 10 lists all spot improvements with their prioritization score and category.

Table 09 Spot Recommendation Prioritization Summary

PRIORITIZATION CATEGORY	POINT RANGE	NUMBER OF PROJECTS
High priority	76-100	28
Medium priority	58-75	40
Opportunity priority	0-57	37

PROPOSED
PEDESTRIAN SPOT
IMPROVEMENT
PRIORITIZATION

TRAVEL SAFE
RICHMOND

PROPOSED
PEDESTRIAN PROJECTS

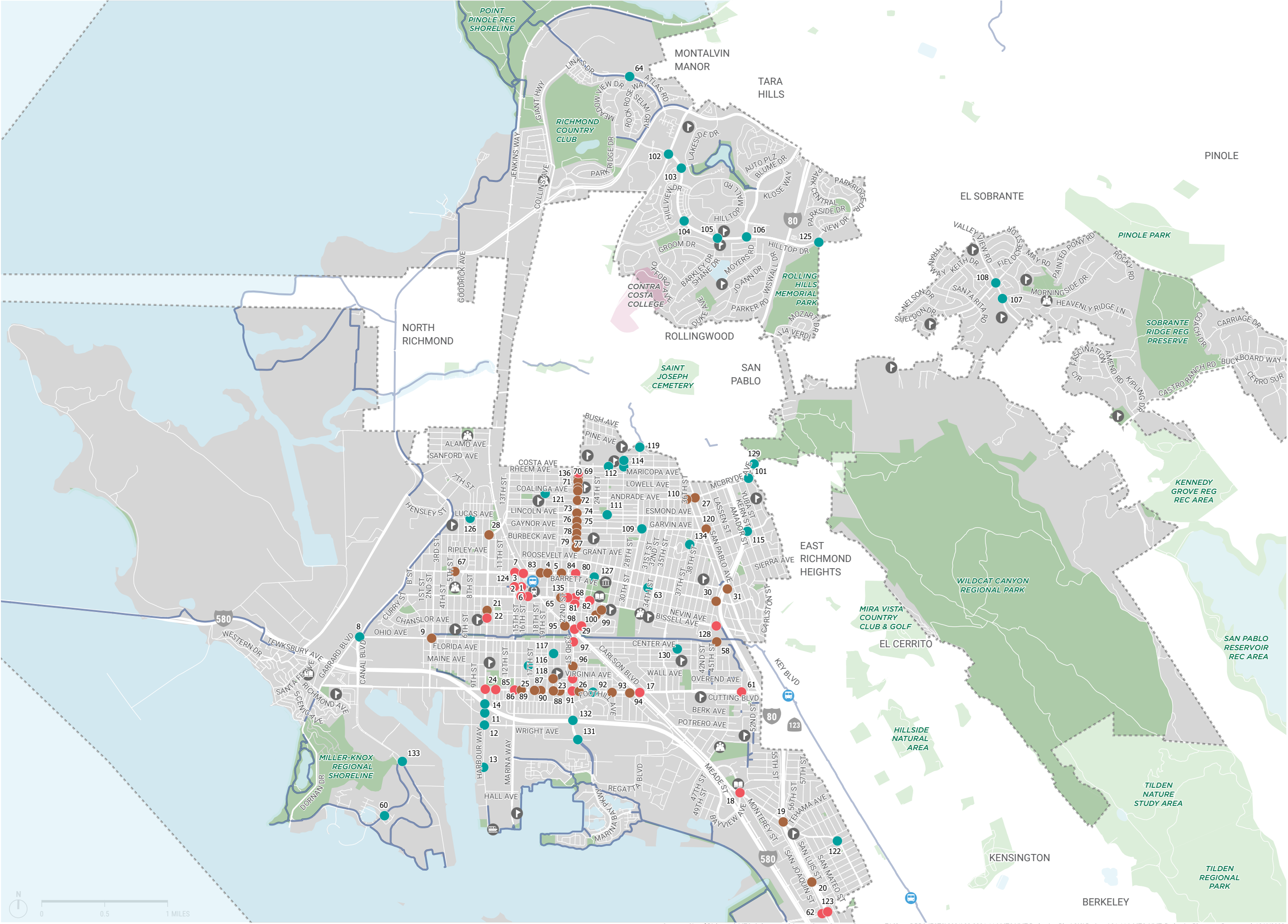
- Prioritization Category
- High Priority Project
 - Medium Priority Project
 - Opportunity Project

EXISTING PEDESTRIAN
PATHS

Existing Pedestrian
Paths

BOUNDARIES +
DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Park
- Contra Costa College
- City Boundary



Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Figure 18 Proposed Spot Improvements by Prioritization Category

PROPOSED PEDESTRIAN SPOT IMPROVEMENT PRIORITIZATION CENTRAL CORE

TRAVEL SAFE
RICHMOND

PROPOSED BICYCLE FACILITIES

- High Priority Project
- Medium Priority Project
- Opportunity Project

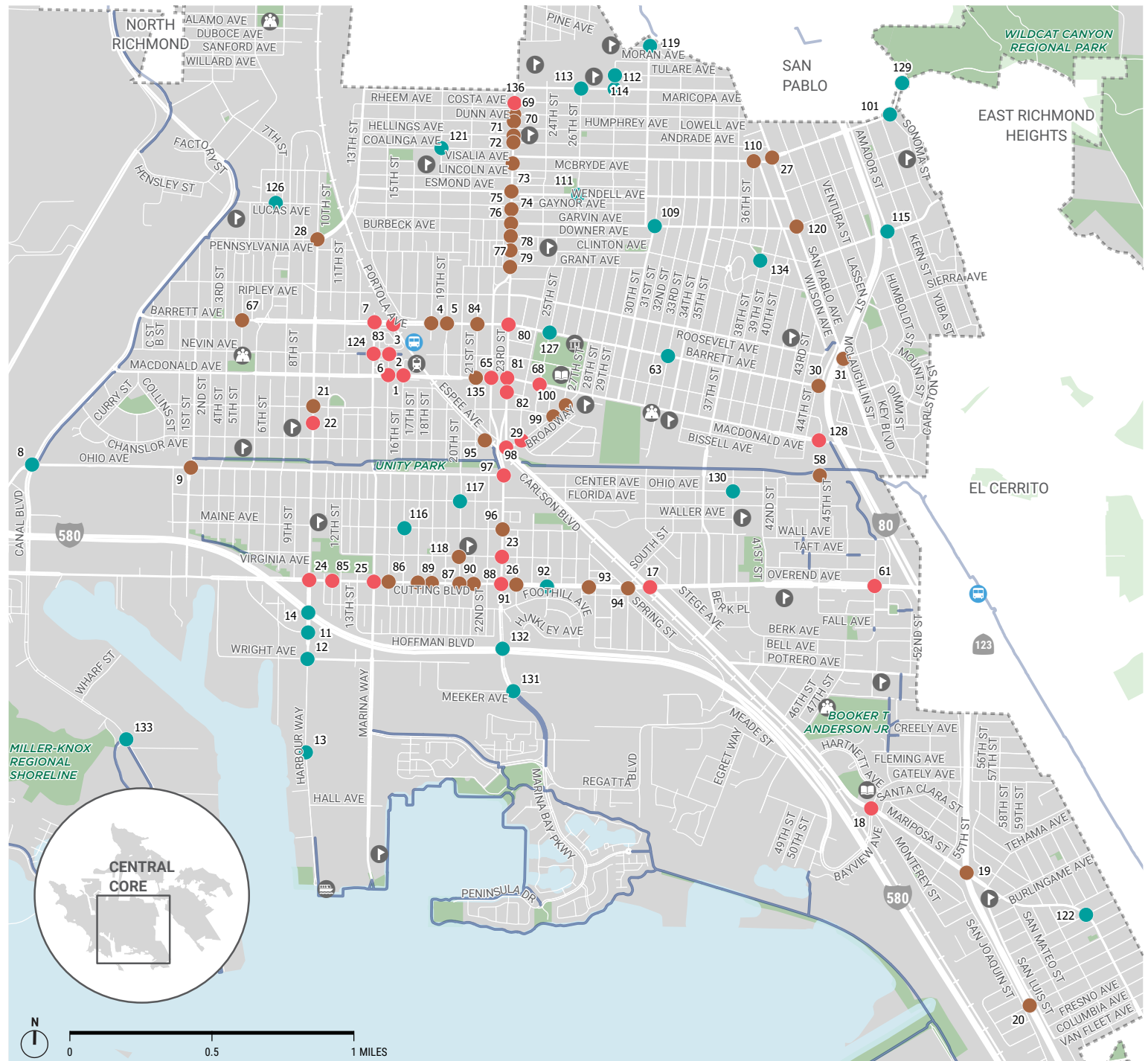
EXISTING PEDESTRIAN PATHS

— Existing Pedestrian Paths

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Park
- Contra Costa College
- City Boundary

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Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Figure 19 Proposed Spot Improvements by Prioritization Category (Central Core)

PROPOSED PEDESTRIAN SPOT IMPROVEMENT PRIORITIZATION

NORTH RICHMOND

TRAVEL SAFE
RICHMOND

BICYCLE PROJECT PRIORITIZATION

- High Priority Project
- Medium Priority Project
- Opportunity Project

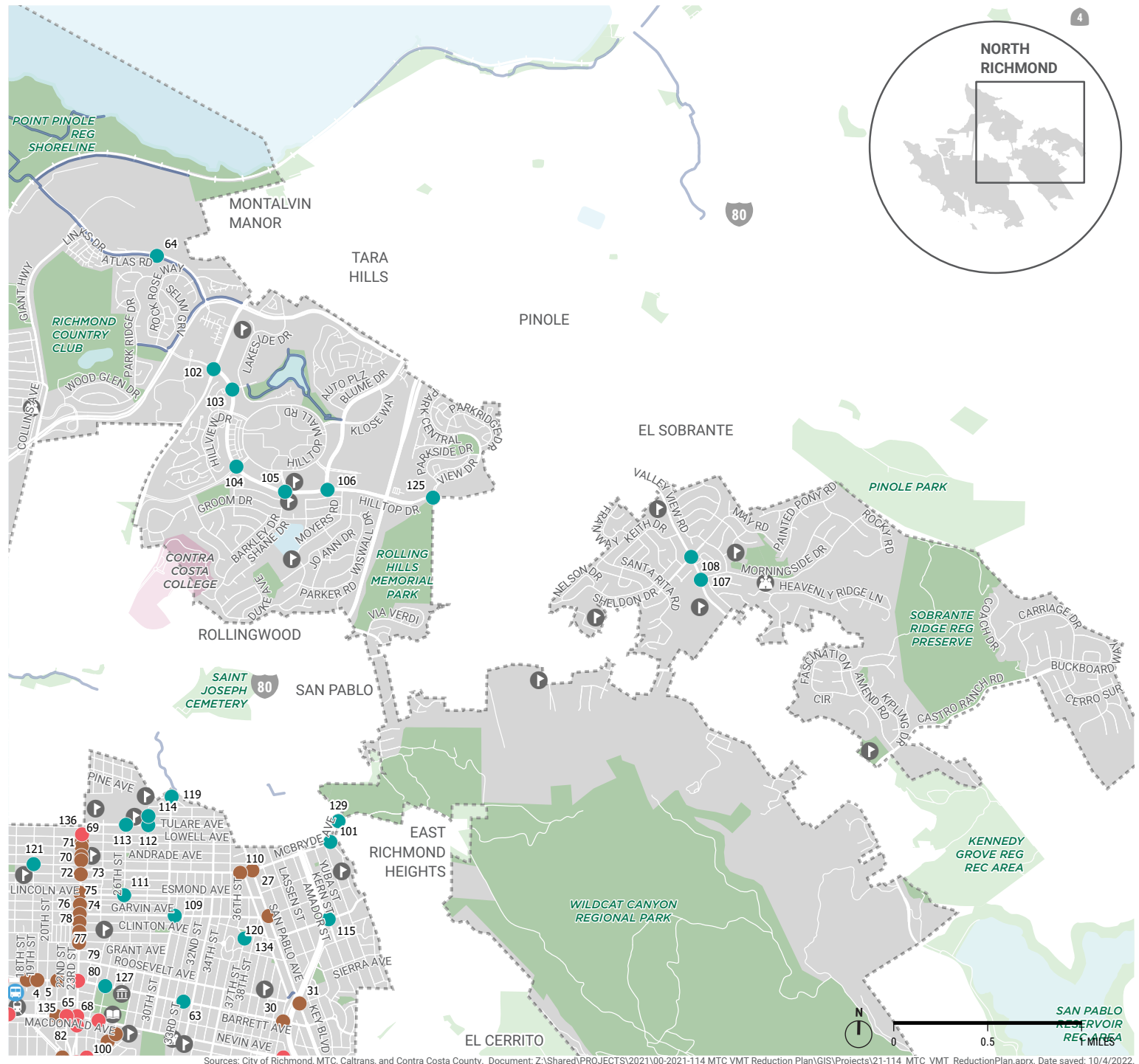
EXISTING BICYCLE FACILITIES

Existing Pedestrian Paths

BOUNDARIES + DESTINATIONS

- BART Station
- Amtrak Station
- Ferry Terminal
- School
- City Hall
- Library
- Community Center
- Park
- Contra Costa College
- City Boundary

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Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Figure 20 Proposed Spot Improvements by Prioritization Category (North Richmond)

HIGH PRIORITY
PEDESTRIAN SPOT
IMPROVEMENTS

TRAVEL SAFE
RICHMOND

PROPOSED
PEDESTRIAN PROJECTS

Prioritization Category

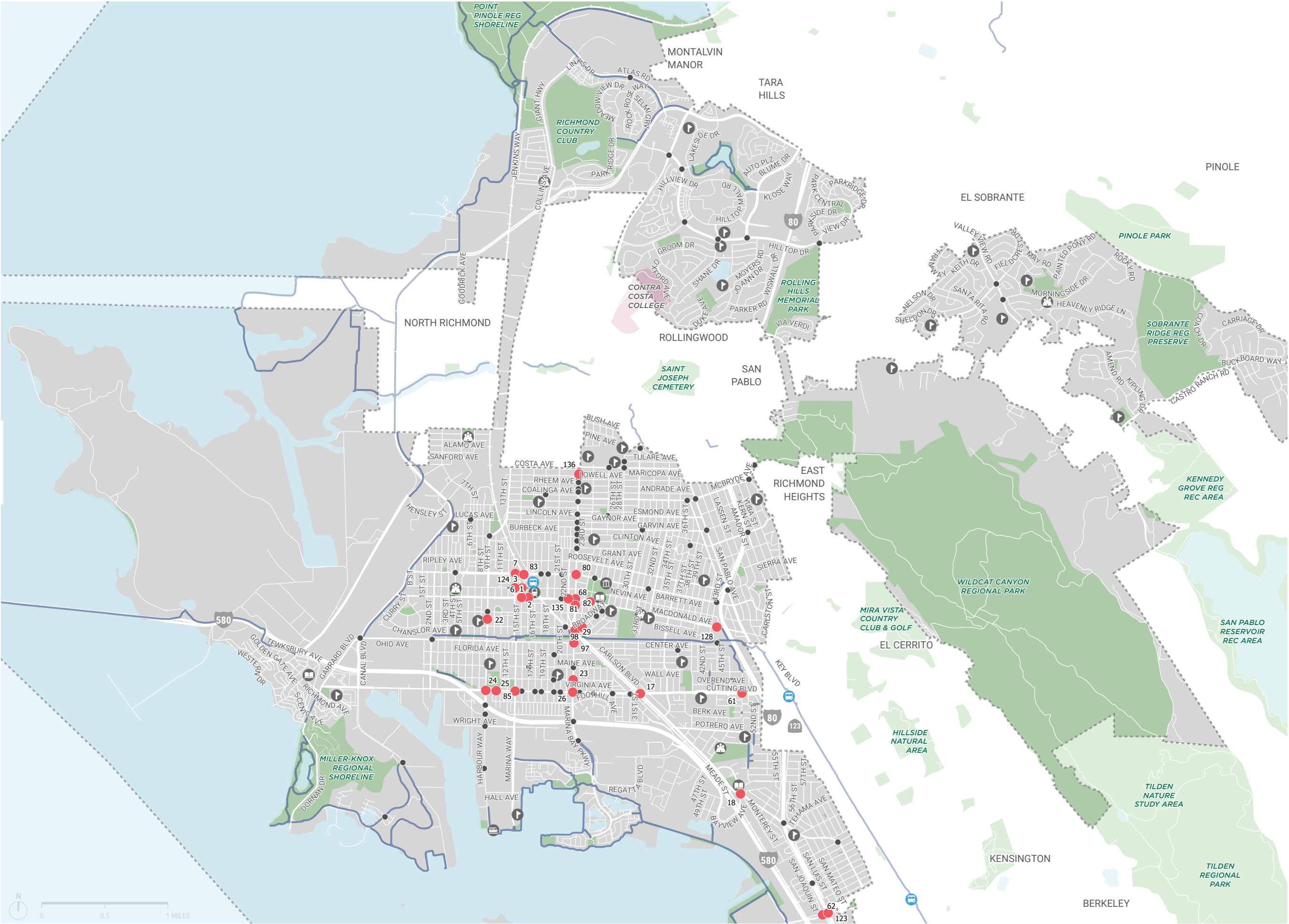
- High Priority Project
- Medium Priority and Opportunity Projects

EXISTING
PEDESTRIAN PROJECTS

- Class I Shared-Use Path

BOUNDARIES +
DESTINATIONS

- 🚇 BART Station
- 🚆 Amtrak Station
- 🚢 Ferry Terminal
- 🎓 School
- 🏛️ City Hall
- 📖 Library
- 🏠 Community Center
- 🌳 Park
- 🎓 Contra Costa College
- 🔲 City Boundary



Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Figure 21 High Priority Spot Improvements

HIGH PRIORITY PEDESTRIAN SPOT IMPROVEMENTS

CENTRAL CORE
TRAVEL SAFE
RICHMOND

PROPOSED BICYCLE FACILITIES

- High Priority Project
- Medium Priority and Opportunity Projects

EXISTING PEDESTRIAN PROJECTS

— Class I Shared-Use Path

BOUNDARIES + DESTINATIONS

- 🚇 BART Station
- 🚆 Amtrak Station
- 🚢 Ferry Terminal
- 🎓 School
- 🏛️ City Hall
- 📖 Library
- 👥 Community Center
- 🌳 Park
- 🎓 Contra Costa College
- 🗺️ City Boundary

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Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Figure 22 High Priority Spot Improvements (Central Core)

HIGH PRIORITY PEDESTRIAN SPOT IMPROVEMENTS

NORTH RICHMOND
TRAVEL SAFE
RICHMOND

PROPOSED PEDESTRIAN PROJECTS

- High Priority Project
- Medium Priority and Opportunity Projects

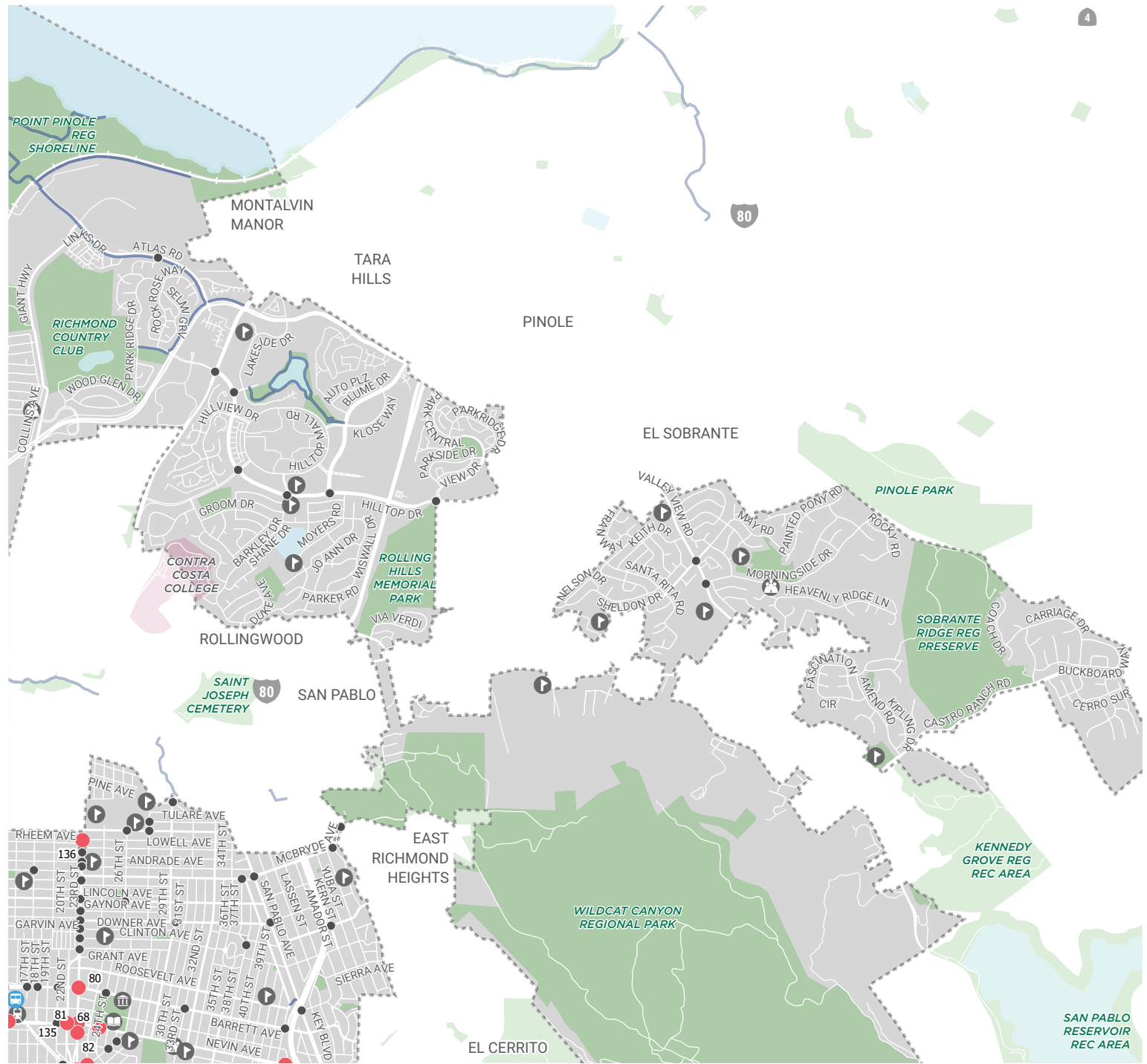
EXISTING PEDESTRIAN PROJECTS

— Class I Shared-Use Path

BOUNDARIES + DESTINATIONS

- 🚇 BART Station
- 🚆 Amtrak Station
- 🚢 Ferry Terminal
- 🎓 School
- 🏛️ City Hall
- 📖 Library
- 🏠 Community Center
- 🌳 Park
- 🎓 Contra Costa College
- 🗺️ City Boundary

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Sources: City of Richmond, MTC, Caltrans, and Contra Costa County. Document: Z:\Shared\PROJECTS\2021\00-2021-114 MTC VMT Reduction Plan\GIS\Projects\21-114_MTC_VMT_ReductionPlan.aprx. Date saved: 10/4/2022.

Figure 23 High Priority Spot Improvements (North Richmond)

Table 10 Bicycle Projects by Prioritization Scores

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
2	Macdonald Ave	15th St	Crossing Improvement	Consider constructing a raised intersection or raised crosswalk at the eastern approach. Construct curb extensions at all four corners. Install high-visibility crosswalks at the eastern and western approaches on top of decorative paving.	81	High Priority Project
26	Broadway	23rd St	Intersection Upgrade	Widen, lengthen, and channelize median islands. Restripe crosswalks as high-visibility crosswalks.	81	High Priority Project
31	S 49th St	Cutting Blvd	Lighting	LRSP high-injury intersection,: install intersection lighting.	81	High Priority Project
32	San Joaquin St	Central Ave	Intersection Upgrade	LRSP high-injury intersection: construct bulb outs and install advanced warning signs.	81	High Priority Project
19	Harbour Way	300' north of Chanslor Ave	Crossing Improvement	Install a high-visibility midblock crosswalk with a median refuge island.	80	High Priority Project
67	Broadway	24th St	Crossing Improvement	Construct curb extensions at all corners.	80	High Priority Project
92	Central Ave	I-80	Crossing Improvement	Coordinate with Caltrans to upgrade all crosswalks to high-visibility crosswalks and provide leading pedestrian intervals for all crossing phases. Extend bicycle conflict markings on Central through the Jacuzzi intersection and interchange. Long term, construct curb extensions to tighten radii and square up approaches.	80	High Priority Project
37	25th St	Macdonald Ave	Crossing Improvement	LRSP high-injury intersection: Upgrade all crosswalks to high-visibility. Consider installing RRFB or PHB. Construct curb extensions at all corners.	79	High Priority Project
51	23rd St	Exchange Pl	Crossing Improvement	Construct a median refuge island and install an RRFB for a crossing of 23rd Street. .	78	High Priority Project
66	Ohio Ave	S 23rd St	Crossing Improvement	Construct curb extensions at all corners.	78	High Priority Project
93	Nevin Ave	Marina Way	Crossing Improvement	Upgrade all crosswalks to high-visibility crosswalks and provide a leading pedestrian interval for call crossing phases. Long term, consider converting the intersection to a raised intersection.	78	High Priority Project
1	Macdonald Ave	16th St	Intersection Upgrade	Consider scramble phase or otherwise don't allow permitted left turns to conflict with pedestrians in the crosswalk. Create LPI. Consider parklet on southwest corner	77	High Priority Project

Table 10 Bicycle Projects by Prioritization Scores (continued).

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
15	Carlson Blvd	Bayview Ave	Intersection Upgrade	Install intersection improvements including curb extensions and a median nose.	77	High Priority Project
20	S 23rd St	Virginia Ave	Crossing Improvement	Consider installation of a pedestrian refuge island and install pedestrian scale lighting.	77	High Priority Project
3	Nevin Ave	15th St	Crossing Improvement	Consider constructing a median refuge or traffic circle to accommodate direct pedestrian path of travel.	76	High Priority Project
6	15th St	Nevin Ave	Other	Provide a ramp to allow bicycle access to/from plaza.	76	High Priority Project
7	Marina Way	Barrett Ave	Intersection Upgrade	Install a curb extension at the northwest and southwest corners. Provide a leading pedestrian interval and adjust pedestrian phase length to provide sufficient crossing times. Realign the southern crosswalk several feet south and install high-visibility crosswalks at the north and eastern approaches. Consider installing bicycle lane conflict markings and a two-stage bike turn box for NB-WB bike movements.	76	High Priority Project
14	Carlson Blvd	Cutting Blvd	Intersection Upgrade	Construct intersection improvements including: formalized curb extensions, widened sidewalk, and additional sidewalks.	76	High Priority Project
21	Harbour Way	Cutting Blvd	Intersection Upgrade	Install curb extensions, directional ramps and high-visibility crosswalks, and median crossing islands.	76	High Priority Project
22	Marina Way	Cutting Blvd	Intersection Upgrade	Install curb extensions, directional ramps and high-visibility crosswalks and median crossing islands.	76	High Priority Project
23	S 23rd St	Cutting Blvd	Intersection Upgrade	Restripe crosswalks as high-visibility crosswalks. Install curb extensions at all corners with directional ramps. Construct median crossing islands.	76	High Priority Project
49	23rd St	Barrett Ave	Crossing Improvement	Implement improvement in CCTA CSSA.	76	High Priority Project
50	23rd St	Macdonald Ave	Crossing Improvement	Implement improvement in CCTA CSSA.	76	High Priority Project
52	Barrett Ave	BART Tracks	Sidewalk	Widen sidewalk on northern side through underpass (Requires road diet).	76	High Priority Project

Table 10 Bicycle Projects by Prioritization Scores (continued).

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
54	Cutting Blvd	S 12th St	Crossing Improvement	Install high-visibility crosswalks at all approaches.	76	High Priority Project
97	Macdonald Ave	45th St	Crossing Improvement	Upgrade all crosswalks to high-visibility crosswalks and install advance yield markings. Install an RRFB for the Macdonald crosswalks. On the south side of the street, widen the sidewalk and provide a connection to the “Target Path.”	76	High Priority Project
104	22nd St	Macdonald Ave	Crossing Improvement	Install curb extensions at the northwest and northeast corners. Install a pedestrian count display at the southwest corner. When next repaved, reduce the intersection’s crown and conform asphalt to the gutter pan.	76	High Priority Project
4	Barrett Ave	18th St	Crossing Improvement	Install the north, south, and west crosswalk legs as high-visibility. Install an RRFB or PHB for Barrett crossings (based on warrants). Add appropriate signs and advance pavement markings based on selected actuated crossing beacon.	75	Medium Priority Project
16	Carlson Blvd	I-80 Undercrossing	Intersection Upgrade	Construct intersection improvements including: median refuge islands and curb extensions.	75	Medium Priority Project
57	Cutting Blvd	S 21st St	Crossing Improvement	Upgrade all crosswalks to high-visibility.	75	Medium Priority Project
18	Harbour Way	Bissell Ave	Intersection Upgrade	Install curb extensions at all corners and re-stripe crosswalks as high-visibility.	74	Medium Priority Project
5	Barrett Ave	19th St	Crossing Improvement	Stripe fourth crosswalk leg and upgrade traffic signal to include pedestrian countdown.	73	Medium Priority Project
35	Macdonald Ave	21st St	Crossing Improvement	LRSP high-injury intersection. Upgrade all crosswalks to high-visibility. Consider installing an RRFB or PHB. Construct curb extensions at all corners.	72	Medium Priority Project
64	Chanslor Ave	Espee Ave	Crossing Improvement	Install curb extensions at the two western corners to square up the intersection.	72	Medium Priority Project
68	Broadway	Bissell Ave	Crossing Improvement	Install curb extensions at the northern corners to square-up the intersection. Realign and upgrade all crosswalks to high-visibility crosswalks.	72	Medium Priority Project

Table 10 Bicycle Projects by Prioritization Scores (continued).

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
28	San Pablo Ave	Roosevelt Ave	Intersection Upgrade	Install curb extensions to tighten turn radii, and shorten crossing distances, Coordinate with Caltrans to study removing double right turn lane from San Pablo onto I-80 on-ramp.	71	Medium Priority Project
55	Cutting Blvd	S 15th St	Crossing Improvement	Install high-visibility crosswalks at all approaches.	71	Medium Priority Project
59	Cutting Blvd	20th St	Crossing Improvement	Restripe the existing high-visibility crosswalks.	71	Medium Priority Project
69	Broadway	26th St	Crossing Improvement	Install high-visibility crosswalks at all approaches.	71	Medium Priority Project
56	Cutting Blvd	S 18th St	Crossing Improvement	Install high-visibility crosswalks at all approaches.	70	Medium Priority Project
46	23rd St	Downer Ave	Crossing Improvement	Install a new high-visibility crosswalk across 23rd Street with an RRFB.	69	Medium Priority Project
47	23rd St	Clinton Ave	Crossing Improvement	Construct a median refuge island and install an RRFB for the 23rd crossing.	69	Medium Priority Project
48	23rd St	Grant Ave	Crossing Improvement	Install high-visibility crosswalks at all approaches.	69	Medium Priority Project
63	Cutting Blvd	S 31st St	Crossing Improvement	Construct a pedestrian refuge island and install an RRFB/ PHB.	69	Medium Priority Project
65	Maine Ave	S 23rd St	Crossing Improvement	Install high-visibility crosswalks at all approaches and construct curb extensions at all corners.	69	Medium Priority Project
58	Cutting Blvd	S 17th St	Crossing Improvement	Install high-visibility crosswalks at all approaches.	68	Medium Priority Project

Table 10 Bicycle Projects by Prioritization Scores (continued).

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
60	Cutting Blvd	S 24th St	Crossing Improvement	Construct a pedestrian refuge island; and install RRFB/PHB.	67	Medium Priority Project
42	23rd St	Visalia Ave	Crossing Improvement	Install a new high-visibility crosswalk across 23rd Street. Install an RRFB at the crossing.	64	Medium Priority Project
53	Barrett Ave	21st St	Crossing Improvement	Install a new high-visibility crosswalk at the western approach.	64	Medium Priority Project
87	Virginia Ave	S 20th Street	Bicycle Access	Install a bicycle cutthrough in traffic divertor.	64	Medium Priority Project
45	23rd St	Garvin Ave	Crossing Improvement	Improve accessibility features (push buttons, curb ramps, etc.) at all corners (more details in the CSSA). Install curb extensions at all corners and crosswalk landings. Upgrade crosswalks to high-visibility.	63	Medium Priority Project
25	Harbour Way	Pennsylvania Ave/13th St	Intersection Upgrade	Install high-visibility crosswalks, and construct medians/channelized islands/curb extensions and advance stop bars. Consider slip lane removal.	62	Medium Priority Project
62	Cutting Blvd	S 29th St	Crossing Improvement	Construct pedestrian refuge island and install RRFB/PHB.	62	Medium Priority Project
27	Barrett Ave	I-80 Undercrossing	Intersection Upgrade	Coordinate with Caltrans to consider reconfiguring the through and turn lanes around the interchange. Coordinate with Caltrans to remove/trim vegetation around the off-ramp that blocks visibility of pedestrians in the north crosswalk. Install a high-visibility crosswalk across the eastern approach.	61	Medium Priority Project
38	23rd St	Lowel Ave	Crossing Improvement	Implement improvement in CCTA CSSA.	61	Medium Priority Project
43	23rd St	Esmond Ave	Crossing Improvement	Construct median refuge island and install an RRFB.	61	Medium Priority Project

Table 10 Bicycle Projects by Prioritization Scores (continued).

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
79	McBryde Ave	37th St	Crossing Improvement	Install curb extensions at all corners.	61	Medium Priority Project
9	Ohio Ave	S 2nd St	Crossing Improvement	Potential for bike and pedestrian intersection improvements.	60	Medium Priority Project
24	San Pablo Ave	McBryde Ave	Intersection Upgrade	Install curb extensions and ramps, and construct curb extensions so that streets intersect at right angles.	60	Medium Priority Project
29	S 45th St	Richmond Greenway Trail connection	Trail Access	Improve connections to trail connector ramp from 45th St	60	Medium Priority Project
39	23rd St	Dunn Ave	Crossing Improvement	Construct median refuge island and install an RRFB.	60	Medium Priority Project
44	23rd St	Gaynor Ave	Crossing Improvement	Install high-visibility crosswalks and an RRFB for the crossing of 23rd.	60	Medium Priority Project
105	23rd St	Rheem Ave	Crossing Improvement	Upgrade all curb ramps to current best practices; specifically, replace the southwest corner ramp with a “parallel” ramp and “centered” ramps at the two eastern corners. Adjust pedestrian signal heads as needed. Provide a leading pedestrian interval for all crossing phases.	60	High Priority Project
36	5th St	Barrett Ave	Crossing Improvement	LRSP high-injury intersection. Upgrade crosswalks to high-visibility. Consider installing an RRFB or PHB. Construct curb extensions.	59	Medium Priority Project
41	23rd St	Andrade Ave	Crossing Improvement	Construct median refuge island and install RRFB.	59	Medium Priority Project
17	Sacramento Ave	San Luis St	Crossing Improvement	Path crossing improvements: upgrade crosswalk to high-visibility and install advance yield markings. Consider installing RRFB.	58	Medium Priority Project
40	23rd St	Hellings Ave	Crossing Improvement	Install high-visibility crosswalks and install an RRFB for the 23rd Street crossing.	58	Medium Priority Project

Table 10 Bicycle Projects by Prioritization Scores (continued).

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
89	Garvin Ave	San Pablo Ave	Crossing Improvement	Install high-visibility crosswalks at all intersection approaches. Provide a leading pedestrian interval with all crossing phases. Install bicycle conflict markings.	58	Medium Priority Project
75	Hilltop Dr	Blumer Dr	Intersection Upgrade	Study removal of free-right turn lane.	56	Opportunity Project
8	Ohio Ave	Canal Blvd	Crossing Improvement	Refresh existing intersection markings, upgrade remaining crosswalks to high-visibility and provide a leading pedestrian interval.	55	Opportunity Project
70	Mcbryde Ave	Sonoma St	Crossing Improvement	Construct curb extensions.	55	Opportunity Project
96	Barrett Ave	25th St	Crossing Improvement	Upgrade the three existing crosswalks to high-visibility crosswalks and provide a leading pedestrian interval for all crossing phases. Install bicycle conflict markings through the intersection and consider other intersection treatments like bicycle boxes.	55	Opportunity Project
73	Hilltop Dr	Robert Miller Dr	Intersection Upgrade	Study removal free right turn lanes.	54	Opportunity Project
101	I-580	Marina Bay Pkwy	Crossing Improvement	Coordinate with Caltrans to upgrade all crosswalks to high-visibility. At signalized crossings, provide a leading pedestrian interval for all crossing phases. At uncontrolled crossings, install RRFBs.	54	Opportunity Project
82	Maricopa Ave	26th St	Crossing Improvement	Install high-visibility crosswalks.	53	Opportunity Project
33	33rd St	Barrett Ave	Crossing Improvement	LRSP high-injury intersection. Construct curb extensions and install advanced warning signs and markings.	52	Opportunity Project
81	Maricioa Ave	28th St	Crossing Improvement	Install high-visibility crosswalks.	52	Opportunity Project
78	Garvin Ave	30th St	Crossing Improvement	Install high-visibility crosswalks and an RRFB for a crossing of Gavin Avenue.	51	Opportunity Project
94	Park Central St	Hilltop Dr	Crossing Improvement	Study intersection design changes to improve pedestrian crossings and accessibility. Improvements should include high-visibility crosswalks and curb extensions. Coordinate with property owners and other jurisdictions as required.	50	Opportunity Project

Table 10 Bicycle Projects by Prioritization Scores (continued).

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
85	Maine Ave	S 16th St	Bicycle Access	Install bicycle cutthrough in traffic divertor.	49	Opportunity Project
86	Florida Ave	S 20th St	Bicycle Access	Install bicycle cutthrough in traffic divertor.	49	Opportunity Project
61	Cutting Blvd	S 26th St	Crossing Improvement	Construct pedestrian refuge island with an RRFB/PHB.	48	Opportunity Project
83	Tulare Ave	28th St	Crossing Improvement	Install high-visibility crosswalks.	48	Opportunity Project
90	Coalinga Ave	18th St	Crossing Improvement	Upgrade the two existing crosswalks to high-visibility and install high-visibility crosswalks at the northern and eastern approaches. Install advance stop markings at all approaches. Study intersection traffic control options with the design of the Coalinga Avenue bicycle boulevard.	48	Opportunity Project
95	Lucas Ave	7th St	Crossing Improvement	Upgrade the two existing crosswalks to high-visibility and install high-visibility crosswalks at the northern and eastern approaches. Build out the northeast corner to square up the intersection. Construct curb extensions at all corners.	48	Opportunity Project
74	Hilltop Dr	Shane Dr	Intersection Upgrade	Study removal of free right turn lanes.	47	Opportunity Project
99	Center Ave	S 39th St	Wayfinding	Add wayfinding signs directing people walking and biking to the Richmond Greenway trailhead off of 39th Street.	47	Opportunity Project
13	Harbour Way	I-580 On and Off Ramps	Intersection Upgrade	Coordinate with Caltrans install high-visibility crosswalks and curb extensions at all corners.	46	Opportunity Project
10	Hoffman Blvd	Harbour Way	Intersection Upgrade	Install high-visibility crosswalks and install curb extensions.	45	Opportunity Project
11	Wright Ave	Harbour Way	Crossing Improvement	Implement ADA accessible accommodations throughout the intersection, sidewalk and curbs.	45	Opportunity Project
91	Sutter Ave	Carlson Blvd	Crossing Improvement	SRTCP: Upgrade the existing southern crosswalk to high-visibility and install advance yield markings. Install transverse crosswalks at the eastern and western approaches with advance stop markings. Install an RRFB for the Carlson (southern) crosswalk. Consider building a refuge islands from the existing median.	44	Opportunity Project

Table 10 Bicycle Projects by Prioritization Scores (continued).

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
76	Morningside Dr	Valley View Rd	Crossing Improvement	Install high-visibility crosswalks.	43	Opportunity Project
77	May Rd	Valley View Rd	Crossing Improvement	Upgrade crosswalks to high-visibility and install curb extensions.	43	Opportunity Project
71	Hilltop Dr	San Pablo Ave	Crossing Improvement	Construct curb extensions.	40	Opportunity Project
100	Meeker Ave	Marina Bay Pkwy	Crossing Improvement	Install a leading pedestrian interval for all crossing phases. Study removal of the free-right turn lane from the northwest corner. If removed, realign the west crosswalk to be parallel to Marina Bay Parkway. Due to the asymmetrical intersection and challenging site lines, consider providing a protected turn phase for northbound left traffic.	40	Opportunity Project
72	Hilltop Dr	Research Dr	Crossing Improvement	Construct curb extensions at all corners.	39	Opportunity Project
80	Esmond Ave	26th St	Crossing Improvement	Install high-visibility crosswalks.	39	Opportunity Project
30	Seacliff Dr	Seaview Dr	Crossing Improvement	LRSP high-injury intersection. Install crosswalk on northeast leg of intersection to connect to Class I path. Consider installing yield markings and radar speed feedback signs.	38	Opportunity Project
88	29th St/Vale Rd	Howard St/ Salesian Ave	Crossing Improvement	Study locations for a marked crossing of 29th/Vale, including one block south at Moran Avenue. Coordinate with City of San Pablo as necessary.	37	Opportunity Project
103	38th St	Boyd Ave/ Solano Ave	Crossing Improvement	Upgrade all crosswalks to high-visibility crosswalks. Install advance yield/stop marks where appropriate. Long term, study additional park access improvements include converting Boyd to one-way, curb extensions, and other traffic calming measures.	36	Opportunity Project
84	Solano Ave	Amador St	Crossing Improvement	Install curb extensions at all corners.	35	Opportunity Project

Table 10 Bicycle Projects by Prioritization Scores (continued).

PROJECT ID	CROSS STREET	CROSS STREET	IMPROVEMENT	RECOMMENDATION	PRIORITIZATION SCORE	PRIORITIZATION CATEGORY
102	Sea Cliff Dr	Canal Blvd	Crossing Improvement	Trim vegetation around stop sign to improve visibility. Consider adding street lighting to this intersection. Upgrade the existing crosswalk to high-visibility. Coordinate with the Port to trim vegetation along Sea Cliff Drive.	35	Opportunity Project
12	1000' north of Hall Ave	Harbour Way	Crossing Improvement	Coordinate with railroad operator to install pedestrian railroad crossing gates, Implement ADA accessible accommodations throughout the intersection, sidewalk, and curbs.	30	Opportunity Project
98	McBryde Ave/ Park Ave	Marin Ave	Crossing Improvement	Study intersection redesign options to improve driver and pedestrian visibility at all intersection approaches. Study should look at crossing, visibility/site lines, and intersection control changes.	28	Opportunity Project
34	Atlas Rd	Oakmont Dr	Crossing Improvement	LRSP high-injury intersection. Construct curb extensions and install advanced warning signs and markings, Consider installing an RRFB or PHB for the Atlas Road crossing.	27	Opportunity Project

Project Funding

Following the designation of a recommended improvement, projects require funding for design (i.e., detailed engineering work) and construction. Funding for design and build active transportation projects is available at all levels of government (local, regional, state, and federal) and from private sources. Project funding can take the form of competitive grants, formula-based allocations, tax measure-based funding, funds from private development, and others. **Appendix C** provides a detailed list of potential funding sources with a brief description.

Table 11 below summarizes the type of projects and project phases (planning, design, construction) that each funding opportunity listed in **Appendix C** will fund.

Planning Level Cost Estimates

Table 10 below provides high and low planning-level cost estimates for each class of bicycle facility. **Table 12** on page 101 provides high and low planning-level cost estimates for each class of bicycle facility. **Table 13** (on page 102) provides this information for different types of spot improvements. Cost estimates include 30% extra for “soft costs” for items like City staff time and other administrative-related work. These are order of magnitude planning budgetary figures; a complete detailed engineering design will be needed to determine the most probable cost of individual projects.



Table 11 Funding Opportunities by Project Type

FUNDING SOURCE	FUNDING FOR PLANNING (P), DESIGN (D), OR CONSTRUCTION (C)	ON-STREET BIKEWAYS/ END-OF-TRIP	TRAILS	SAFE ROUTES TO SCHOOL	SAFE ROUTES TO TRANSIT	CROSSINGS/ INTERSECTIONS	PROGRAMS	STUDIES
LOCAL AND REGIONAL OPPORTUNITIES								
Contra Costa County Measure J (CCTA)	P/D/C	•	•	•	•	•	•	
Transportation Fund for Clean Air, County Program Manager Fund (CCTA)	C	•	•	•	•			
511 Contra Costa Bike Rack and Locker Program (Contra Costa County)	C	•						
One Bay Area Grants (MTC)	D/C	•	•		•			
Transportation Development Act Article 3 (CCTA)	D/C	•	•	•	•	•		
Bicycle Facilities Grant Program (BAAQMD)	C	•						
Climate Initiatives Innovative Grants (MTC)	-					•		
New Developments/Resurfacing Projects (Richmond)	D/C	•	•			•		
Assessment Districts (Richmond)	P/D/C	•	•	•	•	•	•	•
Impact Fees (Richmond)	P/D/C	•	•	•	•	•	•	•
STATE AND FEDERAL OPPORTUNITIES								
Active Transportation Program (CTC)	P/D/C	•	•	•	•	•	•	•
Sustainable Transportation Planning Grants (Caltrans)	P							•
Highway Safety Improvement Program (Caltrans)	D/C	•	•	•	•	•		
Solutions for Congested Corridors (CTC)	C	•	•			•		
Office of Traffic Safety (CA OTS)	-						•	

Table 11 Funding Opportunities by Project Type (continued).

FUNDING SOURCE	FUNDING FOR PLANNING (P), DESIGN (D), OR CONSTRUCTION (C)	ON-STREET BIKEWAYS/ END-OF-TRIP	TRAILS	SAFE ROUTES TO SCHOOL	SAFE ROUTES TO TRANSIT	CROSSINGS/ INTERSECTIONS	PROGRAMS	STUDIES
Recreational Trails Program (CA DPR)	C		•					
Affordable Housing & Sustainable Communities (CA HCD)	C	•			•		•	
Urban Greening Grants (CA NRA)	C	•	•	•	•			
Statewide Park Program (CA DPR)	C	•	•					
RAISE Grants (USDOT)	P/D/C	•	•	•	•	•		•
Congestion Mitigation and Air Quality (Caltrans and MTC)	C	•	•	•	•	•		
Surface Transportation Block Grants (Caltrans and MTC)	C	•	•	•	•	•		
OTHER STATE FUNDS								
Local Partnership Program (CTC)	C	•		•	•	•		
Road Maintenance and Rehabilitation Program (Controller's Office)	D/C	•		•	•			

Table 12 Bicycle Planning Level Cost Estimates by Bikeway Classification

BIKEWAY CLASSIFICATION	COST PER MILE		ASSUMPTIONS
	LOW	HIGH	
Class I - Shared-use Path	\$500,000	\$1,500,000	Cost includes asphalt path and minor crossing improvements. Cost does not include signal modification or right of way acquisition.
Class II - Bicycle Lane	\$50,000	\$350,000	Low cost assumes signage and striping. High cost assumes green conflict marking, and traffic signal modification, including bike signal detection.
Class IIB - Buffered Bicycle Lane	\$100,000	\$400,000	Low cost assumes signage, striping, and a painted buffer. High cost assumes green conflict marking, traffic signal modification (including bike signal detection), and wayfinding signage.
Class III - Bicycle Route	\$15,000	\$25,000	Cost includes signage and striping.
Class IIIB - Bicycle Boulevard	\$70,000	\$1,000,000	Low cost assumes signage, striping, and minor traffic calming (such as speed humps and up to 3 other elements such as medians, diverters, or a raised crosswalk). High cost assumes low-cost items plus traffic circles, curb extensions, traffic signal modification (including bike signal detection), and wayfinding signage.
Class IV - Separated Bikeway	\$300,000	\$1,500,000	Low cost assumes signage, striping, and a painted buffer with flexible delineators. High cost assumes green conflict marking, traffic signal modification (including bike signal detection), and a raised concrete buffer.

Please note that all costs are based on values obtained from Bid Documents of local (i.e., Contra Costa, Alameda, Santa Clara, and San Mateo counties) projects from 2019 to present, or historic planning level costs generated for local planning efforts from 2018 to present. Values derived from Bid documents were multiplied by a planning-level contingency factor to account for additional project needs not explicitly stated in the descriptions. Costs include the cost of materials, labor and administration of the identified facilities and items, and do not include design fees, public outreach efforts, or inter-agency coordination.

Table 13 Spot Improvement Planning Level Cost Estimates (by cost)

FACILITY TYPE	COST	UNIT	NOTES
Signage	\$500	Each	
Pavement Markings (stop/yield)	\$2,000	Each	
Transverse crosswalk	\$3,000	Each	Transverse crosswalk
High-visibility crosswalk	\$4,000	Each	High-visibility crosswalk
Curb Ramps	\$15,000	Each	Assumes no drainage relocation
Red Curb Paint	\$26,500	Per Mile	
Wayfinding Signs	\$30,000	Per Mile	
Curb extensions/Corner Radii	\$50,000	Each	Varies by size and assumes no drainage relocation
Median Refuge Island	\$50,000	Each	Varies by size
Median (short)	\$50,000	Each	
Rectangular Rapid Flashing Beacon (RRFB)	\$60,000	Each	
Leading Pedestrian Interval	\$100,000	Each	Cost varies based on the cost of existing and required equipment
Slip Lane (Free right turn lane) Removal	\$100,000	Each	Varies by size
Pedestrian-only Signal Phase	\$100,000	Each	Cost varies based on the cost of existing and required equipment
Neighborhood Traffic Circle	\$150,000	Each	
Pedestrian Hybrid Beacon (PHB)	\$400,000	Each	
Protected Intersection	\$500,000	Each	
Sidewalk	\$500,000	Per Mile	Six-foot wide sidewalk on one side of the street

Please note that all costs are based on values obtained from Bid Documents of local (i.e., Contra Costa, Alameda, Santa Clara, and San Mateo counties) projects from 2019 to present, or historic planning level costs generated for local planning efforts from 2018 to present. Values derived from Bid documents were multiplied by a planning-level contingency factor to account for additional project needs not explicitly stated in the descriptions. Costs include the cost of materials, labor and administration of the identified facilities and items, and do not include design fees, public outreach efforts, or inter-agency coordination.

Maintenance

Timely and regular maintenance of bicycle facilities, shared-use paths, trails, and sidewalks are critical for their continued safe and comfortable use. Inadequately maintained facilities can create potentially hazardous conditions and reduce the accessibility and connectivity of the walking, rolling, and bicycling networks. Providing safe, accessible, comfortable, and well-maintained walking, bicycling, and rolling facilities allows active transportation to be a viable travel option. Prioritizing the procurement of new equipment for conducting regular maintenance and sweeping on new facilities such as protected bicycle lanes will benefit the City's active transportation long-term goals by encouraging people bicycling and walking to use these well-maintained facilities. The following section offers maintenance policies the City should consider.

Maintenance Policies

The City should consider the implementation of the following policies to maintain the active transportation networks in a state of good repair, high usability, and accessibility. Implementation of all maintenance policies is subject to sufficient allocation of staff, capital, and funding resources.

Policy 1: Identify all maintenance stakeholders across City of Richmond Departments and partner agencies/ jurisdictions.

- A.** Regularly coordinate to establish and update maintenance needs across the City and share resources when possible and practical.
- B.** Create a facility inspection schedule to inspect facilities and update maintenance priorities regularly.



Policy 2: Maintain designated walking and bicycling facilities to be safe, comfortable, accessible, and usable for walking, bicycling, and rolling.

- A.** Sweep streets regularly with priority given to roads with higher pedestrian and bicycle traffic volumes.
- B.** Ensure Richmond Public Works has all necessary equipment to maintain all facility types, including trails and separated bikeways.
- C.** Develop a schedule to sweep separated bikeways regularly.
- D.** Trim overhanging vegetation and work with appropriate property owners to maintain a clear path of travel along pedestrian and bicycle facilities. Consider working with neighborhood councils and community groups to help maintain vegetated pieces of infrastructure.
- E.** Develop and implement an appropriate minimum paving surface standard for bicycle boulevards and other low-stress bikeways that maintain a higher safety and comfort level for active transportation users.
- F.** Update the City's repaving project methodology to prioritize bicycle boulevards and other low-stress bikeways to maintain the minimum paving surface standard.
- G.** Incorporate maintenance needs into the design of separated bikeways and other facilities to ensure proper maintenance after construction.
- H.** Develop a construction mitigation policy for impacted pedestrian and bicycle facilities requiring City staff and contractors to create fully accessible detours of equivalent standards, where possible, when construction, maintenance, or other activities restrict the use of bikeways and walkways.

Policy 3: Maintain bicycle parking and other support facilities for a more comprehensive bicycle network.

- A.** Develop a procedure for inspection and prompt repair/ replacement of damaged bicycle racks or other facilities in the public right-of-way.
- B.** Encourage public event organizers to provide and publicize valet bicycle parking at special events. Amend the City's event permitting process to include bicycle access accommodations and parking as part of necessary traffic control provisions.

Policy 4: Develop a communications protocol for walking, bicycling, or rolling-related updates.

- A.** Regularly update digital and printed bicycle and trail network maps. Distribute paper maps at libraries, community centers, bike shops, and other locations.
- B.** Promote Richmond's eTRaKiT service as an easy-to-use method for the public to report maintenance and other facility issues.



A quick-build curb extensions in Oakland near Lake Merritt BART.

Quick-Build Project Alternatives

Many infrastructure improvements (especially pedestrian projects and intersection geometry changes) can be completed using signage, striping, and other quick-build strategies. Facilities like curb extensions, medians, and separated bikeways are examples of treatments that can be built with quick-build materials. These improvements can be left permanently with the quick-build materials or used as a short-term improvement until additional funding

for design and construction can be secured for permanent, more expensive design iterations. Constructing improvements with quick-build materials can make immediate safety and comfort impacts at lower costs to the City. Using quick-build materials also allows the City to trial design changes before committing to long-term installations.

There are many resources available to help Richmond and community partners learn

more about and implement quick-build projects. [The California Bicycle Coalition has an 80-page guide with details on how to move forward with these low-cost, high-impact project types.](#)



Black Lives Matter painted on Nevin Avenue in front of City Hall.

Public Art

Public art is a crucial component of placemaking and allows community members to help establish and reinforce a public identity. Public art can take many forms, including sculptures, murals, decorative crosswalks, painted curb extensions, and themed street furniture. Public art can also help create a more welcoming and engaging environment to walk, roll, and bike through; helping to encourage more people to use active transportation. Public art can be coordinated through the City's Public Art Advisory Commission and the Richmond Arts and Culture Commission.

Next Steps

Project Timing and Funding

Projects can take a long time to get from “a line on a map” to being fully constructed. Limited staff time and limited City resources constrict how many projects can move forward at a given time and how fast those projects move. In some cases, funding for project phases (planning, engineering design, and construction) is found separately, sometimes with years between phases. As the City wins competitive grants, it can take one to two years for the City to get access to those funds to continue moving the project forward. The realities of active transportation funding strengthen the importance of project prioritization to guide City staff in selecting projects that will provide the most significant safety and overall community benefits.

Richmond and Partner Agencies

The City of Richmond is not the only jurisdiction or agency responsible for planning, designing, and constructing walking, bicycling, and rolling facilities across the City. Some of the project recommendations in this plan are in the rights-of-way of other agencies, jurisdictions, or private owners, such as Caltrans, Contra Costa County, or Union Pacific Railroad. The City will need to coordinate with the appropriate stakeholders for planning, design, funding, and implementation. These partner agencies may have final approval on these projects, even if they are located within the City of Richmond. Examples of projects out of the City's right-of-way include trails on railroad company property, bicycle facilities on Caltrans-operated roads, or pedestrian crossing improvements at interchanges.



Pride and Purpose mural on an overpass wall.

What Projects Move Forward Next?

Given the limited amount of staff time and budget for new projects, several factors impact which recommended projects move forward and when. The infographic to the right, **Figure 26**, provides a simplified visualization of the project development and implementation process.

Focusing on Safety

Throughout the community engagement process, community members consistently stated that improving safety was their top priority. Travel Safe Richmond analyzed collision histories across the City and developed recommendations that responded to those locations. Additionally, safety was one of the major components of the project prioritization process (one-quarter of possible priority points).

When seeking funding sources, many competitive grants have collision history as a score factor. Some grants, including the Highway Safety Improvement Program (HSIP) and those from the Office of Traffic Safety (OTS), focus on responding to collision locations and other safety concerns.

Interpreting Prioritization Results

The overall prioritization rankings provide an order of projects that can improve safety and benefit the community. Overall project rankings can help select projects for Active Transportation Program (ATP) grant applications or for projects to add to the City's next Capital Improvement Plan (CIP). Breaking down the scores of the different inputs can provide guidance for more specific needs. For example, City staff could sort projects by order of the "safety" score to find the best projects for HSIP or OTS grants. The rankings are not intended to be a hardened list but rather a guide for staff to select projects based on the myriad of factors that present opportunities to move projects forward.

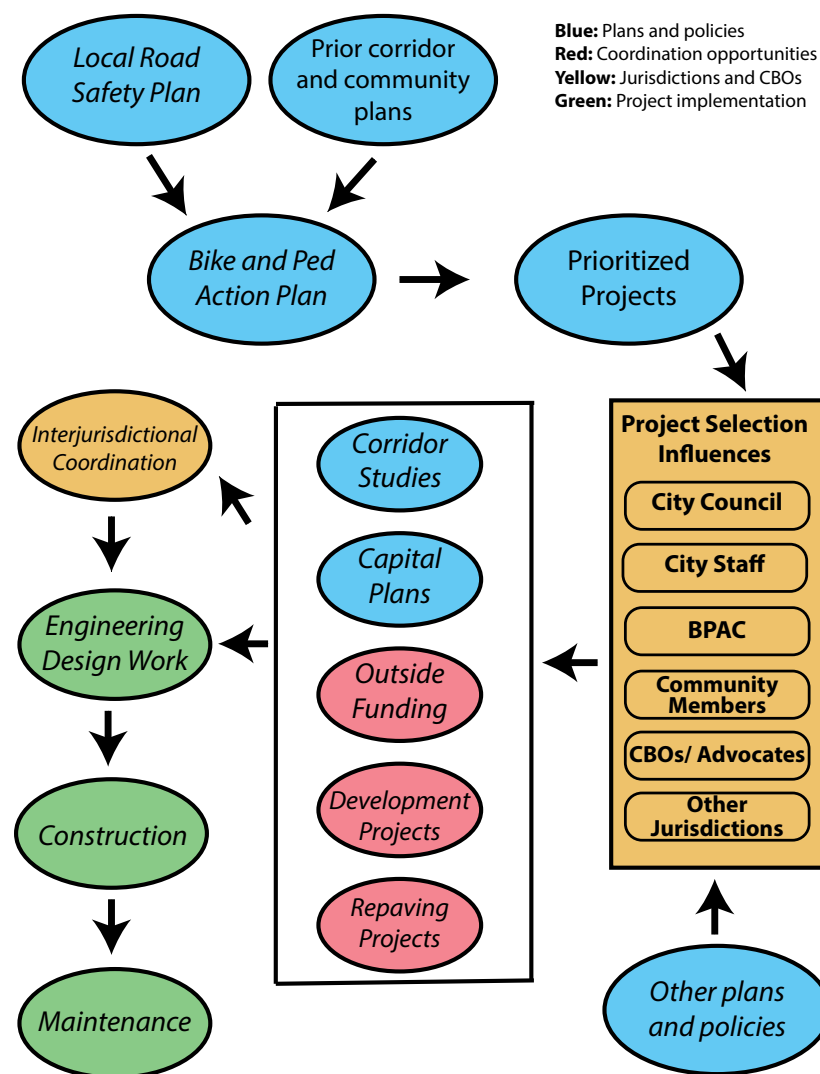


Figure 24 Implementation Process Flowchart

How Can the Community Stay Involved?

Staying informed and involved with Richmond's active transportation activities is one of the best ways to continue to advocate for your community and show support for the projects that matter to you most. There are multiple ways you can get involved:

Attend Bicycle and Pedestrian Advisory Committee Meetings

The Bicycle and Pedestrian Advisory Committee (BPAC) meets monthly to discuss current and future active transportation projects and needs. City staff present updates, and there are opportunities for public comment. If you don't have time to attend, [checking the agenda and minutes is a great way to stay informed.](#)

Get Involved With Your Local Neighborhood Council or Community Association

Neighborhood councils and community associations are great ways to meet your neighbors and stay informed about different happenings in your area. Neighborhood councils receive presentations and updates from City staff on projects and other issues. [Find your neighborhood council.](#)

Get Involved With Local Walking and Biking Organizations

Supporting local community and advocacy groups like [Rich City Rides](#) and [Bike East Bay](#) is another way to advocate for active transportation in your community. These groups focus on advocating for safer roads and getting more people walking and bicycling. Your membership and support allow them to grow and continue their advocacy and education work on behalf of the community.



Appendix

A

Plan Review Summary



Appendix

B

Bicycle Design Guidelines



Appendix

C

Project Funding

