

5 . Existing Bicycle Network

This chapter addresses BTA requirement (c): a map and description of existing and [proposed] bikeways; and (e): a map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes.

INTRODUCTION

The Bicycle Master Plan sets forth a blueprint for completing a system of bikeways and support facilities within the City of Richmond. It builds upon the existing system of on-street and off-street bicycle facilities throughout the City, focusing on connections between neighborhoods, safe routes to schools and access to major destinations such as employment centers, stores and shops, parks, trails and open space areas. This Plan also includes criteria for defining different types of

bicycle facilities, a listing of priority projects, design standards and education and safety programs.

TYPES OF BIKEWAY FACILITIES

Bikeway planning and design in California typically relies on the guidelines and design standards established by Caltrans as documented in “Chapter 1000: Bikeway Planning and Design” of the *Highway Design Manual* (5th Edition, California Department of Transportation, January 2001). Chapter 1000 follows standards developed by the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA), and identifies specific design standards for various conditions and bikeway-to-roadway relationships. Caltrans standards provide for three distinct types of bikeway facilities, as generally described below and shown in the Design Guidelines.

Class I: Bike Path/Shared Use Path*

These facilities provide a completely separate right-of-way and are designated for the exclusive use of bicycles and pedestrians with vehicle cross-flow minimized.

Class II: Bike Lane*

Bike lanes provide a restricted right-of-way and are designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally five feet wide. Vehicle parking and vehicle/pedestrian cross-flow are permitted.

Class III: Bike Route

Bike routes provide a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles. While a basic Class III route may simply have signs and markings, a **Bicycle Boulevard** is a special type of shared route that optimizes bicycle travel. Bike boulevards can have a variety of traffic calming elements to improve safety and comfort for bicyclists.

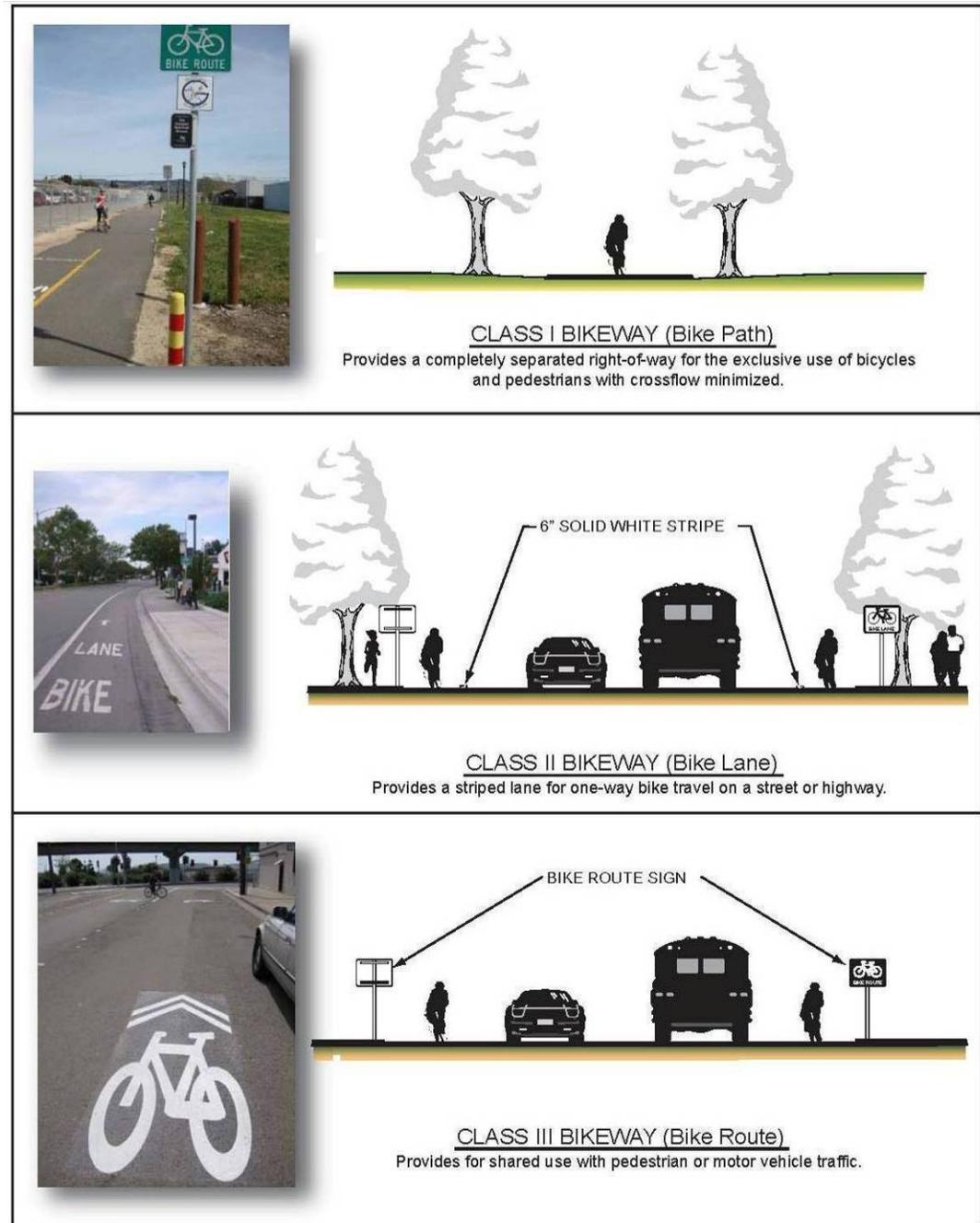
** Class I & II bikeways are not to be used by motorized vehicles. A motor vehicle is any vehicle or device that is self-propelled by means of a internal combustion engine or electric motor, used to transport a person or property. Motor vehicles include, but are not limited to passenger cars, motorcycles, off-road vehicles, "dirt-bikes," all-terrain vehicles, motorized skateboards and "Go-peds," motorized scooters.*

SHARROWS

A shared-use arrow (or "sharrow") can be marked in the outside lane on a Class III route to show the suggested path of travel for bicyclists. This is often done when the route has on-street parking, in order to encourage cyclists to ride a safe distance away from the parked vehicles' "door zone." The sharrow can also be used at intersections with multiple turn lanes to show bicyclists the recommended lane for through travel.



Figure 5-1 | Bikeway facility types



EXISTING CONDITIONS

The central core neighborhoods of Richmond have a grid-based network of streets that provide excellent opportunities to develop a bikeway system. Currently, the City's Class I Bay Trail and Richmond Greenway are the most well developed sections of the bikeway network, while most on-street facilities have been identified but not yet built. The outlying areas of the City, including Point Pinole, Hilltop, Parchester Village, and El Sobrante Valley are physically disconnected from the central City and bicyclists may cross other jurisdictions to and from them. Interjurisdictional coordination is needed to provide regional connectivity along the bikeway network.

Fehr & Peers conducted an inventory of existing multi-use paths, and on-street bikeway facilities in Richmond based on the City's and County's GIS data files, project documents provided by City staff, information from the Richmond Bicycle/ Pedestrian Advisory Committee and general public, and extensive field visits. The City currently has approximately 12 miles of on-street bikeway facilities and 29 miles of multi-use paths, consisting of approximately:

- 28.6 miles of Class I multi-use paths
- 6.7 miles of Class II bike lanes
- 5.3 miles of Class III bike routes

The Existing Bicycle Network map on the next page shows locations for all existing bikeways.

Map 5-1 | Existing bicycle network



MULTI-USE PATH FACILITIES (OFF-STREET)

Richmond's trails and greenways provide important bicycle and pedestrian connections between several neighborhoods, key destinations and the waterfront.

San Francisco Bay Trail

When completed, the San Francisco Bay Trail will provide a 500-mile multi-use route for bicycles and pedestrians around the San Francisco and San Pablo bays, connecting through Richmond. In 2010, more than 30 miles of Bay Trail had been built in Richmond, with an additional 11 miles planned. Segments of the Bay Trail are currently located on portions of the Richmond Parkway, Atlas Road, around the West County landfill, Cutting Boulevard, Marina Way, Regatta Boulevard, and in southern Richmond near the Miller-Knox Regional Shoreline across to Central Avenue. Most segments of the Richmond Bay Trail are Class I facilities, though several on-street segments are Class II bike lanes and Class III bike routes. The Bay Trail links many of the City and regional parks in Richmond as well as the Richmond Greenway and the Wildcat Regional Trail. The City of Richmond and East Bay Regional Parks District, as well some private development projects have been responsible for the construction and maintenance of the Bay Trail.

The San Francisco Bay Trail in Richmond is maintained by the City of Richmond with the following major exceptions:

East Bay Regional Parks District

- Trail segments within the Regional Shoreline parks
- Wildcat Creek Regional Trail with its linkage with West County Landfill and Eastshore State Park, which includes the trail from Marina Bay to Point Isabel Regional Shoreline, Rydin Road, Isabel



Street and Central Avenue from Isabel Street to the end of a 4' high fence well before Central Avenue

Caltrans

- From the Albany border to Central Avenue and west along Central Avenue to the beginning of a 4' high fence where East Bay Regional Parks District becomes responsible for the maintenance

Republic Services: West County Landfill

Seacliff Homeowner's Association: Brickyard Cove Road and Seacliff Drive frontages of the Seacliff residential development

Richmond Greenway



Looking west towards Mt Tamalpais on the Richmond Greenway

Two major sections of the Richmond Greenway which is located just north of, and runs parallel to, Ohio Avenue have recently been completed. The western portion provides a path from 2nd Street to 23rd Street, while the eastern section connects Carlson Boulevard to San Pablo Avenue. When completed,

the Greenway will provide a seamless Class I east-west connection between the Ohlone Greenway (El Cerrito) and Bay Trail via Garrard Boulevard. Currently, three major gaps along the Greenway include access across San Pablo Avenue; a connection across 23rd

Street and the at-grade railroad tracks and Carlson Boulevard; and a segment between 2nd Street and Garrard Boulevard.

Wildcat Creek Trail



A completed section of Wildcat Creek Trail

Once completed, this creekside path will run from Wildcat Canyon Regional Park, through San Pablo, to the Richmond shoreline. Several sections on the west end of the path have been completed by the East Bay Regional Parks District.

Table 5-1 | Existing Class I multi-use paths

<i>Path</i>	<i>From</i>	<i>To</i>	<i>Class</i>	<i>Length (miles)</i>
Bay Trail	Point Isabel Regional Shoreline	Point Pinole Regional Shoreline	I	24.20
Richmond Greenway	2 nd Street	San Pablo Ave	I	2.42
Garrard Boulevard*	Ohio Avenue	Barrett Ave	I	0.63
Regatta Boulevard*	Marina Bay Pkwy	Marina Way South	I	0.63
Wildcat Creek Trail*	Richmond Pkwy	Shoreline	I	0.18
			Total	28.06

*Part of Bay Trail Network

BIKE LANES AND ROUTES (ON-STREET)

The majority of Richmond's on-street bicycle facilities have been installed in the industrial areas around Point Richmond and Marina Bay on the south side of I-580. Bicycle facilities have also been installed along sections of 23rd Street and in east Richmond along the east side of I-80. The tables below provide a list of existing on-street facilities.

Table 5-2 | Existing Class II bike lanes

Street	From	To	Class	Length (miles)
Hensley Street*	Ohio Avenue	Bissell Avenue	II	0.15
Amador Street	Clinton Avenue	McBryde Avenue	II	0.51
Hall Avenue*	Harbour Way	Marina Way	II	0.51
South Garrard Ave*	Ohio Avenue	Cutting Boulevard	II	0.46
Cutting Blvd*	Canal Boulevard	Hoffman Blvd	II	0.77
Canal Boulevard*	Seacliff Drive	Cutting Boulevard	II	0.65
Wright Avenue*	Harbour Way	Marina Way	II	0.23
Harbour Way***	Wright Avenue	Hall Avenue	II	0.60
Key Boulevard	Humboldt Street	Amador Street	II	0.85
Lucas Avenue	Ortho Way	Calspray Street	II	0.17
Ohio Avenue	Garrard Avenue	2 nd Street	II	0.59
Broadway Street	Carlson Boulevard	Macdonald Ave	II	0.30
24 th Street	Broadway Street	Macdonald Ave	II	0.21
Marina Way	Macdonald Ave	Barrett Avenue	II	0.20
Nevin Avenue	Nevin Plaza	11 th Street	II	0.10
			Total	6.70

*Part of Bay Trail

**Class II northbound only

Table 5-3 | Existing Class III bike routes

Street	From	To	Class	Length (miles)
Cutting Boulevard	31 st Street	Carlson Boulevard	III	0.08
Carlson Avenue	Cutting Boulevard	Potrero Avenue	III	0.38
Potrero Avenue	Carlson Boulevard	Ohlone Greenway	III	1.05
Clinton Avenue	Amador Street	Sonoma Street	III	0.23
Regatta Boulevard*	Marina Way	Marina Bay Parkway	III	0.73
Harbour Way***	Wright	Hall	III	0.60
Marina Bay Parkway/ 23rd Street*	Ohio Avenue	Harbour View Drive	III	1.69
Marina Way*	Wright Avenue	Hall Avenue	III	0.51
Nevin Avenue	11 th Street	Harbour Way	III	0.05
			Total	5.32

*Part of Bay Trail

** Class III southbound only

ONGOING BIKEWAY PROJECTS

The City has many bicycle-related projects already underway. The following list includes projects that are in the design or construction phase, as shown in the map on the next page.

- Atlas Road Entry to Point Pinole (2010)
- West County Landfill Loop & Wildcat Creek Connection (2010)
- Donation of Trail Easement by Chevron for the connection to Point San Pablo (2009)
- Design study for a path connecting the Point Richmond Bay Trail to the Richmond-San Rafael Bridge (2009)
- Harbour Way Bike Lanes (2009)
- Keller Beach to Ferry Point Bay Trail Segments (2010)
- 23rd Street Streetscape Improvements (2008); the project, which is being coordinated with improvements on 22nd Street, includes two-way conversion, lane reduction, sidewalk and intersection improvements, lighting and landscaping
- Nevin Avenue Streetscape Improvements (2010); includes sidewalk and intersection improvements, traffic calming, lighting, landscaping and a Class III bike route
- New signalized crossing for the Richmond Greenway-Ohlone Greenway at San Pablo Avenue (2010)
- Ferry Point Loop Trail Guide (2009)
- Ford Point Bay Trail Loop (2009)
- Hall Avenue Bike Lane Racks (2009)
- Marina Way Streetscape Improvements (2010); project includes road diet, bike lanes, lighting and landscaping
- Carlson Boulevard Corridor (2010); includes street repaving, bike lanes and detection, traffic calming, new pedestrian crossings and flattening of the roadway slope

Map 5-2 | On-going projects



Key Issues and Opportunities of the Bikeway Network

Several challenges and opportunities with the bicycle network have been identified through the development of the Bicycle Master Plan. The following section discusses the key issues to be addressed in the Proposed Facilities section and Design Guidelines.

Wide Streets and Intersections



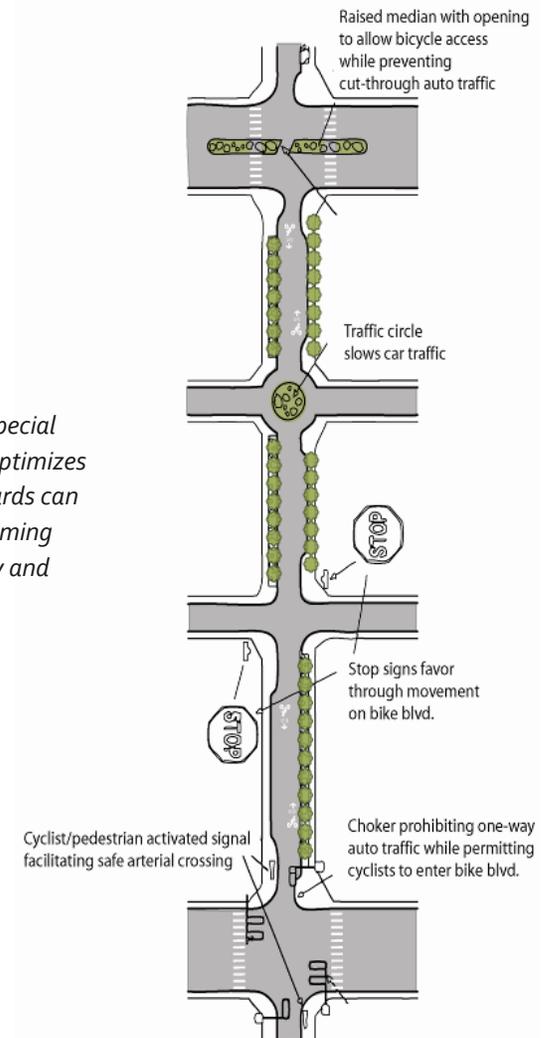
7th Street has excess capacity that can easily accommodate future bicycle lanes

Road Diets: Much of Richmond's roadway system was developed to facilitate and support industrial production during World War II and accommodate cross-Bay traffic. Since that time, the City's industries have dwindled and major freeways have been built in the City to handle regional and inter-city

vehicle travel. As such, the street network has many wide streets that no longer have the vehicle volumes that they once did. Many of Richmond's community and regional connector streets have fast moving traffic, which reduces the safety and comfort for bicyclists and pedestrians. There are multiple opportunities to consider road diets, which reduce the width and/or number of vehicle travel lanes and provide extra space for bike lanes and other bicycle and pedestrian friendly facilities. In several cases, such as on 7th Street (in photo above, right), road diets could result in the dedication of excess right-of-way back to adjacent parcels, which could be an important economic development tool.

Bicycle Boulevards: Most of south and central Richmond is on a grid-based system of streets, which provides excellent opportunities for bicycle travel within neighborhoods. The City's residential streets are well connected and generally narrow, with slower paced traffic. These areas are ideal for less experienced bicyclists and bicyclists who do not feel as comfortable riding on higher speed roads with heavier traffic. There are multiple opportunities for bicycle boulevards and other facilities that give priority to bicyclists and pedestrians in these areas.

*A **Bicycle Boulevard** is a special type of shared route that optimizes bicycle travel. Bike boulevards can have a variety of traffic calming elements to improve safety and comfort for bicyclists.*



Intersections: Several loop detectors for actuating signal changes do not register the presence of bicyclists at intersections. Oftentimes bicyclists must wait through lengthy signal cycles or risk proceeding through the intersection against the light. Bicycle-specific detectors should be considered at major intersections along the bike network and stencils should be used to inform bicyclists where to position their bikes in order to actuate the signal. Specifications are provided in the Design Guidelines section.

Physical Barriers

- Richmond has multiple at-grade railroad tracks and railyards throughout the City, some of which are still active. Railroad tracks are a significant barrier to bicycling and walking in Richmond, and bicycle access is limited in several areas. In particular,



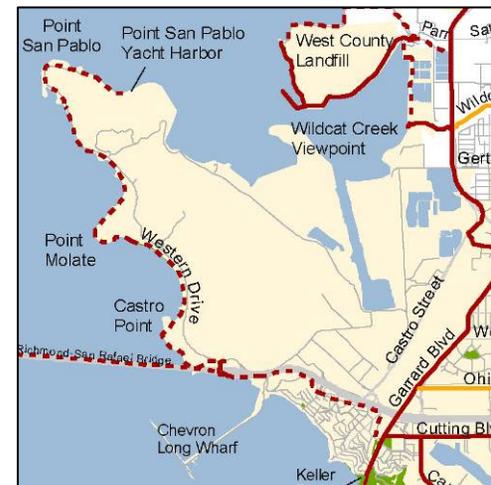
The 33rd Street Bridge provides non-motorized access over the BART tracks

connections within the Iron Triangle neighborhood are heavily constrained by railroad tracks. Most significantly, the newly built Richmond Greenway has a critical gap at 23rd Street and Carlson Avenue, where the railroad and BART tracks pass through. The Richmond BART Station is also a terminus for two BART lines.

- Large industrial sites also present an obstacle to bicycle connectivity. Specifically, Chevron occupies a large area of the Richmond waterfront by Point Molate and Point San Pablo. Completing the Bay

Trail connection through the refinery and its Long Wharf have presented a major obstacle to completing the Bay Trail between Castro St. and the existing trail under the Richmond/San Rafael Bridge.

- Multiple freeways present linear barriers throughout the City: the Richmond Parkway constrains access to the western waterfront, I-580 separates Point Richmond, Ford Point and Marina Bay from central core of the City, and I-80 limits access to neighboring communities such as Albany, El Cerrito, San Pablo and the Richmond Hills.



The Chevron property presents a major barrier along the Bay Trail

Freeway Interchanges

Richmond's proximity to I-580 and I-80 necessitates multiple connector street-freeway interchanges on the south and east sides of the City. Characterized by fast moving vehicular traffic, wide travel lanes and multiple turning lanes, these interchanges could be improved to provide a safer passage for bicyclists.

Access to Transit

Richmond's intermodal transit station provides access to BART, AC Transit, Golden Gate Transit and Amtrak. 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.

Access to the Bay Trail, Richmond Greenway and Ohlone Greenway



The eastern portion of the Richmond Greenway has few access points

The Bay Trail, provides some of the most scenic, well connected and protected bicycle facilities in the area. The Richmond Greenway which traverses the central city will extend the Ohlone Greenway which runs on to Berkeley through the intervening cities of El Cerrito and Albany and eventually connect to the

greater Bay Trail to create a continuous system of regional paths. Several barriers to the completion of these multi-use paths and connections to them, however, remain a challenge:

- Freeways and freeway interchanges
- Railroad crossings
- San Pablo Avenue
- Richmond Parkway
- 23rd Street/Carlson Boulevard/ Broadway
- Adequate funding and obtaining property interest required to complete Trail sections

Regional Connections

As noted above, outlying areas of the City, including Point Pinole, Hilltop, Parchester Village, and El Sobrante Valley are physically disconnected from the central City and bicyclists must cross other jurisdictions to access these areas. Interjurisdictional coordination is needed to provide regional connectivity along the bikeway network.

Bike access on the Richmond-San Rafael Bridge continues to be a high priority for bicyclists. For more than a decade, public access advocates, elected officials, and local jurisdictions have been seeking a safe, viable option for bicycle and pedestrian access on the bridge. The bridge is owned and operated by Caltrans, which has historically denied non-motorized access citing safety, cost and vehicular capacity concerns. The goals and policies of the Richmond Bicycle Plan support efforts to provide bridge access to all users.

Pavement Quality

Several important bicycle routes have very poor pavement conditions. Roadway surfaces are often rough, crumbling and pot-holed, and the roadway and gutter seam where bicyclists are often positioned is frequently uneven. The City should prioritize repaving streets on the bicycle network first.

Secure Bicycle Parking

Both short-term and long-term bicycle parking are needed in key commercial areas, at large employment areas, transit hubs, schools, parks and other community destinations. Security is a significant concern to residents and visitors, and bike parking facilities should provide a high level of security to protect from theft. The addition of secure bicycle parking will be a critical component of encouraging people to bicycle in Richmond and should be prioritized.

Signage and Wayfinding

Richmond's bikeway routes have basic signage indicating where bike lanes and routes are present, begin and end. In several areas signs are missing or obscured by trees and other barriers. Access to the Bay Trail and Richmond Greenway from the roadway is often difficult to identify and once found, there is little to no wayfinding signage directing path users to near-by destinations. The City of Richmond does not currently have a signed route system that would indicate destinations, distances and directions.



Signage along the Richmond Greenway

on street network. Signage should be of a scale appropriate for cyclists. Please refer to the Design Guidelines specifications on signage.

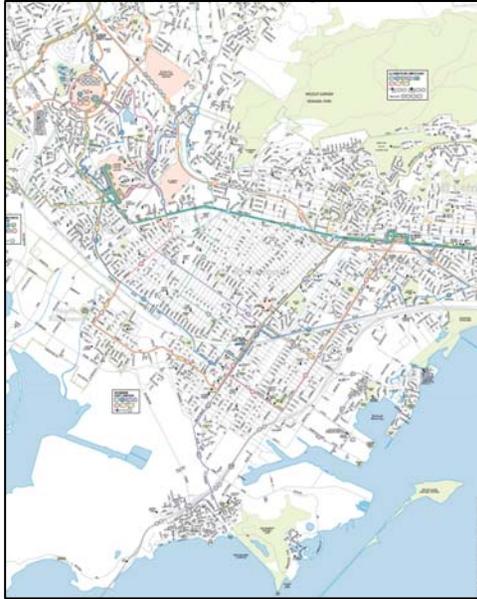
The wayfinding and signage system should be enhanced to help make the bicycle network more visible and easy to navigate. In particular wayfinding improvements are needed to better connect the on-street and off-street bike network. On-street signage and pavement markings would help to create better connections to the off-street network. From the Bay Trail and Richmond Greenway, additional signage would enhance connections back to the

Multi-Modal Connections

Richmond has a major intermodal transit hub in the center of the City, which is served by AC Transit, Bay Area Rapid Transit (BART), Golden Gate Transit and Amtrak. The intermodal transit hub is a critical connection point for passengers traveling throughout the Bay Area, California, and destinations throughout the U.S. It is the only station that provides direct transfer between Amtrak and BART. In addition, AC Transit bus stops are located on corridors throughout the City.



AC Transit operates nine local routes in Richmond. These include the following lines: 7, 70, 71, 72, 72M, 72R, 74, 76, and 376-night. The buses typically operate with 30 to 60-minute headways and connect to key destinations within and near Richmond including the Richmond Parkway Transit Center at Richmond Parkway and Blume Drive, the Richmond BART Station, the El Cerrito Del Norte BART Station, Downtown Richmond, Marina Bay, Contra Costa College and Hilltop Mall. In addition to local routes, three AC Transit Transbay routes operate from Richmond to the San Francisco Transbay Terminal in the a.m. peak hours and from the San Francisco Transbay Terminal to Richmond in the p.m. peak hours.



A section of the AC Transit bus route map within Richmond

AC Transit has several ways bicyclists can store their bikes when traveling on a bus. All buses are equipped with front-mounted racks that hold up to two bicycles. On Transbay busses, two additional bikes can be stored in the cargo bays when the front rack is full. Folded or collapsed bicycles may be carried on board anytime, as long as they do not block seats or aisles. In the event where all the bicycle storage on the bus is full, the patron will either have to store their bike at the bus stop or wait for the next bus. Bicycles are allowed on the last bus of the night at the driver's discretion. On night owl service (midnight to 5:30am), riders may carry bikes inside the bus only if the rack is full and space is available.

Other bus transit providers serving Richmond include Golden Gate Transit, which operates two routes (40/42) to the San Rafael Transit Center from Richmond, and WestCAT, which provides a commute express bus route from the Richmond Parkway Transit Center to the El Cerrito Del Norte BART Station. WestCAT also provides express bus service between the El Cerrito Del Norte BART Station and Hercules Transit Center with stops alternating between Richmond Parkway Transit Center and Hilltop Shopping Center. The recently

completed Richmond Intermodal Transit Station, located near the Richmond BART station, provides links between BART, Amtrak, AC Transit and Golden Gate Transit.

BART, the regional commuter rail transit system, provides service at the intermodal Richmond Station on the Richmond-Daly City-Millbrae and Richmond-Fremont lines. Bicycles are allowed on all Richmond-Fremont trains regardless of time of day, and as long as the car is not already crowded, and all other BART trains during non-commute hours and all day on weekends and holidays. During morning commute hours (7:05AM-8:50AM), bikes are allowed in the Embarcadero Station only for trips to the East Bay. During evening commute hours (4:25PM-6:45PM), bicyclists traveling from the East Bay must exit at the Embarcadero Station. Bikes cannot enter or exit 12th and 19th Street Oakland Stations on weekdays between 6:56AM - 8:50AM and 4:35PM - 6:40PM. Folding bikes are allowed on trains at any time.

BART's Bicycle Access and Parking Plan (August 2002) contains recommendations for access and parking improvements for both existing and future stations, as well as promotions, incentives, support and education for existing and potential bicyclists. According to the plan, the Richmond BART Station has a high priority for bicycle parking improvements. BART has recently developed wayfinding signage for bicyclists both in station areas and on surrounding bikeways and other roads. These signs help direct bicyclists to the station, as well as to bicycle parking, stairs and elevators. Currently, the Richmond BART Station has 21 bike racks outside the gate area and two bike lockers at the west side entrance on ground level.

Amtrak's Capitol Corridor and San Joaquin trains stop at the intermodal Richmond Station. The westbound route connects with Berkeley, Emeryville, San Francisco and Oakland. Eastbound, the Capitol

Corridor extends to Davis, Sacramento and Auburn in California, and Reno and Sparks via bus in Nevada. In each direction, 16 trains stop at the Richmond Amtrak Station on the Capitol Corridor route. In total, 40 passenger trains per weekday make stops at the Richmond Station. Bicycles are permitted on all Capital Corridor trains.



Photo by Eric Haas (www.redoveryellow.com)