



Richmond First Mile/Last Mile Transportation Strategic Plan Final Report

February 2019



Acknowledgements

This effort was made possible with the support of a 2016-17 Caltrans Sustainable Transportation Planning Grant awarded to the City of Richmond in partnership with the Local Government Commission (LGC). This study owes much to the participation and dedication of its Technical Advisory Group and Stakeholder Group members, as identified below. Thanks to everyone who contributed time and energy, and to those that share the vision of a connected Richmond.

Technical Advisory Group Members

Affiliation	Member Name(s)
AC Transit	Michael Eshleman, Stephen Newhouse, and Kathryn Vo
BART	Niki Foletta, Ian Griffiths, Rachel Factor
Caltrans	Blesilda Gebreyesus
CCTA	Brad Beck
City Manager	Bill Lindsay
City Manager's Office	Lori Reese-Brown
EICA Transportation Oversight Committee	Eric Anderson and Marena Brown
Engineering and Capital Improvements	Patrick Phelan
Environmental Manager	Adam Lenz
Fire Department	Robin Poindexter
IT Director	Sue Hartman
Mayor's Office and RBPAC	Sequoia Erasmus
Planning and Building Services	Lina Velasco
Police Department	Aaron Pomeroy
Richmond Bicycle/Pedestrian Advisory Committee and Bike East Bay	Cynthia Armour and Susie Hustader
Transportation Department	Denée Evans
WCCTAC	Joe Nemeth and Leah Greenblat
WETA	Chad Mason and Taylor Rutsch

Stakeholder Groups

City of Richmond (all departments)	East Bay Municipal Utility District
Environmental and Community and Investment Agreement (ECIA) Transportation Oversight Committee	PG&E
Richmond Bicycle/Pedestrian Advisory Committee (RBPAC)	West County Wastewater District
Bike East Bay	West Contra Costa Unified School District

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN | FINAL REPORT
City of Richmond, CA

AC Transit	Bayside Council of PTAs
Bay Area Rapid Transit	University of California Berkeley
Contra Costa Transportation Authority	Richmond Neighborhood Coordinating Council
West Contra Costa Transportation Advisory Committee	Richmond Main Street Initiative
Capitol Corridor Joint Powers Authority	Richmond Village-Metro Square Neighborhood Council
Bay Area Air Quality Management District	Richmond Annex Neighborhood Council
Caltrans, District 4	Point Richmond
Port of Richmond	Iron Triangle Neighborhood Council
Water Emergency Transportation Authority	Belding Woods Neighborhood Council
Kaiser Permanente East Bay	Disabled People's Recreation Center
Healthy Richmond	Reentry Success Center
Richmond Senior Center	Rubicon Programs
Bay Area Rescue Mission	Rich City Rides
Contra Costa Interfaith Supporting Community Organization	Pogo Park
Community Housing Development Corporation	First 5 Contra Costa
Neighborhood House of North Richmond	Bay Area Rescue Mission
San Francisco Estuary Institute	Social Security Administration
Richmond Chamber of Commerce	Rosie the Riveter Trust
Chevron	General Chemical
Sims Metal Management	Restoration Hardware
Park Plaza	R and B Cellars
Assemble Restaurant	Auto Warehousing Company
Chevron	Galaxy Deserts
Richmond Courtyard	Connexsys Engineering
Republic Services	Amazon
SunPower	BP Lubricants
Nutiva	Parker-Hannifin Corporation
Blue Apron	Rubicon Bakery
Auto Warehousing Company	DiCon Fiberoptics
Colliers International	California Oils Corporation
Sims Metal Management	SunPower
Courtyard Marriott	Food Service Partners

Contents

1	Executive Summary	1-1
	Purpose of the Study.....	1-1
	Bridging the First Mile/Last Mile Gap	1-2
	Public Engagement	1-3
2	Methodology	2-6
3	Priority Projects.....	3-8
	Project #1. MacDonald and Nevin Yellow Brick Road Improvements.....	3-9
	Project #2. Ferry to Bridge Complete Streets.....	3-12
	Project #3. Barrett Ave and Marina Way Intersection Improvements	3-14
	Project #4. Marina Way Pedestrian Improvements.....	3-16
	Project #5. First Mile/Last Mile Shuttle Network	3-18
	Project #6. Prepare for Autonomous Vehicles.....	3-22
	Project #7. Prioritize the TDM Program and Commuter Benefits Ordinance.....	3-26
	Project #8. Implement an E-Scooter Permit Program.....	3-30
	Project #9. Implement a Bike Share Program	3-34
	Project #10. Support Paratransit and Senior Mobility Programs	3-36
Appendix A	Inventory of Modern Practices	3-1
Appendix B	Existing Conditions and Needs Assessment.....	3-2
Appendix C	Community Engagement Summary	3-3
Appendix D	Complete List of Recommended Projects	3-1

Table of Figures

		Page
Figure 1	This report includes first mile/last mile recommendations for the Richmond BART Station, El Cerrito del Norte BART Station, and the Richmond Ferry Terminal.....	1-2
Figure 2	Members of the Richmond community provided feedback on first mile/last mile strategy recommendations and evaluation criteria	1-4
Figure 3	Prioritization Criteria	2-6
Figure 4	Yellow Brick Road Vision Network	3-9
Figure 5	A Bicycled-Pedestrian Path Planned for the Richmond San-Rafael Bridge.....	3-12
Figure 6	Barrett Ave and Marina Way Crossing Improvements.....	3-14
Figure 7	Barrett Ave Corridor Improvements.....	3-16
Figure 8	Example of a Revised Shuttle Network.....	3-18
Figure 9	Waymo Vehicle Operating in California's Bay Area.....	3-22
Figure 10	People Riding E-scooters in a Bike Lane	3-30
Figure 11	E-Scooter Program Implementation Schedule	3-32
Figure 12	Ford GoBike Bikeshare System in the San Francisco Bay Area	3-34
Figure 13	R-Transit Paratransit Vans.....	3-36
Figure 14	First Mile/Last Mile Recommended Infrastructure Projects.....	3-1
Figure 15	First Mile/Last Mile Recommended Policy and Program Projects.....	3-6

1 EXECUTIVE SUMMARY

PURPOSE OF THE STUDY

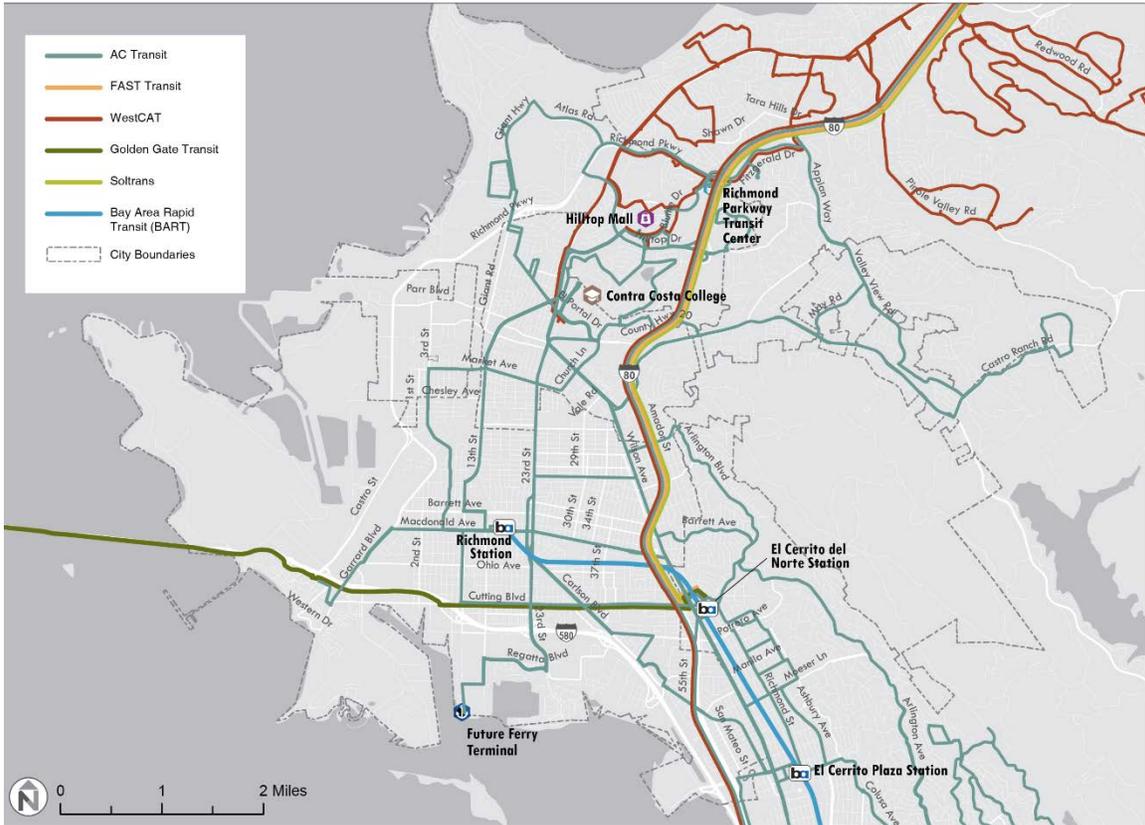
The City of Richmond has a robust multimodal system of transportation options, including BART and Amtrak regional rail, AC Transit local and express bus services, and a recently launched ferry service to San Francisco. However, the use of public transit in Richmond is limited by a lack of effective connections to these services, which are complicated by the city's topography, administrative boundaries, and proximity to major regional freeways. Residents, workers, and visitors alike experience challenges in accessing transit when making trips within Richmond and to and from regional destinations. As Richmond densifies its downtown areas and seeks to reduce reliance on automobile ownership, infrastructure improvements to enhance mobility options and improve connections between Richmond's neighborhoods and to the Bay Area region will be critical to achieving the City's environmental and equity goals.

The Richmond First Mile/Last Mile Transportation Strategic Plan builds upon recent planning efforts that focus on improved transit connectivity, enhanced accessibility, and reduced greenhouse gas emissions. Over the last two decades, the City has developed many relevant plans and policies, including the South Richmond Transportation Connectivity Plan and the Livable Corridors Form-Based Code, which reflect the City's commitment to improving multimodal mobility and access to Richmond's transit network. The 2030 General Plan put forth a number of policies that stress the importance of balancing modes of travel, supporting pedestrian and bicycle connectivity, and transit accessibility. With a focus on connectivity and a reduction in greenhouse gas reductions, this study is consistent with the City's 2030 General Plan 2030 and its obligations to develop community-based greenhouse gas reduction programs under the Chevron Environmental and Community Investment Agreement

The purpose of this study is to develop a comprehensive strategy for mobility within the Richmond community that focuses on development and implementation of a first mile/last mile transportation network at three primary transportation hubs.

1. Richmond BART Station
2. El Cerrito del Norte BART Station
3. Richmond Ferry Terminal

Figure 1 This report includes first mile/last mile recommendations for the Richmond BART Station, El Cerrito del Norte BART Station, and the Richmond Ferry Terminal



This report recommends infrastructure improvements and programs to bridge the first mile/last mile gap. These recommendations are designed to leverage funding to reduce greenhouse gas emissions and promote a more effective transit program that will support the City’s vision for a connected and integrated multimodal transportation system that will better serve its communities.

BRIDGING THE FIRST MILE/LAST MILE GAP

First mile/last mile strategies provide important connections to public transportation. While public transportation agencies may provide services for the bulk of a person’s trip, individuals must complete the first and last leg of their trip to and from a transit station on their own. A first or last mile gap is a barrier that discourages potential riders from using transit because a station cannot be easily accessed from home, work, or other locations. The ways and means in which someone accesses rail or bus services can determine whether someone chooses to ride transit or not. Even when the physical distance between a person’s origin and a transit station is short, the issues of comfort, safety, convenience, and cost all affect that person’s travel choices. All transit riders must contend with the first mile/last mile challenge; the easier it is to access the system, the more likely people are to use it.

Due to its location in the Bay Area and connections with multiple major transportation networks, the City of Richmond is well positioned to take advantage of ongoing innovations in mobility and

develop first mile/last mile connections that will improve its public realm. The vibrancy of Richmond's public realm is challenged by auto-oriented street design, poor maintenance of roads, gaps in the sidewalk network, a non-linear street grid, and a hilly topography. First mile/last mile infrastructure improvements, such as cohesive pedestrian and bicycle networks that are inviting and safe, can encourage people to bike or walk to transit and/or use non-auto modes for trips that otherwise would have occurred in a car. As a result, providing convenient, affordable, and safe options to access transit can have a wider influence on a community's quality of life, particularly for residents who don't have access to automobiles and/or live or work in neighborhoods that are underserved by the public transit system.

No one strategy fully addresses first and last mile gaps. The recommendations in this report are designed to leverage and connect the City's existing mobility hubs, including the Richmond BART Station, Richmond Ferry Terminal, El Cerrito del Norte BART Station; its smaller activity centers, such as Richmond Parkway Transit Center/Hilltop Mall, El Cerrito Plaza BART Station, Contra Costa College; as well as the transit-friendly characteristics of the downtown, including the density of intersections, population, and employment. Implementing first mile/last mile solutions is part of building an ecosystem of supportive options, information, and technologies. This ecosystem increases both the accessibility and attractiveness of transit, helps build a culture of transit use over time, and foster a high quality of life. As such, best practice is to pursue multiple strategies that increase the number of transit access points and options across communities.

PUBLIC ENGAGEMENT

The Richmond First Mile/Last Mile Plan engaged community members and stakeholders to explore strategies that could be deployed to improve access to transit and connectivity across all types of travel. From Spring 2017 through Fall 2018, residents, agencies, transportation service providers, employers, and community-based organizations were engaged in focus meetings, workshops, phone interviews and pop up events. The activities helped document conditions for all travel modes (walking, bicycling, transit, and driving) and users (youth, seniors, people with disabilities, residents, diverse groups, visitors, and businesses), helped identify shared values and concerns, and helped identify and prioritize strategies and improvements for inclusion in the plan. Principal events and activities are summarized below.

Technical Advisory Group

A Technical Advisory Group (TAG) of approximately 18 participants was established and met three times during the course of the project. The meetings included representatives from City agencies and departments, the Environmental and Community and Investment Agreement (ECIA) Transportation Oversight Committee, regional transportation planning and transit providers, Richmond Bicycle/Pedestrian Advisory Committee and Bike East Bay, and other stakeholder groups. The meetings provided guidance and feedback regarding existing issues and opportunities and strategy development. Participants also helped identify key stakeholders, strategies for engaging all segments of the community, and leverage and coordination opportunities with other plans, infrastructure projects, and programs.

Focus Groups and Community Workshop

In person stakeholder listening sessions, phone interviews and a community workshop were conducted during the summer and early fall in 2018 to learn about mobility needs across different

sectors and demographics, challenges that residents and employees of all ages and abilities face getting to and from destinations inside and outside the city, and barriers or gaps in the local transportation network, particularly across different transit systems.

Pop up Events and Open House

Pop up events were held at the Richmond BART station and East Brother Tap Room on May 10, 2018 near the Richmond Harbor in conjunction with Bike to Work Day, and at the Richmond Healthy Village Festival on June 23, 2018 to collect input and preferences for infrastructure improvements and citywide policies, programs and services for enhanced mobility and access to transit. The project team, in partnership with Main Street Initiative, also hosted an Open House at the City's R-Transit building at the Richmond BART Station on June 7, 2018 during which stakeholders, community members, transit riders and others weighed in on proposed improvements and potential citywide policies and programs.

Figure 2 Members of the Richmond community provided feedback on first mile/last mile strategy recommendations and evaluation criteria



Source: LGC

ECIA Transportation Oversight Committee

The Richmond [Environmental and Community and Investment Agreement](#) (ECIA) Transportation Oversight Committee was established to review and help prioritize funding allocations for transit and transportation projects identified in the Chevron Refinery Modernization Project ECIA Community-Based Greenhouse Gas Reduction Program. Project

team members met with the Committee in August and November 2018 for input and feedback regarding the evaluation and ranking of proposed projects in terms of importance and feasibility.

2 METHODOLOGY

Understanding the effectiveness of current first mile/last mile strategies requires that an agency take stock of what is currently implemented. To assess the existing conditions of the transportation network, the project team evaluated and documented opportunities and barriers related to accessibility and connectivity within the City of Richmond and a thorough review of relevant planning documents, meetings with key stakeholders, in-person observations, field data collection, and GIS analysis. Existing conditions are documented in **Appendix A**.

Building on the opportunities and challenges identified in the existing conditions evaluation, the project team identified a series a first mile/last mile infrastructure improvements that would improve connectivity to three primary transit hubs: The Richmond BART Station, the El Cerrito del Norte BART Station, and the Richmond Ferry Terminal. These potential projects were then prioritized based on a set of seven criteria:

1. Serves communities of concern and people in need;
2. Proximity to mobility hub;
3. Funding opportunities;
4. Quality of service investments;
5. Safety;
6. City-owned location; and
7. Environment.

All projects were evaluated using the seven criteria. A project received a certain number of points if it met the prioritization criteria as described in Figure 3. A list of priority projects are included in the following chapter. These projects were deemed to be a priority for the community based on the evaluation criteria and input from the City. Per direction from the City, the priority projects that describe services should be prioritized for ECIA funding.

Figure 3 Prioritization Criteria

Prioritization Criteria	Prioritization Criteria Description (What is Being Measured?)	Point Values
1. Serves Communities of Concern and People in Need	A project receives points if it directly serves a Community of Concern (CoC). There is a legacy of socially inequitable infrastructure investments in the region's marginalized communities, including those in the City of Richmond. The Metropolitan Transportation Commission (MTC) has designated CoCs throughout the Bay Area based on a demographic criteria (including income and race). Projects directly connecting and serving these communities would receive points.	Project is entirely contained in CoC, runs through (with a stop, if applicable in) a CoC or connects directly to the edge of a CoC = 10 pts
2. Proximity to Mobility Hub	A project receives points if it is in a 5-minute walking distance or 10-minute biking distance of a Mobility Hub (Richmond BART, El Cerrito del Norte BART, or the future Ferry Terminal).	Walk shed = 10 pts Bike shed (but outside walk shed) = 5 pts Transit shed (5-10 min of travel time) = 2 pts

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN | FINAL REPORT
City of Richmond, CA

Prioritization Criteria	Prioritization Criteria Description (What is Being Measured?)	Point Values
		No travel sheds = 0 pts
3. Funding Opportunities	A project receives points if it is eligible for the specific types of funding identified in the Chevron Modernization Project Environmental and Community Investment Agreement (ECIA), under the Easy Go and the Transportation and Transit services as identified in the ECIA Agreement.	Qualifies for ECIA Funding = 15 pts
4. Quality of Service Investments	Instituting a transit service itself receives the highest number of points (15), followed by the institution of a program or policy targeted to support or incentivize transit use in the community. New infrastructure which creates or improves bicycle and pedestrian links to mobility hubs receive 5 points, as does infrastructure pertaining to amenities and improved waiting environments for transit riders.	Service = 15 Program or Policy = 10 pts Infrastructure (e.g., new bike/ped links/access points to hubs) = 5 pts Amenities (e.g., wayfinding, amenities) = 5 pts
5. Safety	A project receives points if it is located in close proximity to places that have experienced car crashes, particularly car crashes involving people walking and riding their bikes. Preventing fatalities caused by automobiles is a priority in Richmond's future transportation investments.	Number of bicycle/pedestrians crashes within 500 feet of point/intersection location (or directly along corridor location) over the past 3 years. Each crash receives one point. Severe Injuries are doubled in score. Fatalities are tripled in score. Example of a location: 3 crashes (1 no injury, 1 severe injury, 1 fatality) in the past 3 years = 6 pts
6. City-Owned Location	A project receives full points if it is on City-owned property because a project located directly in City-owned property (including streets) will be easy to implement, as the City has authority to make changes to its own streets and properties. If the plan is located on the property of an active project partner (e.g., BART, Caltrans, AC Transit, and other governments), it will receive partial points.	City is owner = 15 pts Active project partner (aka other government/public sector) is owner = 7 pts Private or inactive owner = 0 pts
7. Environment	A project receives points if it reduces greenhouse gas emissions (GHG) and vehicle-miles travelled (VMT). Projects that reduce VMT and GHG will improve our air quality and protect our environment.	VMT reduction greater than 15% = 10 pts VMT reduction less than 15% = 5 pts No VMT reduction = 0 pts

3 PRIORITY PROJECTS

This study recommends ten priority projects that will help to facilitate easy, safe, and efficient access to Richmond's transit hubs. The following sections describe each of these projects, its proposed treatment or scope, the project need, project integration, cost estimate, and funding opportunities. The infrastructure projects are listed first, followed by policy and program recommendations.

The projects include:

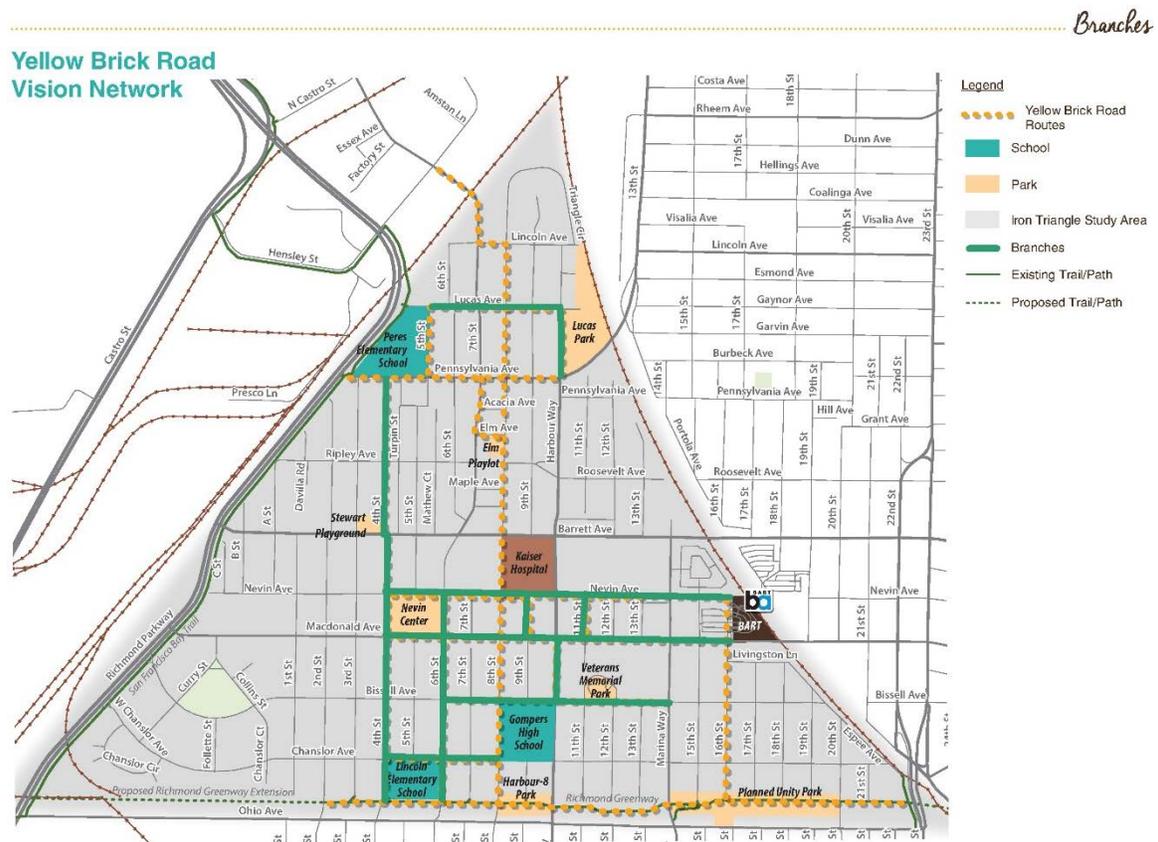
1. MacDonal and Nevin Yellow Brick Road Improvements
2. Ferry to Bridge Complete Streets
3. Barrett Ave and Marina Way Intersection Improvements
4. Marina Way Pedestrian Improvements
5. First Mile/Last Mile Shuttle Network
6. Prepare for Autonomous Vehicles
7. Prioritize the Transportation Demand Management Program and Commuter Benefits Ordinance
8. Implement an E-Scooter Permit Program
9. Implement a Bike Share Program
10. Support Paratransit and Senior Mobility Programs

PROJECT #1. MACDONALD AND NEVIN YELLOW BRICK ROAD IMPROVEMENTS

The [Yellow Brick Road Walkable Neighborhoods Project](#)¹ addresses key community-identified barriers, issues, and opportunities in the community to design and implement complete streets improvements along roadways in the Yellow Brick Road (YBR) network. These complete streets improvements would be implemented in conjunction with rehabilitation of abandoned buildings and properties, code enforcement issues of aggressive dogs and fence lines, and personal security improvements to create safe, pleasant, artful, and walkable roadways in the Iron Triangle Neighborhood. The routes would connect the key assets in the neighborhood, including local elementary schools, parks, and transit.

The “Branch Routes” are intended to fill in the gaps between the Roots and Trunk Routes in the third phase of the Yellow Brick Road Walkable Neighborhoods plan. Key Proposals include complete streets along Nevin Avenue and Macdonald Avenue from the Richmond BART station to 4th Street based on the design guidelines developed by the city and consultants in partnership with community organizations.

Figure 4 Yellow Brick Road Vision Network



Source: Yellow Brick Road Iron Triangle Walkable Neighborhoods Plan, page 43

¹ <http://www.ci.richmond.ca.us/3162/Yellow-Brick-Road>

Project Need

- Improves connectivity between the YBR and Richmond BART station and public transportation.
- Provides safe, walkable, bikeable routes to over 10,000 residents live within walking distance of the BART station; a third of those are underserved youth and 704 of the households (approximately 2,800 residents) do not have access to a car.
- A shift in mode choice helps reduce GHG emissions and build local resilience to climate change.
- Improved walkability and access to public transit helps lower household expenses, improve air quality for a highly-vulnerable population, and reduces the number of bicycle and pedestrian accidents to residents who can't afford insurance.
- The Yellow Brick Road Plan describes issues and opportunities to improve north-south walkability along the 4th Street Branch Route, including 1) Uncontrolled Crosswalks: intersections at Barrett Avenue and Nevin Avenue both have uncontrolled and unmarked crosswalks; 2) Intersection Offsets: At Barrett Avenue, 4th Street is offset which may be difficult to negotiate for pedestrians and bicyclists; and 3) Long Blocks: long blocks with limited traffic control may increase auto speeds.

Proposed Treatment or Scope

The Yellow Brick Road routes are intended to create “slow streets” that are community focused and incorporate design guidelines developed for these elements:

- Pedestrian and bicycle improvements, including considerations of safety, comfort, wayfinding, and crosswalk enhancements
- Traffic calming improvements, such as traffic circles, raised crosswalks, and speed tables
- Public art, including sculpture, murals, and painted intersections/streets
- Streetscape amenities and secure places, including street trees, bioswales and landscape plantings, benches, and garbage cans as well as pedestrian-scale street lighting and law enforcement
- Improvements where YBR “branch routes” connect with “trunk routes” may include a raised intersection at Nevin Avenue and a roundabout at the intersection with Macdonald Avenue, assuming lane reduction on Macdonald Avenue, or ladder crosswalks with median refuges and Rectangular Rapid Flashing Beacons (RRFBs) across Macdonald.

The planning level plans and design guidelines have been developed and initial phases for the YBR phase 1 “trunk lines” are currently funded and implementation is underway. Also, implementation of a similar complete streets project along Nevin Avenue east of BART is complete, and will serve as a proof of concept for future improvements on Nevin Avenue and Macdonald Avenue. However, the branch routes are not yet funded. The YBR consultant team is selected, and next steps include an existing conditions surveys and detailed design and engineering.

Project Integration

- The Yellow Brick Road is envisioned to be an interconnected network of safe and secure roadways where children, parents, and all members of the community can travel safely.

- The Yellow Brick Road streets are intended as important walking routes through the community and, in many cases, this coincides with important bicycle connections.
- The YBR vision network includes “Branch Routes” which are intended to fill in the gaps between the Roots and Trunk Routes in the third phase of the Yellow Brick Road. Macdonald Avenue, Nevin Avenue, 6th Street, and Harbour Way have proposed improvements and have been studied in further detail in the Richmond Bicycle Master Plan, Richmond Pedestrian Plan, and/or Richmond Livable Corridors. Plans for these roadways include the range of treatments presented in the Design Guidelines section of the Yellow Brick Road Plan.

Cost Estimate

The YBR includes improvements at two intersections. The cost estimates for these improvements are listed below.

- Nevin Ave: \$6,000,000
- Macdonald Ave: \$4,000,000

Funding Opportunities

- Metropolitan Transportation Commission (MTC)
- Caltrans Active Transportation Program (ATP)
- Chevron Modernization Project Environment and Community Investment Agreement (ECIA) Grant Program
- Multiple state agencies are administering grants for California Climate Investments (cap and trade dollars). This includes grants for urban greening, stormwater, parks, and natural and cultural community resources that help reduce GHG emissions and provide multiple benefits including a decrease in air and water pollution or a reduction in the consumption of natural resources and energy.
- Foundation grants for Artwork and Creative Placemaking

PROJECT #2. FERRY TO BRIDGE COMPLETE STREETS

Multimodal connections between the Richmond Ferry Terminal and the Richmond-San Rafael (RSR) Bridge will make it easier to walk and bike to and around Richmond. The City has retained a consulting firm to prepare a conceptual multimodal plan aimed at maximizing active transportation connections to and between existing and planned operational investments at the RSR Bridge and the Ferry Terminal. The Plan will provide a framework for projects aimed at providing safe and attractive multimodal transportation options for Richmond residents to connect three counties: Contra Costa, San Francisco, and Marin.

Figure 5 A Bicycled-Pedestrian Path Planned for the Richmond San-Rafael Bridge



Source: HNTB Corp.

Project Need

- Enhances connectivity and multimodal transportation options between the existing Bay Trail, the existing Richmond Greenway, the Richmond-San Rafael Bridge, and the Richmond Ferry Terminal.
- Enhances Safer Routes to School for Washington and Lincoln Elementary Schools.
- Enhances multimodal transportation options to parks, open space, and community facilities for the residents of the Disadvantaged Iron Triangle, Atchison Village, and Santa Fe neighborhoods.
- Improves safety, comfort, and convenience for non-motorized modes and local transit.
- Reduces the dependence on vehicle travel to Marin (over the RSR Bridge) and to San Francisco (by promoting the Ferry).
- Enhances circulation for both the local community as well as regional travelers, while enhancing multimodal mobility.
- Promotes active living and health.
- Emphasizes the Community's significant historical and cultural assets by improving access to and from community resources and events with alternative, safe, secure, and well integrated multimodal facilities that protect these resources.

Proposed Treatment or Scope

The product of the Complete Streets Plan will include conceptual alignments for complete street designs. The current planning process includes the following scope tasks:

1. Data Collection
2. Public Participation and Outreach
3. Existing Conditions
4. Draft Plan Components
5. Final Documentation

Project Integration

- The current planning effort is scheduled for completion in summer 2020.

Cost Estimate

- The current planning effort cost is \$312,287, which will also determine implementation costs and funding options for future phases.

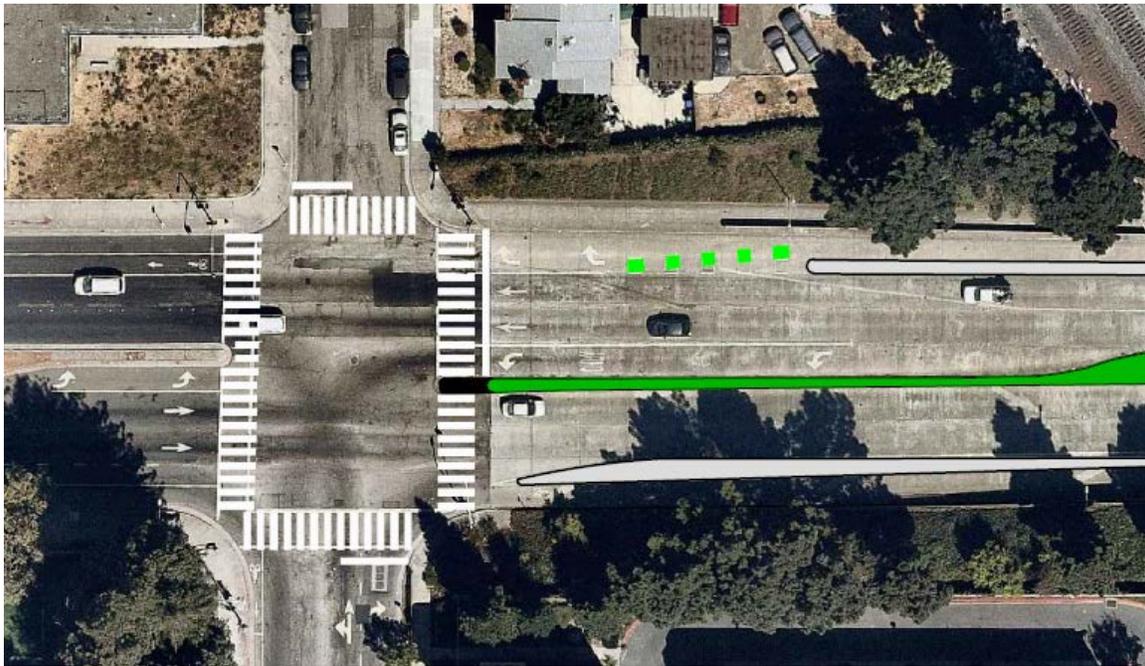
Funding Opportunities

- Caltrans Sustainable Communities Grant (current funding)
- Caltrans Active Transportation Program (ATP)
- Chevron Modernization Project Environment and Community Investment Agreement (ECIA) Grant Program

PROJECT #3. BARRETT AVE AND MARINA WAY INTERSECTION IMPROVEMENTS

People need safe and comfortable walking and biking connections to access transit stations. The Draft BART Walk and Bicycle Network Gap Study (in-progress) identifies global and station-specific solutions to facilitate pedestrian and bicyclist mobility in and out of BART stations, including improvements at Barrett Avenue and Marina Way to help facilitate access to the Richmond BART Station.

Figure 6 Barrett Ave and Marina Way Crossing Improvements



Project Need

- BART is committed to increasing the percentage of people who walk and bike to their stations.
- Providing convenient and safe streets and sidewalks will encourage more people to walk and bike. This is particularly important for the streets and intersections closest to BART stations.
- The Barrett Avenue and Marina Way intersection is two blocks from the BART station.
- The proposed treatments suggested below can help make this intersection more inviting for people to walk and bike to the BART station.

Proposed Treatment or Scope

- **Walking Treatments**
 - Add a new crosswalk on the east leg of the intersection

- Add high-visibility crosswalks on all intersection approaches
- Add advanced stop lines on all legs of the intersection
- **Bicycle Treatments**
 - Upgrade bike lane buffer to a concrete barrier on bike lanes east of intersection
 - Add green stripes on the west bound protected bike lane where bikes merge with right-turning vehicles
- **Signal Treatments**
 - Update signals to accommodate new pedestrian crossing on east leg
 - Add automatic pedestrian recall so that no button presses are necessary to trigger a walk signal
 - Increase pedestrian clearance time to ensure people who may be slow can still make it across safely.
 - Add Leading Pedestrian Interval to allow pedestrians to go first before cars get the green light.
 - Add Accessible Pedestrian Signals that transmit info to visually-impaired pedestrians with audible signals & vibration
 - Add bicycle detection to the signal

Project Integration

- These recommendations originated from the BART Walk and Bicycle Network Gap Study (in-progress).
- Following the Board approval of the Station Access Policy and the voter passage of Measure RR in 2016, BART is seeking to identify ways to make it safer and easier to walk and bike to and from BART stations, to gather station access data and information of the area around the station and to recommend global and station-specific solutions to facilitate pedestrian and bicyclist usage in and out of stations.

Cost Estimate

- The estimated cost for the intersection improvements range from \$90K to \$170K, depending on if the City uses contracted labor or City labor. These cost estimates are planning level estimates.

Funding Opportunities

- Metropolitan Transportation Commission (MTC)
- Caltrans Active Transportation Program (ATP)
- Chevron Modernization Project Environment and Community Investment Agreement (ECIA) Grant Program
- Multiple state agencies are administering grants for California Climate Investments (cap and trade dollars). This includes grants for urban greening, stormwater, parks, and natural and cultural community resources that help reduce GHG emissions and provide multiple benefits including a decrease in air and water pollution or a reduction in the consumption of natural resources and energy.

PROJECT #4. MARINA WAY PEDESTRIAN IMPROVEMENTS

People need safe and comfortable walking and biking connections to access transit stations. The Draft BART Walk and Bicycle Network Gap Study (in-progress) identifies global and station-specific solutions to facilitate pedestrian and bicyclist mobility in and out of BART stations, including improvements on Barrett Avenue between Marina Way and 19th Street to help facilitate access to the Richmond BART Station.

Figure 7 Barrett Ave Corridor Improvements



Project Need

- BART is committed to increasing the percentage of people who walk and bike to their stations.
- Providing convenient and safe streets and sidewalks will encourage more people to walk and bike. This is particularly important for the streets and intersections closest to BART stations.
- The Barrett Avenue is a critical connection to the BART station.
- The proposed treatments suggested below can help make this intersection more inviting for people to walk and bike to the BART station.

Proposed Treatment or Scope

- Implement a road diet on Barrett Ave east of 18th that reduces the number of travel lanes from four to three.
- Add high-visibility crosswalks on all approaches at the Barrett Avenue and 18th Street and 19th Street intersections
- Add advanced stop lines on all legs of the intersections
- Add yield markings at unsignalized intersections
- Add raised concrete islands in place of existing striped buffers on Barrett Ave

Project Integration

- These recommendations originated from the BART Walk and Bicycle Network Gap Study (in-progress).

- Following the Board approval of the Station Access Policy and the voter passage of Measure RR in 2016, BART is seeking to identify ways to make it safer and easier to walk and bike to and from BART stations, to gather station access data and information of the area around the station and to recommend global and station-specific solutions to facilitate pedestrian and bicyclist usage in and out of stations.

Cost Estimate

- The estimated cost for this project's improvements range from \$150K-\$270k, depending on if the City uses contracted labor or City labor. These cost estimates are planning level estimates.

Funding Opportunities

- Metropolitan Transportation Commission (MTC)
- Caltrans Active Transportation Program (ATP)
- Chevron Modernization Project Environment and Community Investment Agreement (ECIA) Grant Program
- Multiple state agencies are administering grants for California Climate Investments (cap and trade dollars). This includes grants for urban greening, stormwater, parks, and natural and cultural community resources that help reduce GHG emissions and provide multiple benefits including a decrease in air and water pollution or a reduction in the consumption of natural resources and energy.

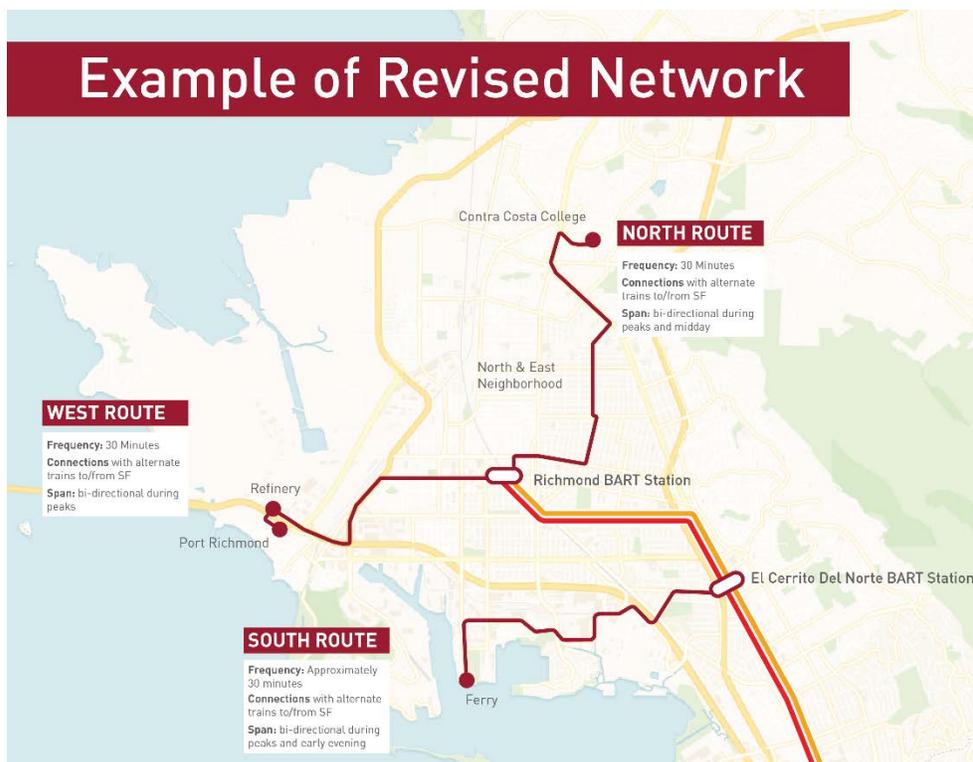
PROJECT #5. FIRST MILE/LAST MILE SHUTTLE NETWORK

The majority of Richmond is beyond walking distance from BART, the new ferry terminal and, in some areas, AC Transit bus service. The re-establishment of a first mile/last mile shuttle network, strategically coordinated with connecting modes, can provide more neighborhoods and destinations with easy proximity to connections and destinations.

There are a range of options to explore for re-establishing a shuttle network. A straightforward process of demand analysis, service planning, and outreach could lead to an implemented service in under a year. Figure 8 provides one of many possible examples to present for discussion in a planning process to re-establish a shuttle network in Richmond. Such a network could improve over previous service networks with more direct routings, timed connections with selected BART trips and ferries, and new destinations. An optimized network would prove more attractive to the customer market, solving the first mile/last mile problem for a city with many areas quite a long distance from BART, the new ferry, or each other.

This particular example is a 3-route prototype system with three linear routes, serving some of the destinations from a previous local shuttle, but adding new destinations such as the Ferry terminal, Point Richmond, and the North & East Neighborhood. In this example, some neighborhoods on the previous shuttle but also served by AC Transit connections to BART are no longer served by the shuttle; instead, neighborhoods further from AC Transit routes, such as North and East, and the new destinations are added to the system. The conceptual schedule is adjusted to make specific timed BART connections (alternate trains to/from San Francisco). All data is order-of-magnitude, pending an actual planning process.

Figure 8 Example of a Revised Shuttle Network



Source: Nelson\Nygaard

Project Need

- The project has the potential to reduce VMT, auto ownership, and parking demand, and increase overall transit mode share and transit ridership.
- The current BART (Richmond + El Cerrito del Norte stations) ridership is approximately 12,000 round trips per day. A system with similar coverage to the example provided could aspire to capture 1,200 round trips per day, as the market matures. This level of ridership would support a potential GHG reduction of 5.7M lbs. of CO₂/year.² This service would also increase the city's overall transit mode share by +1%.

Proposed Treatment or Scope

Following is a recommended process to develop a service plan, and further details on the example of a possible outcome, shown above.

Planning Process: (10 mos., approx. \$100k)

- 3 mos. Demand Analysis
 - Ridership data
 - Market Research
 - Ongoing Outreach
- 3 mos. Route/Schedule Planning
 - Stop locations
 - Timetables
 - Ongoing Outreach
- 1 mos. Fleet and Infrastructure
 - Bus Stop Treatment
 - Design/Branding
 - Fleet Selection
- 3 mos. Procurement of Contractor Services
 - Staffing
 - Maintenance
 - Procurement
- Implementation

Example of Possible Route Network

The public and staff planning processes would benefit from one or more examples of a potential route network that reflects both previous community concerns and state-of-the-art practice. The example mapped in Figure 8 and described below provides the following attributes:

- Not Circular: provides more direct routing
- Serves Peak and Reverse Commuters, with one route serving midday
- Provides scheduled BART and Ferry Connections

² At 4,800 lbs./year/round trip rider.

- Meets every other BART trip to/from San Francisco
- New Destinations
 - Point Richmond
 - North and East Neighborhood (AC Transit gap)
 - Ferry Terminal

The following is the route pattern associated with this example:

1. West Route: Richmond BART, Downtown (Harbor/MacDonald), Chevron Refinery, Washington/Park Place (Point Richmond)
 - Frequency match every other BART connection to/from SF (ex. 30 min.)
 - Span: bi-directional peaks only
2. North Route: Richmond BART, City Hall, North and East Neighborhood, Casino, Medical Center, Contra Costa College
 - Frequency match every other BART connection to/from SF (ex. 30 min.)
 - Span: bi-directional peaks, midday, early evening
3. South Route: El Cerrito Del Norte BART, Regatta Blvd. industrial and residential, Rosie the Riveter, some trips to Ferry Terminal
 - Frequency match every other BART connection to/from SF (ex. 30 min.), with adjustment for ferry.
 - Span: bi-directional peaks and early evening only

Previous Operations 2011 & 2013

The previous operation (July 2011) was contracted to TransMETRO Inc. The service consisted of a bi-directional, circular route serving Richmond BART, Downtown, City Hall, the Casino, Medical Center, and Contra Costa College. Typical frequency was every 40 minutes, which is not a multiple of the BART headway, meaning that there were no scheduled connections. The span included peak hours and portions of midday, with a service gap from 11:30 a.m. to 2:30 p.m.

The previous service also included a linear route serving El Cerrito del Norte station, Cutting Blvd., and Marina Bay, on a frequency of 25-30 minutes, during peak hours only.

Additional peak service was provided beginning August 2013, directly targeted to major employers, running from Richmond BART to Chevron and Kaiser Permanente, and from Richmond BART to California Department of Public Health, Target, and the Childrens Services Center. These two routes ran every 40-45 minutes each. At that time, the Marina Bay service was reoriented to serve 3200 Regatta Blvd., and reduced to two trips in each direction in each peak.

Project Integration

- A shuttle program geared to timed connections with BART and ferries would build on the value added by pedestrian network improvements, and the investments in BART and the ferry operation.
- It would also coordinate with AC Transit service provided in Richmond by providing complimentary service that emphasizes origin-destination pairs and service areas not well served by AC Transit.

Cost Estimate

The shuttle network will generate 9,000 revenue vehicle hour (RVH) per year requiring four vehicles. Based on typical typical privatized costs per RVH, the cost would be about \$600,000 annually.

- A dollar cost per revenue vehicle hour (RVH) is not available for the 2011-2013 service, so RVH are used as a point of cost comparison. The 2011 service consisted of approximately 5,000 RVH per year, with 3 vehicles required.
- The 2013 changes led to a net increase in annual RVH of approximately 1,000 RVH, and the vehicle requirement appeared to be plus one vehicle, for a total of 6,000 RVH and 4 vehicles.

Funding Opportunities

- Bay Area Air Quality Management District (BAAQMD) Carl Moyer program (capital)
- Chevron Modernization Project Environment and Community Investment Agreement (ECIA) Grant Program
- Federal funding through MPO

PROJECT #6. PREPARE FOR AUTONOMOUS VEHICLES

Located near regional rail and highway networks as well as autonomous vehicle (AV) testing grounds at GoMentum Station, the City of Richmond is in a unique position to leverage local policies and street design to integrate AV's into Richmond's transportation environment. The emergence of AVs in coming decades creates the opportunity for improved safety, efficient first mile/last mile transit connections, and reduced parking demand. There are also challenges to incorporating AVs into the transportation network. AVs can make it easier to use a car, deterring adoption of more sustainable modes, which may result in increased vehicle miles travelled (VMT) and congestion. The concept recommends the City of Richmond adopt a comprehensive strategy that creates a convenient multimodal environment, paired with thoughtful policies and street network design, to overcome the potential challenges of AVs.

Figure 9 Waymo Vehicle Operating in California's Bay Area



Source: Kristoffer Tripplaar/Alamy via Wired³

Project Need

- Facilitate pilots to enhance connectivity to regional transit service from residential communities, adding a first mile/last mile option for community members.

³ Aarian Marshall. (2018). "Waymo can Finally Bring Truly Driverless Cars to California." Retrieved from: <https://www.wired.com/story/waymo-self-driving-cars-california/>

- Manage curb space to maximize utility and minimize conflicts between road users.
- Guide development in a way that prepares for and creates conditions amenable to reduced demand for parking, gaining efficiency in development patterns that increase more active land uses in need in Richmond.
- Partner with other municipalities to weigh in on regional, state, and federal AV policy to ensure rollout can be managed toward Richmond's goals.

Proposed Treatment or Scope

The City of Richmond could use an AV policy framework and partnerships with AV companies to guide responsible adoption within its jurisdiction. This section identifies priority steps in anticipation of AVs in Richmond, including policies, pilots, and partnerships.

Ensure AV goals match overall mobility goals

- Before taking action on AV preparation, the City should first identify what it hopes to achieve through their use. Rather than considering AVs as a new and separate part of the transportation system, Richmond's existing multimodal access and safety goals should guide its approach to AVs.

Hosting AV Technology Pilots

- Refer to the State of California's regulations for Testing of Autonomous Vehicles by Manufacturers.⁴ These regulations include requirements for AVs with and without drivers present and eligible uses of public roads, among others.
- Strategic partnerships between the City of Richmond and AV companies provide an opportunity for AV technology to be tested in real-life conditions while providing the City an opportunity to observe what policy decisions are needed for the future of AVs. These partnerships, however, must be approached with clear intention, tied to the City's goals, and attention to the State's requirements for the testing of AVs. The partner(s) must obtain a testing permit from the State of California.
- The City of Richmond should provide space for companies to test different types of AV technology that considers the following:
 - Focus should be on low-speed testing within areas where modal conflicts are limited. Recent pilots have revealed challenges in AVs processing of bicycle facilities or other less-used traffic control tools such as mid-block crossings.
 - Given Richmond's proximity to regional rail service, a first mile/last mile pilot could showcase how AV technology can help facilitate efficient connections from residential areas to high quality transit facilities.

Curb Management

- Observed use patterns of ride-hailing services (such as Lyft or Uber) provide insights into future curb access and management issues. Currently, curb space is in demand for multiple purposes – primarily for auto parking, but also for loading and bicycle facilities, parking, and bus stops. Current competition for curb space has raised awareness of the

⁴ <https://www.dmv.ca.gov/portal/dmv/detail/vr/autonomous/testing>

need to proactively manage curb access, both for parking and other uses. Demand for both passenger and package delivery at the curb is growing in urban areas, and that pace is expected to grow with AVs.

- The City of Richmond should develop a consistent approach to managing curb space, particularly within any AV testing zone or corridor, that includes:
 - An approach for anticipating passenger loading and unloading behaviors to minimize conflicts in areas where curb space is allocated for transit or bicycles.
 - Consideration for how freight/commercial delivery needs will be managed in a future with competing curb space demands.
 - A context-sensitive approach to manage curb space to meet the needs of surrounding land uses.
 - A shift in prioritization of curb space from use for parking to active loading and unloading activity.

Rethinking Parking

- A shared ownership model for AVs could result in significantly lower parking demand over time. Even a private ownership AV model could create more efficient parking behaviors than today.
- To anticipate this trend and avoid overbuilding future parking supply in Richmond, the City should revise parking standards to:
 - Eliminate parking minimums and implement parking maximums to reduce incentives for private vehicle ownership provided by free parking.
 - Where parking supply is needed, utilize a shared parking approach across different uses to avoid underutilized spaces.
 - “Future proof” parking systems by requiring designs that accommodate future conversion to other active land uses if parking demand decreases over time.
 - Reduce the availability of parking around major transit stations in favor of passenger pick-up and drop-off facilities.
 - Consider adopting TransForm’s GreenTRIP certification, allowing developers of new developments to provide discounted transit passes for reduced parking requirements.⁵

Project Integration

- AVs are just one of many options for providing community members access to high capacity transit, and will not offer meaningful solutions without thoughtful planning by cities.
- The City of Richmond will be able to learn from other cities in the Bay Area, such as Mountain View, Sunnyvale, and Palo Alto, where AVs are being tested. These communities are de facto testing grounds due to neighboring AV companies. By contrast, a partnership with Richmond would be more intentional, offered to a significantly

⁵ TransForm CA. (2017). “GreenTRIP Traffic Reduction Strategies Discount Transit Passes.” Retrieved from: http://www.transformca.org/sites/default/files/TransitAgencySheet_2017-06-20.pdf

different socioeconomic community, and could leverage a BART access component, in service of advancing both AV technology and its role in different community types.

Cost Estimate

The cost to conduct the below tasks is estimated to range from \$100,000 to \$150,000:

- Conduct a comprehensive review of curb management and parking practices
- Develop a Curb Management Plan for the City of Richmond
- Provide recommendations for updating parking practices in Richmond
- Develop an AV testing implementation plan, including proposed zones or corridors and a monitoring and evaluation plan

Funding Opportunities

- The U.S. Department of Transportation Automated Driving System Demonstration Grant Program makes \$60 million available to public entities for AV demonstration projects. Applications are due March 21, 2019.
- The Chevron Modernization Project Environment and Community Investment Agreement (ECIA) Grant Program provides \$90 million to the City of Richmond over a 10-year period (beginning July 2014) for efforts that reduce greenhouse gas emissions. An AV pilot focused on transit access could be designed with this goal in mind.

PROJECT #7. PRIORITIZE THE TDM PROGRAM AND COMMUTER BENEFITS ORDINANCE

Transportation Demand Management (TDM) is a general term for strategies that encourage a shift from single-occupant vehicle (SOV) trips to non-SOV modes, or shifting trips out of peak commute periods. TDM seeks to reduce auto trips by increasing travel options, providing incentives and information to encourage and help individuals modify their travel behavior. TDM strategies include, but are not limited to, employee provided transit passes, ride share incentives, employer-run shuttles, and flexible schedule options.

In an effort to reduce SOV trips, the City of Richmond adopted a TDM ordinance⁶ and a Commuter Benefits Ordinance⁷, which requires employers to monitor how their employees travel to and from work.



Commuter Benefits Program

Richmond's Commuter Benefits Program applies to private businesses, public agencies, and non-profit organizations who employ 10 or more full time employees. Participating companies submit quarterly progress reports, as well as annual reports. Compliance is met by meeting the following three requirements.⁸

- Provide employees with one of the following commuter benefit options:
 - Provide employees with a pre-tax commuter reimbursement
 - Supply a pass or reimbursement equivalent to a vanpool rental
 - Offer an employer-run transportation option (e.g. multi-passenger van)
 - Offer an alternative commuter benefit approved by the City of Richmond
- Hire a commuter benefits coordinator
- Make commuter benefits available to all employees

Project Need

Source: City of Richmond,
<https://www.ci.richmond.ca.us/3119/Commuter-Benefits-Ordinance>

- Evaluate the administration and compliance of Richmond's Commuter Benefits Program.
- Upon better understanding, City staff will be able to make thoughtful adjustments, which overtime, will more effectively meet the City's SOV and emission reduction goals.⁹

⁶ City of Richmond City of Richmond. *Chapter 11.92 Transportation Systems Management*. Retrieved from https://library.municode.com/ca/richmond/codes/code_of_ordinances?nodeId=ARTXIPUSAWE_CH11.92TRSYMA

⁷ City of Richmond. Chapter 9.62. *Commuter Benefits Compliance Guide*. Retrieved from http://www.ci.richmond.ca.us/DocumentCenter/View/29957/cbo_guide?bidId

⁸ Ibid.

⁹ City of Richmond (2016). *Climate Action Plan*. Retrieved from <https://www.ci.richmond.ca.us/DocumentCenter/View/40636/CAP-combined?bidId=>

Proposed Treatment or Scope

The following tasks aim to help evaluate the existing program; City staff should complete all tasks internally.

Task 0: Hire a Transportation Coordinator (Optional)

The City of Richmond can either directly administer or participate in the coordination of a more robust and varied commuter program by onboarding a dedicated city employee to monitor the program.

The Transportation Coordinator would be responsible for managing the Commuter Benefits Program, which would include the deployment of Task 1 and 2. Additionally, the role would require liaising between developers, employers, city staff, and city council, and would require coordination with external partners to solicit additional program support (e.g. the development of a dedicated transportation web page and infrastructure planning and construction).

Short-term (1-3 years): Depending on market trends, this position will likely cost approximately \$65,000 - \$100,000 annually in salary and benefits.

Task 1: Assess Employers' Commuter Benefit Programs

Conduct interviews with participating employers to capture the successes and challenges of administrating Richmond's Commuter Benefits Program.

Sample interview questions:

- *How effective is the company's Commuter Benefits Program?*
- *How do you promote the Commuter Benefits Program?*
- *How can city staff provide more programmatic support?*

Task 2: Assess Current Sites' Commute Mode Split and Preferred Commute Choices

Evaluate employees' existing commute choices via an employee survey. The employee survey will help identify current travel patterns and create a program that better suits employees' transportation needs. (*Sample survey provided in Appendix A.*)

Task 3: On-Going Program Support and Evaluation

Following the completion of Task 1 and 2, City staff (led by the Transportation Coordinator) will be responsible for working with on-site commuter coordinators to complete quarterly and annual reporting requirements. City staff will complete a publicly available annual evaluation that details employers' compliance and program performance.

Sample Employee Survey

How far do you travel for work? (One-way)

- Less than 5 miles
- Between 5 and 25 miles
- 25 miles or more

What time did you arrive to work TODAY?

- Before 6 A.M.
- 6:00 A.M. – 6:59 A.M.
- 7:00 A.M. – 7:59 A.M.
- 8:00 A.M. – 8:59 A.M.
- 9:00 A.M. or Later

What time did you leave work TODAY?

- Before 3 P.M.
- 3:00 P.M. – 3:59 P.M.
- 4:00 P.M. – 4:59 P.M.
- 5:00 P.M. – 5:59 P.M.
- 6:00 P.M. – 6:59 P.M.
- 7:00 P.M. or Later

Typically, how do you commute to work? If you take more than one mode, select the mode that you take for the longest leg of your trip.

- Drive-alone
- Carpool
- Lyft, Uber, Taxi
- Public Transportation
- Private Commuter Shuttle
- Bike or Walk
- Vanpool
- Work from home
- Other

Do you participate in the Commuter Benefits Program?

- Yes
- No

If Yes, what commuter benefits do you use?

- Rideshare and Ridematching
- Employer-operated shuttle
- Transit subsidy /voucher
- Parking cash out benefit
- Flexible scheduling
- Guaranteed Ride Home
- Other: _____

Project Integration

- This effort will improve the City’s existing TDM and Commuter Benefits Program by holding both city staff and employers more accountable to the program’s reporting and monitoring requirements.
- A more robust program will illuminate how employees are currently traveling to and from work, and inform city staff on how to prioritize future capital and programmatic investments for non-driving modes – biking, walking, and taking transit.
- A city’s TDM and Commuter Benefits Program is only successful when efforts to reduce single-occupancy vehicles are introduced to the transportation network. This includes exploring AV technology and first mile/last mile shuttle services.

Cost Estimate

In the immediate term, the City of Richmond can create one full-time equivalent (FTE) Transportation Coordinator position. Depending on market trends, this position will likely cost approximately \$65,000 - \$100,000 annually in salary and benefits. Annual tasks include the abovementioned tasks:

- Task 1: Assess Employers' Commuter Benefits Program
- Task 2: Assess Current Sites' Commute Mode Split and Preferred Commute Choices
- Task 3: On-Going Program Support and Evaluation

Funding Sources

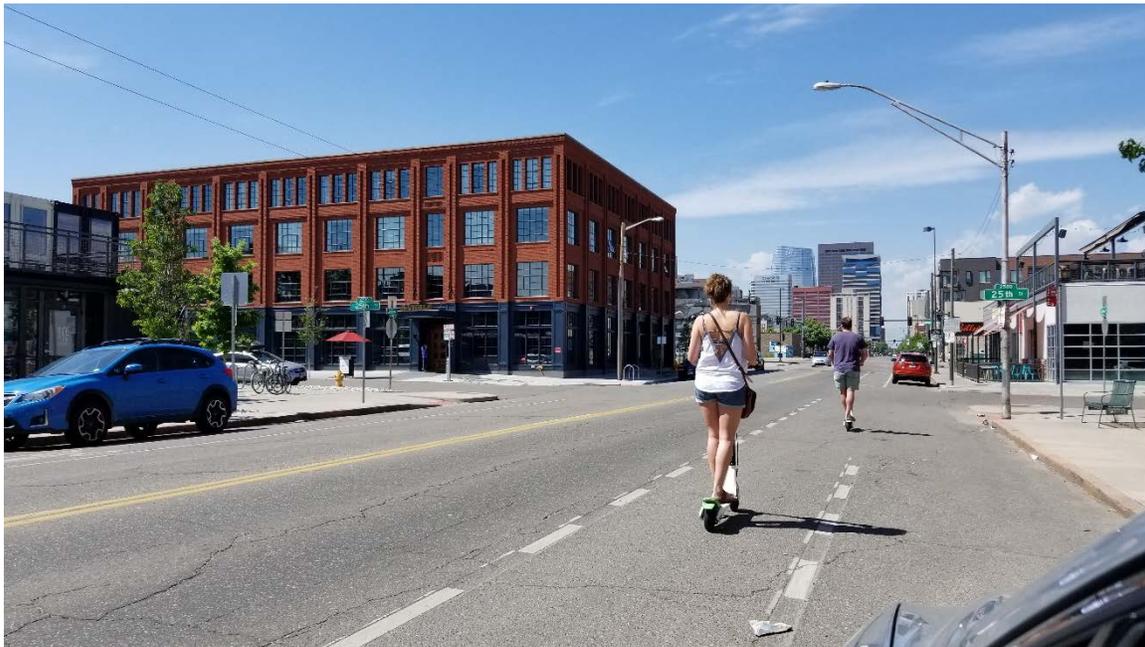
- Caltrans Active Transportation Program (ATP)
- Bay Area Air Quality Management District (BAAQMD) Transportation Fund for Clean Air Grant (TFCA) Regional Fund

PROJECT #8. IMPLEMENT AN E-SCOOTER PERMIT PROGRAM

Electric scooter share (e-scooter) systems are services that provide electric-powered scooters for short-term rentals, usually through the use of an app and without docking locations. Inviting e-scooter systems to Richmond will provide first mile/last mile connections between transit stops and people's ultimate destinations, expanding the scope of existing public transportation systems. Early studies¹⁰ suggest e-scooters have a low-barrier to entry compared to bicycles and have a fast uptake rate once put into a city. This early research also suggests that e-scooters may be viewed favorably and enjoy a higher adoption rate among women and low-income populations.

Richmond can encourage access to e-scooters by establishing an e-scooter policy and permit program that allow private companies to operate in Richmond and outlines specific rules around e-scooter riding, parking, data-sharing, and other mutual expectations. The development of this policy and programmatic approach can be developed iteratively by starting with a pilot designed to evaluate success and adjust program rules before full deployment.

Figure 10 People Riding E-scooters in a Bike Lane



Source: Nelson\Nygaard

Project Need

- Expand the reach of public transit through providing a first mile/last mile travel mode, especially for areas slightly too far to walk from transit stops
- Increase connectivity between areas not easily travelable using transit, especially trips that are approximately 0.5 to 2 miles

¹⁰ 2018. *Measuring Equitable Access to New Mobility: A Case Study of Shared Bikes and Electric Scooters*. Populus. Available for download at <https://www.populus.ai/research>.

- Improve environmental health through replacing shorter commutes previously taken with private vehicles or ride-hailing with e-scooters
- Enhance mobility options for disadvantaged communities, particularly those who cannot bike, do not own a bike, or cannot afford a private vehicle or ride-hailing

Proposed Treatment or Scope

When designing an e-scooter policy, the City of Richmond should consider the following components.¹¹ Program rules can be developed iteratively by starting with a pilot program and testing each rule's feasibility to deliver good customer service, encourage private operator to continue operations, and uphold the city's mobility goals.

1. Riding, parking, and service areas
 - a. Riding on streets, bike lanes, and/or sidewalks. For the safety of pedestrians and e-scooter users, sidewalk riding is not recommended. California Assembly Bill 2989 establishes statewide requirements regarding eligible streets for e-scooter use, which limits use to low-speed streets or streets with designated Class II or Class IV bikeways.¹²
 - b. Parking in designated areas, curb strips, converted vehicle-parking spaces. Parking rules should be simple enough to be complied with and enforced.
 - c. Considerations of service area boundaries, such as city boundaries, as well as mandating or incentivizing service in certain zones, such as low-income neighborhoods with low transit access.
 - d. How to clearly communicate these rules both to operators as well as to customers.
2. Maintenance, safety, and accessibility
 - a. Setting minimum requirements for charging and maintenance of e-scooters
 - b. Incentives for providing more accessible vehicles, such as three-wheelers or scooters with seats
3. Fees and limits on companies
 - a. Charging fees to each private company, either per scooter or per trip, to cover cost of implementing, maintaining, and enforcing e-scooter program, or to fund the improvement of on-street infrastructure
 - b. Limits on number of e-scooters for each neighborhood, company, or city-wide depending on demand. Many cities have established dynamic caps, in which operators are allowed to deploy more e-scooters as certain minimum performance thresholds are met.
4. Data collection and sharing
 - a. Mandated data-sharing with regards to trips, fleet, customer satisfaction, parking, operations and maintenance, and safety

¹¹ Components adapted from: 2018. *Remix Mobility Brief: Micromobility Policy Survey*. Remix. Available for download at <https://blog.remix.com/mobility-brief-3-micromobility-policy-survey-f4a9868cb98d>.

¹² California Assembly Bill No. 2989, Chapter 552: An Act to Amend Section 21235 of the Vehicle Code, related to vehicles. Approved by Governor September 19, 2018. Available online at https://leginfo.ca.gov/faces/billCompareClient.xhtml?bill_id=201720180AB2989.

- b. Considerations of real-time versus static data, delivered through an API (application program interface) or regularly scheduled data transfers. Richmond should assess its capabilities to access and leverage real-time access to data before requiring it.
- c. Public engagement and outreach, as well as surveys conducted regularly

In addition to putting in place the above policy, the City of Richmond can set up an application and evaluation process for a pilot of the program, selecting one or a few e-scooter companies to apply and operate in certain service areas with a lower limit on the number of e-scooters. The City can then edit the policy and requirements based on the results of the pilot and initial data collected. Once the pilot shows success, more companies can apply to bring their services to Richmond in larger numbers.

Figure 11 E-Scooter Program Implementation Schedule

1-Year Process: 4-Month Phases	Phase 1: Define	Phase 2: Pilot	Phase 3: Permanence
Project Management			
Background Review & Public Outreach			
Policy & Program Design			
Pilot Launch			
Data Collection & Reporting			
Permanent Program Launch			

Project Integration

- **Richmond Bicycle Master Plan** – In 2011, the City of Richmond adopted a Bicycle Master Plan that includes goals of expanding the city’s bike routes and parking facilities and making streets safer for bicyclists both day and night. A safe, comfortable bike network supports the success of scooters, since e-scooters will likely use the same routes. E-scooter parking areas can also be tied to existing bike parking or bike-share facilities.
- **E-scooter programs in the region** – Other cities in the Bay Area, like San Francisco and Oakland, are running their own pilot programs for e-scooters, and Berkeley launched its application process in January 2019. Since many people commute across city boundaries, providing similar services for both sides of a public transit trip can boost mobility for the whole region.

Cost Estimate

The estimated cost to implement this program is \$250,000. This cost estimate is based on costs reported by the City of Oakland.¹³ The cost includes:

- \$225,000 for hiring staff to manage day-to-day operations, outreach, enforcement, and implementation.
- \$25,000 for funding to boost software and data management capabilities in order to more effectively monitor the program.

¹³ 2018. *Remix Mobility Brief: Micromobility Policy Survey*. Remix. Available for download at <https://blog.remix.com/mobility-brief-3-micromobility-policy-survey-f4a9868cb98d>.

Funding Opportunities

- Chevron Modernization Project Environment and Community Investment Agreement (ECIA) Grant Program
- Fees on private e-scooter companies to operate in the city per number of scooters, trips, or other measure

PROJECT #9. IMPLEMENT A BIKE SHARE PROGRAM

Bikeshare is a service that provides bicycles for short-term use for a fee. A bikeshare program in Richmond will expand mobility options, improve public health, and support community growth. Residents and visitors can also use the service to complete their first mile or last mile trip to transit stations, especially when bicycles are placed near public transit stops and residential and commercial zones. Integrating the system with Clipper cards and providing opportunities for subsidized memberships will bring more users into the system, encouraging people to use more active and less polluting forms of transportation, and increase transportation equity by providing a local, local cost mobility option.

Figure 12 Ford GoBike Bikeshare System in the San Francisco Bay Area



Source: Paul Wasneski on flickr (public domain)

Project Need

- Enhance access to the five public transit systems that operate to and from Richmond, as well as over 20 systems in the Bay Area, by providing a new mode to get from transit stops to farther destinations.
- Expand mobility options for residents and workers in Richmond, especially low-income residents with the provision of subsidized memberships.
- Improve public health through increased physical activity and reduced emissions.

Proposed Treatment or Scope

The City is currently pursuing a bikeshare system with the following steps:

1. RFP posted and consultants interviewed in December 2018
2. One firm will be selected and notified in January 2019
3. Contract will be executed in the first quarter of 2019
4. Richmond is proposing over 144 bikes with more the six stations throughout the City
5. Proposed locations include City Hall, Richmond BART, Richmond Ferry, and more
6. Service to commence by summer 2019

Project Integration

- Metropolitan Transportation Commission (MTC) Bike Share Capital Program – In 2017, MTC approved funding for the City of Richmond to establish the first phase of a bikeshare system with six stations and 144 bikes.
- Richmond Bicycle Master Plan (BMP) – This project aligns with the BMP's goals to expand the City's bicycle network, and to increase the number of people of all ages and background who bike for transportation, recreation, and health.

Cost Estimate

The estimated cost to implement a bikeshare program is \$2,770,000. This cost includes:

- Project management and partner coordination: \$225,000
- Background review and existing conditions: \$10,000
- System development, procurement, and design: \$310,000
- Operations and maintenance: \$2,180,000
- Monitoring and reporting: \$45,000

Funding Opportunities

- Metropolitan Transportation Commission (MTC) Bike Share Capital Program
- Chevron Modernization Project Environment and Community Investment Agreement (ECIA) Grant Program
- Sponsorship and partnership with other major employers in the area

PROJECT #10. SUPPORT PARATRANSIT AND SENIOR MOBILITY PROGRAMS

The City of Richmond should work to ensure the viability and sustainability of R-Transit, the City's paratransit service, while finding ways to meet the mobility needs of the elderly and disabled community. Currently it costs R-transit \$107 to provide one paratransit trip, these costs are almost double that of comparable city-based paratransit programs. In addition to the high cost of service, service gaps are leading to high rates of service denials in the unincorporated parts of the service area. The inability of the City to control the costs of paratransit service threatens the mobility of seniors in Richmond and West Contra Costa County. R-transit would benefit from a top to bottom review to address the inefficiency and gaps in service coverage. This review should explore the coordination of service with neighboring transit systems, as well as administrative changes that can bring about the reforms needed to control costs and improve service.

Figure 13 R-Transit Paratransit Vans



Source: City of Richmond

Project Need

- Increases the productivity of paratransit service and improve the quality of service for residents within the service area.
- Addresses the current paratransit program's inefficiency and inability to meet the transportation needs of the community.
- Paratransit service is critical for elderly and disabled residents to access community resources.

Proposed Treatment or Scope

The City of Richmond should undertake a Comprehensive Service and Unmet Needs Analysis of the R-Transit. This study should include an independent analysis of R-transit's operations to identify ways to improve service and an intensive customer survey to determine the unmet needs of the community. The City should then develop a service development plan to address the issues identified in the service and unmet needs analysis. The City would implement these changes using the best practices and strategies identified in the plan.

Planning

- Comprehensive Service and Unmet Needs Analysis
 - A complete analysis of the existing service focused on system performance and service delivery.
 - Conduct outreach to seniors and disabled persons to determine unmet community needs and gaps in service.
- Service Development Plan
 - Use the service and unmet needs analysis to develop short, medium, and long-range plans for R-Transit to address the issues of productivity and viability of the service.
 - Focus on developing a model for paratransit service that best meets the needs of the City of Richmond and West Contra Costa County.

Implementation

- Implement recommendations in the Service Development Plan in coordination with the senior and disabled communities and stakeholders to include West Contra Costa Transportation Advisory Committee (WCCTAC), Contra Costa Transportation Authority (CCTA), East Bay Paratransit and WestCAT.

Timeline

- The timeline for the proposed study, planning, and implementation would be between 6-12 months.

Project Integration

- In 2008, the City of Richmond conducted an audit of paratransit services that included recommendations for improving service. The audit recommended the City privatize service; establish new administrative policies and procedures for R-Transit and move the program to the recreation department.
- In 2018, the West Contra Costa Transportation Advisory Committee conducted the West County Needs Assessment Study of Measure J Programs for seniors and persons with disabilities. That study identified some of the challenges of R-transit and provided potential solutions, including better coordination with neighboring city based paratransit services and reassignment of the service area. These studies should be the foundation upon which future studies are built.

Cost Estimate

- The estimated cost for the Comprehensive Service and Unmet Needs Analysis, Service Development Plan, and Implementation Plan is \$35,000 to \$40,000.

Funding Opportunities

- Contra Costa Transportation Authority Measure J Sales Tax Revenue
- Federal Transportation Administration 5310 Grant Program (Capital and Mobility Management)

APPENDICES

Appendix A Inventory of Modern Practices

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN

INVENTORY OF BEST MULTIMODAL PRACTICES

Table of Contents

Introduction.....	1
Pedestrian Access	2
Bicycle Access	2
Bikeways and Bicycle Parking.....	2
Folding Bikes	3
Bicycle Sharing	3
Transit Access.....	3
Shuttles	3
Intermodal Station Improvements.....	3
Motor Vehicle Access	4
Carpooling.....	4
Short-Distance Vanpools.....	4
Ride-Hailing Services.....	4
Taxis.....	4
Car Sharing	4
Autonomous Vehicles.....	5
Multimodal Policies and Programs	6
Integrated and Interactive Wayfinding	6
Real-Time Information	6
Marketing and Promotion.....	6
Transportation Management Association	6
Safe Routes to School.....	7
Land Use Controls to Promote Walkable and Mixed-Use Environments.....	7
Transportation Demand Management	7
Conclusion.....	9

INTRODUCTION

This memo provides a description of approaches to address last-mile access to and from transit stations, including illustrative examples of projects and programs from North America and Europe. Although commonly referred to as “last-mile solutions,” the access tools described here address a broader range of access needs, including pedestrian access within the more immediate vicinity (a five to 10-minute walk) of stations, as well as bicycle, shuttle, or other vehicle access to locations a half-mile away or farther. It also includes a description and peer examples of supportive programs that combine information, education, marketing, and incentives to leverage capital and operational investments to further increase transit use.

Each section of this document provides an overview of “last-mile” tools used in other communities that are relevant to Richmond due to a variety of shared characteristics (including urban geography, social demographics, public-private partnerships, and transportation infrastructure). The memo concludes with summary tables with

more detailed descriptions of the tools and examples and best practices from communities in North America and Europe. Nelson\Nygaard will use this toolbox — and build upon it as the project progresses — to develop site-specific strategies for transit and activity hubs in Richmond.

PEDESTRIAN ACCESS

Walking is a free transportation option for accessing public transit and other key destinations, and is a viable option for most people within a quarter- to half-mile of transit stations/stops and other destinations. Consequently, a safe, comfortable, and convenient walking environment is key to supporting and facilitating transit use and reducing short driving trips. A well-designed network of streets and pathways that improve the pedestrian experience will enhance pedestrian accessibility and connectivity to transit and other key destinations. An appealing walking environment includes infrastructure that can be used by people with specialized mobility needs, safe intersections, low traffic speeds, and a pedestrian-oriented built environment.

When taking concrete action for pedestrian access improvements, there are multiple “toolkits” of strategies. These different sets can be primarily categorized by the specific location of such improvements in the context of the overall street network. Just like motor vehicles, pedestrians rely on a continuous network of public rights-of-way and safe, effective, and efficient intersections. Therefore, such strategies to improve pedestrian access from a first- and last-mile perspective include:

- **Streetscape Improvements**
- **Sidewalks**
- **Intersection Improvement Tools**
- **Intersection Crossing Enhancement Tools**
- **Mid-Block Crossing Enhancement Tools**
- **Lighting**
- **Traffic Speed**

BICYCLE ACCESS

Integrating bicycles with transit combines the long-distance coverage of transit with the door-to-door service of riding a bicycle. Transit is most effective for trips of moderate to long distance on busy corridors, and bicycles are effective for trips of shorter distances. For these reasons, the combination of bicycling and transit can provide a high level of mobility comparable to automobile travel in terms of the overall travel time and distance. BART and AC Transit promote and support the use of bicycles by allowing bikes onboard trains and providing racks on the front of all buses. Water Emergency Transportation Authority (WETA) ferryboats serving the Bay currently have capacity for parking bicycles at no additional cost.

Bikeways and Bicycle Parking

Allowing bicycles on transit is only one-step in promoting transit-bike integration. Safe and convenient bikeways to transit stations and key destinations such as schools are required, and secure and convenient bike parking at transit stations / stops and key destinations is equally important. In addition, planning should consider effective access, such as how bicyclists navigate to station areas. Maps of the bicycle network can be provided near stops, and wayfinding signage and/or pavement markings should guide bicyclists from the nearest bike path to stations and key destinations.

Folding Bikes

Encouraging folding bikes on transit has the advantage of addressing first-mile/last-mile barriers on *both* ends of the transit trip. Folding bikes on transit also increases user convenience (compared to leaving a non-folding bike at a transit stop/station all day) without exacerbating peak-hour transit capacity constraints (compared to bringing a non-folding bike on board a transit vehicle). As for the benefits to the rider, a folding bike is highly convenient for anyone who lacks the space to store their bicycle at any point in their journey or work day. Folding bikes can be easily stored in the office or cubicle, and then unfolded and ready to ride in seconds. The Capitol Corridor Joint Powers Authority (JPA), which services Richmond, recently inquired about building stations for folding bikes.

Bicycle Sharing

Similar to car sharing, bike sharing is a form of short-term bicycle rental where people can access a shared fleet of bicycles as needed. Bicycle sharing programs provide safe and convenient access to bicycles for short trips, such as running errands or transit-work trips. Cities of all sizes from around the world have experimented with bicycle sharing programs for nearly 40 years. In the summer of 2017, Ford GoBike (formerly called Bay Area Bike Share) expanded bike share facilities into the East Bay. Although Contra Costa County is not covered in the currently planned expansion phases for the East Bay, Motivate (the operator of Ford GoBike) is still accepting submissions and proposals for bicycle share stations. As of January 2017, over 20 individuals expressed support for a bicycle share dock located at the Richmond BART and Amtrak station.

TRANSIT ACCESS

Shuttles

Shuttle buses typically serve a defined group of riders within a defined area or along a specific route. Shuttle service is usually from point to point, or between one point and many to fill gaps or make connections with the broader public transit network, often for specific groups of individuals. Fares are usually free or nominal. Shuttles are an important aspect of first mile/last-mile connectivity because they provide convenient and direct service to desired destinations.

Private/institutional shuttle services have gained enormous popularity in recent years. In the past, Richmond had piloted a Circular Shuttle program, which was cancelled when the Bay Area Air Quality Management District removed funding in 2013. The city is currently served by some existing employer and medical shuttles, including the UC Berkeley shuttles from the El Cerrito Plaza BART station and Kaiser Permanente shuttles from the Richmond BART station.

Shuttles serve as connectors to and from the regional transit system with employers or institutions, and can also provide important neighborhood circulation. Effective shuttles offer a service that is finely tailored to local needs. Some of the most successful shuttles are privately funded, or funded through public/private partnerships, such as a Transportation Management Association (TMA). Shuttle operations usually fall under three main categories or combinations thereof: 1) city supported and operated, 2) transit agency operated, and 3) employer operated.

Intermodal Station Improvements

For the purposes of this memo, intermodal stations are defined as a transit facility in which an interchange or transfer of passengers is intended. These transfer opportunities may include connections to rail, bus stops, bicycle share docks, bicycle parking, car sharing pods, bikeways, and sidewalks. Facilities in intermodal stations may include information booths, Clipper Card vending machines, accessible paths of travel and elevators, and connections to surrounding developments.

Whether the priority is increasing transit ridership or maximizing economic development, it is critical that intermodal stations are designed around maximizing the security and convenience of its users. Such strategies can include the aforementioned pedestrian and bicycle improvements, but also greater wayfinding systems and fare media systems that facilitate easy and convenient transfers across the many regional transit options servicing Richmond and the East Bay.

MOTOR VEHICLE ACCESS

Carpooling

Carpooling is the shared use of a car by the driver—usually the owner of the vehicle—and one or more passengers. When carpooling, people either get a ride or offer a ride to others instead of each driving separately. Carpooling arrangements and schemes involve varying degrees of formality and regularity. Carpools may be formal (arranged through an employer, public website, etc.) or casual (the driver and passenger might not know each other or have agreed upon arrangements). Carpooling can be used as a first mile/last-mile connector by efficiently connecting with public transit or other alternative commute modes.

Short-Distance Vanpools

Short-distance vanpools (sometimes called van shares) are designed to provide “last-mile” connections between transit centers and nearby employment locations, typically two to five miles away. Vanpools consist of at least four or five commuters who rideshare to and from work in vans provided by an outside operator. Vans can be provided by an employer, provided through a vanpool vendor, or can be owned by individual employees.

Ride-Hailing Services

Ride-hailing services, sometimes called transportation network companies (TNCs), are on-demand ridesharing services where the ride is shared through mobile apps to connect passengers with drivers. Payment is collected through the mobile app and drivers are paid a portion of the user charge.

Ride-hailing services offer on-demand, point-to-point transportation that can augment public transit by providing a demand-responsive option. Similar to taxis, companies such as Uber and Lyft provide on-demand transportation services for compensation using an online-enabled application or platform (such as smart phone apps). The difference between ride-hailing services and taxis is that passengers are connected to drivers who use their personal vehicles rather than vehicles in association with a taxi or limousine company.

Taxis

A taxicab transports passengers between locations of their choice. Examples of services in Richmond include Yellow Cab, Metro Cab, and Richmond Taxi Cab Service. Taxis are best for short-distance trips. For these reasons, taxis are an excellent first/last-mile connector to bridge the gap between a transit station and a person’s origin or destination. Taxi fares can be costly for some. Some communities offer taxi voucher programs or help subsidize taxis for low-income residents or older adults. Taxis can use already existing technology to pick up multiple riders in proximity to one another, provide on-demand door-to-door travel and connect riders from home to transit or from transit to job centers.

Car Sharing

Car sharing programs allow people to have on-demand access to a shared fleet of vehicles on an as-needed basis. Usage charges are assessed at an hourly and/or mileage rate, in addition to a refundable deposit and/or a low annual membership fee. Car sharing is similar to conventional car rental programs with a few key differences

between most programs: a) system users must be members of a car-sharing organization, b) fee structures typically emphasize short-term rentals rather than daily or weekly rentals, c) vehicle reservations and access is “self-service,” d) vehicle locations are widely distributed rather than concentrated, and e) most systems require vehicles to be picked up and dropped off at the same location.¹

Car sharing has proven successful in reducing both household vehicle ownership and the percentage of employees who drive alone because of the need to have a car for errands during the workday. As a result, car sharing can be an important tool to reduce parking demand.

For residents, car sharing reduces the need to own a vehicle, or a second or third car. Survey have shown that more than half of car-share users have sold at least one vehicle since joining the program in the San Francisco Bay Area.² For employees, car sharing allows them to take transit to work, since they will have a vehicle available for errands during the day.

There is an important distinction in both the management structures of car sharing systems and the trip types that can be taken with car sharing.

With regards to management structures, car sharing systems have included:

- Exclusive car sharing services in which vehicles are company-owned (e.g., Zipcar)
- Car sharing services provided under the banner of traditional car rental companies (e.g., Enterprise Car Share)
- Peer-to-peer car sharing services in which vehicles are owned and shared by individuals or households (e.g., Getaround)

The two kinds of trips taken with car share are:

- Round-trip or “static” trips: these are the typical trips used with car share. The user must return the car to the location they picked it up.
- One-way or “point to point” trips: these are a less prevalent option for car share, but many markets are testing them out. These trips fill a gap in both price and convenience between a transit ride and a TNC ride.

Autonomous Vehicles

Also commonly defined as “self-driving cars” and “highly automated vehicles,” the autonomous vehicle (AV) is an emerging technology that depends on computer and robotic science to conduct the driving of a vehicle. It is being tested by private corporations on roads throughout the Bay Area and in conjunction with other cities and states throughout the country. Although this is a nascent technology, AVs are a complex and consequential development in the built environment because they have the potential to affect traffic congestion, travel decisions, road safety, land use, and public health. Some researchers predict that autonomous vehicles will reduce vehicle ownership by upwards of 40%.³

¹ It should be noted that certain aspects of the service models offered by car rental companies and car-sharing organizations can overlap. For example, “Connect by Hertz” is a short-term car rental service that shares many of the same attributes as a carsharing service. A key distinction is that traditional carsharing organizations *only* provide short-term carsharing (rather than both short-term and long-term car rental) and typically have an organizational mission to reduce vehicle trips and vehicle miles traveled (VMT).

² Source: Survey by Nelson\Nygaard Consulting Associates for City Car Share – now Carma

³ <http://www.oregon.gov/ODOT/PT/PROGRAMS/transportation-options/ODOT-Rideshare-opportunities.pdf>

MULTIMODAL POLICIES AND PROGRAMS

These policies and programs often leverage multiple modes of transportation.

Integrated and Interactive Wayfinding

A successful wayfinding system provides integrated, consistent, and user-friendly information to confirm that chosen routes are efficient, safe, and ultimately lead directly to one's destination. Wayfinding particularly helps new users and visitors feel comfortable in an unfamiliar environment and is an essential element of both pedestrian and bicycle improvements. Wayfinding including directional signs, maps, schedules, and instructions. It also includes pavement markings to guide pedestrians, bicyclists, and transit users to their destinations. Branded wayfinding with consistent formatting and colors can help alert people to their location.

Real-Time Information

Real-time information provides transit arrival information, usually updated at regular intervals, based on automated vehicle locator (AVL) data, global positioning system (GPS) data, dispatch responders (or based on modeled assumptions about speed), or even social networking feedback. Real-time information helps passengers plan their trip (e.g. if the bus is delayed, the passenger may choose to walk instead. Real-time information also makes for a more pleasant waiting experience and overall transit experience; waiting without knowing is tedious and frustrating, and passengers tend to overestimate how long they wait for transit by up to 50%. Passengers with access to real-time information tend to rate their overall transit experience more highly than others without the information.⁴ Passengers have access to real-time information for BART, AC Transit, and Amtrak through digital signs or phone apps.

Marketing and Promotion

Awareness of transportation options affects travel behavior. Providing information about travel options affects a person's likelihood of using these options, and helps commuters learn about the health, financial, and environmental benefits of alternative commute modes. Marketing and promotion is critical to ensure that commuters are aware of commute options and are able to provide input needed to make the programs effective. These efforts may include a commuter website, apps and multimodal access guides, as well as pamphlets regarding walking and biking routes, transit options and real-time schedules, and information on accessing all the available transportation options.

Transportation Management Association

A Transportation Management Association (TMA) generally seeks to improve transportation access by reducing people's dependence on the single occupant vehicle and promoting strategies to make it easier to bicycle, vanpool, or take transit to a site. TMAs can be structured to serve one large development site, a group of employers, or an entire community. TMAs are generally financed through a public-private partnership or with private funding. Transportation Management Associations can provide a variety of services that encourage more efficient use of transportation and parking resources, such as:

- Access management
- Commuter programs
- Coordination between employers and facilitation with public agencies
- Parking management and brokerage

⁴ <http://www.citylab.com/commute/2014/01/why-technology-forever-changing-psychology-waiting-bus/8158/>

- Direct service provision
- Standard and guidelines development
- Wayfinding and multimodal navigation tools
- Marketing and promotion

Safe Routes to School

The Safe Routes to School (SRTS) program is a national program to encourage children to walk and bike to school. In Richmond, SRTS partnerships are enabled by the Contra Costa Health Services department.

SRTS programs consist of a variety of activities including:

- An audit and evaluation of existing walking conditions surrounding the school, usually leading towards advocacy for specific infrastructure (e.g., traffic calming, intersection improvements, pedestrian signals, bicycle facilities)
- Prearranged groups of children walking to school with a supervising adult, also known as a “walking school bus”
- Safety training for bicycle riders
- Monthly or annual “walk and roll to school days” in which students are actively encouraged and incented to walk or bike to school
- Development of an official “Walking routes” map for the school

Land Use Controls to Promote Walkable and Mixed-Use Environments

Land use controls (including zoning and urban design standards) has a direct influence – and is often influenced in return – on transportation needs and decisions. For example, if an individual decides to drive from their house to the post office, there are land use controls and regulations (or lack thereof) that may have motivated the decision. An integrated approach to land use controls with consideration towards the impacts on the transportation networks and people’s intentional transportation decisions can make a large difference. Some examples of positive land use controls include:

- Reform of parking codes, including implementing shared parking provisions and incentives, and maximum off-street requirements.
- Requirements that improve the pedestrian experience, including restricted parking at corners, visible frontage, sidewalk widths.
- Development impact fees to ensure that the costs of transportation infrastructure and services necessary to support new development are not borne disproportionately by existing residents and businesses.
- Public-private partnerships to open up programming streams for multimodal infrastructure and services (including capital and operations).
- Transit-oriented development (TOD) land use policies to encourage mixed use development within walking distance of transit stations to increase transit ridership. As a first and last-mile strategy, a TOD effectively shortens the mile to make create convenient access to transit. A TOD includes high-density development, a pedestrian-friendly environment, and a mix of complementary land uses.

Transportation Demand Management

Transportation Demand Management (TDM) is a general term for strategies that increase overall system efficiency, most often by encouraging a shift from single-occupant vehicle (SOV) trips to non-SOV modes, or shifting trips out of peak periods. TDM seeks to reduce auto trips – and hopefully vehicle miles traveled (VMT) –

by increasing travel options, providing incentives and information to encourage and help individuals modify their travel behavior, or reducing the physical need to travel through transportation-efficient land uses. The cumulative impact of a comprehensive set of TDM strategies can have a significant benefit on system efficiency, accommodation of new growth, and success of a metropolitan area. Typically, public agencies, employers, and public-private partnerships implement TDM programs. A TDM program can provide support and incentives to employees to leave their cars at home and use transit, rideshare, walk, or bike to work. A few examples of supportive programs include many of the strategies discussed earlier in this memo, in addition to:

- Priority parking for carpools/vanpools
- Parking cash-out programs
- Employee shuttles
- Information and assistance with transportation options
- Guaranteed or emergency ride home programs
- Subsidies or other incentives such as the commuter pre-tax transit benefit program and deep discount bulk transit pass programs
- Flexible work schedules (to facilitate ridesharing arrangements)
- On-site amenities or vehicles (bicycles or cars) available to run errands during the day
- Lockers and showers for those who bicycle to work as well as secure and convenient bicycle parking

Parking Management

Parking is a way for people to access transit and other modes, but it requires effective parking management to avoid incentivizing driving and adding to congestion and GHG emissions. Without effective management, pricing, and right-sizing the parking supply, the amount of land devoted to parking will expand and incentivize more people to drive for all trips and purposes. Additionally, the pricing and regulation of parking, if not intentionally managed, can exacerbate congestion as drivers will devote time to searching for the most convenient and cheapest spaces available.

A comprehensive management program's primary goal is to create availability for all types of users of parking resources (i.e. residents, employees, commuters, and visitors). Such parking management practices include:

- Residential and business permit programs
- City government fleet management and accounting
- Customer-friendly enforcement
- Pricing locations based on demand
- Right-sizing (in which citywide development regulations respond to demand trends and observed utilization to promote sharing of existing resources)
- Improving wayfinding and multimodal access to parking

Employer-Based Incentives and Support

Employers can provide TDM measures for their employees to encourage people to walk, bike and take transit to and from work. These measures are similar to the TDM measures listed above, including shuttles, flexible work schedules, and transit subsidies. The TDM measures take advantage of existing transportation infrastructure and can financially support options other than driving alone, such as an employer-based shuttle to and from the nearby transit station. Businesses in Richmond with at least 10 employees are required to offer a pre-tax selection of TDM strategies.

CONCLUSION

This toolbox of multi-modal mobility strategies highlights the many options available to the City of Richmond. Summary tables of the different types of strategies and best practices follow. Which tools to use and prioritize in Richmond will depend on the City's existing infrastructure and programs, along with input from members of the public and local stakeholders.

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

Table 1 Pedestrian Mobility Tools

First-/Last-Mile Improvement	Description	Case Study Examples
<p>Streetscape Improvements: Streetscape includes the overall look, feel, and design of the roadway and public right-of-way, including sidewalks, street trees and landscaping, green infrastructure, lighting, paving, signage, and street furnishings.</p>	<p>Encourages walking and can improve pedestrian safety. Applicable to key pedestrian routes within quarter- to half-mile of transit stations/stops and key destinations.</p>	<ul style="list-style-type: none"> ▪ North American cities have made streetscape, sidewalk, intersection and other improvements to enhance the quality and safety of the pedestrian environment to increase the number of trips made on foot. ▪ The National Association of City Transportation Officials (NACTO) states in the “Urban Street Design Guide” that throughway zones of sidewalks should be 5-7 feet wide in residential settings and 8-12 feet wide in commercial or downtown settings. ▪ The City of Richmond has completed a Pedestrian Plan (http://www.ci.richmond.ca.us/2738/Pedestrian-Plan) that incorporates many of the pedestrian improvements listed on the left. The adopted Pedestrian Plan also includes two detailed subarea plans-Iron Triangle Walkable Neighborhood Plan and the Richmond Wellness Trail. ▪ The County of Alameda developed a sidewalk construction prioritization tool for high-demand pedestrian areas in unincorporated communities. The project used a points system to prioritize sidewalk projects for construction based on demand and safety. http://www.pedbikeinfo.org/cms/downloads/ENG_SidewalkConstructionProgram.pdf ▪ The City of Albany, CA installed bulbouts at an uncontrolled crosswalk to improve pedestrian safety. Research showed an increase in drivers yielding to pedestrians at the crosswalk with a bulbout compared to a crosswalk without a bulbout. http://nacto.org/docs/usdq/pedestrian_safety_impacts_of_curb_extensions_randal.pdf
<p>Sidewalks: The sidewalk zone is the portion of the street right of way between the curb and building front. Sidewalks should be wide enough to accommodate people with wheelchairs and strollers.</p>	<p>Improves pedestrian safety and mobility, particularly for those with disabilities. All roadways within ¼ mile to ½ mile of stations/stops should have sidewalks on both sides of the roadway.</p>	
<p>Intersection Improvement Tools:</p> <ul style="list-style-type: none"> ▪ Curb Extensions ▪ Reduced curb radii ▪ Pedestrian refuge islands ▪ Curb ramp improvements 	<p>Increases pedestrian safety and mobility by improving visibility, slowing vehicular traffic, and reducing crossing distances for pedestrians. Roadway intersections on key pedestrian routes should be designed to maximize pedestrian mobility, safety, and visibility, particularly on roadways with high traffic volumes and/or speeds.</p>	
<p>Intersection Crossing Enhancement Tools:</p> <ul style="list-style-type: none"> ▪ Advanced yield markings for multi-lane roadways ▪ Longer traffic signal walk phases ▪ Pedestrian signal countdown timers ▪ Accessible pedestrian signals ▪ Leading pedestrian signal intervals ▪ Marked and high visibility crosswalks ▪ Raised crosswalks ▪ In-street pedestrian crossing signs ▪ High-visibility signs and markings 	<p>Increases pedestrian safety and mobility by improving visibility, separating or phasing pedestrian and vehicular movements, and providing more time and/or shorter distances to cross roadways. Roadway intersections on key pedestrian routes should be designed to maximize pedestrian mobility, safety, and visibility, particularly on wide roadways with high traffic volumes and/or speeds and large turning volumes.</p>	
<p>Mid-Block Crossing Enhancement Tools:</p> <ul style="list-style-type: none"> ▪ HAWK (High Intensity Activated Crosswalks) or Pedestrian Crossing Hybrid beacons ▪ Rectangular Rapid Flash Beacon (RRFB) ▪ In-pavement flashing lights crosswalk warning system ▪ Staggered pedestrian refuge island 	<p>Pedestrians often cross the street at locations other than intersections due to the location of trail crossings, transit stops, or key attractions. These crossings are more frequent when the spacing between intersections is very wide. Creating safe mid-block crossings can shorten pedestrian travel distances significantly and make walking a more attractive choice.</p>	

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017**

City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
<p>Lighting:</p> <ul style="list-style-type: none"> ▪ Pedestrian-oriented street lighting 	<p>Pedestrian-oriented lighting is generally at a lower height (10-12 feet) and more closely spaced than conventional street lighting, which is used to light the roadway. Pedestrian-oriented lighting increases pedestrian visibility for drivers and enhances safety and security, ultimately creating a more inviting and appealing walking environment.</p>	<p>Several resources provide both general and specific guidance for improving the pedestrian environment. These include:</p> <ul style="list-style-type: none"> ▪ “Urban Street Design Guide,” NACTO, A “Blueprint for 21st Century Streets” (http://nacto.org/publication/urban-street-design-guide/)
<p>Traffic Speed:</p> <ul style="list-style-type: none"> ▪ Speed limit reductions ▪ Roadway narrowing (10-12 foot travel lanes) ▪ Reductions in the number of travel and turning lanes 	<p>High traffic speeds pose a significant safety threat to pedestrians and can create an unpleasant walking environment. The risk of death or a severe injury to a pedestrian being hit by a vehicle travelling 30 MPH is over three times higher than if the car was travelling 20 MPH. If the car was travelling 40 MPH, the risk of death or a severe injury to a person walking is 80%.⁵ Physical design changes that cause drivers to reduce their speed can improve both safety and overall walkability.</p>	<ul style="list-style-type: none"> ▪ “Designing Walkable Urban Thoroughfares: A Context Sensitive Approach”, an Institute of Transportation Engineers (ITE) Recommended Practice (http://www.ite.org/css/) ▪ “Model Design Manual for Living Streets”, Los Angeles County (http://www.modelstreetdesignmanual.com/) ▪ “Metrorail Bicycle and Pedestrian Access Improvements Study”, Washington D.C. Metro (http://planitmetro.com/wp-content/uploads/2010/12/Metrorail-Bicycle-Pedestrian-Access-Improvements-Study-Final.pdf) ▪ “<u>Complete</u> Intersections: A Guide to Reconstructing Intersections and Interchanges for Bicyclists and Pedestrians,” Caltrans (http://nacto.org/docs/usdg/complete_intersections_caltrans.pdf) ▪ The City of Berkeley, CA has a citywide speed limit of 25 MPH, with a handful of exceptions for highways and overpasses, where speed limits reach 35 MPH, and school zones, where speed limits are 15 MPH. http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=8244 http://www.ci.berkeley.ca.us/ContentPrint.aspx?id=99348

⁵ AAA Foundation for Traffic Safety, “Impact Speed and Pedestrian’s Risk of Severe Injury or Death”, p. 12

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

Table 2 Bicycle Connectivity Tools

First-/Last-Mile Improvement	Description	Case Study Examples
<p>Bikeways:</p> <ul style="list-style-type: none"> ▪ Bicycle trails and paths ▪ Bicycle lanes (conventional, buffered, protected) ▪ Shared vehicular lanes ▪ Bicycle detection at signalized intersections ▪ Signage/wayfinding 	<p>Bikeways improve mobility for people who bicycle, and studies have shown that higher levels of bicycle infrastructure are positively and significantly correlated with higher rates of bicycle commuting.⁶ Bicycle facilities also enable a wider range of bicyclists with varying skills and abilities to comfortably and safely travel.</p> <p>The bikeway design should provide the lowest stress environment to encourage more people to bike. The type of bikeway will depend on the existing roadway conditions, including traffic volume and traffic speed.</p>	<p>A number of cities have provided a combination of bikeway facilities and secure bicycle parking as one of the primary modes of transportation from home to rail stations to destinations within the city. Recent improvements around MacArthur BART Station in Oakland include a protected bicycle lane built in tandem with a new parking garage and future transit-oriented development. In Richmond, bikeways were proposed in the South Richmond Transportation Connectivity Plan and Richmond Bay Specific Plan, including protected lanes along Harbour Way, Carlson Boulevard, and Hoffman Boulevard.</p> <p>Resources for bikeway planning and design include:</p> <ul style="list-style-type: none"> ▪ National Association of City Transportation Officials Urban Bikeway Design Guide (http://nacto.org/cities-for-cycling/design-guide/) ▪ "Guidelines for Successful Pedestrian and Bicycle Facilities in the Denver Region", Denver Regional Council of Governments (http://www.drcog.org/index.cfm?page=BicycleandPedestrianPlan) ▪ Oakland Bicycle Facility Design Guidelines, City of Oakland (http://www2.oaklandnet.com/government/o/PWA/o/E/C/s/BicycleandPedestrianProgram/OAK024653) <p>The City of Richmond has completed a Bicycle Master Plan "Richmond Bicycle Master Plan," City of Richmond, CA (http://www.ci.richmond.ca.us/2739/Bicycle-Master-Plan) that identifies a network of bicycle improvements and design guidelines.</p>
<p>Bicycle Parking and Storage:</p> <ul style="list-style-type: none"> ▪ Shelters ▪ Lockers 	<p>Long-term bicycle parking is for people to park their bikes for longer than two hours. Long-term bicycle</p>	<p>In the San Francisco Bay Area, BikeLink (http://www.bikelink.org/) provides secure on-demand parking for bicycles and other small vehicles to make it</p>

⁶ The Atlantic Cities Place Matters, "Do Bike Paths Promote Bike Riding?" <http://www.theatlanticcities.com/commute/2012/02/do-bike-paths-promote-bike-riding/1318/> (accessed January 3, 2017).

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
<ul style="list-style-type: none"> ▪ Stations ▪ Racks ▪ Repair Stations along highly used bicycle routes or stations 	<p>parking is secured and protected from the elements. Examples include lockers, shelters and stations.</p> <p>To effectively increase the capacity of bicycle lockers and provide more convenience and flexibility to users, transit agencies have installed "eLockers": computerized, on-demand systems that allow users to check for available lockers or sign up for them online.</p> <p>Models from eLocker and CycleSafe allow keyless access to the locker with the use of a SmartCard or cell phone. Advance reservation systems are being tested that would enable users to reserve a locker in advance. With an internet connection, centralized computerized administration allows the transit agency to monitor and respond to demand for one-time use as well as reserved lockers.</p> <p>Lockers available for one-time use have the advantage of serving multiple users a week. Monthly rentals, by contrast, ensure renters that their own personal locker will always be available, however incidental users cannot be accommodated, and rentals are limited to a particular location.</p> <p>Bicycle stations provide a range of services to people who ride bicycles, including security, valet bicycle parking, bicycle repair, and sales on-site, and in some cases bicycle rentals or bike sharing.</p>	<p>easier to use transit and other mobility alternatives. Lockers are located outside of BART, Caltrain, VTA, and Capitol Corridor rail stations—as well as multiple park-and-ride termini. Richmond Ferry Terminal also proposed to provide lockers.</p> <ul style="list-style-type: none"> ▪ eLockers are available at BART stations throughout the system, including 24 at the Richmond station. (https://www.bart.gov/guide/bikes) ▪ Caltrain has on-demand and 6-month rental eLockers. (http://www.caltrain.com/riderinfo/Bicycles/BicycleParking.html) <p>Bike stations are located at US and European train stations.</p> <ul style="list-style-type: none"> ▪ The Caltrain Bike Station in San Francisco offers repairs, rentals, and free valet parking. (http://bikehub.com/caltrain-bike-station/) ▪ The Radstation in Muenster, Germany includes bike parking and other amenities, including a bike washing machine (http://www.radstation.de/). ▪ BikeHub® operates bike stations on the BART system. Services vary, but include free valet, 24-hour controlled access, and repairs. (http://bikehub.com/bartbikestation/) ▪ Bikestation® has several North American locations (http://home.bikestation.com/) and offers secure bicycle parking and other services and facilities for bicyclists. <p>Bicycle parking resources include:</p> <ul style="list-style-type: none"> ▪ "Essentials of Bike Parking" and "Bicycle Parking Guidelines, 2nd Edition", Association of Pedestrian and Bicycle Professionals (http://www.apbp.org/?page=Publications) ▪ "Metrorail Bicycle and Pedestrian Access Improvements Study", Washington D.C. Metro (http://planitmetro.com/wp-content/uploads/2010/12/Metrorail-Bicycle-Pedestrian-Access-Improvements-Study-Final.pdf)

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
<p>Folding Bicycles</p>	<p>Folding bicycles can provide ultimate flexibility for transit users since they can be used for both first and last-mile travel and do not necessarily require special storage facilities on trains, stations or at final destinations. Many folding bikes provide all the comfort and ease of use of a full-size bike, but that then fold easily and quickly for transport and storage.</p>	<ul style="list-style-type: none"> ▪ The City of Santa Cruz, CA initiated a folding bicycle program to allow riders greater access to METRO buses by bicycle. Although buses were equipped with bike racks, racks on higher-ridership routes were often full. The program offered \$200 in rebates on specific vendors' folding bicycles, and offered program participants the option of purchasing two months' worth of Santa Cruz Metropolitan Transit District bus passes at up to 70% off retail price. Participants were required to attend a two-hour safety program first before they could qualify for the program. ▪ At Stanford University in Palo Alto, CA, Parking and Transportation Services partners with the on-campus bike shop to offer free one-week rentals and \$100 subsidies for certain models. http://transportation.stanford.edu/alt_transportation/BikingAtStanford.shtml
<p>Bicycle Sharing:</p> <ul style="list-style-type: none"> ▪ Publicly shared bicycles ▪ Private or employer-based programs 	<p>Ford GoBike is a public bike sharing system serving the Bay Area for short (30 minutes or less) trips. System members can pick up a bike at any station and return it to any other station when done. System membership (annual or daily) or a single ride can be purchased online or at any kiosk. Members can use their Clipper Card or a mobile app to unlock and use a bike. As of the summer of 2017, Ford GoBike serves parts of San Francisco, Oakland, Berkeley, and San Jose.</p> <p>There are smaller bike share systems in the Bay Area that serve private campuses (e.g., Google) or other city-specific services, such as San Mateo Bay Bikes.</p>	<ul style="list-style-type: none"> ▪ Google, based in Mountain View, CA provides a fleet of bikes distinctively painted in red, green, blue, and yellow for employees to use to travel around its campus and run errands during the workday. ▪ In 2016, the City of College Park, MD, in coordination with the University of Maryland and Zagster (a bike sharing provider throughout North America), launched mBike, a bike share system available to the public. Supported by grant funding, the system has 120 bikes across 14 stations (including the two Metrorail stations serving College Park). Although there is a larger regional bike share system in Washington, DC (Capital Bikeshare), the establishment of mBike ensured that bike share could be implemented in College Park more quickly, with more bikes, and at a lower cost, than what the regional bike share system could offer. ▪ European cities have used bicycle sharing to facilitate bicycle use for several years. Copenhagen has one of the oldest (and now somewhat outdated systems) that offers free public bikes with the deposit of a coin.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017**

City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
		<ul style="list-style-type: none"> Since September 2011, the City of Lille, France provides a public bicycle sharing system called V'Lille. Each V'lille station is equipped with an automatic rental terminal and has stands for dozens of bicycles. Maps showing the locations of the city's V'lille stations are available at all kiosks. Users must have a daily, weekly or annual subscription. With a subscription, bike rental is free for the first half hour. A trip that lasts longer than 30 minutes incurs a charge of €1 for each subsequent 30-minute period. Over 1000 Free Service bikes are available in areas with transit access in the municipalities of Lille, La Madeleine and Mons in Baroeuland, and 3000 bicycles are available for longer-term rentals, with plans to expand. In addition, a local bike manufacture ("btwin") is planning to build a bike-friendly, car-free campus in the area.
<p>Station Bicycles</p>	<p>For some who want to travel between transit stations and their workplace by bicycle, it may be most convenient to keep a bicycle at the station for this express purpose (and to use for errands and other trips during the workday). Rather than expect a person to buy multiple bicycles (and leave them scattered throughout the transportation network), one could reserve a shared bicycle at their destination station for a guaranteed last-mile connection. These "station bicycles" are typically low-cost bikes and ideally would be stored in lockers or covered bicycle parking areas.</p>	<ul style="list-style-type: none"> In 33 stations throughout the United Kingdom, Brompton Bike Hire has established docks with folding bicycles for people to reserve in advance and take with them for transportation needs immediately preceding and following a transit trip. The system is intended to be "accessible to all, easy and cheap to install and run, economical to use, not dependent on state subsidies, flexible and compact." In Oakland, CA, the Capitol Corridor Joint Powers Authority has reached out to Brompton about the feasibility of such a program in tandem with its Bicycle Access Plan.
<p>Electric Bicycles</p>	<p>Electric bicycles provide a more attractive alternative for some users, particularly in hilly areas, and for riders who have difficulty accelerating and maintaining higher speeds. Electric bicycles can be combined with trailers or other equipment so that they can transport cargo as well as people.</p>	<ul style="list-style-type: none"> The My-Go-Pasadena pilot program provided rebates to transit commuters to purchase a two-wheel electric bicycle from one of several participating dealers in the Pasadena area. The goal of the program was to demonstrate the value of these electric vehicles as new transportation options to connect to Metro Gold Line transit stations in lieu of single occupancy automobiles. The Los Angeles M.T.A., the City of Pasadena, Pasadena Water and Power, and the Federal Transit Administration generously funded the

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017**

City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
		program. (http://www.calstart.org/projects/first-mile/First-Mile-Projects/MyGo-Pasadena.aspx)
Bicycle Events and Programs <ul style="list-style-type: none"> ▪ General marketing and promotion ▪ Bike to Work Day ▪ Bicycle commuter events throughout the year 	<p>A marketing and educational campaign can promote bicycling as an everyday activity. Campaigns can also educate the public about new facilities, such as improved bicycle parking facilities. People are unlikely to change from established patterns unless they are persuaded that parking bicycles at the transit stop is easier than bringing their bicycles with them, that spaces will be available, that they will be able to retrieve their bicycles easily upon their return, and that it is not going to cost them too much additional money or time.</p>	<ul style="list-style-type: none"> ▪ GoLloyd, a TMA in Portland, OR, sponsors several supportive programs to encourage cycling and walking, including the distribution of safety lights, bicycle maps, sponsored group bike rides, bicycle commuter breakfasts, and a “Bike Champ” mentoring program. (www.golloyd.org) ▪ Cycling Scotland sponsors a “Cycle Friendly Employer” program that provides information, support and other services to encourage and facilitate cycling to work. (http://www.cyclingscotland.org/our-projects/award-schemes/cycle-friendly-employer/)

Table 3 Transit First-/Last-Mile Tools

First-/Last-Mile Improvement	Description	Case Study Examples
Shuttle Programs: <ul style="list-style-type: none"> ▪ Partnership Programs ▪ Employer Sponsored Shuttles ▪ Agency Sponsored Shuttles ▪ Short-Distance Vanpools 	<p>Shuttle services provide point-to-point transportation, or between one point and many to fill gaps or make connections with the broader public transit network, often for specific groups of individuals. Shuttle services typically serve riders in a well-defined area or along a specific route and provide convenient and direct service to desired destinations.</p> <p>Shuttles can be costly and difficult to administer, however. There are several approaches to shuttle programs, described further below, that can be used to address these issues:</p> <ul style="list-style-type: none"> ▪ Partnership Programs: Several partners financially sponsor Shuttles, including employers, TMAs, and government agencies. Typically, one agency is responsible for ongoing administration, and a governing board makes major decisions. ▪ Employer Sponsored: Shuttles are paid for and administered solely by an employer or group of employers and serve specific employees only. 	<p>Examples of different shuttle programs include:</p> <ul style="list-style-type: none"> ▪ South of San Francisco, CA, a number of employer shuttles connecting commuter rail stations to nearby employers are jointly funded by the transit authority, air district, and local employers (http://www.caltrain.com/schedules/Shuttles.html) ▪ Downtown Walnut Creek Trolley service is operated by the City of Walnut Creek, which supports a number of free transportation options for residents and visitors including the Route 4 Downtown Trolley, and the Route 5 Shuttle. The Free Downtown Trolley operates 7 days a week from the Walnut Creek BART Station to various downtown destinations. The Route 5 Shuttle operates from the Walnut Creek BART Station to Creekside Drive Monday through Friday. ▪ The Emery Go-Round shuttles connects destinations in Emeryville with the nearest BART rail station. The service is funded entirely by commercial property owners in the citywide transportation business improvement district and does not charge a fare to passengers (http://www.emerygoround.com/).

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
	<ul style="list-style-type: none"> ▪ Agency Sponsored: Shuttles are paid for and administered by an agency or TMA and are open to the public. ▪ Short-Distance Vanpools: Employees, employers, or an agency sponsor vans. Vans are parked at transit stations and driven by employees to the worksite, then driven back to the station at the end of the day (or shift). 	<ul style="list-style-type: none"> ▪ Kaiser Permanente provides a free, public shuttle between its medical campus in Richmond and both the Richmond and El Cerrito Del Norte BART stations. ▪ In Oakland, CA, the fare-free Broadway Shuttle connects nearby destinations with Amtrak, BART, ferry, and other bus routes. As of December 2016, the shuttle is funded through a partnership of eight different organizations and agencies and is operated by AC Transit (http://www.meetdowntownoak.com/shuttle.php). ▪ In the Seattle, WA area, King County Metro sponsors a van share program to provide last-mile connections between public transit and workplaces (http://metro.kingcounty.gov/tops/van-car/commutervans.html).
<p>Intermodal Station Improvements</p>	<p>The experience of a rider in a transit station, when transferring, arriving, or disembarking, can affect the decision to ride transit as much as the trip itself. If one does not feel comfortable or satisfied in the stop and station environment, they may decide the transfer or waiting experience makes the entire trip no longer worth it. Therefore, access improvements are key to solving such deficiencies in intermodal stations. Solutions include: accessible and direct paths of travel for riders' transferring and access needs, sufficient space to ensure the smooth maneuvering of buses, safe and clean elevators/escalators, protection from the elements, and convenient locations for multimodal pickup, drop-off, and parking. Some of these elements, including those dependent on safety and wayfinding systems, are also indicative of good practice in urban design for pedestrians.</p> <p>In addition to improving station design for bicycle and pedestrian access, many transit agencies are interested in fare payment media that is itself multimodal—one card or smartphone app that is accepted as payment on transit, car share, bike share, parking, or other mobility options. The main challenge with these programs is the high level of coordination and lead time required to</p>	<ul style="list-style-type: none"> ▪ Improvements in transit station access were researched as part of a plan for the West Contra Costa Transportation Advisory Committee (WCCTAC) in 2011. Among other recommendations and stations throughout the County, a number of enhancements in wayfinding systems, bus bays, shuttle connections, and rider crossings were proposed for the Richmond BART Station, Richmond Parkway Transit Center, and the proposed Richmond Ferry Terminal. ▪ WMATA in Washington, DC, has begun an 18-month pilot of its New Electronics Payment Program, which will allow passengers to pay using a smart card, government I.D. cards, contactless credit cards, and smartphones. One of the program's primary objectives is to maintain seamless regional transfers among existing transit services. WMATA has partnered with more than a dozen agencies to implement this program. The pilot will encompass Metro rail, bus, and parking, though the agency is in conversation with regional bike share and car share companies about integrating with their systems, as well. It is several years from implementation.

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
	implement; a long lead time can render chosen technologies obsolete or outdated by the time of implementation.	

Table 4 Motor Vehicle First-/Last-Mile Tools

First-/Last-Mile Improvement	Description	Case Study Examples
Carpooling & Vanpooling	<p>Carpooling is the shared use of a car by the driver—usually the owner of the vehicle—and one or more passengers. When carpooling, people either get a ride or offer a ride to others instead of each driving separately. Carpooling arrangements and schemes involve varying degrees of formality and regularity.</p> <p>Vanpools typically serve commuters who live and work near each other and travel more than 15 miles to work one-way.</p> <p>It may be possible for longer-distance car- or vanpools to pick up additional passengers at light rail stations and transport them the last few miles to work. Given the fact that stations are located within close proximity of freeway exits, the detour required to pick up someone from the station would be minimal.</p>	<ul style="list-style-type: none"> ▪ The City of Portland has a preferential on-street parking program for people who carpool to certain districts of the city. These locations, surrounding Downtown and Lloyd Center, are well served by transit. The program is so popular that that the City is not accepting new applications as of December 2016. ▪ In the Bay Area, 511.org provides a carpool matching program for over 60,000 commuters, but also links to other private matching firms operating in the Bay Area, including Scoop (www.takescoop.com) and Carzac (www.carzac.com).
Employer-Specific Ridematching	<p>Some employers facilitate ridesharing among their employees, either through a company intranet site or through a third-party provider. This approach enables a greater degree of customizability and has proven more attractive to some employees, particularly those of large employers who have enough individuals to support their own ridematching system. Such systems can be easily combined with incentives and other promotions into a comprehensive employer-based commute program.</p>	<ul style="list-style-type: none"> ▪ Many online ride-matching services already exist, allowing potential users to enter information about their trips – including origin and destination, time of day, which days of the week, etc. – and the system can pair them up with others with similar requirements. Some examples include RideAmigos (http://www.rideamigos.com/), and TripSpark (http://www.tripspark.com/). Bay Area companies (e.g. Google) and academic institutions (e.g. UCSF, Castilleja School) use RideAmigos.
Ride-Hail Services (Lyft, Uber, etc.)	<p>To be a successful first and last mile solution, a ride-hail service needs to find balance in its driver supply and customer demand, coordination with transit agencies, and effective marketing. This may be an expensive</p>	<ul style="list-style-type: none"> ▪ Beginning August 17, 2016, riders within the Centennial (CO) City Call-n-Ride (dial-a-ride) service area are now able to summon free shared Lyft rides (known as “Lyft Line”) to and from the Regional Transportation District’s (RTD) Dry Creek light-rail station southeast of Denver. Riders have the option of

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
	<p>first/last mile solution for transit riders to use on a regular basis.</p> <p>Driver supply: Achieving balance between driver supply and customer demand is the most critical key to success when formalizing a last-mile ride-hail service program. While targeting the use of ride-hail services for last-mile trips is a growing phenomenon, a program that does not offer sufficient driver supply to meet demand will likely correspond to a lack of perceived reliability from the user's standpoint.</p> <p>Coordination with transit agencies: Instead of viewing ride-hail services as competition, transit agencies are beginning to partner with this type of service to fill in service gaps and improve the transit experience.</p> <p>Effective marketing: Education and promotion are critical to ensure transit users understand how ride-hail services can support transit trips. While the Federal Transit Administration is still assessing whether federal funding can be appropriated through transit agencies and directed to ride-hail services, active marketing and promotion will be critical to incentivize operational changes to meet last-mile needs.</p>	<p>putting in their request on the Lyft app or on Go Denver, a mobile platform developed by Xerox that integrates scheduling and payment information for transit and ride-hailing services around the metro area. The six-month pilot project is expected to end in February 2017. Free Lyft rides are available 5:30 a.m. to 7 p.m. on weekdays only.</p> <ul style="list-style-type: none"> ▪ Also in 2016, the Livermore Amador Valley Transit Authority (LAVTA) proposed Wheels on Demand, a partnership with the private sector to provide service to low-density suburban areas in Dublin, CA where existing fixed-route LAVTA Wheels service is underperforming. Wheels on Demand is an extension of a traditional user side subsidy program, which is used by transit systems nationwide to partner with taxicab companies, but this partnership would extended to ride-hail services such as Uber or Lyft.
<p>Conventional Taxi Service</p>	<p>As evidenced by the presence of taxi stands outside of many BART stations (including Richmond), taxis have been a last-mile solution for decades. However, there are limitations to depending on taxis as a last-mile solution. Primarily, many individuals may not be able to afford routine taxi rides, the probability of hailing a cab on the street is very low outside of city centers, and even when one expects to find a taxi at a location like a BART station, there is no guarantee it will be waiting. Nevertheless, opportunities exist to make taxis more appealing, easier to access, and more affordable.</p> <p>Under a taxi-sharing program, cab drivers can pick up multiple passengers at the same time, provided each passenger is headed in the same direction.</p> <p>Under a taxi-sharing program, cab drivers can pick up multiple passengers at the same time, provided each passenger is headed in the same direction. Taxi sharing</p>	<p>Following are best practice examples that facilitate the use of taxis as a last-mile solution:</p> <ul style="list-style-type: none"> ▪ Dedicated taxi phones at rail stations and major bus stops, currently in use by the London Underground. ▪ Advance taxi dispatch service available from transit vehicles, currently used in several German cities. ▪ Integrated transit-taxi fare payment, potentially using "smart card" technology. The Hong Kong Oyster Card enables users to pay for multiple means of transportation, as well as transactions in many convenience stores and markets located adjacent to rail stations. ▪ Streetside taxi stand infrastructure (shelters, lighting, emergency call boxes). Outdoor advertising companies often subsidize the capital and

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
	<p>allows passengers to pay lower fares for door-to-door journeys than they would if travelling alone. A taxi-sharing program is especially beneficial when passengers have a common destination, such as from a transit station to downtown. These arrangements not only benefit customers, but the trade and local communities too. Sharing taxis results in fewer taxi trips overall, which reduces traffic congestion and pollution.</p>	<p>maintenance costs of transit shelters and associated infrastructure as part of their franchise agreement.</p> <ul style="list-style-type: none"> ▪ Development of enhanced reservation system (online, text messages, etc.). For example, Flywheel in San Francisco uses a unique taxi hailing mobile app and fleet management software. ▪ Development of a “taxi pool” system to allow passengers with similar origins/destinations to “share the fare.” Precedent: New York City shared taxi pilot programs (http://home2.nyc.gov/html/tlc/downloads/pdf/pass_info_card.pdf); online carpool matching systems. ▪ Development of a “flat fare” pricing structure for targeted areas (such as downtown and near transit stations) to simplify customer experience. Atlanta, for example, establishes “flat rate zones” for all taxi rides originating and ending within a defined area surrounding three of the region’s busiest transit station areas (Downtown, Midtown, and Buckhead).
<p>Car Sharing Organizations</p>	<p>Car share programs allow for 24/7 on-demand access to a shared fleet of vehicles on an as-needed basis. Members to reserve a car for a short period of time – typically a number of hours or a day. Car share vehicles reduce the need for people to need to own their own vehicle, and therefore can reduce the need to build parking. In 2011, a survey coordinated between Nelson\Nygaard and City Carshare (now Carma), demonstrated that 65% of respondents with car share memberships rode transit multiple times in a given week, while only 41% of respondents without memberships did the same.</p>	<ul style="list-style-type: none"> ▪ In early 2008, the Emeryville, CA TMA negotiated with Zipcar to initiate and help fund car sharing services at several locations throughout Emeryville. The TMA is under a license fee agreement with Zipcar to provide free membership and corporate rates to TMA members, and helps advertise the services to employees at commercial properties near the Zipcar Pods. Any business that pays into the TMA (including residential complexes) can join Zipcar for free, and users receive a discount on the standard usage rate (subsidized by the TMA). Other residents of Emeryville can join Zipcar and use the cars at the Emeryville pods at the regular Zipcar rates. All members of Zipcar can also use their services elsewhere at the standard rate. The Emeryville TMA is no longer subsidizing car sharing pods. Zipcar has expressed appreciation for the support the TMA has provided in helping them expand their market. ▪ In the Washington, DC area, WMATA contracts with Zipcar; shared cars are available at almost half of

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017**

City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
		<p>Metrorail Park & Ride lots. Zipcar does not pay for parking spaces. WMATA informally monitors trends in car share usage through their partnership with Zipcar. They know that Zipcars at Metro stations are used about 30-40% over a typical 24-hour weekday period, and demand “skyrockets” on weekends. In addition, DDOT has reserved several on-street parking spaces for car share vehicles, typically located near Metro and/or residential locations. The City of Berkeley and the City of Oakland are currently seeking car share providers that will offer one-way car sharing. This concept has been successfully implemented in locations like Boston (with Zipcar), Portland (ReachNow), and Austin (Car2Go)</p> <ul style="list-style-type: none"> Car sharing can also be used for the purposes of efficient fleet management. In 2009, Washington, D.C. partnered with Zipcar to launch the first FastFleet system. Unlike Zipcar’s normal service, FastFleet allows an organization to use its own vehicles and pick storage locations. Using GPS data provided by the service, managers can then optimize their system and track vehicles using real-time GPS information. Such tracking can facilitate the ability of employees to coordinate rides between off-campus facilities and the main campus, thus reducing the overall parking demand generated by these remote workers on the main campus parking supply. The city government reduced its fleet size from 360 to 58 vehicles. The installation of the technology cost \$1,200 per vehicle, plus an additional \$115 fee per month per vehicle to maintain it and operate the technology. Within the first four months of the pilot project, the city saved more than \$300,000. It was estimated to save the city \$6.6 million over five years.
<p>Car Sharing from Traditional Car Rental Agencies (Short-Term and Hourly Car Rental)</p>	<p>Since car sharing services may not be successful in all contexts, existing national rental car companies might be able to provide some of the same benefits (i.e. short-term car rental with convenient pick-up and low rates) in lieu of or in addition to traditional membership-based car-sharing organizations.</p>	<ul style="list-style-type: none"> Enterprise (www.enterprise-carshare.com) and U-Haul (www.uhaul-carshare.com) are currently active in the short-term and hourly car rental market. Among other locations, Enterprise CarShare is set up throughout San Francisco, including in garages owned by the City and County.

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
	<p>Car sharing and short-term car rental can exist side-by-side, and programs can be designed to provide multiple types of membership or rentals, including hourly, daily, and "shared lease" monthly rates, depending on need and demand.</p>	<ul style="list-style-type: none"> ▪ A lesson learned from both successful and failed programs (such as the first iteration of U-Haul's service and a program from Hertz), is that convenience, cost, and availability trump nearly everything else. People like fun and attractive cars, but will stop using a service if it becomes inconvenient or unavailable.
<p>Personal Car Sharing or Peer-to-Peer Car Sharing</p>	<p>A number of companies are enabling individuals to rent out their cars (similar to other car sharing operations) when not in use. Companies provide in-car technology to enable borrowing and provide insurance when the car is being used by other members. Owners have the ability to set their own price and schedule for their cars.</p> <p>Peer-to-peer car sharing could serve an important supportive function for employees who use transit in Richmond by providing them with access to vehicles during the day for errands and work trips.</p>	<ul style="list-style-type: none"> ▪ Turo, JustShareIt, and Getaround are some of the companies that are enabling individuals to share their vehicles with others for a profit. Currently, these companies only operate in a few locations; however, they are expanding to other areas based on demand. ▪ Google employees use Turo to share their personal vehicles while they are parked at work. This enables employees who did not drive to work to use other employees' cars (who did drive) for trips during the day.
<p>Autonomous Vehicle Governing Policies</p>	<p>Governing policies now primarily are dealing with the legal definition of AVs, the necessary safety prerequisites, and the extent to which car occupants may be required, if not, responsible for operation. Many interested governments are partnering with technology entities to test out AVs on streets. As knowledge becomes more prevalent and mainstream, a more widespread adoption of AV policies may emerge.</p>	<ul style="list-style-type: none"> ▪ The District of Columbia officially defines AVs as "a vehicle capable of navigating District roadways and interpreting traffic-control devices without a driver actively operating any of the vehicle's control systems." Provisions that were removed included alternative fuel requirements and a vehicle-miles-travelled (VMT) tax. ▪ In 2016, the State of California authorized AV testing on public roads by the Contra Costa Transportation Authority (AB 1592). If the vehicle is not operating at "specified locations" and "at speeds of less than 35 miles per hour," then the vehicle must be equipped with a steering wheel, brake pedal, an accelerator, and a driver "seated in the driver's seat and is capable of taking immediate manual control of the vehicle." In partnership with Honda, the CCTA is prioritizing testing in two locations: and Gomentum Station, a research and testing facility in Concord, and the Bishop Ranch business district in San Ramon. Commercial vehicles, including freight and shuttle buses, are also being tested at these locations.

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
Autonomous Vehicle Curbside Management, Land Use, and Parking	<p>Although there is little agreement on the order and timing of the rollout of autonomous vehicles, its potential impact on the design of streets, land uses, and parking is noteworthy. To that end, it will be important to pay attention to how AV's interact with these elements.</p> <p>The Nashville region's transit master plan "recognizes that autonomous vehicles will very likely have a connection to future transit service and infrastructure. In particular, fully autonomous vehicles could jointly use "managed lanes" with BRT and emergency vehicles. Neighborhood and regional transit centers could serve as the connecting points between localized, autonomous circulation and the regional mass transit system. Recommendations will continue to be responsive to changes in the industry as these vehicles make their way onto our roads."</p>	<ul style="list-style-type: none"> ▪ The Center for Automotive Research acknowledges the potential to "retrofit" all curbsides (including on-street parking, street frontage, transit stops). http://greaterannarborregion.org/prosperity/wp-content/uploads/2016/11/CAR-RPI-Presentation-Draft-16Nov2016.pdf

Table 5 Multimodal Policy and Program Tools

First-/Last-Mile Improvement	Description	Case Study Examples
Integrated and Interactive Wayfinding <ul style="list-style-type: none"> ▪ Station area signage and maps ▪ Local area signage for bicyclists and pedestrians ▪ Guidelines and standards 	<p>Wayfinding signage helps orient visitors, shoppers, and residents alike, pointing them to area parking facilities, retail establishments, pedestrian and bicycle access routes, and other important destinations. A wayfinding program can be tailored to specific groups depending on contextual factors and desired outcomes; however, these tools are most relevant and important for those unfamiliar with an area. Wayfinding informs people of the best way to access an area, depending on their mode of travel.</p> <p>A successful wayfinding system provides integrated, consistent and user-friendly information to confirm that chosen routes are efficient, safe, and ultimately lead directly to one's destination. Wayfinding particularly helps new users and visitors feel comfortable in an unfamiliar environment.</p>	<ul style="list-style-type: none"> ▪ The City of Portland has a comprehensive pedestrian wayfinding system that combines with transit and bicycle wayfinding. Additionally, TriMet, Portland's regional transit agency has incorporated the use of "quick response" (QR) codes into its transit signage: http://trimet.org/qrcodes/index.htm. ▪ The West Contra Costa Transit Enhancement Strategic Plan and the West Contra Costa/Albany Transit Wayfinding Plan were prepared by WCCTAC in October 2011 to generate increased transit ridership by identifying specific strategies that improve access to transit centers and routes.
Real-Time Information Transit information (arrival/departure)	<p>Real-time arrival information gives passengers the comfort of knowing exactly when the next bus will arrive. Passengers can look online, on their cell phones, or at a</p>	<ul style="list-style-type: none"> ▪ In 2004, TriMet – Portland, Oregon's regional transit service – launched its real-time arrival information system TransitTracker.™ Using satellite tracking on

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017**

City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
	<p>digital sign at the station to know exactly how long they have to wait – or they can choose to stay at home or at work a little longer and catch the bus just in the nick of time. Communicating when the bus will arrive in real-time makes transit more dependable. Open sourcing transit agency data is a key to the success of real-time systems, as the private sector can often take these applications to the next level. AC Transit and BART have a real-time information available for passengers.</p>	<p>buses and sensors in the train tracks, TransitTracker estimates when the next vehicle will arrive based on its scheduled speed and last reported location. In 2005, it was among the nation’s first transit agencies to open source its data. Today, over 50 on-line applications from the private developer community help area residents and commuters plan their transit trip in real time. In addition to a strong on-line resource, TriMet has installed over 15 real-time arrival information displays at major transit stations. Open source data can encourage technology companies and universities to develop innovative products that a transit agency would not have the expertise or capacity to develop. https://trimet.org/tools/transittracker.htm</p>
<p>Marketing and Promotion</p>	<p>Marketing is an important component of implementing first-/last-mile strategies. From a customer perspective, marketing is important for two reasons: 1) What you don’t know can’t help you, and some auto commuters may be predisposed to take transit but don’t know or understand their options; 2) First impressions really do matter, and no program will succeed if first-time users have a negative experience because of technical failure, unclear operating instructions, or even inflated expectations that the service can’t meet.</p>	<ul style="list-style-type: none"> ▪ One of the most effective forms of marketing for “choice” transit riders can be personalized marketing programs (sometimes called “personal travel encouragement” or “high touch marketing”). ▪ Several online apps also make the marketing process easier for potential participants in TDM programs. <ul style="list-style-type: none"> – Scoop is a mobile app that connects commuters who are driving to work with those who are not. With a growing following in the Bay Area (in locations like Hacienda Business Park and San Jose State University), a user-friendly interface, a streamlined registration process, and the capability to integrate with Luum (see below), Scoop can help to hasten a company-wide shift toward carpool commuting. ▪ Commute gamification creates a fun way of tracking one’s own travel patterns while simultaneously providing useful data to the user’s employer. It can also help to inform users on other available transportation options and lead to tangible user benefits down the road. Luum is an online platform that encourages users to take sustainable modes of transportation by employing the aforementioned approach. Luum can integrate with Automatic License

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
		Plate Reader (LPR) and radio-frequency identification (RFID) technologies, making it easier to track user parking behavior and patterns, and thus help to inform parking data collection efforts in the future
Transportation Management Association (TMA)	<p>TMA's can take on a variety of functions, depending on the reasons they were formed and their financing structures. Some TMA's are task driven. A TMA designed solely to manage and run a shuttle service would be a task driven TMA. TMA's are also "mission driven." A mission-driven TMA might be set up to address transportation access in a specific area and will develop its tasks and programs based on this mission. Following is a list of the many functions a TMA can perform:</p> <ul style="list-style-type: none"> ▪ Transit pass sales and subsidies ▪ Vanpools – promotion, van formation, administration, van provision, and/or subsidies ▪ Shuttle services ▪ Parking management ▪ Bicycling programs – advocacy, bike commuter clubs, bike lockers, showers, etc. ▪ Bicycle parts/repair/locker discount programs ▪ Guaranteed Ride Home - Free Ride for Employees ▪ Rideshare matching service for carpools and vanpools (can be done through the 511 Regional Rideshare program, but customized to TMA members) ▪ Prizes & financial incentives to employees who use alternatives to driving alone (A commuter club for employee members) ▪ Discounts & promotions geared toward increasing alternate commute participation ▪ Transportation information through a website, brochures, on-site transportation fairs, promotional events, an on-site information center, and employer or employee newsletters ▪ Information to employers about transportation and air quality legislation. 	<ul style="list-style-type: none"> ▪ Programs to reduce commuter parking demand can have significant impacts on the overall cost to develop downtown, reduce congestion and better allocate existing and future built parking to resident, visitor, and employee needs. TMA's have provided the vehicle through which downtowns and business districts have successfully addressed this issue in other areas of the United States. As an example, Downtown Vancouver, WA recently completed a TMA feasibility study and concluded that reducing its current employee commute rate of 88% to 65% (over 20 years) could result in parking development cost savings of approximately \$67 million. ▪ The Emeryville (CA) TMA Board of Directors, which also serves as the official representative of property owners for the business improvement district, sets the service parameters for the Emery Go-Round, provides fiscal oversight, approves the annual operating budget and sets organizational policy. ▪ In Portland, OR, the GoLloyd TMA reduced the drive-alone rate from 86 percent to 41 percent between 1994 and 2009 through a comprehensive package of business-based programs for transit, biking, walking, and business/employee assistance. GoLloyd employers meet the requirements of the state-mandated Employer Commute Options (ECO) rule that requires employers with more than 100 employees to track mode split every two years. The TMA assists over 75 employers and 9,000 employees adhere to ECO requirements. ▪ Some TMA's (GoLloyd, for example) have voluntary membership. Others, including Emeryville TMA and Irvine Spectrum TMA, require membership for new development and businesses in their service area. The policy process by which membership is required

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
	<ul style="list-style-type: none"> ▪ Advocate for transportation projects or employer transportation interests ▪ Networking meetings for area employers to discuss transportation issues. ▪ Employer training and consulting about setting up on-site employer programs ▪ Telecommuting consulting <p>There is no single method of forming a TMA, but they typically rely on these programming strategies:</p> <ul style="list-style-type: none"> ▪ Regional or local governments, chambers of commerce, or the management of a major facility (such as a mall or hospital) can help create a TMA and provide seed funding. ▪ Developers or facility managers may be required to establish a TMA to mitigate local congestion and parking problems. ▪ TMAs are typically staffed by a mobility coordinator who administers and actively markets local transportation demand management programs. ▪ Through the TMA, a mobility coordinator will serve as a facility-wide concierge, providing personalized information on transit routes and schedules, ridesharing information, bicycle routes and facilities, and other transportation options available to residents, employees and customers. They may also negotiate with transit agencies for low-cost transit passes. ▪ Initial funding to establish TMAs normally comes from local governments, highway or planning authorities, major private businesses, etc. Federal funds, such as the Congestion Mitigation Air Quality (CMAQ) program can be used to support TMA start-up costs and up to three years of operating assistance. ▪ Later, TMAs are typically funded through dues paid by member businesses and government grants. ▪ TMAs can also charge a certain amount in fees for their services, such as shuttles, parking management, etc. 	<p>varies. The Irvine Spectrum TMA was formed when the property was initially developed, and thus new tenants and property owners must also join the TMA. The Emeryville TMA is citywide and funded by a Property-Based Business Improvement District, which assesses a property tax for all commercial land uses in the city.</p> <ul style="list-style-type: none"> ▪ The Santa Cruz Metropolitan TMA was started by the area's Chamber of Commerce, but is now a freestanding organization financed solely through membership dues.

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
	<ul style="list-style-type: none"> ▪ Business Improvement Districts (BID) can also provide funding for businesses to implement tailored TDM strategies. ▪ Foundation funding is also sometimes available for TMAs to fund specific projects and programs. The TMA can either take the lead in responding to foundation opportunities or work with area partners on a joint application. 	
<p>Safe Routes to Schools (SRTS)</p>	<p>The National Safe Routes to School Program provides the following eight-step process to create a Safe Routes to School Program:</p> <ul style="list-style-type: none"> ▪ Bring together the right people: Identify the people in your community who want to make walking and bicycling to school safer and more appealing for children and families (parents, teachers, law enforcement, etc.). ▪ Hold a kick-off meeting: The kick-off meeting creates a vision and generates next steps. ▪ Gather information and identify issues: Assess the walking and bicycling conditions for students to understand what the barriers and opportunities are. ▪ Identify solutions: Solutions will include a combination of education, encouragement, engineering, and enforcement strategies. ▪ Make a plan: A Safe Routes to School plan should include a description of tasks and programs from step 4, a schedule, and an explanation of how the program will be evaluated. ▪ Fund the plan: Work with local, regional, and/or state partners and the private sector to help fund the plan. ▪ Act on the plan: Hold a kick-off event to initiate the plan, such as Walk to School Day. ▪ Evaluate, make improvements, and keep moving: Carefully monitor whether or not identified strategies, 	<ul style="list-style-type: none"> ▪ The National Center for Safe Routes to School (http://www.saferoutesinfo.org/) has a comprehensive database of best practices, collected data on various SRTS programs, and standard guides, forms, and questionnaires for implementing a program at a school.

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
	<p>programs, and investments are increasing the number of children safely walking and bicycling to school. ⁷</p>	
<p>Land Use Controls</p>	<p>Transportation options should be considered at the very beginning of the planning process, not just as a mitigation tool. There is a need to articulate how transportation options benefits can be better included in planning processes. Guidance, recommendations, impact fees, and potential credits to integrate transportation options into the land development process should also be considered. Developing planning and design guidance on transportation options requirements and incentives for development to be implemented at the local level can be beneficial.</p>	<ul style="list-style-type: none"> ▪ The Transit Impact Development Fee (TIDF) is a reliable source of operating and capital revenue for the San Francisco Municipal Transportation Agency (SFMTA), which operates San Francisco's entire surface transportation network including the transit system, Muni. TIDF has generated about \$120 million (including interest) since 1981. Originally a \$5 per square foot fee on office developers in the downtown area, it was expanded in 2004 to encompass most non-residential projects citywide. Fees were also raised and indexed to inflation, and are now \$9.07 or \$11.34 per square foot depending on land use type.⁸ ▪ http://www.newportbeachca.gov/Home/ShowDocument?id=11819 ▪ The San Diego Municipal Code uses transit infrastructure as the primary basis for reductions in minimum parking requirements, though it also recognizes the lower rates of auto ownership and use in lower income communities. The Code allows reduced minimum parking requirements for residential, office, retail, institutional, and industrial uses in designated transit areas and for residential uses in designated very low-income areas. For residential uses, the minimum parking requirements can be reduced in multi-family residential developments, generally depending on the number of bedrooms. For non-residential uses, reduction factors generally depend on nearby transit infrastructure. Although the potential minimum reductions depend on multiple factors in both residential and non-residential cases, reductions generally amount to around 85 percent of the original, baseline parking requirement.

⁷ National Safe Routes to School "Steps to Creating a Safe Routes to School Program"

⁸ City of Seattle "Transit Master Plan," <http://www.seattle.gov/transportation/docs/tmp/final/TMPFinalSummaryReportandAppendices.pdf>, p. 6-16

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
<p>Transit-Oriented Development (TOD)</p>	<p>Successful transit-oriented development requires the coordination of multiple partners, including the transit agency, the city, the community, and the developer. Nevertheless, TOD plans and guidelines may come from a variety of partners with a vision placed on the long-term growth and accessibility of the urban and suburban areas surrounding transit hubs and corridors.</p>	<ul style="list-style-type: none"> ▪ In June 2016, the Bay Area Rapid Transit (BART) Board approved an updated TOD Policy. There are many goals and strategies incorporated in the Policy, but of particular importance are the “Sustainable Communities” and “Transportation Choice” goals. Additionally, a major component of the strategy to “Increase Sustainable Transportation Choices using Best Practices in Land Use and Urban Design” includes the objective of BART to “ensure that combined TOD/parking/access improvements on and around each BART station encourage net new BART ridership, utilizing corridor-level, shared, and off-site approaches to parking replacement as appropriate.” BART’s TOD Guidelines are “currently being updated to reflect the new TOD Policy.” ▪ In September 2014, the City of El Cerrito adopted the San Pablo Avenue Specific Plan to guide development in the corridor. The plan and associated form-based development code are intended to enable San Pablo Avenue to transition from an auto-oriented corridor, to a mixed-use district, with housing and shops, served by a truly multimodal corridor. ▪ The Richmond Bay Specific Plan (2015) was designed around reuniting auto-oriented areas presently separated by auto-oriented land uses and corridors. Context-sensitive land use planning and designs for safer multimodal access across over 10 corridors were created. Additionally, standards for actual developments were also built around a form-based code. Both the San Pablo Avenue corridor and Richmond Bay area were located within Priority Development Areas (PDAs) set by the Metropolitan Transportation Commission, a broader regional policy that identifies responsible sites and contexts for responsible TOD planning—rather than increasing population density in greenfields and other areas not served by any public transportation. ▪ There are many examples of TOD planning from the perspective of different government agencies:

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017**

City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
		<ul style="list-style-type: none"> – At the regional level, Portland Metro developed a TOD Strategic Plan in 2011: http://reconnectingamerica.org/resource-center/browse-research/2011/metro-tod-program-transit-oriented-development-strategic-plan/ – From the perspective of a transit agency, Translink in Vancouver, BC released a primer on transit-oriented development design guidelines that maximize access to transit: http://www.reconnectingamerica.org/assets/Uploads/20120718TransitOrientedCommunitiesDesignGuidelines.pdf – In 2013, the City Council of Charlotte, NC, approved a transit station area plan for urban and suburban transit stations. The plans address conceptual land uses, propose new mobility and accessibility for bicycles and pedestrians, and set critical land use and community design policies for each station area, as well as the surrounding rail corridor and right-of-way: http://www.charmeck.org/Planning/Land%20Use%20Planning/Transit_Station_Area_Plans/Northeast_Corridor/BLE_AdoptedPlan.pdf ▪ Although it is difficult to fulfill every promise made in a TOD plan for a variety of reasons, there are successful implementations of transit-oriented plans and developments, if success is measured in the form of increasing density, accessibility, and overall activity in a formerly underutilized urban land use. Such sites include Fruitvale Station in Oakland, CA, Olympic Village in Vancouver, WA, and several locations along the Red Line in Los Angeles, CA.
<p>Transportation Demand Management (TDM)</p>	<p>Across the United States, communities, cities, regions and employers have used TDM as part of other strategies to help manage growth, alleviate congestion, and encourage economic development. In many regions, the main objective is to increase the accessibility of</p>	<ul style="list-style-type: none"> ▪ Cambridge, MA has long included TDM measures in development review, with a formal TDM Ordinance adopted in 2006. The ordinance identifies a series of TDM measures and defines thresholds for when they take effect and become effective requirements of

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
	<p>employment, much of which is located in suburban areas and is inaccessible due to a lack of regional transit service and poor (or nonexistent) pedestrian infrastructure. Providing greater access helps both potential employees by opening up economic opportunities and employers by enlarging their potential labor pool and minimizing costs. In many cases, there are direct tax benefits or available funding for the implementation of existing TDM strategies. TDM strategies are designed to work together, with the most significant impact on creating options and changing travel behaviors arising from implementing different combinations of strategies.</p> <p>Many TDM strategies are designed to be implemented by employers but can be established or supported through partnerships at a municipal or regional level. Employers around the country, recognizing that difficult or costly commutes is one of the primary reasons employee leave their jobs, have demonstrated an interest and willingness to develop these strategies because they have proven effective at helping employers attract and retain a quality workforce.</p>	<p>development. Mandated use of a TDM program is triggered by an increase in off-street parking (as little as one space), with development adding twenty spaces requiring a more involved level of commitment.</p> <ul style="list-style-type: none"> ▪ Faced with both a shortage of parking for customers and citizens' aversion to additional traffic, the City of Boulder developed a program that combines reduced subsidies for downtown parking with aggressive transportation demand management. All downtown parking revenue, including more than \$1 million per year from meters and over \$2 million per year from garages, is returned to the community for area improvements, including streetscape enhancements and bicycle parking. ▪ Among major TDM programs, Contra Costa Guaranteed Ride Home Program (GRH) already serves Richmond. Additionally, there are many resources, including carpool/vanpool matching services, trip planning tools, and information for employers provided by the Metropolitan Transportation Commission (MTC) at www.511.org. Like all TDM programs, the use of such resources depends on whether employers are aware of the programs, their ease of use, and their applicability to the context of each home and work location. ▪ Richmond adopted a TDM Ordinance (see RMC Section 15.04.612) that requires projects of a certain size to incorporate measures to reduce single-occupancy vehicle use. ▪ TransForm GreenTrip certifies residential projects that apply strategies to reduce vehicle trips, excessive parking and greenhouse gases, while making transportation more affordable.
<p>Parking Management</p>	<p>With decentralized management, each department or authority manages parking to achieve its own goals. Working together and establishing consolidated and documented parking goals will make the system work together, instead of competing against one another.</p>	<ul style="list-style-type: none"> ▪ In 2010, the Seattle (WA) City Council approved criteria to allow SDOT to manage on-street parking with a goal of maintaining each block face at 75-88% occupied. The SDOT Director has authority to adjust rates (ranging between \$1 and \$4) within zones by

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017**

City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
		<p>location and time of day. Data collected in 2011 indicates that price increases created availability and price decreases had little impact.</p> <ul style="list-style-type: none"> ▪ Berkeley, California coordinates their on-and off-street parking prices to both simplify information for drivers and to set rates for off-street facilities that are lower than nearby on-street rates. (http://www.goberkeley.info) ▪ In-lieu fees may be used to finance the construction and management of parking spaces in centrally located public garages that serve various developments, including ones that opt for in-lieu fees instead of providing on-site parking. Locations from Santa Monica, CA to Montgomery County, MD have in-lieu fees established. ▪ Situations arise where the minimum parking requirements interfere with the ability of the owner/occupant to change the use of their property. As discussed above, often the minimum parking requirements set out in the zoning code require more off street parking than is feasible within the constraints of the property. In mid- to high-density town centers where lots are small and available space is limited, this can become a serious obstruction to sensible redevelopment. ▪ The designation of curbsides --for reasons including freight loading and maintaining traffic flows and visibility-- also affect parking. The city of San Francisco has a "Color Curb Program" in which not only are all curbs given one of five colors denoting parking regulations, but also that residents or businesses can apply for a new curbside color on a monthly basis.⁹

⁹ San Francisco Municipal Transportation Agency, "Color Curb Program," https://www.sfmta.com/sites/default/files/pdfs/2017/ColorCurbBrochure_2017%20Eng_0.pdf

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017
 City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
<p>Employer-Based Incentives and Support</p> <ul style="list-style-type: none"> ▪ Priority parking for carpools/vanpools ▪ Parking cash-out programs ▪ Information and assistance with transportation options ▪ Guaranteed or emergency ride home (GRH) programs ▪ Subsidies or other incentives such as the commuter pre-tax transit benefit program and deep discount bulk transit pass programs ▪ Flexible work schedules (to facilitate ridesharing arrangements) ▪ On-site amenities or vehicles (bicycles or cars) available to run errands during the day ▪ Lockers and showers for those who bicycle to work as well as secure and convenient bicycle parking 	<p>Per City Ordinance, all businesses in Richmond with at least 10 employees are required to offer a pre-tax election of transit, vanpool, or bicycle commuting costs, a paid transit pass (or equivalent reimbursement for vanpools), employer furnished transit at no cost to the employee, or an alternative benefit pre-approved by the City. The threshold for this requirement (10 employees) is much lower than a similar measure required for all Bay Area employers to register with a commuter benefits program (50 employees).</p> <p>Priority parking recognizes that parking is a finite resource and should be managed to assure maximum access for patrons. It reserves the most convenient parking spaces to support customer, client, vendor, and visitor access and to promote ridesharing in the form of carpool/vanpool or car sharing (also sometimes used to promote electric vehicles and motorcycles).</p> <p>Parking cash out is a policy whereby employees who may be offered parking as a benefit of their job are offered monthly cash benefits or free transit passes in exchange for giving up their free or employee paid parking. Often, revenues from paid parking facilities will pay for the free employee transit passes and other related benefits. A parking cash out policy reduces employee parking demand through financial incentives or free alternative transportation.</p> <p>GRH programs provide an occasional subsidized ride to commuters who use alternative modes, for example, if a bus rider must return home in an emergency or a carpooler must stay at work later than expected.</p> <p>Employers can offer a wide range of incentives to encourage the use of commute alternatives among employees, including selling transit passes on site,</p>	<ul style="list-style-type: none"> ▪ Per the code of Providence, RI, any spaces reserved for car share facilities “may count toward minimum parking requirements.”¹⁰ ▪ The Community Transportation Association provides a comprehensive Transportation to Work Toolkit for the business community (http://web1.ctaa.org/webmodules/webarticles/anviewer.asp?a=1442), including a number of profiles of employer-sponsored transportation programs (http://www.ctaa.org/webmodules/webarticles/articfiles/ProfilesofEmployer-SupportedTransportationPrograms.pdf). ▪ The Moving to Work in the Bay Area report in 2013 provides greater context of the jobs and housing balance challenges in the Bay Area (and the important role of transportation solutions): http://reconnectingamerica.org/resource-center/books-and-reports/2013/moving-to-work-in-the-bay-area/ ▪ Major employers throughout the Bay Area have taken strides to support employees who commute to work by means other than single-occupant vehicles: <ul style="list-style-type: none"> – Adobe provides employees with a monthly subsidy of \$100 for transit commuters and \$20 for bicycle commuters. ▪ The Lawrence Berkeley Laboratory provides a dedicated web page listing all pertinent commute trip planning information. LBL also permits bicycles to be parked indoors within an individual’s workspace. Additionally an advisory group of staff and faculty is empowered to assess current transportation and parking conditions and propose needs for the campus “in support of science.” http://commute.lbl.gov/TPSS

¹⁰ Providence Municipal Code of Ordinances, 1402.D.1, accessed July 7, 2017.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
INVENTORY OF MODERN PRACTICES | JULY 2017**

City of Richmond

First-/Last-Mile Improvement	Description	Case Study Examples
	providing transit subsidies and establishing pre-tax spending accounts to pay for commuting expenses.	

Appendix B Existing Conditions and Needs Assessment



RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN

Existing Conditions and Needs Assessment

September 2017



Table of Contents

	Page
1 Introduction.....	1
Key Findings.....	1
Report Structure	2
2 Service, Plan, Policy, and Program Review	4
Transit Service	6
Ferry Service.....	13
Recent Plans and Policies	15
3 Inventory of Existing Conditions and Needs Assessment.....	30
Mobility Hubs and Areas of Connectivity	30
Bicycle and Pedestrian Demand.....	43
Pedestrian and Bicycle Access	45
Transit and Shuttle Access	57
Transit-Oriented Development.....	67
Shared Mobility	82
Transportation Demand Management.....	86
Autonomous Vehicle Assessment.....	88
4 Conclusion	93
Next Steps.....	94
Appendix A Detailed Summary of Existing Plans and Policies	96
City of Richmond Programs and Plans.....	96
AC Transit.....	109
County and Regional Programs and Plans.....	111
Bay Area Rapid Transit (BART).....	114
Amtrak/Capitol Corridor Joint Powers Authority.....	116
Water Emergency Transportation Authority	116
Appendix B Zoning Details for Transit-Oriented Development	118
Appendix C Mobility Hub Urban Design and Pedestrian Experience Analysis	125

Table of Figures

	Page
Figure 1 Existing Transit Service in Richmond.....	5
Figure 2 Richmond Ferry Terminal Site Plan and Parking	14
Figure 3 Richmond Ferry Terminal Site Plan Detail.....	14
Figure 4 Contents of Recent Plans and Policies.....	15
Figure 5 Improvements Recommended in Relevant Plans and Policies.....	16
Figure 6 Profile of Recommended Improvements for Mobility Hubs and Areas of Connectivity.....	17
Figure 7 Profile of Recommended Improvements for Additional Vital Transportation Nodes.....	22
Figure 8 Designation of Corridors in Richmond Plans.....	28
Figure 9 Profile of Important Statistics on Mobility Hubs and Areas of Connectivity.....	31

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 10	City of Richmond Transportation Hubs and Population/Employment Density	33
Figure 11	Sign Outside Richmond BART Station Facing 19th Street	34
Figure 12	Richmond BART Station ADA Passenger Loading	35
Figure 13	Existing Bus Stop Near Future Richmond Ferry Terminal	37
Figure 14	Ohlone Greenway Approach to El Cerrito del Norte BART Station from the North	38
Figure 15	Bus Bays on Western Side of El Cerrito del Norte BART Station.....	40
Figure 16	Major Employers in Richmond	43
Figure 17	Bicycle and Pedestrian Propensity Index (Estimated Demand).....	44
Figure 18	Mode of Access to Home Origin Stations (2008-2015)	45
Figure 19	Median Distance Travelled from Home Origins to Home BART Station (2008- 2015)	45
Figure 20	Pedestrian Barriers, Facilities, and Walkshed at El Cerrito del Norte BART Station.....	46
Figure 21	Intersection of Hill Street, Eastshore Boulevard, and San Pablo Avenue	47
Figure 22	Pedestrian Barriers, Facilities, and Walkshed at Ferry Terminal.....	48
Figure 23	Missing Crosswalks at Hall Avenue and Marina Way South	49
Figure 24	Pedestrian Barriers, Facilities, and Walkshed at Richmond BART Station	50
Figure 25	Pedestrian Barrier at Macdonald Avenue and 20th Street	51
Figure 25	Bike Facilities and Bikeshed around El Cerrito del Norte BART Station.....	52
Figure 26	Bicycle Rider on Sidewalk along Cutting Boulevard (at I-80 On-Ramp)	53
Figure 27	Bike Facilities and Bikeshed around the Future Richmond Ferry Terminal.....	54
Figure 28	Markings and Obstructions along Bay Trail Outside Ford Building	55
Figure 29	Bike Facilities and Bikeshed around Richmond BART Station.....	56
Figure 30	Nevin Avenue and 23rd Street.....	57
Figure 31	Transit and Shuttle Access - Richmond BART Station	59
Figure 32	Transit and Shuttle Access - El Cerrito del Norte BART Station.....	60
Figure 33	Transit and Shuttle Access - Contra Costa College	61
Figure 34	Transit and Shuttle Access - El Cerrito Plaza BART.....	62
Figure 35	Transit and Shuttle Access - Richmond Ferry Terminal (future).....	63
Figure 36	Transit and Shuttle Access - Richmond Parkway Transit Center and Hilltop Mall....	64
Figure 37	Home Origin Cities for Riders Who Start their BART Trips at Richmond BART Station (2015)	65
Figure 38	Home Origin Cities for Riders Who Start their BART Trips at El Cerrito del Norte BART Station (2015).....	66
Figure 39	Home Origin Cities for Riders Who Start their BART Trips at El Cerrito Plaza BART Station (2015).....	66
Figure 40	Vision Plan from Livable Corridors Plan for Macdonald Avenue	69
Figure 41	Vacant Parcels and Opportunity Sites at Richmond BART Station.....	70
Figure 42	Vision Plan from Richmond Bay Specific Plan.....	73
Figure 43	Vision Plan from Livable Corridors Plan for Ferry Terminal	74
Figure 44	Vacant Parcels and Opportunity Sites at Richmond Ferry Terminal	75
Figure 45	Vacant Parcels and Opportunity Sites at the RPTC/Hilltop Mall Areas	77
Figure 46	Zoning Summary from San Pablo Avenue Specific Plan (2014)	78
Figure 47	Opportunity Site Study from SCS by Strengthening Public Health Plan.....	81
Figure 48	Opportunities for Improving Mobility Hubs and Areas of Connectivity	93

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 49	Place-Based Circulation Classification System.....	98
Figure 50	Pedestrian Shed Definitions	102
Figure 51	Planned Pedestrian and Bicycle Improvements Map with Pedestrian Improvement Districts, 2030 General Plan.....	106
Figure 52	Richmond Ferry Terminal Site Plan and Parking	117
Figure 53	Richmond Ferry Terminal Site Plan Detail.....	117
Figure 54	Richmond BART Station Zoning Map from Richmond Livable Corridors	118
Figure 55	Zoning Details Surrounding Richmond BART Station	119
Figure 56	Richmond Ferry Terminal Zoning Map from City Zoning Update and Richmond Bay Specific Plan.....	120
Figure 57	Zoning Details Surrounding Richmond Ferry Terminal.....	120
Figure 58	Richmond Parkway Transit Center / Hilltop Mall Zoning Map from City Zoning Update.....	121
Figure 59	Zoning Details Surrounding Richmond Parkway Transit Center / Hilltop Mall.....	122

1 INTRODUCTION

First mile and last mile strategies provide important connections to public transportation. Although a transit (bus and rail) system often makes up the core of a transportation network, *how* someone accesses that system can determine whether someone chooses to ride transit or travel another way. Even when the physical distance is short, issues of comfort, safety, convenience, and cost affect an individual's travel choices. Efforts to improve any of these characteristics along key routes to transit stops and stations can have a wider influence on a community's quality of life; areas where people are walking, biking, and taking transit are often more vibrant and pleasant than auto-oriented areas. Providing convenient, affordable, and safe options to access transit and other modes reduces traffic congestion and greenhouse gas emissions and supports economic and physical health.

Richmond's residents, businesses, and visitors rely on several transit systems including Amtrak, BART, and AC Transit to access services, amenities, and opportunities both regionally and locally. The City has already made strides towards greater sustainability and mobility through recent planning and policy efforts, such as the South Richmond Transportation Connectivity Plan, the Livable Corridors Form-Based Code, and the 2012 General Plan. Described further in Chapter 2, these efforts reflect the City's desires to support Richmond's opportunities and communities through multimodal, integrated transportation. The Richmond First Mile/Last Mile Strategic Transportation planning effort aims to leverage the work done to date to enhance connections to existing transit hubs and support multimodal connectivity citywide.

Laying the groundwork for recommended strategies to create these connections, this report evaluates and documents opportunities and barriers related to accessibility and connectivity within the City of Richmond. It draws on a thorough review of relevant planning documents, meetings with key stakeholders, in-person observations, field data collection, and GIS analysis.

KEY FINDINGS

Nelson\Nygaard's research and analysis yielded several key findings, included below:

- Due to its location in the Bay Area and connections with multiple major transportation networks, Richmond is well positioned to take advantage of ongoing innovations in mobility.
- However, the city's access to transit is complicated by its topography, administrative boundaries, and proximity to major regional freeways. Rail rights of way and Interstates 80 and 580 are barriers for pedestrians and bicyclists, and they also complicate designing transit routes for effective coverage.
- Richmond is characterized by a mix of moderate and low-density development served by a few primary mobility hubs that facilitate both regional and local access via multiple transportation systems. Mobility hubs include:
 - Richmond BART Station

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- Richmond Ferry Terminal (future)
- El Cerrito del Norte BART Station
- In addition to these hubs, several other sites also provide connections between different transit services but with lower levels of transit service. These areas of connectivity often include an activity center of smaller scale commercial development and/or major employment providers. These sites include:
 - Richmond Parkway Transit Center/Hilltop Mall
 - El Cerrito Plaza BART Station
 - Contra Costa College
- The density of intersections, population, and employment in central downtown Richmond are highly conducive to sustainable transportation behavior and leveraging existing access to transit. However, many of the mobility hubs possess physical barriers to walking and biking.
 - Although a large amount of bike infrastructure has been proposed, the existing facilities vary in their coverage and connectivity. This is most notable in the future Richmond Ferry Terminal area, where gaps in the bike network hinder access to several prime bike facilities—the San Francisco Bay Trail and the Richmond Greenway.
 - Almost all mobility hubs have multiple crossing barriers in the immediate vicinity. For instance, nearly all intersections around El Cerrito del Norte BART station have multiple legs requiring pedestrians to cross up to twelve lanes of traffic. Richmond BART station has the fewest walking obstacles, but there are still important corridors missing sidewalks on one side.
 - The quality of the pedestrian experience is also affected by deficiencies in infrastructure (inaccessible curb ramps, crumbling sidewalks, missing lighting) and the surrounding environment (empty parcels, high-volume streets, and the perception of safety).
- There are multiple development opportunities throughout Richmond; however, activation of these areas is often conditional on proportional investment in transportation programs and infrastructure.
 - For example, the future Richmond Ferry Terminal presents an important opportunity to establish convenient, safe, and intuitive links between the waterfront and other major activity centers in the city. Without strategic investment in sustainable transportation options, the area is at risk of continuing to be an isolated commercial and recreational node.
 - Many of the other mobility hubs and areas of connectivity have nearby vacant parcels or unused areas within their site that may be repurposed for transportation connections.

REPORT STRUCTURE

This report contains the following sections:

- **Plan, Policy, and Program Review.** Chapter 2 presents an overview of existing plans, policies, and other documents prepared by the City of Richmond, Contra Costa County, AC Transit, BART, and other key stakeholder entities. This overview focuses on

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- observations and recommendations for improving multimodal access and connectivity, particularly around the mobility hubs and other areas of connectivity. This section also summarizes the existing transit service to, from, and within Richmond.
- **Inventory of Existing Conditions.** Chapter 3 describes existing conditions for accessing central mobility hubs by multiple modes of transportation, as well as the quality of connectivity for the larger Richmond area. This chapter identifies barriers and potential opportunities for enhancing access through physical infrastructure and programs.
 - **Accessibility Needs Assessment.** Chapter 4 summarizes the key takeaways from the prior chapters and lays the groundwork for developing strategies to improve access and connectivity in Richmond.

2 SERVICE, PLAN, POLICY, AND PROGRAM REVIEW

The City of Richmond has a solid foundation of transit service with various ways to access these services by non-motorized means. As noted in the City's 2011 Pedestrian Plan, Richmond "was originally developed around pedestrian travel and the streetcar, and persists to this day as a transit-rich, transit-oriented community."¹ However, the vibrancy of Richmond's public realm is challenged by auto-oriented street design, poor maintenance of roads, gaps in the sidewalk network, a non-linear street grid, hilly topography, and a historic perception of crime and other threats to personal safety.²

However, the City has developed many plans over the last two decades to address these challenges. The concentrated transit-oriented development surrounding Richmond BART Station and the plans to implement regional ferry service at Ford Point have focused attention on the city's crucial mobility hubs and the need to create strong connections between them with access design guidelines, bicycle connections, and street design. City policies and plans reflect efforts to regulate Richmond's sidewalks and streets, from applying form-based codes to establishing pedestrian plans that prioritize complete streets and formalize the consideration of bicyclists and pedestrians in the planning, design and construction of all transportation projects.³ From a citywide perspective, much of the recent planning activity focuses on Richmond's freeway and rail corridors, as well as on the Bay's shoreline.

This chapter summarizes recent plans and policies relevant to improving multimodal mobility and access to Richmond's transit network, beginning with a summary of the existing transit networks serving Richmond. The remainder of the chapter reviews existing plans, policies, and other documents prepared by the City of Richmond, Contra Costa County, BART, and other key stakeholder entities. This overview focuses on observations and recommendations for improving multimodal access and connectivity, particularly around mobility hubs. Additional detail is provided in Appendix A.

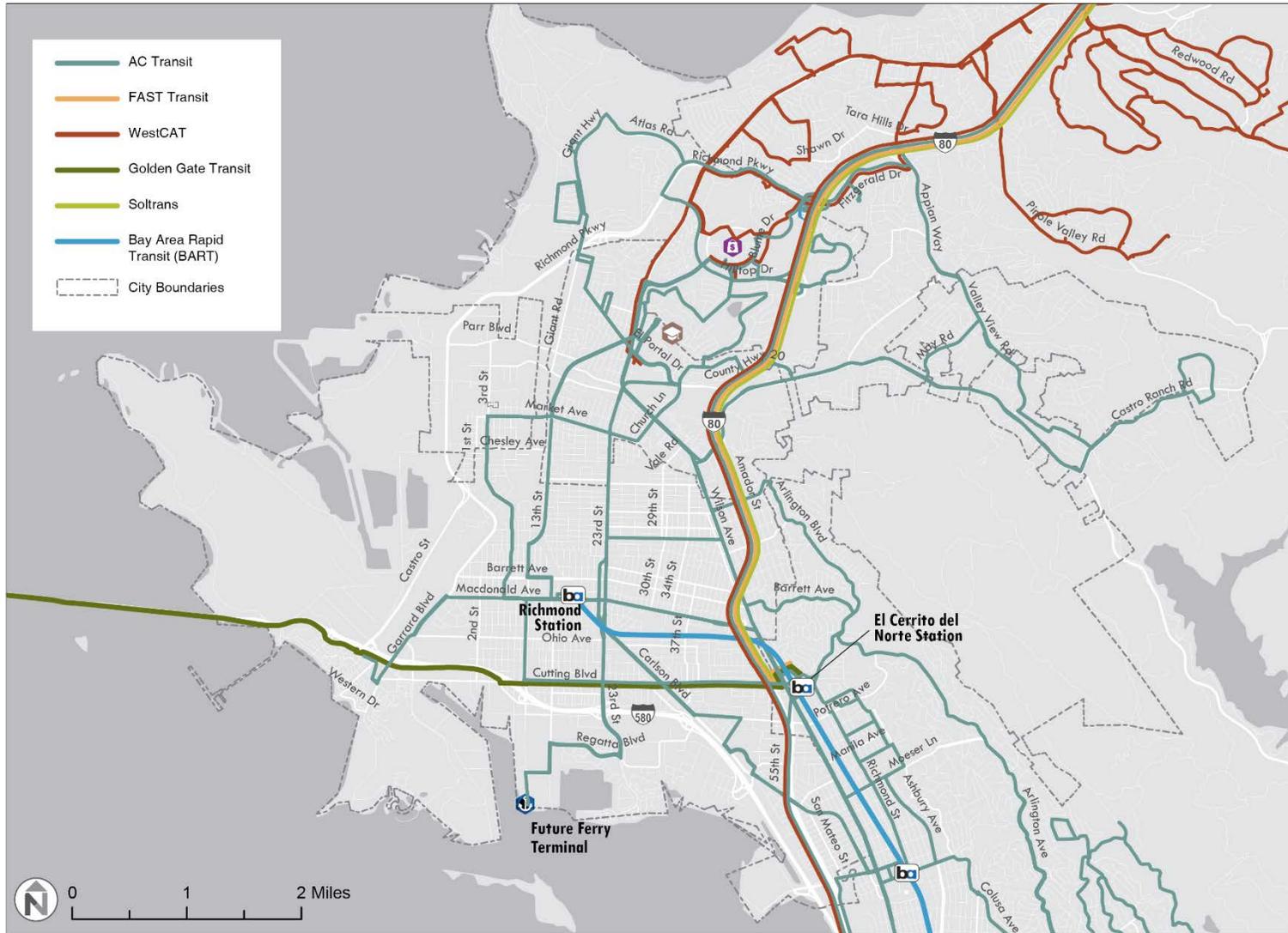
¹ City of Richmond, Richmond Pedestrian Plan, 2011, p. 16

² Other challenges include "unemployment, blight and decay, beleaguered and underfunded schools, little access to healthy foods, persistent health problems including asthma and obesity, high levels of violent crime, dangerous streets, and hopelessness." City of Richmond, Yellow Brick Road Iron Triangle, 2016, p. 7

³ As defined by MTC Resolution number 3765.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**
City of Richmond

Figure 1 Existing Transit Service in Richmond



TRANSIT SERVICE

The transit service profiled is a “snapshot” of existing service as presented from each transit provider’s publicly posted spring 2017 schedules and maps. Since the new fiscal year started July 1, 2017, there may be small changes in the particular scheduled times listed as many transit agencies make small adjustments to existing routes and schedules when starting a new fiscal year (in the case of AC Transit, a slight fare increase was enacted at the start of the 2017/2018 fiscal year).

Bay Area Rapid Transit (BART)

Richmond has been served by a terminal station of the BART system since 1973, when the second segment of direct BART service to Oakland opened.⁴ Today, trains serving the **Richmond BART Station** provide:

- Direct service to Fremont via Oakland, 365 days a year (this line extends to Warm Springs/South Fremont after 6:00 p.m. on weekdays and all day on weekends).
- Direct service to Daly City and Millbrae via San Francisco and the Transbay Tube is provided on weekdays until the afternoon rush hour ends and on Saturdays.
- Collectively, these trains serve Richmond with a frequency of every seven to eight minutes during morning peak, midday, and evening peak periods on weekdays, every nine to 11 minutes on Saturdays during the day, and every 20 minutes on all evenings, Sundays, and holidays.
- On weekdays, trains depart Richmond 4:12 a.m. through 12:17 a.m.
- On Saturdays, trains depart Richmond 5:55 a.m. through 12:17 a.m.
- On Sundays and holidays, trains depart Richmond 7:55 a.m. through 12:17 a.m.

Ridership at Richmond reached record highs in BART’s fiscal year of 2016, with an average of 4,434 station exits per weekday⁵. Although this is an increase of over 50% from station exits in fiscal year 1999, Richmond’s BART ridership is low relative to that of other BART stations. Only South Hayward Station had a lower number of average station exits among Richmond-Fremont line stations in fiscal 2016.

However, the next two stations on the line—**El Cerrito del Norte** and **El Cerrito Plaza**—play a critical role in Richmond’s transit service. With 9,229 and 5,131 average weekday station exits, respectively, El Cerrito del Norte and El Cerrito Plaza BART Stations function as key transit gateways to Contra Costa County and provide direct service to Richmond’s southwestern neighborhoods.

⁴ <https://web.archive.org/web/20131013054420/.http://www.bart.gov/docs/BARTHistory.pdf>.

⁵ Although BART does collect data on station entries as well, in BART’s Station Access Surveys, average weekday ridership per station over a fiscal year is shown in station exits. There are multiple benefits from showing this figure, including the fact that it represents one-half of a round-trip journey, reducing the likelihood that individual riders are double-counted. Additionally, in the case of stations outside of regional cores (like the Market Street stations in San Francisco), the number of station exits are typically higher than entries (as they were for the Richmond station as recently as April 2017), which captures more individuals choosing to ride BART. This may be because many carpool passengers only take a carpool in the morning and take transit in the evening. As tolling for the Bay Bridge only occurs for westbound traffic into San Francisco, there is less incentive for forming carpools in the evening outbound trips. The higher afternoon demand for outbound transit is reflected most prominently in AC Transit’s Transbay schedules, many of which schedule more buses in the afternoon.

AC Transit

AC Transit is the largest bus transit service in the East Bay and the City of Richmond, primarily serving Alameda and Contra Costa Counties. In total, the City is served by 10 regular local buses (one of which, the 72R, operates with limited stops), and five Transbay express buses with direct service to San Francisco (one of which operates overnight). Outside of the BART stations, the major termini for AC Transit routes in Richmond include the Richmond Parkway Transit Center (RPTC) and Hilltop Mall. Contra Costa College, which is located in San Pablo between the downtown and Hilltop areas of Richmond, is also a major transfer point and transit center for Richmond bus riders.

Transbay Routes

- **Line H** runs from the intersection of Barrett Avenue and San Pablo Avenue in Richmond to the Transbay Terminal in San Francisco via El Cerrito, Kensington, and Berkeley. It runs in peak direction only (toward San Francisco in the morning peak period and toward Richmond during the evening peak) on weekdays (departing from 6:10 to 8:16 a.m. and arriving from 5:12 to 8:17 p.m.). Local passengers are permitted on Line H.
- **Line L** runs from Princeton Plaza in San Pablo to the Transbay Terminal in San Francisco via San Pablo Avenue, Central Avenue, and Pierce Street in Richmond (as well as El Sobrante, El Cerrito, and Albany). It departs Cutting and San Pablo approximately every 15 to 20 minutes from 5:50 a.m. to 8:34 a.m., and arrives at the same location from 3:41 p.m. to 7:36 p.m. – all on weekdays only. The route is only for Transbay riders.
 - LC is a part-time extension of Line L. It runs only from the Transbay Terminal in San Francisco to Hilltop Mall (via Central Avenue, Cutting Boulevard, and the RPTC) during weekday evenings. It arrives at the RPTC at 8:21 p.m., 8:51 p.m. and 9:51. Local passengers are permitted to ride Line LC.
- **Line LA** runs from Park Central at Hilltop Drive to the Transbay Terminal in San Francisco via Parkway Drive, Park Central, Hillton Drive, Richmond Parkway, and the RPTC. It departs Hilltop Mall every 20-30 minutes from 5:30 a.m. to 8:30 a.m. and arrives at the same location from 4:23 p.m. to 8:06 p.m. – all on weekdays only. Local passengers are permitted to ride Line LA.
- **Line 800** is an “all-nighter” bus providing overnight Transbay service from Richmond BART Station to Mission 24th Street BART in San Francisco via El Cerrito, Albany, Berkeley, and Oakland. It generally follows the same BART corridor, but with far more frequent stops. Line 800 is considered an essential piece of the regional transit network, as the BART system does not operate overnight. Line 800 is also notable in that it is the only AC Transit late night line to actually serve San Francisco; connections to all other routes are made in Downtown Oakland. On weekdays, buses depart Richmond BART Station every 60 minutes from 12:52 a.m. (35 minutes after the last BART train) to 4:52 a.m. On weekend nights, buses depart Richmond BART Station every 30 minutes from 12:33 a.m. (16 minutes after the last BART train) to 7:03 a.m. Local passengers are permitted to ride Line 800.

Local Routes

- **Line 7** runs from El Cerrito del Norte BART to Downtown Berkeley BART via San Pablo Avenue and Barret Avenue in Richmond (as well as El Cerrito and Kensington). It runs

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- approximately every 30 minutes, departing El Cerrito from 6:05 a.m. to 8:05 p.m. on weekdays and 7:55 a.m. to 6:25 p.m. on weekends.
- **Line 70** runs from Richmond BART Station to RPTC via 18th Street, Rheem Avenue, and 29th Street in Richmond, San Pablo, El Sobrante, and Pinole. On weekdays, Line 70 runs approximately every 30 minutes, departing Richmond BART Station from 5:58 p.m. to 7:58 p.m. On weekends, Line 70 runs approximately every 60 minutes, departing Richmond BART Station from 6:38 p.m. to 8:38 p.m.
 - **Line 71** runs from El Cerrito Plaza BART to RPTC via Carlson Boulevard, Hartnett Avenue, 47th Street, Potrero Avenue, Macdonald Avenue, Richmond BART Station, Harbour Way, and 13th Street in Richmond, the City of San Pablo, and then Phanor Drive, Jenkins Way, Williams Drive, the United Parcel Service (UPS) center on Atlas Road, and Richmond Parkway in Richmond again. On weekdays, Line 70 runs approximately every 30 minutes, departing the RPTC from 5:45 a.m. to 7:45 p.m. On weekdays, Line 70 runs approximately every 30 minutes, departing the RPTC from 6:43 a.m. to 8:43 p.m. On weekends, Line 71 runs approximately every 60 minutes, departing the RPTC from 6:21 a.m. to 8:21 p.m.
 - With the two local 72 corridor lines combined, local bus service along San Pablo Avenue to Richmond runs with a frequency of 15 minutes, seven days a week.
 - **Line 72** runs from Oakland’s Jack London Square to Contra Costa College, with an extension to Hilltop Mall (when the mall is in operation), via the San Pablo Avenue corridor running through Oakland, Emeryville, Berkeley, Albany, El Cerrito (including El Cerrito del Norte BART), and Richmond. Line 72 runs approximately every 30 minutes, departing Contra Costa College from 5:10 a.m. to 12:20 a.m. on weekdays, from 5:21 a.m. to 12:40 a.m. on Saturdays, and from 5:21 to 12:31 a.m. on Sundays and holidays.
 - **Line 72M** runs from Oakland’s Jack London Square to Point Richmond. From Oakland, Line 72M generally follows the same corridor and makes the same stops as Line 72, but upon entering the City of Richmond, it runs along Macdonald Avenue instead of San Pablo, and also serves Richmond BART Station. Line 72M runs approximately every 30 minutes, departing Castro Street & Tewksbury Avenue from 4:45 a.m. to 11:21 p.m. on weekdays, 5:03 a.m. to 1:02 a.m. on Saturdays, and 5:03 a.m. to 12:51 a.m. on Sundays and holidays.
 - **Line 72R** is a limited stop route (branded as “San Pablo Rapid”) that runs from Oakland’s Jack London Square to Contra Costa College. Line 72R follows the same corridor as Line 72, but with limited stops and no extension to Hilltop Mall. Within Richmond, the only stops made are along San Pablo Avenue at Macdonald Avenue and at Garvin Avenue (Line 72R also stops at El Cerrito del Norte BART). Line 72R runs approximately every 12 minutes on weekdays, departing Contra Costa College from 6:04 a.m. to 7:16 p.m. On weekends and holidays, Line 72R runs approximately every 15 minutes from 6:55 a.m. to 6:55 p.m.
 - **Line 74** runs from Richmond Harbour to Castro Ranch Road in El Sobrante (with a part time extension to Hilltop Mall on weekends) via Harbour Way South, Regatta Boulevard, Marina Bay Parkway, 23rd Street, Macdonald Avenue, Richmond BART Station, and 23rd Street in Richmond, San Pablo, El Sobrante, and May Road again in Richmond. Line 76 runs approximately every 30 minutes, departing Harbour Way South & Ford Point from 5:28 a.m. to 8:58 p.m. on weekdays, and from 7:00 a.m. to 7:00 p.m. on weekends.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- **Line 76** runs from El Cerrito del Norte BART to Hilltop Mall via Cutting Boulevard, Macdonald Avenue, Richmond BART Station, 7th Street, Fred Jackson Way, in Richmond, North Richmond, San Pablo, and Lancaster Drive, Aberdeen Way, Birmingham Drive, and Shane Drive in Richmond again. Line 76 runs approximately every 30 minutes, departing Hilltop Mall from 5:41 a.m. to 8:41 p.m. on weekdays, and from 6:29 a.m. to 7:29 p.m. on weekends.
- **Line 376** runs from El Cerrito del Norte BART to Pinole via Cutting Boulevard, Macdonald Avenue, 7th Street, and Fred Jackson Way in Richmond, North Richmond, San Pablo, and then runs along a one-way loop going through Phanor Drive, Jenkins Way, Williams Drive, the United Parcel Service (UPS) center on Atlas Road, Richmond Parkway, Fitzgerald Drive in Pinole, then back through RPTC, Klose Way, Hilltop Mall, and Robert H. Miller Drive before connecting back with the two-way route at Contra Costa College. Line 376 runs approximately every 30 minutes, departing Richmond BART Station from 8:35 p.m. to 2:45 a.m. 7 days a week.

AC Transit also operates four **school routes** in and around Richmond. These routes, intended for K-12 student commutes, only operate on school days:

- Line 607
- Line 667
- Line 668
- Line 675

Amtrak

The National Railroad Passenger Corporation, also known as Amtrak, provides intercity rail service to Richmond. Located on a platform along the historic Atchison, Topeka, and Santa Fe railroad (now BNSF) right-of-way, Richmond's Amtrak station is virtually adjacent to the Richmond BART Station and can be accessed by the same underground network of passageways.

There are three Amtrak lines serving Richmond BART Station:

- The **Capitol Corridor** (operated by Amtrak California, a joint enterprise of Amtrak and Caltrans) provides service from San Jose to Auburn via Sacramento. With 7 weekday trains to San Jose and 15 weekday trains to Sacramento, the Capitol Corridor is by far the most frequent Amtrak route serving Richmond.
- The **San Joaquin** (operated by Amtrak California) provides service from Oakland to Bakersfield via Stockton. There are 5 weekday trains headed to Bakersfield from Richmond. At Bakersfield, many riders will connect to a thruway bus to Los Angeles Union Station.
- The **California Zephyr** (operated by Amtrak) provides long-distance service from Emeryville to Chicago, IL with one train per day.

The **Coastal Starlight** is an active long-distance train also serving the East Bay, but it no longer stops at Richmond.

The Richmond BART Station is the closest direct connection between any BART station and Amtrak. The next closest connection is an 800-foot walkway at the Coliseum Station in Oakland – approximately 15 miles southeast of Richmond. Also unlike Coliseum Station, which only serves local train routes between Oakland and San Jose, Richmond's Amtrak station also directly connects to routes to and from Sacramento and Auburn.

Fairfield and Suisun Transit (FAST)

Fairfield and Suisun Transit (FAST) is a public transit entity based in Solano County along with Soltrans (which services primarily Vallejo). Both services operate express bus routes under the “SolanoExpress” banner. FAST operates one of these express routes, which is pertinent to Richmond:

- **Route 90 (SolanoExpress)** is an express route connecting the Fairfield Transportation Center and Suisun City Amtrak Station with the El Cerrito del Norte BART Station. Running in both directions, Route 90 departs El Cerrito del Norte on weekdays from 5:00 a.m. through 7:30 p.m. and on Saturdays from 10:00 a.m. to 7:00 p.m.

Western Contra Costa Transit Authority (WestCAT)

Western Contra Costa Transit Authority, or WestCAT, provides public transportation to the western portion of Contra Costa County, primarily focused around Hercules, Richmond, Pinole, and Martinez (among other communities), with express Transbay service to San Francisco.

- **Route 17** connects the RPTC with the Bayview neighborhood in San Pablo via Fitzgerald Drive and Appian Way. It runs only on weekdays, departing RPTC approximately every 60 to 70 minutes during morning and evening hours (6:21 a.m. to 10:01 a.m. and from 1:11 p.m. to 6:01 p.m.)
- **Route 18** connects the RPTC with the Tara Hills neighborhood in San Pablo via Hilltop Drive and San Pablo Avenue. It runs only on weekdays, departing RPTC approximately every 60 to 70 minutes during morning and evening hours (6:15 a.m. to 9:51 a.m. and from 1:11 p.m. to 5:55 p.m.)
- **Route 19** connects the Hilltop Mall in Richmond with the Hercules Transit Center. It runs on Saturdays only, departing the Hilltop Mall approximately every 45 minutes from 8:38 a.m. to 8:21 p.m.
- **Route JR** and **Route JL** are express routes connecting Hercules Transit Center with El Cerrito del Norte BART via San Pablo Avenue in Pinole. The JR stops at RPTC, while the JL stops at Hilltop Mall. On weekdays, the buses collectively depart El Cerrito del Norte every 15-30 minutes from 5:16 a.m. to 11:56 p.m. On Saturdays, the buses run every 40-60 minutes from 6:36 a.m. to 10:16 p.m. On Sundays, the buses run every 40-60 minutes from 7:56 a.m. to 8:36 p.m.
- **Route JX** and **Route JPX** are express routes connecting Hercules Transit Center with El Cerrito del Norte BART (the JPX includes a local extension through Pinole with a part-time midday extension to RPTC). They run on weekdays only, and collectively depart at El Cerrito del Norte approximately every 15-60 minutes from 5:41 a.m. to 7:54 p.m.

Golden Gate Transit

Golden Gate Transit is a service operated by the Golden Gate Bridge, Highway, and Transportation District. It primarily serves the North Bay, with limited service crossing the Bay to both San Francisco and Contra Costa Counties.

- **Routes 40 and 40X** run from El Cerrito del Norte BART Station to the San Rafael Transit Center in Marin County via Cutting Boulevard and I-580. From San Rafael, one

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

can transfer to local, regional, and intercity buses and, in the future, to Sonoma-Marín Area Rail Transit (SMART) trains. Routes 40 and 40X depart El Cerrito del Norte from 5:46 a.m. to 10:55 p.m. on weekdays, and from 6:49 a.m. to 9:52 p.m. on weekends and holidays. They run approximately every 5 to 25 minutes during peak hours (depending on the direction), and 60 minutes during off peak hours, weekends, and holidays.

- Although Golden Gate Transit service no longer stops at Richmond BART Station (formerly Route 44), the City of Richmond is still served by Golden Gate Transit's direct link to Marin County. Along Cutting Boulevard, Routes 40 and 40X stop along four major cross streets (49th Street, Carlson Boulevard, 23rd Street, and Harbor Way). Additionally, Route 40 stops in Point Richmond (Tewksbury Avenue at Castro Street).
- However, the loss of a connection at Richmond BART Station means that there is no direct transfer available to Golden Gate Transit from Amtrak Capitol Corridor services.

Paratransit Services

Paratransit services supplement or substitute fixed-route bus and rail services for people with disabilities. These services are sometimes operated by public transit agencies or other public entities.

With coverage similar to that of AC Transit, **East Bay Paratransit** (jointly provided by AC Transit and BART) provides Americans with Disabilities Act (ADA)-standard dynamic paratransit services in Richmond among other cities throughout the East Bay. The agency also provides paratransit services that can originate in Richmond and terminate in San Francisco. This service is designed as a substitute for regular bus or BART service; as such, pick-ups and drop-offs are only available within 0.75-miles of an AC Transit bus route or within 0.75-miles of a BART station during the same hours of operation as those fixed-route services. Trips are sometimes shared among passengers with similar origins and destinations. Reservations must be made at least a day in advance.

Provided by the City of Richmond and headquartered at the Richmond BART Station, **R-Transit** has been providing door-to-door dynamic paratransit services for seniors and people with disabilities since 1976. R-Transit operates on weekdays from 8:30 am to 5:00 pm (excluding holidays). The service area includes the Richmond City Limits, as well as El Cerrito, San Pablo, North Richmond, El Sobrante, Kensington, and Pinole. Trips made be shared, and reservations must be made at least one day in advance.

Private and Public Shuttles

Kaiser Permanente provides complimentary shuttle service from Richmond BART Station and El Cerrito del Norte Station to the Richmond Medical Center. The Richmond BART Station shuttle runs weekdays from approximately 6:00 a.m. to 7:15 p.m. and is available for visitors. The El Cerrito del Norte BART Station shuttle only runs in peak direction during morning and afternoon rush hours, and is available to just employees.

The City of Richmond formerly offered the Richmond Circular Shuttle, a free service connecting BART stations and employment centers. Buses were operated by transMetro and funded by the Bay Area Air Quality Mitigation District (BAAQMD) until 2013, when funding was no longer available. These routes included:

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- The main circular route, originating at Richmond BART Station, connected with the Richmond Civic Center, the intersection of Macdonald Avenue and Garrard Boulevard, Contra Costa County Health Offices, Rumrill Boulevard and Sutter Avenue, Contra Costa College, the Doctor's Medical Center on Vale Road, San Pablo Lytton Casino, and the shopping center at San Pablo Avenue and Macdonald Avenue. It ran in both clockwise and counter clockwise directions, departing approximately 40 minutes in each direction (or 20 minutes in any direction) on weekday peak hours. Routes departed Richmond BART Station from 7:00 a.m. to 11:00 a.m. and from 2:30 p.m. to 6:20 p.m.
- A separate branch linked El Cerrito Del Norte BART Station to the intersection of Marina Bay Parkway and Regatta Boulevard. It ran every 15 to 20 minutes during weekday peak hours (Departing El Cerrito Del Norte from 6:34 a.m. to 7:57 a.m. and from 3:34 p.m. to 4:54 p.m.)

Soltrans

Soltrans is the main transit provider for Solano County.

- **Route 80** is an express route connecting El Cerrito del Norte BART Station to Vallejo Transit Center, where riders can transfer to other bus routes throughout Solano County and the North Bay. Running in both directions, buses depart El Cerrito del Norte BART Station approximately every 15 minutes during peak hours, and every 30 minutes on all other times, including Saturdays. Service runs from 5:15 a.m. to 10:54 p.m. on weekdays and from 6:35 a.m. to 11:01 p.m. on Saturdays.⁶
- **Route 82** is an express route connecting Vallejo and Sereno Transit Centers with the San Francisco Transbay Terminal via El Cerrito del Norte BART. This route is a single evening run each weekday intended to provide supplemental service to the Vallejo Ferry. Buses departing for San Francisco depart El Cerrito del Norte BART at 9:48 p.m., while buses headed towards Vallejo and Sereno depart El Cerrito del BART at 11:01 p.m.

The Vine

The Vine is the main transit provider for Napa County.

- **Route 29** is a limited stop bus route connecting El Cerrito del Norte BART to the Napa Transit Center via the Vallejo Ferry Terminal and American Canyon, (with a part-time extension going further north to Yountville, St. Helena, and Calistoga). Running on weekdays only (but in both directions all day), buses depart El Cerrito del Norte BART Station approximately every 30 to 60 minutes from 5:55 a.m. to 7:30 p.m. Although the route technically connects El Cerrito/Richmond to a ferry terminal to the north, passengers are not permitted to use Route 29 to make such a connecting trip “due to an agreement with Soltrans.”⁷

⁶ On Sunday, Route 80 South connects Vallejo to Walnut Creek BART only.

⁷ http://napavalleyregister.com/news/local/vine-opens-route-to-el-cerrito-bart/article_c6b4f616-3327-11df-8fb9-001cc4c002e0.html

FERRY SERVICE

Passenger ferry transit service is one of the oldest transportation modes serving the San Francisco Bay Area. Today, multiple entities provide ferry service, including Water Emergency Transportation Authority (WETA as San Francisco Bay Ferry), the Blue and Gold Fleet, and the Golden Gate Bridge Highway and Transportation District (Golden Gate Ferry). The ferries serve many Bay Area cities with a developed waterfront, including San Francisco, Oakland, Alameda, Vallejo, South San Francisco, Larkspur, Sausalito, and Tiburon. During weekday peaks, ferries may serve these locations as frequently as every 30 minutes. During off-peak and weekend times, frequencies range from 60 to 120 minutes.

There are currently small-scale private water taxi operations serving Richmond's Marina Bay Yacht Harbor. Operated by Tideline Marine Group, the service connects the Yacht Harbor and San Francisco's Pier 1.5 during the peak hours of weekdays. Because the service is private, ferry rides to Richmond are currently limited to riders who purchased a pass or ticket online; unlike the ferry services noted above, walk-ons are not permitted. Two trips are available in each direction during morning peak hours (6:30 a.m. to 9:30 a.m.) and one trip is available in each direction in the evening (5:00 p.m. to 6:20 p.m.) The boats have a capacity of 40 passengers. A similar service is also in operation at Berkeley's waterfront.

In 2015, WETA, the Contra Costa Transportation Authority (CCTA), and the City of Richmond entered into an agreement to subsidize the first 10 years of operations for ferry service between the San Francisco Ferry Building and Richmond. Programming for the service will primarily come from the half-cent local transportation sales tax in Contra Costa County.

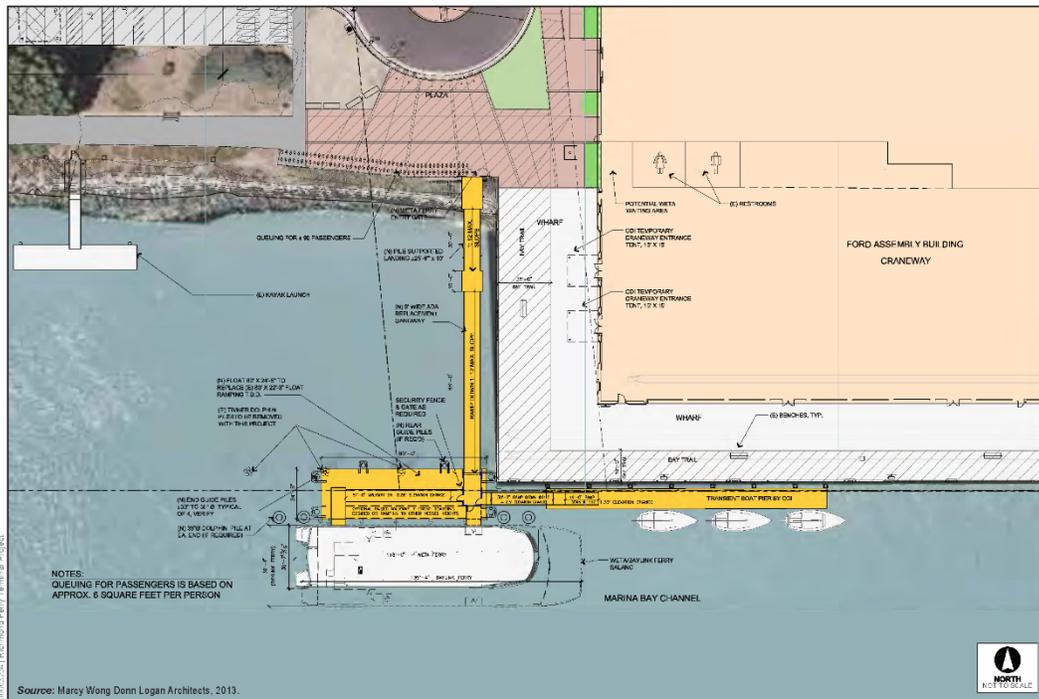
The Richmond Ferry Terminal is planned to be constructed at what is currently a recreational boat launch site along Ford Channel (the recreational launch will be relocated to another location closer to the Richmond Marina). The ferry terminal site is adjacent to where Harbor Way South ends at Ford Channel (also known as Marina Bay Channel), and access will be designed to facilitate passenger movement to the new gangway and dock from Harbor Way South, the parking lot to the west, and the Ford Assembly Building to the east (see Figure 2 and Figure 3). The newly expanded ferry service, which may start as early as 2018, was contingent on a grant-funded expansion of capacity at the San Francisco Ferry Terminal, which began construction in Spring 2017.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**
City of Richmond

Figure 2 Richmond Ferry Terminal Site Plan and Parking



Figure 3 Richmond Ferry Terminal Site Plan Detail



**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

RECENT PLANS AND POLICIES

This section presents an overview of existing plans, policies, and other documents prepared by the City of Richmond, Contra Costa County, BART, and other key stakeholder entities. This overview focuses on observations and recommendations for improving multimodal access and connectivity, particularly around the mobility hubs and other areas of connectivity.

The following maps and summary tables are a documentation of all the proposed and planned infrastructure investments that will improve access to transit at mobility hubs, areas of connectivity, and other vital transportation nodes within Richmond. Each relevant plan is identified via a letter and number code as specified in Figure 4.

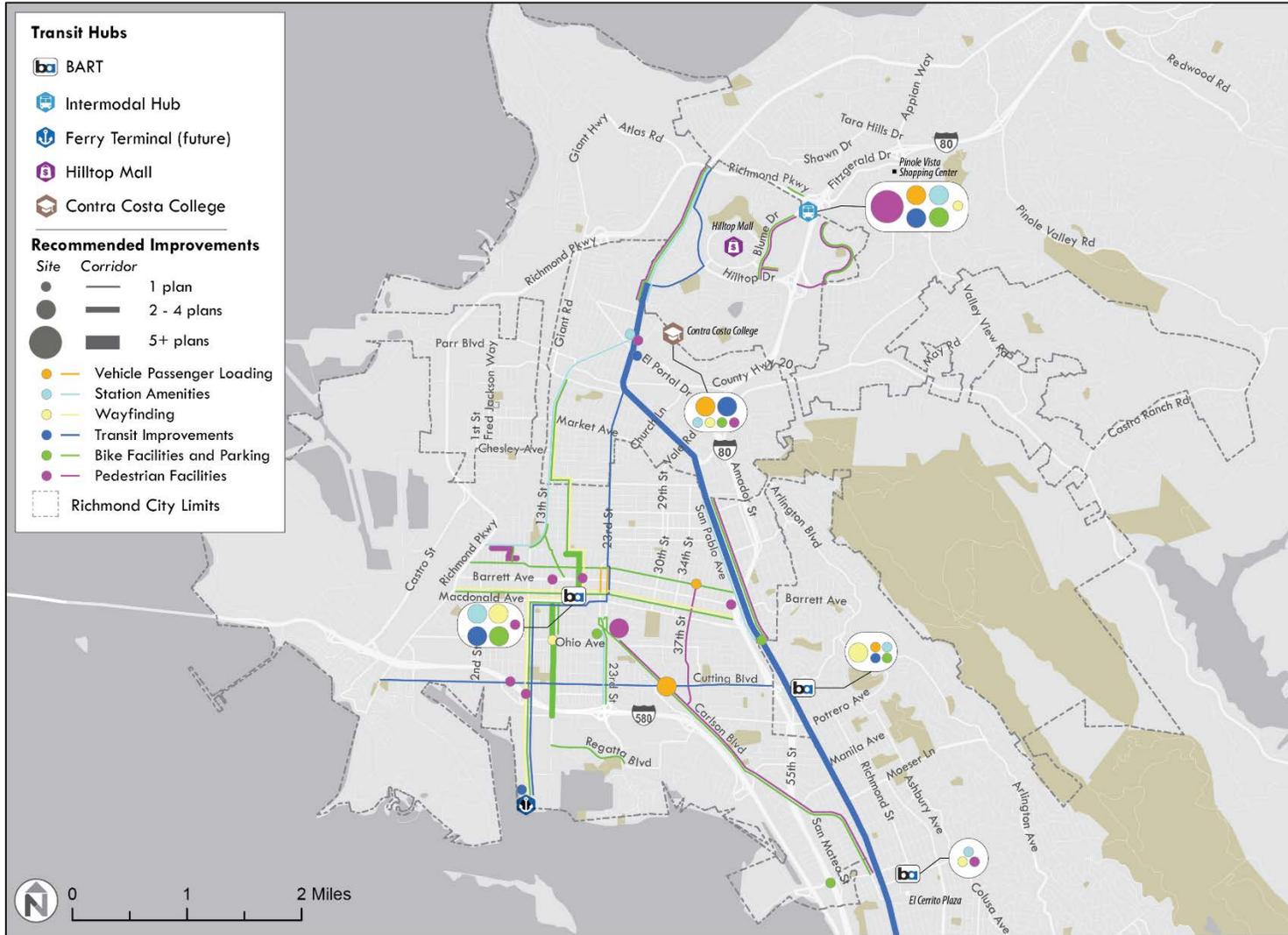
Figure 4 Contents of Recent Plans and Policies

Jurisdiction	Plan Name (Code)
City of Richmond Plans	Richmond Zoning Update (A2) Richmond Bay Specific Plan (A3) Livable Corridors Form Based Codes (A4) South Richmond Transit Connectivity Plan (A5) Richmond Wellness Trail Vision Plan (A6) Yellow Brick Road Iron Triangle Neighborhood Wellness Plan (A7) Rumrill Boulevard / 13 th Street Complete Streets Study (A8) Pedestrian Plan (A9) Bicycle Master Plan (A10) 23 rd Street Streetscaping Project (A11)
AC Transit Plans	AC Transit Short-Range Transit Plan (B1) Major Corridors Study (B2) RPTC Planning and Conceptual Design Study (B3) AC Transit Bicycle Parking Study (B4)
Contra Costa County Plans	Countywide Comprehensive Transportation Plan (C1) West County High-Capacity Transit Study (C2) WCCTAC Transit Enhancement and Wayfinding Plan (C3)
BART Plans	BART Bike Parking Capital Program (D1) Station Profile Study (D2) BART Bicycle Plan (D3) Richmond BART Station Access Plan (D4)
Capital Corridor Joint Powers Authority Plans	Capitol Corridor Business Plan (E1)
Water Emergency Transportation Authority (Ferry) Plans	Richmond Ferry Terminal Design Project (F1)

Appendix A includes further detail on each plan and its proposed policies and transit access improvements and uses the same coding for ease of reference. Figure 5 summarizes the general types of improvements recommended by these plans and policies; the size of the circle and line correspond to the number of plans that refer to the site and corridor, respectively. Figure 6 and Figure 7 explain the specific references according to improvement type for each area and corridor.

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT
 City of Richmond

Figure 5 Improvements Recommended in Relevant Plans and Policies



RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT
 City of Richmond

Figure 6 Profile of Recommended Improvements for Mobility Hubs and Areas of Connectivity

	Mobility Hubs			Areas of Connectivity		
Location	Richmond BART Station	Richmond Ferry Terminal	El Cerrito del Norte BART Station	Hilltop Mall /Richmond Parkway Transit Center	El Cerrito Plaza BART Station	Contra Costa College
Vehicle passenger loading areas and car share			<ul style="list-style-type: none"> Relocation of drop-off area for passengers with disabilities to be closer to station entrance (C3) 	<ul style="list-style-type: none"> Dedicated taxi areas on site (C3) New parking structure and elevated connection from Richmond Parkway (B3) 		<ul style="list-style-type: none"> Car sharing at the College (C3) Dynamic ridesharing program at the College (C3) Dedicated kiss-and-ride area (C3)
Station amenities (Lighting, furniture, landscaping)	<ul style="list-style-type: none"> Security cameras, especially for bike parking areas (C3, D4) Waiting areas (C3) Streetscaping, lighting, and other amenities in local streets, Nevin Avenue, and the transit village (D4) Richmond Police substation (D4) 		<ul style="list-style-type: none"> Additional trash bins and collection shifts (C3) Pedestrian-scale lighting on San Pablo (A9) 	<ul style="list-style-type: none"> Public restrooms (C3) On-site vendor (C3) 	<ul style="list-style-type: none"> Pedestrian-scale lighting on San Pablo (A9) 	<ul style="list-style-type: none"> Landscaping and public art at San Pablo and Rumrill (A8) Security upgrades (C3) Restrooms (C3)

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT
 City of Richmond

	Mobility Hubs			Areas of Connectivity		
Location	Richmond BART Station	Richmond Ferry Terminal	El Cerrito del Norte BART Station	Hilltop Mall /Richmond Parkway Transit Center	El Cerrito Plaza BART Station	Contra Costa College
Wayfinding and informational signage	<ul style="list-style-type: none"> ▪ Map of bicycle facilities and parking around station (A10) ▪ Wayfinding signs along local streets and in the transit village (D4) ▪ Bicycle wayfinding signage for key access routes, including Macdonald Avenue, Harbour Way, 17th and 19th Streets(D4) 		<ul style="list-style-type: none"> ▪ Improved station area signage, including maps of station area and connections along San Pablo Avenue (C3) ▪ Real-time signage for parking inventory (C3) 	<ul style="list-style-type: none"> ▪ Information booth similar to BART (C3) 	<ul style="list-style-type: none"> ▪ Improved information and real-time arrival signs within station and along San Pablo Avenue (C3) 	<ul style="list-style-type: none"> ▪ Upgraded wayfinding and information systems (C3)

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT
 City of Richmond

	Mobility Hubs			Areas of Connectivity		
Location	Richmond BART Station	Richmond Ferry Terminal	El Cerrito del Norte BART Station	Hilltop Mall /Richmond Parkway Transit Center	El Cerrito Plaza BART Station	Contra Costa College
<p>Transit capacity and service improvements (Adding a stop, increasing frequency, headways).</p>	<ul style="list-style-type: none"> ▪ Indicator for Capitol Corridor trains of approaching BART trains to streamline transfers (E1) ▪ BRT treatments and upgrades along Macdonald Avenue and Marina Way South (C2) 	<ul style="list-style-type: none"> ▪ Feasibility study for a municipal shuttle (electric bus or streetcar) connecting the Ferry to Downtown and other key destinations (A1) ▪ Peak hour extension of BRT service (C2) 	<ul style="list-style-type: none"> ▪ Simplified bus route designs along San Pablo Avenue (B1) ▪ BRT treatments and upgrades along San Pablo Avenue (B2, C2) ▪ Consolidated frequent Golden Gate and AC Transit service along Cutting Boulevard (A5) ▪ Circulator shuttle to Berkeley Global Campus from del Norte (A5) ▪ BRT, light rail, or streetcar line serving Cutting Boulevard, terminating at del Norte (A9) 	<ul style="list-style-type: none"> ▪ Minimize the number of boarding areas (B3) ▪ Potential BART extension station location (C2) 	<ul style="list-style-type: none"> ▪ Simplified bus route designs along San Pablo Avenue (B1) ▪ BRT treatments and upgrades along San Pablo Avenue (B2, C2) 	<ul style="list-style-type: none"> ▪ Relocated layover spots at outermost bays/islands (C3) ▪ Improved signal timing at El Portal and Mission Bell Drives (C3) ▪ Potential BART extension station location (C2)

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT
 City of Richmond

	Mobility Hubs			Areas of Connectivity		
Location	Richmond BART Station	Richmond Ferry Terminal	El Cerrito del Norte BART Station	Hilltop Mall /Richmond Parkway Transit Center	El Cerrito Plaza BART Station	Contra Costa College
Bicycle facilities and parking	<ul style="list-style-type: none"> ▪ Bike station (C3) ▪ Bike stair channels at station entrances (D4) ▪ Class I bike parking on site (A10, D4) ▪ Class II bike parking as demand warrants (D4) ▪ Continuous bike facility along Nevin Avenue through BART property (A9) ▪ Protected path to the north of Barrett Avenue (C3) ▪ Bike Boulevards along Marina Way, 15th Street, and 19th Street (C3) ▪ On-street bike lanes for key access routes, including Macdonald Avenue, Harbour Way, and 17th and 19th Streets (D4) ▪ Left turning lane into the station from 19th Street (D4) 	<ul style="list-style-type: none"> ▪ Class I Multi-Use paths along Regatta Boulevard and 23rd Street (C3) 	<ul style="list-style-type: none"> ▪ Class I Bike Storage (A10, C3) ▪ Connection between Richmond and Ohlone Greenways (A1, A10) ▪ Class II lanes on San Pablo Avenue (A9) 	<ul style="list-style-type: none"> ▪ On-street bike lanes along Blume Drive (B3, C3) ▪ On-street bike lanes along Garrity Way, Park Central, and Hilltop Drive (C3) ▪ Shared-use path along Richmond Parkway (C3) ▪ On-site Class I bicycle lockers (B3) ▪ On-site Class II bicycle racks (C3, B3) ▪ Bike station (B3) 	<ul style="list-style-type: none"> ▪ Connecting Class I and II bike facilities along Central Avenue past freeway overpasses to Bay Trail (C3) ▪ Class II lanes on San Pablo (A9) 	<ul style="list-style-type: none"> ▪ Two-way Class II bike facilities along Rumrill Avenue just west of San Pablo Avenue (A1, A8, C3) ▪ Bike parking on site (C3)

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

<p>Pedestrian facilities (Sidewalks and crossing treatments)</p>	<ul style="list-style-type: none"> ▪ Improved crossing and signals at Intersection of 22nd Street, Broadway, and Carlson Boulevard (A10) ▪ Continuous sidewalk along Nevin Avenue through BART property (A9) ▪ Crossing improvements along Barrett Avenue at Marina Way and 19th Street (C3) 	<ul style="list-style-type: none"> ▪ Improved crossings surrounding the I-580 interchanges along Harbour Way and Cutting Boulevard (C3) 	<ul style="list-style-type: none"> ▪ Widened medians and/or curb extensions along San Pablo Avenue (A9) 	<ul style="list-style-type: none"> ▪ Plaza and direct multi-use path connecting RPTC and the intersection of Richmond Parkway and Blume Drive (B3) ▪ Clear marked walking routes between parking, boarding areas, and pick-up/drop-off zones (B3) ▪ Sidewalks for Richmond Parkway (B3, C3) ▪ Sidewalks for Blume Drive, Garrity Way, Park Central, and Hilltop Drive (C3) ▪ Improved crossings on the west and south edges of the RPTC facility (C3) ▪ Improved crossings surrounding I-80 interchanges (C3) ▪ Formal crossing to Hilltop Plaza (B3) ▪ Traffic signals at Blume Drive intersections at RPTC and Hilltop Plaza access roads (B3) 	<ul style="list-style-type: none"> ▪ Improved pedestrian linkages to El Cerrito Shopping Center (C3) ▪ Widened medians and/or curb extensions along San Pablo (A9) 	<ul style="list-style-type: none"> ▪ Reduced crossing distance at San Pablo and Rumrill Avenues (A8) ▪ New sidewalks surrounding the transit center (C3)
---	---	--	--	--	--	--

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT
 City of Richmond

Figure 7 Profile of Recommended Improvements for Additional Vital Transportation Nodes

Location	Cutting Boulevard (and Carlson Boulevard)	7th Street at Pennsylvania Avenue (and Overpass)	23 rd and 24 th Street Underpass (at Ohio)	Marina Way and Ohio Avenue	Barrett and San Pablo Avenues I-80 off-ramp	37 th Street and Roosevelt Avenue
Vehicle passenger loading areas and car share	<ul style="list-style-type: none"> ▪ Grade separation of the railroad (A1) ▪ Traffic circle / roundabout (A1, A9) 		<ul style="list-style-type: none"> ▪ Two-way traffic circulation on both streets (A1) 			<ul style="list-style-type: none"> ▪ Traffic circle / roundabout (A9)
Station amenities (Lighting, furniture, landscaping)		<ul style="list-style-type: none"> ▪ Pedestrian-scale lighting (A7) 	<ul style="list-style-type: none"> ▪ Pedestrian-scale lighting (A9) 			
Wayfinding and informational signage				<ul style="list-style-type: none"> ▪ Directional signage (A10) 		
Transit capacity and service improvements (Adding a stop, increasing frequency, headways).	<ul style="list-style-type: none"> ▪ Consolidated frequent Golden Gate and AC Transit service along Cutting Boulevard (A5) ▪ Study options for converting excess capacity on Cutting Boulevard to bus rapid transit or rail (A9) 		<ul style="list-style-type: none"> ▪ BRT treatments and upgrades along 23rd Street (C2) 			

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT
 City of Richmond

Location	Cutting Boulevard (and Carlson Boulevard)	7th Street at Pennsylvania Avenue (and Overpass)	23 rd and 24 th Street Underpass (at Ohio)	Marina Way and Ohio Avenue	Barrett and San Pablo Avenues I-80 off-ramp	37 th Street and Roosevelt Avenue
Bicycle facilities and parking	<ul style="list-style-type: none"> Class II bicycle lanes along Carlson Boulevard (A9) 	<ul style="list-style-type: none"> Class II bike lanes along 7th (A7) Class I bike lanes along Pennsylvania Avenue overpass (A10) 	<ul style="list-style-type: none"> Class I spur path along Carlson Boulevard to connect the Richmond Greenway and Broadway (A10) Class II lanes along Carlson Boulevard (A10) Two-way cycle track along 23rd Street railroad underpass (A10) Two-way Class II bike lanes along 23rd (A9) 	<ul style="list-style-type: none"> Two-way Class I bicycle lanes on the west side of Marina Way South (A6) Bike boulevard treatments along Marina Way north of the Greenway (A10) Class II lanes along Marina Way south of Greenway (A10) 		
Pedestrian facilities (Sidewalks and crossing treatments)	<ul style="list-style-type: none"> Widened medians along Carlson or relocated curb further away from railroad tracks (A9) 	<ul style="list-style-type: none"> Curb extensions at crossings (A7) Extended sidewalks along the west side of 7th Street (A7) High-visibility ("yellow brick style") crosswalks (A7) 		<ul style="list-style-type: none"> Upgraded plaza in front of Richmond Greenway on-ramp on the corner of Ohio (A6) 	<ul style="list-style-type: none"> Pedestrian signals for crossing off-ramps along Barrett (A10) 	<ul style="list-style-type: none"> Traffic calming, curb extensions, and high-visibility crosswalks to reduce the use of 37th as a shortcut for vehicles (A1, A9)

Summary of Transit Access Policies and Plans by Station Area

Additional information about each of these policies and plans are found in Appendix A.

Overarching Citywide and Regional Policies

Throughout the City's overarching planning documents and policies, strategies that address affordability, access, and safety are marked as a priority. Key documents and policies include the General Plan, the City Zoning Code, and the West Contra Costa County Technical Advisory Committee (WCCTAC) Transit Enhancement and Wayfinding Plan. Priorities articulated in these documents include access to mobility, equitable access, expanded information on transit access, additional non-motorized connections, and new development standards that shift focus away from automobiles toward more sustainable modes of transportation. The plans and policies address improvements to connectivity and access from both a citywide and regional perspective. For example, closing gaps on the Bay Trail are important to creating access for the future Ferry Terminal as well as completing a piece of the Bay Area's region-wide transportation infrastructure.

Richmond BART Station Policies

The area around the Richmond BART Station area is a Priority Development Area (PDA), as identified by the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) in Plan Bay Area. This regional transportation and land use plan calls on cities and other planning agencies to implement measures to ensure the ease of access to transit via walkable and bikeable infrastructure in these areas. BART's transit-oriented development policy classifies this stations as a "Balanced Intermodal" station,⁸ indicating its users access the station by a variety of modes, including driving, walking, biking, and transit. The City also mandates reduced parking requirements for developments within this station area, which contributes to the area's emphasis on non-auto modes. In recognition of the continued importance of the station's connectivity to the central Richmond transportation network, the General Plan calls for a future Station Area Plan for the Richmond BART Station.

Ferry Terminal Policies

The future Richmond Ferry Terminal will be located in a PDA as well, and as such, the surrounding area is considered integral to the Bay Area's regional growth plans. Access to transit through sidewalk connections, safe pedestrian crossing, and established bike facilities are critical to supporting this growth. In acknowledging the demand for transportation and access that will come with future residential and commercial growth in the area around the terminal, the City of Richmond's plans and policies have singled out the area for improved links to downtown, from the creation of the Wellness Trail to a future Station Area Plan as directed by the General Plan.

Richmond Parkway Transit Center/Hilltop Mall Policies

Although the Richmond Parkway Transit Center is already supported and accessible via the regional road network, it is isolated from surrounding neighborhoods due to barriers making

⁸ From the Station Access Typology Map in BART TOD Guidelines, 2nd edition, 2017, p. 57

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

walking and bicycling undesirable, if not unsafe. The chief policy priority regarding the Transit Center area is ensuring connections with immediate neighborhoods. Hilltop Mall is located approximately a mile away along Blume Drive; it is another focal point in the Hilltop area of Richmond yet is not integrated with the Transit Center. The General Plan does call out the need for continued station area planning efforts specific to Hilltop Mall.

El Cerrito Del Norte BART Station Policies

This station area is also designated as part of a PDA, which indicates its role in the Bay Area's regional growth plans. The City supports the region's directives on improvements to bike and pedestrian infrastructure in these types of areas by prioritizing pedestrian connections to the station in its zoning code, as it does with all BART station areas. As in the Richmond BART Station area, the City mandates reduced parking requirements for developments within this station area. The prominence of El Cerrito del Norte BART Station in the regional transportation network has also led to traffic congestion on the primary roadways that feed into the station, which the County seeks to address over a long-term timeframe.

El Cerrito Plaza BART Station Policies

Also within a PDA, the El Cerrito Plaza area plays a key role in regional growth. As such, efforts to improve station access via walkable and bikeable infrastructure have been identified as priorities. Unlike El Cerrito del Norte station, the El Cerrito Plaza BART station is designated by BART as "balanced intermodal," meaning that mode split of users accessing the station of balanced, as opposed to more auto-reliant stations (as the El Cerrito del Norte Station is categorized).

Contra Costa College Policies

Contra Costa College is located within a PDA in San Pablo adjacent to Richmond. Reaffirming the role of walking and bicycling for accessing transit in this area, the City of San Pablo designated the nearby intersections along San Pablo Avenue—overlying Richmond between Rumrill Boulevard and 23rd Street—as part of a "Pedestrian Priority Zone." This label indicates an area where high volumes of pedestrian traffic are encouraged and should be accommodated by the street design.

Relevant Corridors Highlighted in Key Plans

Several key City plans, including the Richmond General Plan's Circulation element (2012), the South Richmond Transportation Connectivity Plan (2015), and the 2011 Pedestrian Plan, also identify several specific corridors surrounding these mobility hubs as priority areas for a range of improvements. The various plans have bestowed specific designations on these corridors, indicating each corridor's significance to the city's transportation network and highlighting potential opportunities for critical multimodal improvements. This section defines the different types of corridors and identifies where they have been designated in Richmond. Figure 8, at the end of this section, specifies how these designations apply to major roadways across the city. This section provides additional detail about the corridors shown in Figure 5 and summarized in Figure 7.

Key Travel Corridors

"Key travel corridors" are referenced in multiple plans, and the designation generally refers to the highest priority corridors for implementation of specific multimodal connectivity projects and

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

services.⁹ Whether denoted in a specific plan, pedestrian plan, or bicycle plan, a key corridor is essentially a major component of a future multimodal transportation network in Richmond.

Key South Richmond corridors are identified in the first column of Figure 8 with the letter “S.” Among other things, the South Richmond plan supports the following measures specifically in key corridors:

- “safety and predictability through the physical and operational separation of truck and bike traffic¹⁰”
- “street design and signal system upgrades where feasible¹¹” including “bicycle-only signal phases” in “high priority intersections”

Key pedestrian corridors are identified in the first column with the letter “P.” These are corridors identified in the Pedestrian Plan as “integral” to pedestrian mobility.¹²

Key bicycle corridors are identified in the first column with the letter “B.” These are what the Bicycle Master Plan defines “Key Bicycle Corridors,” which include “many residential and regional collector streets that provide the most direct and continuous connections between destinations, but also have heavier and fast-moving vehicle traffic.”¹³

“Wide and Redundant” Streets

Beyond just key corridors, the 2011 Pedestrian Plan designates routes as “overly wide and redundant connector streets” due to shifting employment trends in Richmond. As a result, these streets with “excessive right of way” are seen as “immediate opportunities to enhance the pedestrian and bicycle realm by expanding sidewalks, installing bike lanes and creating inviting public spaces.” All of these streets are also served by transit routes.¹⁴

Transit Priority Streets

Per the place-based circulation classification system defined in the General Plan,¹⁵ Transit Priority Streets are streets in which public transit has been determined a “priority mode” as opposed to an “allowable” or “prohibited mode.” Under this approach, “where public transit is a priority travel type, both physical and programmatic responses may be appropriate such as improving transit connections, expanding transit service, providing transit hubs, addressing affordability and transit incentives.”¹⁶ Transit is a priority mode on three types of thoroughfares:

- Community Activity Street;
- Community Connector Street; and
- Freeway.

⁹ City of Richmond, South Richmond Transportation Connectivity Plan, 2015, <http://www.ci.richmond.ca.us/2776/SRTCP>, p. ES-3

¹⁰ Ibid., p. 8-1

¹¹ Ibid., p 8-9

¹² City of Richmond, Pedestrian Plan, 2011, p. 47

¹³ City of Richmond, Bicycle Master Plan, 2011, p. 58

¹⁴ Pedestrian Plan, p. 16

¹⁵ Map 4.2

¹⁶ City of Richmond, Richmond General Plan 2030, 2012, p. 4.14

Future Streetscaping Corridors

The General Plan identifies locations where the City wishes to revitalize the streetscape “to enhance access, lighting, safety and experience for pedestrians, bicyclists, transit users, and motorists.” These corridors are listed under “Future Streetscaping” in the General Plan.¹⁷

In particular, Action CR2.C calls on focusing future improvements “in areas with the highest need such as the Downtown, mixed-use corridors, key intersections, designated pedestrian priority districts, and multi-use trails that connect high-density areas of the City to parks and open space.¹⁸” In addition to “university accessibility improvements, pedestrian-scale lighting and landscaping,” future efforts are to consider the use of assessment districts to fund improvements, and sustainable building materials. The City’s Planning and Building Services is primarily responsible for streetscaping improvements.¹⁹ Also noted in the plan’s map of potential roadway improvements, “Streetscape improvements may include pedestrian and bicycle amenities such as sidewalks, street lights, street furniture, signage, crosswalks and trees.”²⁰

Future New Roadway Alignment

Few roads are specifically designated for a new alignment in the Richmond General Plan, reflecting the general acknowledgement in Richmond policies of the number of wide roadways that already exist in Richmond.²¹ The primary road that is proposed for a new roadway alignment, a spur off Regatta Boulevard, has the unique circumstance of potentially providing new freeway access to an area of South Richmond currently constrained by the freeway itself, at-grade railroads, and large industrial lots. Regatta Boulevard is specifically called out for realignment for its unique and critical connection between the UC Richmond Field Station Campus and I-80.

Existing Truck Routes

Because “an efficient, safe and reliable system for goods movement is an important part of Richmond’s circulation network,²²” the General Plan calls for the City’s Engineering division to develop and update a “citywide goods movement plan.”²³

As a result, “there are 28 designated truck routes in the City of Richmond. Many of these truck routes located south of Interstate 580 where they access port terminals on the Richmond Harbor. These truck routes, which are identified in the General Plan,²⁴ will face pressure to maintain certain elements of their existing design, which aids the flow of large commercial vehicles.

Routes of Regional Significance

Regionally significant routes are “defined by WCCTAC as roadways that connect two or more regions of Contra Costa County, cross Contra Costa County boundaries, carry as [sic] significant

¹⁷ Map 4.3

¹⁸ Ibid., p. 4.35

¹⁹ Ibid., p. 4.45

²⁰ Ibid., p. 4.51

²¹ Map 4.3

²² Ibid., p. 4.10

²³ Ibid., p. 4.40

²⁴ Map 4.4

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

amount of traffic or provide access to a regional freeway or transit facility.”²⁵ In addition to Interstates 80 and 580, there are nine regionally significant routes in Richmond, as designated by the Contra Costa Transportation Authority and reiterated in the General Plan.²⁶

Figure 8 Designation of Corridors in Richmond Plans

	Key Travel Corridors	“Wide and Redundant” Streets	Transit Priority Street	Future Streetscaping Corridors	Future New Roadway Alignment	Existing Truck Routes	Route of Regional Significance
23rd Street	S, P, B		X	X		X	X
37th Street	B						
Barrett Avenue	B	X					
Bayview Avenue	S						
Blume Drive				X		X	
Carlson Boulevard	S, P, B	X		X			X
Central Avenue	S			X		X	X
Cutting Boulevard	S, P, B	X	X	X			X
West Cutting Boulevard						X	X
Harbour Way	S, P, B		X	X		X	
Hilltop Drive				X		X	
Macdonald Avenue			X	X		X	X
Marina Way	P		X	X		X	
Marina Bay Parkway	S, B	X		X		X	
Nevin Avenue				X			
Ohio Avenue	S, P					X	
Regatta Boulevard					X	X	
Richmond Parkway							X
San Pablo Avenue	S, P, B		X	X		X	X

²⁵ Ibid., p. 4.11

²⁶ Map 4.5

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Overall, many of Richmond’s policies and plans are focused on improving multimodal mobility, with a range of policies, recommendations, and planned infrastructure improvements that will for streets across the City. Many of the recommendations of this past work are concentrated around a few important mobility hubs, such as the Richmond and El Cerrito del Norte BART stations. The next chapter details existing travel conditions in the areas around these and other mobility hubs.

3 INVENTORY OF EXISTING CONDITIONS AND NEEDS ASSESSMENT

Given the City of Richmond's location outside of the San Francisco Bay Area's core employment areas of San Francisco, Oakland, and San Jose's downtowns, the city houses regional connections that bridge Alameda and Contra Costa Counties. In this capacity, the city's transit service is dynamic and diverse, including crosstown bus service and out-of-state travel and connecting Richmond directly with locations from San Rafael to San Jose. As a result, the transit sites in Richmond vary in location and purpose, depending on their geographic context, site design, and complexity of operations.

This chapter presents the existing conditions and multimodal needs for the key transit sites in Richmond. It first introduces these sites, explaining their categorization as a **mobility hub** or an **area of connectivity** and presenting the general characteristics of the site and its surroundings. More detailed sections follow discussing site access by foot, bike, and transit. Later sections present potential development opportunities near these mobility hubs and discuss the overarching context of shared mobility, transportation demand management, and autonomous vehicles for Richmond.

MOBILITY HUBS AND AREAS OF CONNECTIVITY

Overall, Richmond is characterized by a mix of moderate and low-density development served by a few primary mobility hubs that facilitate both regional and local access via multiple transportation systems. These hubs—**Richmond BART Station**, the future **Richmond Ferry Terminal**, and **El Cerrito Del Norte BART Station**—are located within or immediately adjacent to city limits and provide opportunities to establish or strengthen intra- and inter-city connections.

In addition to these hubs, several other sites also provide connections between different transit services but with lower levels of transit service. These include the **Richmond Parkway Transit Center**, **El Cerrito Plaza BART Station**, and **Contra Costa College**. These areas of connectivity also take the form of multiple activity centers along corridors such as 23rd Street, Macdonald Avenue, and San Pablo Avenue connect residents and businesses with amenities and services.

Figure 9 notes the general differences among the mobility hubs and areas of connectivity. Many of the assessments throughout the rest of the chapter reinforce the designations and prioritization of certain areas as mobility hubs.

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT
 City of Richmond

Figure 9 Profile of Important Statistics on Mobility Hubs and Areas of Connectivity²⁷

Area Considered	Location	Total Population	Population Density (per acre)	Total Jobs	Total Number of Households	Total Number of Zero-Vehicle Households	Number of Providers/Routes	Service Levels	Scale	Access Category
Richmond BART Station	Richmond	21,007	21.1	4,671	6,139	1,362	<ul style="list-style-type: none"> ▪ Amtrak ▪ BART ▪ AC Transit (five routes) ▪ Kaiser Shuttle 	High	Regional and local	Mobility hub
Richmond Ferry Terminal	Richmond	738	2.9	285	229	38	<ul style="list-style-type: none"> ▪ WETA (ferry) ▪ AC Transit (one route) 	Moderate (projected)	Regional and local	Mobility hub
El Cerrito del Norte BART Station	El Cerrito	15,086 (48% in Richmond)	12.8	2,716 (32% in Richmond)	5,941 (44% in Richmond)	696 (47% in Richmond)	<ul style="list-style-type: none"> ▪ BART ▪ AC Transit (five routes) ▪ WestCAT (three routes) ▪ Golden Gate Transit (one route) ▪ SolanoExpress (two routes) ▪ Napa VINE 	High	Regional and local	Mobility hub
Richmond Parkway Transit Center	Richmond	2,428	5.9	2,729	1,183	37	<ul style="list-style-type: none"> ▪ AC Transit (three routes) ▪ WestCAT (five routes) ▪ Casual carpool 	Moderate	Regional and local	Area of connectivity

²⁷ All statistics were calculated based on a one-mile network buffer radius from the site location. Rather than use Euclidean distance (i.e. as the crow flies), network buffers use the distance along roadway segments to better approximate true distance and travel time.

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT
 City of Richmond

Area Considered	Location	Total Population	Population Density (per acre)	Total Jobs	Total Number of Households	Total Number of Zero-Vehicle Households	Number of Providers/Routes	Service Levels	Scale	Access Category
Hilltop Mall	Richmond	7,135	8.1	3,771	2,852	145	<ul style="list-style-type: none"> ▪ AC Transit (two routes) ▪ WestCAT (one route) 	Low	Local	Area of connectivity , part of Richmond Parkway Transit Center
Stops along 13th St/Rumrill corridor	Richmond	N/a	N/a	N/a	N/a	N/a	<ul style="list-style-type: none"> ▪ AC Transit (one route) 	Low	Local	Area of connectivity
Stops along 23rd St corridor	Richmond	N/a	N/a	N/a	N/a	N/a	<ul style="list-style-type: none"> ▪ AC Transit (one route) 	Low	Local	Area of connectivity
Stops along San Pablo Avenue corridor*	Richmond	N/a	N/a	N/a	N/a	N/a	<ul style="list-style-type: none"> ▪ AC Transit (three routes) 	Low - Moderate	Local	Area of connectivity
El Cerrito Plaza BART Station	El Cerrito	12,144 (20% in Richmond)	11.4	3,785 (25% in Richmond)	5,036 (20% in Richmond)	355 (22% in Richmond)	<ul style="list-style-type: none"> ▪ BART ▪ AC Transit (six routes) ▪ UC Berkeley Shuttle 	High	Regional and local	Area of connectivity
Contra Costa College Transit Center	San Pablo	10,828 (19% in Richmond)	16.4	1,777 (7% in Richmond)	3,560 (26% in Richmond)	323 (26% in Richmond)	<ul style="list-style-type: none"> ▪ AC Transit (five routes) ▪ WestCAT (one route) 	Moderate	Local	Area of connectivity

Richmond BART Station

The Richmond BART Station is located between Macdonald and Barrett Avenues to the north and south, and between 16th and 19th Streets to the east and west. Bus access to the facility is provided via Macdonald Avenue and extension of 16th Street, and bus bays are located off-street adjacent to the northeastern corner of Macdonald Avenue and 16th Street. The Amtrak and freight rail line and BART lines bisect the site at grade. The south entrance to the station serves as the fare payment area for BART, a ticket vending area for Amtrak, and the offices for Richmond's paratransit provider, R-Transit. Intersections along Nevin Plaza have standard curb extensions, which improve safety by calming vehicular traffic and reducing crossing distances. The primary approaches to the station along Macdonald Avenue have planted medians, median islands, and other modern traffic-calming and pedestrian-friendly tools, such as curb extensions, decorative crossings with accessible signals, and angled parking. Macdonald Avenue from 22nd Street to the station has some median islands and curb.

Figure 11 Sign Outside Richmond BART Station Facing 19th Street



Due to construction, station access is restricted to the south from Macdonald Avenue. During construction, pedestrians and vehicles (for passenger pick-up only) can access the station from the north along 18th Street, with no access for people with disabilities. After construction is completed, patrons will be able to access the station from the north along 19th Street and from the east along Nevin Avenue.

Passenger Loading

As part of the Richmond BART Station access improvements, a new ADA-compliant pedestrian walkway and passenger loading area is being constructed on the east side of the station. There is temporary passenger pick-up from the north along 18th Street. On the south side of the station, there is an outer island with a taxi stand with space for approximately five vehicles on side and general passenger loading with space for approximately six vehicles, including an ADA loading space, on the other.

Figure 12 Richmond BART Station ADA Passenger Loading



Passenger Comfort and Safety

The pedestrian area is clearly identified, with space on the platform for bus patrons to line up for boarding. Transferring between the bus and rail does not require patrons to cross a driveway or street. Each bus bay has a patron shelter, and there is seating for approximately 50 people in these shelters, with additional seating indoors. The lighting is good within the station, and security

cameras are visible. Outside of the station, pedestrian lighting varies in spacing but is installed throughout Macdonald Avenue and Nevin Plaza, but is more limited and sparse along Bissell Avenue, Marina Way, Barrett Avenue, and Harbour Way.

Signage and Wayfinding

All AC Transit and Golden Gate Transit stops have signs with route numbers, and most have maps and schedules. Schedules and maps for pick up are only available for BART and Amtrak. Real-time information is only available for BART trains on BART platforms, and for Amtrak in the Richmond Redevelopment Office. There are regular electronic voice announcements for rail.

Within the bus loading area, the directionality of service is only indicated on the bus stop sign itself; since the inbound and outbound service do not necessarily use the same stop, nor are the stops close to one another, this may generate confusion. Inside the station, there is generally good signage to Amtrak and BART, although there are some outside signs for buses.

Outside the station, the signage and information about buses is generally good. Public art has been installed as informational/historical signage in Nevin Plaza and along Macdonald Avenue, increasing its visibility. Informational kiosks are installed at the Macdonald Avenue entrance, the BART entrance, at Nevin Plaza and Marina Way.

Other Amenities

There are trash cans, a payphone, water fountains, and newspaper vending. There is a small convenience store adjacent to the southern entrance. Restrooms are accessible on weekdays only.

There is on-site staff in the R-Transit offices. Landscaping is minimal, as the station is almost entirely paved. The southern entrance has a large awning that provides shade.

Operational Capacity

There are eight bus bays, with a bay on an outer island used by paratransit vehicles and the Kaiser Permanente shuttle. Seven of those are dedicated bus bays for AC Transit, with multiple routes at some stops; AC Transit and Golden Gate Transit share one bay. Bus platforms are approximately 40 feet or less, with one longer platform. The estimated total bus capacity is nine. Additional capacity could be made available if taxis were removed.

At peak periods, bus circulation is somewhat constrained due to heavy traffic and some short bus platforms.

Vehicle Parking

The Richmond Parking Garage contains 775 parking spaces and is the only location for parking at the BART station. This garage contains 55 spaces for parking permit holders, 17 ADA accessible spaces, 13 carpool spaces, and 13 space for official BART use. The remaining 677 are for daily parking. After 10 a.m., any unoccupied permit parking spaces become available to the public at the daily rate. With the exception of long-term permit parking, there is a 24-hour weekday time limit on parking. The parking on the north side of the station is currently closed off due to construction, and will be removed as part of the development.

Daily parking costs \$3 per day, while monthly permits are \$105 per month. Patrons using the ADA accessible parking spaces are also required to pay this parking fee. Drivers may also purchase a single-day permit for \$6 that permits them to park in the reserved spaces for permit-holders. Airport/long-term parking is also available for \$7 per day; this allows drivers to park in the reserved permit areas for up to 30 days.²⁸

Bicycle Parking

There are 62 bike racks and 24 electronic bike lockers available outside the fare gates at the Richmond BART station. A one-day occupancy count found that 35% of the bike racks and 21% of the bike lockers were being used.²⁹

Future Richmond Ferry Terminal

As discussed in Chapter 2, the San Francisco Bay Water Emergency Transportation Authority (WETA) is in the process of constructing a ferry terminal in Richmond and will provide new ferry service between Richmond and San Francisco. The terminal in Richmond will be located at the southwest end of the Ford Peninsula, approximately 1.5 miles south of downtown Richmond. This location currently possesses an existing passenger float and gangway, used for privately operated vessels that shuttle visitors to events at the Craneway Pavilion (inside the Ford Building) and for vessel storage. The wharf also serves as an existing segment of the San Francisco Bay Trail. The area is served by AC Transit Line 74, which provides direct access to the Richmond Intermodal

²⁸ Parking supply and pricing information, email from Robert Franklin, BART, dated April 3, 2017.

²⁹ BART bike occupancy audit, May-June 2016.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Transit Station with connections to BART, Amtrak, Golden Gate Transit, and other AC Transit routes.

Ferry passengers will have to cross the San Francisco Bay Trail in order to access the entry gate.

Passenger Loading

At the moment, there are no designated areas for passenger loading. However, shuttle pick-up and drop-off is shared with private vehicles at the end of the cul-de-sac at Harbour Way, which is adjacent to the AC Transit bus stop. The bus stop has minimal lighting and no passenger seating or shelter.

Passenger Comfort and Safety

At the moment, there is standard vehicular lighting along major corridors such as Harbour Way South and Marina Way South, but little to no pedestrian lighting.

Amenities

Currently there are no amenities provided except for the restrooms within the Craneway Pavilion. With the proposed terminal, there would be passenger waiting areas within the existing Craneway Pavilion and an outdoor queuing area adjacent to the proposed entry gate.

Figure 13 Existing Bus Stop Near Future Richmond Ferry Terminal



The project will extend the Bay Trail spur along the shoreline between the parking lots and the navigation channel. This extension will include amenities such as benches, trash receptacles, signage, lighting, and landscaping in line with the Bay Trail Design Guidelines.

Signage and Wayfinding

The area around the future Ferry Terminal directs

visitors to the nearby San Francisco Bay Trail connections, the Marina, and the National Park Service Rosie the Riveter Visitor Center. There is minimal signage indicating the direction of transit connections. Wayfinding signage is installed along Hall Avenue, a small cross street connecting Harbour Way and Marina Way.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Vehicle Parking

Parking is currently provided in a lot at the southwest corner of the Ford Peninsula, directly adjacent to the proposed terminal location. The lot contains 301 spaces, including 245 spaces for the Ford Assembly Building tenants. The remaining spaces are available for public use. Parking is free. Approximately an eight-minute walk, the Marina Bay Yacht Harbor charges \$10 for 24 hours of parking with a 48-hour limit.

The proposed project will include vehicle and bicycle parking. Parking for Ford Assembly Building tenants will be relocated to other existing parking areas for the Building. The proposed project parking lots will contain 319 spaces, 53 of which will be reserved for public access parking only. There is a possibility of expanding the parking lot in the future, using WETA property to add up to approximately 395 additional parking spaces.

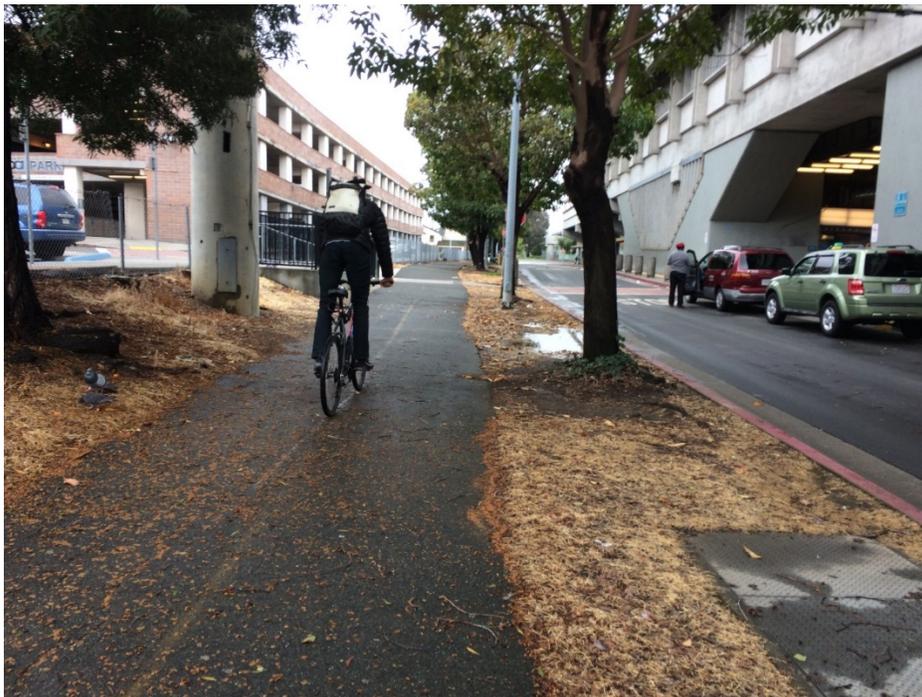
Bicycle Parking

There is currently no bike parking in the immediate area, although there are approximately 10 Class II spaces in front of the Visitor Center next to the Ford Building, and there are private bike locker facilities approximately a quarter-mile away as part of the Marina. The proposed project will also install approximately 24 bicycle lockers on the section of the parking lot adjacent to the Bay Trail.

El Cerrito del Norte BART Station

This BART station is located in the northern part of El Cerrito on San Pablo Avenue; it is approximately a quarter-mile from the Richmond city line, and is an important regional transportation hub for Richmond.

Figure 14 Ohlone Greenway Approach to El Cerrito del Norte BART Station from the North



**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Passenger Loading

All of the bus bays immediately adjacent to the BART station are used and identifiable. On the east side of the station is a taxi stand; additional curb space has been allocated for taxi waiting along Cutting Boulevard. There is a passenger and ADA loading zone to the east of the BART station before the parking garage with curb space for approximately 10 vehicles. However, loading area access is restricted by fencing and uneven landscaping between the loading area and the BART station.

Passenger Comfort and Safety

Benches are provided at all bus bays. The passenger waiting areas are generally well lit; each bus stop canopy has its own light. The station and adjacent streets generally possess vehicular lighting but no pedestrian lighting. The parking lot adjacent to Kearney Street and Knott Avenue has three lights installed at unequal intervals; the BART parking lot along San Pablo Avenue between Knott and Hill Avenues has more even lighting. The presence of BART police in a portable building between the station entrance and Cutting Boulevard contributes to the overall perception of safety.

Signage and Wayfinding

The ADA loading area is unmarked and difficult to locate from the driver's point of view. There is minimal signage indicating the Ohlone Greenway; wayfinding signage further along the Ohlone Greenway is eye-catching and provided by the City of El Cerrito. The connection between the Ohlone Greenway and the Richmond Greenway is very difficult to discern, lacking any wayfinding, signage, or clear bicycle infrastructure. Additional wayfinding for bicycle routes and roadway connections along the San Pablo Avenue corridor is also provided by the City of El Cerrito.

Other Amenities

There is a deficient number of trash receptacles throughout the station. In the higher-traffic areas of the station, there is a newspaper kiosk and posted manual schedules. Accessible paths of travel are marked by linear panels that are flush with the sidewalk.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 15 Bus Bays on Western Side of El Cerrito del Norte BART Station



Operational Capacity

All of the bus bays and immediately adjacent curb space appears to be fully utilized. There is an open paved area at the south end of the BART station on Hill Street that could potentially serve as a location for a bike share station or additional bike parking or passenger waiting amenities.

Vehicle Parking

The BART station contains 2,090 parking spaces provided by surface parking lots and a four-story parking garage. The facility includes 240 permit parking spaces, 36 ADA accessible parking spaces, 40 carpool spaces, and 13 spaces for official BART use. The remaining 1,761 spaces are available for daily fee parking.

Daily parking costs \$3 per day, while monthly permits are \$94.50 per month. Patrons using the ADA accessible parking spaces are also required to pay this parking fee. Drivers may also purchase a single-day permit for \$6 that permits them to park in the reserved spaces for permit-holders. Airport/long-term parking is also available for \$7 per day; this allows drivers to park in the reserved permit areas for up to 30 days.³⁰

³⁰ Parking supply and pricing information, email from Robert Franklin, BART, dated April 3, 2017.

No parking is allowed along San Pablo Avenue. Parking is unrestricted on the station side of Key Boulevard and Liberty Street, and has a four-hour non-residential limit on the opposite side of the street. No station-side parking is allowed on Cutting Boulevard, but no restrictions exist on the north/west side. Hill Street parking is unrestricted on the station side, and has a four-hour non-residential time limit on the opposite side. Most of the neighborhood streets have a four-hour limit for cars without residential parking permits. As adjacent parking is unrestricted, there is some spillover parking due to people driving to the station and preferring to park for free nearby rather than pay for parking at the station.

Bicycle Parking

There are approximately 126 short-term bicycle parking spaces and 44 electronic bike lockers at the station. A one-day occupancy audit found that approximately 29% of the bike racks and 70% of the bike lockers are utilized.³¹ The high utilization of bike cages over bike racks suggest that bicycle security is a concern; both the bike lockers and bike racks are located under the tracks, where they are not highly visible and not in the direct line of sight for BART personnel.

Areas of Connectivity and Other Activity Centers

Due to the shape and location of city boundaries, Richmond's transportation network is necessarily regional, facilitating mobility to and from neighboring cities in addition to creating connections for its own residents and businesses. This travel pattern of people using Richmond as a transfer point combined with the city's mix of moderate and low-density development has generated multiple smaller areas of connectivity. These areas enable transfers among different transportation modes and systems but do not provide the same level of access as those hubs previously mentioned due to varying levels of service and system types.

Richmond Parkway Transit Center

Located in the Richmond Hilltop neighborhood, the Richmond Parkway Transit Center (RPTC) is a park-and-ride location with approximately 206 parking spaces. Drivers can park their car at this location for \$3 per day and can then transfer to multiple bus systems, including AC Transit (lines 70, 71, 376, LA, LC) and WestCAT (routes 16, 17, 18 19, JR, JPX). The RPTC is also the location of Richmond's only "casual carpool" pickup location, where people can quickly form a carpool to save money and time when driving down the Eastshore Freeway and through the San Francisco-Oakland Bay Bridge tollbooth. Although the WestCAT service is relatively frequent, the AC Transit service that provides connections to other destinations in Richmond is less so.

Overall, the RPTC's design and close proximity to I-80 and Richmond Parkway allows for easy vehicular access at the sacrifice of a welcoming pedestrian experience. There are no dedicated passenger loading areas, and passenger amenities are minimal. The central island for bus loading possesses one bus shelter, a bench, and a portable toilet. A manned parking/security attendant station is also located on the island next to the bus bays. There is no bike parking. Sidewalks are often only on one side of the road, of an adequate width but usually with only a minimal to no buffer between the sidewalk and road. Blume Drive, a local arterial adjacent to the RPTC, is six lanes wide at certain intersections, and there are no islands or pedestrian refuges in the middle to aid with crossing.

³¹ BART bike occupancy audit, May-June 2016.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Due to its location immediately adjacent to a major interchange, the RPTC lacks integration with the nearby residential and commercial areas. Compared to other areas in Richmond, it has relatively low population density; most households own a car and therefore have less of a need for transit access. Given the existing conditions of the RPTC, this area functions more as a transfer point for regional access rather than a mobility hub with strong local connections in addition to regional ones.

El Cerrito Plaza BART Station

El Cerrito Plaza BART Station is approximately a quarter-mile from the southeastern-most Richmond city limits, and provides connections to multiple transit systems, including BART, AC Transit (lines 71, 72, 72M, 79, 80, G), and the University of California-Berkeley Bear Transit shuttle. The station is located along the Ohlone Greenway and provides 94 Class II spaces and 96 bike lockers. There are also two car share parking spaces near the station entrance in the parking location, but the car share company providing those vehicles is no longer in operation.

However, in spite of the close physical proximity of a transit hub with multiple local and regional connections to the City of Richmond, both San Pablo Avenue and I-80 act as substantial barriers to both actual and perceived access from Richmond. Approximately 3,000 Richmond residents live within a mile of the station, while four times that many live in El Cerrito. Because of the limited local access offered by this station, El Cerrito Plaza BART Station is considered more of an area of connectivity rather than a possible mobility hub for Richmond.

Contra Costa College

Contra Costa College is the west campus of the Contra Costa Community College District and is located in San Pablo, just south of Richmond's Hilltop area. The College is a primary destination in the county, serving students from all of the nearby cities, including Richmond. The College's transit center provides connections to both AC Transit (lines 71, 72, 72R, 74, 76) and WestCAT (route C3). The bus bays are well labeled around a central island with multiple benches and bus shelters. There is no bike parking, although the adjacent campus provides bike parking at each of its major buildings. Approaching the transit center, there is unregulated parking on the east side of Campus Drive to the south, and on both sides of Campus Drive to the north. College Center is approximately a 0.4-mile away, with multiple chain restaurants, a supermarket, banks, and other retail.

Although multiple lines, including one with higher frequency service, serve the transit center, the center lacks regional access and functions more as a destination. Its location in San Pablo and topography make it less likely to attract Richmond residents and businesses.

Major Employers and Other Activity Centers

As work trips make up a large part of travel, locations with high levels of employment will typically generate large numbers of trips. Moreover, many of the large employers in Richmond are industrial or retail, both of which often involve non-typical work shifts. Companies with large warehousing facilities often also have more complex freight needs, and so evaluate the transportation network for its ability to move not only employees and customers but goods as well.

Richmond's major employers (e.g. those with approximately 150 employees or more) are predominantly located in central Richmond near downtown and the waterfront, generally near

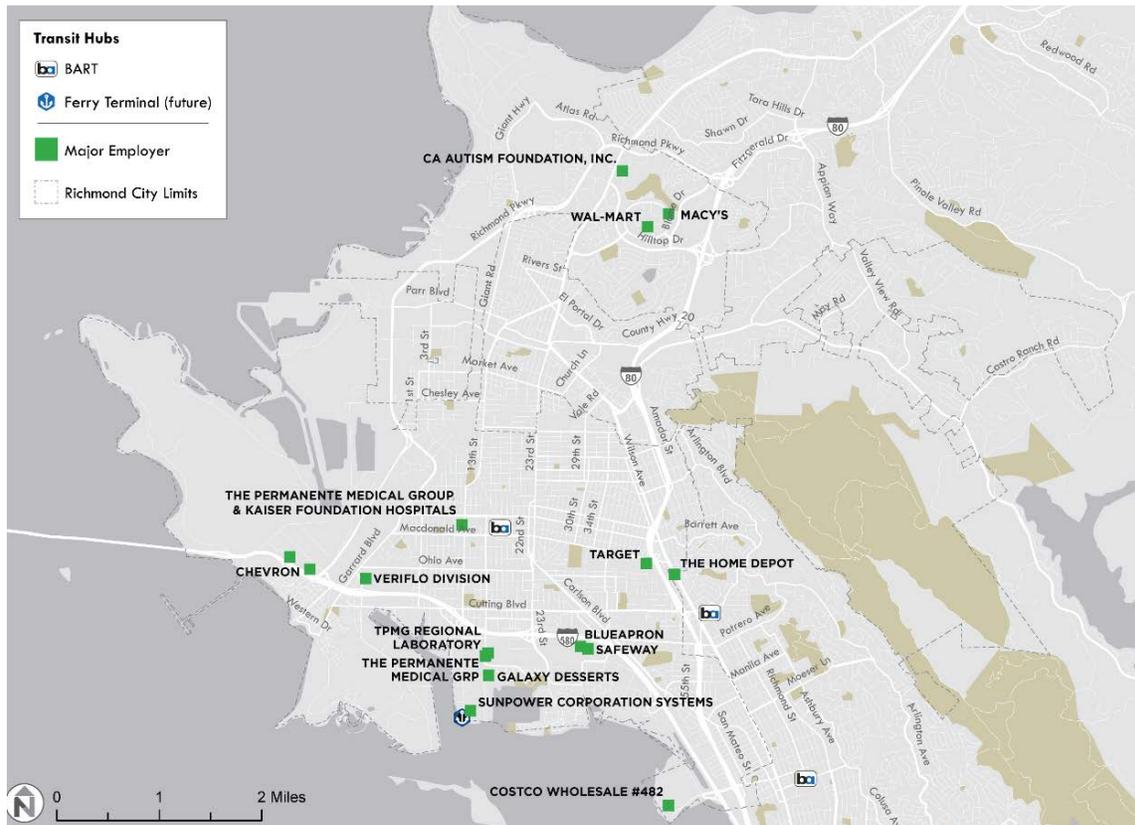
RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN EXISTING CONDITIONS AND NEEDS ASSESSMENT

City of Richmond

Richmond BART and the Ferry Terminal. The proximity of employers to these stations reinforce the stations' roles as mobility hubs; improving the first mile/last mile connections between these hubs and these employment locations will be a critical element of enhancing access to other key destinations, services, and opportunities through more sustainable modes.

In recognition of their role in generating trips, there are several other activity centers in addition to these major employers. These centers are typically smaller commercial areas along corridors such as 13th and 23rd Streets and at major intersections such as Macdonald Avenue and San Pablo Avenue. These activity centers connect residents and businesses with amenities and service and generally have a lower level of transit service. For instance, the 23rd Street corridor is composed of a variety of small, local retail and commercial services, with residential areas and several schools a block or two off the main thoroughfare. AC Transit's line 74 passes through approximately every 30 minutes, providing connections farther afield to Richmond BART and Contra Costa College. These activity centers also generate trips whose connections to the mobility hubs should be considered within the larger first mile/last mile connectivity.

Figure 16 Major Employers in Richmond



BICYCLE AND PEDESTRIAN DEMAND

Accessing transit via non-auto modes is a crucial part of first mile/last mile connectivity. One's mode choice is often the result of a combination of factors shaped by one's individual circumstances and preferences as well as the larger geographic and social context. For instance, although an individual may live within walking distance of his workplace, hilly topography and a lack of safe or direct walking paths may sway him towards driving rather than walking. Similarly,

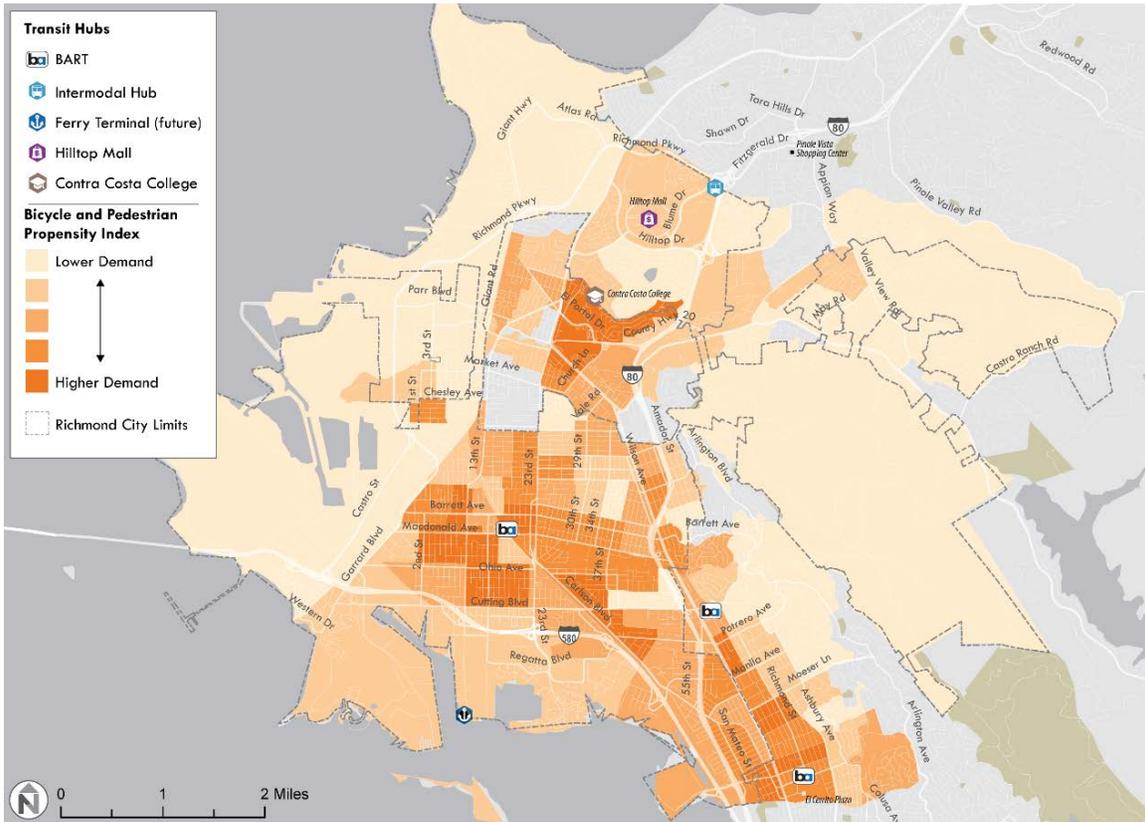
**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

income level and physical ability may influence one’s choice to use transit or bicycling as their primary means of transportation.

The following map estimates the propensity of bicycling and walking within Richmond; this index is a weighted calculation based on a variety of inputs, including population and employment density, percentage of youth population, percentage of households with no vehicle, household income, and the bicycle/pedestrian mode share. These characteristics – higher densities, a higher proportion of youth, limited vehicle access, and lower incomes – point to a higher propensity for bicycling and walking. This scale is based on characteristics and thresholds that are unique to Richmond.

Figure 17 Bicycle and Pedestrian Propensity Index (Estimated Demand)



In general, central Richmond in the downtown area shows the highest estimated demand for bicycling and walking; this propensity can be further leveraged by the relatively flat topography and consistent street grid, which both help make walking and biking more appealing.

Recent survey data from BART riders and their transportation mode choice for accessing stations show a trend toward increased bicycling and walking. However, fewer BART riders have been arriving to these stations by other forms of transit, and more are being dropped off, which may be indicative of the growing use of ride-hailing service such as Uber and Lyft to supplement existing transit service.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 18 Mode of Access to Home Origin Stations (2008-2015)

HOME ORIGIN STATIONS	Walk	Bicycle	Bus, train, or other transit	Drive alone / carpool	Drop off / taxi / other
El Cerrito del Norte (2008)	13%	3%	22%	51%	10%
El Cerrito del Norte (2015)	25%	4%	13%	32%	26%
Richmond (2008)	24%	2%	21%	38%	15%
Richmond (2015)	35%	5%	8%	26%	25%

System-wide, the median distance from BART passengers’ homes to their respective origin stations decreased from 1.39 miles in 2008 to 1.19 miles in 2015. For riders who use Richmond BART Station and El Cerrito del Norte Station, the median distance travelled also decreased.³² This may also have contributed to the mode shift towards walking and biking, as a mile is often an acceptable distance for a casual bicyclist and can be a comfortable 20-minute walk depending on the pedestrian environment.

Figure 19 Median Distance Travelled from Home Origins to Home BART Station (2008-2015)

HOME ORIGIN STATIONS	Median Distance (All Modes)
El Cerrito del Norte (2008)	4.02
El Cerrito del Norte (2015)	1.39
Richmond (2008)	1.62
Richmond (2015)	1.06

Out of the surveyed BART riders who are bicycling to these stations, the majority of them often choose to bring their bike onto the train rather than park it at the station, indicating that they might be using their bicycle on the other end of their transit trip as well, and possibly a larger concern about possible bike theft. Out of those riding their bicycles to the Richmond BART station, approximately 75% chose to bring their bicycles onto trains, with 25% parking their bicycles at the station. Out of those people riding bicycles to the El Cerrito del Norte BART station, approximately 60% chose to bring their bike onto the train with 40% parking at the station.

PEDESTRIAN AND BICYCLE ACCESS

This section focuses on the mobility hubs and the primary corridors used to access them via walking and biking, presenting an overview of the station’s context within the transportation network from a pedestrian and bicyclist perspective and identifying the opportunities and barriers of safe walkability and bikeability along each of the corridors – including safety, accessibility, amenities, and aesthetics.

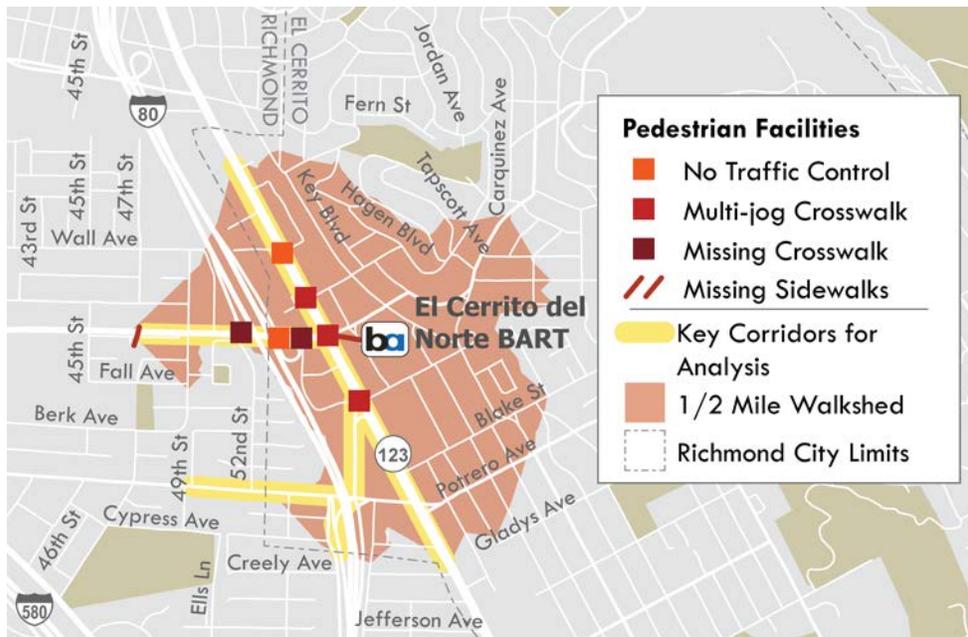
³² The dramatic decrease in median home distance for those traveling to El Cerrito del Norte BART Station is likely due to a combination of station-area development and survey methods. The 2008 survey only captured the median distance for those respondents who arrived by car and transit; people walking and biking are more likely to have traveled shorter distances. The 2015 survey was able to capture these numbers for people arriving by all modes.

The corridors profiled in these sections were considered the most intuitive and direct paths to and from the hub. Their determination was influenced by reviewing access corridors in existing plans, the design of connecting transit lines and routes, and placement of existing bike facilities, and observing in the field of people’s movements and commercial activity,

Pedestrian Access Analysis

El Cerrito del Norte BART Station

Figure 20 Pedestrian Barriers, Facilities, and Walkshed at El Cerrito del Norte BART Station



El Cerrito del Norte Station is accessible from Knott Avenue, Cutting Boulevard, and Hill Street, with a center axis pedestrian entrance from San Pablo Avenue. No main entry exists and the station does not offer a sense of place or visual cue to indicate arriving at a destination. The setback of the station from San Pablo Avenue requires navigating through parking lots and side streets to access the BART station entrance. The pedestrian entrance splits the parking lot and requires negotiating interactions with parking, loading, and bus queuing.

There is a sensor activated flashing beacon alerting drivers to pedestrians crossing Cutting Avenue to the north of the station in order to protect pedestrians from the amount of traffic entering and exiting both the BART station and the surrounding parking facilities. The crosswalks further west on Cutting Boulevard—at San Pablo Avenue—are controlled by accessible pedestrian signals.

With as many as seven travel lanes, San Pablo Avenue is both a major vehicle access corridor as well as a barrier for pedestrians and bicyclists approaching and leaving the setback BART station. The sidewalks do benefit from substantial width, some wayfinding signage (from the City of El Cerrito), and occasional medians and pedestrian islands to reduce crossing distances, but the experience is inconsistent by the present of heaved sidewalks, and limited trees and shading. For people trying to access the station from the south, the unconventional intersection of Hill Street, Eastshore Boulevard, and San Pablo Avenue necessitates multiple street crossings, making it a

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

challenge to cross. This is partially due to the lack of a crosswalk on the northern side of the intersection (pictured in Figure 21).

Figure 21 Intersection of Hill Street, Eastshore Boulevard, and San Pablo Avenue



As an improvement over San Pablo Avenue, Eastshore Boulevard offers pedestrian protections via parallel parking and tree lines on the curb side of the street. However, Eastshore lacks pedestrian-scaled lighting, and has a significantly narrower sidewalk width than San Pablo, as it never exceeds six feet wide.

From a pedestrian standpoint, however, there are minimal attributes scaled to the walking experience between El Cerrito and Richmond, albeit compromised by the presence of Interstate 80 overpasses. The on- and off-ramps to the freeway are substantial barriers to pedestrian travel along Cutting Boulevard. At the far west end of Cutting Boulevard away from the BART station, there are pedestrian protections from traffic in the form of residential setbacks and frontage roads, which, in spite of the presence of pedestrian-scale lighting are not necessarily a direct path of travel nor considered a best practice for complete streets design.

At the Potrero Avenue overpass, lighting is relatively minimal and focused only over the street, similar to the Cutting Boulevard overpass. Of pedestrian amenities, there are sidewalks alongside occasional street trees and setbacks, but the sidewalks are narrow (averaging 3.5 to 4 feet). At intersections, there are missing crosswalk stripes and curb ramps, curtailing the corridor's accessibility and rendering a strong need for upkeep.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Richmond Ferry Terminal

Figure 22 Pedestrian Barriers, Facilities, and Walkshed at Ferry Terminal



In the immediate future Ferry Terminal area, there have been recent investments in the beautification of the streets, sufficiently wide sidewalks, and accessibility upgrades at the corners and crossings at intersections particularly closer to the terminal.

Harbour Way and Marina Way South are both two-way streets with substantial width for vehicles, buses, sidewalks, mature trees and plantings. The width of these streets along with the distance of crossing the freeway itself make for an undesirable pedestrian experience at points along the Harbour and Marina corridors. Most of the intersections in the Ferry Terminal area are unsignalized, but the blocks surrounding the freeway do have signals.

South of the freeway crossing, Marina Way South performs relatively better in terms of accessibility and amenities. The street recently underwent some sidewalk and crossing improvements, including widening, restriping, decorative treatments, curb ramps, and reduced crossing distances due to medians.

Harbour Way also has some good safety elements, such as pedestrian lighting. Like Marina Way, however, the sidewalks experience some heaving and narrowing to less than three feet wide at key points, which compromises overall accessibility, especially just north of Hall Avenue continuing to Cutting Boulevard.

Hall Avenue, which is the southernmost connection between the Harbour and Marina Ways South, is a generally poor pedestrian environment as it is hampered by empty lots, missing sidewalks, and virtually no street lighting.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 23 Missing Crosswalks at Hall Avenue and Marina Way South



With attributes that increase the visibility and accessibility of pedestrians (substantial lighting, curb ramps, striped crosswalks investments in public art, a multi-use trail running parallel to the northern sidewalk, and a consistent median), Regatta Boulevard is a relatively more desirable street to walk down to reach the future Ferry Terminal. However, there are still accessibility and aesthetic issues to overcome. There are significant stretches of sidewalk missing along the southern edge of the street. Regatta Boulevard's proximity to train tracks and vacant lots may increase the perception that it is unsafe to walk around at night, and the lighting is generally oriented towards vehicles and not pedestrians. Like all other streets in the Ferry Terminal area, the railroad crossings along sidewalks are not ADA accessible.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Richmond BART Station

Figure 24 Pedestrian Barriers, Facilities, and Walkshed at Richmond BART Station



Placed in the center of a perpendicular street grid with a relatively high density of multiple land uses and intersections, Richmond BART Station has the potential for a highly walkable experience.

Although Nevin Avenue is called a bicycle boulevard, the aesthetic benefits and protections pedestrians along this corridor are relatively new. They include curb extensions (“bulbouts”) and clear landscaping at intersections, shared pavement markings, wayfinding signage, pedestrian-scale lighting – all of which contribute to the visibility of people walking and biking.

Extending from the western station entrance is Nevin Plaza, a multi-use path full of benches and trees. At 15th Street, Nevin Plaza aligns with a narrow stretch of roadway with sidewalks, trees, and extended planters as traffic calming devices. On the west side of the station, Nevin Avenue is a local street primarily serving the transit-oriented development between the station and Marina Way. Although the facility is relatively new, crosswalks are faded and curb ramps lack detectable warning systems.

Corridors connecting with Marina Way near the station provide diverging pedestrian experiences. Crossing Marina Way and continuing along Nevin Avenue, pedestrians can utilize an additional block-length multi-use path and another relatively narrow and calm stretch of roadway. Marina Way, meanwhile, provides a minimal-- or even interrupted-- walking experience. One block to the north, there is no crosswalk on the eastern side of Marina Way’s intersection with Barrett Avenue. To the south, the sidewalks on Marina Way are as narrow as 3.5 feet at points, potentially rendering them barely accessible as paths of travel and completely inaccessible as bus stops. The amount of fencing along property lines and lighting towards vehicles only – along both Marina Way and Harbour Way to the west - also makes for an aesthetically unpleasant and invisible experience for pedestrians. However, once Marina Way intersects with Macdonald, the pavement is in better condition, and standard marked crosswalks with accessible curb ramps with detectable warning panels are present again.

Because a railroad overpass bisects Macdonald Avenue and Barrett Avenue, the experience of walking along the sidewalk is similar to walking underneath an interstate highway overpass, with

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

limited lighting and visibility, leading to concerns about personal safety. In the case of Macdonald Avenue, pedestrians must walk behind a barrier along the north side of the street; there is no alternative, and an individual must commit to walking all the way to the next intersection without stopping. Barrett Avenue pedestrians must walk along the north side as well, but they are relatively more visible as there is no physical barrier (and the bicycle lane provides a buffer from traffic).

Figure 25 Pedestrian Barrier at Macdonald Avenue and 20th Street



Bissell Avenue, an alternative east-west access corridor, is a street more suitably scaled for pedestrians with two travel lanes and two parking lanes, but pedestrian infrastructure is inconsistent. Sidewalk widths range between four and 12 feet, and all lighting is scaled to vehicles. Although there are few crosswalk markings and accessible curb ramps at corners along Bissell, the “zebra” crosswalk at 13th Street is an example of high-visibility crossing.

Bicycle Access Analysis

El Cerrito del Norte BART Station

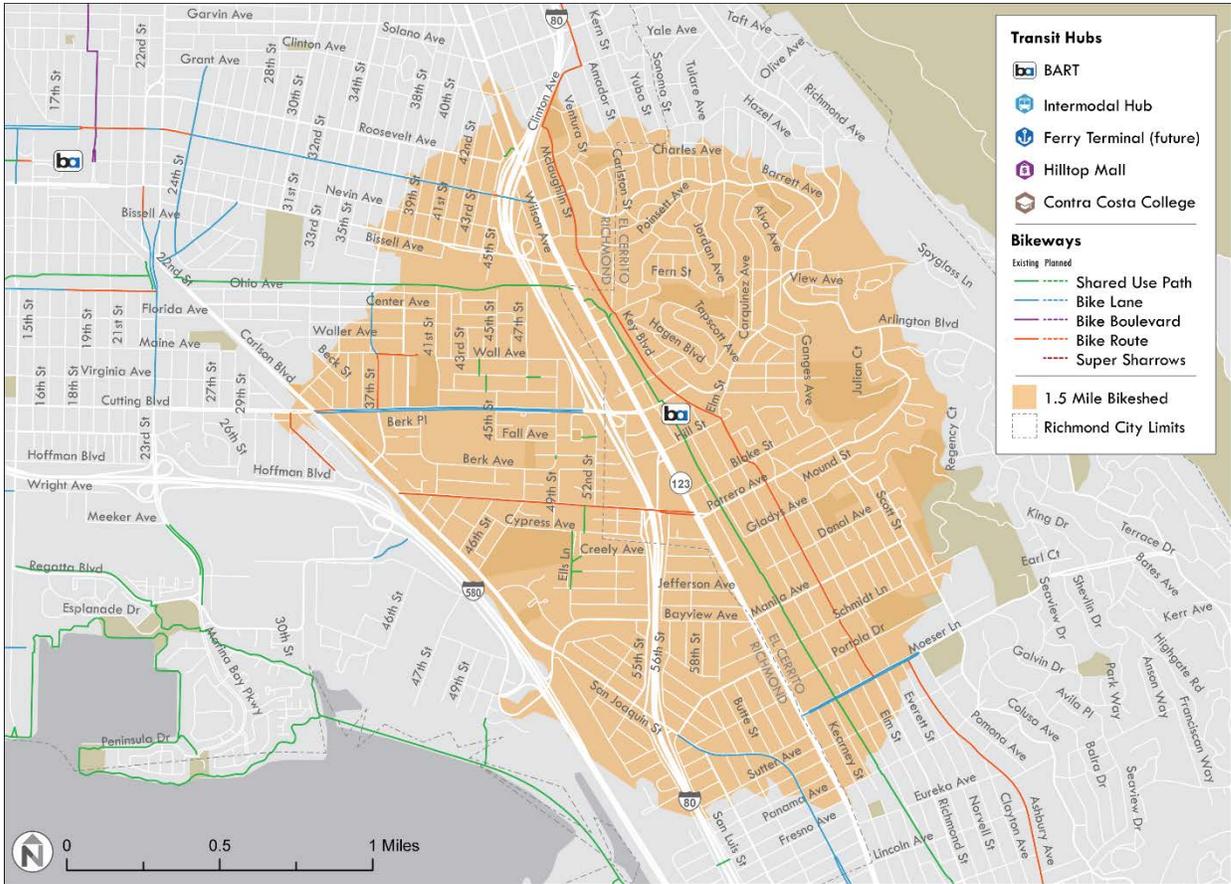
Biking access to El Cerrito del Norte BART Station is generally positive, with the station situated directly on the Ohlone Greenway. Running parallel to the BART right-of-way, the Greenway is a visible route. There is room for improvement, however, as the paving along the immediate Greenway has become warped. Additionally, a clearly marked, protected, and signed connection

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

to the Richmond Gateway still does not exist, meaning there is a major 250 foot gap in the bicycle network around del Norte.³³

Figure 26 Bike Facilities and Bikeshed around El Cerrito del Norte BART Station



All of the remaining facilities accessing the El Cerrito del Norte BART station are on-street with, at most, with pavement markings for all buffers and demarcations between the legal bike lane and the traffic (Class II protections).

³³ At the time of writing, the connection between the Richmond and Ohlone Greenways was under construction. Its design was not available for assessment.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 27 Bicycle Rider on Sidewalk along Cutting Boulevard (at I-80 On-Ramp)



There is no bicycle striping or signage along the San Pablo Avenue corridor, with the exception of loop detectors at the front of the decorative intersection at Cutting Boulevard and San Pablo Avenue. Instead, Eastshore Boulevard is the only other north-south corridor in the del Norte station area where there is an on-street bicycle lane. Of all the on-street bicycle facilities accessing the station, the combination of Eastshore Boulevard and Hill Street is a notable access route in terms of visibility and potential conflicts from traffic. Even though the southbound segment of Eastshore's bike lane must run alongside a lane of on-street parking, the bike lane is consistent with no gaps, with the amount of space for bicyclists is relatively generous (seven to eight feet).

Cutting Boulevard also offers some safety for bicyclists, as it partially has a buffered bicycle lane. Unfortunately, there are situations where a biker leaving the station may not be visible to drivers, even in spite of the current Class II facilities. The lighting along the underpass is minimal and the bike lane goes missing when crossing the I-580 and I-80 on-ramps along Cutting Boulevard and Potrero Avenue, only to re-emerge east of the freeway.

Similar to El Cerrito Plaza BART station, the lack of continuity in facility design may be attributed in part to the station area crossing as many as four jurisdictions (BART, Caltrans, City of El Cerrito, and the City of Richmond) in a half-miles' journey. Unlike the El Cerrito Plaza BART area, del Norte is more distant from the Bay Trail (approximately two miles compared to one mile), thus making crossing the I-80 right-of-way a greater priority than crossing I-580 for accessing this station from the western bicycle network.

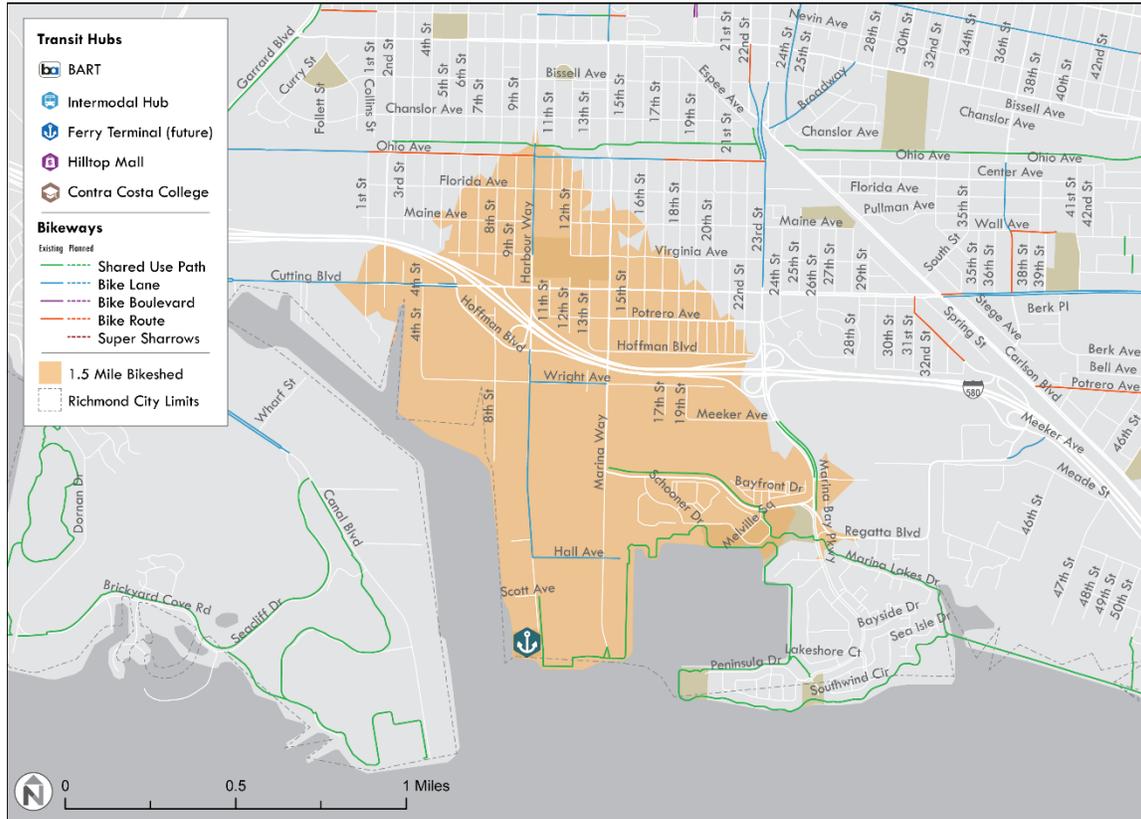
**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Richmond Ferry Terminal

The San Francisco Bay Trail provides an intuitive connection for people riding bikes to and from the future Ferry Terminal, especially if they are coming from the shoreline's several residential subdivisions.

Figure 28 Bike Facilities and Bikeshed around the Future Richmond Ferry Terminal



There are many vestiges of the industrial land uses that remain in the area, including vacant lots, freeway overpasses, at-grade railroad crossings, missing sidewalks, and limited lighting, which compromise the perception of safety along such streets, and do not contribute to a consistent bicycling and walking experience between central Richmond and the waterfront.

As the Bay Trail crosses around the historic Ford Assembly Building on its southernmost shoreline edge, there are remaining railroad tracks, occasional pedestrian crowding and other obstructions forcing a bicyclist to slow down. As an alternative east-west connection, Hall Avenue and Regatta Boulevard have substantial width for bicycle accommodations, but although Hall Avenue is signed as a Bay Trail alternative, it lacks the full protections of a multi-use path similar to what is along Regatta Boulevard.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 29 Markings and Obstructions along Bay Trail Outside Ford Building



The connective corridor to the Ferry Terminal from points north (along the couplet of Harbor Way and Marina Way South) is the focus of both the General Plan and Wellness Trail Plan to complete a link to downtown Richmond’s bicycle network. However, the roads both share a major barrier to bicycles and pedestrians: Interstate 580. Along the freeway overpasses lack any buffers or protections (save for a sidewalk). Bikers may have more visibility along Harbour Way (which includes a Class II bicycle facility for stretches before and after the overpass), but the disappearance of a bicycle facility at the overpass, paired with conflict points at off-ramps and on-ramps, negatively impact bicycle safety.

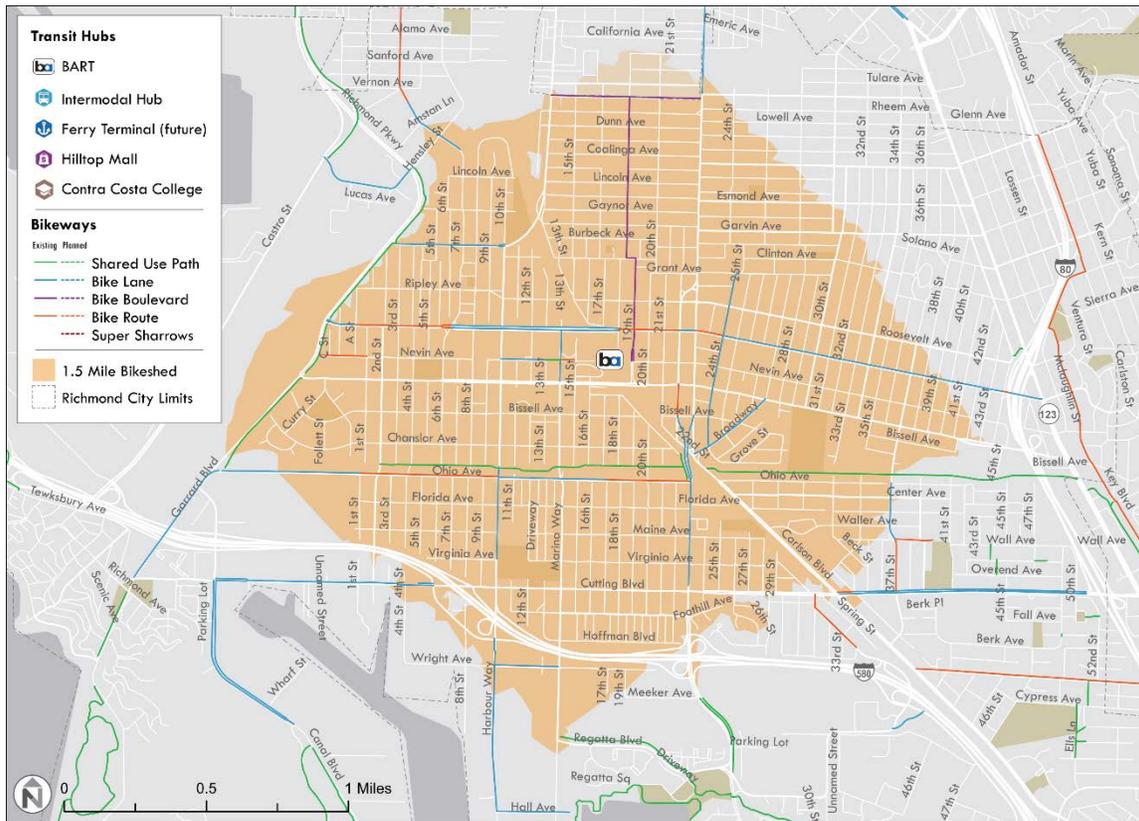
Richmond BART Station

As discussed in the earlier pedestrian access section, Nevin Avenue is the most prominent non-motorized accommodation outside Richmond BART Station as a bike boulevard connecting the station’s eastern edge to the busy commercial and civic corridors along 22nd and 23rd Streets. The facility includes narrowed intersections to help calm vehicular traffic, visible and attractive directional signage for bicycles, and regulations forcing intersecting traffic to yield to bicycles along Nevin Avenue.

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN EXISTING CONDITIONS AND NEEDS ASSESSMENT

City of Richmond

Figure 30 Bike Facilities and Bikedshed around Richmond BART Station



Outside of Nevin Avenue, subtle barriers exist at critical intersections and roads surrounding Richmond BART Station for bicyclists. There is generally little directional signage for people riding bicycles, nor are there pavement markings directing bicycles where to cross or wait at lights.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 31 Nevin Avenue and 23rd Street



Beyond the BART station property line, there are another two major east-west corridors – Macdonald Avenue and Barrett Avenue. As they are the next closest streets to the grade-separated platforms of Richmond BART Station, Macdonald and Barrett Avenues are bisected by the BART and railroad rights-of-way. The overpass limits the visibility of bicycles on the street, but the lack of physical protections like flexible pylons or curbs and audibly accelerating vehicles going uphill from the overpass may encourage bicycles to ride on the sidewalk or avoid the corridor altogether.

On either side of the rail overpass, Macdonald Avenue is emblematic of Richmond’s main commercial street, with decent sidewalks and good visibility of crossing pedestrians. This is especially noticeable on the west side, where streetscaping and paving improvements are relatively recent.

TRANSIT AND SHUTTLE ACCESS

As discussed in Chapter 2, transit service throughout Richmond varies from regional rail to rapid bus service to infrequent local shuttle connections serving specific destinations. The following maps present the general transit service level surrounding the mobility hubs and other areas of connectivity, especially within a half-mile and 1.5-mile travel shed, which roughly corresponds to a 10 minute and 30 minute walk respectively, or a three minute and 10 minute bike ride respectively.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

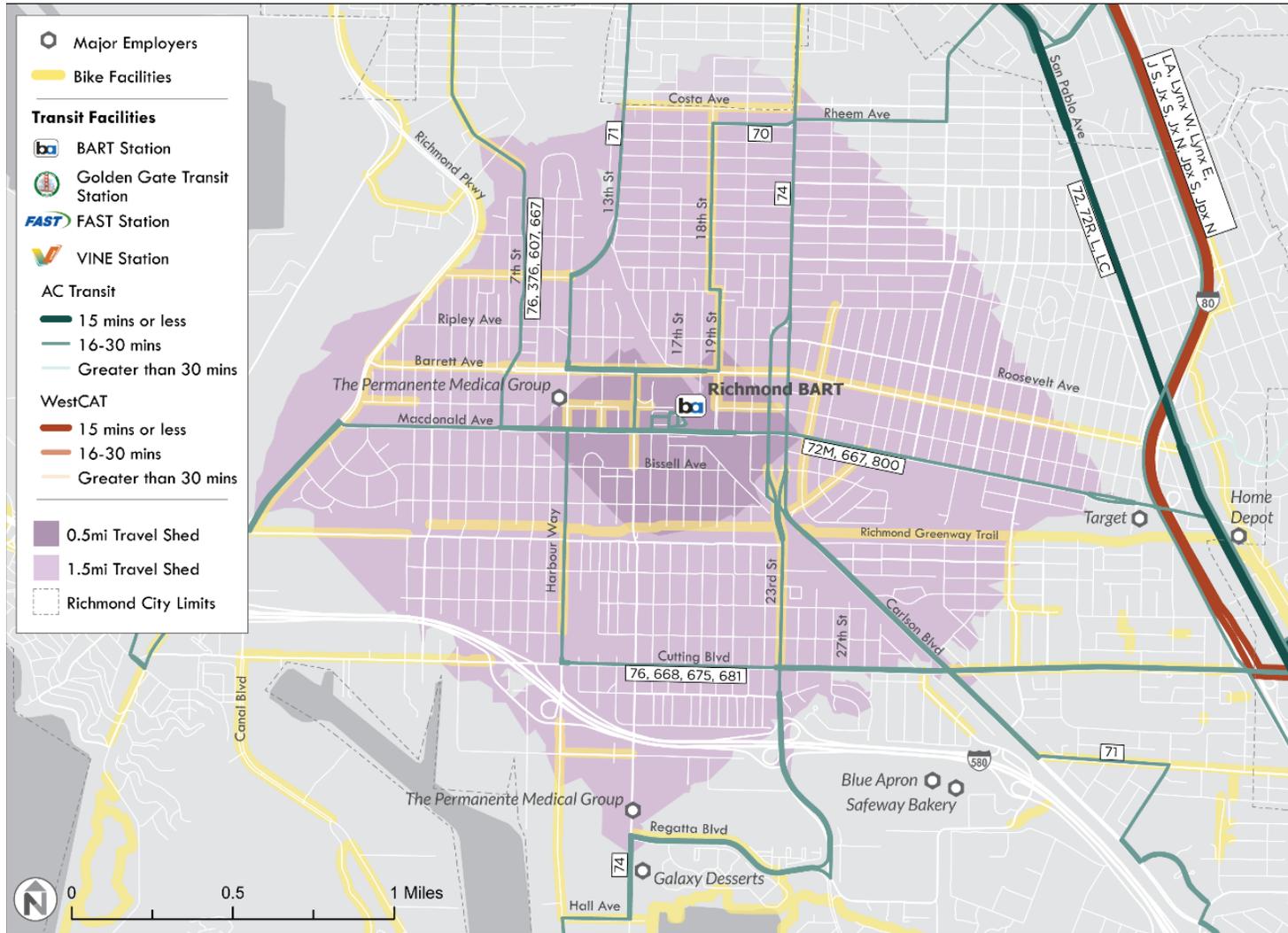
City of Richmond

As shown, Richmond and El Cerrito del Norte BART stations have the highest levels of transit service, with multiple local and regional transit systems and high frequency service. The transit service coverage spreads in multiple directions, establishing connections with nearby activity centers. Transit service is more infrequent and indirect near the RPTC/Hilltop Mall area and around the future Richmond Ferry Terminal. The relative lack of transit service will likely hinder the Ferry Terminal's development as a mobility hub, unless additional transportation options to access this location are developed.

Although the transit service near El Cerrito Plaza BART stations is both regional and local, the latter provides minimal access for Richmond, with only AC Transit line 71 penetrating central Richmond. Similarly, Contra Costa College's travel shed covers primarily San Pablo and barely reaches Richmond city limits, implying that the transit center itself is less likely to be a critical access point for Richmond.

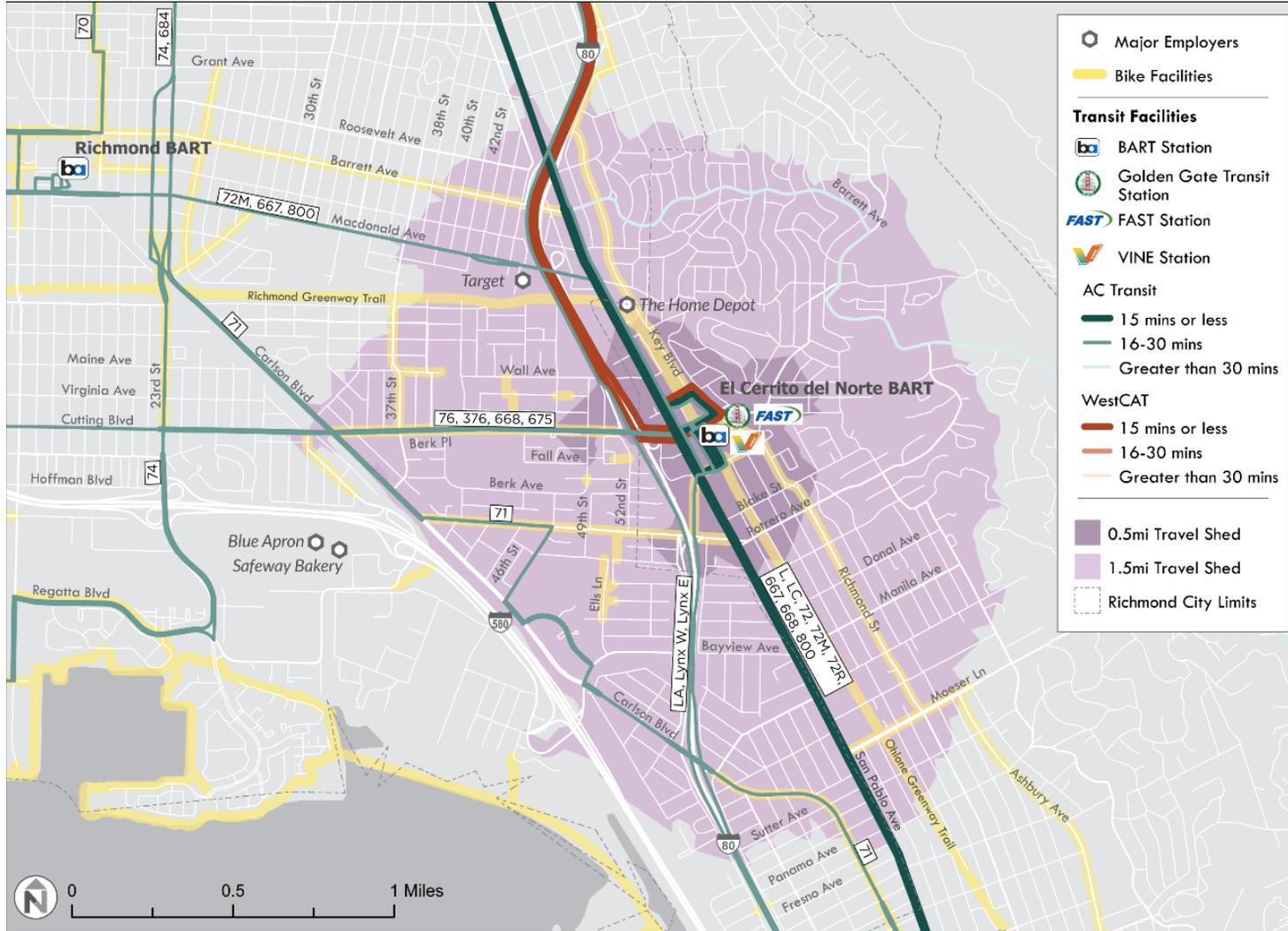
**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**
City of Richmond

Figure 32 Transit and Shuttle Access - Richmond BART Station



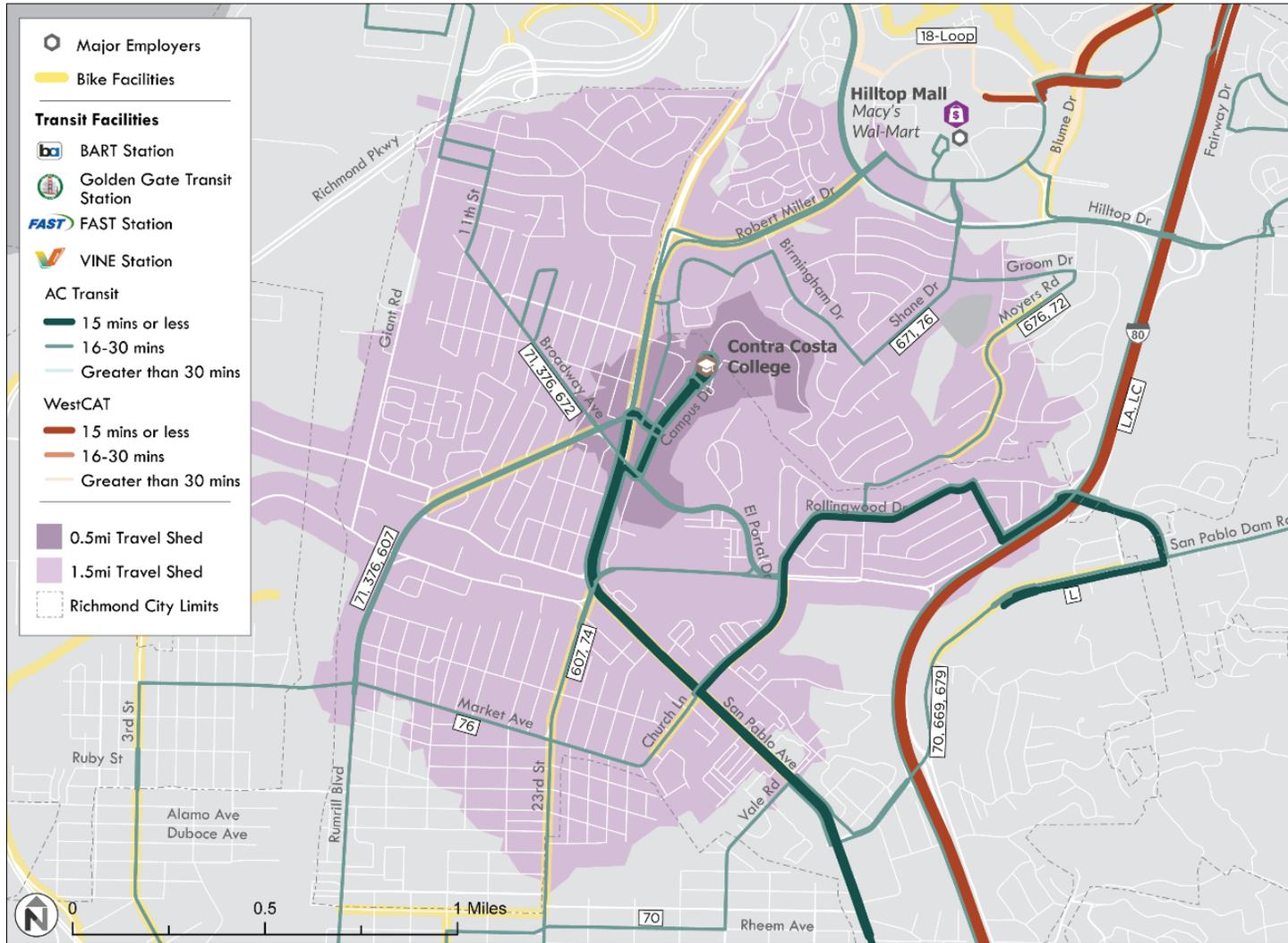
RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT
 City of Richmond

Figure 33 Transit and Shuttle Access - El Cerrito del Norte BART Station



RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT
 City of Richmond

Figure 34 Transit and Shuttle Access - Contra Costa College



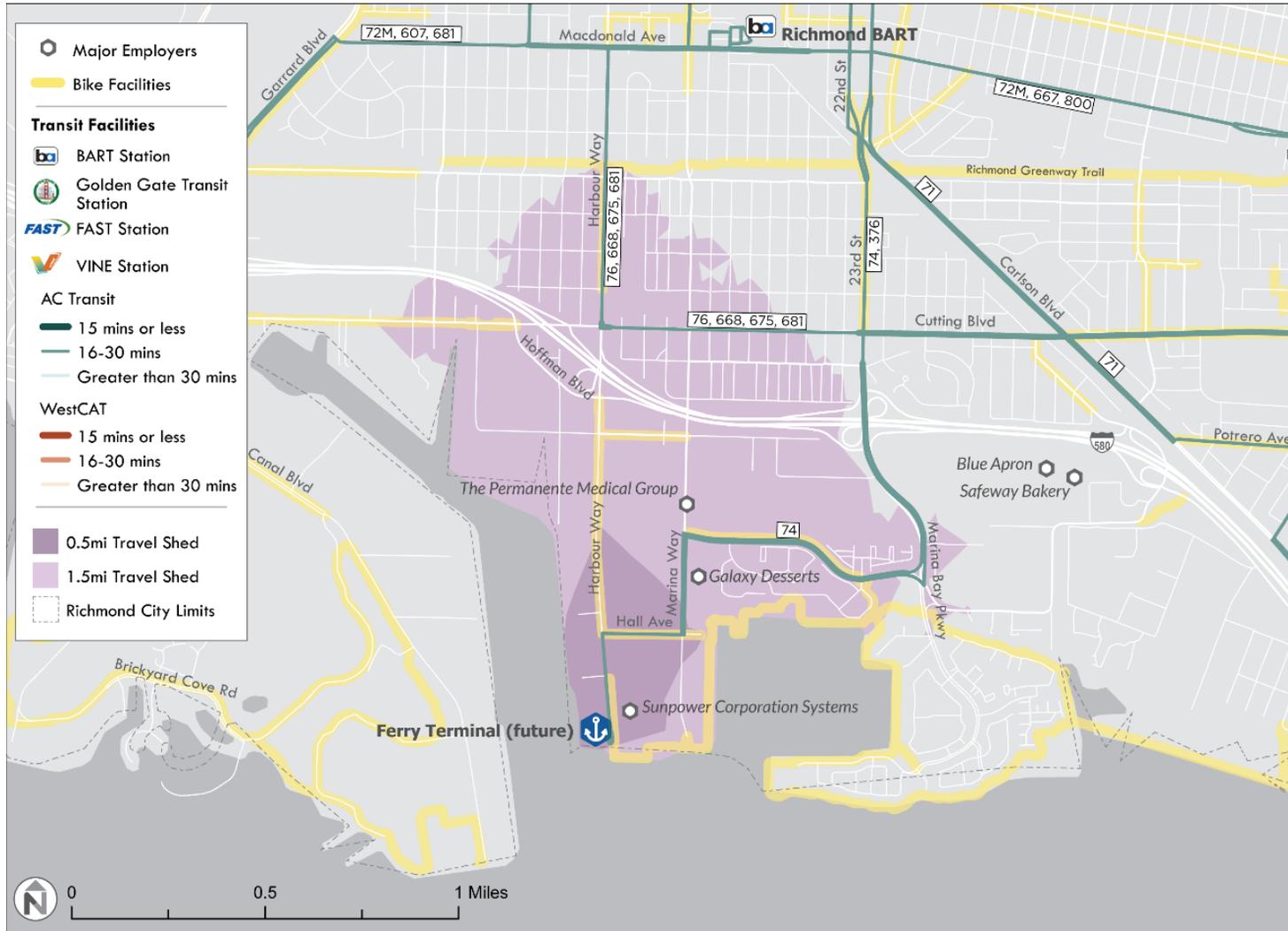
**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**
City of Richmond

Figure 35 Transit and Shuttle Access - El Cerrito Plaza BART



**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**
City of Richmond

Figure 36 Transit and Shuttle Access - Richmond Ferry Terminal (future)

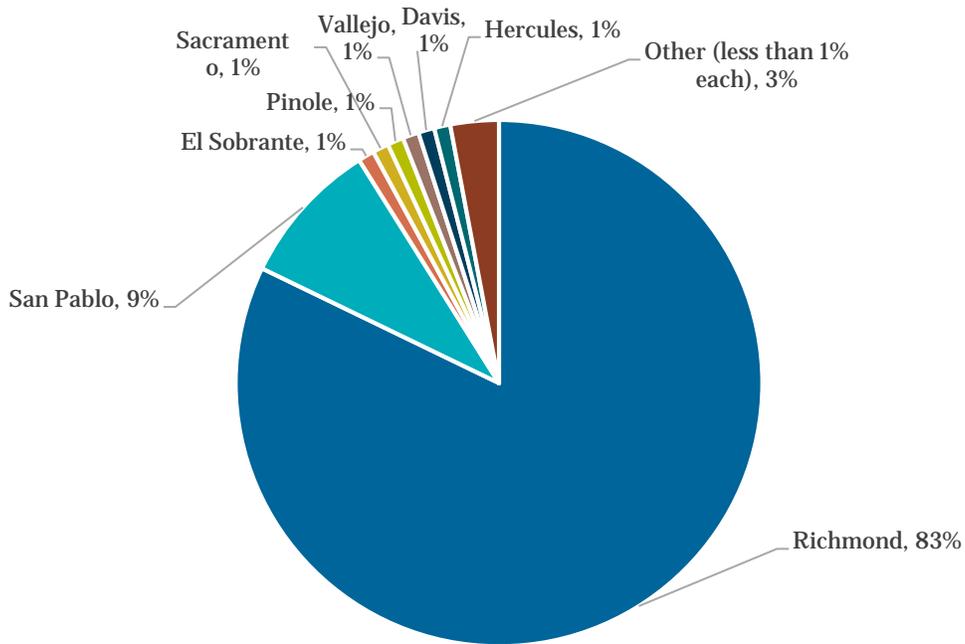


**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Moreover, a 2016 BART Station Profile Study found that an unequivocal majority of riders who start their BART journey at Richmond BART Station also hail from Richmond (Figure 35). While El Cerrito del Norte riders' home cities are more diffuse, a significant 28% are from Richmond (Figure 36). This differentiation continues the notion that El Cerrito del Norte fits a larger regional need (possibly due to its proximity to the freeway network) while Richmond BART Station is geographically oriented towards just the City of Richmond. For El Cerrito Plaza BART station, the percentage of riders who originate in Richmond is even less, supporting its designation as a secondary area of connectivity rather than a mobility hub for Richmond.

Figure 38 Home Origin Cities for Riders Who Start their BART Trips at Richmond BART Station (2015)



**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 39 Home Origin Cities for Riders Who Start their BART Trips at El Cerrito del Norte BART Station (2015)

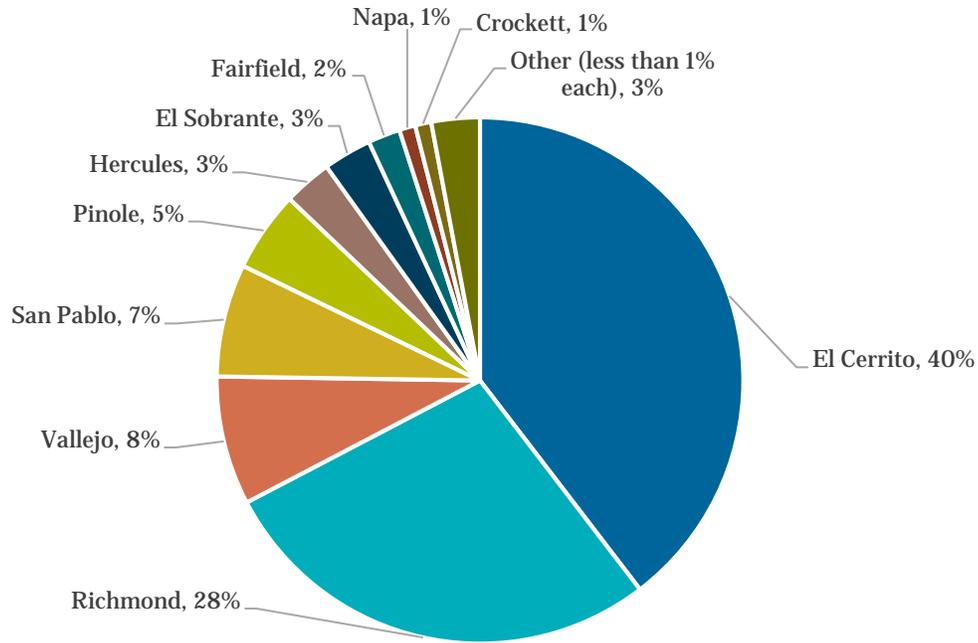
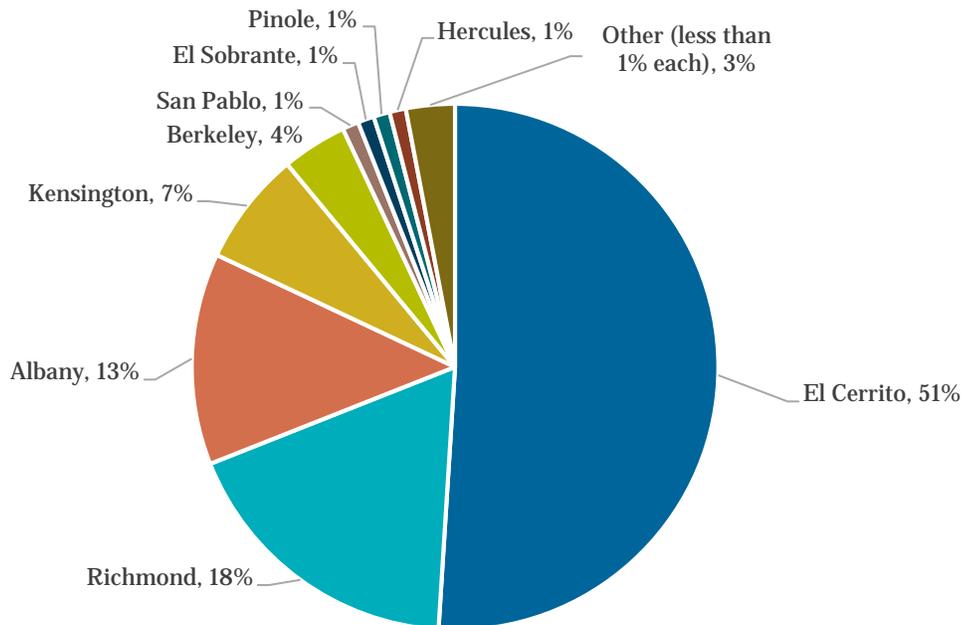


Figure 40 Home Origin Cities for Riders Who Start their BART Trips at El Cerrito Plaza BART Station (2015)



TRANSIT-ORIENTED DEVELOPMENT

This section evaluates the transit-oriented development (TOD) opportunities adjacent to major transit centers and gateways into Richmond. TOD environments are pedestrian-friendly, vibrant, and near one or more high-frequency transit options. All six study areas around the mobility hubs and areas of connectivity also relate to Activity Centers and Change Areas as designated by the Richmond General Plan. Activity Centers are intended for “pedestrian and transit-friendly community hubs characterized by mixed-use and higher-density development” and hold regional and/or local significance as transit hubs. Change Areas recognize areas within Richmond that are suitable for change, redevelopment, and focused infrastructure investment. Changes are expected in land use and development types due to many underutilized parcels, incompatible land uses, and/or a high potential for new development.

TOD opportunity sites are evaluated within the study areas based on the following criteria:

- **Transit Access:** The presence of one or more frequent, high-quality transit modes.
- **Physical Connectivity:** A high degree of physical connectivity within the vicinity of the transit station (i.e. the extent to which existing block and street grid pattern creates short block faces and perimeters that can provide quality environments for pedestrians and street frontage opportunities for a variety of uses).
- **Public Realm:** An active, interesting, and safe pedestrian environment contributes to a sense of place. Existing and planned physical public realm improvements can also potentially stimulate private investment.
- **Mix of Uses:** A high potential for new mixed-use development due to the presence of existing transit-supportive uses and activities can be leveraged to increase development intensity and/or transit ridership. A mix of uses also contributes to a sense of place, providing a destination to attract visitors and residents.
- **Presence of Developable Sites:** The presence of existing large and underutilized parcels or opportunities to consolidate properties to create parcels that can accommodate high-intensity development. The feasibility of developing underutilized parcels is dependent on ownership, zoning, and land use capacity. Large developable sites can serve as catalysts for future infill development.
- **Parking:** The ability to minimize automobile parking requirements and encourage alternative parking, demand management, and transit strategies minimizes the land dedicated for parking. This allows more intense and mixed-use development.

Details pertaining to the zoning of each station area are in Appendix B.

Policies and Plans Guiding Development

Guiding citywide and regional plans give direction on development location, type, and extent, including:

- **Richmond General Plan (2015):** Organizes city into activity centers, corridors, and gateways that prioritize areas for intensive development.
- **Plan Bay Area (2017):** Identifies Priority Development Areas (PDAs) suitable for transit-oriented infill development within Richmond including Central Richmond, South Richmond, and San Pablo Avenue.

- **Citywide Zoning Update (2016):** Updates zoning code to achieve the type of development projected in the General Plan and Plan Bay Area

Several area plans have been completed that analyze more specific development potential and consider public improvements in and around several these nodes including, the Livable Corridors Plan and Form-Based Code (Central Richmond and 23rd Street PDA) and Richmond Bay Specific Plan (South Richmond PDA). Other activity nodes have had limited focused efforts within the City of Richmond (e.g. Hilltop) but have been considered by other communities (e.g. San Pablo Avenue. PDA).

Other multimodal plans that can contribute to TOD potential include the WCC Transit Enhancement Strategic Plan's analysis of new transit improvements to the sub-region, including BRT, rail and BART extensions that can further TOD potential in the study areas. The South Richmond Transportation Connectivity Plan also studied multimodal connection improvements from within and between central and south Richmond.

Richmond BART Station

Existing Development

The mobility hub in central Richmond along the major east-west corridor of Macdonald Avenue is the site of an intermodal station including BART, Amtrak, and AC Transit transfers. This area is home to Kaiser (a major employer), City Hall, and several schools. In the General Plan, this area is designated as an historic district, a General Plan change area³⁴ with the land use of high-intensity mixed-use. According to the General Plan, Macdonald Avenue is expected to support community-oriented retail and services. This area has been studied in multiple refined studies, outside of the General Plan, including the Richmond Livable Corridors Plan, 23rd Street Corridor Plan, and the Macdonald Avenue Economic Revitalization Plan. This area has great TOD potential as it meets the criteria for development, discussed below.

TOD Criteria Assessment

- Designation as an activity center and change area in General Plan denotes that this area has a potential for high-density infill development to revitalize a pedestrian-oriented main street environment and maximize transit potential. The additional studies, especially the Livable Corridors Plan, refined the land uses into zones specific to expected development along the Macdonald corridor and 23rd Street corridor.
- Richmond BART Station is a hub for commuters and can provide access to local attractions for visitors.
- Designation as Macdonald Avenue Historic District contributes to a sense of place, providing a key attraction for potential residents and visitors, and additional funding streams for the revitalization of landmarked buildings.
- Wide variety of zoning designations consistent with the designated land uses, allows for a variety of development (from residential to commercial) to support a lively pedestrian-friendly environment. This includes residential neighborhoods designated within a 10-minute walk of a main street.

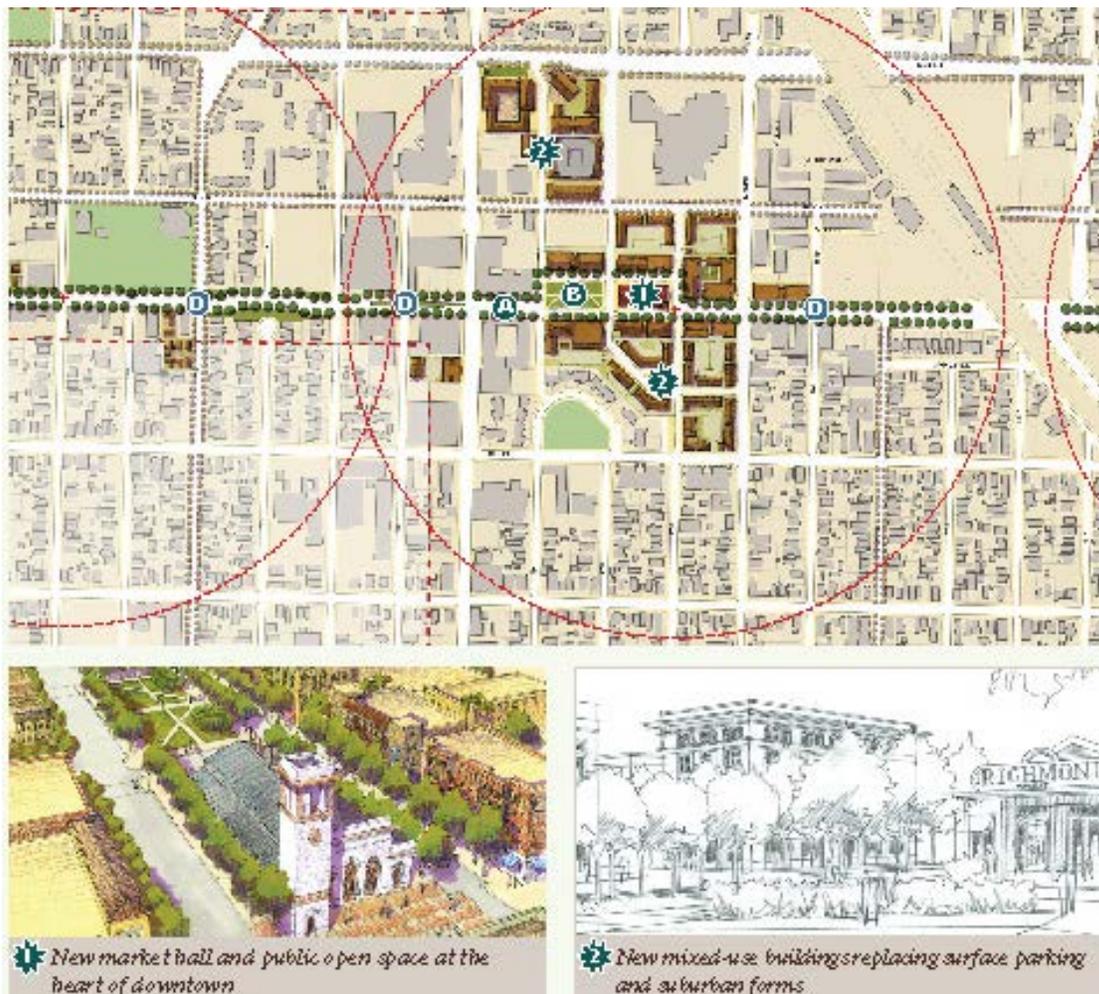
³⁴ Change Area 1 – Downtown/Macdonald Avenue.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

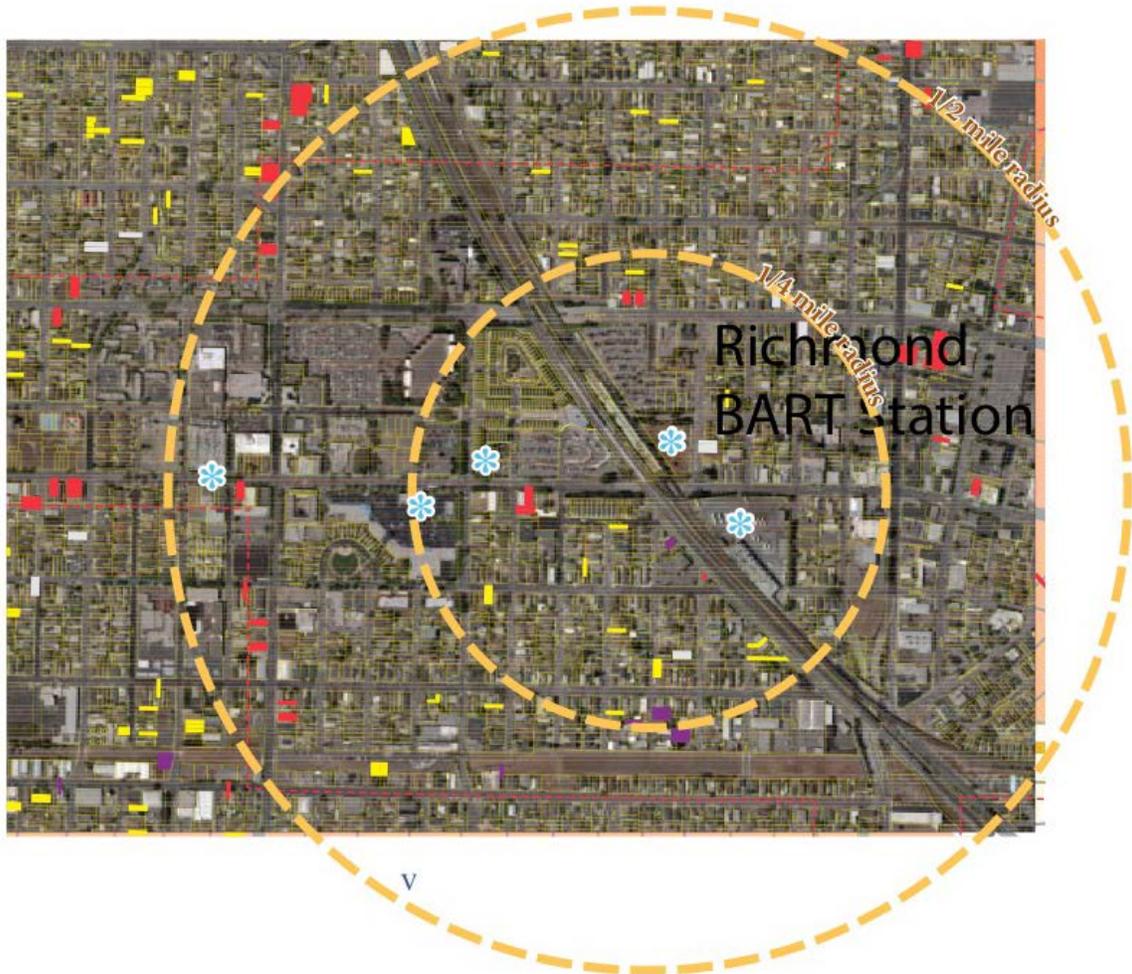
- An intact street grid with small block faces contributes to a high level of connectivity.
- Railway divides the west side of Macdonald Avenue from the eastern side. While there is auto connectivity across the rail lines from east to west along Macdonald Avenue, the underpass creates a barrier for pedestrians because of the perceived unfriendly streetscape.
- Much of the land immediately surrounding the intermodal station has been developed with relatively low-intensity residential development that is not easily redeveloped in the medium term. There may be a shortage of high quality infill sites that can accommodate higher-intensity infill close to the station.
- While there are at least 40 vacant residential sites and at least 20 vacant commercial sites within one mile of the transit station, these vacant sites are not consolidated into larger groups. This could be an opportunity for incremental development but a constraint for large-scale development, especially along Macdonald Avenue. The Richmond Livable Corridors plan identified larger opportunity sites adjacent to the transit center.

Figure 41 Vision Plan from Livable Corridors Plan for Macdonald Avenue



**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**
City of Richmond

Figure 42 Vacant Parcels and Opportunity Sites at Richmond BART Station



KEY

-  Industrial Vacant Parcel
-  Commercial Vacant Parcel
-  Residential Vacant Parcel
-  Unbuildable Residential Vacant Parcel
-  Opportunity Sites

Current Projects and Opportunity Sites

Key Opportunity Sites

- **Macdonald Avenue between 11th and 13th Streets:** Transform current auto-oriented retail with parking lots to pedestrian oriented mixed-use development including a market hall and 1,000 residential units to support retail. The introduction of a new market hall and public open space on the vacant lots currently owned by the City between 11th and 13th Streets will be a catalyst for future development in Richmond's downtown.
- **Macdonald Avenue opportunity sites west of Harbour Way:** Within a 10-minute walk of the station are 800 Macdonald Avenue, 810 Macdonald Avenue, 824 Macdonald Avenue, and 920 Macdonald Avenue. These sites are intended for commercial and office uses to support Kaiser, and were not studied in the Livable Corridors Plan.
- **Additional opportunity sites include:**
 - Transit parking lot and bus yards at 19th Street and Macdonald Avenue (Currently underutilized parcels which may potentially connect the fabric of central Richmond east of the railway with the help of pedestrian rail crossing improvements)
 - 1417 Macdonald Avenue (Site adjacent to BART intended for high-density mixed-use development)
 - 315 Harbour Way, 921 Macdonald Avenue, 909-911 Macdonald Avenue, 907 Macdonald Avenue (Planned for mixed-use development and potential offices serving Kaiser Medical Center).
 - 1800 Barrett Avenue
 - 12th Street & Cutting Boulevard
 - 111-113 Macdonald Avenue
 - Potential further study of BART station through a Station Area Plan³⁵

Development Projects in progress:

- **Nevin Homes Residential Project:** The proposed design replaces a parking lot with two six-story buildings with 289 apartment units.
- **Macdonald Avenue BART-to-19th Street Infrastructure and Façade Renovations:** Currently underway.
- **Carlson Crosstown Connection project:** Funded and going to construction fall 2017. Will connect El Cerrito Plaza BART station to Richmond BART Station
- **Richmond Wellness Trail:** This trail would provide health-themed improved bike facilities and connections within central Richmond and connecting to the south waterfront area.
- **Nevin Avenue Streetscape Improvements:** Streetscape improvements can spur and increase potential of incremental development.
- **Harbour Way Pedestrian/Bike Infrastructure Improvements:** Improvements beginning summer 2017.

³⁵ General Plan Action LU1.F

Richmond Ferry Terminal

Existing Development Summary

The Richmond Ferry Terminal is the site designated by the City as the future site for a WETA ferry landing. The City is currently working with WETA to develop the ferry terminal with the expected construction of the terminal in late 2017. Currently the allowed land uses include Business/Light Industrial, Port, and Activity Center, which includes high-intensity mixed uses. Key attractions at the Ferry Terminal include the Ford Building, Craneway Pavilion and the Rosie the Riveter National Historical Park. Past planning studies conducted at or adjacent to the future Ferry Terminal location include the Ford Building Rehabilitation and Redevelopment Project, Richmond Bay Specific Plan Area (2017), and Richmond Waterfront TOD Plan (2008). The Richmond Waterfront TOD Plan and the General Plan call for high-density mixed-use development adjacent to the terminal, as well as a transformation of the urban form to a pedestrian and transit-oriented neighborhood. This would include a diverse mix of uses transitioning new development from existing office and industrial, introducing new streets, limiting parking to strategic areas, and capitalizing on the identity of the Ford Peninsula.

TOD Criteria Assessment

- Zoning from the Richmond Bay Specific Plan allows for a range of housing intensities within a half-mile radius. CM-5 zoning designation allows for intense development along water frontage and a mix of uses. Light Industrial and Port uses remain a key use type in this area. Transitions between industrial and residential/retail are key to study.
- Past specific plan study conducted by WETA and the General Plan designation as activity node encourages further analysis/refinement on type of development expected. Expected development based on 2008 TOD Plan projects a mix development types including 1,550 residential units, and 251,000 square feet of office/retail.
- Tideline Ferry Service is currently operating as a private commuter ferry service.
- The adjacency to key historic and recreational facilities including Rosie the Riveter Park and Ford Terminal is a key attraction for potential residents and visitors.
- Connections between the Ferry Terminal to the Bay Trail and convenient I-80 freeway access connect to major employers and higher intensity living, mixed-use within south Richmond and to the surrounding area.
- Lack of access to other parts of Richmond because of street and bike/pedestrian facilities into downtown Richmond. Planned development and improved east-west connections from the Richmond Bay Specific Plan (RBSP), including the reconfigured railway crossing could help to connect additional riders to the Ferry Terminal. The current north-south barriers have been studied as part of the South Richmond Transportation Connectivity Plan (SRTCP) and RSBP, most significantly the realignment of the railway crossing.
- As a major thoroughfare in the Richmond Bay Plan Area, Regatta Boulevard will become a neighborhood-serving main street with residential uses over retail. Amenities provided will be accessed by residents north of the waterfront and the Marina Bay neighborhoods to the south.
- Increased housing development is key to success of the site as a TOD. This area is projected to provide 1,550 residential units as studied in the 2008 TOD Plan; however, the allowed density has since increased. The General Plan encourages the implementation

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

of the ferry terminal specific plan³⁶ to create high-intensity housing adjacent to the ferry terminal. The current zoning will allow development up to 125 dwelling units per acre. A few housing developments including the Anchor Cove residential/retail development have started to introduce residential units adjacent to waterfront. A key opportunity site, the contentious Richmond Riviera site, is currently planning low-density single-family development.

Figure 43 Vision Plan from Richmond Bay Specific Plan



³⁶ GP Action LU1.I

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 44 Vision Plan from Livable Corridors Plan for Ferry Terminal



Current Projects, Plans, and Opportunity Sites

Key Opportunity Sites:

- **Hall Avenue and Harbour Way South:** Vacant site currently zoned for Industrial Light and within the Industrial Buffer Zone, which could limit the uses allowed on this site to non-residential uses. In the 2008 TOD Plan, a grocery store and light industrial building were studied in the development concept plan as well as new streets to provide connectivity.
- **Westshore Marina:** Vacant site currently planned for the Richmond Riviera project. The 4.2-acre site is currently designed for 59 single family homes. This area may require extra study to meet the land use and zoning potential of up to 125 dwelling units per acre.
- **Additional Opportunity Sites and potential planning efforts:**
 - General Plan recommended a station area plan for high-density mixed-use environment adjacent to future Ferry Terminal.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- Two additional large vacant industrial sites to north of the ferry terminal and studied in the Richmond Bay Specific Plan as T5 Main Street environments.

Figure 45 Vacant Parcels and Opportunity Sites at Richmond Ferry Terminal



Development Projects in Progress:

- Richmond Riviera Site (single-family housing)
- Reconfigured railway crossing at Regatta Boulevard: In the short term, as studied in the Richmond Bay Specific Plan, Regatta Boulevard can be rerouted to allow for transit to run between the Ferry Terminal and the planned Richmond Bay Campus without crossing any rail tracks. The improved intersection of Regatta with Marina Way South offers an opportunity to create a gateway to the South Richmond and the waterfront from downtown.
- Grade-separated railway: In the long-term vision from the RBSP, South Richmond rail yards can be consolidated and the principal east-west rail line can be elevated on to a viaduct or set in an underground trench, greatly increasing connectivity to south Richmond.
- Marina Way Undergrounding: plans for the undergrounding of electrical lines for reinstalling streetlights.

Richmond Parkway Transit Center & Hilltop Mall

Existing Development Summary

This area is currently home to the Hilltop Mall and Richmond Parkway Transit Center (RPTC). The area surrounding Hilltop is mostly low-density residential. According to the General Plan, the Hilltop Mall area is expected to transform from an auto-oriented, low-intensity retail center to a high-intensity urban center encouraging higher-intensity office, retail and entertainment uses as well as higher-density residential. According to the General Plan, the RPTC area on either side of Blume Drive is expected to support a mix of regional retail, office and housing to transition to adjacent residential areas. This area has a range of land uses, the most significant being Activity Center: High-Intensity Mixed-Use (Major Activity Center), High-Intensity Mixed-Use

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

(Community Node), Regional Commercial Mixed-Use, and Residential Neighborhood: Low-Density Residential, Medium-Density Residential. The General Plan recommends further refined study of this area in the form of a Specific Plan because of the significant potential for change of uses and the issues of connectivity to the rest of Richmond. This site does not have as much potential for TOD compared to the mobility hubs due to lack of connectivity and pedestrian-oriented public realm.

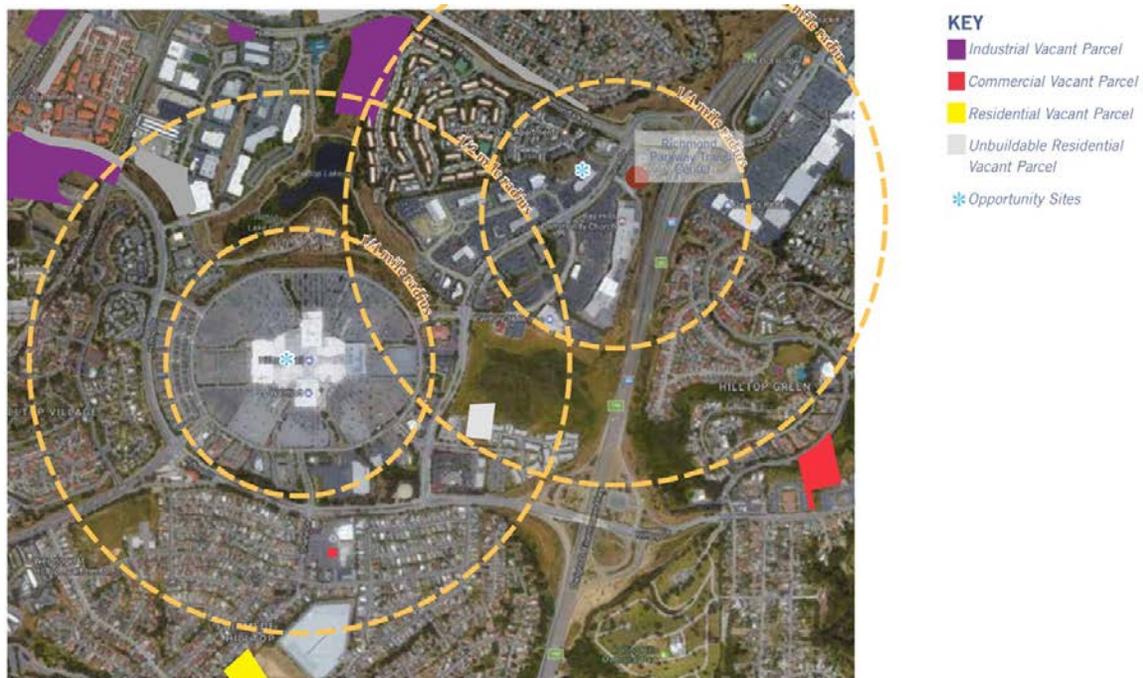
TOD Criteria Assessment

- The General Plan calls for relatively higher intensity, a mix of uses, and development that is pedestrian-friendly (i.e. entrances facing the street, streetscape improvements). The zoning designation for the Hilltop area is CM-5. Further study to create more specificity in the zoning designation is needed to prioritize development and create transitions to the adjacent existing low-density residential neighborhoods and commercial districts. The CR zoning designation at Richmond Parkway is associated with auto-oriented development which is not conducive to a TOD, which limits areas otherwise considered as prime opportunity sites adjacent to the transit station.
- The physical constraints to connectivity, especially the area's isolated location as well as large block sizes and lack of minor street connections contribute to the auto-oriented nature of this study area. While auto and transit connectivity are relatively strong, there is little to no pedestrian-friendly connections.
- The existing Hilltop Mall and the surface parking lot surrounding it are not as well utilized as they were in the past. This area could be an opportunity for redevelopment to introduce more intense residential development.
- There is a lack of vacant parcels within a mile radius of Hilltop Mall and the transit station. Currently there is one large vacant residential parcel, five unbuildable vacant residential parcels, and two vacant commercial parcels.
- Among the proposed options from the WCCTAC Transit Study includes a potential express bus route stopping at RPTC.
- The 2005 assessment of the RPTC projected the surrounding area as a prime retail opportunity due to its location along I-80, proximity to the Transit Center, and the increasing residential development adjacent to the site.
- Hilltop Lake provides an amenity to potential residential development, but the topography and size of the park contribute to connectivity issues.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 46 Vacant Parcels and Opportunity Sites at the RPTC/Hilltop Mall Areas



Current Projects, Plans, and Opportunity Sites

Key Opportunity Sites:

- **Hilltop Mall adjacent properties:** While there is a lack of defined vacant parcels, there are several underutilized parcels adjacent to Hilltop Mall. With the recent purchase of Hilltop Mall, there is a possibility of redeveloping not just the mall building, but also the surrounding parking lots. This could be a TOD potential with key connections to San Pablo Avenue and Richmond Parkway.
- **Richmond Parkway adjacent properties:** While the zoning is not conducive to TOD development, the 2005 study could provide insight on capitalizing on the underutilized parking lots for residential infill adjacent to the transit station.
- Potential further study of Hilltop area through a Specific Plan and a Station Area Plan.³⁷

Development Studies/Projects in Progress:

- Potential Transit Improvements currently being studied by WCCTAC:
 - Potential Bus Rapid Transit station would connect Hilltop Mall and Richmond Parkway north to Hercules and south to El Cerrito BART Stations and central Richmond.
 - Two potential BART extension alternatives with stops at Hilltop Mall and Richmond Parkway connecting north to Hercules and south to central Richmond and beyond.

³⁷ GP Action LU1.F and GP Action LU3.G

El Cerrito Del Norte BART Station

Existing Development Summary

El Cerrito Del Norte BART station is adjacent to the City of Richmond and is connected to central Richmond to the west by Cutting Boulevard. Cutting Boulevard is the longest east-west corridor connecting El Cerrito and Richmond; it and Carlson Boulevard are designated as Key Corridors in General Plan and are designated as a Gateways and Community Nodes within this study area. The General Plan encourages reuse of vacant and underutilized sites along this corridor. New taller development is desired at the gateway into the city. Several plans including Richmond Livable Corridors, Knox/Cutting Boulevard Plan, South Richmond Connectivity Plan. This gateway has high potential for TOD development because it is considered an important regional transit hub to reduce traffic along I-80 corridor. In addition to its regional significance, the improvement to bike/pedestrian facilities, intact existing street grid, number of underutilized parcels, and proximity to central Richmond create prime opportunity for development.

Development around the Del Norte BART Station within the City of El Cerrito is guided by the El Cerrito San Pablo Avenue Specific Plan (2015). The Specific Plan establishes a form-based land use designation (Transit-Oriented, High-Intensity Mixed Use – TOHIMU) for parcels around the station as well as guidance for mobility and civic space improvements.

TOD Criteria Assessment

- The General Plan calls for reuse of vacant and underutilized parcels. There are a number of small vacant parcels which create opportunities for incremental development including 15+ small vacant residential and 2+ small vacant commercial parcels within a one mile radius of BART station within Richmond.
- Wide variety of zoning designations and uses allows for a variety of development from residential to commercial to support a lively pedestrian-friendly environment. Residential neighborhoods are within a 10-minute walk of a main street.
- The connection between the BART station and the activity center is impeded by the I-580 and I-80 underpass.

Figure 47 Zoning Summary from San Pablo Avenue Specific Plan (2014)



**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- The Richmond Greenway, almost complete, creates a bike and pedestrian connection from central Richmond to El Cerrito's Ohlone Greenway with a connection to both El Cerrito BART Stations and beyond to the Bay Trail and Richmond Wellness Trail.
- The South Richmond Connectivity Plan proposes expanded transit service along Cutting Boulevard and streetscape improvements which will increase pedestrian traffic to retail along Cutting Boulevard and Central Avenue. These improvements will offer more attractive transit alternatives from El Cerrito to central Richmond and beyond.
- Most of the gateway connection to the BART station is outside of the City of Richmond boundary, which leaves the city with less control of the development of this key connection.

Opportunity Sites Identified by City:

- 12th Street and Cutting Boulevard (within 2.2 miles of station)

Development Studies/Projects in Progress:

- WCCTAC Transit Study is currently assessing Del Norte as a regional transit hub. Del Norte is considered as an important regional transportation hub for multimodal transfers and is seen as key to controlling congestion on the I-80 corridor as trips can transfer off of the freeway system to rail and bus before completing the trip into the inner core of the Bay Area. This is evident in the significantly higher BART ridership compared to the line's terminus in Richmond.
- El Cerrito del Norte is in the middle of a BART Station Modernization project that is looking to upgrade and modernize station function, safety, capacity, sustainability, appearance and improve connectivity to the Ohlone Greenway.
- The Richmond-Ohlone Greenway Gap Closure project is funded and under construction.
- The Carlson Crosstown Connection project is funded and going to construction in the fall of 2017. This project will connect El Cerrito Plaza BART station to Richmond Intermodal Station.

El Cerrito Plaza BART Station

Existing Development Summary

El Cerrito Plaza BART acts as a gateway into Richmond along Central Avenue. Central Avenue was identified as a Key Corridor in the South Richmond Connectivity Plan with the primary land uses including Key Corridor: Medium-Intensity Mixed-Use (Commercial Emphasis), Activity Center: Regional Commercial Mixed-Use, Residential Neighborhood: Low- Density Residential, and Community: Parks and Recreation.

Central Avenue is a key east-west corridor connecting El Cerrito to south Richmond across I-580 and I-80 via an underpass. The City of El Cerrito initiated the Central Avenue and Liberty Streetscape improvement project which includes improvements to bike and pedestrian facilities. This project will improve multimodal connections between the BART station to the Richmond Annex and the Richmond Bay Specific Plan Area. This area is adjacent to the Richmond Bay Specific Plan Area which expects a variety of uses to develop catalyzed by the connection to the waterfront and to the potential Bay Campus development.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Development around the El Cerrito Plaza BART Station within the City of El Cerrito is guided by the El Cerrito San Pablo Avenue Specific Plan (2015). The Specific Plan establishes a form-based land use designation (Transit-Oriented, High-Intensity Mixed Use – TOHIMU) for parcels around the station as well as guidance for mobility and civic space improvements.

TOD Criteria Assessment

- Streetscape improvements and multimodal connections from the efforts of the City of El Cerrito will provide better commuter access to the activity center.
- The area within one mile of the BART station is designated as a Gateway Activity Center in the Richmond General Plan. This designation signifies this area is intended to support pedestrian-friendly and transit friendly development.
- Large area of residential uses in neighborhoods adjacent to activity center to support the retail, commercial, and services.
- There are a number of vacant parcels within walking distance of BART including at least four small vacant residential parcels and at least six large vacant commercial parcels.
- The connection between the BART station and the activity center is impeded by the I-80 underpass. Most of the gateway connection to the BART station is outside of the City of Richmond boundary, which leaves the city with less control of the development of this key connection.
- Zoning designation of Regional Commercial may lead to a more auto-oriented retail environment versus a pedestrian/multimodal oriented environment that is described in the General Plan.
- The Ohlone Greenway is accessible from this area and provides a connection to the Richmond Greenway creating a bike and pedestrian connection from central Richmond and El Cerrito del Norte BART Station.
- Of development parcels, the current building project at 5620 Central Avenue is on 2.58 acres of land and located partially within the City of El Cerrito (but much of the site is within City of Richmond). One hundred and seventy-two (172) below-market rate apartments are proposed in a podium building with on level of above-ground parking totaling five stories.

Contra Costa County Transit Center

Existing Development Summary

In 2016, the City of San Pablo conducted an economic and design feasibility study in order to further implementation on four key opportunity sites identified in the San Pablo Avenue and 23rd Street Specific Plans. The intersection of Rumrill Boulevard and San Pablo Avenue was studied as a potential transit hub. The sites adjacent to the intersection are underutilized and could be redeveloped into retail/service uses serving the transit hub and residential uses serving Contra Costa College. Multimodal improvements can connect transit riders to the College and to planned bicycle infrastructure along Rumrill Boulevard.

The WCCTAC is studying alternatives for transit improvements along San Pablo Avenue to create a transit hub at Contra Costa College, building upon the existing bus transfer point on campus. These improvements would create a connection from central Richmond to Hilltop Mall and Richmond Parkway, improving TOD potential at the most northern activity center.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 48 Opportunity Site Study from SCS by Strengthening Public Health Plan



TOD Criteria Assessment

- Most of the gateway connection to the BART station is outside of the City of Richmond boundary, which leaves the city with less control of the development of this key connection. The City of San Pablo has focused planning efforts on this area including Complete Streets Study (2015) for improvements along San Pablo Avenue and Rumrill Boulevard, improved development standards with the San Pablo Specific Plan, and economic feasibility studies of key opportunity sites at gateway intersections.
- Proximity and connection to Contra Costa College and to several underutilized parcels make this area ready for more intense and transit-oriented development
- There is a potential bike/pedestrian connection to Bay Trail along the San Pablo Creek, and a parallel connection existing along Wildcat Creek.
- There are a number of large, vacant, and underutilized parcels in the Richmond city limits including at least one residential parcel and seven industrial parcels – all within a one-mile radius of the transit station.
- Potential transit improvements studied by WCCTAC include:
 - Potential Bus Rapid Transit station would connect this area to Hilltop Mall, El Cerrito BART Stations and central Richmond.
 - Potential BART extension with stops at Contra Costa College and connections north to Richmond Parkway and Hercules and south to central Richmond and beyond.

SHARED MOBILITY

There are many alternate terms for shared mobility; the term commonly includes “the shared use of a vehicle, bicycle, or other mode.”³⁸ In essence, the vehicle is “shared” by many paying users, but unlike regular fixed-route public transportation, shared mobility typically includes services that are responsive to immediate user demands. These user demands are often enabled by technology, ranging from a phone call to a stationary kiosk, or a mobile app.

This section discusses existing shared mobility options in Richmond and the greater East Bay area. By virtue of its location in the Bay Area and California, Richmond is the beneficiary to many services emerging from the shared mobility sector, but not all services are necessarily available within the city limits. Services which have incorporated Richmond as part of a larger shared mobility network are either via major national operations (such as Uber, Lyft, and Zipcar), or are part of a special consortium of funders (such as East Bay Paratransit).

Taxis

Taxis are an intuitive “last mile” option for all individuals disembarking from the rapid transit system. All BART stations have designated curb space for the sole use of taxis as a waiting area for pick-ups. In outlying transit hubs, including the future Ferry Terminal and the RPTC, there are no designated taxi areas at this time.

Taxicabs are regulated in the City of Richmond as follows:

- The Director of Public Works may “establish taxi zones on the central traffic district for the exclusive use by taxicabs (Municipal Code 14.48.090).”
- Taxi zones are marked by white curbs and signage.
- All taxi cab companies operating in Richmond must collectively pay the City \$50.00 per quarter per “parking space designated as a taxi zone.”
- “Every person engaged in the business of operating vehicles for hire or taxicabs shall pay a license fee of eighty-three dollars and sixty cents (\$83.60) per vehicle per year. (Municipal Code 7.04.120)”
- The cap of 60 taxicabs in the City was repealed by Ordinance 9-80 N.S.

The availability of taxis is relatively concentrated at stations. Even before the growth of ride-hailing mobile applications, taxi drivers experienced difficulty sustaining a steady income.³⁹

Paratransit

As discussed in the prior chapter, there are two paratransit service providers in Richmond: East Bay Paratransit, which is jointly provided by AC Transit and BART; and R-Transit, provided by the City of Richmond and based at the Richmond BART. R-Transit riders must be a resident of Richmond, North Richmond, El Sobrante, or Kensington.⁴⁰ In Fiscal Year 2015/2016, East Bay

³⁸ Shaheen, Chan, Bansal, and Cohen, Shared Mobility: Definitions, Industry Developments, and Early Understanding, 2015.

³⁹ <http://richmondconfidential.org/2009/10/13/rough-roads-for-richmonds-cab-drivers/>

⁴⁰ <http://www.ci.richmond.ca.us/2880/R-Transit-Paratransit>

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Paratransit had 17,273 ADA eligible riders on their database and an average of 2,526 riders per weekday.⁴¹

The City of Richmond conducted an internal audit of paratransit services in January 2008 to provide an overview of the program's operations and service levels as well as recommendations to City management to improve the program's effectiveness, efficiency, organizational structure, and internal controls. A follow-up report was produced in June 2008 to document progress of the recommendations, which included the following:

- Outsource vans, drivers, and related scheduling to a private company to allow for more flexibility in scaling services.
- Develop and document policies and procedures for paratransit operations.
- Increase the cost of van coupons relative to the cost of taxi scrip to incentivize passengers to use lower-cost taxi services in lieu of vans.
- Move the program offices to the Recreation Department to improve integration with other senior services.
- Improve coordination with East Bay Paratransit to avoid duplicating services.
- Program staff should be adequately cross-trained to ensure that all important program tasks are accomplished in the absence of any manager or employee.
- Improve program monitoring and progress evaluation.
- Purchase scheduling software to prepare the daily driver schedules.
- Ensure that the revenue accounts included in the program's annual budget are reasonable, adequately supported, and conservative.

From 2012 to 2014, as part of a clean air settlement with Chevron, a series of transportation programs were piloted in Richmond. The overarching program, known as "Easy Go Richmond," included paratransit services, as well as car and bicycle sharing programs (which are described later in this section). The paratransit system was among the most popular, in contrast with the light usage of the car sharing service. One paratransit service known as the "kids cab" incorporated demand-response rides for children heading to after school programs and had an average of 1,730 rides and 346 reservations per month. The "deviated" route, which had an average of 1,380 rides and 276 reservations per month, "drove non-paratransit eligible and low income families around on shopping trips, grocery runs and communities events."⁴² These programs were discounted due to lack of ongoing funding.

TNCs / Ridesharing

Transportation Network Companies (TNCs), which are regulated by the California Public Utilities Commission, are a common term for the smartphone and ride-hailing services provided by companies such as Uber and Lyft. Through the use of a mobile smartphone application, a ride-hailing user requests a door-to-door ride. Users have a choice of sharing their ride; if selected, the application will match the user with a nearby driver as well as other users who are nearby and traveling in the same general direction. In this way, the driver is paid to share space in their vehicle to provide rides to willing and paying users. Both Uber and Lyft are available within

⁴¹ http://www.alamedactc.org/files/managed/Document/19554/7.2_EBP_SRAC_Meeting_Minutes_20160503.pdf

⁴² <http://richmondconfidential.org/2014/12/06/after-exhausting-1-8-million-funding-richmonds-easy-go-program-yields-low-usage-rates-at-high-costs/>

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Richmond, and both offer ride-sharing options, known as UberPool and Lyft Line respectively. Although more data is slowly becoming available, there is currently no information on ridesharing usage within Richmond. The San Francisco County Transportation Authority (SFCTA) recently assembled a report of TNC vehicle activity, but it only analyzes rides taking place entirely within the City of San Francisco. However, it was observed that only 29% of registered TNC vehicles in San Francisco are actually based in San Francisco. Twelve percent of registered TNC vehicles were based in Contra Costa County, which is the fourth most represented county. This implies that significant amounts of TNC vehicles are regularly making trips into San Francisco. It was noted that future reports will build on this research, including transit demand impacts and policies regarding safety, congestion, disabled access, equity, and curbside management.⁴³

The Richmond BART station, in its current form, lacks a visible designated passenger loading zone. Although the ongoing construction surrounding the area may affect the placement and availability of such curbside zones, TNC drivers may not have a clear designation of where they may—and may not—pick up passengers. This is an ongoing issue throughout many cities which have yet to comprehensively inventory and regulate curbside space.

The Contra Costa Transportation Authority (CCTA) received a regional planning grant to create a pilot a Real-time Ridesharing program. The program is intended to assist riders and drivers in creating instant carpools. The program relied on many partners, including a real-time ride-sharing smartphone app, a technology vendor, and neighboring county transportation organizations.⁴⁴ A targeted marketing approach to the program resulted in the signups of 500 participants in the first two weeks.⁴⁵ In 2014, 3,500 new accounts on the app were created, and 4,000 one-way shared trips were taken. The real-time ridesharing concept will continue being examined through 2019.⁴⁶

Car Share

Car sharing programs allow people to have on-demand access to a shared fleet of vehicles on an as-needed basis, but are different than traditional car rentals in that:

- System users must be members of a car-sharing organization.
- Fee structures typically emphasize short-term rentals rather than daily or weekly rentals.
- Vehicle reservations and access are “self-service.”
- Vehicle locations are widely distributed rather than concentrated
- Most systems require vehicles to be picked up and dropped off at the same location.

Car sharing has the potential to reduce household car ownership, and allow employees who commute by transit to use a shared car for midday errands if needed.

Among Richmond’s transit hubs and gateways, the only car share vehicles are located in the El Cerrito del Norte BART station. At a Chevron gas station at the intersection of San Pablo and Potrero Avenues, there are three Zipcar (the nation’s largest car share service) vehicles available.

⁴³ http://www.sfcta.org/sites/default/files/content/Planning/TNCs/TNCs_Today_061317.pdf

⁴⁴ http://www.ccta.net/_resources/detail/115/2

⁴⁵ <http://www.circlepoint.com/casestudies/ccta-real-time-ridesharing-pilot-program-2/>

⁴⁶ <http://ccta.net/uploads/555a7b6429289.pdf>

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Other BART stations such as Ashby, Rockridge, and West Oakland include car share spaces on BART property. The placement of these car sharing spaces on station property demonstrates the potential use of car share for connecting trips to transit.

Turo (formerly RelayRides) is a peer-to-peer car share service, allowing people to rent out their vehicles. This service is available in Richmond. Unique to Turo is the option of having a rented vehicle being “delivered” directly to the location of the customer.

A similar service, Getaround, does not currently offer vehicles in Richmond. In 2012, Getaround participated in an electric car sharing program, which was funded indirectly by the “Easy Go Richmond” program. The services, which were intended “to demonstrate that peer-to-peer car can work just as well in smaller towns and rural areas as it does in dense urban cities,” included a bike sharing system, a van sharing program, and a “kid’s cab” program.⁴⁷ The operation, which was primarily contracted by transMetro, included 15 vehicles at Richmond Transit Village (a mix of Miles electric vans and Toyota Prius hybrid sedans), six vehicles at Hilltop Mall, and another six on-demand vehicles that had to be parked in an on-site warehouse. From January 2012 through the car share program’s suspension in August 2013, an average of only four daily reservations, or 120 per month, were made.⁴⁸

Gig is a one-way car share service that was introduced to the East Bay by the American Automobile Association (AAA) in 2017. The system works in that an individual may locate a car (one amongst a fleet of identical Toyota Priuses) via a map locator on the car share company’s mobile app. When the trip is complete, the driver must park within what is currently deemed the “Home Zone” (Central Oakland and the City of Berkeley).

Bicycle Share

Bay Area Bike Share (also known as Ford GoBikes), the most prolific program, is a traditional “second generation” bicycle share system, in that bikes are docked at locking stations placed along plazas, sidewalk zones, or the parking lane of a street. These stations, which are intended to be located in prominent and accessible destinations, are where a casual user may walk up, enter a credit card into a kiosk, and check out a bike. In addition to a bike share membership (which may last from a day to a month), bikes are charged by an escalating fee based on how long the bike is checked out (usually with an initial grace period). All bikes are expected to be returned to a station, but in theory, any willing and paying user could take the bike to any intermediate destination. Although the current expansion of Ford GoBike includes the East Bay, there are currently no BABS/Ford GoBike bicycle share stations planned for the City of Richmond.

The Bay Area also has a variety of smaller “station-less” bike share systems (including Social Bicycles and Jump). These systems are primarily funded by private enterprises for the benefit of their employees (e.g., Genentech’s campus has a bicycle share system under the auspices of their “gRide” transportation demand management program).

In 2012, the City of Richmond did have a bicycle sharing system as a part of the “easy Go Richmond” program. Lasting through the initial funding stage, a total of 32 bikes were purchased for use at the Richmond BART Station and Liberty Village areas. However, the bike share system

⁴⁷ <http://blog.getaround.com/peer-to-peer-electric-car-sharing-enhances-richmonds-green-transport-initiative/>

⁴⁸ <http://richmondconfidential.org/2014/12/06/after-exhausting-1-8-million-funding-richmonds-easy-go-program-yields-low-usage-rates-at-high-costs/>

was hindered by poor maintenance and confusion about how to access the bikes, and only 89 reservations were made over the entire program, or four per month.⁴⁹

TRANSPORTATION DEMAND MANAGEMENT

Transportation demand management (TDM) refers to policies, physical amenities, programs, tools, and services that support the use of sustainable modes. TDM works with the existing transportation system to expand and support mobility options that accommodate future growth while meeting larger city goals. Supporting bicycling, walking, using transit, and carpooling makes it easier for all users to reduce reliance on driving alone, and provides larger environmental benefits through lower emissions, health benefits through increased safety, and community benefits through active public spaces and streets. Often, investment in first mile/last mile connections is a large part of TDM, as these investments strive to improve physical access to transit and increase awareness of sustainable travel modes. However, where first mile/last mile connections' objective is to make these sustainable travel modes more accessible and attractive, TDM also includes mechanisms to discourage or disincentivize the use of single occupancy vehicles.

The provision of free or underpriced, readily available parking is a major contributor to one's decision to drive. Overbuilding parking supply leads to increased automobile use, contributing to more vehicle trips, traffic congestion, higher construction costs, and greenhouse gas emissions.⁵⁰ There is a strong correlation between the price of parking and the rate at which people park. The more the price of parking reflects its true cost (including land, construction, operations), the more likely drivers with a choice will consider using non-driving modes for all or some of their trips. In this way, TDM uses mechanisms such as parking supply management and dynamic pricing reveal the true impacts of parking and discourages driving while preserving access to parking for those who need it.

This section provides the larger context for TDM in the City of Richmond, including TDM policies and regulations, and summarizes the overarching structure of the chapters that follow.

City TDM Policies

The City of Richmond updated the Zoning and Subdivision Regulations of the Richmond Municipal Code in November 2016, which included an article requiring residential and commercial developments to implement transportation demand management programs with the goal of reducing single-occupant vehicle trips generated by the development. Currently, there have been no development applications that fall under this requirement.

The City also currently has a Commuter Benefits Ordinance (CBO), which requires employers with 10 or more employees to implement a Commuter Benefits Program (CBP). The ordinance encourages commuters to use sustainable methods of transportation such as public transit, vanpools, carpools, biking, telecommuting, and alternative work schedules to reduce reliance on single-occupant vehicle trips. Compliance is required from private businesses, public agencies, and non-profit organizations within the city limits and with fewer than 50 employees. For employers with 50 or more employees in the City of Richmond or across all sites in the Bay Area, the employer must register with the Bay Area Commuter Benefits Program and is exempt from

⁴⁹ Ibid.

⁵⁰ King County Metro, <http://www.rightsizeparking.org/about.php>.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

registering with the City of Richmond. The CBO requires employers to offer at least one of the following benefits:

- A program allowing employees to exclude \$230 per month from taxable wages for the use of public transit and vanpool and \$20 per month for bicycles
- A program supplying a transit pass or reimbursement for equivalent vanpool charges at least equal in value to the purchase price of the adult monthly transit pass for the local transit agency system(s) for the employee to complete the trip to the workplace
- Transportation furnished by the employer (e.g. vanpool, bus, or multi-passenger vehicle) at no cost to the employee
- An alternative commuter benefit pre-approved by the City of Richmond

In reaching out to the major employers in Richmond with approximately 150 employees or more, it was found that one large employer did not offer any commuter benefits to its employees, citing challenges with warehouse hours and scheduling of employee shuttles or vanpools. This employer provides free parking at a rate of more than one space per employee, although parking is available for both staff and customers. Employees at this business take a variety of transportation modes including personal vehicles, motorcycles, public transit, and bicycling. Another business surveyed was a large retail corporation that provides its employees pre-tax deductions for commuting costs in the Bay Area (up to \$130 a month for public transportation and \$250 a month toward parking expenses). At this business, the ratio of parking spaces to number of employees is 2.37; however, this parking is provided for both staff and customers and may be shared with other businesses in the area.

Parking at other large employers in Richmond varied generally depending on the type of industry:

- All manufacturing facilities provide employee parking. Half of these manufacturing facilities have gated entrances to employee parking lots. A correlation between the proportion of parking spaces to number of employees showed that businesses with gated parking had lower ratios (0.16 – 0.26) compared to non-gated parking (0.42 – 1.58).
- Retail locations provide both customer and employee parking. All of these businesses have high ratios of parking spaces to number of employees (1.73 – 3.69) because of the additional capacity for customers.
- Nonprofits and other miscellaneous businesses provide employee parking with relatively low ratios (0.12 – 0.67). Richmond Hospital provides a parking garage for patients and a dedicated surface lot for staff.

Three out of four businesses with convenient transit access (a transit stop less than 0.5 miles away) had low parking ratios. This number was lower for businesses near BART connections (0.09 spaces per employee) than for local bus connections (0.328 spaces per employee), reinforcing how nearby frequent transit access may reduce the need for driving and thus additional parking supply. All of the businesses without convenient transit access were less than one mile from the I-80 or I-580 freeways, and were generally businesses with large freight and shipping components. Of these 15 businesses, 11 had parking ratios of 0.5 or more.

Regional TDM Context

The West Contra Costa Transportation Advisory Committee (WCCTAC) reached out to 60,000 employees and obtained 615 completed surveys regarding employee ridesharing alternatives in West Contra Costa County, which includes the cities of Richmond, Pinole, San Pablo, El Cerrito,

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

and Hercules.⁵¹ Of the employees surveyed, most were full-time, working at least 40 hours per week with commute times between the peak hours of 7:00 a.m. and 9:00 a.m. Most of these employees lived in the East Bay, where 8 out of 10 drove to work alone citing inconveniences of transit and work schedules. Of those surveyed, employees were most likely to live in Richmond (8% of respondents).

Key findings from the survey revealed that most commuters preferred to drive alone to work (78%). However, WCCTAC cited one large employer with a strong carpool and vanpool program as the reason for a lower than average drive-alone rate in the Bay Area. To encourage solo drivers to take ridesharing alternatives, employers found financial incentives were most compelling. Telecommuting and guaranteed rides home in case of emergencies were also cited as important issues for commuters, indicating the need for flexible and reliable transportation options. Transit use varied among employers, with some having many transit riders and others having none. WCCTAC found that half of solo drivers were receptive to at least one ridesharing alternative, and one-third applied for a financial incentive to drive less, implying that drivers in the region are open to using more sustainable modes of travel.

One-third of those surveyed (34%) traveled 21 to 40 miles to work, with an average distance of 21 miles. Given this distance, it makes sense that the preferred alternative to solo driving was carpooling (42%) and vanpooling (27%), then followed by BART and bus (24% and 18% respectively). The inadequacy of transit service was the primary reason (42%) solo drivers gave for why they chose to drive.

Among Contra Costa employers who are required to provide commuter benefits to their employees (142 in 2014), providing pre-tax transportation benefits (e.g. Commuter Checks) is the primary choice to meet this requirement (75%). Approximately 8.5% provide a transit/vanpool subsidy. Over one-quarter of employers provide additional TDM benefits beyond the required strategy, typically including on-site bicycle parking (10%), an emergency ride home (6%), and showers and bike lockers (6%). Overall, more employers provided TDM strategies related to bicycling more than for any other mode. This may be indicative of a latent demand within the workforce for bicycling, or is perhaps symptomatic of the relatively minimal financial investment required for bicycling strategies.

AUTONOMOUS VEHICLE ASSESSMENT

The growing research and development activity around autonomous vehicle (AV) technology has recently started to show results, with AV pilots taking place in a number of cities across the United States and the globe. In addition to the potential to reduce the cost of providing transit service itself, AVs present a new way to facilitate connections between high capacity transit stations and people's home or work front doors. This section discusses the outlook for the technology, potential ways in which AVs could efficiently provide first/last mile connections, and emerging ideas on how design and regulations might affect the way AVs are adopted and accompanying implications for the first and last mile in Richmond.

⁵¹ WCCTAC Employee Transportation Survey, May 2016.
<http://www.wcctac.org/files/managed/Document/352/WCCTAC%20Employee%20Transportation%20report%202016.pdf>.

It is likely to be at least a few years before AVs are available for widespread consumer use.⁵² Once they are, AVs are expected to steadily gain market share and ultimately provide a major portion of motorized passenger travel within several decades. Various technology and transportation theorists estimate that AVs will penetrate the motorized travel market by 70% to 90% sometime between 2035 and 2055.⁵³ However, given many unknowns about the technology itself and the regulatory efforts at the state and federal levels that will shape it, all of these estimates are subject to significant error.

Given Richmond's proximity to multiple regional transportation networks, both rail and highway, the city is well-positioned to capitalize on AVs by preparing its policies and street network to encourage AVs in a sustainable manner.

Shared vs. Private Mobility: The Implications of How AVs are Adopted

How autonomous vehicles are adopted could have significant implications for the built environment and, in turn, for the first and last mile of people's journeys. If they are adopted as shared resources,⁵⁴ they could lead to major reductions in the need for parking around all manner of trip origins and destinations. If people made journeys from front door to front door in cars that were constantly in use (instead of sitting unused 95% of the time at one location or another), the need for parking would substantially decline. With adoption of AVs in this way, conventional car parking may morph into something similar to transit vehicle parking today – centralized facilities, often with maintenance capabilities, that owned by the operators of large fleets and largely empty at peak times.

While the exploding demand for ride-hailing services, particularly in urban areas, has shown the potential of a shared model of AV use, people have continued to purchase private vehicles and drive, with private vehicle sales in the United States hitting record highs in recent years, and climbing vehicle miles traveled (VMT) per capita.⁵⁵ If AVs are adopted as private mobility resources, they might substantially eat into the market share of transit services. To the extent that they provide first- and last-mile connections, accommodating them around transit stations might look a lot like accommodating private vehicles does today, with large parking facilities and “kiss and ride” areas for more limited pick-up and drop-off activity.

Cities that want to see a shared future of motorized travel will need to use a mix of regulations and incentives that encourage shared mobility over the status quo. In addition to the potential for

⁵² Bliss, Laura. “The Future of Autonomous Vehicles is Shared,” CityLab, January 6, 2017, <http://www.citylab.com/tech/2017/01/the-future-of-autonomous-vehicles-is-shared/512417>.

⁵³ Estimates from “Peak Car Ownership: The Market Opportunity of Electric Automated Mobility Services,” Rocky Mountain Institute, 2016, <https://rmi.org/insights/reports/peak-car-ownership-report> and “Global Insurance Market Opportunities,” 2016, http://www.aon.com/japan/product_services/by_specialty/reinsurance/report/20160911-ab-analytics-gimo.pdf and “Ten ways autonomous driving could redefine the automotive world,” McKinsey & Company, June 2015, <http://www.mckinsey.com/industries/automotive-and-assembly/our-insights/ten-ways-autonomous-driving-could-redefine-the-automotive-world> and “Effects of Next-Generation Vehicles on Travel Demand and Highway Capacity,” February 2014, http://www.fehrandpeers.com/wp-content/uploads/2015/07/FP_Think_Next_Gen_Vehicle_White_Paper_FINAL.pdf, and “Autonomous Vehicle Implementation Predictions: Implications for Transport Planning,” February 27, 2017, <http://www.vtpi.org/avip.pdf>.

⁵⁴ In other words, AVs as a shared resource would mean that they are integrated into public-facing systems, such as ride-hailing companies (i.e. Lyft and Uber, also categorized as transportation network companies or TNCs) and dynamic “microtransit” services (i.e. Chariot).

⁵⁵ <https://www.wsj.com/articles/u-s-car-sales-poised-for-their-best-month-ever-1451999939>. Short, Doug, Advisor Perspectives, https://www.advisorperspectives.com/images/content_image/data/9c/9c6653974df4f9bea06b785ab3d9bb50.png.

furthering urban sprawl,⁵⁶ AV adoption as private mobility resources would also have significant negative equity implications. The high cost of the technology would make it much harder for those with low incomes to take advantage of the benefits AVs may offer. However, shared mobility will likely require additional investment on the part of cities and public agencies to subsidize access for all users.

Regulating and Designing for an Autonomous Future

Local governments like the City of Richmond have a major role to play in determining how AVs are adopted within their jurisdictions. Federal and state regulatory action to date has focused on regulating the safety of the technology and of how the vehicles are operated.⁵⁷ While state and federal policy makers ultimately have great power to determine the trajectory of the technology (if they are willing to use that power), cities can help determine the way local streets and the built environment evolve to make way for AV travel. Specifically, cities can:

- Provide space for companies to test different types of AV technology
- Adjust their approach to managing curb-space in street design
- Adjust their parking regulations and the extent to which they provide and/or operate public space for vehicle storage

The sub-sections below outline cities' action to date, emerging best practices, and open questions in each of these areas, with the overarching vision of AVs as shared mobility resources.

Hosting AV Technology Pilots

For several years now, Google and its Waymo AV division have tested AVs on city streets along the Peninsula, primarily in Mountain View and Palo Alto. Those cities did not actively lure or even necessarily approve AV testing on their streets, but rather the location of Google's headquarters in Mountain View was the reason testing has happened in the area. Several cities have actively encouraged or regulated AV testing on their streets, although some of these localities have soured on its partnership due to concerns about the private company's lack of cooperation with city requests and safety concerns.⁵⁸

Other cities have allowed time-limited trials of autonomous shuttles, which typically fit six to 10 passengers and are limited to relatively low speeds. The Contra Costa County Transportation Authority (CCTA) is funding a fixed-route shuttle pilot with one company, Easy Mile, in the Bishop Ranch office park in San Ramon.⁵⁹ The vehicles are first being tested on the GoMentum test facilities at the Concord Naval Weapons Station, and they are slated to hit city streets after that.

Emerging Best Practices:

- Provide space for low-speed testing of higher capacity AVs within circumscribed areas with as few natural modal conflicts as possible. Such AVs might be a natural fit for first/last-mile situations, though the complicated mix of modal conflicts around major transit stations would need to be managed carefully.

⁵⁶ https://opinionator.blogs.nytimes.com/2013/07/23/driving-sideways/?_r=0

⁵⁷ CITE Stanford AV policy website

⁵⁸ <http://www.politico.com/story/2017/05/01/uber-pittsburgh-city-mayors-237772>

⁵⁹ <http://www.mercurynews.com/2016/07/22/driverless-shuttles-coming-to-east-bay-to-be-tested/>

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Open Questions:

- What are the safety implications of testing early autonomous vehicles on city streets? Recent pilots have revealed some issues with certain technologies, including unsafe operation around bicycle facilities and a lack of recognition of less-used traffic control approaches like signalized mid-block crosswalks.

Curb Management

Especially in light of the growing use of ride-hailing services, some jurisdictions have begun to tackle passenger loading as part of the broader challenge of determining which mode should get priority for curb space in different parts of the urban street network. Seattle⁶⁰ and Washington, DC⁶¹ have both commissioned curb management studies in recent years. Richmond currently lacks a consistent approach to managing its curb space. If passenger loading increases in importance with the proliferation of autonomous vehicles, cities across the country will need to develop thoughtful ways to more fully incorporate passenger loading (in addition to commercial delivery activity) in a context-sensitive way that minimizes conflicts with pedestrians and bicyclists.

Emerging Best Practices:

- Develop a context-sensitive approach to managing curb space citywide.
- Consider how to incorporate passenger loading and unloading behavior in places where curb space is allocated to bicycles or transit vehicles to minimize conflicts.
- Consider shifting incentive structure created by allocating most curb space to private vehicle parking. Tipping the balance toward active loading and unloading could be one way to encourage the use of shared vehicles.

Open Questions:

- How should passenger pick-up and drop-off activity be incorporated in areas in which curb space is allocated to buses or bicycles, to avoid conflicts?
- To what extent should curb space be used for private vehicle parking in a shared autonomous future, and at what pace should a transition happen?

Parking

Since the provision of free/underpriced, readily accessible parking implicitly incentivizes driving, many cities interested in a future in which AVs are shared should consider adjusting parking requirements as a primary way to incentivize this future. Shared autonomous vehicles offer the potential to substantially reduce the need for parking. Some early analyses estimate that parking demand could drop by as much as 80% if the entire small-vehicle fleet is shared.⁶² Even if some of the fleet is privately owned, self-driving and self-parking cars could enable a much more efficient

⁶⁰ <http://www.seattle.gov/transportation/parking/cbdCurbspaceStudy.htm>

⁶¹ <https://comp.ddot.dc.gov/Documents/District%20Department%20of%20Transportation%20Curbside%20Management%20Study.pdf>

⁶² International Transport Forum and Corporate Partnership Board. "Urban Mobility System Upgrade: How shared self-driving cars could change city traffic." Organization of Economic Co-operation and Development (OECD), 2015, http://www.itf-oecd.org/sites/default/files/docs/15cpb_self-drivingcars.pdf.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

use of the space dedicated to parking.⁶³ Clearly, the ways cities regulate the parking supply – primarily through off-street parking requirements in zoning codes – will need to shift to account for AVs. This is especially relevant to Richmond, which has minimal parking regulation even around the primary mobility hubs.

Emerging Best Practices:

- Eliminate parking minimums and implement parking maximums, reducing the incentives to use private vehicles that are built into new buildings through the ample provision of free parking.
- Where parking is necessary, ensure that it is shared flexibly across different uses and, as possible, discourage its incorporation into buildings with primary land uses (i.e. residential or commercial). Rather, encourage any new supply to be in stand-alone areas or structures, to more easily enable conversion to primary land uses in the future.
- Shift the allocation of space around major transit stations, reducing parking and increasing the prominence of passenger pick-up and drop-off facilities.

Open Questions:

- What is the best way to manage the transition to a shared autonomous future, accounting for people’s auto-oriented behavior today while avoiding further encouragement of this behavior?
- How much might parking demand drop with the uptake of AVs?

Although it may be quite a while before autonomous vehicles are part of Richmond’s daily reality, the City can be proactive in examining its curb and parking management through a lens of shared mobility. A strong policy framework and street design will lay the foundation for Richmond to take advantage of opportunities to test or implement AVs on its streets, when the time comes.

⁶³ Meier-Burkert, Friedrike. “With self-parking cars and intelligent fleet management, real-estate developers save time and money.” Audi Urban Future Initiative blog, November 17, 2015. <http://audi-urban-future-initiative.com/blog/urban-future-partnership-somerville-boston>.

4 CONCLUSION

The City of Richmond has a strong policy framework for improving its multimodal access and connectivity. Although recent planning work and improvement projects support access to transit (i.e. streetscape improvements, bicycle lane striping, and new wayfinding), there is no coordinated program to address first and last mile connections in a comprehensive way. This report aims to consolidate the relevant work and provide an up-to-date snapshot of existing conditions, needs, and opportunities.

The figure below summarizes the existing conditions for the areas examined in this report. Although these are general characterizations of the areas' various qualities, they speak to the different ways in which each area could be improved to enhance access and connectivity.

Figure 49 Qualitative Evaluation of Existing Conditions Prior to Implementing First Mile/Last Mile Strategies and Programs

Area Considered	Station Area Design	Pedestrian Access	Bicycle Access	Transit Access	Development Opportunity
Richmond BART Station	Good	Excellent	Excellent	Excellent	Moderate
Richmond Ferry Terminal	Poor (current) Good (future)	Moderate (current) Good (future)	Moderate (current) Excellent (future)	Poor (current) Average (current)	Good
El Cerrito del Norte BART Station	Moderate to Good	Poor to Moderate	Poor to Moderate	Excellent	Excellent
Richmond Parkway Transit Center (RPTC)	Poor	Poor	Poor	Moderate	Poor to Moderate
Hilltop Mall	Poor	Poor to Moderate	Poor to Moderate	Poor	Moderate
Stops along 13th Street / Rumrill Avenue corridor	Poor	Moderate	Poor to Moderate	Poor	N/a
Stops along 23rd Street corridor	Poor	Moderate	Poor to Moderate	Poor	N/a
Stops along San Pablo Avenue corridor*	Poor to Moderate	Moderate	Poor	Poor	N/a
El Cerrito Plaza BART Station	Good	Moderate to Good	Poor to Moderate	Moderate	Good
Contra Costa College Transit Center	Good	Moderate to Good	Poor to Moderate	Moderate	N/a

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

In addition, there are several citywide trends and issues that should be considered in the development of first mile/last mile connections:

- **Shared mobility.** Motorized transportation modes will always play a role in first mile/last mile connections, as walking, biking, and taking transit are not always feasible. Shared motorized modes can be valuable links in the first mile/last mile connection, if infrastructure like streetscapes and loading areas are designed in a way that encourages increases in average vehicle occupancy and reduces demand for parking.
- **Transportation demand management.** Strategies to access transit should incorporate the needs of major employers, which include employee needs as well as those related to shipping and receiving goods. Managing vehicular travel demand will require striking a balance between local access and regional mobility.
- **Autonomous vehicles.** Although no one is sure about what the future holds, the impending arrival of autonomous vehicles on the market means that Richmond should consider preparing its policies and street network to encourage the use of AVs in a sustainable manner. Both policy and infrastructure improvements can address first mile/last mile needs and lay the groundwork to utilize AVs in a space-efficient way.

NEXT STEPS

Understanding limitations and opportunities in the transportation network is a critical step toward determining feasible and effective solutions. Based on this report, proposed strategies will strive to address the first mile/last mile gaps in the various transportation networks, including, but not limited to: physical crossing barriers, uncomfortable biking experiences, indirect and deteriorated walking routes, and the lack of awareness of available transportation options among different populations. Strategies should reflect the following takeaways:

- Due to its location in the Bay Area and connections with multiple major transportation networks, Richmond is well positioned to take advantage of ongoing innovations in mobility. However, the City also faces several challenges related to perceptions about personal safety and level of comfort with non-auto transportation modes. Strategies will have to address mental as well as physical obstacles.
- City policies recognize the need for improved access and integration among the different transportation systems and infrastructure. It is not readily apparent how plans will be translated to implementation.
- Some City plans lack a clear process for ensuring its projects continue to be maintained or operated in the long term. The First Mile/Last Mile Strategic Plan will need to acknowledge the need for ongoing operations and maintenance and identify how these important tasks may be accomplished.
- Richmond's access to transit is complicated by its topography, administrative boundaries, and proximity to major regional freeways. Rail rights of way and Interstates 80 and 580 are all major barriers, and Richmond is nearly divided in half by San Pablo and unincorporated areas of Contra Costa County. Citywide strategies will likely require substantial coordination across jurisdictions and government levels (e.g. Caltrans, BART, Richmond, El Cerrito, San Pablo, etc.)
- The density of intersections, population, and employment in central downtown Richmond are highly conducive to sustainable transportation behavior and leveraging existing access to transit. Recent physical improvements and planning efforts in this area

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- reflect a trend towards walking and bicycling, yet concerns of safety and comfort are still an issue.
- There are multiple development opportunities throughout Richmond; however, activation of these areas will likely be conditional on proportional investment in transportation programs and infrastructure.
 - Communities and businesses throughout Richmond are disconnected from the transportation network in varying ways; strategies to enhance access and connectivity will need to be considered from the perspective of all stakeholders, balancing local access with regional mobility.

Given the wide variety in transit service quality in different areas of Richmond, it makes sense to focus on establishing first mile/last mile connections to those areas with the highest utility and appeal – the mobility hubs. Nevertheless, it is likely that some strategies will be applicable in a broader citywide context as well and improve the likelihood that individuals choose to ride transit in Richmond. As such, this report forms the basis from which programmatic, policy, and infrastructure improvements will be identified for each of the mobility hubs as well as for citywide benefits.

APPENDIX A

DETAILED SUMMARY OF EXISTING PLANS AND POLICIES

There are many plans that technically affect the transit station areas of Richmond. They have different responsibilities (in the form of agencies that lead or author a plan), and focuses on transportation modes (with differing legal requirements). The plans described and quoted below are sorted by the agency/government responsible for the plans completion. The extent to which other agencies and transportation modes are involved may vary during the implementation of these plans.

CITY OF RICHMOND PROGRAMS AND PLANS

Local Programs

Carpool

The Richmond Parkway Transit Center (RPTC) is the location of Richmond’s only “**casual carpool**” pickup location, where people can quickly form a carpool to save money and time when driving down the Eastshore Freeway and through the San Francisco-Oakland Bay Bridge tollbooth. People who park on the RPTC site are permitted to use the carpool.

There is also a casual carpool pickup location near the El Cerrito del Norte Station. It is located along Eastshore Boulevard, just north of the intersection with Potrero Avenue.

Commuter Benefits

Per Ordinance 22-09 N.S., the City of Richmond builds off the standards set by the Bay Area Commuter Benefits Program. Rather than require commuter benefits of all employers with 50 or greater than 50 employees, the City of Richmond sets the minimum at 10 employees who work an average of at least 10 hours per week. Employers are also required to pay into an annual transportation fee upon registration (the fee, which covers administrative costs, is \$20.00 per employee). Lastly, the City requires two of the following additional TDM programs for employers that provide commuter benefits:

- End-of-trip shower facilities
- On-site bike sharing
- Commuter ride-matching services
- Annual membership dues for car sharing memberships
- Cash-out program valued at \$30.00 per space per month
- Using employer fleet vehicles for carpooling and/or vanpooling purposes

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- Permitted compressed work weeks (alternative work schedules or flex-time are two separate options)

Parking

Although Richmond does not have a **Residential Parking Permit (RPP)** program, it is currently in the process of studying the possibility of one. This included a review of other cities using such a program, including Sacramento, San Luis Obispo, Pasadena, Santa Rosa, Oakland, Berkeley, El Cerrito, and San Rafael.

Traffic Improvements

On its website, the City of Richmond solicits requests from the public for:

- Accessible curb ramps
- Traffic control and safety issues
- Parking zone assignments and new color curb parking
- Encroachment permits for construction within the publicly-owned right-of-way

General Plan (2012); A1

Broadly speaking, the general plan update for Richmond continues an inclusive and context-sensitive approach to transportation improvements, as generally shown in prior plans, like the Pedestrian and Bicycle Plan. Unlike those plans, which are more focused on “Complete Streets” policies, the General Plan highlights “Complete Neighborhoods” in addition to recommending a Complete Streets policy⁶⁴. Defined as “when residents have access to a range of goods and services that are typically utilized on a daily basis within” a “comfortable walking distance” of one quarter-mile⁶⁵. The vision of Complete Neighborhoods extend to transit services as well, as shown in future updates to the municipal code, which incentivize development within a quarter-mile distance of a transit stop.

Especially notable in the Circulation Element of the General plan is Policy CR1.8, a demand to “promote the place-based planning approach and classification system.” This system, detailed as “Richmond’s new approach to circulation,” is built around the designation of each street under a certain type, which is subsequently defined by which transportation mode is considered a priority mode, an allowable mode, or prohibited mode (Figure 47).

⁶⁴ p. 4.32

⁶⁵ p. 16.2

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 50 Place-Based Circulation Classification System⁶⁶

Accessway Type	Travel Type				
	Public Transit	Bicycle	Pedestrian	Automobile	Truck
Multi-Use Trail	✗	●	●	✗	✗
Residential Street	○	○	●	○	✗
Neighborhood Street	○	●	●	○	✗
Community Activity Street	●	○	●	○	✗
Community Connector Street	●	○	○	○	○
Regional Connector Street	○	○	○	○	○
Freeways	●	✗	✗	●	●

Legend: ● Priority Mode ○ Allowable Mode ✗ Prohibited Mode

Note: Public transit does not include heavy rail. Trucks include vehicles weighing 9,000 lbs. or more and with dual tires on the rear axle.

Not every street in Richmond is classified in the General Plan. Instead, Policy CR1.9 states a priority to “classify all streets in the City to conform to the Place-Based Circulation Classification System discussed in the Circulation Element of the General Plan and adopt multi-modal level of service (MMLOS) standards that are consistent with each street type’s intended function and character.” Classification will be critical in future transportation projects.

Other policies and actions in the General Plan intended to support transit access include:

- “Prioritize strategies and improvements that address affordability, access and safety. Also prioritize transit and street improvements that increase mobility for low-income, youth, seniors, disabled, and other vulnerable residents to ensure equitable access. Expand outreach and information programs to promote transit use.”⁶⁷
- “Explore the potential to designate pedestrian priority areas or districts. Include strong connections to the downtown, recreation destinations, commercial and mixed-use streets, transit stations and schools. Address pedestrian and bicycle connections in parking lots.”⁶⁸
- “Enhance circulation linkages within the City and region. The City will work with regional transportation agencies such as AC Transit, BART, West Contra Costa Transit Agency, and Amtrak to provide or improve connections to Richmond’s key transportation hubs such as the proposed ferry terminal in Marina Bay, the Downtown Intermodal Transit Station, Hilltop Mall, the shoreline and commercial and mixed-use streets. Collaborate with regional, state and federal transportation agencies and neighboring jurisdictions to

⁶⁶ p. 4.14

⁶⁷ Action CR1.B

⁶⁸ Action CR1.C

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- support a high level of service for all users including pedestrians, bicyclists, and automobile drivers.”⁶⁹
- “All housing units and employment centers in Richmond should have access to a local and regional public transit stop. Ensure that all transit stations and routes to and from these stations are safe. As many residents and visitors rely on regional passenger rail and air travel, support efforts to create efficient public transit connections to train stations and regional airports. Support efforts to expand service at night and on weekends and to make transit affordable and accessible to people of all abilities, seniors, youth and low-income households.”⁷⁰
 - “Station Area Plans: Develop station area plans for major transit stations including the BART Station, proposed ferry terminal and Hilltop Mall. Revise and update plans already underway to encourage higher-density development within a half-mile of stations; improve pedestrian, bicycle and transit connectivity; and address parking, safety and congestion.”⁷¹
 - “Develop access and mobility criteria for capital improvement projects and new development to enhance physical access to community facilities, schools, parks, shoreline open spaces, historical destinations, commercial and employment centers and transit hubs.”⁷²
 - “Enhance safety and accessibility for pedestrians, bicyclists and public transit riders,” including “improving key intersections and streets to reduce bicycle collisions,” and “improvements at transit stations and stops to reduce crime and vandalism.”⁷³
 - “Ensure adequate maintenance of transportation facilities,” including bus shelters, in “a manner that is socially equitable.”⁷⁴
 - “Update the City’s development impact fee program to provide funding for future circulation improvements including pedestrian, bicycle, and public transit facilities and amenities.”⁷⁵
 - “Proposed enhancements to the street system must consider all types of travel and be based on a particular street’s intended function and character.”⁷⁶
 - “Develop a transportation demand management (TDM) program that encourages use of public transit, bicycling, and walking.”⁷⁷
 - “Explore the potential for developing a citywide Intelligent Transportation System (ITS) to maximize the efficiency of the circulation system and enhance user experience. Use available technologies such as synchronized street lights, adaptive signal controls and real-time traffic, transit and parking information, among others. Establish real-time

⁶⁹ Policy CR1.3

⁷⁰ Policy CR1.4 see also EC2.3; HW4.1

⁷¹ Action CR1.K

⁷² Action CR2.A

⁷³ Policy CR3.1

⁷⁴ Policy CR3.2

⁷⁵ Action CR3.C

⁷⁶ p. 4.14

⁷⁷ Action CR 5.A

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

transportation information kiosks at major transit hubs and in pedestrian-oriented districts.”⁷⁸

Throughout the Circulation Element of the General Plan, there are several Richmond arterials intersecting current and future major transit in the General Plan that are specifically identified for certain policies. These are summarized in the “Corridors” section of the Executive Summary.

In addition to corridors, specific “intersections or roadway sections that could benefit from improvement,” were identified.⁷⁹ Those which included specific suggested improvements include:

- Meeker Avenue and Marina Bay Parkway (traffic calming measures)
- 22nd and 23rd Streets between Roosevelt and Macdonald (two-way conversion and traffic calming measures)
- 37th Street and Roosevelt Avenue (narrowed travel lanes and traffic calming measures including traffic circles and curb extensions)
- Barrett Avenue (conditions of development approval and capital improvements)
- Central Avenue (coordination with CCTA and El Cerrito)
- San Pablo Avenue and 23rd Street (realigned intersections with turning restrictions)
- San Pablo Avenue and Richmond Parkway (intersection improvements)
- Marina Bay Parkway Rail Crossing (grade separation and a new route to Interstate 80 via an extension of Regatta Boulevard)
- Harbour Way and Wright Avenue Rail Crossing (coordinated traffic signals and gates)
- Carlson and Cutting Boulevard Rail Crossing (traffic circle)
- Giant Road Rail Crossing (grade separation)

City Zoning Update (2016); A2

On November 15, 2016, the City of Richmond officially adopted a revised Chapter 15.04 of the Richmond Municipal Code—which pertains to zoning and subdivision regulations. This revision (Ordinance No. 16-16) includes several items that may potentially improve access to transit:

- Per 15.04.201.070 (Design Standards for Multi-Family Housing):
 - “On-site pedestrian circulation and access must be provided according to the following standards [...]”
 - “Safe and convenient pedestrian connections shall be provided from transit stops and BART stations to building entrances.”
 - Per 15.04.602 (Affordable Housing Density Bonus):
 - Developments with the maximum percentage of affordable units located “within one half mile of the Richmond BART Station/Intermodal Terminal, and the El Cerrito Del Norte BART Station, measured from the station platform, and there is unobstructed access to the major transit stop from the development” are subject to a “vehicular parking ratio, inclusive of handicapped and guest parking, [that] shall not exceed 0.25 spaces per bedroom or the ratios set below, whichever are lower.”

⁷⁸ Action CR5.B

⁷⁹ pp. 4.12-4.13

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- Per 15.04.607 (Parking and Loading Standards):
 - Developments “within one-half mile of the Richmond BART Station/Intermodal Terminal, and the El Cerrito Del Norte BART Station measured from the station platform and within one-quarter mile of an AC Transit bus stop” shall have all “minimum and maximum parking requirements [...] reduced to 50 percent of the requirements set forth in this Article”
- Per 15.04.203 (Commercial Districts)
 - “Safe and convenient pedestrian connections shall be provided from transit stops to building entrances. Sidewalk “bulbouts” or bus “pull-outs” may be required at bus stops serving commercial centers (building floor area over 25,000 square feet) to provide waiting areas for transit users and safety for passing motorists.”

Richmond Bay Specific Plan (2016); A3

Bolstered by South Richmond’s designation as a planned development area (PDA) by the Bay Area’s regional planning organizations, as well as the selection of Richmond as the home of a new campus for the Lawrence Berkeley National Laboratory, Richmond Bay is at the forefront of major shifts in land use throughout Richmond, as well as West County. Specific to access to transit, some established policies include:

- Requirements for “pedestrian access and frontage” are set for virtually every building type, which will enable more pedestrian circulation.
- Minimum requirements for bicycle parking at all developments.
- Maximum requirements for parking only, but also with standards for carpool, vanpool, and car sharing spaces.
- The design of new streets is in fitting with “the original street grid serving the current site of the Richmond Field Station,” which will increase the density of intersections and encourage pedestrian and bicycle activity as a realistic transportation option.⁸⁰ The alignments of these streets will also cross existing barriers to the area, including freeways and railroad rights-of-way.
- “The establishment and continuing maintenance of a Transportation Management Association (TMA) is a high implementation priority.⁸¹ New projects would be required to join the TMA and participate in transportation demand management (TDM) programs. The TMA would also be required to conduct parking inventory studies.⁸²
- Unbundled parking for commercial and residential uses (setting parking costs “as a separate line item in the lease” or separating the space from the rent/purchase terms altogether) is required.⁸³
- “A Transportation Impact Fee (TIF) nexus study shall be completed for the RBSP Area, the South Richmond Transportation Connectivity Plan Area, or the City as a whole.”⁸⁴

⁸⁰ p. 4-76

⁸¹ p. 4-106

⁸² p. 4-103

⁸³ p. 4-103

⁸⁴ p. 4-108

Livable Corridors Form Based Code (2015); A4

The City of Richmond is undergoing a “form-based code” planning process “for implementing the intent of the General Plan to create walkable mixed-use neighborhoods.⁸⁵” At this stage, the final draft was released in February 2015, but final approval from the City Council is still pending.

Planners for the form-based code developed a “transect” specifically for Richmond, in which the definition of linear corridors is based on a zone structure that progresses depending on the context and relation to the conditions and intent of the built environment (or lack thereof). Access to transit is not explicitly mentioned in any of the transect zones, with the exception of T4 Neighborhood: “To provide a walkable, predominantly single-family neighborhood that integrates appropriate medium-density building types such as duplexes, mansion apartments, and bungalow courts within walking distance to transit and commercial areas.⁸⁶”

“Pedestrian sheds” are defined “on the understanding that most people are willing to walk up to 5 minutes before they will choose to drive and up to 10 minutes to a major destination or transit stop.”⁸⁷ They include as follows:

Figure 51 Pedestrian Shed Definitions

Pedestrian Shed Name	Application	Definition	Maximum Size
Standard	“Planning neighborhoods”	A radius of 1,320 feet around a transportation node	160 acres
Linear	“Planning neighborhood main streets or neighborhoods with multiple nodes”	A radius of 1,320 feet around “a series of block lengths.”	200 acres
Long	“Planning major destinations and downtowns”	A radius of 2,640 feet around a “series of block lengths”	510 acres

Parking space reductions⁸⁸ for developments may be obtained for a variety of purposes:

- Up to 15% of the required parking reduced with the provision of bicycle spaces. The ratio for reduction is one vehicle space for every four bicycle spaces.
- Up to 15 parking spaces (or more with Council approval) may be reduced if the developer pays an “in-lieu fee”
- Parking facilities may not take up more than one acre in size

A minimum of 2 bicycle parking spaces are required for virtually every land use except single-unit residential developments.⁸⁹

Bicycle and pedestrian wayfinding systems defer to the WCCTAC Wayfinding Plan (see below).

⁸⁵ 15.05.P010

⁸⁶ 15.05.120.080

⁸⁷ 15.05.610.030

⁸⁸ 15.05.320.070

⁸⁹ 15.05.320.080

South Richmond Transit Connectivity Plan (2015); A5

The study area for the SRTCP is equivalent to the “Sphere of Influence” for the Richmond Bay Specific Plan. Unlike the RBSP, the study area for the SRTCP (bounded by the San Francisco Bay, Harbour Way, Ohio Street, San Pablo Avenue, and Central Avenue) includes major and future high-capacity transit stations, including the Ferry Terminal, El Cerrito del Norte BART Station, and El Cerrito Plaza BART Station.

The SRTCP defined a series of “key travel corridors,” which are the location of “most of the specific multimodal connectivity projects and services located in” the plan.⁹⁰ Among other things, the plan supports the following measures specifically in key corridors:

- “safety and predictability through the physical and operational separation of truck and bike traffic⁹¹”
- “street design and signal system upgrades where feasible⁹²” including “bicycle-only signal phases” in “high priority intersections”

The key corridors in the SRTCP include:

- Cutting Boulevard
- Carlson Boulevard
- Regatta Boulevard
- Potrero Avenue
- Central Avenue
- San Pablo Avenue
- Marina Way and Harbour Way
- 23rd Street / Marina Bay Parkway
- Julia Woods Street
- Bayview Avenue

Projects on each of these corridors (particularly streetscape and multi-modal improvements) were determined by a variety of criteria, including:

- connections to South Richmond
- access to regional transit hubs
- transit service enhancements
- proximity to key destinations
- multimodal safety
- relative ability to implement⁹³

⁹⁰ p. ES-3

⁹¹ p. 8-1

⁹² pp. 8-9

⁹³ p. 11-1

Wellness Trail (2017); A6

Envisioned as essentially a north-south connection from the Bay Trail, Future Ferry Terminal, and Marina areas to Richmond BART Station and Kaiser Medical Center via Marina Way South. Overall, the Richmond Wellness Trail's design is primarily a planned series of bike facilities that will help compliment the perpendicular Richmond Greenway in the City's bicycle network. Design elements proposed for Marina Way South include:

- A protected two-way bicycle lane on the west side south of Wright Avenue
- Two protected bicycle lanes
- An initial separation of the bicycle lane by a combination of planters, curbs, and delineator posts
- A permanent separation of the bicycle lane by landscaped medians
- Standards for the width of the protected bicycle lanes set at 7' in each direction, except at bus stops, in which the width is reduced to 5 in each direction
- One travel lane and one parking lane in each direction

A design concept was provided for the junction of the Wellness Trail and Richmond Greenway. Using painted bike lanes across Ohio Street and a prominent plaza improvement on the northeastern corner of the intersection, a biker may intuitively follow this sizable and prominent route to the existing multi-use path "on-ramp" to the Richmond Greenway.

Additionally, design elements proposed for 9th and 16th Streets (part of the loop along the northern end of the trail to compliment Nevin Avenue and the Richmond Greenway) are similar to treatments in the Yellow Brick Road plan, including traffic circles, curb extensions, high-visibility crosswalks and other calming elements.

Closer to the waterfront, the intersection of Marina Way South and Regatta Boulevard is proposed to have a roundabout.

Yellow Brick Road Iron Triangle Neighborhood Wellness Plan (2016); A7

Enacted by Council in 2015, the Yellow Brick Road Iron Triangle Walkable Neighborhood Plan was funded by a Caltrans Environmental Justice Grant. The plan area, known as the Iron Triangle, is bounded by the Union Pacific Railroad right-of-way to the east, Richmond Parkway to the west, and Richmond Greenway/Ohio Avenue to the south. The "Yellow Brick Road" vision of the plan placed a premium on many aspects of urban walkability, including accessible sidewalks, traffic calming measures, and an overall aesthetically pleasing walking experience.

Demonstration projects, including curb extensions, bike lanes, and traffic circles with public art, were implemented by the community across multiple workshops.

A design plan concept and cost estimates were created for the first phase, known as the "Root Route," which is a critical north-south link centered on 7th Street, with connections along Pennsylvania Avenue and Elm Avenue. This includes:

- Class II Bike lanes
- Curb extensions at crossings
- Extended sidewalks along the west side of 7th Street
- Pedestrian-scale lighting

- Roundabouts (specifically at 7th and Elm)

16th Street between Richmond BART (at Nevin Avenue) and the Richmond Greenway is identified as a “Trunk Route,” which is the second phase of the project. This includes:

- Bicycle Boulevard signage and striping between the Richmond Greenway and Macdonald Avenue, with existing landscaping replaced with trees and bioswales.
- “Yellow Brick” crosswalks and raised intersections along the corridor
- Curb extensions on the northwest corner of the intersection with Macdonald Avenue
- Raised crosswalks at the intersections with Livingston Avenue, Bissell Avenue
- A traffic circle at Chanslor Avenue and a cul-de-sac with no parking allowed at the Richmond Greenway

Other recommendations involving “Trunk Routes” include:

- Raised crossings along the Richmond Greenway
- Median, green painted bike lanes, raised intersections and “yellow brick” crosswalks along Pennsylvania Avenue between Richmond Parkway and Harbour Way
- WCCTAC guidelines for pedestrian and bicycle wayfinding systems

Rumrill Boulevard / 13th Street Complete Streets Study (2015); A8

This study, a unique cross-jurisdictional collaboration including the City of San Pablo and Contra Costa Health Services, resulted in a 30% design concept for the reconstruction of the corridor.

Specifically, the Rumrill /13th corridor is a continuous stretch of locally owned and separately named roadways that amalgamate into a major northeastern/southwestern connection between San Pablo Avenue and Richmond Parkway. The streets, which are a “key corridor for walking in San Pablo and Richmond,” also bear “an important function for neighborhood access to Richmond BRT, Contra Costa College, safe routes to school for many area households, and through access for autos to I-580 and I-80 via Harbour Way and San Pablo Avenue.⁹⁴” It is a Priority Development Area, making it eligible for One Bay Area Grants (OBAG).

The portion within the City of Richmond includes the study corridor’s origin at Pennsylvania Avenue and 10th Street/Harbour Way (just west of the railroad right of way heading northbound out of Richmond BART Station), continuing north along 13th Street, to the limits just north of Rheem and Costa Avenues (approximately 0.6 miles long).

The preferred concept, in response to deficiencies in many multimodal protections and amenities along the corridor includes:

- A “repurposed” single travel lane in each direction to be reallocated for primarily multimodal transportation facilities (and “in some cases” for left-turn pockets)
- A continuous protected bicycle lane, with “a landscaped buffer and parting protection” in the Richmond portion
- High-visibility crosswalks with shorter crossing distances

⁹⁴ pp. 8-10

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

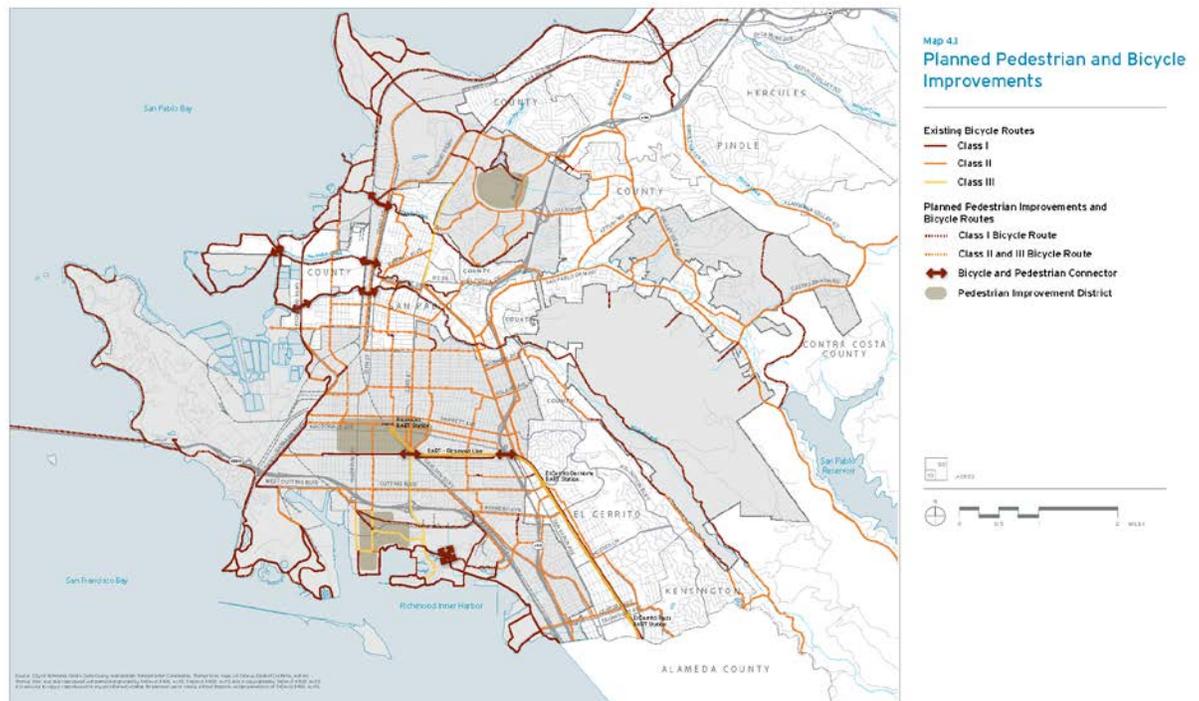
City of Richmond

- Reconstruction of curb cuts and driveways
- Pedestrian-scale lighting
- Bus shelters and relocating stops to the far side of intersections
- Additional street trees

Pedestrian Plan (2011); A9

Three “pedestrian improvement districts” were identified in older (dating back to 1994) updates to the Richmond General Plan (and are mentioned again in the 2030 Plan’s maps, as shown in Figure 49): Downtown Richmond, the Ford Peninsula, and the Hilltop Mall area. Not only are these locations “where the City anticipates its highest pedestrian volumes and demand of the course of its General Plan build-out,” but pedestrian improvements within a quarter-mile of these districts receive greater priority as set by the 2011 Pedestrian Plan’s project prioritization methodology.⁹⁵

Figure 52 Planned Pedestrian and Bicycle Improvements Map with Pedestrian Improvement Districts, 2030 General Plan⁹⁶



Beyond designating corridors based on a scoring system, several corridors were singled out. Cutting Boulevard, Harbour Way, Marina Bay Parkway, Barret Avenue, and Carlson Boulevard (each of which is touched by a transit route), are identified as “overly wide and redundant

⁹⁵ p. A-2

⁹⁶ p. 4.49

connector streets” due to employment trends in Richmond. As a result, these streets with “excessive right of way” are seen as “immediate opportunities to enhance the pedestrian and bicycle realm by expanding sidewalks, installing bike lanes and creating inviting public spaces.”⁹⁷ To enable greater pedestrian connectivity, the Pedestrian Plan recommends:

- A complete streets policy
- Design enhancements to tighten roadways and intersections
- Increased crosswalk illumination
- Enforcement of sidewalk blockage laws

Bicycle Master Plan (2011); A10

The Bicycle Master Plan proposes a bicycle facility network expansion of over 100 miles, with the overarching goal “to provide continuous bikeways with the greatest degree of bicycle comfort possible.”⁹⁸ Beyond the envisioned network, there are numerous policies and actions that support transit access in the Bicycle Master Plan. They include:

- “Providing safe and comfortable bicycle and pedestrian access to the station area will facilitate multi-modal trips and help to reduce auto trips. Way-finding signage, secure bicycle parking and connectivity to the Richmond bicycle network should be prioritized.”⁹⁹
- “The intermodal transit village, Downtown Richmond, Hilltop Mall area, Ford Point and other major retail and employment centers should be accessible from all neighborhoods by a reasonably direct system.”¹⁰⁰
- “Improving safety and access along freeways and through inter- changes” is one of 7 “focus areas” of the proposed bicycle network, which has ramifications for accessing the more peripheral transit nodes (RPTC, El Cerrito del Norte).¹⁰¹
- Action CR2.C is to “Enhance access, safety and the streetscape experience for pedestrians, bicyclists and transit riders.”¹⁰² This is echoed in Policy CR3.1.
- “Class I parking [secure and weather protected] is meant to be used for more than two hours and is typically used by employees at work, students at school, commuters at transit stations or park-and-ride lots and residents at home.”¹⁰³
- Recommended “Install a map of biking routes and parking facilities in the Richmond BART Station/Amtrak station.”¹⁰⁴
- Bike stations are “appropriate at major transit hubs, such as a ferry terminal.”¹⁰⁵

Specific projects proposed by the Bicycle Master Plan include:

⁹⁷ p. 16

⁹⁸ p. xi

⁹⁹ pp. 46-47

¹⁰⁰ p. 52

¹⁰¹ p. 57

¹⁰² p. 10

¹⁰³ p. 73

¹⁰⁴ p. 91

¹⁰⁵ p. 186

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- Oakland bicycle wayfinding signage (with BART logo) recommended.
- “Fundable bicycle projects include improvements at or near the I-80/San Pablo Dam Road interchange; storage at the El Cerrito Plaza, El Cerrito Del Norte and Richmond BART Stations.”¹⁰⁶
- At the time, Nevin Avenue streetscape improvements were being implemented from BART to 27th Street, as was a connection between the Richmond and Ohlone Greenways.
- “A critical gap at 23rd Street and Carlson Avenue where the railroad and BART tracks pass through.”¹⁰⁷ Recommendations include:
 - Improve crossings at the Carlson Boulevard/ Broadway/ 22nd Street intersection to create a seamless connection between the Greenway and on-street facilities. Provide a pedestrian/bicycle actuated signal phase to allow Greenway users to cross diagonally across the intersection.
 - Construct a Class I spur path along the east side of Carlson Boulevard from the Richmond Greenway to Broadway. Right-of- way acquisition may be necessary.
 - Install Class II physically separated bike lanes on Carlson Boulevard.
 - Potential lane narrowing or lane reduction on Carlson Boulevard and S. 23rd Street.
 - Install a two-way cycle track adjacent to southbound S. 23rd Street below the railroad tracks. Provide switchback connections to the Greenway at Ohio Avenue on the south end and 22nd Street on the north end.

23rd Street Streetscaping Project (2008-2009); A11

The streetscaping of 23rd is an ongoing collaboration that initially emerged out of the City’s redevelopment agency at the time. The final community meeting acknowledged that the project, covering the one mile of 23rd Street extending north from Macdonald Avenue to the city limits near Rheem Avenue, would “likely need to be done in phases based on priority and available funding.”¹⁰⁸

Primarily a commercial road, 23rd Street has, as of 2016, begun to see some consistent implementation of a streetscape redesign, including banners and branding, street lighting, accessible sidewalks and crossings. However, many preferences for streetscape elements, as listed below, remain to be seen.

Needs coming out of community and technical advisory meetings included:

- The top priority of community input was “street trees”
- A directional signage program
- “Thematic elements”¹⁰⁹ that are specific to the project area

Alternatives for numerous essential street elements were chronicled and evaluated, including the following, which are most relevant toward safe, convenient, and equitable transit access:

¹⁰⁶ p. 15, Section 15.08.410

¹⁰⁷ p.46

¹⁰⁸ Community Workshop 5 Summary

¹⁰⁹ Technical Advisory Committee Meeting 5 Summary

- Placement of street trees
- Number and arrangement of travel lanes
- Number and angle of on-street parking lanes
- “Signature”¹¹⁰ and pedestrian-scale street lighting
- Bus stop shelters
- Street furniture
- Sidewalk width

Ultimately, a preferred alternative with parallel parking was chosen by the team.

AC TRANSIT

Short-Range Transit Plan (2015); B1

The latest Short-Range Transit Plan (SRTP) for AC Transit comes on the heels of the approval of Measure BB by Alameda County voters in November 2014, which set in motion a Service Expansion Plan for the agency. Because the funds related to Measure BB are limited to Alameda County, “AC Transit’s ability to expand service in Contra Costa County is limited at this time.”¹¹¹

Nevertheless, the planning and outreach processes for the Service Expansion Plan revealed and confirmed several district-wide priorities for AC Transit, including:

- The simplification of route designs on corridors served by at least three routes (such as San Pablo Avenue);
- The implementation of a “grid network where feasible,” and a complementary plan for “timed transfers”¹¹²
- Performance measurements for AC Transit that, among others, include an improvement in the number of people within a quarter-mile, walk of bus service.¹¹³

Major Corridors Study (2015); B2

In keeping with goals to increase ridership, access, reliability, cost-effectiveness, and environmental sustainability, the Major Corridors Study seeks to find “the best opportunities to benefit the largest number of customers and to attract new riders by 2040.”¹¹⁴ The study focuses on 12 of the most populated and transit-dependent corridors in the AC Transit District, including the San Pablo Avenue/Macdonald Avenue corridor.

Although the Study acknowledges that recent improvements to Line 72R reduced travel times, but “on-time performance is low as San Pablo Avenue is heavily congested at many times of the day and on weekends.”¹¹⁵ This analysis led the study to conclude that investments in bus rapid transit

¹¹⁰ Community Workshop 2 Summary

¹¹¹ p. 59

¹¹² p. 55

¹¹³ p. 56

¹¹⁴ p.10

¹¹⁵ p. 48

(BRT) upgrades (including bus-only lanes for a majority of the corridor, off-board fare payment, high-platform stations with amenities, and new pedestrian infrastructure to improve stop access;¹¹⁶ is the necessary path for the San Pablo/Macdonald corridor. BRT was proposed for just 5 of the 12 corridors.¹¹⁷

Richmond Parkway Transit Center Planning and Conceptual Design Study (2005); B3

Multiple concept designs were made for the RPTC with an included “focus on small, local-serving convenience retail.¹¹⁸” There is a recognition that “pedestrian access to the RPTC is currently constrained,”¹¹⁹ and the following pedestrian access suggestions include:

- “Minimize the number boarding area
- “Provide shelters, canopies and landscaping for weather and sun protection within the RPTC
- “Provide direct, clear and protect pedestrian routes between parking, transit boarding areas, and the passenger pick-up/drop-off
- “Improve connection to intersection of Richmond Parkway and Blume Drive, pave existing dirt path, increase paved surfaces and/or create a plaza
- “Potential to create a connection from the elevated segment of Richmond Parkway to a new parking structure on the RPTC site
- “If warranted, a traffic signal at the intersection of Blume Drive and the RPTC/Hilltop Plaza access road would create a new location to cross Blume Drive
- “Create a formal crossing to Hilltop Plaza and improve pedestrian connection (may require off-site improvements)
- “New sidewalks along Richmond Parkway (requires off-site improvements)”

The following suggestions were made for bicycle access to RPTC:

- “Consider reconfiguring lanes at the Richmond Parkway/Blume Drive intersection to improve bicycle conditions and, if possible, extend bicycle lanes
- “Potential to provide bicycle lanes on Blume Drive (requires off-site improvements)
- “Provide bicycle facilities at the RPTC (bicycle racks, bicycle lockers, potential bicycle station)
- “Improve bicycle connection to intersection of Richmond Parkway and Blume Drive, pave existing dirt path to make it an accessible bicycle and pedestrian path
- “If warranted, a traffic signal at the intersection of Blume Drive and the RPTC/Hilltop Plaza access road would improve crossing conditions for bicyclists
- “Potential to create a connection from the elevated segment of Richmond Parkway to a new parking structure on the RPTC site”

¹¹⁶ p. 25

¹¹⁷ AC Transit has broken ground on a BRT Line along International Boulevard in Oakland, and outcomes may influence the details of what may be implemented along the San Pablo/Macdonald corridor.

¹¹⁸ p. 17

¹¹⁹ p. 41

AC Transit Bicycle Parking Study (2009); B4

“In 2009 AC Transit conducted a study to identify its bus stops that have a high latent demand for bicycle parking and to provide guidelines for the design and installation of secure and accessible parking at those locations. Using an index model of bicycle parking demand, the study identified 39 priority bus stop locations for bicycle parking in Richmond.”¹²⁰

COUNTY AND REGIONAL PROGRAMS AND PLANS

Contra Costa County Programs

Through December 31, 2036, the City of Richmond has a **development fee dedicated to the West County Subregional Transportation Mitigation Program**. No new development may be exempt from the fee. In addition to locations in El Sobrante, Hercules, San Pablo, and North Richmond, fees are exclusively to be used for:

- Richmond Intermodal Station
- El Cerrito Del Norte area improvements
- improvements along the Capitol Corridor right-of-way
- ferry service to San Francisco, as well as supportive capital improvements like feeder transit service, landside and terminal areas, etc.
- closing gaps in the Bay Trail
- improvements to access and parking at Richmond and El Cerrito BART stations
- improvements at the I-80 interchange with Central Avenue (although provisions for bicycle and pedestrian safety are not exclusively stated for this interchange as they are for San Pablo Dam Road).¹²¹

Regional Programs

The City of Richmond is within the jurisdiction of the Bay Area Air Quality Mitigation District and is subject to the **Bay Area Commuter Benefits Program**, as established by Air District Regulation 14 (Rule 1), Senate Bill 1339, and renewed by Senate Bill 1128. Under the program, all employers in the Bay Area with at least 50 full-time employees are required to designate a commuter benefits coordinator and provide at least one of four options of commuter benefits to all employees, including the exclusion of transit or vanpool costs from taxable income, a subsidy for transit or vanpool, a shuttle service provided by the employee, or a commuter benefits that will be as effective as the other options.

Countywide Comprehensive Transportation Plan (2014); C1

Transit priorities specific to Richmond include:

- “Implement Appian Way Alternatives Analysis and Complete Streets Study,

¹²⁰ Bicycle Master Plan, p. 78

¹²¹ Section 15.12.050

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- “Support projects and programs that improve passenger experience, system upgrades, and capacity of BART stations in West County,
- “Continue to evaluate long term solutions to congestion around the El Cerrito Del Norte BART Station,
- “Partner with Water Emergency Transportation Authority and MTC to plan and fund ferry service in West County.”¹²²

Among the listed projects relevant to Richmond:

- Streetscaping along 23rd Street, Macdonald Avenue, and Nevin Avenue;
- Parking expansion for ferry service;
- Improvements to BART station access;
- Improvements to the Richmond BART Station facility;
- Improvements to the at-grade railroad crossing next to the intersection of Carlson and Cutting Boulevards, and;
- A grade separation of railroad lines currently cutting across Marina Bay Parkway, are among the listed projects relevant to Richmond.

West County High-Capacity Transit Study (2015); C2

In 2015, the West Contra Costa Transportation Advisory Committee (WCCTAC) began a study of expanding high-capacity transit for residents living within West County. With consideration given to current population trends, the potential development of the Richmond Field Station as the “second campus” of the Lawrence Berkeley Laboratory, and the ongoing interest among residents for greater transit service, the study has proposed a series of high-capacity transit services along the I-80 corridor. The study is currently in its final stages, but the alternatives proposed for West County include:

- Express bus service to Emeryville, Berkeley, and Oakland.
- A bus rapid transit (BRT) line connecting Contra Costa College, Hilltop Mall, and RPTC with BART stations. Corridors could include 23rd Street or a combination of San Pablo and Macdonald Avenues.
- An extension of the BART system from Richmond BART Station to Hercules with the possibility of infill stations at Contra Costa College, Hilltop Mall, RPTC, and Appian Way.
- An expansion of commuter rail service to Hercules was initially considered but ultimately tabled.

The alternatives given full consideration incorporated phased design improvements, especially surrounding Hercules Transit Center, RPTC, and Hilltop Mall. The ramifications for expanded transit rights-of-way could create new barriers for pedestrians, but certain ideas, such as the conversion of parking at RPTC to a garage, could also be an opportunity for accessible pedestrian connections in the long term.¹²³

¹²² Figure 1.2-5: Transit Projects and Programs

¹²³ TM#11 p. 13

WCCTAC Transit Enhancement and Wayfinding Plan (2011); C3

The many streetscaping efforts occurring throughout downtown Richmond, including reconstructions of Nevin Avenue, all play a role in encouraging bicycle and pedestrian access to Richmond BART Station. The following enhancements, among others, were listed:

- improved passenger amenities, including security cameras, informational signage, a bike station, and upgraded waiting areas, at Richmond BART Station itself
- Protected path connections to the north of Barret Avenue
- Bicycle boulevards going to the south, along Marina Way, 15th Street, 19th Street.
- Crossing improvements at key Barrett Avenue intersections with Marina Way and 19th Street.

As for the RPTC, the key issues include disconnected land uses, surrounding high speed traffic, and neglected pedestrian infrastructure. The listed improvements for the RPTC area include:

- New sidewalks and on-street bike lanes along Blume Drive, Garrity Way, Park Central, and Hilltop Drive
- New sidewalks and separate shared use paths along Richmond Parkway
- On-street bike lanes along Park Central, Blume Drive, hilltop Drive
- Improved crossings on the west and south sides, as well as surrounding I-80 interchanges
- Additional passenger amenities, such as dedicated taxi areas, bicycle racks, public restrooms, an on-site vendor, a transit information booth similar to BART station entrances,

El Cerrito del Norte benefits from surrounding low-speed residential streets, but to get to Richmond, one must pass through several notable wide and busy streets, including San Pablo Avenue, Cutting Boulevard, and Potrero Avenue, as well as the barriers set up by interchanges onto I-80. Listed enhancements include:

- Relocation of the drop-off area for passengers with disabilities to be closer to the station entrance
- Installation of bicycle lockers and improved station area signage (including maps of the station area and transit connections along San Pablo Avenue)
- Installation of real-time signage showing available parking inventory and relocation of real-time signage showing upcoming bus arrival times
- Additional trash bins and collection shifts to maintain station cleanliness

South Richmond's planned development area (PDA), where the future ferry terminal will be located, also has access issues profiled. Among the recommendations are:

- Improved crossings around the I-80 interchanges
- Shared use paths along Regatta Boulevard and 23rd Street to pass by historically industrial land uses

Countywide, a series of TDM measures are recommended as a means to enhance and encourage transit ridership through greater access:

- A feasibility study for shuttles
- Subsidized and universal transit passes
- Parking cash out programs through a local ordinance

- Car sharing, dynamic ride sharing, and taxi sharing programs
- Alternative work schedules
- Improved “smart” parking technology
- Shared parking policies

BAY AREA RAPID TRANSIT (BART)

Bike Parking Capital Program (2015); D1

After identifying a total of 68 bicycle parking spaces existing in Richmond BART Station, the Bike Parking Capital Program recommends an increase of 48 spaces to be added (and none to be removed) in the form of 40 short-term wave/inverted U rack spaces and 8 long-term “ArcLocker” spaces.¹²⁴ The justification in the proposed expansion is found in the face that “the Richmond BART Station has a modest amount of space for additional secure bicycle parking within the fare gates.”¹²⁵ To enable greater visibility and security of existing and proposed bicycle parking, the plan recommends the relocation of the station’s information kiosk, as well as benches, trash receptacles, and other signage – all outside the paid area within the underground corridor.

Because the “plan is a snapshot in time and reflects bicycle parking needs and opportunities at stations throughout the BART system in mid-to-late 2014,” El Cerrito del Norte Station is not included.¹²⁶

Station Profile Study (2016); D2

In general, the guidelines pertaining to multimodal access, curbside management, and transit-oriented development at BART stations are still under development. However, among the existing policies and programs are under review, the Station Access Policy identifies points specific to Richmond and El Cerrito del Norte BART stations:

- Richmond BART Station is classified as a “Balanced Intermodal” station with a “stable” development climate, while El Cerrito del Norte is classified as an “Intermodal – Auto Reliant” station with a “dynamic” development climate.
- The relatively late time in which the station parking facilities fill up (8:40 a.m. for Richmond and 8:25 a.m. for El Cerrito del Norte).
- The fact that transit-oriented developments are continuing to be built around Richmond BART Station.

Station Access Policy (in progress)

The Station Access Policy was adopted in 2016. BART is currently in the process of implementing this policy and setting benchmarks.

¹²⁴ p. 3

¹²⁵ p. 39

¹²⁶ p. 2

Station Modernization Program (in progress)

This ongoing program includes El Cerrito Norte BART as one of two pilot stations. This process will include a thorough review of the station, a reassessment of long range needs and design needs to respond to capacity challenges, and a remodeling of the station.

Multimodal Access Guidelines; Curbside Management Guidelines (in progress)

BART is currently in the process of developing policies and guidelines around design elements and curbside regulations pertaining to all areas between the edge of BART property to the fare gate of BART stations.

BART Bicycle Plan (2012); D3

The BART Bicycle Plan is bookended by an ambition to double the bicycle access mode share across the BART system from 4.1% in 2010 to 8% in 2022 (p. 27), as recent gains in bicycle trips to BART are still not keeping up with the pace of BART's overall growth in ridership.

However, the BART Bicycle Plan concedes that, because the first and last mile is cited, in the national literature and by focus group participants alike, as one of the biggest barriers to bicycling to public transit," the necessary measures to increase bicycle access shares rest on improvements occurring outside of BART's jurisdiction and responsibility, including municipalities.¹²⁷

Richmond had 60 existing bicycle spaces (42 racks and 18 lockers), while El Cerrito del Norte had capacity for 154 bicycles (126 racks and 28 lockers). All racks are located outside of the fare gates. Occupancy for the two stations were 29% and 14%, respectively, which is less than the system wide average of 41%.¹²⁸

Among many system wide recommendations, Richmond BART Station was called out as a location with "minimal or no directions leading passengers to bicycle facilities,¹²⁹" which suggests a need for improved wayfinding systems.

Richmond BART Station Access Plan (2002); D4

The Richmond BART Station Access Plan, dated from 2002 (before the development of the Richmond Transit Village), declared that "many riders perceive the station area as unsafe," which contributes to its relatively lower usage than the El Cerrito stations (as well as its distance from I-80). With that said, the plan advocates for a "relatively small investment in new facilities at the Richmond BART Station and in the surrounding community, beyond that which is currently planned for the station." Pedestrian investments recommended include:

- "Create safe, pedestrian, wheelchair, and bicycle friendly streetscape on Nevin Avenue between station and Civic Center.
- Provide wayfinding signs, lighting and other amenities along local streets and throughout the transit village.

¹²⁷ p. 26

¹²⁸ pp. 14-17

¹²⁹ p. 25

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- Reconfigure some existing and add new curb cuts along local streets.
- Locate a Richmond Police substation at the new intermodal facility.”¹³⁰

Bicycle investments recommended include:

- “Install bike stair channels at station entrances;
- Incorporate BART’s Bicycle Access and Parking Plan design guidelines (currently under development) into the final design of the Richmond Transit Village;
- Add bicycle lockers to meet current demand, and additional racks in the future, as demand warrants;
- Provide security cameras for bicycle parking areas;
- Work with the City of Richmond to develop on-street bike lanes and signage for key access routes (Macdonald Avenue, Harbour Way and 17th/19th Street corridor);
- Encourage the City of Richmond to create a bicycle left turn lane into the station at 19th Avenue.”¹³¹

AMTRAK/CAPITOL CORRIDOR JOINT POWERS AUTHORITY

Fiscal Year 2017-2019 Business Plan; E1

Specific to Richmond, the latest Capitol Corridor business plan programs \$2.5 million for Richmond BART Station improvements. In particular, the funds would create a “flashing light that will indicate to Capitol Corridor trains when a BART train is approaching, to allow better coordination of passengers transferring from BART to Capitol Corridor.”¹³² Additionally, a parking validator machine would be installed in the Richmond BART Station parking garage to improve the ease of payment for parking.

WATER EMERGENCY TRANSPORTATION AUTHORITY

Richmond Ferry Terminal Design Project (2014-2016); F1

The Richmond Ferry Terminal is planned to be constructed at a current recreational boat launch site along Ford Channel (the recreational launch will be relocated to another location closer to the Richmond Marina). The ferry terminal site is adjacent to where Harbor Way South ends at Ford Channel (also known as Marina Bay Channel), and access will be designed to facilitate passenger movement to the new gangway and dock from Harbor Way South, the parking lot to the west, and the Ford Assembly Building to the east.

The newly expanded ferry service, which may start as early as 2018, was contingent on a grant-funded expansion of capacity at the San Francisco Ferry Terminal.

¹³⁰ p. 10

¹³¹ p. 10

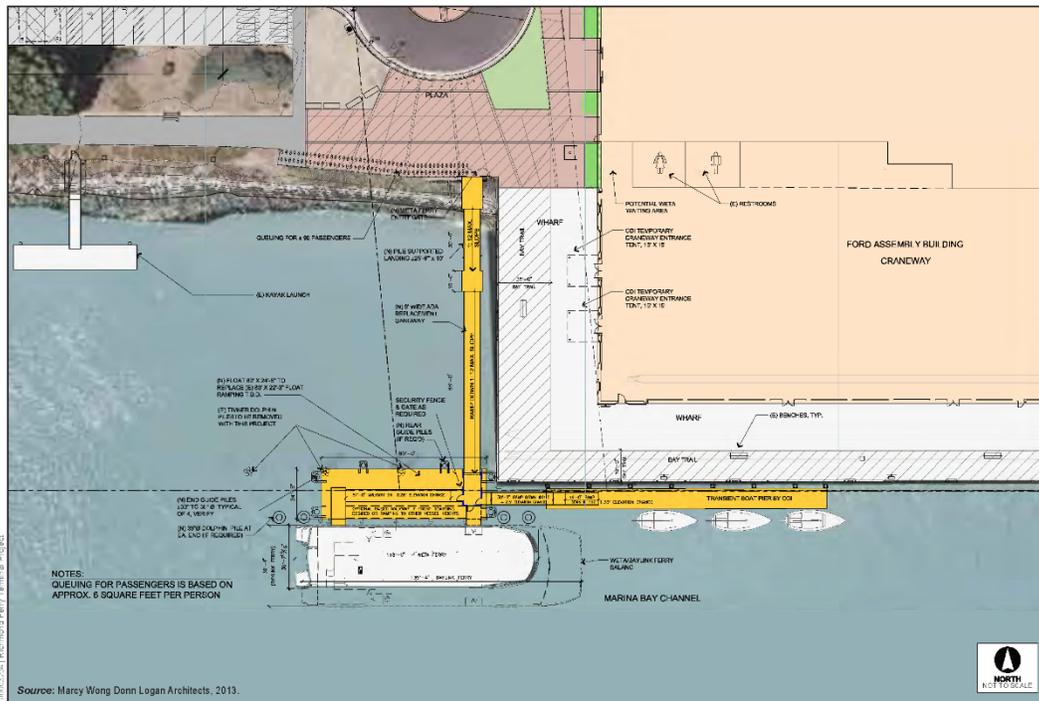
¹³² p. 10

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**
City of Richmond

Figure 53 Richmond Ferry Terminal Site Plan and Parking



Figure 54 Richmond Ferry Terminal Site Plan Detail



**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

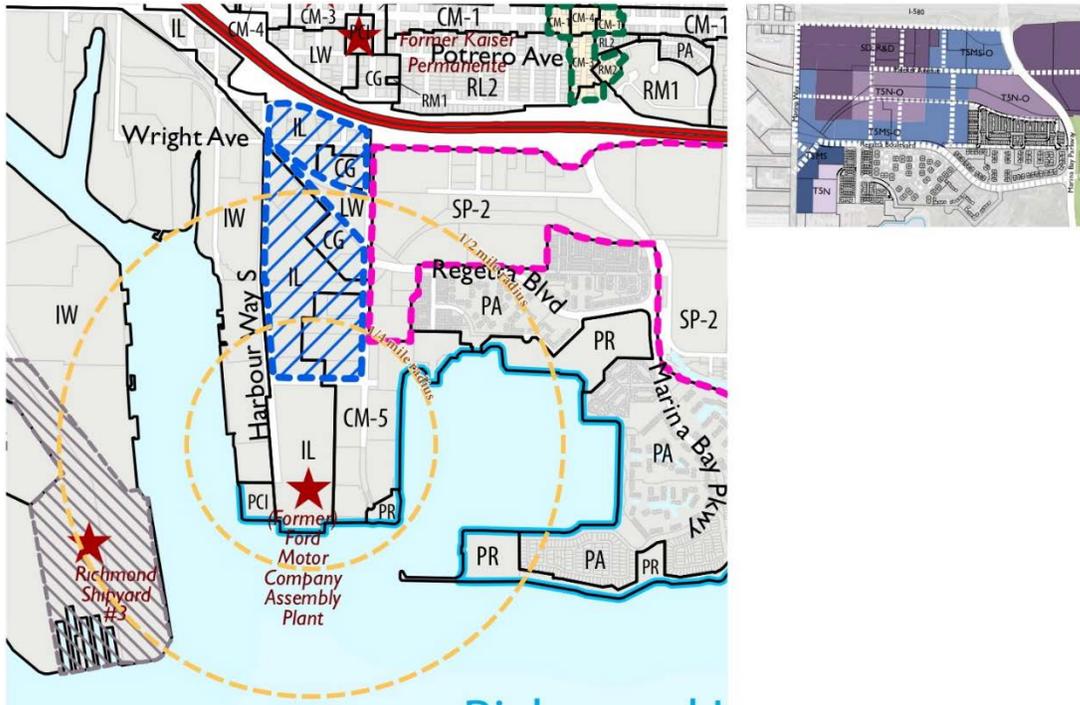
Figure 56 Zoning Details Surrounding Richmond BART Station

Zones	Intent/Uses	Density/ FAR	Lot Size	Lot Coverage	Building Height	Setbacks
Richmond General Plan / Zoning Update						
Medium Density Multi-Family Residential (RM 1)	Single- and multi-family residential with a limited amount of neighborhood supporting uses	10 du/ac min. 27 du/ac max.	5,000 sf min.	75% max.	35' max.	10' min. front setback
Single Family Low Density Residential (RL2)	Low density residential with a limited amount of neighborhood supporting uses	12 du/ac max.	3,750 sf min.	50% max.	30' max.	15' min. front setback
Commercial General (CG)	Retail, service, office, research & development, and limited industrial uses. No residential	2.0 FAR	5,000 sf min.	NA	55' max.; 35 within 50 feet of R district	0' min. front setback
Richmond Livable Corridors Form-Based Zones						
T4 Neighborhood (T4N)	Primarily residential with mix of uses allowed in open sub-zone	Medium density	Varies	NA (Small to Medium Footprint Buildings)	2 ½ stories	10' min.; 15' max. front setback
T4 Main Street (T4MS)	Vertical Mixed-use. Commercial on ground floor with residential allowed on upper floors.	Medium density	Varies	NA (Small to Large Footprint Buildings)	20' min.; 3 stories max.	0' min.; 10' max. front setback
T5 Neighborhood (T5N)	Primarily residential with home occupation uses and neighborhood supporting uses allowed in ancillary buildings	Medium to High-density	Varies	NA (Small to Large Footprint Buildings)	2 stories min.; 55' max.	0' min.; 15' max. front setback
T5 Main Street (T5MS)	Vertical Mixed-use. Commercial on ground floor with residential allowed on upper floors.	High-density	Varies	NA (Small to Large Footprint Buildings)	2 stories min.; 55' max. (85' max. in some areas)	0' min.; 10' max. front setback
T6 Core (T6C)	Vertical Mixed-use. Commercial on ground floor with residential allowed on upper floors.	High-density	Varies	NA (Medium to Large Footprint Buildings)	4 stories min.; 135' max.	0' min.; 10' max. front setback

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 57 Richmond Ferry Terminal Zoning Map from City Zoning Update and Richmond Bay Specific Plan



Richmond Ferry Terminal

Figure 58 Zoning Details Surrounding Richmond Ferry Terminal

Zone	Intent/Uses	Density/FAR	Lot Size	Lot Coverage	Building Height	Setbacks
Richmond General Plan / Zoning Update						
Industrial Light (IL)	Light industrial, Office, Research	0.65 FAR	NA	NA	55' max.	0' min. front setback
Industrial Water Related (IW)	Water Related industrial, research Facilities	0.5 FAR	NA	NA	100' max.	10' min. from local streets; 25' min. from collector streets (front setback)
Commercial Mixed-use, Activity Node (CM-5)	Commercial on ground floor and Residential allowed on upper floors	40 du/ac min.; 125 du/ac max. 5.0 FAR	5,000 sf min.	NA	22' min.; 135' max.; 12 stories max.	5' min. front setback
Public Cultural, & Institutional (PCI)	City facilities, utilities, schools, and other public and quasi-public uses	1.0 FAR	10,000 sf min.	NA	45' max.	When adjacent to an RS or RM zone, same as that zone

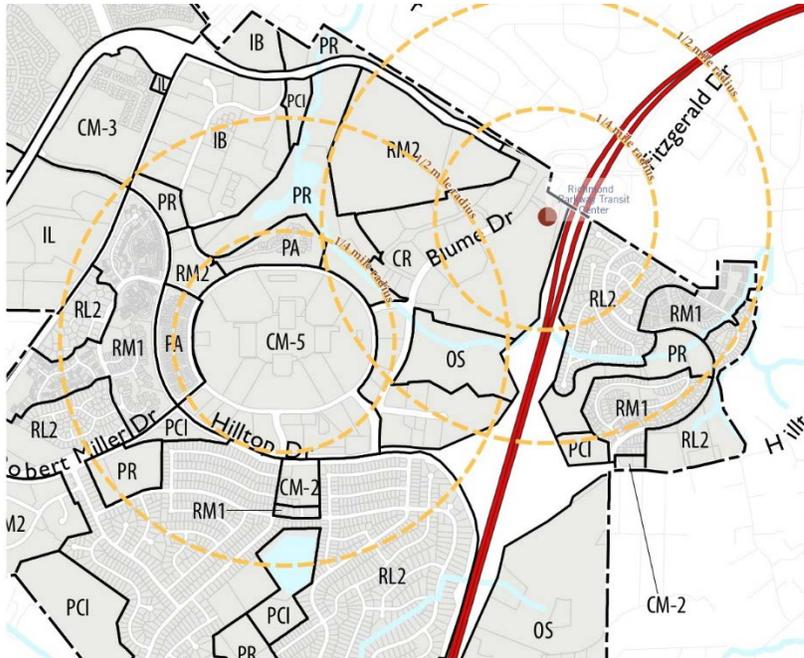
**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Zone	Intent/Uses	Density/FAR	Lot Size	Lot Coverage	Building Height	Setbacks
Parks & Recreation (PR)	Active and passive public parks including indoor and outdoor public and private recreation facilities.	0.5 FAR	NA	NA	35' max.	10% of lot depth, not to exceed 20'
Planned Area (PA)	This zone designation facilitates the development of large sites (over 5 acres) in accordance with the General Plan through a Planned Area Plan					
Richmond Bay Specific Plan (SP-2)						
T5 Neighborhood (T5N)	Medium- to high-density residential to transition to lower-density and mixed-use environments.	Medium- to high-density	Varies	Small- to Large-footprint buildings	20' min.; 55' max.	0' min.; 15' max. front setback
T5 Main Street (T5MS)	Urban main street environment supporting locally and regionally serving commercial, retail, and services	Medium- to high-density	Varies	Small- to Large-footprint buildings	2 stories min.; 55' max. (85' with bonuses)	0' min.; 15' max. front setback

Richmond Parkway Transit Center and Hilltop Mall

Figure 59 Richmond Parkway Transit Center / Hilltop Mall Zoning Map from City Zoning Update



**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Figure 60 Zoning Details Surrounding Richmond Parkway Transit Center / Hilltop Mall

Zones	Intent/Uses	Density/ FAR	Lot Size	Lot Coverage	Building Height	Setbacks
Richmond General Plan / Zoning Update						
Medium Density Multi-Family Residential (RM 1)	Single- and multi-family residential with a limited amount of neighborhood supporting uses	10 du/ac min.; 27 du/ac max.	5,000 sf min.	75% max.	35' max.	10' min. front setback
Single Family Low Density Residential (RL2)	Low density residential with a limited amount of neighborhood supporting uses	12 du/ac max.	3,750 sf min.	50% max.	30' max.	15' min. front setback
Commercial Mixed-use (CM-5)	Mid- and high-rise mixed-use with office, retail, entertainment and residential uses.	40 du/ac min.; 125 du/ac max. 5.0 FAR	5,000 sf min.	N/A	22' min.; 135' max.; 5 stories max.	5' min. front setback
Public Cultural, and Institutional (PCI)	City facilities, utilities, schools, and other public and quasi-public uses.	1.0 FAR	10,000 sf min.	N/A	45' max.	Same as RS or RM
Parks and Recreation (PR)	Active and passive public parks.	0.5 FAR	N/A	N/A	35' max.	20% of lot depth, not to exceed 40 ft.
Regional Commercial (CR)	Mid-rise mixed-use development and regional shopping centers with primarily retail as well as office and residential uses.	2.0 FAR	5,000 min.	N/A	2 ½ stories	0' min. front setback
Open Space (OS)	Vertical Mixed-use. Commercial on ground floor with residential allowed on upper floors.	0.5 FAR	N/A	N/A	20' min.; 3 stories max.	20% of lot depth, not to exceed 40 ft.
Commercial Mixed-Use, Neighborhood (CM-2)	Residential and neighborhood-serving retail uses. Residential above ground floor commercial is preferred.	10 du/ac min.; 30 du/ac max. 0.5 FAR	5,000 sf min.	N/A	45' min.; 135' max.; 4 stories max.	0' min. front setback
Commercial Mixed-Use, Neighborhood (CM-3)	Mixed-use development with commercial or office/light industrial uses at street-level along corridors.	15 du/ac min.; 50 du/ac max. 2.0 FAR	5,000 sf min.	N/A	55' min.; 135' max.; 5 stories max.	0' min. front setback
Industrial, Business (IB)	Flex and industrial buildings accommodating a diverse range of business and light industrial uses.	0.5 FAR	N/A	N/A	55' max.	15' min.
Industrial, Light (IL)	Industrial complexes, flex and industrial buildings	0.65 FAR	N/A	N/A	55' max.	0' min.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

Zones	Intent/Uses	Density/ FAR	Lot Size	Lot Coverage	Building Height	Setbacks
	accommodating a diverse range of light industrial uses.					

El Cerrito del Norte BART Station

City of Richmond Zoning in proximity to El Cerrito del Norte BART Station includes:

- **Regional Commercial (CR):** Intended for mid-rise mixed-use regional shopping centers. High-intensity retail development in a pedestrian-friendly environment. Can also support some office, services, and residential uses.
- **Commercial General (CG):** Intended to support retail, service, office, research & development, and limited industrial uses. No residential uses allowed.
- **Commercial Mixed-Use, Residential (CM-1):** Intended to support mixed-use and Residential-only development. Commercial-only development is not allowed. New development is required to incorporate pedestrian-oriented design standards.
- **Commercial Mixed-Use, Commercial (CM-3):** Intended to support mixed-use development with commercial and office uses along corridors. Allows residential-only and commercial-only development. New development is required be designed to pedestrian-oriented design standards.
- **Commercial Mixed-Use, Gateway/Node (CM-4):** Intended to support mid-rise mixed-use development at key gateways and nodes. Allows commercial at ground floor and allows office or residential uses on upper floors. New development is required be designed to pedestrian-oriented design standards.
- **Medium Density Multi-Family Residential (RM 1):** Primarily single- and multi-family residential (10 du/ac min, 27 du/ac max) up to 35 feet. Allows a limited amount of neighborhood supporting uses.
- **Medium-High-density Multi-Family Residential (RM 2):** Primarily multi-family residential (15 du/ac min, 40 du/ac max) up to 35 feet. Also allows a limited amount of neighborhood supporting uses
- **Single Family Low Density Residential (RL 2):** Primarily low-density residential (15 du/ac max). Can also support a range of neighborhood supporting uses.
- **Planned Area (PA):** Facilitates the development of large sites (over 5 acres) in accordance with the General Plan through a Planned Area Plan
- **Public, Cultural, and Institutional (PCI):** City facilities, utilities, schools, and other public and quasi-public uses.
- **Parks and Recreation (PR):** Intended to support active and passive public parks including indoor and outdoor public and private recreation facilities.

El Cerrito Plaza BART Station

City of Richmond Zoning in proximity to El Cerrito Plaza BART Station includes:

- **Regional Commercial (CR):** Intended for mid-rise, mixed-use regional shopping centers. High-intensity retail development in a pedestrian-friendly environment. Can also support some office, services, and residential uses.

**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
EXISTING CONDITIONS AND NEEDS ASSESSMENT**

City of Richmond

- **Single Family Low Density Residential (RL 2):** Primarily low-density residential (15 du/ac max). Can also support a range of neighborhood supporting uses.

Contra Costa College Transit Center

City of Richmond Zoning in proximity to Contra Costa College Transit Center includes:

- **Medium Density Multi-Family Residential (RM 1):** Primarily single- and multi-family residential (10 du/ac min, 27 du/ac max) up to 35 feet. Also allows a limited amount of neighborhood supporting uses.
- **Medium-High-density Multi-Family Residential (RM 2):** Primarily multi-family residential (15 du/ac min, 40 du/ac max) up to 35 feet. Also allows a limited amount of neighborhood supporting uses
- **Single Family Low Density Residential (RL 2):** Primarily low-density residential (15 du/ac max). Can also support a range of neighborhood supporting uses.
- **Public, Cultural, and Institutional (PCI):** Intended to support City facilities, utilities, schools, and other public and quasi-public uses
- **Parks and Recreation (PR):** Intended to support active and passive public parks including indoor and outdoor public and private recreation facilities.
- **Industrial Light (IL):** Intended to support a variety of light industrial uses as well as office and research uses.

APPENDIX C MOBILITY HUB URBAN DESIGN AND PEDESTRIAN EXPERIENCE ANALYSIS

Please see attached PDF. This appendix provides supporting photos and details for each mobility hub's site overview and pedestrian access assessment in Chapter 3.

STUDY AREA: DEL NORTE BART STATION ACCESS

POTRERO AVENUE: SOUTH 52ND STREET-EASTSHORE BOULEVARD

ZONING: RL-2: Single Family Low Density Residential, Commercial Emphasis. PC-1-Public, Cultural, and Institutional

Corridor Synopsis

Richmond's section of Potrero Avenue is within low density residential zoning. Sidewalks are often narrowed and / or impeded by utilities and disrepair, with crossings not fully accessible with missing curb ramps, striping, and signal indicators. An Interstate 80 on-ramp creates a barrier in accessing BART, however a pedestrian island is available which increasing visibility, and a complete sidewalk is available on the north side of the street, connecting to Eastshore Boulevard.

Rating- Out of 5

Safety	2.7
Accessibility	2
Amenities / Aesthetics	2.6

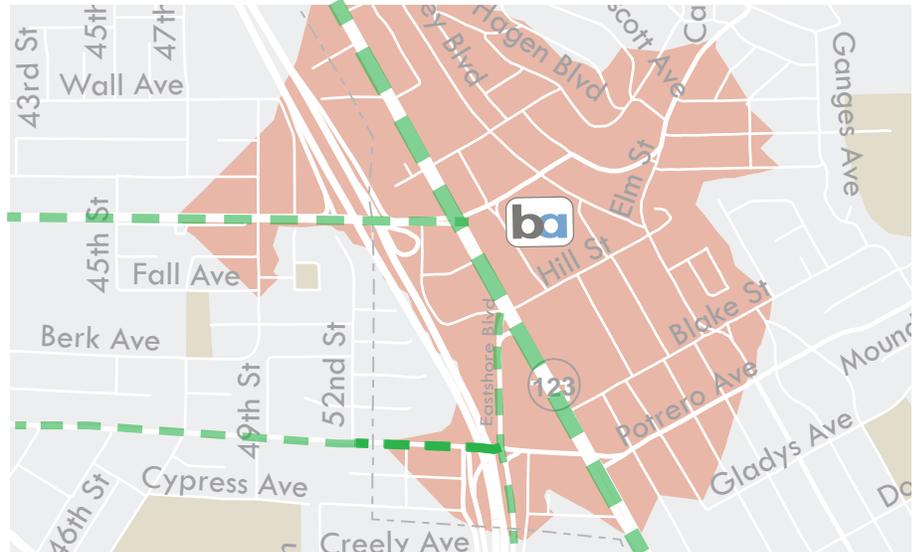


Photo Documentation: Google Earth Software and Digital Photography

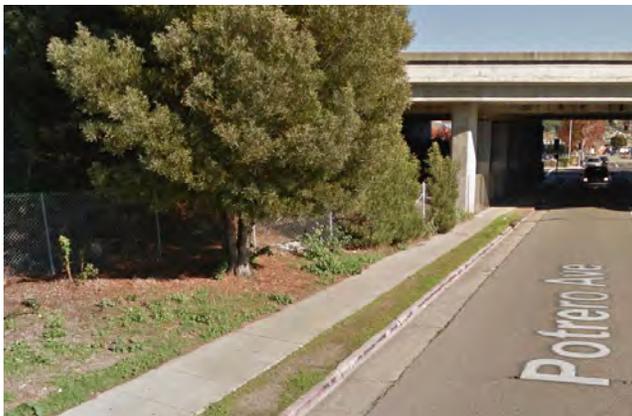


Figure 1 - Sidewalk section at Interstate 80 overpass



Figure 2 - Typical road condition and bicycle striping / signage

Infrastructure and Amenities

Safety

- Vehicular lighting
- Visibility from street and adjacent structures sometimes impeded by structures or vegetation
- Pedestrian island and freeway on-ramp

Accessibility

- Some crosswalk indicators / striping missing
- Narrow sidewalks
- Some curb ramps missing at intersections

Amenities / Aesthetics

- Some street tree planting
- Small residential setbacks, small allotment of pedestrian right-of-way
- Minimal bicycle infrastructure

Constraints / Issues

- Interstate overpass is significant barrier
- Maintenance issues at sidewalks and road
- Generally not accessible

STUDY AREA: DEL NORTE BART STATION ACCESS

CUTTING BOULEVARD: SOUTH 49TH STREET-INTERSTATE 80

ZONING: CM-1: Commercial Mixed Use, Residential

Corridor Synopsis

Richmond's section of Cutting Boulevard is designed to accommodate pedestrian and vehicular traffic, with sections of wide sidewalks buffered from the street, pedestrian and vehicular lighting, high contrast crossings, and traffic calming devices that help reduce vehicular speed. The Interstate 80 overpasses poses a significant barrier to BART access, requiring pedestrians to cross through on / off ramps on both sides of the street. The El Cerrito section of the street is in disrepair and offers minimal safety considerations for pedestrian travel.

Rating- Out of 5

Safety	3.8
Accessibility	3.3
Amenities / Aesthetics	2.8

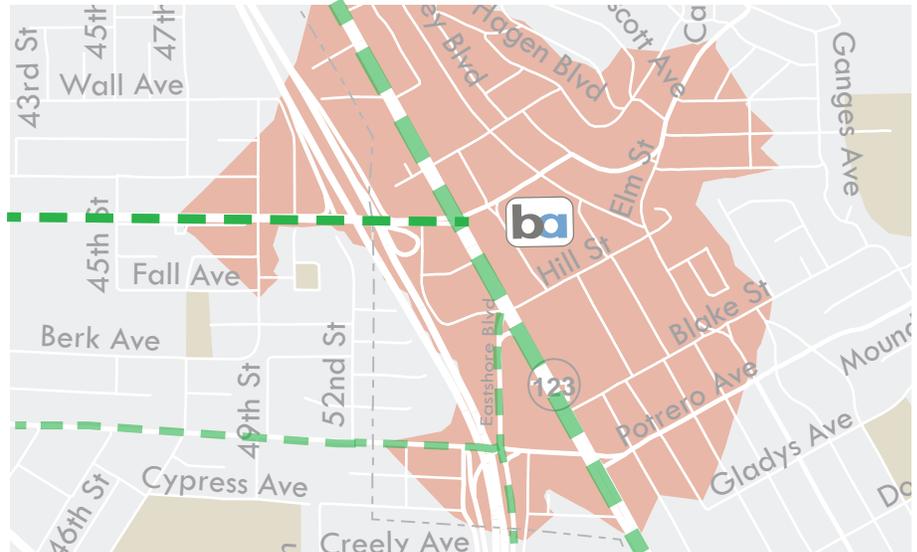


Photo Documentation: Google Earth Software and Digital Photography



Figure 3 - Sidewalk section at Interstate 80 overpass



Figure 4 - Typical road condition and bicycle striping / signage

Infrastructure and Amenities

Safety

- Pedestrian and vehicular lighting
- Good visibility from street and adjacent structures
- Buffered sidewalk
- On-ramp crossing required, no signal available

Accessibility

- Curb ramps and detectable warning systems with signals installed at most residential intersections
- Large crossing without detectable warning system at off-ramp

Amenities / Aesthetics

- Partial street tree planting and private trees provide shade
- Large allotment for pedestrian right-of-way
- Sidewalks have large buffer from vehicular traffic on most sections
- Partial Class II bicycle lane striping
- Bus Stops

Constraints / Issues

- Interstate overpass is significant barrier
- Bus Stops not covered
- Lack of street trees

STUDY AREA: DEL NORTE BART STATION ACCESS

SAN PABLO AVENUE

Corridor Synopsis

San Pablo Avenue is a wide arterial with heavy vehicular traffic, composed of up to 7 travel lanes for two-way traffic. Some sidewalks are not buffered from vehicular traffic and are narrowed or impeded by utilities. Some street trees are installed offering a buffer and partial shade. Accessible crossings are available, sometimes requiring same side crossing to access intersection crossing signals. The width of San Pablo Avenue requires extensive crossing distances without pedestrian islands.

Rating- Out of 5

Safety	2.3
Accessibility	3.3
Amenities / Aesthetics	2.6

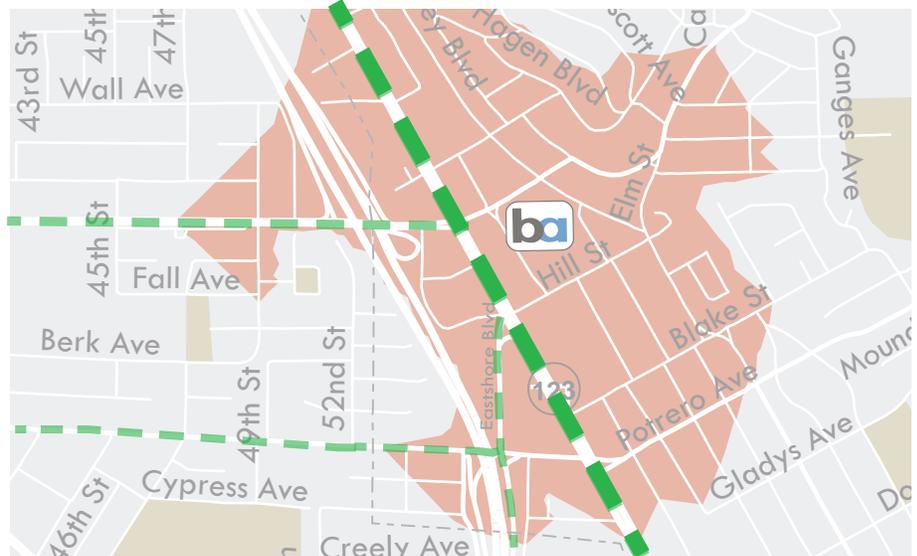


Photo Documentation: Google Earth Software and Digital Photography



Figure 5 - Sidewalk section at Interstate 80 overpass



Figure 6 - Typical road condition and bicycle striping / signage

Infrastructure and Amenities

Safety

- Vehicular lighting
- Long crossing, often missing pedestrian island
- Multiple crossing required
- Minimal vehicular traffic buffering
- Narrow sidewalks / pedestrian right-of-way allocation
- Planted and hardscape medians for traffic calming

Accessibility

- Curb ramps and detectable warning systems with signals installed at most intersections
- Path-of-travel sometimes impeded by heaved sidewalks / utilities

Amenities / Aesthetics

- Partial street tree planting and private trees provide shade
- Some sidewalk sections have furniture zone with seating, trash / recycle
- Some public art / banners installed
- Some wayfinding signage

Constraints / Issues

- Width of street requires extensive crossing, often only partially available, requiring multiple crossings
- high rate of vehicular traffic often not buffered from sidewalk
- No bicycle infrastructure

STUDY AREA: DEL NORTE BART STATION ACCESS

DEL NORTE BART

Station Synopsis

Del Norte Station is a two-block wide transit center with extensive parking both in front and back of the station entrance. The station is accessible from Knott Avenue, Cutting Boulevard, and Hill Street, with a center axis pedestrian entrance from San Pablo Avenue. No main entry exists and the station does not offer a sense of place or visual cue of a destination. The setback of the station requires navigating through parking lots and side streets to access the BART entrance. The pedestrian entrance splits the parking lot and requires negotiating parking, drop off, and bus que.

Rating- Out of 5

Safety	3.2
Accessibility	3
Amenities / Aesthetics	3.4

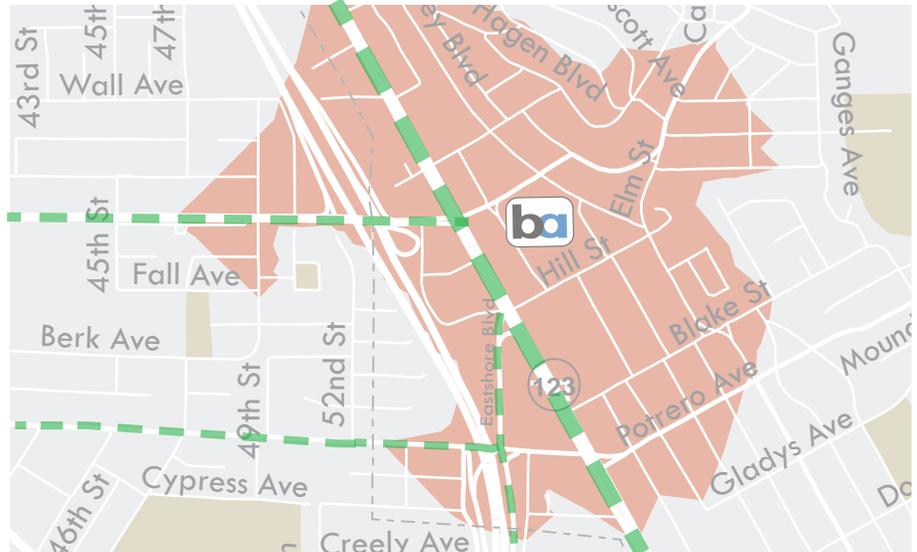


Photo Documentation: Google Earth Software and Digital Photography

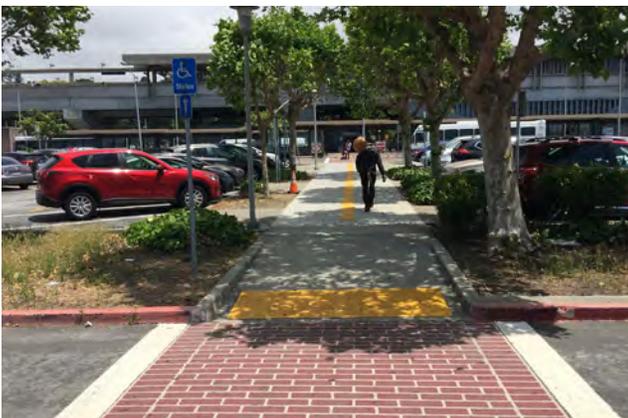


Figure 7 - Sidewalk section at Interstate 80 overpass

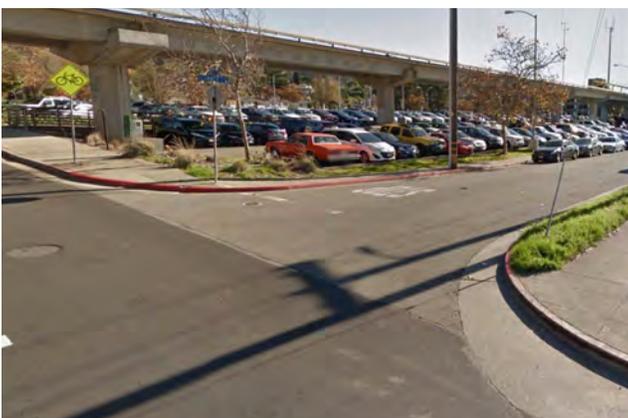


Figure 8 - Typical road condition and bicycle striping / signage

Infrastructure and Amenities

Safety

- Vehicular lighting, pedestrian lighting near entrance
- Entrances can require negotiating large parking areas
- Center pedestrian entrance has buffered pathway, decorative paving crossings. Requires passing through bus que
- Multiple crossing required
- Minimal vehicular traffic buffering
- Narrow sidewalks / pedestrian right-of-way allocation

Accessibility

- Curb ramps and detectable warning systems not installed at all crossings
- Path-of-travel sometimes impeded by heaved sidewalks / utilities

Amenities / Aesthetics

- Covered bus que seating
- Seating, trash / recycle
- Some public art / banners installed
- Some wayfinding signage

Constraints / Issues

- Unclear pick up / drop off area
- No bicycle infrastructure
- No sense of entry
- Parking frontage navigation feels unsafe, minimal viewing / eyes on street

BART ENTRANCE CROSSING AND ACCESSIBILITY

Crossing and Accessibility Treatments to El Cerrito Del Norte BART Entrance

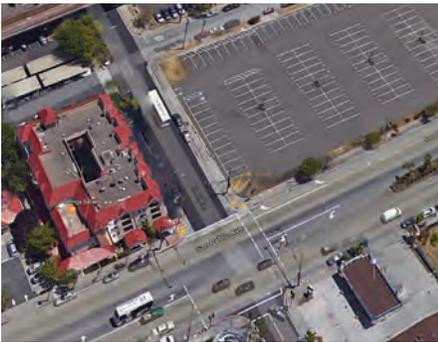


Hill Street and San Pablo Ave.

Hill Street has a similar treatment to Cutting with standard crosswalk striping at one edge of the intersection, requiring multiple street crossings to access BART.



Crossing at San Pablo provides a pedestrian island refuge midway of vehicular traffic. The BART entrance curb ramps are City standard dimensions with truncated domes / detectable warning surfaces and provide proper clearance for accessible path of travel.



Knott Ave and San Pablo Ave.

Knott Ave. has a similar treatment to Cutting and Hill with standard crosswalk striping at one edge of the intersection, however the sidewalk layout circulates pedestrians onto the western edge of the BART facility, requiring no additional crossings. Striping has low visibility and is in disrepair. Truncated domes at curb ramps are installed at all sidewalk entrances from crosswalk entries.



Knott Avenue and Kearney Street / Ohlone Greenway

No curb ramp or crossing indicator is installed at Kearney Street. Large ladder-style crosswalk striping is installed at the Ohlone Greenway crossing along with Supplementary Pedestrian Crossing Channeling Device (SPCCD). Ohlone curb ramps do not contain truncated domes / detectable warning systems.

BART ENTRANCE LIGHTING

Pedestrian and Vehicular Street Lighting



Knott Avenue And San Pablo Avenue

1 Vehicular Light installed at corner of Knott and San Pablo. No Pedestrian lighting installed.



Kearney Street and Knott Avenue

No direct pedestrian or vehicular lighting installed. 3 total lights installed in planting buffer for adjacent parking lot at unequal intervals. No pedestrian lighting installed.



San Pablo Avenue-BART Frontage

11 Vehicular Lights are installed between Knott Avenue and Hill Street. Posts are installed on the sidewalk at uneven intervals between 100' and 130'. No pedestrian lighting is installed.



Cutting Blvd. and San Pablo Avenue

Two Vehicular Lights are installed along Cutting Blvd. between BART entrance and San Pablo Ave. No pedestrian lighting is installed.

BART FACILITY LIGHTING

Pedestrian and Vehicular Street Lighting



BART Parking Lot Along San Pablo Frontage Between Knott Avenue and Hill

Approximately 35 vehicular light poles with both one and two light fixtures each are installed in the parking areas between Knott Avenue and Hill Street.



BART Entrance Lighting

Pedestrian scale lighting is only installed along the main pedestrian access path from San Pablo Avenue That starts in the approximate center of the parking lot.



Cutting Blvd. and San Pablo Avenue

Approximately 17 vehicular lights are installed along the bus queuing area and BART entry plaza.

POTRERO AVENUE AND EASTSHORE BLVD. ACCESS

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Curb cuts are often not available along Potrero Avenue, with crosswalks ending into solid curbs, planting or utilities, not meeting City Standard building codes. Some intersections do not have crosswalk striping or delineation installed.



Sidewalks

Sidewalk widths average 3.5'-4', often impeded by utilities. Sidewalk heaving occurs due to mature tree roots, make the sidewalk inaccessible.

Bicycle Amenities and Lighting



Bike Striping and Signage

Sharrows and vehicular bike signage is installed long both travel directions along Potrero Avenue. Striping breaks at the Interstate 80 underpass and picks up on the eastern edge of Eastshore Blvd. with a Class II bike lane.



Lighting

Vehicular lighting is installed in the residential section of Potrero Avenue, unequally spaced. Approximately five vehicular lights are installed along Eastshore Drive between Potrero and San Pablo Avenue. No pedestrian lighting is installed.

BART ENTRANCE AND FACILITY BIKING AMENITIES

Striping and Signage



Knott Avenue and Hill Street Entries

Sharrow striping is installed in one location at Hill Street and San Pablo Avenue entering the BART station. Bike crossing signage is installed at Knott Avenue and Kearney Street near the Ohlone Greenway Crossing.



San Pablo Avenue and Cutting Blvd.

Class II bike lane is available at Cutting Blvd. at the Interstate 80 overpass heading westward. It discontinues near the intersection of San Pablo Avenue. No bike striping or signage is installed San Pablo Avenue.

Storage and Parking



BART Station

126 rack parking stalls and 28 keyed bike lockers are available per BART Bicycle Plan 2002. Bike parking occurs under the tracks, bike lockers are not highly visible.



Cutting Blvd. and San Pablo Avenue

Two Vehicular Lights are installed along Cutting Blvd. between BART entrance and San Pablo Ave. No pedestrian lighting is installed.

BART ENTRANCE CROSSING AND ACCESSIBILITY

Signal Treatments



San Pablo Avenue at BART Frontage
Accessible pedestrian signals controlling countdown timers are provided at crosswalks leading to BART entrances at Knott Avenue, Cutting Blvd. and Hill Street. An accessible signal button is available in the median of San Pablo Avenue at Cutting Blvd. This signal is installed at the concrete nose of a median planter, not an island refuge.



Cutting Blvd. at Ohlone Greenway
Solar powered crosswalk signal is installed at the Bus exit at Cutting Blvd. along with pedestrian detection signal bollards at the ladder crosswalk that connects the Ohlone Greenway to the BART entrance.

CUTTING BOULEVARD

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Curb cuts with detectable warning surfaces are installed at crosswalk entrances. Standard sidewalk striping is installed at most intersections, missing in some locations. Intersections have accessible signals with pedestrian countdown timers.



Sidewalks

Off-street sidewalks and buffered sidewalks are available in the residential section of Cutting. Buffering is removed toward the Interstate on ramps and toward the San Pablo Avenue intersection. Sidewalk widths vary from 4-6'.

Bicycle Amenities and Lighting



Bike Striping and Signage

Class II bike lanes are available in the residential section of Cutting Blvd. and includes striping and vehicular signage. Bike striping ends at the beginning of the Interstate 80 on-ramps.



Lighting

Pedestrian lighting is available at 60' on-center spacing along the buffered sidewalk in the residential section of Cutting Blvd. Vehicular lighting is also installed at approx. 150' on-center spacing. The pedestrian lighting stops at Cutting Blvd. the Interstate 80 off-ramp.

BART ENTRANCE CROSSING AND ACCESSIBILITY

Crossing and Accessibility Treatments to El Cerrito Del Norte BART Entrance



Cutting Blvd. and San Pablo Ave.

Pedestrian crossing at Cutting Blvd. Standard striping installed on the western edge of the intersection with a 2' decorative paving stamp treatment with a contrasting finish. Pedestrian circulation from the West side of Cutting Blvd toward BART is required to first cross Cutting then San Pablo then back across Cutting in order to adhere to crosswalks and utilize accessible curb ramps.



Crosswalk patterns on Cutting Blvd. include standard striping at San Pablo Avenue and the Bus loading exit adjacent to the Kearney Street intersection. Ladder pattern striping is installed under the BART tracks at the Ohlone Greenway crossing.



San Pablo Avenue at Pedestrian BART Entrance

Decorative sidewalk treatments with contrasting color-stamped pattern between standard striping delineates pedestrian crossing from vehicular traffic. Truncated domes / detectable warning surfaces have been installed at curb ramps located at all sidewalk entrances from crosswalks sidewalks.



Cutting Blvd. at Bus Exit

Some paths of travel are partially interrupted by vegetation. Some ramps and are not per City standard for new work of 4'-0" width.

STUDY AREA: FERRY TERMINAL

HARBOUR WAY SOUTH

ZONING: CM-3: Commercial mixed use, Commercial Emphasis. CM-4: Commercial Mixed Use, Gateway / Node.
 IL-Industrial, Light. IW-Industrial, Water related.

Corridor Synopsis

Harbour Way South is a two-way street that crosses Interstate 580 within a primarily industrial zoned development. Modest pedestrian transportation infrastructure is installed with partial class II bike lanes and wayfinding signage toward the Ferry Terminal site. Vehicular lighting is installed along the street with pedestrian scale lighting near the Ford building.

Rating- Out of 5

Safety	2.8
Accessibility	2.7
Amenities / Aesthetics	2

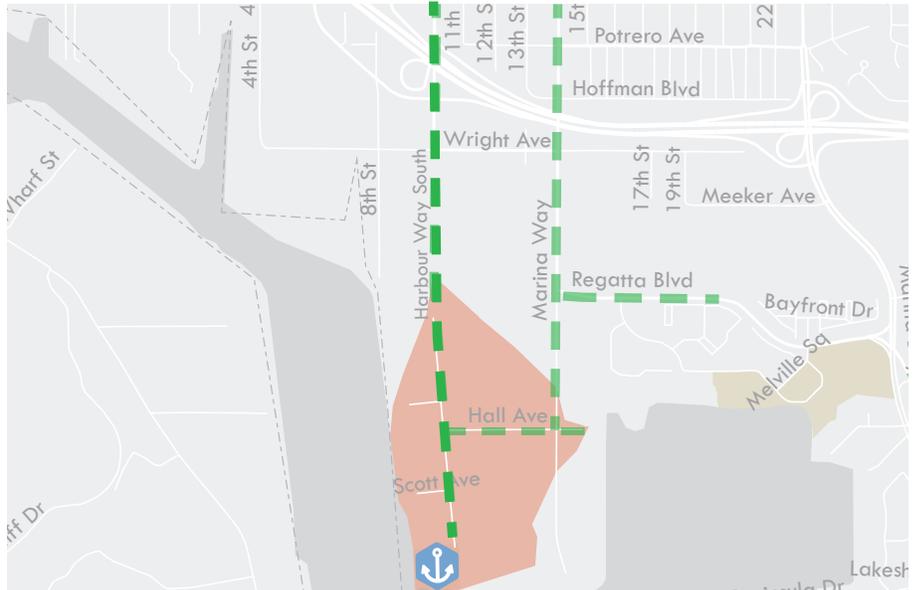


Photo Documentation: Google Earth Software and Digital Photography



Figure 1 - Typical road condition near 580 Overpass



Figure 2 - Sidewalk section toward Hall Avenue

Infrastructure and Amenities

Safety

- Pedestrian and vehicular lighting
- Fair visibility from street and adjacent structures
- Pedestrian islands / vehicular buffers
- Wide sidewalks

Accessibility

- Most crossings have striping, some in disrepair
- Curb ramps at intersections
- Not all crossings have signals

Amenities / Aesthetics

- Planting areas
- Mature trees both street and in adjacent private property
- Some wayfinding signage

Constraints / Issues

- Minimal bicycle infrastructure
- Some sidewalk heaving
- Some paths of travel narrowed due to furnishings
- Non buffered highway overpass crossing

STUDY AREA: FERRY TERMINAL

MARINA WAY SOUTH

ZONING: SP-2: Richmond Bay Specific Plan. CG: General Commercial. LW: Live-Work. IL: Industrial, Light.

Corridor Synopsis

Marina Way South is a two-way street that crosses Interstate 580 within industrial, commercial and live-work zoned developments. Non-buffered sidewalks pass over Interstate 580 and transition to moderate-width sidewalks adjacent to vehicular traffic. Planted medians separate traffic flow, and increased wayfinding signage, public art and planting areas define the corridor closer to Hall Avenue.

Rating- Out of 5

Safety	2.8
Accessibility	3
Amenities / Aesthetics	2.8

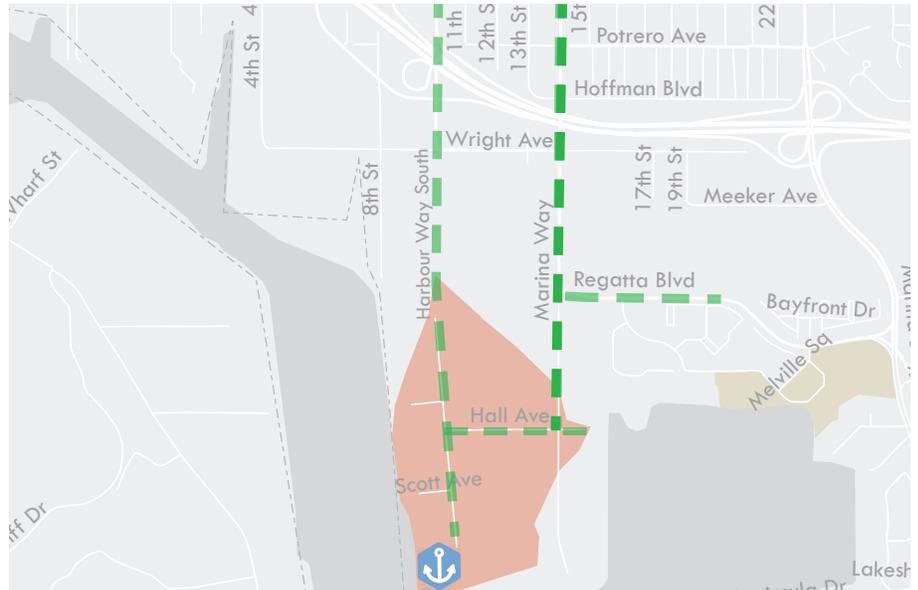


Photo Documentation: Google Earth Software and Digital Photography



Figure 3 - Typical sidewalk section south of 580 overpass



Figure 4 - Typical road section near Interstate 580

Infrastructure and Amenities

Safety

- Vehicular lighting
- Fair visibility from street and adjacent structures
- Traffic calming / planted medians
- Wider sidewalks available south of 580

Accessibility

- Crossings have striping, decorative treatment closer to Ferry site
- Curb ramps at intersections
- Not all crossings have signals

Amenities / Aesthetics

- Planting areas
- Mature trees, both street and in adjacent private property
- Some wayfinding Signage
- Public art
- Connection to Class I trail at Regatta Blvd.

Constraints / Issues

- Minimal bicycle infrastructure
- Some sidewalk heaving
- Some paths of travel narrowed due to furnishings
- Non buffered highway overpass crossing

STUDY AREA: FERRY TERMINAL

HALL AVENUE

ZONING: CM-5: Commercial Mixed Use, Activity Center. IL: Industrial, Light.

Corridor Synopsis

Hall Avenue connects Marina Way and Harbour Way South with a moderate-width sidewalk that is available on the north side of the street. The street receives minimal vehicular traffic. Amenities include a class II bike lane, public art and wayfinding signage at intersections.

Rating- Out of 5

Safety	2.7
Accessibility	2.7
Amenities / Aesthetics	2.2

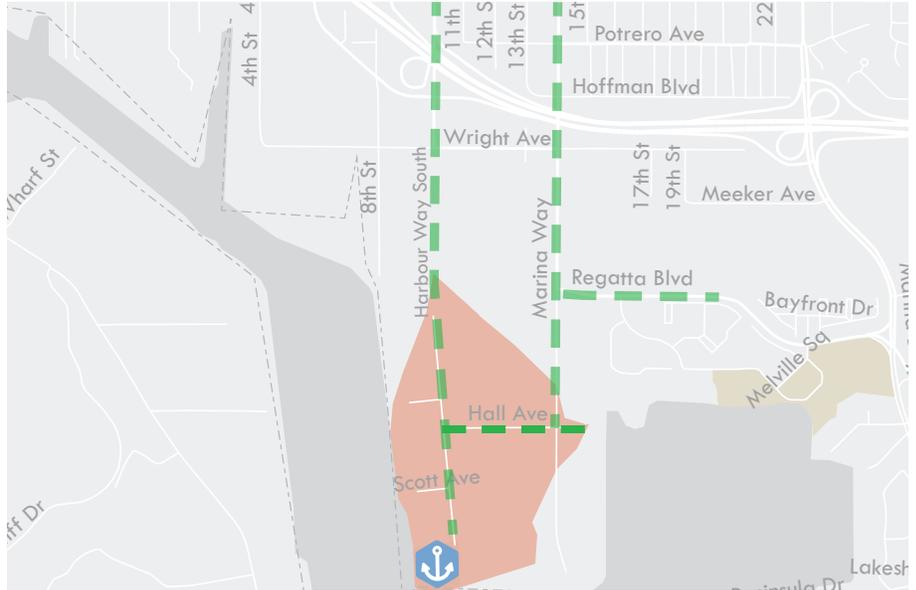


Photo Documentation: Google Earth Software and Digital Photography



Figure 5 - Typical sidewalk section



Figure 6 - Typical road and striping condition

Infrastructure and Amenities

Safety

- Vehicular lighting
- Sight lines partially obstructed by vegetation
- Minimal pedestrian and vehicular traffic, empty lots provide less eyes on the street

Accessibility

- Crossings have striping, decorative treatment
- Curb ramps at intersections
- Not all crossings have signals

Amenities / Aesthetics

- Mature trees, in adjacent private property
- Some wayfinding Signage
- Public art
- Class II bike lane

Constraints / Issues

- Minimal use, can feel unsafe at night
- Some paths of travel narrowed due to furnishings

STUDY AREA: FERRY TERMINAL

REGATTA BLVD

ZONING: SP-2: Richmond Bay Specific Plan, PA: Planned Area.

Corridor Synopsis

Regatta Boulevard connects a planned community development to Marina Way South. Two-way traffic is partially separated by planted medians, with a class I multi-use trail on the south edge of the street.

Rating- Out of 5

Safety	3.5
Accessibility	3
Amenities / Aesthetics	2.2

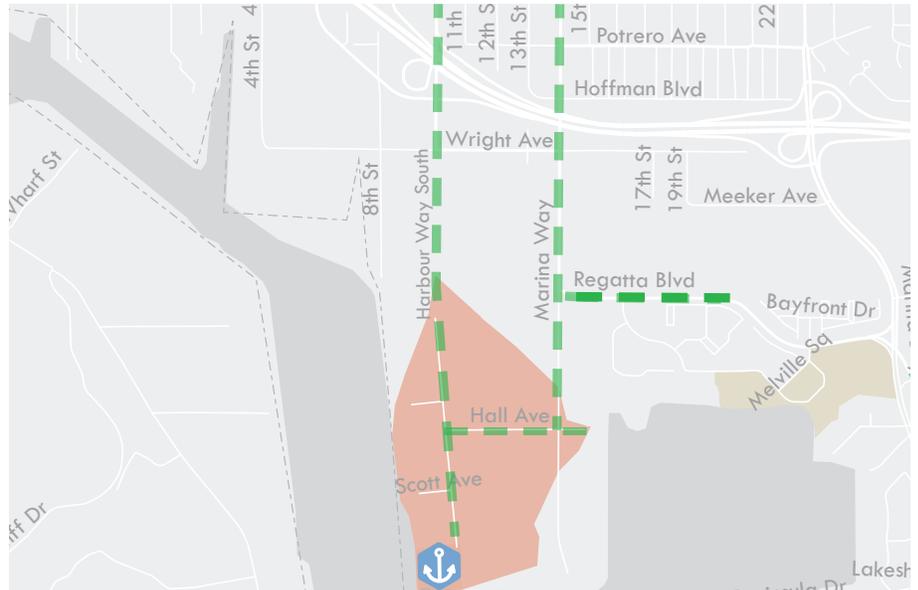


Photo Documentation: Google Earth Software and Digital Photography



Figure 7 - Typical section of multi-use trail



Figure 8 - Typical crossing at residential housing

Infrastructure and Amenities

Safety

- Vehicular lighting
- Good visibility
- Moderate pedestrian and vehicular traffic, residential unit windows and doors facing street
- Unused lots and train tracks can feel unsafe during passage

Accessibility

- Crossings have striping
- Curb ramps at intersections
- Not all crossings have signals
- Crossing at train tracks not accessible

Amenities / Aesthetics

- Mature trees in street and adjacent private property
- Some wayfinding Signage
- Public art
- Class II bike lane

Constraints / Issues

- No crossing at some sides of intersections that are adjacent to property entries
- Sidewalk not complete on residential zoned side of street

HARBOUR WAY SOUTH | CUTTING BLVD. TO WRIGHT AVE.

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Curb ramps have been installed at intersection crossings. Detectable warning systems are not installed at all locations. Accessible signal controls are available. Standard striping has been installed at most intersections. Wright Avenue does not have crosswalk striping.



Sidewalks

Sidewalk width ranges from 5'-7'. Some areas have planting area buffers ranging from 2'-3'. Throughways are sometimes interrupted due to sidewalk heaving or utility installation and narrow to less than 3' wide.

Bicycle Amenities and Lighting



Bike Striping and Signage

Class II bike lanes are installed between Hoffman and Wright Avenue, ceasing mid-block. Bay Trail signage installed on standalone posts are installed in sidewalks.



Lighting

Vehicular lighting between Cutting Blvd. and Hoffman Blvd. at approximately 130' on-center spacing, staggered. Installation types is stand alone post. No vehicular lighting is installed between Hoffman Blvd. and Wright Avenue. No pedestrian lighting is installed.

HARBOUR WAY SOUTH | WRIGHT AVE. TO FERRY TERMINAL

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Some intersection crossings are missing curb ramps. Detectable warning systems are not installed at all locations. Accessible signal controls are not available at all intersections. Standard or ladder striping has been installed at most intersections crosswalks.



Sidewalks

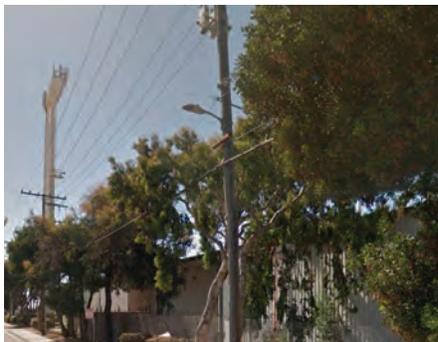
Sidewalk width ranges from 3-10'. Throughways are sometimes interrupted due to sidewalk heaving or utility installation.

Bicycle Amenities and Lighting



Bike Striping and Signage

Class II bike lanes are installed between Hall Avenue and the railroad crossing. Sharrow striping is installed in southbound lane. Bay Trail signage installed on standalone posts are installed in sidewalks.



Lighting

Vehicular lighting between Cutting Blvd. and Hoffman Blvd. at approximately 90'-130' on-center spacing. Installation types is fixture attached to utility / telephone pole. Pedestrian lighting is installed along the sidewalk at approximately 80'-100' on-center spacing.

MARINA WAY SOUTH | CUTTING BLVD. TO WRIGHT AVE.

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Some intersection crossings are missing curb ramps. Detectable warning systems are not installed at all locations. Accessible signal controls are not available at all intersections. Standard striping has been installed at most intersections crosswalks.



Sidewalks

Sidewalk width ranges from 3'-10'. Throughways are sometimes interrupted due to sidewalk heaving or utility installation and narrow to less than 2' wide.

Lighting



Lighting

Vehicular lighting is installed at approximately 120'-150' on-center spacing. Installation type is fixture attached to utility / telephone pole and standalone post.

MARINA WAY SOUTH | WRIGHT AVE. TO FERRY TERMINAL

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Some intersection crossings are missing curb ramps. Detectable warning systems are not installed at all locations. Accessible signal controls are not available at all intersections. Standard striping has been installed at most intersections crosswalks.



Sidewalks

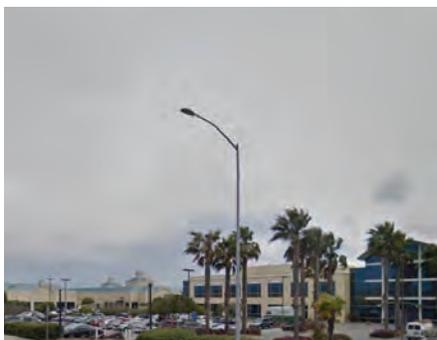
Sidewalk width ranges from 7'-15'. Throughways are sometimes interrupted due to sidewalk heaving or utility installation. Median sidewalks / islands are installed, separating travel lane directions. Widths vary from 2'-5'.

Lighting and Signage



Lighting

Vehicular lighting is installed at approximately 120'-150' on-center spacing. Installation types is standalone post. Posts installed in medians have two fixtures.



Signage

Bike lane signage is installed on utility posts, no bike lane striping is installed. Bay trail and wayfinding signage is installed in medians and along sidewalks on standalone posts.

HALL AVENUE

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Intersection crossings are marked with standard striping. Decorative pattern with contrasting pavement material is marked at Marina Way intersection. Some curb ramps do not have detectable warning systems.



Sidewalks

Sidewalk width is approximately 7', mostly uninterrupted throughways. Some utilities narrow throughway to approximately 5'. Sidewalk only occurs on one side of the street.

Lighting and Signage



Lighting and Wayfinding Signage

Vehicular lighting is installed at approximately 130' on-center spacing. Installation type is fixture attached to utility / telephone pole and standalone post. Wayfinding signage is installed near intersections.



Signage

Class II bike lane striping is installed on both sides of the street. Bike lane and Bay Trail signage is installed on utility posts,

REGATTA BOULEVARD

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Intersection crossings are marked with standard striping. Curb ramps have detectable warning systems / truncated domes. North side sidewalk / trail interrupts at the railroad crossing, not accessible.



Sidewalks

Standard sidewalk width ranges from 5'-7' width. Class I multi-use trail approximately 10' wide is available on the north side of the street with unutilized planting buffer separating standard sidewalk and trail.

Lighting, Public Art, and Multi-Use Trail



Lighting and Public Art

Vehicular lighting is installed at approximately 180' on-center spacing. Installation type is standalone post in center median with two fixtures. Public Art is installed at the Regatta and Marina Way South intersection.



Multi-Use Trail

A class I trail is installed on the north side of the street. No striping or signage is installed.

STUDY AREA: RICHMOND BART STATION ACCESS

MACDONALD AVENUE: 6TH STREET- BART ENTRANCE

ZONING: CM3-Commercial mixed use, Commercial Emphasis. CM5-Commercial Mixed Use, Activity Center

Corridor Synopsis

Located in the commercial mixed use zone, this section of Macdonald Avenue is adjacent to major employment hubs, with infrastructure that provides a strong connection for pedestrians to multiple transit opportunities. Macdonald Avenue was redeveloped in 2008, implementing contemporary urban design techniques that promote first / last mile transit.

Rating- Out of 5

Safety	3.5
Accessibility	4
Amenities / Aesthetics	3.6

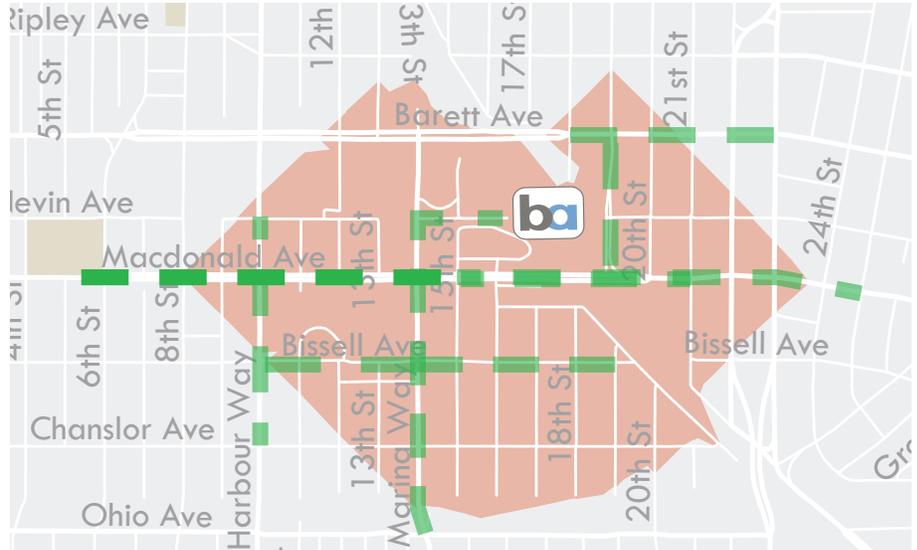


Photo Documentation: Google Earth Software and Digital Photography



Figure 1 - Typical sidewalk section of commercial corridor



Figure 2 - Sidewalk extension at Macdonald Ave. and Harbour Way

Infrastructure and Amenities

Safety

- Pedestrian and vehicular lighting
- Good visibility from street and adjacent structures
- Pedestrian islands / vehicular buffers
- Curb Extensions
- Traffic calming devices
- Wide sidewalks with zoning delineation

Accessibility

- Visible / Contrasting crossings
- Narrow street width
- ADA accessibility

Amenities / Aesthetics

- Seating
- Covered bus stops
- Trash / Recycle
- Wayfinding Signage
- Public art installation
- Street tree planting
- Planting areas
- Strong sense of place / identity

Constraints / Issues

- No bicycle infrastructure
- Some sidewalk heaving
- Some paths of travel narrowed due to furnishings
- Vacant / boarded structures block sight lines

STUDY AREA: RICHMOND BART STATION ACCESS

MACDONALD AVENUE: 22ND STREET- BART ENTRANCE

ZONING: CM5-Commercial Mixed Use, Activity Center

Corridor Synopsis

Located in the commercial mixed use zone, this section contains heavy vehicular traffic with minimal buffering from sidewalks. The rail track underpass has off-street sidewalks that connect to the Richmond BART Station. There are contemporary urban design techniques that promote first / last mile transit. Some of the existing medians offer pedestrian islands for crossing.

Rating- Out of 5

Safety	2.2
Accessibility	3
Amenities / Aesthetics	2.2

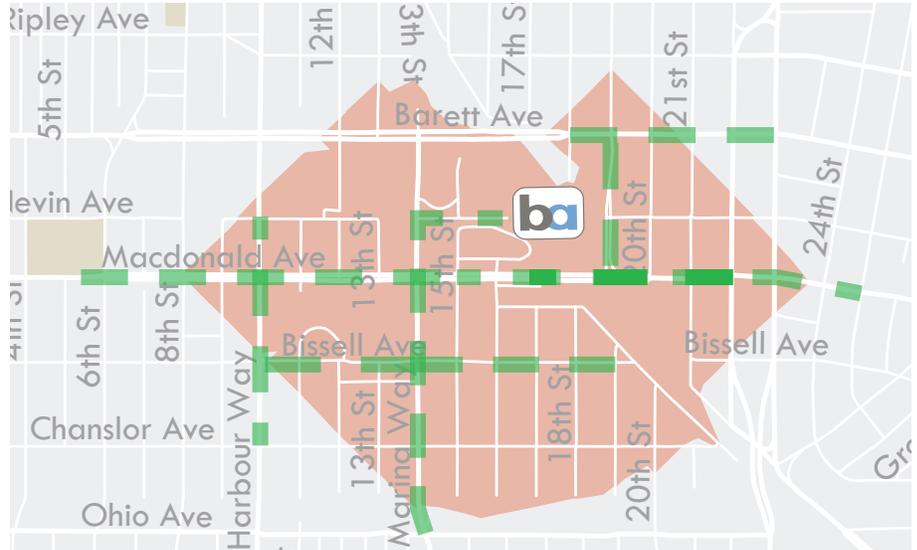


Photo Documentation: Google Earth Software and Digital Photography



Figure 3 - Underpass road and sidewalk condition near BART entrance



Figure 4 - Typical road and sidewalk condition at Macdonald Avenue near 22nd Street

Infrastructure and Amenities

Safety

- Vehicular lighting
- Fair visibility from street and adjacent structures
- Pedestrian islands / vehicular buffers at some crossings
- Higher vehicular speed than 6th Street-BART
- Separate sidewalk available at underpass

Accessibility

- Visible / Contrasting crossings
- Not all crossings are accessible
- Sidewalk path of travel narrows due to utilities

Amenities / Aesthetics

- Trash / Recycle
- Wayfinding Signage
- Some street tree planting
- Some public art / banners

Constraints / Issues

- No bicycle infrastructure
- Some sidewalk heaving
- Some paths of travel narrowed due to furnishings
- Higher vehicular speed with minimal traffic calming

STUDY AREA: RICHMOND BART STATION ACCESS

MARINA WAY

ZONING: CM1-Commercial mixed use, Residential. CM5-Commercial Mixed Use, Activity Center

Corridor Synopsis

Located in the commercial mixed use zone, this section of Marina Way connects the Richmond Greenway Trail to Macdonald Avenue. The Greenway overpass is the largest barrier but can be crossed via off-street sidewalk with guardrail protection. Setbacks along commercial and residential frontages often provide minimal right-of-way allocation to pedestrian traffic, with often-impeded paths of travel and reduced visibility.

Rating- Out of 5

Safety	2.3
Accessibility	2
Amenities / Aesthetics	2

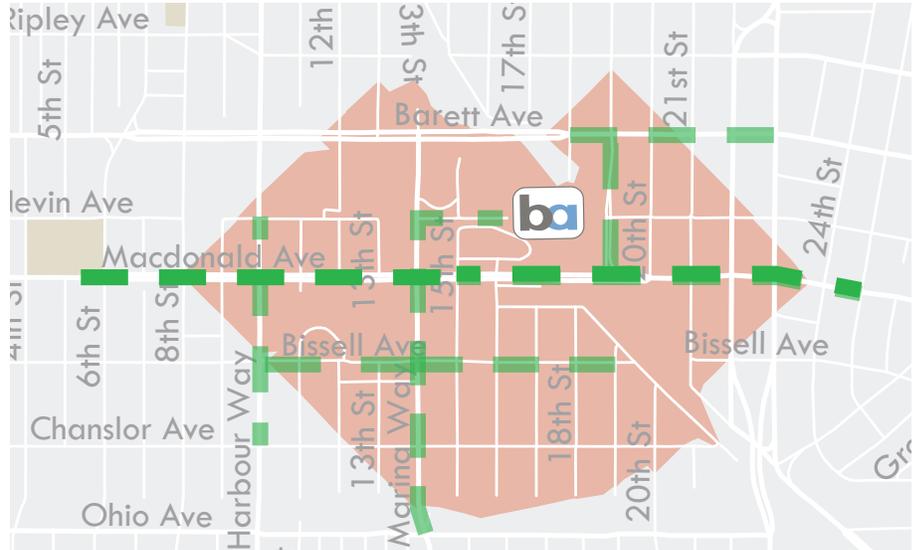


Photo Documentation: Google Earth Software and Digital Photography



Figure 5 - Typical sidewalk section showing narrow path of travel, maintenance issues



Figure 6 - Typical road condition with minimal pedestrian right of way allocation / interference of path-of-travel

Infrastructure and Amenities

Safety

- Vehicular lighting only
- Visibility interrupted due to small setbacks / tall buildings, fencing at property line
- Some landscape buffering

Accessibility

- Narrow sidewalks
- ADA features not installed at all crossings
- Narrow street width
- Partial bicycle striping / signage infrastructure

Amenities / Aesthetics

- Trash / Recycle near Macdonald Ave. Intersection
- Street tree planting with some large canopy / mature trees, not continuous
- Slower vehicle traffic / moderate street width
- Wayfinding signage near Macdonald Ave.

Constraints / Issues

- Tall fencing along residential property lines and taller buildings with minimal windows deter visibility
- Maintenance issues / disrepair in large sections of sidewalks and roadways

STUDY AREA: RICHMOND BART STATION ACCESS

BISSELL AVENUE: HARBOUR WAY -MARINA WAY

CM5-Commercial Mixed Use, Activity Center

Corridor Synopsis

Located in the commercial mixed use zone, this section of Bissell Avenue runs east / west, one block from Macdonald Avenue. 19th Avenue is adjacent to Carlson Boulevard and the rail line which blocks the connection to central Richmond. This section consists mostly of single family homes with sidewalks and roads in severe disrepair. Setbacks often are minimal with fencing or walls installed on the property lines. Lighting is inconsistent with vehicular lightings installed on utility / telephone poles.

Rating- Out of 5

Safety	2.7
Accessibility	3
Amenities / Aesthetics	2.6

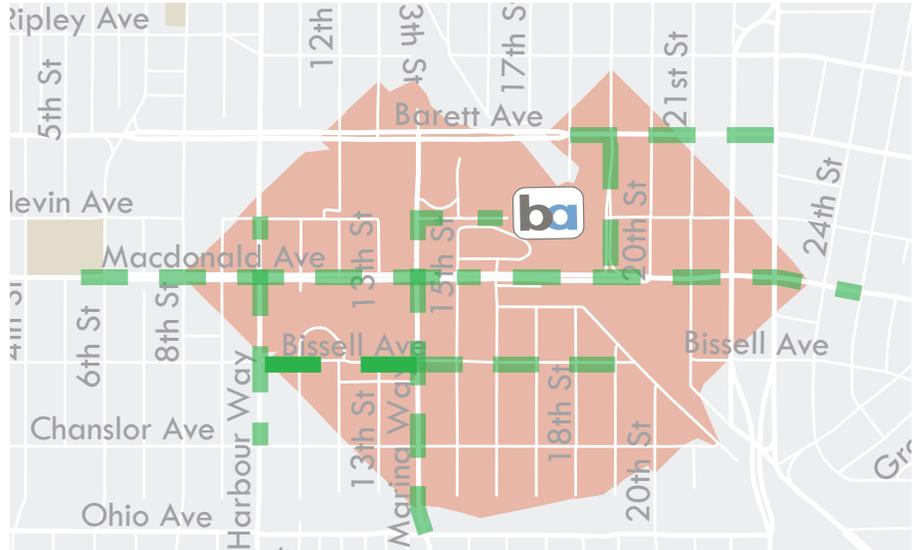


Photo Documentation: Google Earth Software and Digital Photography



Figure 7 - Typical sidewalk section showing narrow path of travel, maintenance issues



Figure 8 - Typical road condition with minimal pedestrian right of way allocation / interference of path-of-travel

Infrastructure and Amenities

Safety

- Vehicular lighting only
- Visibility Partially interrupted due to small setbacks / tall buildings, fencing at property line
- Some landscape buffering

Accessibility

- Some sidewalks narrow due to street tree installation
- ADA features not installed at all crossings
- Narrow street width

Amenities / Aesthetics

- Street tree planting with some large canopy / mature trees, relatively consistent
- Slower vehicle traffic / narrow street width

Constraints / Issues

- Some fencing along residential property lines and taller buildings with minimal setback deter visibility
- Maintenance issues / sidewalk heaving due to mature tree species
- No bicycle infrastructure
- No wayfinding signage

STUDY AREA: RICHMOND BART STATION ACCESS

BISSELL AVENUE: 19TH -MARINA WAY

CM5-Commercial Mixed Use, Activity Center

Corridor Synopsis

Located in the commercial mixed use zone, 19th Avenue is adjacent to Carlson Boulevard and the rail line which blocks the connection to central Richmond. This section consists mostly of single family homes with sidewalks and roads in severe disrepair. Fencing or walls installed on the property lines causing sight line impairment. Lighting is inconsistent with vehicular lighting installed on utility / telephone poles. Paths of travel are often obstructed by utilities, most sidewalks are not accessible.

Rating- Out of 5

Safety	2
Accessibility	1
Amenities / Aesthetics	2.4

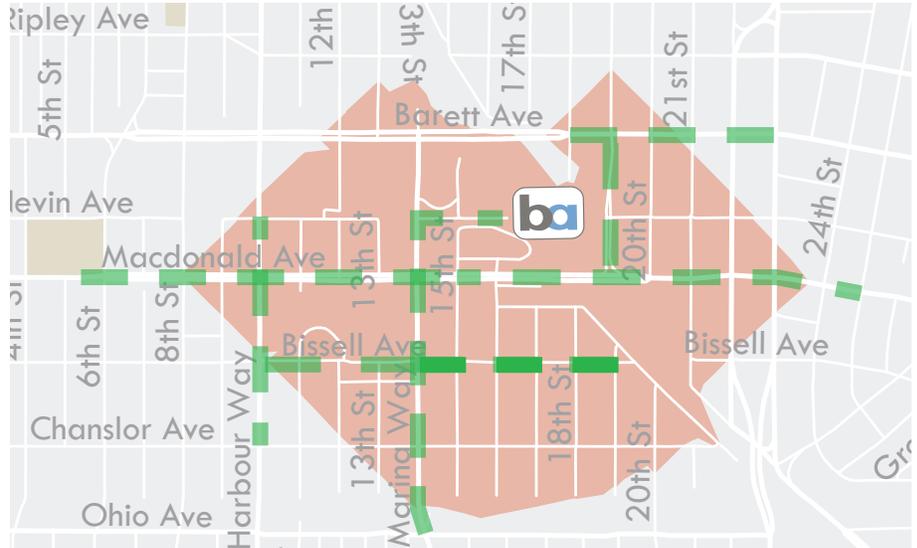


Photo Documentation: Google Earth Software and Digital Photography



Figure 9 - Typical road section with non-accessible crossings, maintenance issues



Figure 10 - Typical sidewalk condition with minimal pedestrian right of way allocation / interference of path-of-travel

Infrastructure and Amenities

Safety

- Vehicular lighting only
- Visibility Partially interrupted due to fencing at property line

Accessibility

- Sidewalks are narrow, in disrepair
- Crossings are not accessible / missing ramps

Amenities / Aesthetics

- Minimal vegetation/ mature trees, planting areas typically empty
- Slower vehicle traffic / narrow street width

Constraints / Issues

- Fencing along residential property lines and taller buildings with minimal setback deter visibility
- Maintenance issues along sidewalks and roads
- No bicycle infrastructure
- No wayfinding signage

STUDY AREA: RICHMOND BART STATION ACCESS

BART ENTRANCE AT MACDONALD AVENUE

CM5-Commercial Mixed Use, Activity Center

Corridor Synopsis

Located in the commercial mixed use zone, The Macdonald Avenue BART station entrance provides a strong sense of place, utilizing decorative pedestrian and vehicular lighting, decorative crossings, wayfinding signage and public art to distinguish the space. New amenities including accessible crossings, bus queuing areas with covered seating areas, storm water treatment planters and trees add to the sense of entry upon approaching the station.

Rating- Out of 5

Safety	3.7
Accessibility	4
Amenities / Aesthetics	3.4

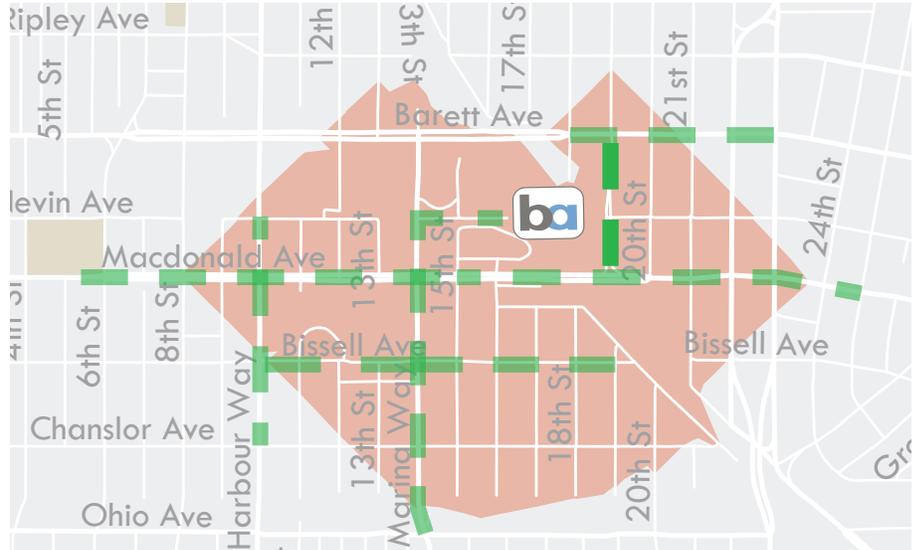


Photo Documentation: Google Earth Software and Digital Photography



Figure 11 - BART Station entrance



Figure 12 - Sidewalk and covered stop adjacent to tree and shrub planting in the bus queuing area

Infrastructure and Amenities

Safety

- Decorative pedestrian and vehicular lighting
- Strong visibility / minimal structural blockage

Accessibility

- All crossings have curb ramps with detectable warning systems and high-contrast crosswalks
- Large sidewalks buffer from vehicular traffic

Amenities / Aesthetics

- Large planting areas and mature trees
- Covered stop / waiting areas
- Public art and wayfinding signage
- Trash Recycle

STUDY AREA: RICHMOND BART STATION ACCESS

BART ENTRANCE AT NEVIN PLAZA

CM5-Commercial Mixed Use, Activity Center

Corridor Synopsis

Nevin Plaza provides access to the BART station via Marina Way. The housing development along Nevin Plaza was completed within the last ten years and provides many contemporary urban design solution to balance vehicular and pedestrian traffic for safe access to and from BART. A wide thoroughfare and pedestrian lighting create strong sightlines and overall safety.

Rating- Out of 5

Safety	3.8
Accessibility	3.3
Amenities / Aesthetics	3.6

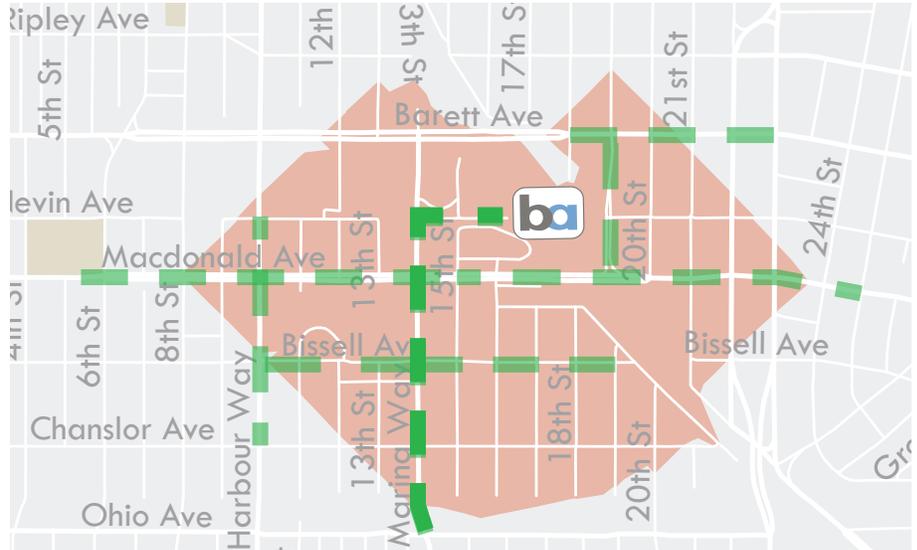


Photo Documentation: Google Earth Software and Digital Photography



Figure 13 - Nevin Plaza

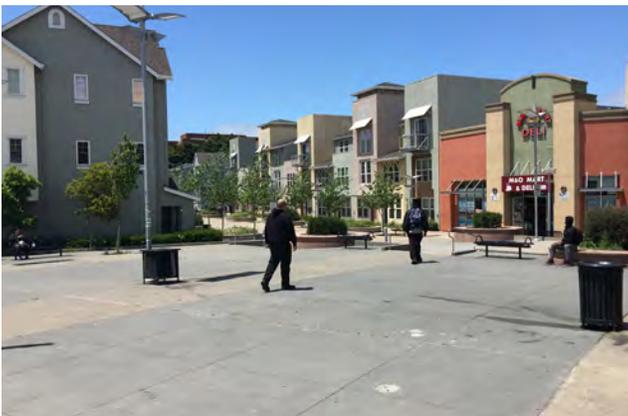


Figure 14 - Sidewalk adjacent to BART entrance from Nevin Plaza

Infrastructure and Amenities

Safety

- Decorative pedestrian and vehicular lighting
- Strong visibility / minimal structural blockage
- Residential windows and doors face plaza

Accessibility

- Curb extensions with ramps
- Narrow streets
- Wide pathways

Amenities / Aesthetics

- Large planting areas and mature trees
- Wayfinding signage
- Public art
- Seat wall planters
- Decorative paving
- Metal decorative seating and trash / recycle

STUDY AREA: RICHMOND BART STATION ACCESS

BARRETT AVENUE: 19TH STREET-22ND STREET

CM5-Commercial Mixed Use, Activity Center

Corridor Synopsis

Barrett Avenue is a wide two-way traffic road with moderate vehicular use and minimal infrastructure for alternative transportation. Crossings are wide and often not consistently defined. Sidewalks are often not buffered from vehicular traffic. Bicycle sharrow striping is installed.

Rating- Out of 5

Safety	3.5
Accessibility	4
Amenities / Aesthetics	3.6

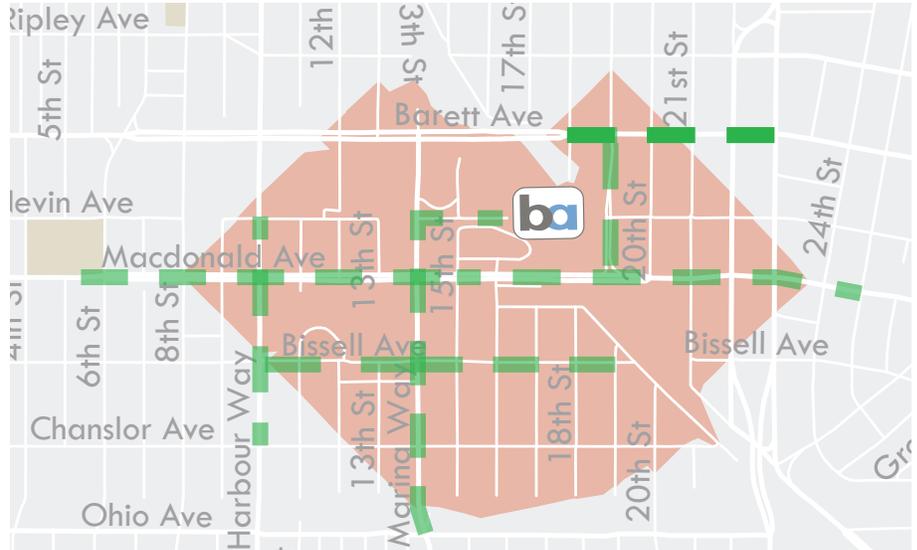


Photo Documentation: Google Earth Software and Digital Photography



Figure 15 - Typical section of Barrett Avenue



Figure 16 - Typical sidewalk condition

Infrastructure and Amenities

Safety

- Vehicular lighting only
- Moderate visibility, fencing / structures sometimes impede sight lines
- Narrow sidewalks no buffered from vehicular traffic
- Fencing along property lines narrow path of travel / cause visibility issues

Accessibility

- Missing crossings
- Newer curb ramps with detectable warning systems installed at most intersections

Amenities / Aesthetics

- Minimal vegetation / trees
- Planting areas often empty
- No wayfinding signage

Constraints / Issues

- Wide road crossings
- Higher vehicular speed
- Minimal bicycle infrastructure
- Some sidewalk heaving
- Some paths of travel narrowed due to furnishings / utilities
- Structures / fencing block sight lines

STUDY AREA: RICHMOND BART STATION ACCESS

HARBOUR WAY: CHANSELOR AVENUE-NEVIN AVENUE

CM5-Commercial Mixed Use, Activity Center

Corridor Synopsis

Harbour Way consists mostly of narrow sidewalks where path of travel is often impeded by utilities or maintenance issues. Sight lines are impaired by large building facades with minimal windows and setbacks, with opaque fencing often installed on the property line. Street crossings have standard striping and accessible curb ramps at sidewalks.

Rating- Out of 5

Safety	3.5
Accessibility	4
Amenities / Aesthetics	3.6

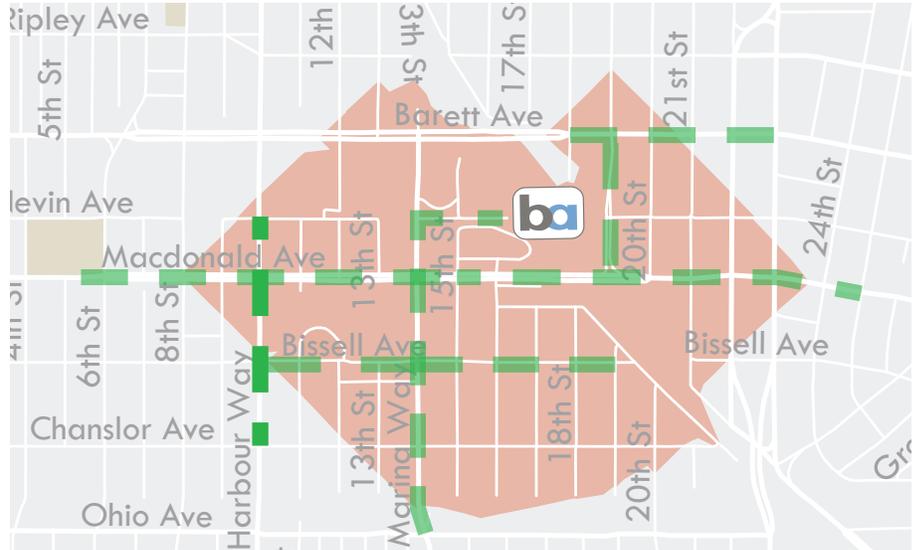


Photo Documentation: Google Earth Software and Digital Photography



Figure 17 - Road and sidewalk condition at Harbour Way toward Nevin Plaza



Figure 18 - Typical road condition and Harbour Way and Bissell Avenue

Infrastructure and Amenities

Safety

- Vehicular lighting only
- Low visibility, fencing / structures impede sight lines
- Narrow sidewalks, often impeded by utilities
- Fencing along property lines narrow path of travel / cause visibility issues

Accessibility

- Curb ramps and signals at intersections
- Standard crosswalk striping

Amenities / Aesthetics

- Some street tree planting
- Bicycle sharrow striping

Constraints / Issues

- Minimal bicycle infrastructure
- Some sidewalk heaving
- Some paths of travel narrowed due to furnishings / utilities
- Structures / fencing block sight lines

RICHMOND BART ENTRANCE | MACDONALD AVENUE AND NEVIN PLAZA

Crossing and Accessibility



Striping and Sidewalk Accessibility

Standard striping with contrasting pavement treatment is installed at the Macdonald Avenue BART entrance. Ladder striping is used at the Bus ques and at the entrance to the BART station. Truncated domes / detectable warning systems are installed at curb ramps.



Nevin Plaza entrance is missing detectable warning systems at curb ramps. Crosswalk striping is not highly visible and not installed in some locations.



Sidewalks

Sidewalks at the Macdonald Avenue entrance and within the BART facility range in width between 7'-20'. Installation is newer and pavement is in good condition.



Sidewalks at the residential development entryways at Nevin Plaza range in width between 4.5'-6'. Nevin Plaza thoroughfare is 20' between raised seatwall planters.

RICHMOND BART ENTRANCE | MACDONALD AVENUE AND NEVIN PLAZA

Crossing and Accessibility



Traffic Calming

One curb extension is installed at the Macdonald Avenue BART entrance. Curb extensions are standard at Nevin Plaza intersections, with vehicle lanes narrowed to 18' wide for two-way traffic. Parallel parking is marked within curb extensions.



Public Art

Public art is installed as informational / historical signage and as placards installed in pavement.



Wayfinding Signage

Informational kiosks are installed at the Macdonald Avenue entrance, the BART entrance, and at Nevin Plaza and Marina Way.

RICHMOND BART ENTRANCE | MACDONALD AVENUE AND NEVIN PLAZA

Lighting and Bicycle Amenities



Lighting

Vehicular lighting is installed on standalone posts in the BART bus que / entrance areas. Approximately 16 posts total with both single and dual fixtures. Pedestrian lighting is installed at the Macdonald Avenue and Nevin Plaza entrances. Pedestrian styles vary in locations, varying in spacing between 50-90' both staggered and linear installation.



Bicycle Amenities

Bike racks and lockers are available at the BART station entrance. 60 spaces total: 42 rack stalls, and 18 lockers (16 electronic, 2 keyed). Bike hhhhhhh and Class II lanes are available along Marina way toward the Nevin Plaza entrance.



MACDONALD AVENUE | 8TH STREET TO BART

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Standard striping is installed at crosswalks. Some intersection crossings contain decorative paving contrast between striping. Some intersections do not have detectable warnings. New improvements in the commercial downtown district have new curb ramps and detectable warning systems / truncated domes.



Sidewalks

Sidewalk width ranges from 8'-20', with wider sections toward the newer improvements along the commercial downtown district. Commercial district sidewalks have furniture zones in some locations. Older sidewalks are heaved in some locations due to mature tree roots causing disrupted paths of travel.

Traffic Calming Devices and Lighting



Traffic Calming

Planted medians containing mature trees are installed to divide travel lane directions. New street improvements between Harbor Way and 16th include many modern traffic calming and pedestrian-friendly tools including curb extensions, decorative crossings with accessible signals, and angled parking.



Lighting

Vehicular lighting between 6th Street and Harbor Way is installed on standalone light posts at approximately 120' on center, both sides of the street. From Harbor Way to BART, newer pedestrian lighting is installed at approximately 50' on-center with dual fixtures facing both sidewalk and street.

MACDONALD AVENUE | 22ND STREET TO BART

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Standard striping and ladder striping is installed at crosswalks. Some intersections have installed new curb ramps with detectable warnings / truncated domes and accessible signals. Some intersections do not have detectable warnings at curb ramps.



Sidewalks

Sidewalk width ranges from 5'-10'. Older sidewalks are heaved in some locations due to mature tree roots causing disrupted paths of travel. Curb extensions have been retrofitted in some locations.

Traffic Calming Devices and Lighting



Traffic Calming

Median islands are installed at 21st Street toward BART separating direction of vehicular travel. Some curb extensions have been installed.



Lighting

Vehicular lighting installed on standalone posts at approximately 80'-120' on center, both sides of the street. No pedestrian lighting is installed.

MARINA WAY

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

At the Macdonald Ave. intersection, curb extensions with detectable warning systems provide access to standard striping crosswalks with decorative contrast paving between. Toward Bissell Ave. standard crosswalk striping is installed only on one side of the street, connecting curb cuts with detectable warnings / truncated domes.



Sidewalks

Buffered sidewalk between Ohio and Chancellor Ave. transitions into residential sidewalks ranging from 3.5'-7'. Sidewalks often narrow due to tree and utility installation.

Bicycle Amenities and Lighting



Bike Striping and Signage

Class II bike lanes are available for a half block between Macdonald and Bissell Ave. Bike sharrows are installed on one side of the street.



Lighting

Vehicle lighting is installed at approximately 100'-120' on-center spacing, staggered. Installation types include stand alone post or fixture installation on telephone / utility poles. No pedestrian lighting is installed.

HARBOR WAY

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

At the Macdonald Ave. intersection, curb ramps with detectable warning systems / truncated domes provide access to standard striping crosswalks with decorative contrast paving between. Between Bissell Ave. and Macondald Ave. have standard crosswalk striping installed connecting curb ramps with detectable warning systems / truncated domes.



Sidewalks

Between Bissell Ave. and Macdonald Ave. sidewalk width range from 8'-10', often narrowing due to exposed tree well installation and utilities. Between Nevin Ave. and Macdonald Ave. sidewalk width ranges from 5-8'

Bicycle Amenities and Lighting



Bike Striping and Signage

A bike sharrow is installed in a single location between Nevin Ave. and Macdonald Ave.



Lighting

Vehicular lighting between Nevin Ave. and Macdonald at approximately 110-130' on-center spacing, staggered. Installation types include stand alone post or fixture installation on telephone / utility poles. No pedestrian lighting is installed.

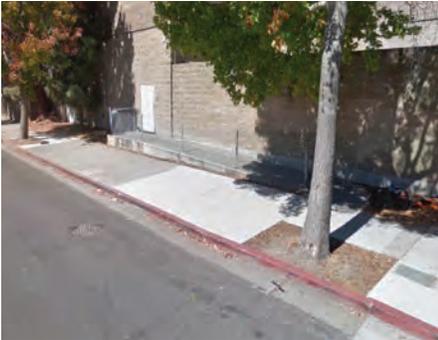
BISSELL AVENUE | HARBOR TO MARINA WAY

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Crosswalk striping is installed at intersection, typically standard style, with a zebra pattern installed at 13th Street. Striping does not occur on all sides of intersections containing curb ramps. Some curb ramps do not have detectable warning systems.



Sidewalks

Sidewalk width ranges from 8'-12', often narrowing due to exposed tree well installation and utilities. Heaving occurs at multiple locations due to mature tree roots growing beyond tree well.

Lighting



Lighting

Vehicular lighting is installed at approximately 125' on-center spacing, staggered. Standalone post installation type. No pedestrian lighting is installed.

BISSELL AVENUE | 19TH STREET TO MARINA WAY

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

Crosswalk striping is not installed at intersections. Majority of curb ramps are not accessible and do not contain detectable warning systems. Intersection are controlled via stop sign, no signal available. Curb ramps not installed at some intersections.



Sidewalks

Sidewalk width ranges from 4'-6' with planting areas, often empty, between the sidewalk and the street. Sidewalks often have uneven surfaces due to empty sunken tree wells, and heaving. Fencing ranging from 3-6' is consistently installed along the property line.

Lighting

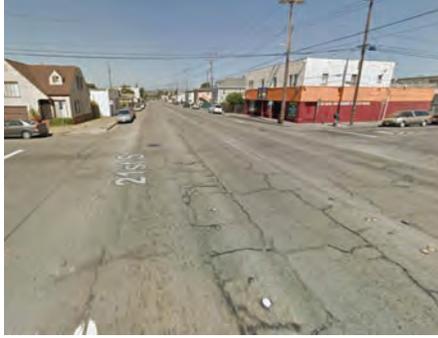


Lighting

Vehicular lighting is installed at approximately 125' on-center spacing on one side of street. Light fixtures are installed as retrofit on telephone / utility poles.

BARRETT AVENUE

Crossing and Accessibility



Typical Striping and Sidewalk Accessibility

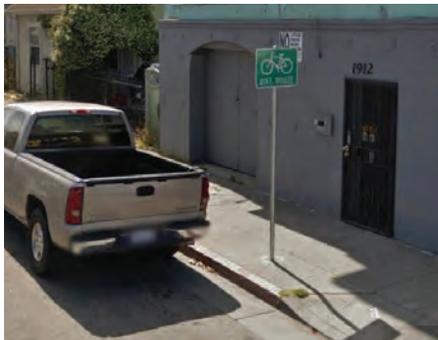
Curb ramps with detectable warning systems / truncated domes have been installed as a retrofit at intersection crossings. Standard striping has been installed at some intersections.



Sidewalks

Sidewalk width ranges from 5'-10', often narrowing due to exposed tree well installation and utilities. Some areas have planting area buffers ranging from 2'-3'.

Bicycle Amenities and Lighting



Bike Striping and Signage

Bike sharrows are installed at the beginning of each block in both directions, with adjacent signage installed in the sidewalk.



Lighting

Vehicular lighting between Nevin Ave. and Macdonald at approximately 110-130' on-center spacing, staggered. Installation types include stand alone post or fixture installation on telephone / utility poles. No pedestrian lighting is installed.

Appendix C Community Engagement Summary

This section summarizes the community engagement activities as part of the Richmond First Mile/Last Mile Transportation Strategic Plan.

Activities and Events, April 2017 – November, 2018

- Advisory Group Meetings:
 - April 24, 2017, 1:00 pm – 2:30, City Manager Conference Room
 - August 4, 2017, 2:00 pm – 3:30 pm, City Manager Conference Room
 - August 24, 2018, 11:00 am – 12:30 pm, City Manager Conference Room

- Chevron Environmental Community Investment Agreement (ECIA) Transportation Oversight Committee (community member appointees):
 - June 16, 2017 – phone interview with Marena Brown and Erica Benita Haywood
 - June 20, 2017 – phone interview with Martha Serianz and Carolyn Douglas
 - August 24, 2018 – meeting with ECIA members, Richmond Room, Civic Center
 - November 18, 2018 – meeting with ECIA members, City Manager Conference Room

- Stakeholder Focus Groups:
 - Richmond Bicycle/Pedestrian Advisory Committee (RBPAC):
 - July 10, 5:30 – 6:30 pm, Point Molate Room, Civic Center – project overview, input regarding challenges and opportunities and key issues to address

- July 12th Stakeholder Focus Group Meetings:
 - City Manager Meeting with City Department Directors, 10:30 – 11 am: project briefing, input on needs, relevant policies and planning activities, and goals for the project
 - Transit Agencies, 1:00 – 2:30 pm: project overview, relevant policies and planning activities, and key issues to address

- August 30th Stakeholder Focus Group Meetings:
 - Community Based Organizations, 10-11:30 am, Richmond Room, Civic Center
 - Employer/Business/Economic Development, 1-2:30 pm, Richmond Room

- Contact with Large Employers

- Review of Commuter Benefits Program Richmond employer practices to promote transit and other commute modes to reduce SOV commute trips, traffic congestion, GHG emissions and other air pollutants from motor vehicles.
- Phone interview with Chevron, September 22: TDM practices and employee transportation needs
- Blue Apron: provided information about transportation program for employees Richmond
- October 16th Neighborhood Coordinating Council Meeting (RNCC), Richmond City Hall
 - Overview of project objectives, discussion of neighborhood-focused needs and opportunities.
- Community Workshop: Existing Transportation Conditions, Possibilities, Needs & Potential Strategies. Thursday, September 28th, 6:00 pm – 8:00 pm, Richmond Memorial Auditorium
- Bike to Work Day Pop ups, May 10, 2018
 - Pop up tables at the Richmond BART station and East Brother Tap Room in conjunction with Bike to Work Day to collect input and preferences for infrastructure improvements and citywide policies, programs and services for enhanced mobility and access to transit.
- First Mile/Last Mile Transportation Plan Open House, June 7, 2018
 - In partnership with Main Street Initiative, Open House at the City’s R-Transit building at the Richmond BART Station in which stakeholders, community members, transit riders and others weighed in on proposed improvements and potential citywide policies and programs.
- June 23rd Richmond Healthy Village Festival, June 23, 2018
 - Booth at the annual Healthy Village Festival in which visitors weighed in on proposed improvements and potential citywide policies and programs.

Technical Advisory Group Participants

Affiliation	Member Name(s)
AC Transit	Michael Eshleman, Stephen Newhouse, and Kathryn Vo
BART	Niki Foletta, Ian Griffiths, Rachel Factor
Caltrans	Blesilda Gebreyesus
CCTA	Brad Beck
City Manager	Bill Lindsay
City Manager's Office	Lori Reese-Brown
EICA Transportation Oversight Committee	Eric Anderson and Marena Brown

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN | FINAL REPORT
City of Richmond

Engineering and Capital Improvements	Patrick Phelan
Environmental Manager	Adam Lenz
Fire Department	Robin Poindexter
IT Director	Sue Hartman
Mayor's Office and RBPAC	Sequoia Erasmus
Planning and Building Services	Lina Velasco
Police Department	Aaron Pomeroy
Richmond Bicycle/Pedestrian Advisory Committee and Bike East Bay	Cynthia Armour and Susie Hustader
Transportation Department	Denée Evans
WCCTAC	Joe Nemeth and Leah Greenblat
WETA	Chad Mason and Taylor Rutsch

Organizations Contacted or Engaged

City of Richmond (all departments)	East Bay Municipal Utility District
Environmental and Community and Investment Agreement (ECIA) Transportation Oversight Committee	PG&E
Richmond Bicycle/Pedestrian Advisory Committee (RBPAC)	West County Wastewater District
Bike East Bay	West Contra Costa Unified School District
AC Transit	Bayside Council of PTAs
Bay Area Rapid Transit	University of California Berkeley
Contra Costa Transportation Authority	Richmond Neighborhood Coordinating Council
West Contra Costa Transportation Advisory Committee	Richmond Main Street Initiative
Capitol Corridor Joint Powers Authority	Richmore Village-Metro Square Neighborhood Council
Bay Area Air Quality Management District	Richmond Annex Neighborhood Council
Caltrans, District 4	Point Richmond
Port of Richmond	Iron Triangle Neighborhood Council
Water Emergency Transportation Authority	Belding Woods Neighborhood Council
Kaiser Permanente East Bay	Disabled People's Recreation Center
Healthy Richmond	Reentry Success Center
Richmond Senior Center	Rubicon Programs
Bay Area Rescue Mission	Rich City Rides
Contra Costa Interfaith Supporting Community Organization	Pogo Park

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN | FINAL REPORT
City of Richmond

Community Housing Development Corporation	First 5 Contra Costa
Neighborhood House of North Richmond	Bay Area Rescue Mission
San Francisco Estuary Institute	Social Security Administration
Richmond Chamber of Commerce	Rosie the Riveter Trust
Chevron	General Chemical
Sims Metal Management	Restoration Hardware
Park Plaza	R and B Cellars
Assemble Restaurant	Auto Warehousing Company
Chevron	Galaxy Deserts
Richmond Courtyard	Connexsys Engineering
Republic Services	Amazon
SunPower	BP Lubricants
Nutiva	Parker-Hannifin Corporation
Blue Apron	Rubicon Bakery
Auto Warehousing Company	DiCon Fiberoptics
Colliers International	California Oils Corporation
Sims Metal Management	SunPower
Courtyard Marriott	Food Service Partners

Summary of Key Issues and Needs

- Need to coordinate with existing plans, including regional, San Pablo and El Cerrito
- Explore city shuttle
- Take into consideration improvements to operation and services as well as infrastructure
- Transit expansion needed in anticipation of future development (e.g., Marina, Giant Hwy/Atlas Road, Hilltop)
- Bicycle and Pedestrian Plans need updating
- Improve bike security and parking
- Opportunities for connectivity downtown to shoreline, but more challenging to the north
- Nighttime safety concerns for biking and walking
- Need signage, wayfinding
- Affordable options needed for low income residents
- Many local Richmond station users, high opportunity for trip conversion
- AC GO service expansion plan, partner to improve high priority stops, high capacity transit study to coordinate earlier plans

- Important for community to be heard; connect with CBOs such as RYSE Center, Healthy Richmond, Rubicon
- Rail track safety, safety at crossings
- Bike access and walkability to Bay Trail and Greenway
- General bike access and network continuity to transit
- Pedestrian comfort on sidewalks while accessing transit
- Address the needs of young people (look at school district and charter school data)
- Make improvements aesthetically pleasing – want elegant inviting public spaces, how they will look and feel
- Consider maintenance costs associated with installations and improvements
- Update development standards (e.g., number of vehicles per unit augmented by area car share)
- Communications: wifi throughout the entire network; wifi at bus stops

Appendix D Complete List of Recommended Projects

This section includes the list of projects recommended as part of the Richmond First Mile/Last Mile Transportation Strategic Plan.

Figure 14 First Mile/Last Mile Recommended Infrastructure Projects

#	Mobility Hub	Proj #	Location Street	Location Extents	Category	Treatment	Description/Rationale	Source
1	El Cerrito Del Norte	E-7	Cutting Boulevard	Ohlone Greenway to Hoffman Boulevard	Bicycle	Class II Bike Lanes	Consistent Class II (or more protected) bike lane with high-visibility markings and reflectors -- all the way through the I-80 overpass and San Pablo Avenue (building on proposed design for buffered bike lanes from 49 th St to the City limits, planned for construction this year). Wayfinding signage at both ends. Long term consideration of a bus and bicycle only lane in the long run.	Richmond Bicycle Master Plan (Recommends Class II) Richmond Pedestrian Plan
2	Richmond BART	R-2	23rd Street	Emeric Avenue-Bissell Avenue	Bicycle Pedestrian	Streetscape Improvements	23rd Street Streetscape Improvements to develop bike share services and improve pedestrian, bicycling, and transit access to the station	WCCTAC Transit Enhancement & Wayfinding Plans (2011) Project #101
3	Richmond BART	R-27	Macdonald Ave and Nevin Ave	Between 4th Street and Richmond BART Station	Pedestrian	Safe, green, and clean walking and biking route	These are "Branch Routes" in the Yellow Brick Road network. While they have proposed improvements and have been studied in further detail in other plans, the range of proposed treatments should be presented in the Design Guidelines section of this Plan.	Yellow Brick Road Iron Triangle Walkable Neighborhood Plan

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN | FINAL REPORT
City of Richmond

#	Mobility Hub	Proj #	Location Street	Location Extents	Category	Treatment	Description/Rationale	Source
4	Ferry Terminal	F-18	Harbour Way South, Cutting Blvd, Richmond Ave, Garrard	Ferry Terminal to Point Richmond and Richmond Greenway	Bicycle Pedestrian Wayfinding	Complete street	Provide a more comfortable walking and bicycling connection between Point Richmond and non-vehicular transportation options (bicycling and ferry)	2018 City of Richmond STP grant application for Ferry to Bridge Complete Streets Plan and Project Prioritization
5	Richmond BART	R-25	Barrett Avenue	Marina Way to 19 th Street	Pedestrian	Crossing improvements along Barrett Avenue at Marina Way and 19 th Street	Marina Way/Barrett Avenue Intersection Crossing Enhancements = Stripe crosswalk on east leg of Barrett Avenue; 19 th Street/Barrett Avenue Intersection Crossing Enhancements = Provide crosswalk connection to proposed multi-use path to North Richmond and upgrade traffic signal to include pedestrian countdown	WCCTAC Transit Enhancement and Wayfinding Plan BART Walk and Bicycle Gap Study
6	Richmond BART	R-4	Marina Way	Marina Way/ Barrett Avenue	Pedestrian	Crosswalk and pedestrian-scale lighting	Install crosswalk on east leg of intersection (Marina Way/Barrett Avenue Intersection); Crossing Enhancements: Stripe crosswalk on east leg of Barrett Avenue Intersection Crossing Enhancements. Construct pedestrian-scale lighting on approaches.	WCCTAC Transit Enhancement & Wayfinding Plans (2011) Project #104 BART Walk and Bike Gap Study
7	Ferry Terminal	F-4	Regatta Boulevard and 23 rd Street	23 rd Street and Marina Way	Bicycle	Class II bike lane	Install Class I multi-use paths along Regatta Boulevard and 23 rd Street to provide continuous, low-stress bikeway access to the Marina and Ferry area	WCCTAC Transit Enhancement and Wayfinding Plan

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN | FINAL REPORT
City of Richmond

#	Mobility Hub	Proj #	Location Street	Location Extents	Category	Treatment	Description/Rationale	Source
8	Richmond BART	R-23	Intersection of 22nd Street, Broadway, and Carlson Boulevard	N/A	Pedestrian Bicycle Wayfinding	Improved crossing and signals at Intersection of 22nd Street, Broadway, and Carlson Boulevard	Improve crossings at the Carlson Boulevard/ Broadway/ 22nd Street intersection to create a seamless connection between the two sides of the Greenway and with on-street facilities. Provide a pedestrian/bicycle actuated signal phase to allow Greenway users to cross diagonally across the intersection. Add signage for bicyclists and drivers to navigate the intersection safely.	Bicycle Master Plan
9	Ferry Terminal	F-9	Hall Ave and Marina Way	N/A	Pedestrian	Cross walks and mid-block crosswalks	Install crosswalks across Marina Way and Hall Ave on north side of the intersection and pedestrian-scale lighting to increase visibility of pedestrians crossing and slow vehicle traffic safely. Consider midblock crossings on Hall and Marina approaches.	n/a
10	Ferry Terminal	F-10	Hall Ave	Marina Way and Harbour Way	Pedestrian	Sidewalks	Install sidewalks and pedestrian-scale lighting to increase visibility of pedestrians crossing at driveways	n/a
11	Richmond BART	R-15	Richmond BART Station	N/A	Bicycle	Bike station, Class I bike parking, Class II bike parking, additional BikeLink card vending machines or purchasing locations	Recommended by WCCTAC Transit Enhancement and Wayfinding Plan: Intermodal Transit Center Bike Station Recommended by Bicycle Master Plan: Remove existing locker and replace with Class 1 parking for 8 total bicycles with perforated metal box-style lockers or pie-shaped lockers in the free area. Monitor demand and consider additional lockers to accommodate increased activity resulting from RTV development.	WCCTAC Transit Enhancement and Wayfinding Plan BART 2015 Bike Parking Capital Program Bicycle Master Plan Richmond BART Station Access Plan

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN | FINAL REPORT
City of Richmond

#	Mobility Hub	Proj #	Location Street	Location Extents	Category	Treatment	Description/Rationale	Source
12	Ferry Terminal	F-16	Harbour Way South	Ferry Terminal to Hall Ave.	Pedestrian	Sidewalks and bulbouts	Provide a more comfortable safer walking environment along Harbour Way South, increase visibility of pedestrians crossing, reduce crossing distances	Ferry Terminal Design Summary
13	Richmond BART	R-11	Barrett Ave, Nevin Plaza, and Macdonald Ave	Between Marina Way and 19 th Street	Wayfinding	Wayfinding signs and lighting along local streets and in the transit village	Provide wayfinding signs and lighting along Nevin, Barrett, and Macdonald avenues. Ensure the RTV signage and BART pathfinding signage are compatible.	Richmond BART Station Access Plan
14	Ferry Terminal	F-5	I-580 interchange with Harbor Way	Cutting Blvd and Wright Ave	Bicycle	Class II bike lane	Install Class II buffered bike lane along Harbour Way to provide continuous, low-stress bikeway access to BART and Ferry Terminal.	South Richmond Connectivity Plan
15	Ferry Terminal	F-7	I-580 interchange with Harbor Way	Cutting Blvd and Wright Ave	Pedestrian	High-visibility pedestrian crossing lights and signage	Install high-visibility pedestrian crossing lights and STOP lines and pedestrian-scale lighting to increase visibility of pedestrians crossing and slow vehicle traffic safely. Install striped curb extensions and soft-hit posts at on- and off-ramps. Consider a new pedestrian routing in the long-term through this interchange.	WCCTAC Transit Enhancement and Wayfinding Plan South Richmond Connectivity Plan
16	Ferry Terminal	F-8	Harbour Way	At railroad crossing	Pedestrian	ADA-compliant railroad crossing	Install ADA-compliant sidewalk/crossing and pedestrian-scale lighting to increase visibility of pedestrians crossing. Add warning lights, gates and traffic signals.	South Richmond Connectivity Plan

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN | FINAL REPORT
City of Richmond

#	Mobility Hub	Proj #	Location Street	Location Extents	Category	Treatment	Description/Rationale	Source
17	Ferry Terminal	F-13	Ferry Terminal	N/A	Auto	Point-to-point carsharing	Enable access to the Ferry Terminal for people without personal vehicles or live beyond the reach of walking, biking, and taking transit	<i>n/a</i>
18	Richmond BART	R-6	Richmond BART Station	N/A	Station Amenities	Security cameras, especially for bike parking areas and bus rider waiting areas	Provide security cameras for bicycle parking areas and bus rider waiting areas.	WCCTAC Transit Enhancement and Wayfinding Plan Richmond BART Station Access Plan
19	Ferry Terminal	F-3	At Ferry Terminal	N/A	Transit Marketing	Real-time transit and ferry arrival information	Install real-time arrival information near AC Transit stops to reassure passengers about bus and ferry departures	<i>n/a</i>
20	Ferry Terminal	F-6	At Ferry Terminal	N/A	Bicycle	Secure bicycle parking	Install secure bicycle parking (e.g. bike lockers) to provide a secure and easily accessible location for bicycle riders to store their bikes close to their destinations	Ferry Terminal Design Summary
21	Richmond BART	R-10	Richmond BART Station	N/A	Wayfinding	Map of bicycle facilities and parking around station incorporated with transit information	Install a map of biking routes and parking facilities in the Richmond BART/Amtrak station along with wayfinding signage/directions for specific bus lines and bike/ped routes once out of the BART station	Bicycle Master Plan

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN | FINAL REPORT
City of Richmond

#	Mobility Hub	Proj #	Location Street	Location Extents	Category	Treatment	Description/Rationale	Source
22	Ferry Terminal	F-14	N/A	N/A	Marketing	Wayfinding	Provide integrated and consistent information on potential paths and options, including nearby destinations	n/a
23	Ferry Terminal	F-11	Ferry Terminal	N/A	Auto	Passenger loading area	Establish designated passenger loading areas for taxis and TNCs that clarifies vehicle circulation and reduces conflicts with pedestrian paths of travel	n/a

Figure 15 First Mile/Last Mile Recommended Policy and Program Projects

#	Location	Strategy	Description
1	Citywide	Develop Local Shuttle	The City of Richmond formerly offered the Richmond Circular Shuttle, a free service connecting BART stations and employment centers. Buses were operated by transMetro and funded by the Bay Area Air Quality Mitigation District (BAAQMD) until 2013, when funding was no longer available. This strategy recommends developing a new shuttle service for Richmond residents and employers with the use of ECIA, Regional and State funding.
2	Citywide	Evaluate Curbside Space Demand At Richmond Bart Station And Ferry Terminal	<p>Conduct annual curbside space demand study to assess management needs at the Richmond BART Station and Ferry Terminal. If there is a need to manage the curb space, the City should work with BART and the Ferry Terminal and apply BART's curbside management guidelines for next steps.</p> <p>As BART ridership grows, so does demand for BART's limited station area parking and curb space as more people are picked-up and dropped-off at stations via shuttles, carpools, taxis and ride-hail services. These pressures and the rapid growth of ridesharing services is leading to more curb congestion on BART property, driving the need to manage curb space to maximize access for BART riders and improve the customer experience.</p> <p>The City of Richmond should work with BART to manage the curb space at the Richmond BART Station through BART's existing curbside management they use for other station. This same methodology can also be applied to the Ferry Terminal.</p>
3	Citywide	Prepare for Autonomous Vehicles	<ul style="list-style-type: none"> ▪ The City of Richmond should prepare for autonomous vehicle technology (AV) by implementing policies that support safe and successful AV operations. Specifically, the City should pursue three efforts. ▪ Provide space for companies to test different types of AV technology

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN | FINAL REPORT
City of Richmond

#	Location	Strategy	Description
			<ul style="list-style-type: none"> – Provide space for low-speed testing of higher capacity AVs within circumscribed areas with as few natural modal conflicts as possible. Such AVs might be a natural fit for first/last-mile situations, though the complicated mix of modal conflicts around major transit stations would need to be managed carefully. ▪ Adjust the City's approach to managing curb-space in street design <ul style="list-style-type: none"> – Develop a context-sensitive approach to managing curb space citywide. – Consider how to incorporate passenger loading and unloading behavior in places where curb space is allocated to bicycles or transit vehicles to minimize conflicts. – Consider shifting incentive structure created by allocating most curb space to private vehicle parking. Tipping the balance toward active loading and unloading could be one way to encourage the use of shared vehicles. ▪ Adjust the City's parking regulations and the extent to which these regulations provide and/or operate public space for vehicle storage <ul style="list-style-type: none"> – Eliminate parking minimums and implement parking maximums, reducing the incentives to use private vehicles that are built into new buildings through the ample provision of free parking. – Where parking is necessary, ensure that it is shared flexibly across different uses and, as possible, discourage its incorporation into buildings with primary land uses (i.e. residential or commercial). Rather, encourage any new supply to be in stand-alone areas or structures, to more easily enable conversion to primary land uses in the future. – Shift the allocation of space around major transit stations, reducing parking and increasing the prominence of passenger pick-up and drop-off facilities. – For new developments, consider adopting TransForm's GreenTRIP certification which allows developers to opt into an EasyPass program in lieu of parking requirements.
4	Citywide	Prioritize the Transportation Demand Management Program and Commuter Benefits Ordinance	<p>The City of Richmond should require residential and commercial developments to implement transportation demand management programs with the goal of reducing single-occupant vehicle trips generated by the development. The City also currently has a Commuter Benefits Ordinance (CBO), which requires employers with 10 or more employees to implement a Commuter Benefits Program (CBP).</p> <p>The results of the CBO have been mixed. The City should amend its CBO to consider increased oversight to ensure existing and future businesses are complying with requirements.</p>

RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN | FINAL REPORT
City of Richmond

#	Location	Strategy	Description
5	Citywide	Implement Transit Wayfinding Recommendations	The City of Richmond should implement the recommendations from the Transit Enhancement and Wayfinding Plan (WCCTAC, 2011) to provide enhanced signing for people walking and bicycling to and from transit hubs. The recommendations are shown on pages 42-43 of the WCCTAC Plan . ¹⁴
6	Citywide	Develop a Parking Management Plan	This Plan recommends the City of Richmond develop a Parking Management Plan. Parking is a way for people to access transit and other modes, but it requires effective parking management to avoid incentivizing driving and adding to congestion and GHG emissions. Without effective management, pricing, and right-sizing the parking supply, the amount of land devoted to parking will expand and incentivize more people to drive for all trips and purposes. Additionally, the pricing and regulation of parking, if not intentionally managed, can exacerbate congestion as drivers will devote time to searching for the most convenient and cheapest spaces available, or undo any TDM policies that aren't as attractive as free guaranteed parking.
7	Citywide	Implement an E-Scooter Program	Establish an e-scooter share program to Richmond. The program should work with a private company to launch the e-scooter systems in Richmond to promote first- and last-mile scooter rides from the transit hubs. The program should include a scooter parking policy so that scooters do not become obstacles on the sidewalk or inhibit pedestrian travel.
8	Citywide	Plan for Ferry Terminal Development and Specific Plan	The General Plan encourages the implementation of the ferry terminal specific plan (GP Action LU1.I) to create high-intensity housing adjacent to the ferry terminal. The current zoning will allow development up to 125 du/acre. This strategize recommends the City capitalize on improvements and increase residential and mixed use development potential along Richmond South Shoreline. Zoning from the Richmond Bay Specific Plan allows for a range of housing intensities within a half-mile radius. CM-5 zoning designation allows for intense development along water frontage and a mix of uses. Light Industrial and Port uses remain a key use type in this area. Transitions between industrial and residential/retail are key to study. The current development proposal for Richmond Riviera proposes detached single-family homes resulting in 120 du/ac. Because of the location adjacent to the Ferry Terminal, this site should be considered for a more intense transit oriented housing development with some mixed-use. The zoning and land use would allow up 40 du/ac min.; 125 du/ac max. and 12 stories max. building height. Increased housing development is key to success of the site as a TOD. This area is projected to provide 1,550 residential units as studied in the 2008 TOD Plan, however, the allowed density has since increased. The General Plan recommends studying this area further through a specific plan to understand capacity and guide development.

¹⁴ http://www.dot.ca.gov/hq/tpp/offices/orip/Grants/final_products/2012/4WestContraCostaTransitEnhancementandWayfindingPlan.pdf