



RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN

Existing Conditions and Needs Assessment

September 2017



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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

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- 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

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- 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.

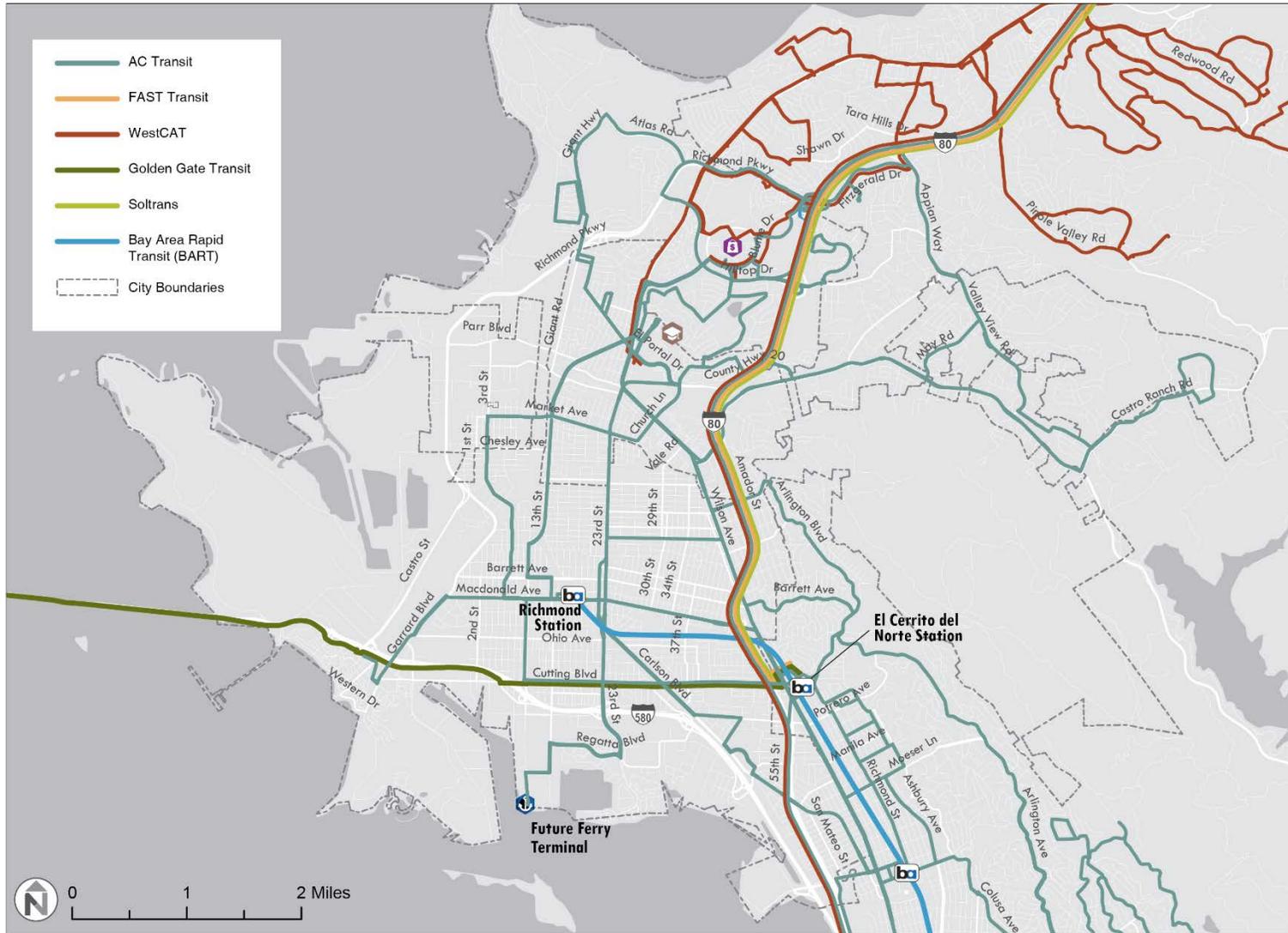
¹ City of Richmond, Richmond Pedestrian Plan, 2011, p. 16

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.

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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

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- 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.

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- **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

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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:

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- 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.

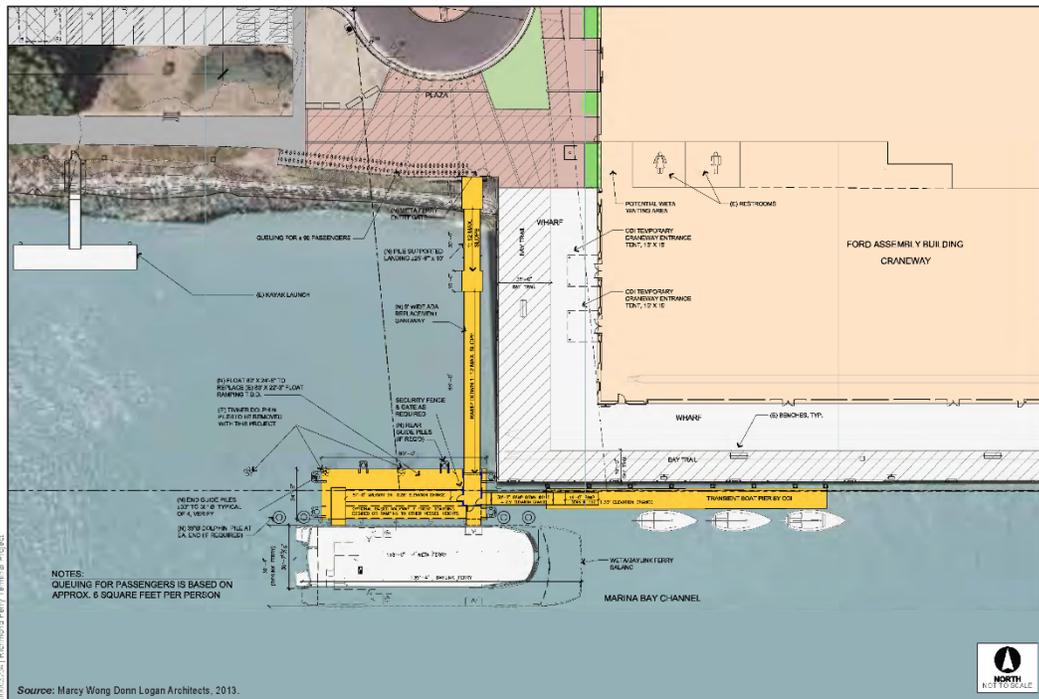
The Richmond Ferry Terminal is planned to be constructed at what is currently a recreational boat launch site along Ford Channel (the recreational launch will be relocated to another location closer to the Richmond Marina). The ferry terminal site is adjacent to where Harbor Way South ends at Ford Channel (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.

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Figure 2 Richmond Ferry Terminal Site Plan and Parking



Figure 3 Richmond Ferry Terminal Site Plan Detail



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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.

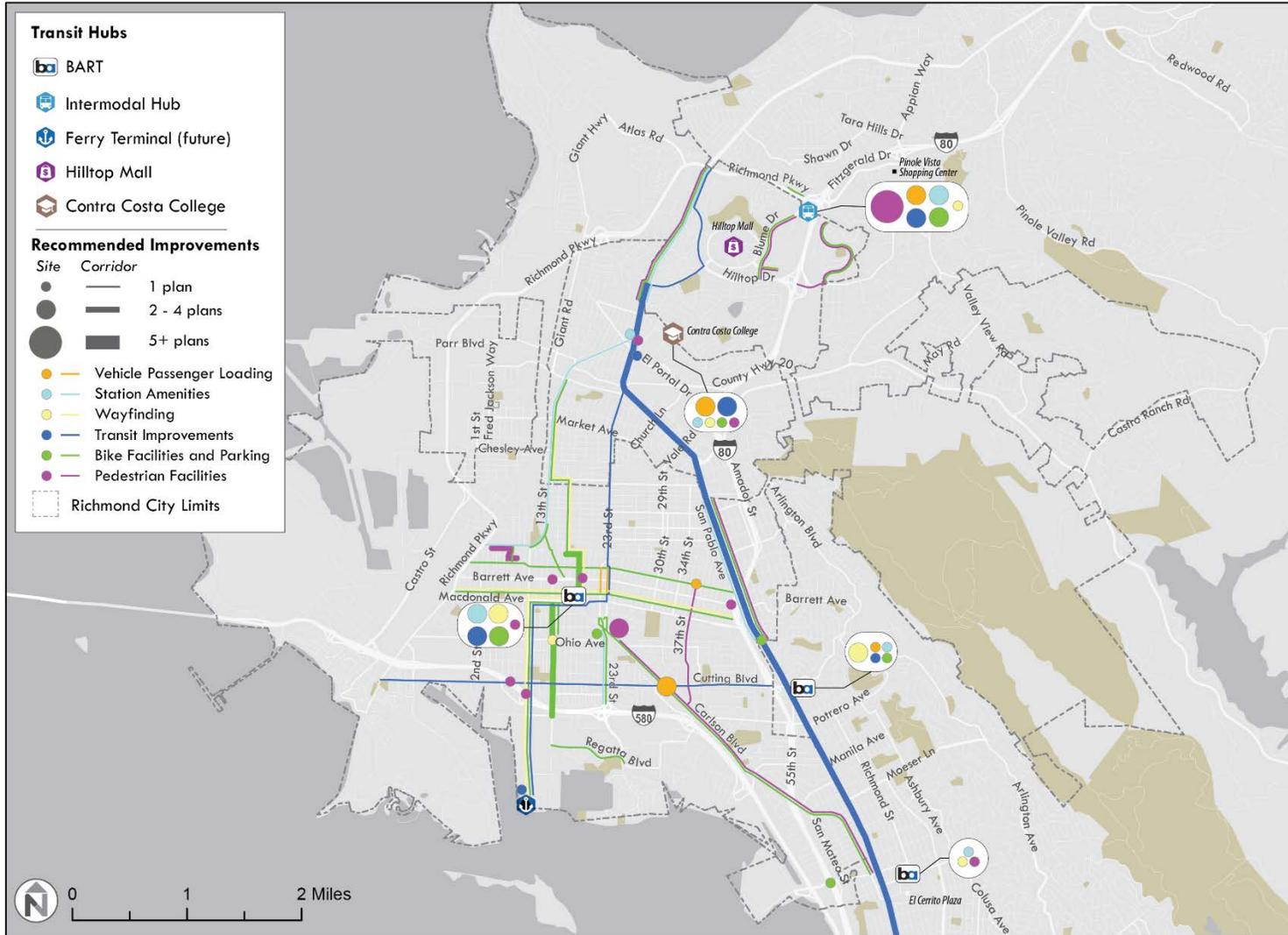
Figure 4 Contents of Recent Plans and Policies

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.

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Figure 5 Improvements Recommended in Relevant Plans and Policies



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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)

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	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)

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	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)

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	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)

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<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)
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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) 			

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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

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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

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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

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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

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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.

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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.

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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.

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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.

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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



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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.

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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.

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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

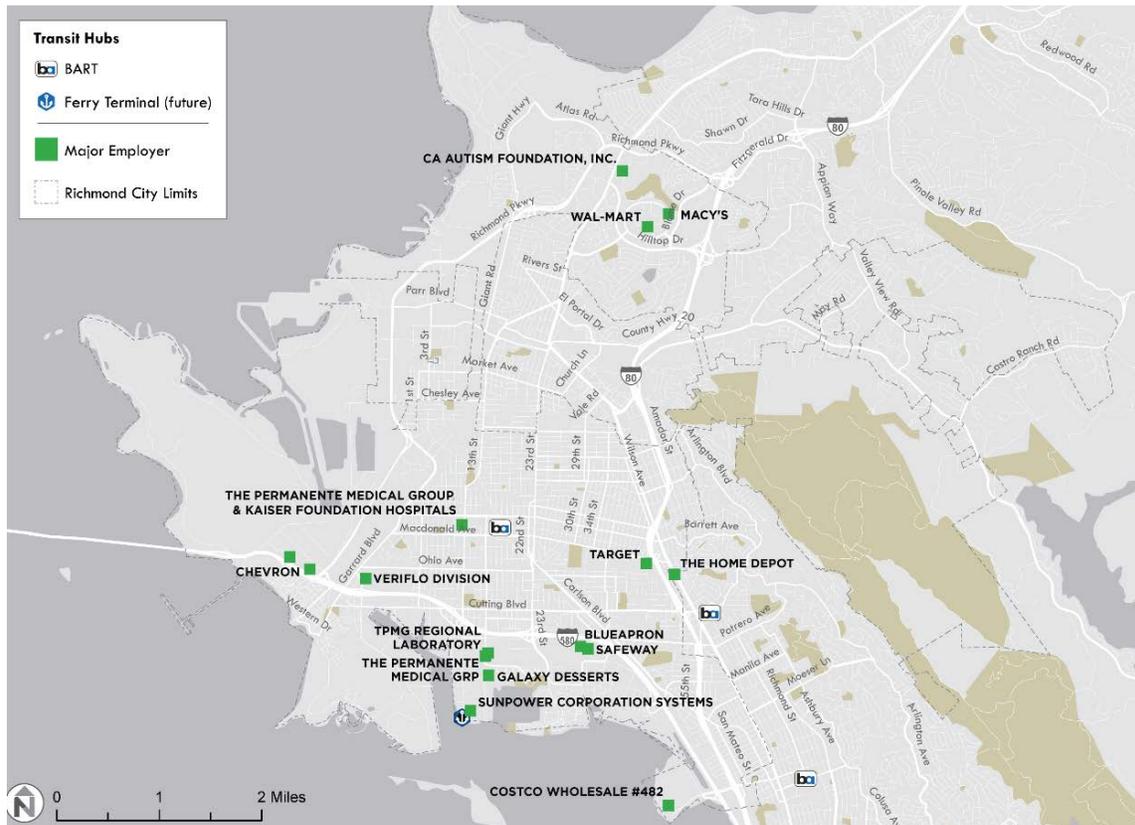
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Richmond BART and the Ferry Terminal. The proximity of employers to these stations reinforces the stations' roles as mobility hubs; improving the first mile/last mile connections between these hubs and these employment locations will be a critical 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,

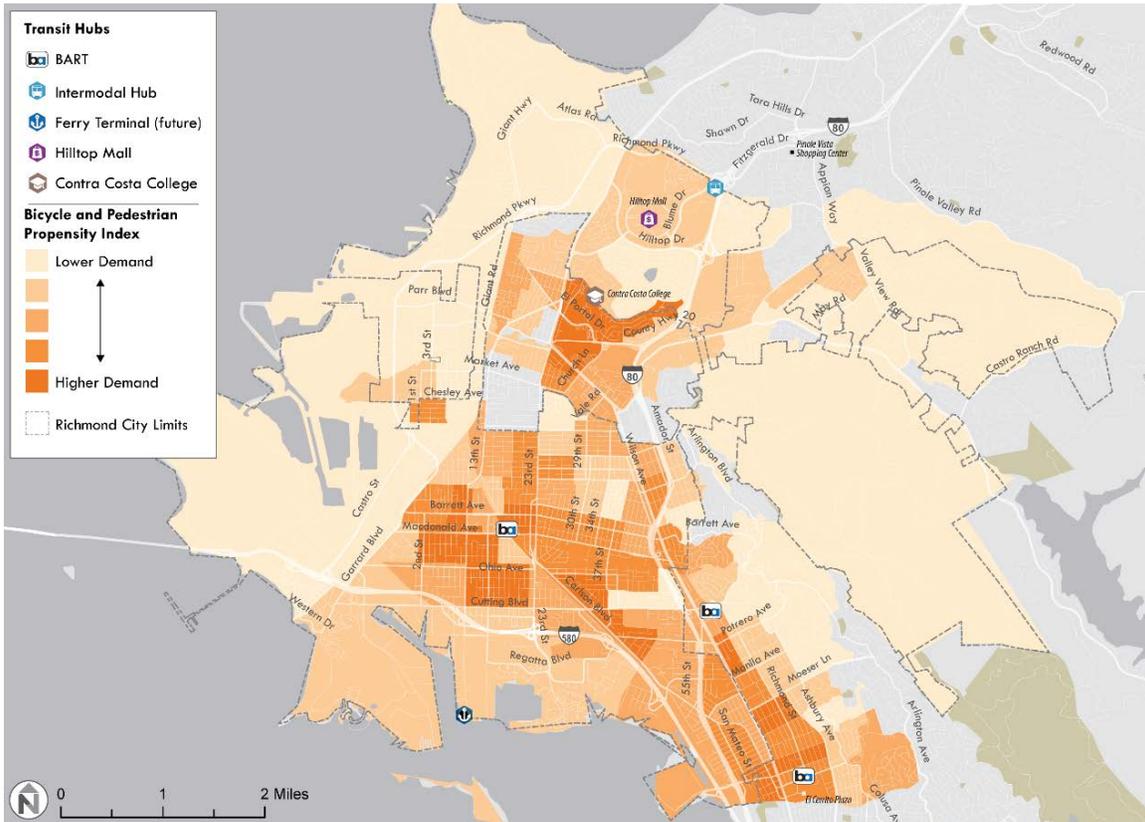
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income level and physical ability may influence one’s choice to use transit or bicycling as their primary means of transportation.

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.

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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.

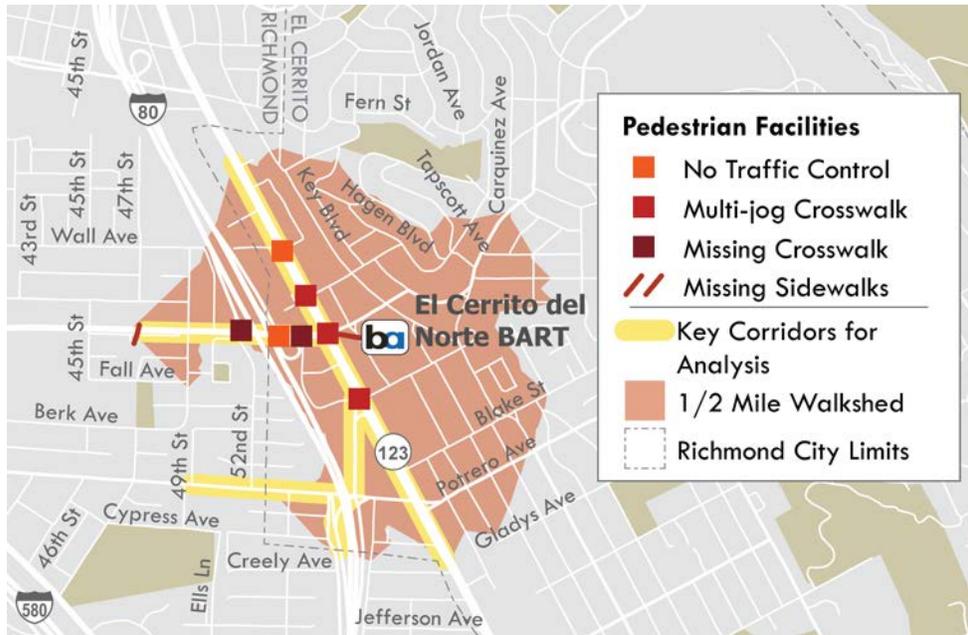
³² The dramatic decrease in median home distance for those traveling to El Cerrito del Norte BART Station is likely due to a combination of station-area development and survey methods. The 2008 survey only captured the median distance for those respondents who arrived by car and transit; people walking 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

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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 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.

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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.

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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

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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

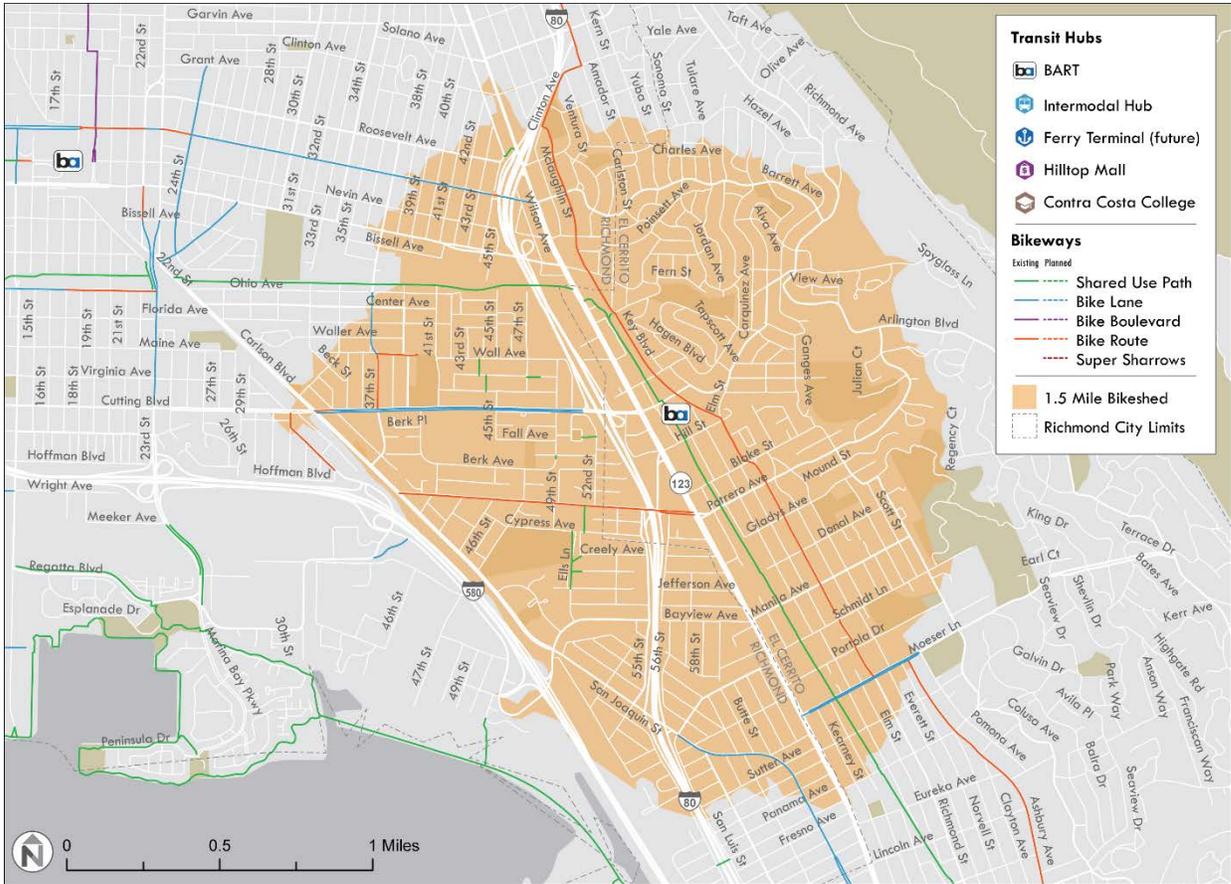
Biking access to El Cerrito del Norte BART Station is generally positive, with the station situated directly on the Ohlone Greenway. Running parallel to the BART right-of-way, the Greenway is a visible route. There is room for improvement, however, as the paving along the immediate Greenway has become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

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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.

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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.

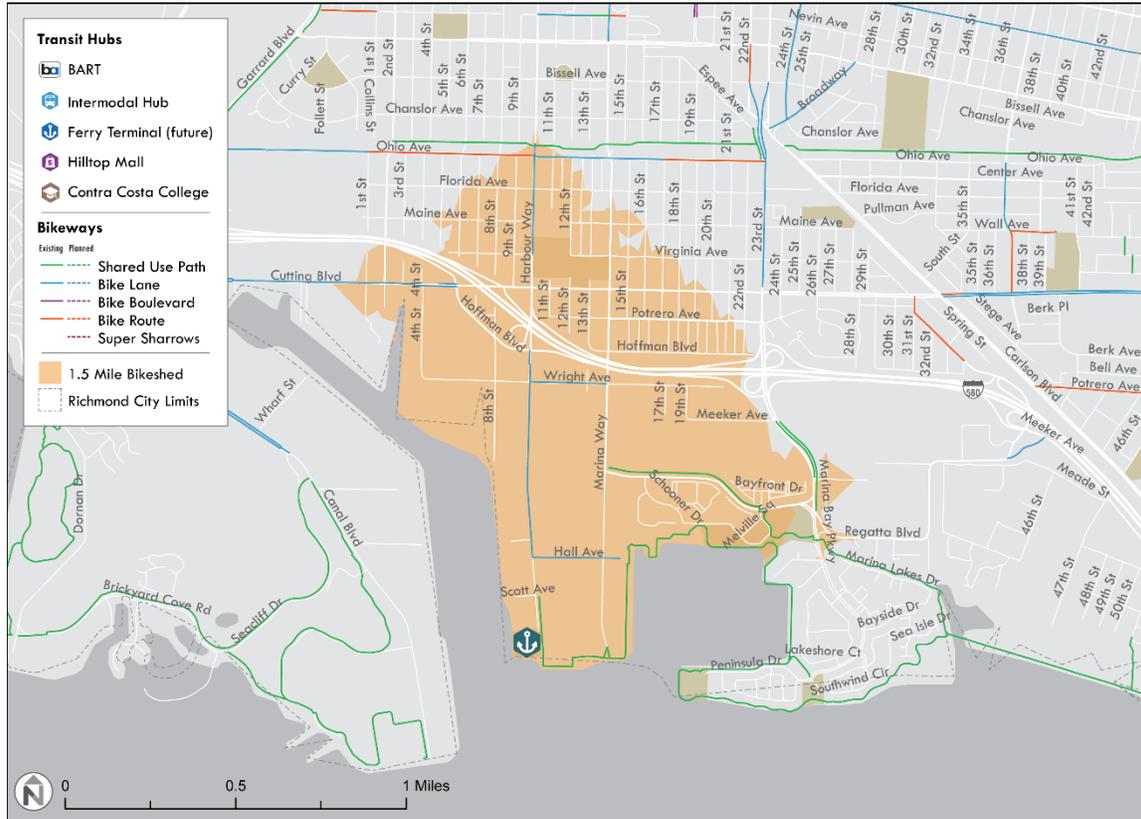
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Richmond Ferry Terminal

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.

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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.

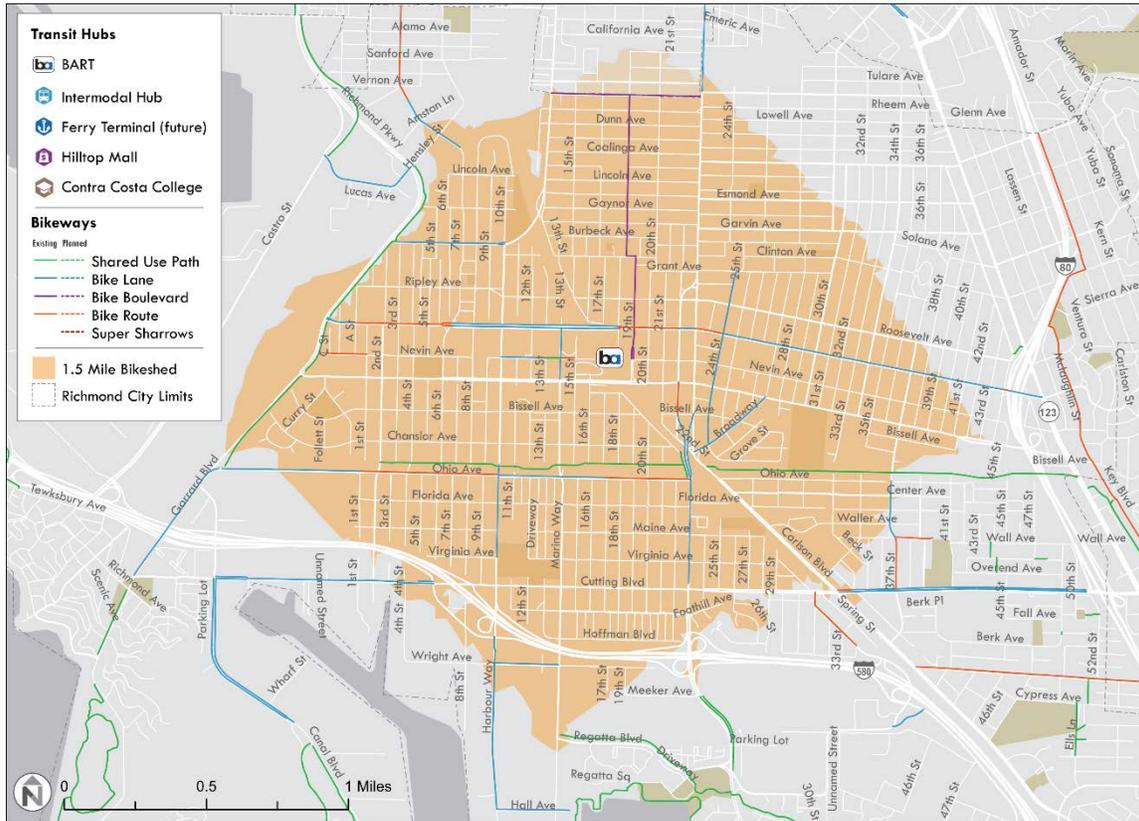
Richmond BART Station

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.

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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.

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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.

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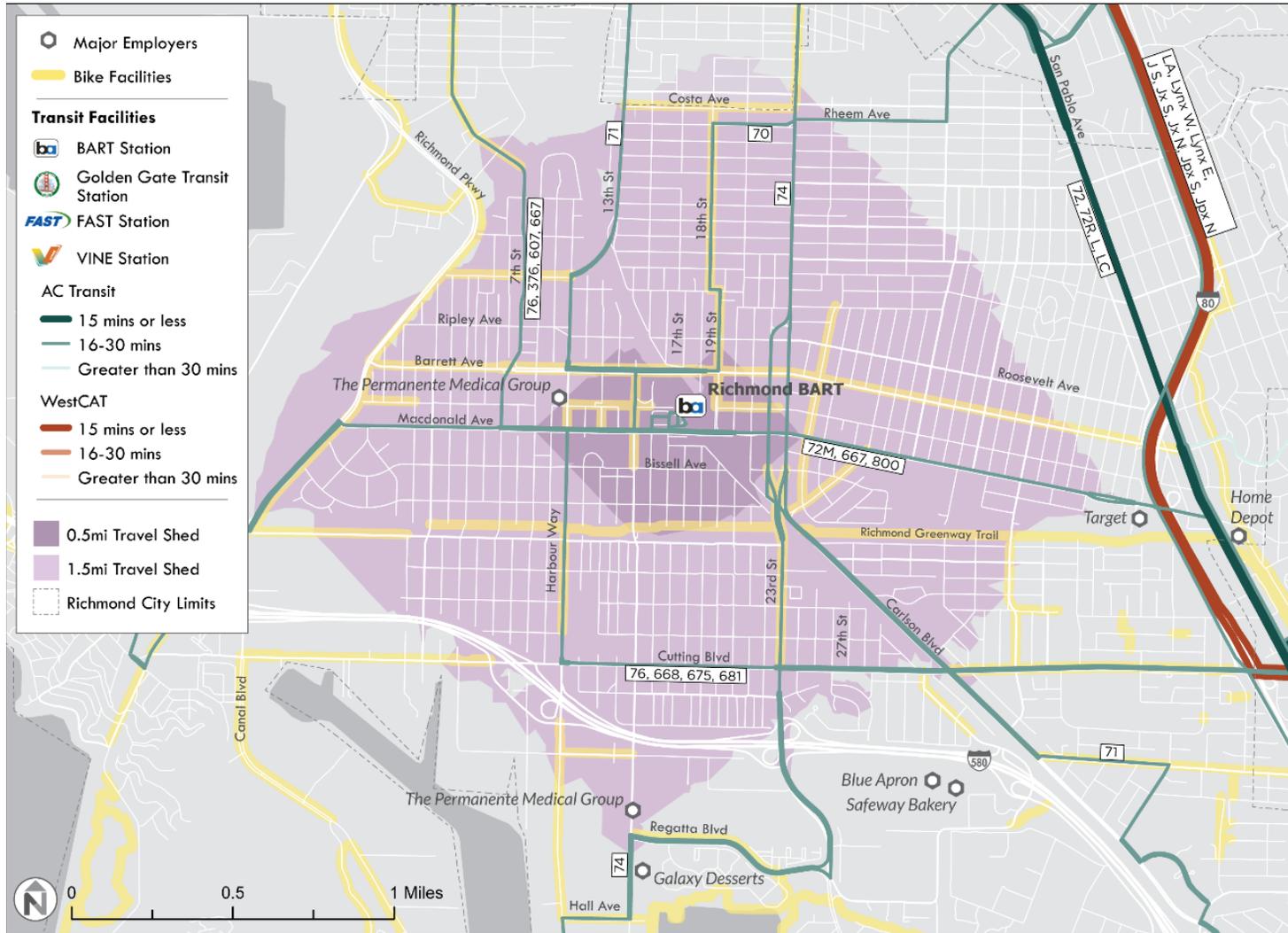
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As shown, Richmond and El Cerrito del Norte BART stations have the highest levels of transit service, with multiple local and regional transit systems and high frequency service. The transit service coverage spreads in multiple directions, establishing 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.

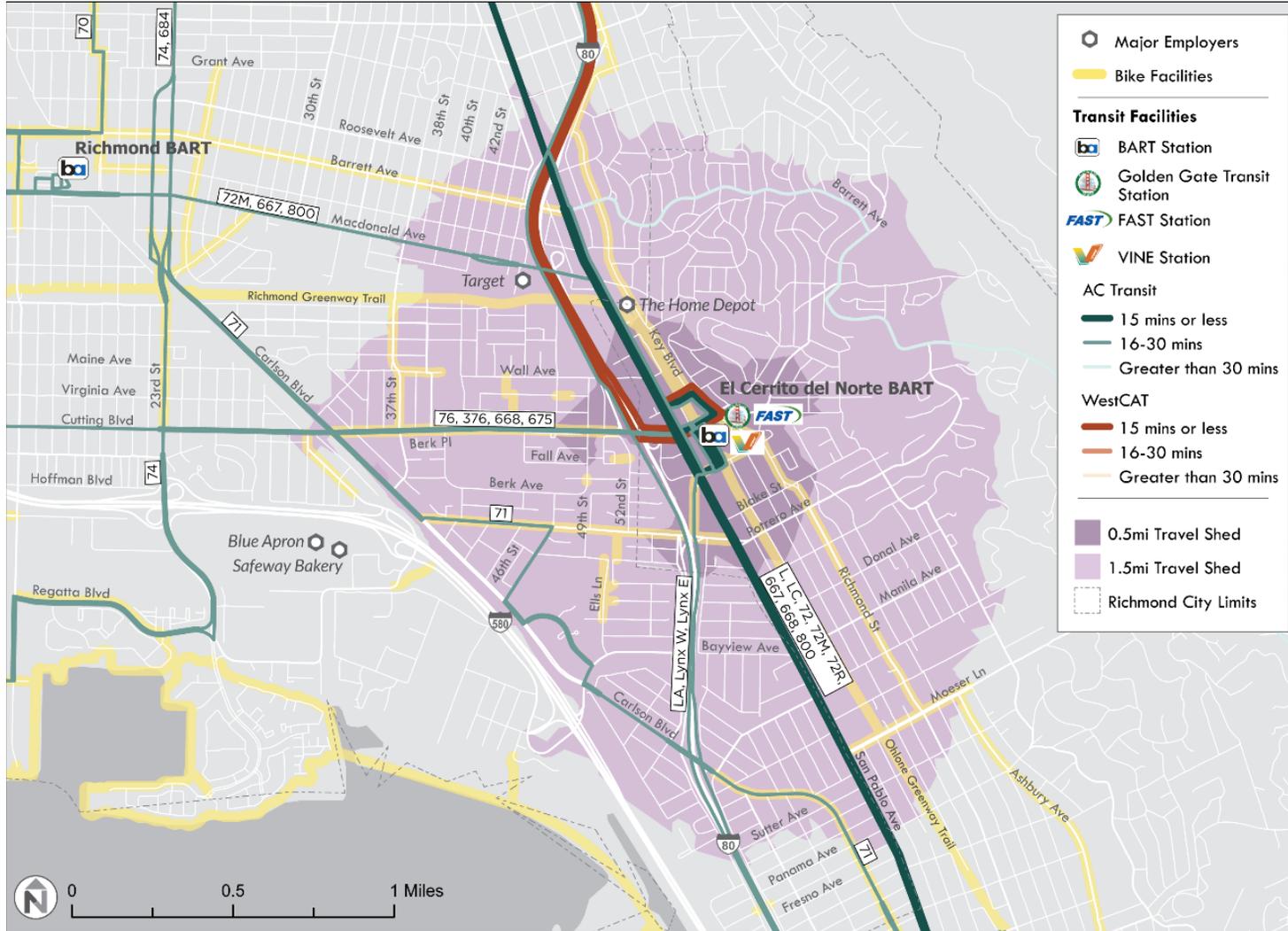
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Figure 32 Transit and Shuttle Access - Richmond BART Station



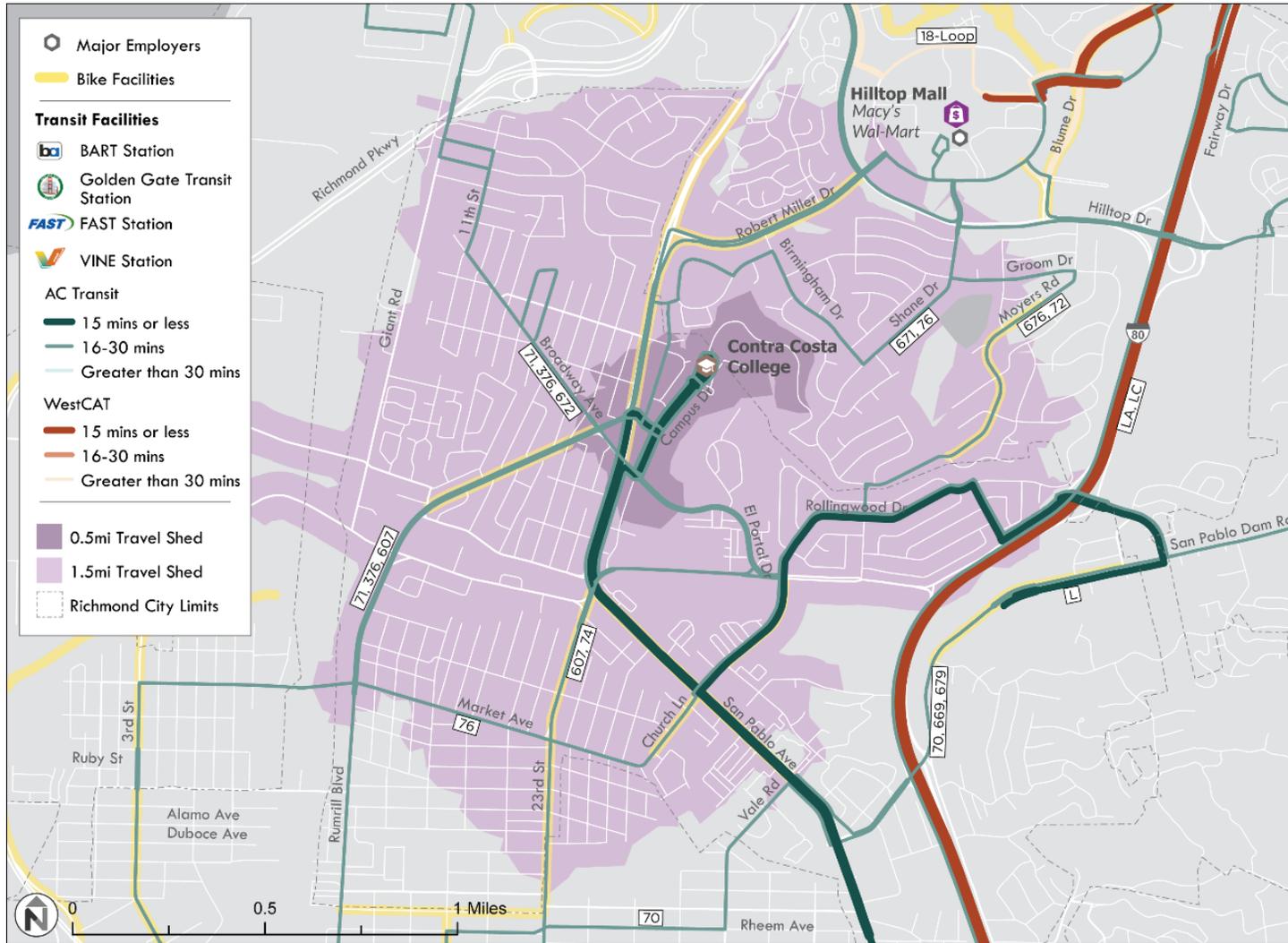
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Figure 33 Transit and Shuttle Access - El Cerrito del Norte BART Station



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Figure 34 Transit and Shuttle Access - Contra Costa College



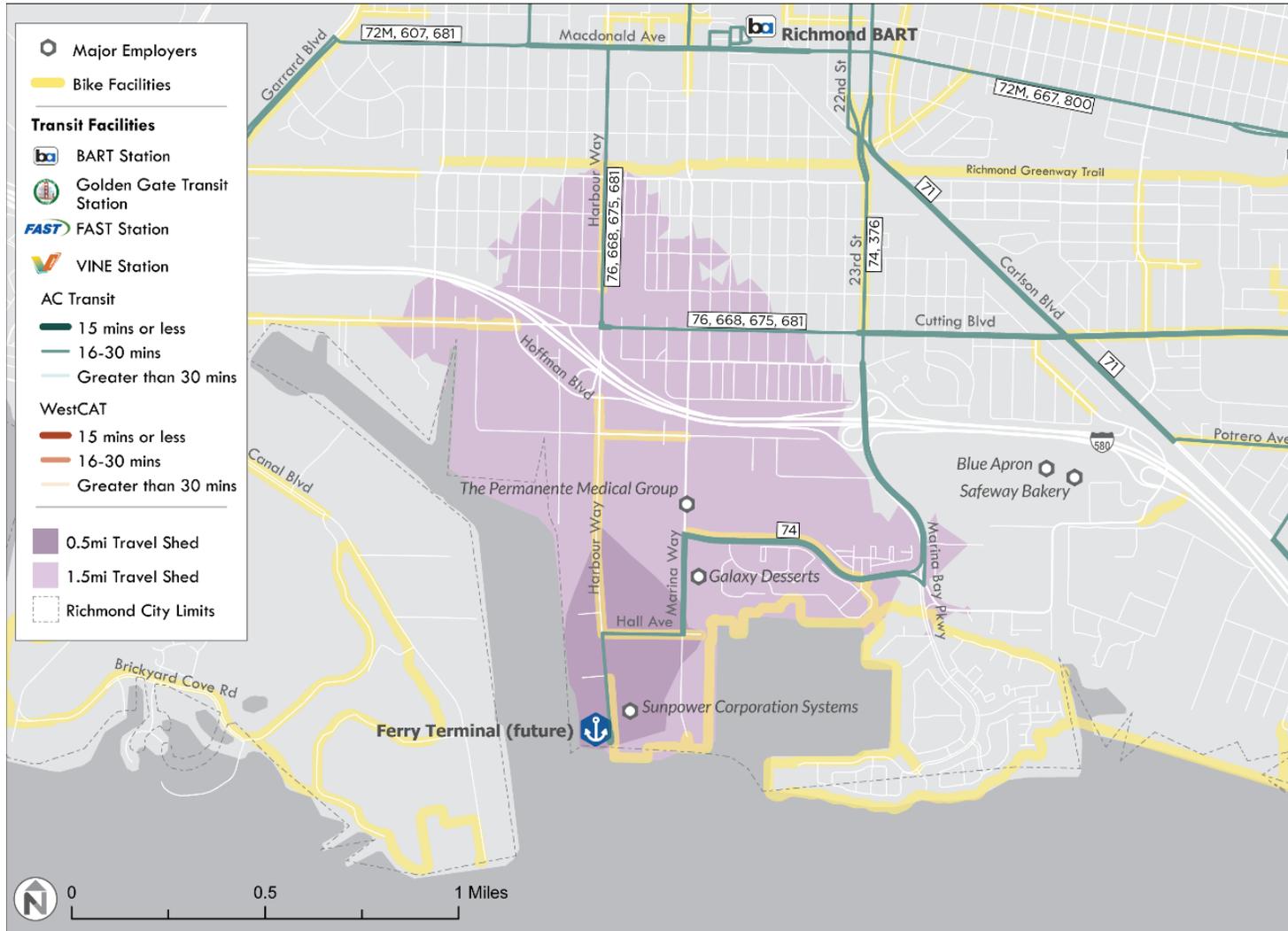
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Figure 35 Transit and Shuttle Access - El Cerrito Plaza BART



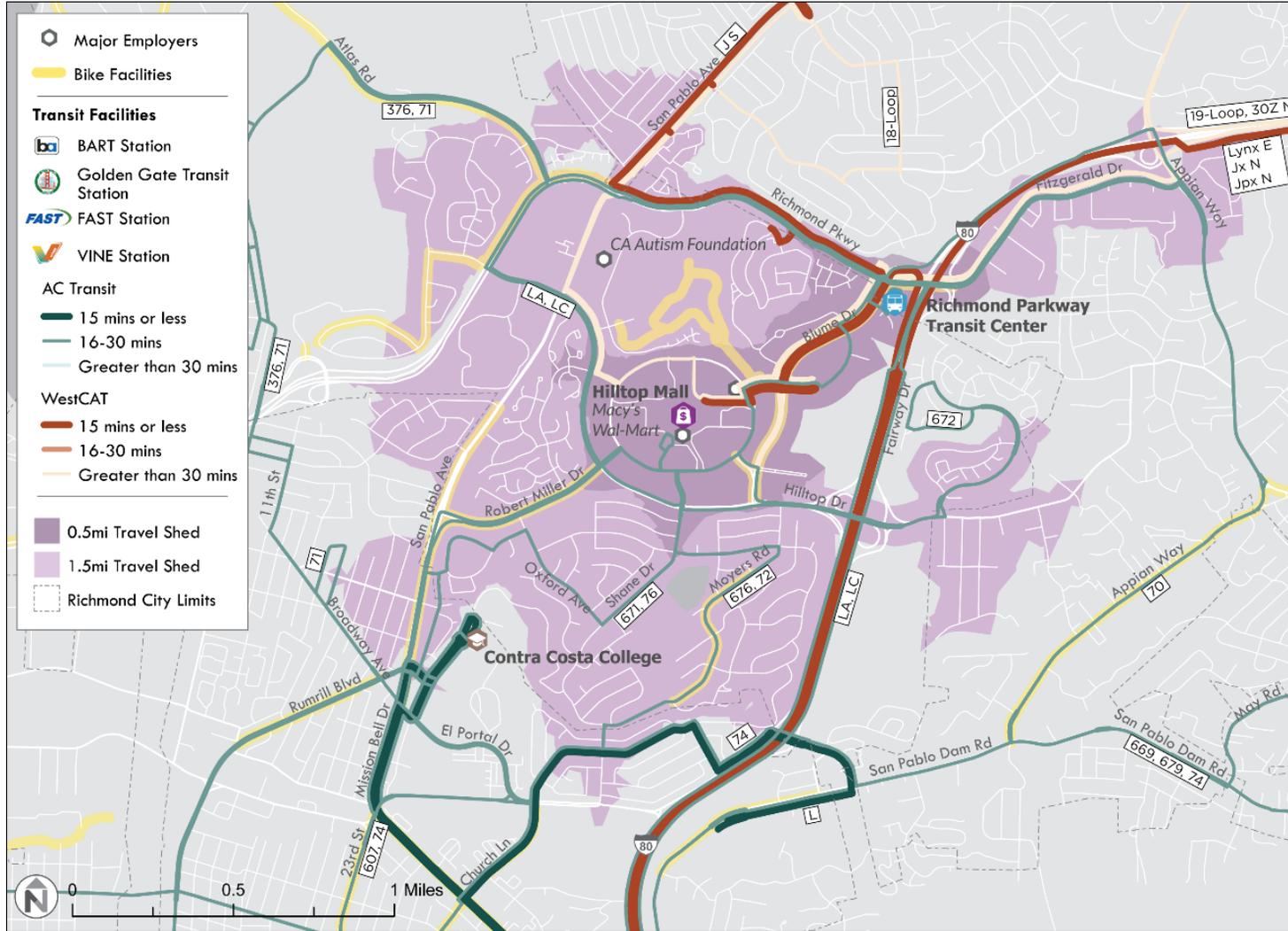
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Figure 36 Transit and Shuttle Access - Richmond Ferry Terminal (future)



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Figure 37 Transit and Shuttle Access - Richmond Parkway Transit Center and Hilltop Mall

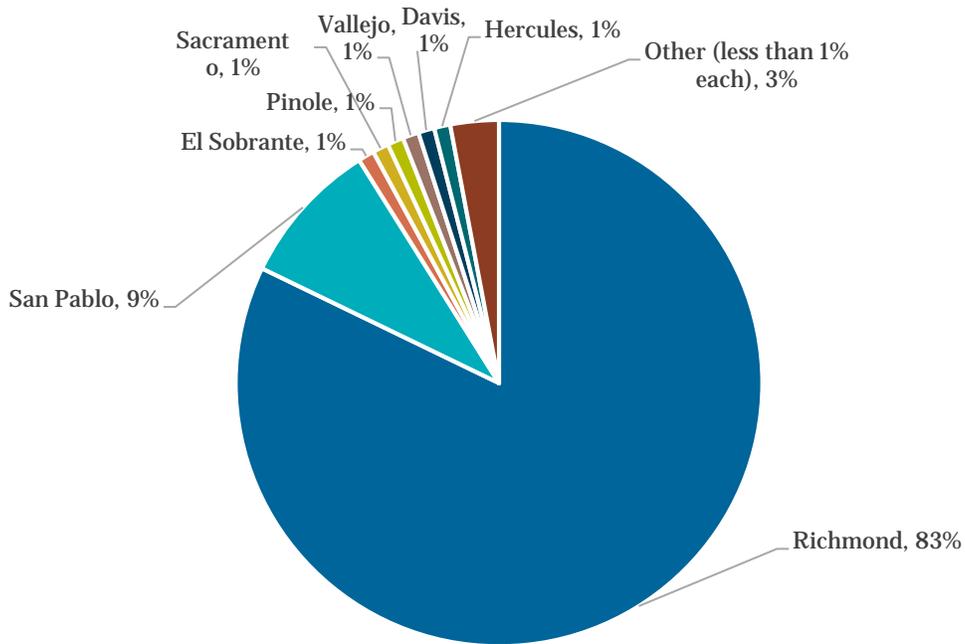


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Moreover, a 2016 BART Station Profile Study found that an unequivocal majority of riders who start their BART journey at Richmond BART Station also hail from Richmond (Figure 35). While El Cerrito del Norte riders' home cities are more diffuse, a significant 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)



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

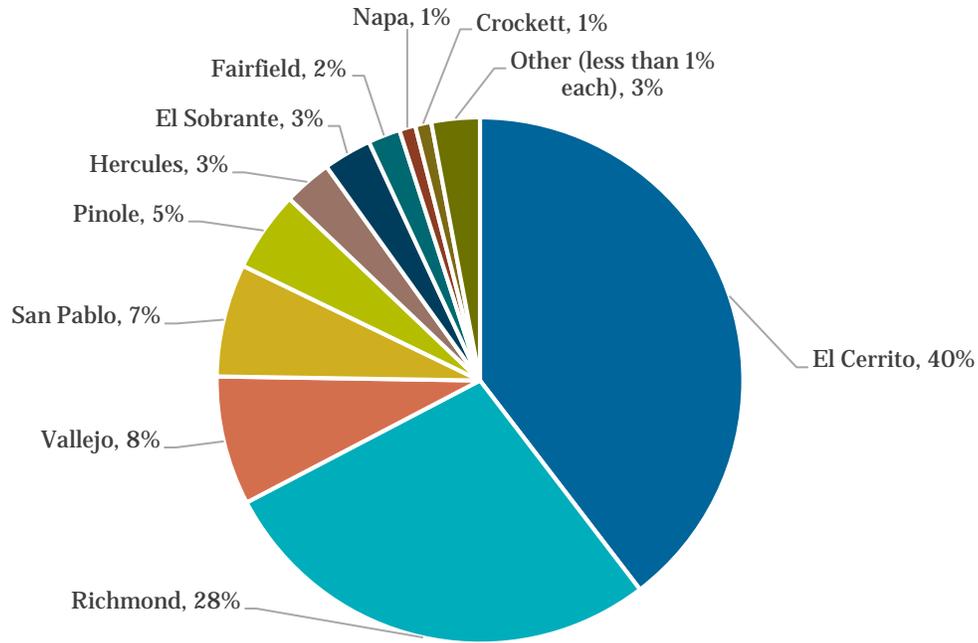
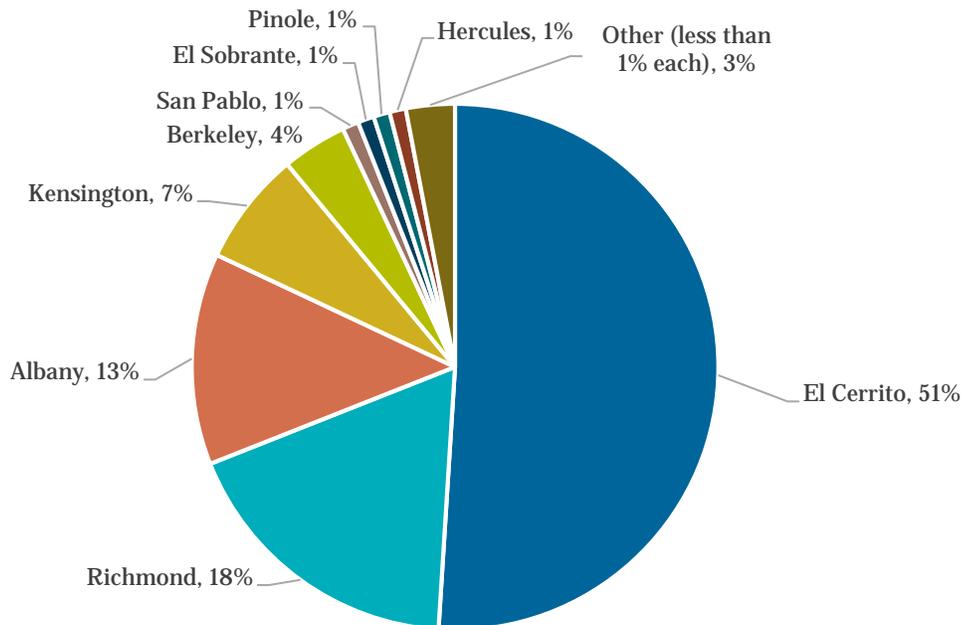


Figure 40 Home Origin Cities for Riders Who Start their BART Trips at El Cerrito Plaza BART Station (2015)



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.

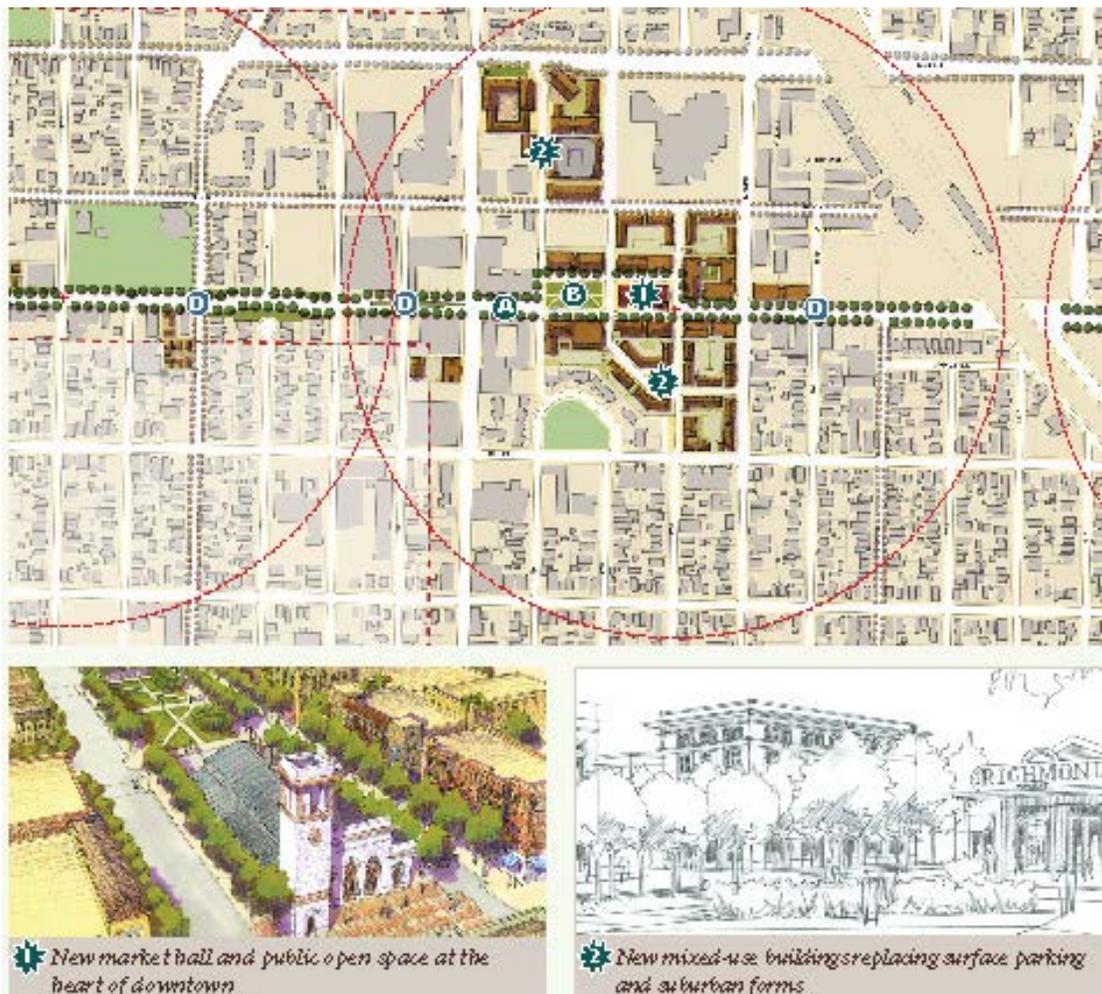
³⁴ Change Area 1 – Downtown/Macdonald Avenue.

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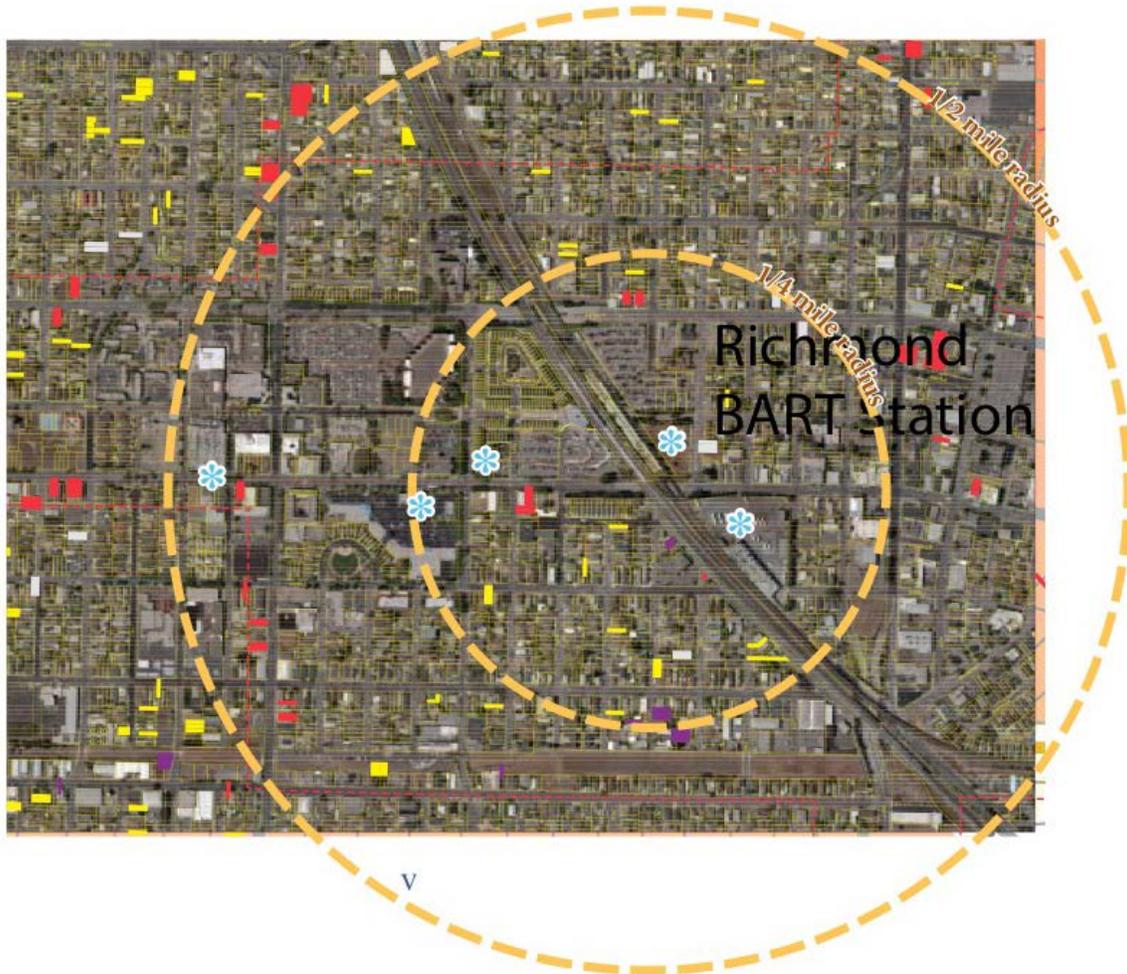
- An intact street grid with small block faces contributes to a high level of connectivity.
- Railway divides the west side of Macdonald Avenue from the eastern side. While there is auto connectivity across the rail lines from east to west along Macdonald Avenue, the underpass creates a barrier for pedestrians 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



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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

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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

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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.

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- 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

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(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.

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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

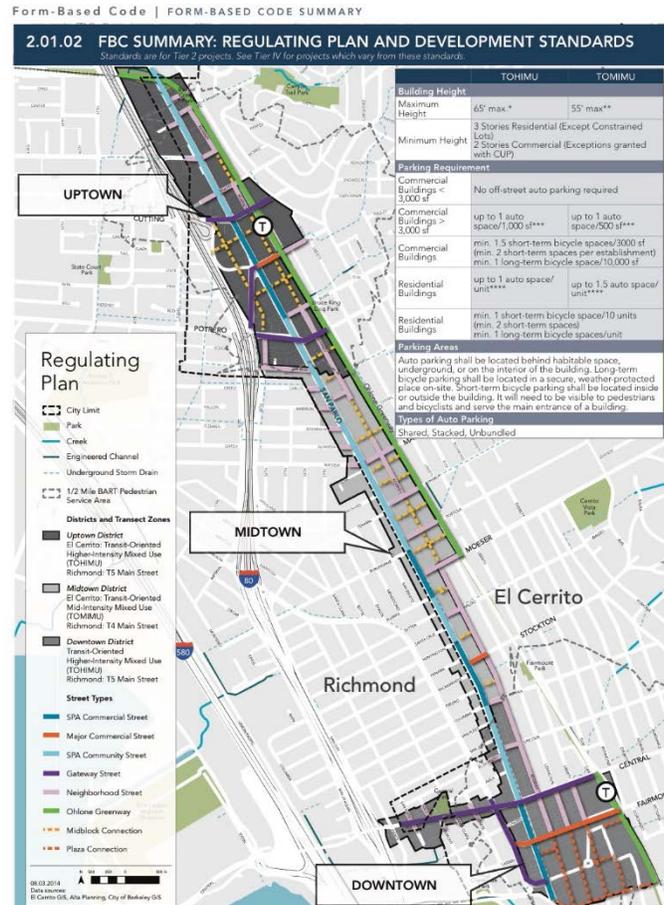
El Cerrito Del Norte BART station is adjacent to the City of Richmond and is connected to central Richmond to the west by Cutting Boulevard. Cutting Boulevard is the longest east-west corridor connecting El Cerrito and Richmond; it and Carlson Boulevard are designated as Key Corridors in General Plan 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)



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- 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 initial the Central Avenue and Liberty Streetscape improvement project which include 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.

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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.

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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>

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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, 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>

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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>.

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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,

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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/>

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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.

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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

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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

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- 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

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- 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

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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

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- 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

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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

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- 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

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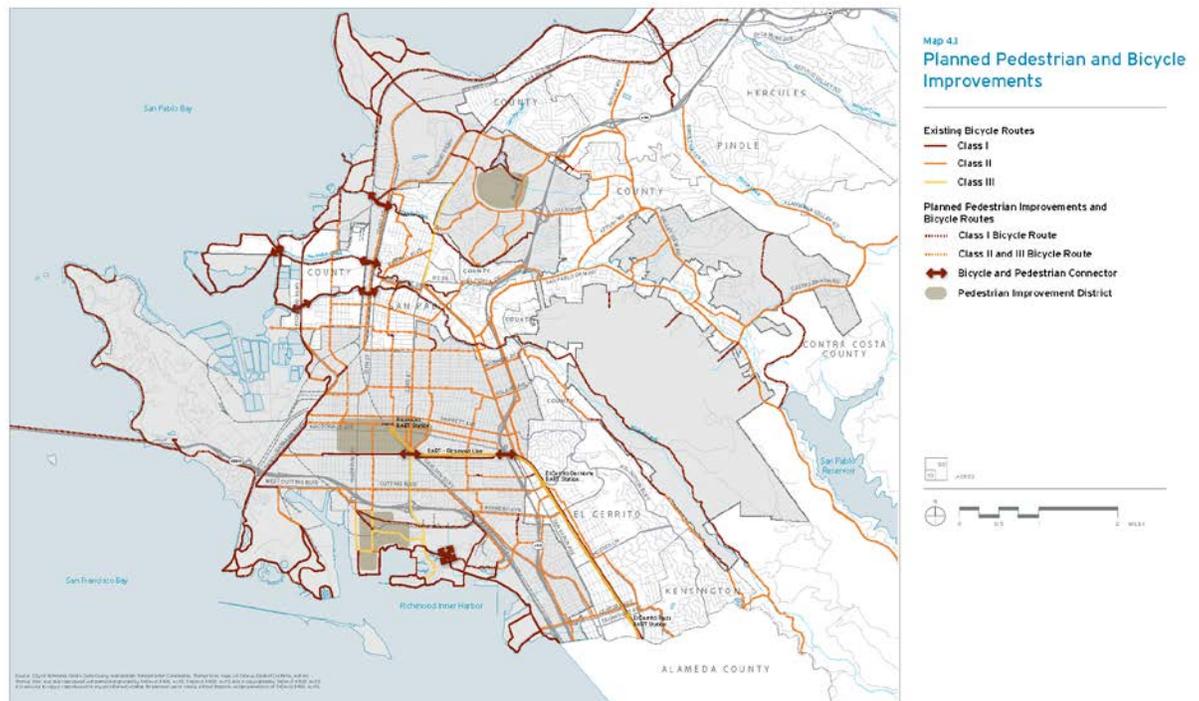
City of Richmond

- 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

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- 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
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- “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**

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- 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

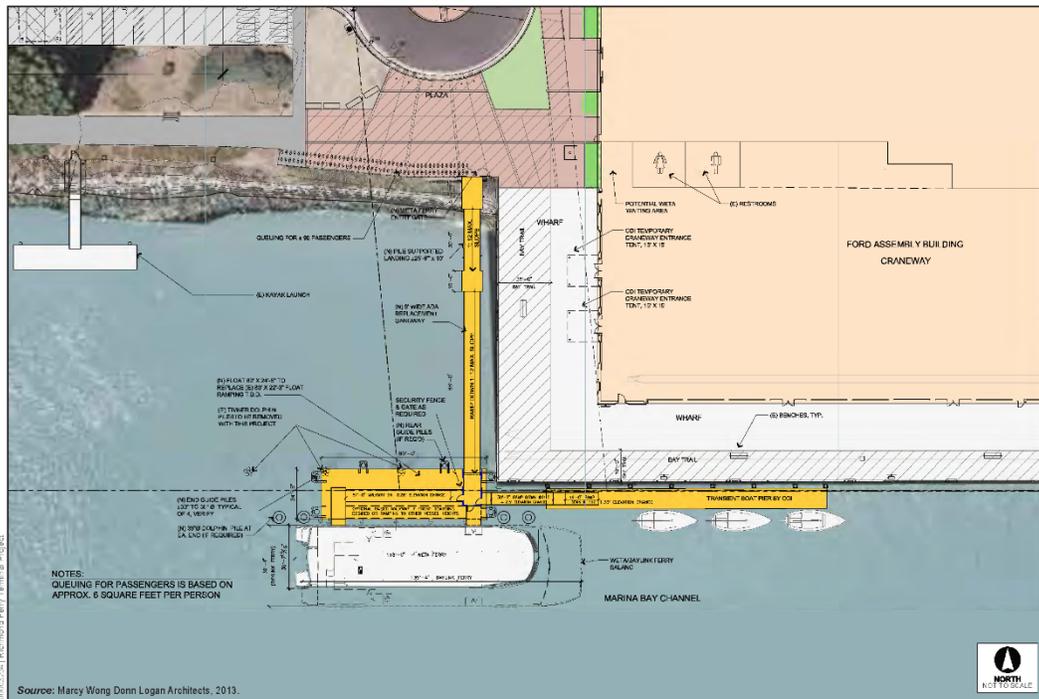
**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
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Figure 53 Richmond Ferry Terminal Site Plan and Parking



Figure 54 Richmond Ferry Terminal Site Plan Detail



**RICHMOND FIRST MILE/LAST MILE TRANSPORTATION STRATEGIC PLAN
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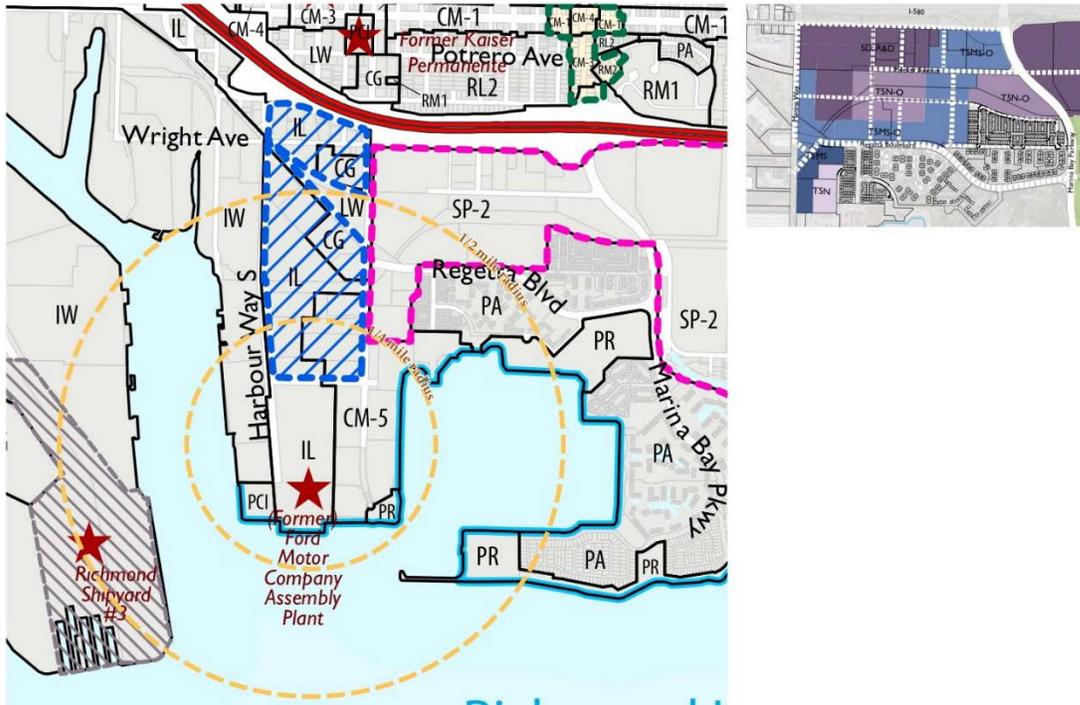
Figure 56 Zoning Details Surrounding Richmond BART Station

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

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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

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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.

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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
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- **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

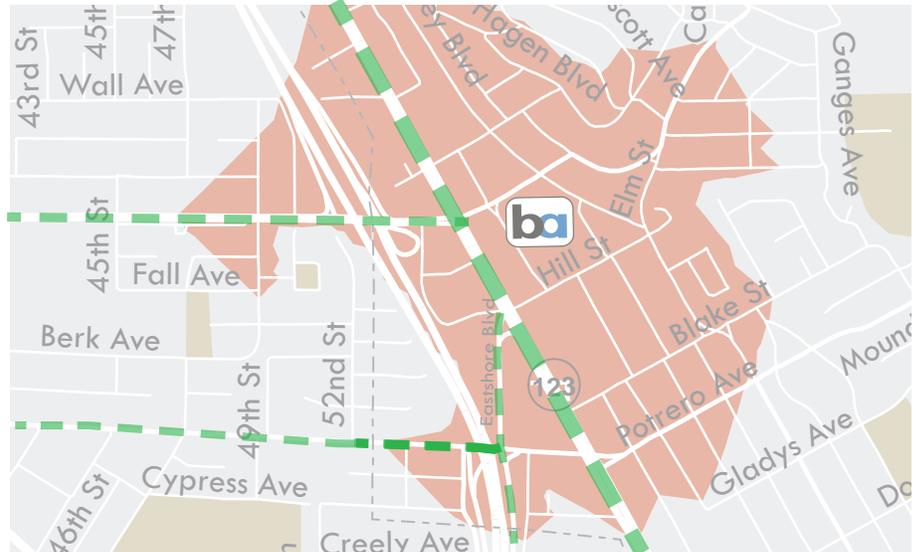


Photo Documentation: Google Earth Software and Digital Photography

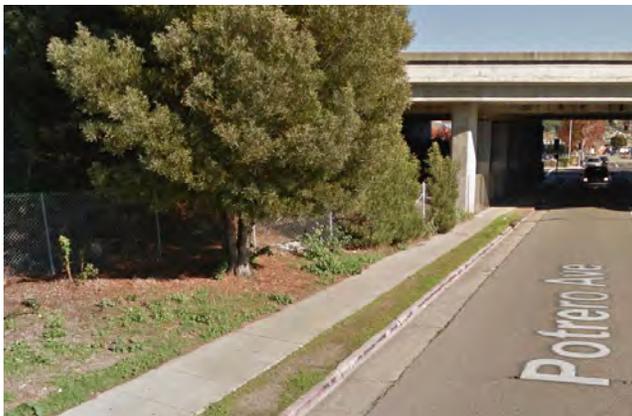


Figure 1 - Sidewalk section at Interstate 80 overpass



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

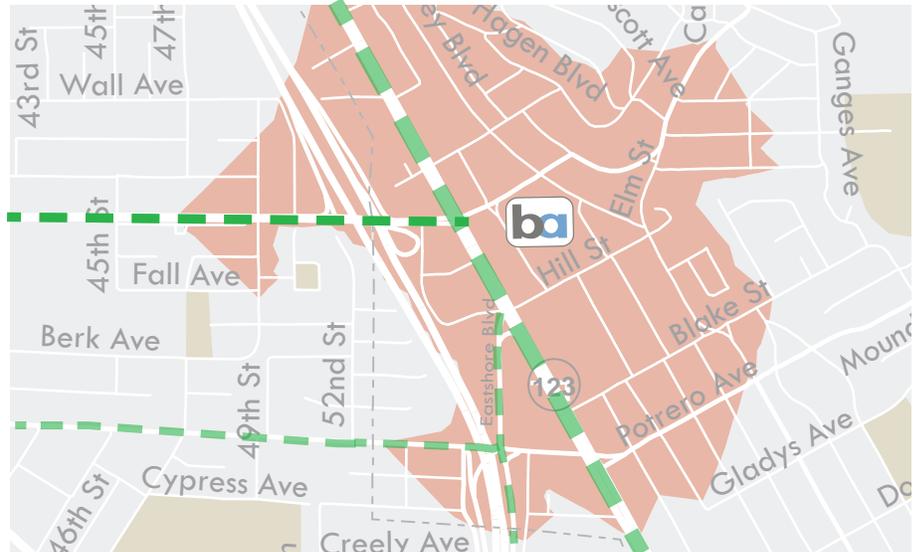


Photo Documentation: Google Earth Software and Digital Photography



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

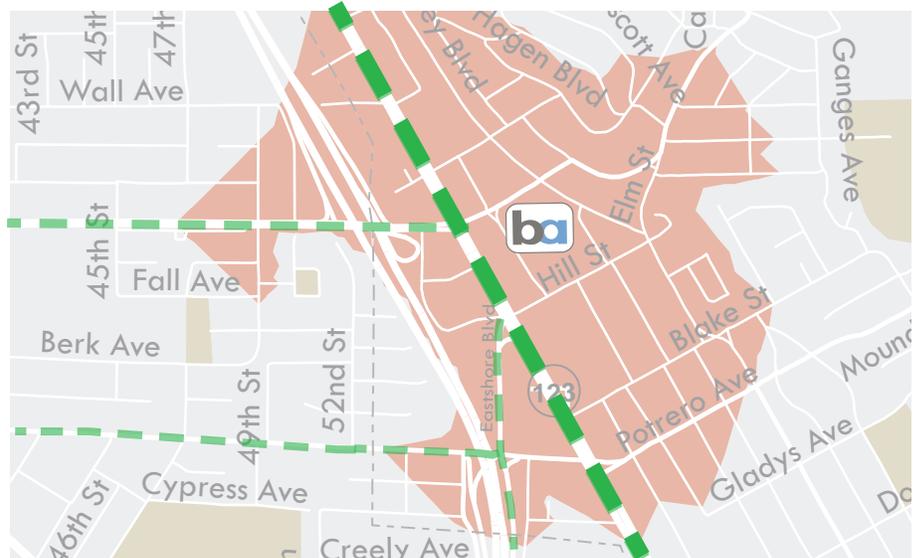


Photo Documentation: Google Earth Software and Digital Photography



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

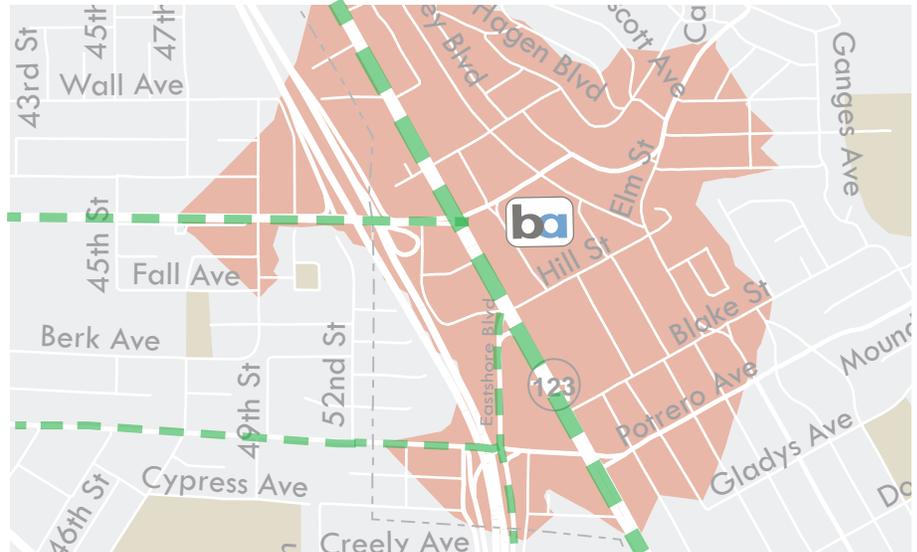


Photo Documentation: Google Earth Software and Digital Photography



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

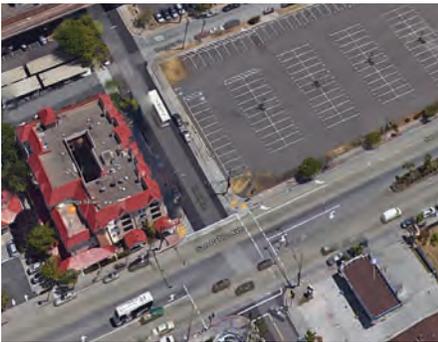


Hill Street and San Pablo Ave.

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

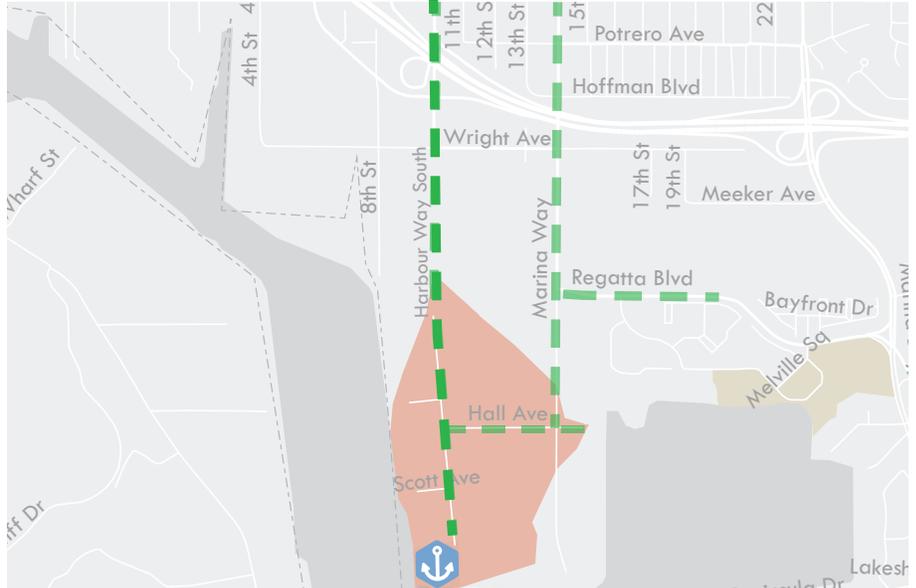


Photo Documentation: Google Earth Software and Digital Photography



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

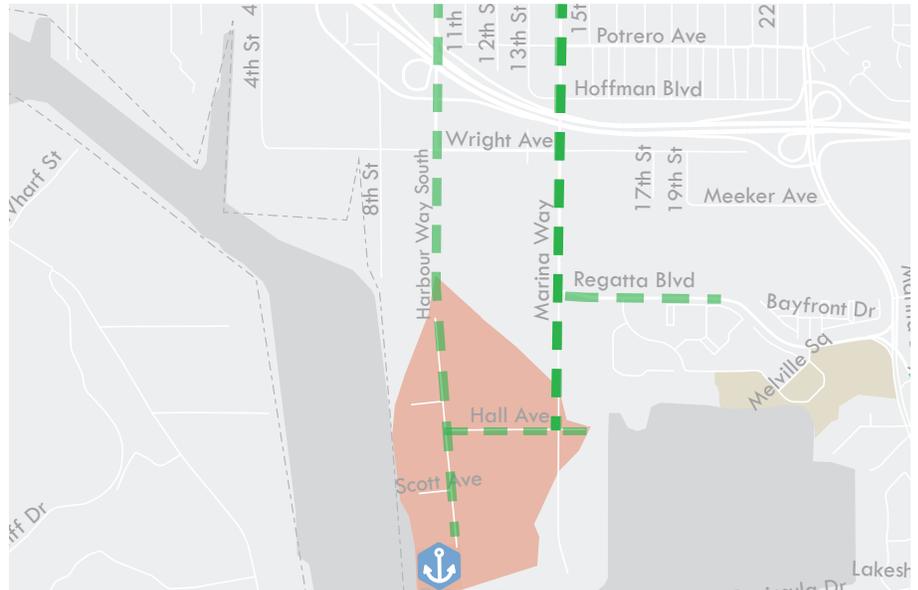


Photo Documentation: Google Earth Software and Digital Photography



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

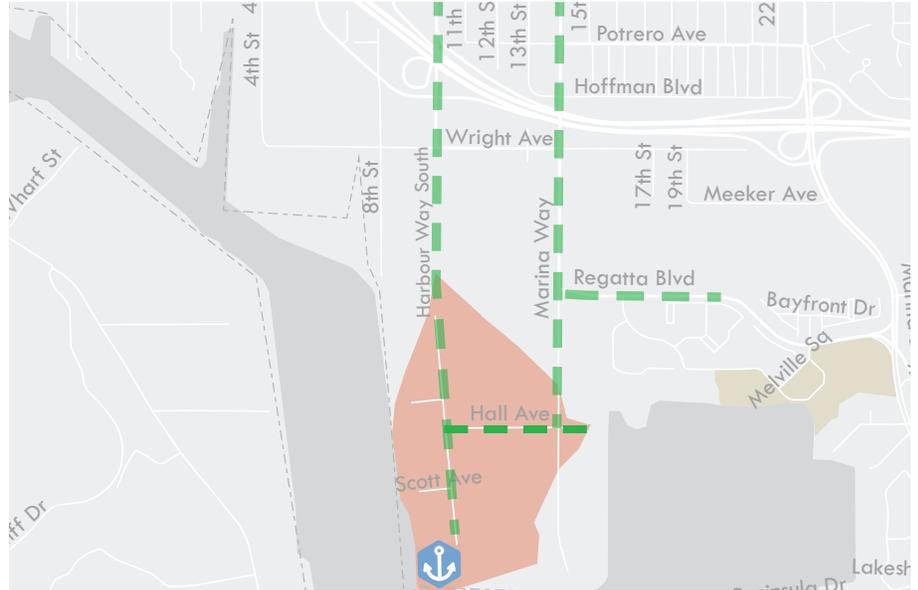


Photo Documentation: Google Earth Software and Digital Photography



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

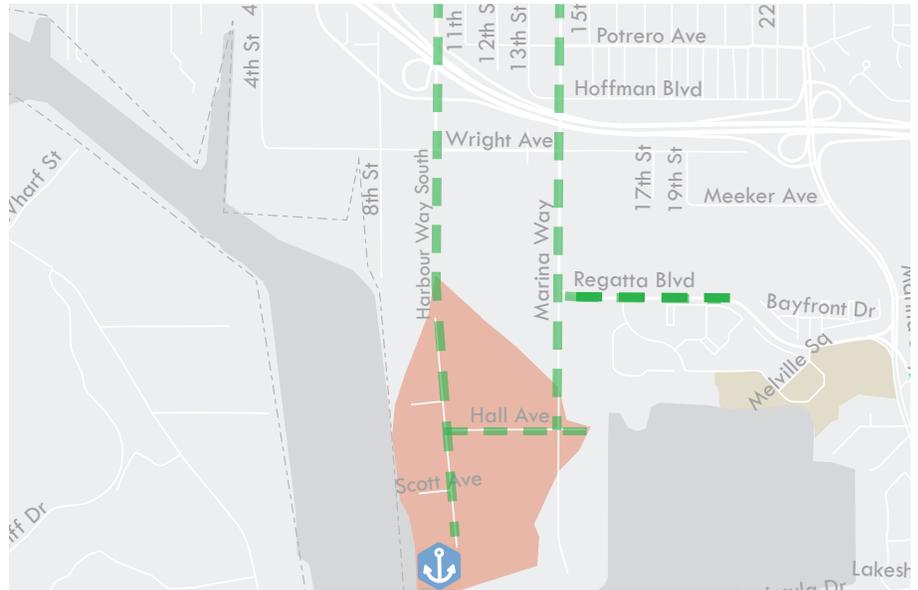


Photo Documentation: Google Earth Software and Digital Photography



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.

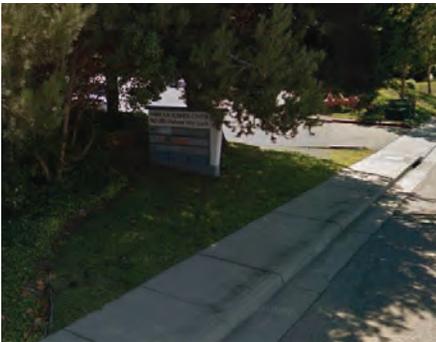
HARBOUR WAY SOUTH | WRIGHT AVE. TO FERRY TERMINAL

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

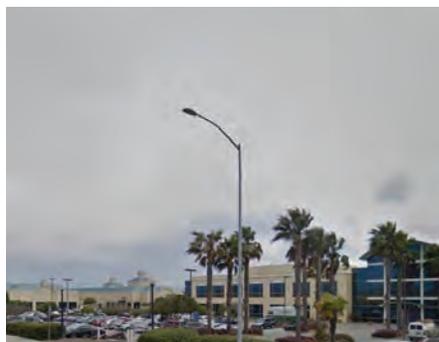
Sidewalk width ranges from 7'-15'. Throughways are sometimes interrupted due to sidewalk heaving or utility installation. Median sidewalks / islands are installed, separating travel lane directions. Widths vary from 2'-5'.

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

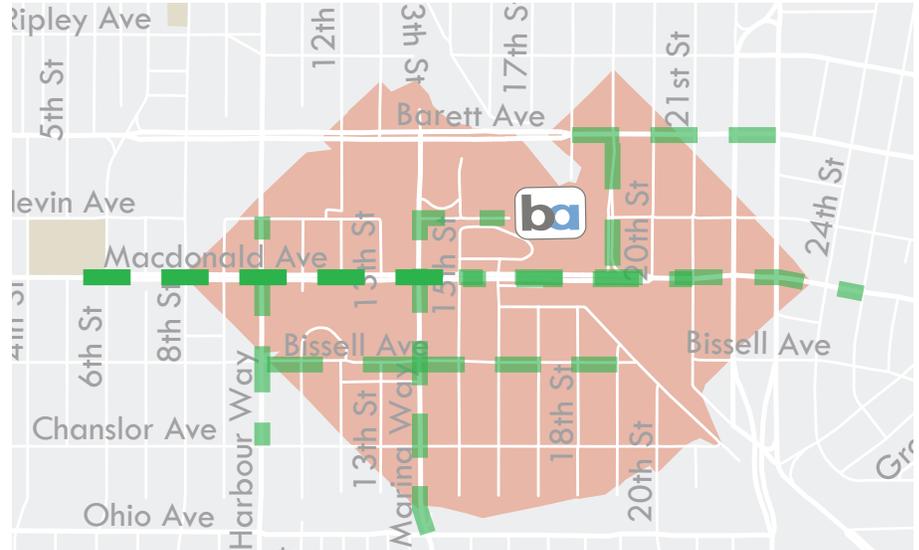


Photo Documentation: Google Earth Software and Digital Photography



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

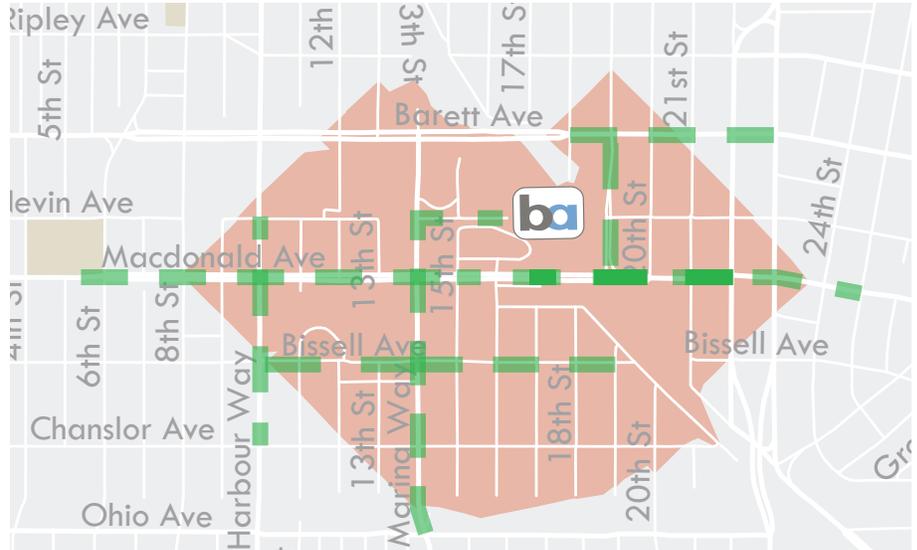


Photo Documentation: Google Earth Software and Digital Photography



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

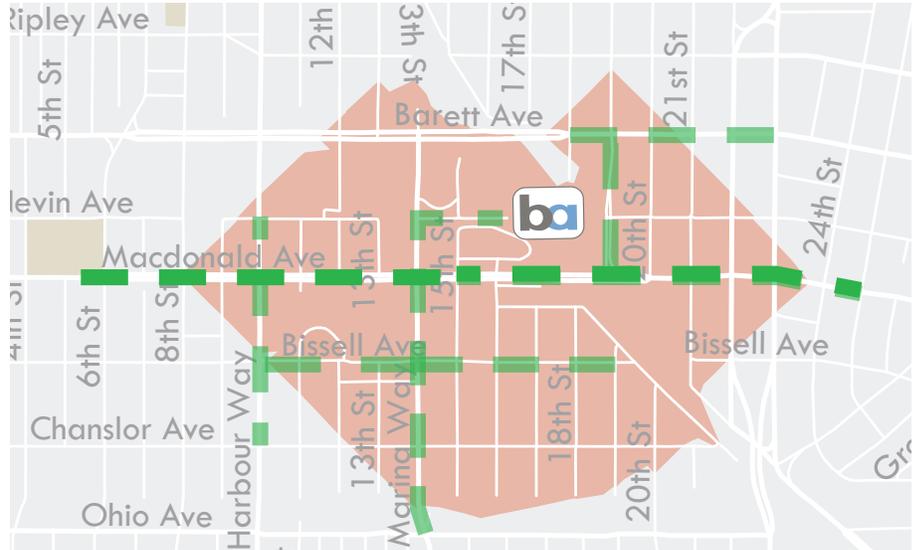


Photo Documentation: Google Earth Software and Digital Photography



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

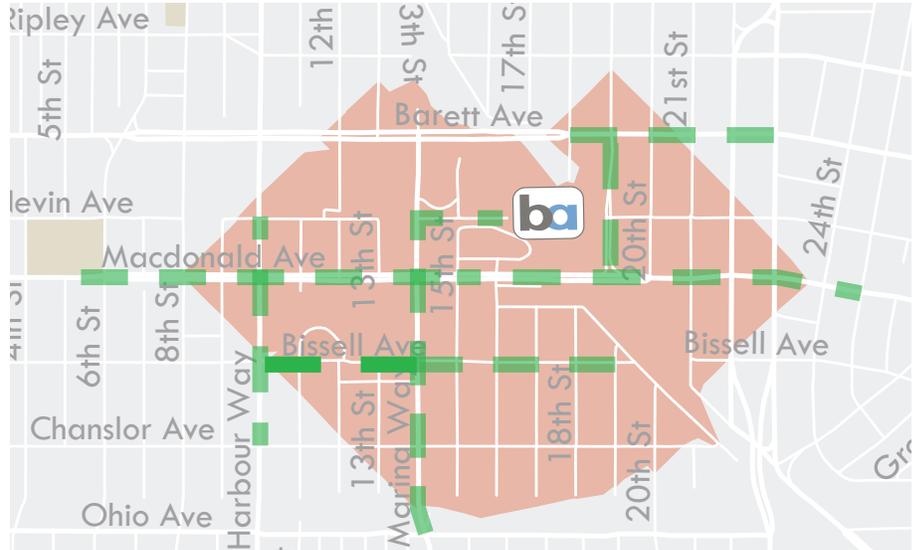


Photo Documentation: Google Earth Software and Digital Photography



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

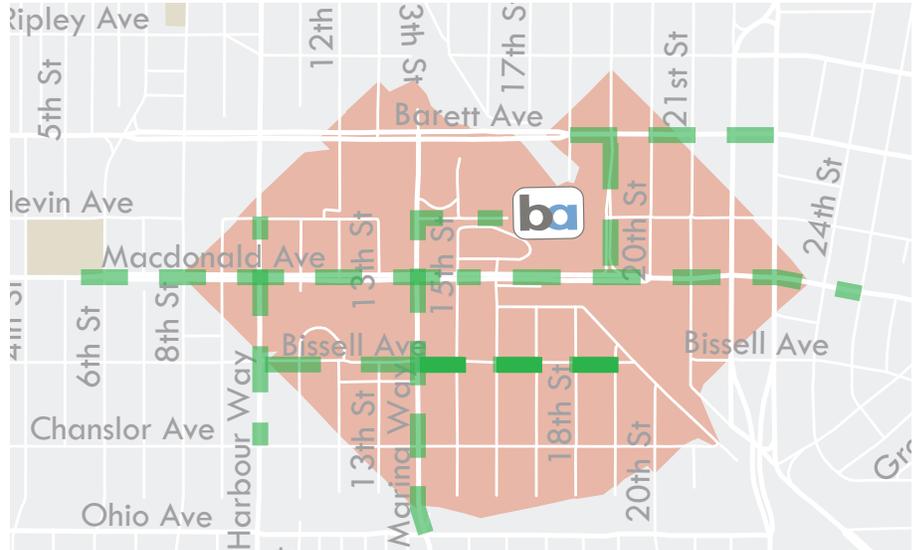


Photo Documentation: Google Earth Software and Digital Photography



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

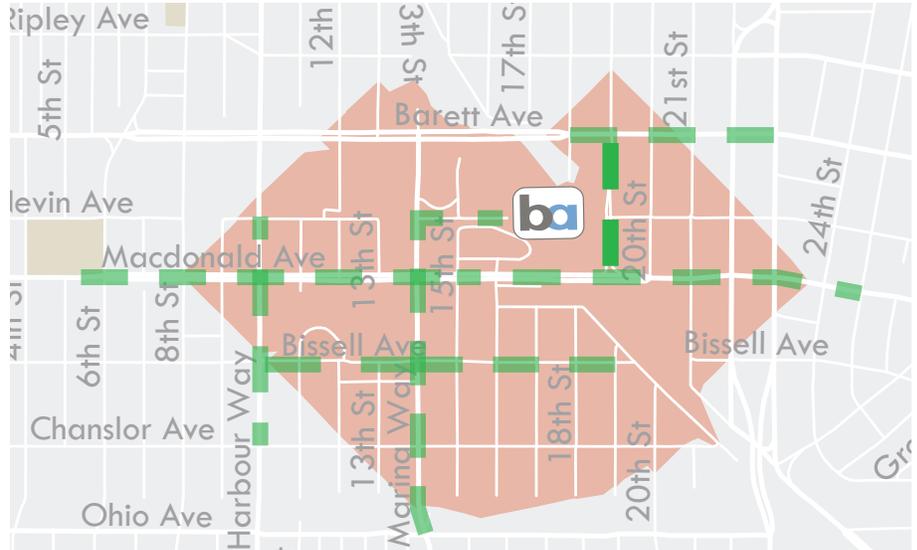


Photo Documentation: Google Earth Software and Digital Photography



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

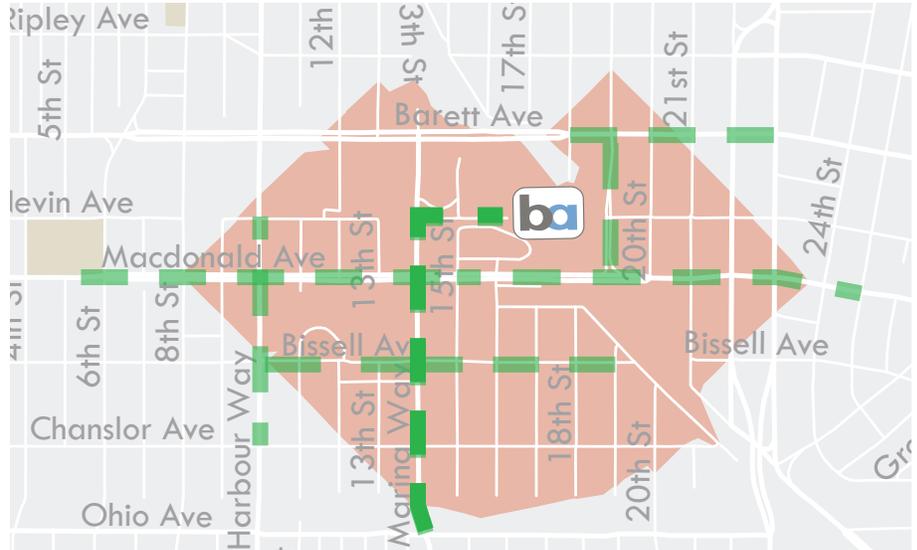


Photo Documentation: Google Earth Software and Digital Photography



Figure 13 - Nevin Plaza

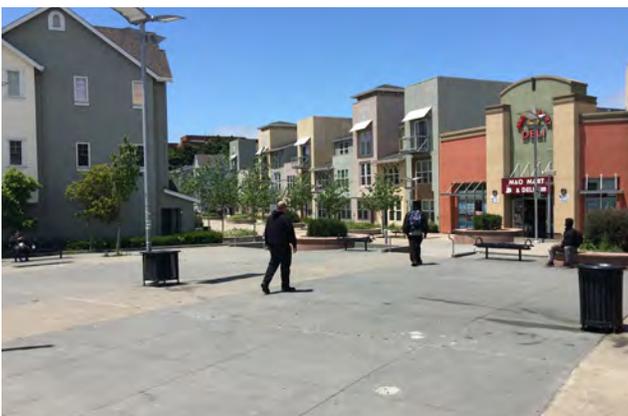


Figure 14 - Sidewalk adjacent to BART entrance from Nevin Plaza

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

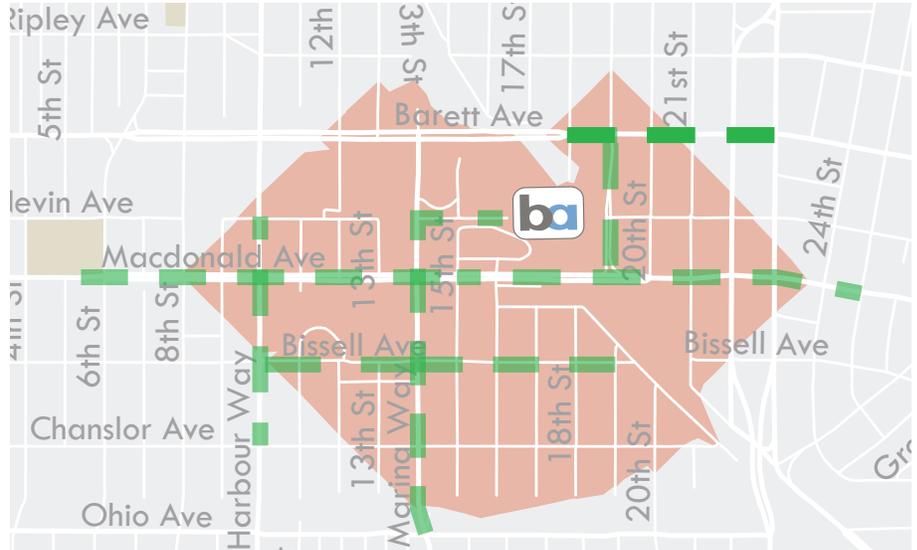


Photo Documentation: Google Earth Software and Digital Photography



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

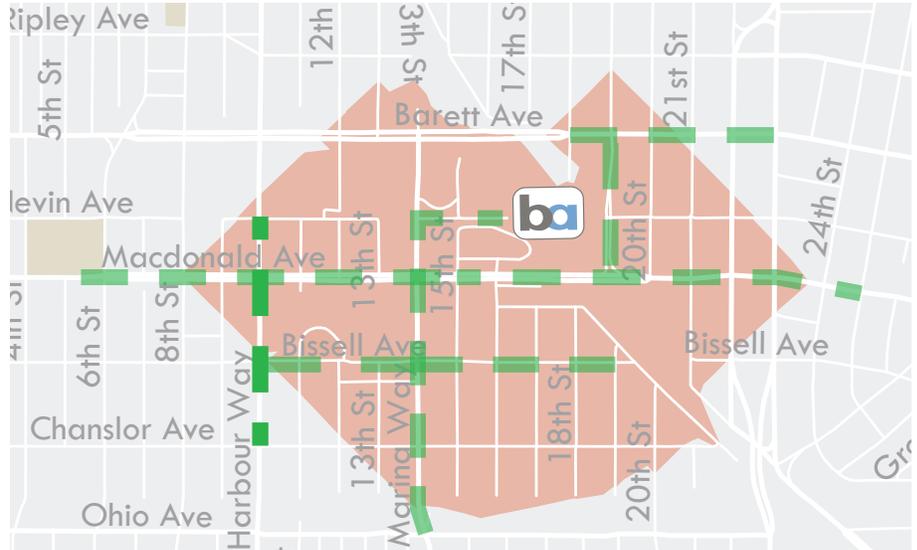


Photo Documentation: Google Earth Software and Digital Photography



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

Vehicular 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 Macdonald 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.

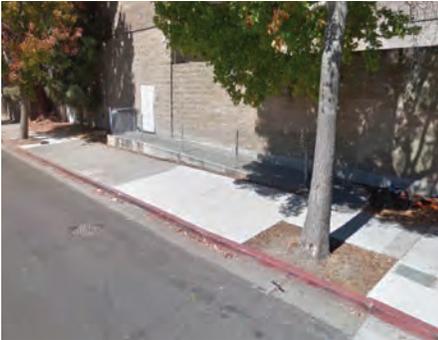
BISSELL AVENUE | HARBOR TO MARINA WAY

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

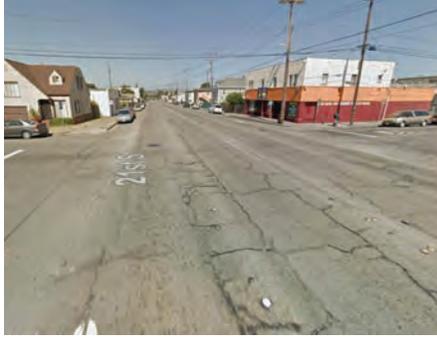


Lighting

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

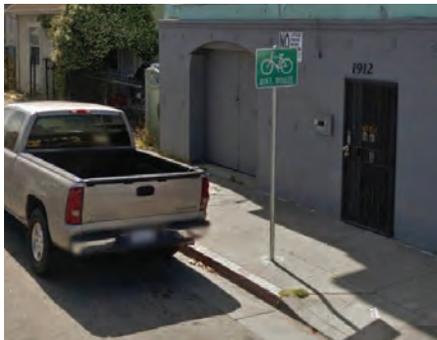
Curb ramps with detectable warning systems / truncated domes have been installed as a retrofit at intersection crossings. Standard striping has been installed at some intersections.



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.