City of Richmond
Bicycle Master Plan

Draft | September 29, 2010

Prepared by Fehr & Peers
In association with Eisen | Letunic
City of Richmond
Bicycle Master Plan
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The City of Richmond thanks the following individuals and organizations for assisting in the development of the city’s first Bicycle Master Plan:
List of Acronyms

Below is a list of some of the acronyms used in the Bicycle Master Plan:

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADA</td>
<td>American with Disabilities Act</td>
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<td>BMP</td>
<td>(Richmond) Bicycle Master Plan</td>
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<td>BPAC</td>
<td>(Richmond) Bicycle and Pedestrian Advisory Committee</td>
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<tr>
<td>BTA</td>
<td>Bicycle Transportation Account</td>
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<tr>
<td>CBN</td>
<td>(Contra Costa) Countywide Bicycle Network</td>
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<td>CCTA</td>
<td>Contra Costa Transportation Authority</td>
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<tr>
<td>EBRPD</td>
<td>East Bay Regional Park District</td>
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Executive Summary

Forthcoming.
1. Introduction

Bicycling is increasingly recognized as an important component of the transportation system. Not only can it reduce traffic, air pollution and energy consumption, it can also improve the health and quality of life of our residents and communities. The City of Richmond is among those far-sighted cities that recognizes the contribution that bicycling can make to mobility, environmental quality and community vitality. The City’s General Plan—the master planning document for the community—contains numerous policies and action items to make Richmond a bicycle-friendly city; these include developing citywide bicycle routes and safe routes to schools, implementing traffic calming strategies, expanding the network of multi-use paths and identifying priority safety improvements.

One of the most important purposes of the Richmond Bicycle Master Plan (BMP) is to set in motion the policies and action items from the General Plan. The BMP does this primarily by proposing a system of bikeways connecting neighborhoods and key activity centers throughout the city, and also by including recommendations for increasing the supply of bicycle parking and improving cyclists’ safety. This chapter describes the process to develop the BMP (including the extent of public involvement), describes the contents of the plan and outlines how those contents meet the requirements of the California Department of Transportation (Caltrans) for bicycle plans.

**History of Transportation in Richmond**

Richmond has a rich history of what today would be described as sustainable transportation. Richmond was founded and plotted in the pre-automobile era.

- Block sizes are small and conducive to walking and bicycling as they promote route directness, lower auto speeds and spreading traffic across multiple narrow streets (as opposed to...
suburban models of limited number of very wide through streets like are found in the Hilltop Area).

- Transit was and is an integral part of Richmond with a major BART/AMTRAK station and robust bus service. In the 1940’s Richmond also had streetcar transit service (the Key System) on portions of Cutting Boulevard and MacDonald Avenue.

- Richmond also has neighborhood-scaled schools, well-distributed commercial corridors, and a Downtown district with historic treasures and great character.

With the advent of the automobile, I-80 and the Richmond-San-Rafael Bridge were built. Still later, I-580, the Richmond Parkway and BART were built. These facilities, along with the freight rail systems that were largely built to serve the Richmond Shipyards and other industrial uses, such as Chevron, along the waterfront have created a number of barriers to walking and bicycling in Richmond.

This Plan, along with the Pedestrian Master Plan that was created concurrently, seek to reintroduce opportunities for non-auto modes as envisioned in the City’s General Plan. There are tremendous opportunities to expand walking and bicycling facilities as many roads in Richmond are oversized to their current or projected auto travel needs. Cutting Boulevard is the most obvious example, but Harbour Way, Carlson Boulevard, Barrett Street are also good examples of streets where existing traffic lanes could be removed and converted to space for walker and bikers.

Re-envisioning Richmond’s transportation system as a multi-modal system is key to City and State objectives for reducing greenhouse gas emissions. Perhaps more importantly, it is key to helping the City achieve an active and healthy community and creating economic development opportunities.
Plan Development and Public Involvement

This section addresses BTA requirement (h): “A description of the extent of citizen and community involvement in development of the plan, including, but not limited to, letters of support.”

To ensure that the Bicycle Master Plan reflects the interests and priorities of the Richmond community-at-large, agency and public outreach was a high priority throughout the course of the project.

Outreach activities included the following:

- Regular meetings with Richmond Planning, Engineering, and Redevelopment Agency staff
- Regular meetings with the Richmond Bicycle and Pedestrian Advisory Committee (RBPAC)
- A day-long public workshop and “bike-about”
- Participation in community-led bike rides throughout Richmond
- An interactive on-line map for the Richmond community to post issues and opportunities related to existing and future conditions
- Close coordination with the Richmond Pedestrian Master Plan outreach efforts.
CONTENTS OF THE RICHMOND BICYCLE MASTER PLAN

The BMP consists of the following sections:

- **Executive Summary**
- **Chapter 1, Introduction**
- **Chapter 2, Related Plans:** Summarizes key plans, programs, policies and other planning efforts that will affect and be affected by implementation of the BMP.
- **Chapter 3, Policy Framework:** Formulates the vision, goals, objectives and policies of the BMP.
- **Chapter 4, Existing Bicycle Network:** Discusses existing local conditions relevant to bicycling, including commuting statistics, the city’s land use patterns, existing bikeways, challenges to bicycling in Richmond and key opportunities for increasing the number of cyclists.
- **Chapter 5, Proposed Bicycle Network:** Establishes a proposed network of bikeways connecting neighborhoods and key activity centers throughout the city, and includes a map of the network and a list of proposed segments.
- **Chapter 6, Bicycle Parking:** Describes the main types of bicycle parking, provides a list and map of locations in Richmond where bicycle parking can be found and, perhaps most importantly, makes recommendations for increasing the supply of parking.
- **Chapter 7, Collisions:** Analyzes data on traffic collisions involving bicyclists, identifies collision hotspots and recommends to the City a set of monitoring, evaluation and reporting actions related to collisions.
- **Chapter 8, Support Programs:** Describes existing bicycle safety and education programs in Richmond, and recommends additional or enhanced programs with the potential to improve the state of bicycling in the city.
- **Chapter 9, Funding and Implementation:** Estimates costs to build the proposed bikeway network, prioritizes individual projects on the proposed network and summarizes the main funding sources and programs for bicycle improvements.
- **Appendix A, Design Guidelines:** Provides standards and guidelines for the design of on- and off-street bikeways, bicycle parking, signage and maintenance of facilities.

BTA-REQUIRED ELEMENTS IN THE BMP

As mentioned earlier, Caltrans requires that bicycle plans include certain components, or “elements.” These required elements are listed in Section 891.2 of the California Streets and Highways Code. Table 1, below, summarizes the Caltrans-required elements and lists the pages or sections in the BMP where these requirements are addressed.

-California Streets and Highways Code, Section 890-894.2: www.leginfo.ca.gov/cgi-bin/displaycode?section=shc&group=00001-01000&file=890-894.2
Table 1  |  Conformance with BTA requirements

<table>
<thead>
<tr>
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<td>b. Land use and settlement patterns</td>
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<td>c. Existing and proposed bikeways</td>
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<td>g. Bicycle safety, education and law enforcement programs</td>
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<td>j. Projects proposed in the plan and their priority for implementation</td>
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<td>k. Past expenditures for bicycle facilities and future financial needs</td>
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2. Related Plans

This chapter addresses BTA requirement (i): “A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, programs that provide incentives for bicycle commuting.”

The City of Richmond hopes that the Bicycle Master Plan (BMP) will have a significant positive impact on bicycling in the city. The BMP, though, is not the only effort aimed at improving conditions for bicyclists in Richmond nor is the City the only entity working toward such a goal. Instead, the BMP will build on and coordinate with a number of plans, projects and policies of other parties. These other efforts are being conducted by a variety of public agencies and are occurring not only at the local level but also at the county, regional and state levels.

This chapter provides an overview of the planning framework surrounding bicycling in Richmond by summarizing the key planning efforts that will affect, and in some cases be affected by, implementation of the BMP. Before doing so, it is worth highlighting the relationship between the BMP and three other planning efforts of particular relevance described in this chapter:

- **Richmond General Plan**: This is the City’s master planning document. As such, all other planning documents must be consistent with it. The BMP advances a number of policies and actions in the General Plan. These include developing citywide bicycle routes; identifying gaps in the network, major travel routes and priority safety improvements; expanding the network of multi-use paths; and implementing the highest industry standards for bicycle improvements and amenities.

- **Richmond Pedestrian Master Plan**: The City is currently developing its first Pedestrian Master Plan, which includes goals, conceptual
plans and design guidance for enhancing the walking environment. In many instances, the Pedestrian Plan recommendations are congruent with those set forth in this Plan, and efforts should be made to coordinate the implementation of proposed projects.

- **Contra Costa Countywide Bicycle and Pedestrian Plan (CBPP):** The bikeway network and support programs proposed in the BMP have been cross-checked for consistency with those in the CBPP. Such consistency will generally be necessary for the City to obtain Measure J funding for bicycle projects and programs from the Contra Costa Transportation Authority.

We recommend that City of Richmond planners, engineers and other staff responsible for transportation improvements and development-related projects familiarize themselves with the plans, projects and policies outlined in this chapter.

**Planning efforts summarized in this chapter**

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<td>• Pedestrian Plan</td>
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| MTC’s Complete Streets/Routine Accommodation Policy |

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<td>• Caltrans’ Complete Streets Policy</td>
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<td>• California Complete Streets Act</td>
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**RICHMOND PLANS**

**General Plan**

A general plan is a long-range planning document intended to guide the physical growth and the social and economic development of a city or county. It expresses a community’s vision of its future and contains a jurisdiction’s official policy statements related to the distribution of future land uses (both public and private), its transportation system, conservation of natural resources, protection of the public from safety hazards and a number of other development-related topics. The Richmond General Plan is in the process of being updated. The new plan, entitled “Shaping the New 100 Years,” is expected to be adopted in the first half of 2010. The plan addresses locally relevant planning issues under 15 chapters, or subject-specific “elements.”

Most of the information and policy statements related to bicycling appear in the **Circulation Element** (Element 4). The element emphasizes a “place-based” transportation planning approach, under which “potential enhancements to the street system must [in general] consider all modes of travel and should be based on a particular street’s intended function and design character.” The element includes a section on “Walking and Bicycling Patterns and Facilities” (pages 4.7–4.11) and a map of existing and planned Class I, II and III bike routes (Map 4.1). One of the key findings of the Circulation Element is
that “[a]lthough a network of existing streets, sidewalks and trails provide linkages and connectivity between neighborhoods, improvements are needed to enhance safety and comfort for pedestrians and bicyclists.” The five goals of the element are to expand the multimodal circulation system (CR1); promote walkable neighborhoods and livable streets (CR2); create a safe and well-maintained circulation system (CR3); ensure an efficient movement of goods (CR4); and promote sustainable and green practices (CR5).

Policies and actions directly related to bicycling include:

**Policy CR1.3**  
**An Interconnected Street System:** Promote an interconnected system of streets that adequately serves current and future travel needs. By promoting an interconnected system for streets along with pedestrian, bicycle and transit facilities, the City can support streets that are compatible with surrounding land uses, street function and community character.

**Policy CR1.6**  
**Safe and Convenient Walking and Bicycling:** Promote walking and bicycling as a safe and convenient mode of transportation.

**Policy CR1.7**  
**Comprehensive Network of Multi-Use Trails:** Develop a comprehensive network of multi-use trails....

**Policy CR1.10**  
**Level of Service Standard:** Allow flexible Level of Service (LOS) standards to create streets that balance all modes of travel. Future improvements to major streets and intersections will consider design solutions that support walking, bicycling, and provide comfortable public spaces while continuing to function as thoroughfares that support the movement of vehicles....

**Action CR1.C**  
**Bicycle and Pedestrian Networks:** Develop citywide bicycle and pedestrian routes to make Richmond a more pedestrian and bicycle-friendly City. Identify gaps in the network, major travel routes and priority safety improvements. Expand the network of multi-use trails and off-street paths. Include connections to open space amenities...the Downtown, recreation destinations, commercial and mixed-use streets, transit stations and schools. Address pedestrian and bicycle connections in parking lots. Ensure links to the regional trail network including the San Francisco Bay Trail, and consistency with the County Bicycle and Pedestrian Plan....

**Action CR1.D**  
**Bicycle and Pedestrian Standards:** Implement the highest industry standards for bicycle and pedestrian improvements and amenities in new development and
redevelopment projects. Include adequate, safe and accessible bicycle parking, drinking fountains, public restrooms, benches, landscaping and lighting. Provide adequate connections to the existing and proposed bicycle and pedestrian network.... [R]equire owners of property along the shoreline to provide maximum feasible public access to the shoreline. Wherever feasible, include a condition to contribute to Bay Trail improvements as part of any large project approval.

**Action CR1.E**  
**Trails and Greenway Program:** Expand multi-use trails and linkages to improve access from inner city neighborhoods to the regional open space in the hills and along the shoreline. Address barriers such as freeways, the Richmond Parkway and railroad tracks that limit shoreline access....

**Policy CR2.2**  
**Complete Streets:** Promote mixed-use urban streets that balance public transit, walking and bicycling with other modes of travel....

**Policy CR2.3**  
**Integrated Bicycle and Pedestrian System:** Plan, construct and maintain a safe, comprehensive and integrated bicycle and pedestrian system....

**Action CR2.A**  
**Community Access and Mobility:** Develop access and mobility in new development.... Access and mobility design features should....Promote bicycle and pedestrian-friendly routes including completion of major trails and pathways like the San Francisco Bay Trail and Richmond Greenway...Include provisions to extract an easement for the completion of the Bay Trail along the Richmond Shoreline; Strategically coordinate new park development and upgrades with street improvements (green streets, bicycle and pedestrian improvements); [and] propose locations for creek daylighting, creekside trails and other pedestrian-friendly corridors....

**Action CR2.B**  
**Safe Routes to School:** Develop safe routes to school in collaboration with West Contra Costa Unified School District and other educational institutions and service providers. Improve walking and bicycling access and safety to schools and after-school programs.

**Action CR2.C**  
**Streetscape Improvement:** Enhance access, safety and the streetscape experience for pedestrians, bicyclists and transit riders. Focus 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....

**Action CR2.D**  
**Street Design:** New development and redevelopment should include street design that supports public transit, bicycles and walking on all streets, consistent with and tailored to street or trail function and adjacent land use type.... Bicycle-friendly design should address lane widths, street and intersection crossings and parking areas....

**Action CR2.E**  
**Signage and Wayfinding:** Install comprehensive signage and wayfinding elements that addresses all modes of travel including transit, trucks, bicycles, multi-use trails and cars....

**Action CR2.F**  
**Lower Speed Limit Zone Study:** Explore the potential to designate streets around schools, parks and public gathering places as safety zones where the vehicular speed limit may be lowered to 20 miles per hour....

**Policy CR3.1**  
**Safety and Accessibility:** Enhance safety and accessibility for pedestrians, bicyclists and public transit riders. Promote walking, bicycling and transit use by improving: key intersections and streets...transit stations and stops...upgrade railroad crossings...and streetscape design....

**Policy CR3.2**  
**Adequate Maintenance:** Ensure adequate maintenance of transportation facilities such as streets, trails, sidewalks and bicycle paths.
Policy CR3.3  Concurrent Infrastructure Development: Require concurrent infrastructure development for new and redevelopment projects that may have a significant impact on the existing circulation system including streets, trails, sidewalks, bicycle paths and public transit.

Action CR3.A  At-Grade Railroad Crossings Improvements: Work with the railroads to improve safety at at-grade railroad crossings. Provide fair-share contributions to improvements where grade separations will enhance safety, community linkages and access for pedestrians, bicyclists and public transit.

Action CR3.B  Traffic Calming: Develop strategies to calm traffic on streets that experience speeding or cut-through traffic. Engineering measures should consider emergency vehicle access as well as pedestrian and bicycle circulation and may include traffic circles, curb extensions, stop signs, narrow travel lanes, fewer travel lanes, landscaping and plantings.

Action CR4.A  Goods Movement: Identify priority improvements such as grade separation and safety improvements for at-grade railroad crossings to reduce conflicts between different modes of travel. [E]nsure that track capacity expansion in Richmond is accompanied by safety improvements including grade separation at crossings that carry high traffic, pedestrian and/or bicycle volumes, or have high accident rates.

Action CR5.A  Transportation Demand Management: Encourage use of public transit, bicycling and walking in existing and proposed developments through measures that may include transit subsidies, carshare service, parking cash-out programs, bicycle-share programs, bicycle amenities and facility enhancements.

Action CR5.D  City Vehicles Transition: Increase the share of climate-friendly vehicles and use of climate-friendly fuels in the City and consider including bicycles in a corporate fleet where feasible.

Additional bicycle-related policies and actions are scattered throughout other elements of the Richmond General Plan. Key policies and actions not already mentioned above include:

Economic Development Element (Element 1)

Action ED5.A  San Pablo Avenue Specific Plan: ...complete and implement the San Pablo Avenue Specific Plan.... Include design and infrastructure features in the Plan that support higher-density and mixed-use development, pedestrian and bicycle uses, public safety and active use and public transit service.

Action ED5.B  23rd Street Specific Plan: ...complete and implement the 23rd Street Specific Plan.... Include design and infrastructure features in the Plan that support higher-density and mixed-use development, pedestrian and bicycle uses, public safety and active use and public transit service.

Policy ED8.4  Public Access to the Shoreline: Improve public access to the Bay. The City supports the expansion of trails, viewpoints and supporting infrastructure to fully capitalize on the Southern Shoreline’s prime access to the Bay.

Action ED8.A  Southern Shoreline: Guide improvements in the Southern Shoreline Area...including...public access to the shoreline...bicycle and public transit service and amenities that link this area to the rest of the City...and infrastructure improvements such as streetscape, pedestrian-scale lighting, landscaping and grade separations at railroad crossings.

Land Use and Urban Design Element (Element 3)

Policy LU1.3  A Range of High-Quality Community Facilities and Infrastructure: Maintain high-quality facilities and infra-
structure to serve diverse community needs...[including] multi-use trails....

Policy LU3.3 Recreation and Tourism Industry: ...Expand and complete the Bay Trail to enhance regional connections with Richmond’s shoreline...

Policy LU4.1 Richmond Shoreline: ...develop shoreline parks and trails to increase public access; encourage recreation and tourism activities; and enhance and showcase historic and cultural resources....

Policy LU6.1 Pedestrian and Transit-Oriented Urban Environment: ...Support complete and balanced streets and an expanded multimodal circulation system.... Require new development and improvements to include amenities for pedestrians, bicycles and transit users....

Energy and Climate Change Element (Element 8)

Policy EC2.6 Private Automobile Use: Work toward creation of an urban landscape that will reduce reliance on private automobiles. Provide amenities and infrastructure that encourage safe and convenient use of public transit, walking and bicycling....

Action EC2.F Promote Bicycle Use: Encourage safe and convenient bicycle use by residents, employees and visitors. Consider strategies that expand bicycling as a viable mode of transportation for people of all ages and abilities. Encourage businesses to provide bicycle amenities such as secured bicycle parking, showers and lockers for employees who bike to work.

Parks and Recreation Element (Element 10)

Policy PR1.2 Multimodal Connections to Parks, Open Space and Recreational Facilities: Improve connections to parks, open space and recreational facilities through an interconnected network of pedestrian-friendly green streets, multimodal corridors and trails. The City should enhance trails and greenways to provide recreational opportunities for residents, connect neighborhoods and community uses, improve access to natural resources and the shoreline and promote walking and bicycling. On-street connections should be pedestrian and bicycle-friendly and incorporate green infrastructure where possible....

Action PR1.D Parkland Acquisition Plan: Develop a parkland acquisition plan for achieving better distribution of parks in all neighborhood planning areas of the City and accomplishing an integrated system of parks.... Include considerations for trail and greenway expansion....

Action PR1.F Shoreline Parks Plan: ...Trails and greenways along the scenic shoreline should be enhanced to provide recreational opportunities and circulation access and to develop the shoreline as a visitor destination.... The plan should also include: an analysis of gaps and opportunity sites for completing and expanding the Bay Trail; identification of routes and improvements needed to connect the shoreline with core urban areas of the City; bicycle and pedestrian trails to provide local connections between the waterfront and surrounding neighborhoods; and provisions to complete planned regional trails including the San Francisco Bay Trail, Richmond Greenway and Wildcat Creek Regional Trail....
Action PR1.K  Inter-Agency Collaboration: Collaborate with the East Bay Regional Park District (EBRPD), California Department of Parks and Recreation (DPR), University of California and the National Park Service (NPS) to ensure coordinated management of Richmond’s many parks and trails.

Action PR3.A  Sustainability Guidelines for Parks and Recreation Facilities: ...Key components of Richmond's parks and open space system should include...using green streets and multi-use trails to link open spaces...[and] [r]etrofitting streets to be bicycle and pedestrian-friendly and developing multi-use trails to encourage non-vehicular modes of transit.

Action PR4.C  Bay Trail and Shoreline Access Ordinance: Develop and adopt an ordinance that requires future developments near the shoreline to provide public access where the San Francisco Bay Trail is planned and to provide public access to the shoreline where feasible.

Community Health and Wellness Element (Element 11)

Policy HW1.1  An Integrated System of Parks, Plazas, Playgrounds and Open Space: Provide a comprehensive and integrated system of parks, plazas, playgrounds, trails and open space....The City should ensure adequate maintenance of these facilities to encourage safe and active use.

Action HW1.D  Parks Maintenance Plan: Update the maintenance plan for all City-owned and operated parks, trails, landscapes and greenways. Include funding mechanisms to support ongoing operations and life-cycle replacements.

Policy HW4.3  Safe and Convenient Walking and Bicycling: Promote walking and bicycling as a safe and convenient mode of transportation. Continue to improve pedestrian and bicycle amenities to serve the recreation and travel needs of residents and visitors in all parts of Richmond. Where feasible, the City should connect major destinations such as parks, open spaces, civic facilities, employment centers and retail and recreation areas with pedestrian and bicycle infrastructure; promote shared roadways in residential streets; require new development and redevelopment projects to provide pedestrian and bicycle amenities, streetscape improvements and linkages to planned and completed City and regional multi-use trails; and develop safe routes to schools and out-of-school programs that allow access by bicycle and pedestrian paths or reliable and safe transit. Support construction of provide enhanced bicycle and pedestrian facilities, explore innovative solutions such as bicycle-sharing programs, encourage businesses, schools and residential developments to provide secure bicycle parking.

Policy HW8.1  Investment in Public Facilities: Prioritize public investment and improvements for public facilities and amenities that provide significant social, economic and community benefits in underserved neighborhoods...[including] streetscape improvements such as pedestrian-scale lighting, safe pedestrian and bicycle routes, landscaping and traffic calming....

National Historical Park Element (Element 15; refers to the Rosie the Riveter/World War II Home Front National Historical Park)

Policy NP1.2  Access to Resources: Support the expansion of transportation options to National Historical Park resources and sites in the City. Prioritize access by public transit, bicycling and walking....
Municipal Code

The Richmond Municipal Code contains all the City’s ordinances. The code is organized into three tiers, beginning with article (or title), then chapter and ending with section. An article is a broad category under which ordinances on a related subject are compiled. Chapters deal with more specific subjects and are often derived from a single ordinance; all of the chapters on a related subject are grouped under one title. Lastly, sections contain substantive ordinance material. The Municipal Code is slated to be updated following adoption of the updated General Plan.

Most of the sections in the Richmond Municipal Code related to bicycling are found in Chapter 7.12 and articles XIV and XV (see below). In addition, Chapter 12.28 contains provisions on the construction, maintenance, excavation and inspection of streets in general and of sidewalks, while Section 11.08.010, under the “Public Safety and Welfare” article, prohibits “any person to ride a bicycle, motorcycle or motor scooter in city parks, playgrounds and playlots.”

Chapter 7.12, Bicycles and Bicycle Establishments, generally deals with the licensing of bicycles and the regulation of certain bicycling-related businesses. The chapter forbids “any resident of the city to operate or use a bicycle within the city unless such bicycle has been licensed and is equipped as provided in this chapter” (§7.12.020) and contains additional provisions on bicycle licensing and registration (§7.12.030–100). Sections 7.12.120–290 outline the requirements for businesses “wherein used bicycles or bicycle parts are purchased, sold, exchanged, bartered, repaired, remodeled, dismantled or junked.” Section 7.12.110 lists the rules of the road for bicyclists.

Article XIV, “Traffic,” regulates vehicular and pedestrian traffic in the City. It contains the following bicycle-related provisions:

14.08.020 Traffic accident reports: The Police Department shall maintain a suitable system of filing traffic accident reports. Accident reports or cards referring to them shall be filed alphabetically by location. Such reports shall be available for the use and information of the Director of Public Works.

14.08.030 Police department to submit annual traffic safety report: The Police Department shall annually prepare a traffic report which shall be filed with the City Council. Such report shall contain information on traffic matters in the City as follows:
1. The number of traffic accidents, the number of persons killed, the number of persons injured, and other pertinent traffic accident data;
2. The number of traffic accidents investigated and other pertinent data on the safety activities of the police;
3. The plans and recommendations of the division for future traffic safety activities.

14.12.050 Traffic regulations apply to persons riding bicycles or animals: Every person riding a bicycle or riding or driving an animal upon a highway shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle....

14.32.070 Restrictions on use of freeways: No person shall drive or operate any bicycle, motor driven cycle, or any vehicle which is not drawn by a motor vehicle upon any street established as a freeway, as defined by State law....

14.44.090 Bicycle or motor scooter parking zones: (a) When the Director of Public Works determines that the establishment of bicycle or motor scooter parking zones is necessary or desirable for the regulation of traffic, or to provide facilities for the temporary parking of bicycles or motor scooters being operated upon the public streets...he is authorized to set aside a space on the street not more than thirty-six feet in length for the parking of bicycles or motor scooters....
Article XV, “Zoning and Subdivisions,” contains the City’s zoning and subdivision ordinances. Section 15.08.410 enables the City to require a subdivider, as appropriate, “to dedicate such additional land as may be necessary and feasible to provide bicycle paths...if the subdivision...contains two hundred or more parcels.” Section 15.08.550 requires that developer-provided bicycle paths “consist of asphalt surfacing with a minimum width of ten feet and a minimum thickness of one and one-half inches within a minimum right-of-way of sixteen feet” and have a maximum grade of ten percent. Chapter 15.12 specifies the transportation improvements that can be funded through trip-impact mitigation fees raised from new development under the West County Subregional Transportation Mitigation Program. 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; and access improvements at the “Del Norte Area Transit Oriented Development Project.” Lastly, Section 15.04.520.070, which establishes a “Special Features Overlay District” for the Point San Pablo Peninsula area, requires “[a]dequate provision...for automobile and bicycle parking at or near shoreline access points.”


Pedestrian Plan

The City is in the process of developing a plan to make Richmond a safer, more appealing place to walk. The Pedestrian Plan will provide direction on creating streets, sidewalks and surroundings that “calm” traffic, improve the comfort and mobility for people of all ages and abilities, and provide a positive environment for interaction and community pride. Pedestrian-friendly design solutions will be explored in locations where there have been collisions involving pedestrians, and focus on “change areas” in the new General Plan, which present opportunities for revitalization. So that the plan can be applied citywide, special attention will be given to characteristics and challenges that appear in places throughout Richmond, such as the grid street and block pattern prevalent in many neighborhoods; railroad tracks and crossings; corridors that change from residential to commercial and industrial development; dead-end locations; and freeway on and off ramps and overpasses.

[This section will be finalized when the Pedestrian Plan is further along the development process.]

Five-Year Strategic Business Plan

The Strategic Business Plan (SBP) is one of the key tools for implementing the City’s updated General Plan. The 2009–2014 SBP outlines the strategies, projects and programs that will support phased implementation of the General Plan over its first five-year period. The SBP guides development of the City’s Capital Improvement Plan and operating budget, which are then used to prioritize the City’s projects and programs on an annual basis.

The SBP is guided by five goals: maintain and enhance the physical environment; promote a safe and secure community; promote economic vitality; promote sustainable communities; and promote effective government. Each goal is underpinned by a set of objectives and each objective by a set of supporting actions. The SBP has a number of bicycle-related objectives and supporting actions, including to implement the Bicycle Master Plan (objective 1.3.e):

Goal 1: Maintain and enhance the physical environment
Objective 1.1: Increase the existing Paving Condition Index
Objective 1.2: Improve the street lighting system
Objective 1.3: Make Richmond more pedestrian- and bicycle-friendly
1.3.a  Conduct a citywide sidewalk survey
1.3.b  Increase collaboration with the school district to jointly fund improvements on safe routes to schools
1.3.c  Rehabilitate concrete sidewalks, curbs and gutters for ADA compliance and safety
1.3.d  Rehabilitate pedestrian paths in parks
1.3.e  Implement the Bicycle and Pedestrian master plans
1.3.f  Create connection between the Richmond Greenway Phase 2 and the Ohlone Pathway
1.3.g  Connect and increase the number of “off-street” bicycle trails
1.3.h  Complete the San Francisco Bay Trail in Richmond
1.3.i  Establish an ordinance that requires utilities to remove obstructions in the public rights of way

Goal 1: Promote a safe and secure community

Objective 2.7: Enhance recreational facilities, programs and activities
2.7.b Upgrade and improve physical conditions of current recreation facilities
2.7.e Provide sustainable city activities which promote health, fitness and an appreciation of our environment

Objective 2.9: Improve traffic and pedestrian safety
2.9.a Revise traffic-calming standards
2.9.b Revise crosswalk standards
2.9.c Review and prioritize improvements at at-grade railroad crossings
2.9.d Inspect all traffic signals regularly

Goal 2: Promote sustainable communities

Objective 4.2: Promote and support the creation of healthy town centers and neighborhoods
4.2.a Complete the community design and implement the construction of 23rd Street streetscape improvements
4.2.d Upgrade streetlight aesthetics and illumination in two neighborhoods
4.2.e Revise City street and sidewalk standards

- www.ci.richmond.ca.us/index.aspx?NID=1785

Richmond Community Redevelopment Agency Five-Year Implementation Plan (FY2009/10-2013/14)

The Richmond Community Redevelopment Agency’s (RCRA) Implementation Plan outlines the agency’s proposed program of revitalization, economic development and affordable housing activities. The Redevelopment Program for the five years covered in the latest plan includes several bicycle-related items:

- Assist City departments with the implementation of pedestrian and bicycle safety programs, including street and sidewalk improvements, traffic calming projects, and expansion of, or improvement to, the local bicycle network.
- Set forth policies in partnership with other public agencies to provide open space in the community and improve programs at existing facilities. Potential improvements include community access to the waterfront and assistance in completing the Bay Trail and Point San Pablo Shoreline.
- Assist with the landscaping and creation of trails on City right-of-ways adjacent to railroad tracks and on former railroad rights-of-way, such as the Richmond Greenway.
- Assist City departments with the implementation of pedestrian and bicycle safety programs, including street and sidewalk improvements, traffic calming projects, and expansion of, or improvement to, the local bicycle network.

- http://sireweb.ci.richmond.ca.us/sirepub/cache/2/03vbdf453lpkfo45wl32i45/17016009172010021541325.PDF
Streetscape and Trail Projects

In the last two years, the City of Richmond and RCRA have undertaken a number of streetscape and trail plans and projects, which, when fully implemented, promise to improve conditions for both pedestrians and bicyclists considerably. The most significant of these plans and projects are summarized below.

23rd Street Streetscape Improvements: In 2008, RCRA initiated a process to revitalize the 23rd Street commercial district from Bissell Avenue at the south to Costa Avenue at the north. The street functions as a north–south arterial connection for Central Rich mond and San Pablo to Interstate 580 and the Marina Bay area of South Richmond. The emphasis of the revitalization plan is on a comprehensive streetscape improvement initiative that will reduce the number of travel lanes and widen the sidewalks; shorten crossing distances for pedestrians; and enhance community character through improved lighting and landscaping, and the introduction of new community-gathering spaces.

Macdonald Avenue Streetscape Improvements: As part of RCRA’s efforts to recast downtown Richmond as a vibrant, pedestrian-friendly “urban village,” the agency is also implementing streetscape improvements on Macdonald Avenue. The first phase of the project targeted Macdonald from San Pablo Avenue to 39th Street and involved straightening the street; installing sidewalk bulb-outs, enhanced crosswalks and improved street lighting; and planting more than 130 street trees. The second phase, completed in 2009, extends from Harbour Way to 19th Street; it involves the installation of new street lights, landscaping, sidewalks, angled parking, street furniture and public art. Design documents have been completed for remaining segments of Macdonald but construction is pending identification of funds.

Nevin Avenue Streetscape Improvements: More recently, in 2009, RCRA also began a process to improve pedestrian conditions on Nevin Avenue, a primarily residential corridor linking the Richmond Transit Village and Intermodal Transit Station with the recently renovated Richmond Civic Center. The project area is approximately one-half mile long, extending from 19th Street in the west to 27th Street in the east. The project’s focus will be on improving the aesthetics and safety of the street through redesigned intersections with enhanced crosswalks, new curb and gutter, curb ramps to meet disabled-access requirements, pedestrian-scale lighting, enhanced landscaping, wayfinding signage and traffic-calming measures. The improvements are designed to complement similar projects along 23rd Street (see above) and Macdonald Avenue (see below). A portion of this project is included in phase II of the Richmond Transit Village development and involves a total reconstruction of the existing, non-ADA compliant east access to the transit station.

Bay Trail improvements: As mentioned later in this chapter, Richmond has more miles of completed Bay Trail alignment than any other city. Highlights from 2009 in the development of the local
Bay Trail include opening of a trail link at Ford Point, installation of bike lanes or bike routes on Hall Avenue between Marina Way South and Harbour Way South, and on Harbour Way South between Hall Avenue and Wright Avenue (accomplishments of RCRA); publication of a guide of the Ferry Point Loop Trail (by the Trails for Richmond Action Committee [TRAC], a local advocacy organization; donation by Chevron of a 1.5-mile easement on its refinery property for a trail between Interstate 580 and Point San Pablo; and launch of a $1.6 million design project to connect Point Richmond and the Richmond–San Rafael Bridge. At least 5 miles of Bay Trail segments are expected to be completed by Spring 2011, including through Kaiser Shipyards 3, from Kaiser Shipyards 3 to Ferry Point, between Wildcat Creek and the former West County Landfill, and a 3-mile loop through the former landfill.

**Richmond Greenway to Ohlone Greenway Connection:** The Richmond Greenway (in central Richmond) and the Ohlone Greenway (in El Cerrito) will be connected by way of a new signalized bicycle/pedestrian crossing at San Pablo Avenue and a new bicycle/pedestrian bridge over the confluence of the middle and south forks of Baxter Creek. This connection will improve access to several BART stations and transit corridors, and provide regional connectivity between the San Francisco Bay Trail and the cities of Richmond, El Cerrito, Albany and Berkeley.

**Other Cities’ and County Plans**

**El Cerrito Circulation Plan for Bicyclists and Pedestrians**

The City of El Cerrito adopted this plan in 2007 as its bicycle and pedestrian master plan. The plan provides an overview of the city and of related plans, projects and policies; describes existing conditions, including facilities and demand estimates for bicycling and walking; identifies goals; designates a bikeway network and recommends specific route, bicycle detection, parking and wayfinding signage improvements; designates pedestrian routes and describes recommended route and intersection improvement projects; identifies “major activity centers” and other priority areas for improvement; contains facility design guidelines; describes recommended support programs; includes project prioritization and implementation strategies; and identifies funding opportunities.

The map of existing and proposed bikeways is on page 31 of the El Cerrito plan (Figure 14). The bikeways that connect to Richmond are the Ohlone Greenway (Class I); San Pablo Avenue, Potrero Avenue, Moeser Lane and Carlson Boulevard (Class II); and Rifle Range Road (into Wildcat Canyon Regional Park), Arlington Boulevard, Barrett Avenue, Key Boulevard, Manila Avenue, Schmidt Lane, Portola Drive, Waldo Avenue, Stockton Avenue, Lincoln Avenue and Lassen Street–Belmont Avenue (Class III). Of these bikeways, the only existing ones as of the date of adoption of the El Cerrito plan were the Ohlone Greenway and the Lassen Street–Belmont Avenue bike lanes.

Contra Costa Countywide Bicycle and Pedestrian Plan

The Contra Costa Transportation Authority updated its Countywide Bicycle and Pedestrian Plan in 2009. The plan describes existing conditions (namely the county’s physical landscape, commute statistics and collision data); summarizes related planning efforts; establishes goals and policies; and reaffirms the countywide bikeway network designated in the previous countywide plan. The main existing and proposed segments of the countywide bikeway network in and near Richmond are Central Avenue, Carlson Boulevard, San Pablo Avenue, the Richmond and Ohlone greenways, Cutting Boulevard, Marina Way, Harbor Way, Wright Avenue, Hoffman Boulevard, Canal Boulevard, Ohio Avenue, Barrett Avenue, Garrard Boulevard, Richmond Parkway, 20th Street, Market Avenue, Church Lane, El Portal Drive, Key Boulevard, Amador Street, San Pablo Dam Road, Hilltop Drive, Blume Drive, Fitzgerald Drive and Appian Avenue. The countywide bikeway network also encompasses much of the San Francisco Bay Trail (see below).

The plan also contains a list of implementation actions and establishes prioritization criteria to be used by the CCTA when awarding funds for bicycle, pedestrian and trail projects. The main purpose of the plan, however, is to provide tools for cities and other local agencies in Contra Costa on implementing bicycle and pedestrian projects. Accordingly, the plan outlines the main types of pedestrian and bicycle facilities and support programs that local jurisdictions can implement; provides online tools and resources on the planning and design of facilities and also of pedestrian- and bicycle-friendly developments; outlines requirements for sponsors of transportation projects under MTC’s complete streets/routine accommodation policy (see below); provides guidance on the application of the Americans with Disabilities Act to public rights-of-way; summarizes the main funding programs for bicycle and pedestrian projects and programs; and describes how cities can use the countywide plan to become eligible for funds from Caltrans’ Bicycle Transportation Account.

> www.ccta.net/EN/main/bike/cbpp.html

Regional Plans

San Francisco Bay Trail

The Bay Trail is a planned continuous multi-use trail that, when complete, will encircle San Francisco and San Pablo bays. Approximately 500 miles long, the trail’s planned alignment connects the shoreline of all nine Bay Area counties, links 47 cities and crosses all the toll bridges in the region. The alignment includes a continuous “spine” along or near the shoreline and many short “spurs” to the waterfront itself. Planning for the Bay Trail is coordinated by the nonprofit San Francisco Bay Trail Project, a project of the Association of Bay Area Governments.

To date, over 300 miles of the Bay Trail alignment have been developed as either off-street paths or on-street bicycle lanes or routes. Richmond has 26 miles of completed Bay Trail, the most of any city. (This is in large part thanks to the efforts of TRAC). Completed segments—including off- and on-street—of significant length exist through Point Isabel Regional Shoreline, Eastshore State Park, Marina Bay, Miller–Knox Regional Shoreline, West County Landfill and Point Pinole Regional Shoreline and on Regatta
Boulevard, Marina Way, Harbor Way, Cutting Boulevard, Canal Boulevard, Seaciff Drive, Garrard Boulevard, Richmond Parkway and Atlas Road. On the other hand, 15 miles of Bay Trail gaps remain in Richmond; significant missing lengths are found through the Kaiser Shipyard 3, from Brickyard Cove to Ferry Point, from Point Richmond to the Richmond–San Rafael Bridge toll plaza, from the toll plaza to Point San Pablo Yacht Harbor, from Wildcat Creek Trail to the West County Landfill and from Goodrick Avenue to Point Pinole Regional Shoreline.

> www.baytrail.org (San Francisco Bay Trail Project);
  www.baytrail.org/maps/carquinez_strait.pdf (Bay Trail Project map covering Richmond)

**Regional Bicycle Plan for the San Francisco Bay Area**

In 2009, the Metropolitan Transportation Commission (MTC)—the regional transportation planning agency for the Bay Area—updated its Regional Bicycle Plan for the San Francisco Bay Area. The new plan updates the designated regional bikeway network, one of the purposes of which is to focus MTC’s spending on high-priority facilities that serve regional trips. The regional bikeway network extends approximately 2,140 miles and the estimated cost to complete it is just over $1.4 billion, approximately half of which is for toll bridges that currently lack bicycle access.

The MTC plan breaks down the length and completion cost of the regional bikeway network by county, though not by city. The network includes 319 miles in Contra Costa County, of which 181 miles (almost 60 percent) have been built or are fully funded and awaiting development. The plan estimates the cost to complete the bikeway network within Contra Costa, excluding the toll bridges, at almost $26 million. A map of the Contra Costa portion of the regional bikeway network is shown on page 35 of the MTC plan. In and near Richmond, the existing and proposed network encompasses much of the San Francisco Bay Trail (see above), the Richmond and Ohlone greenways, Barrett Avenue, San Pablo Avenue, Appian Way, Atlas Road, Wildcat Creek Trail and San Pablo Dam Road.

> www.mtc.ca.gov/planning/bicyclespedestrians/MTC_Regional_Bicycle_Plan_Update_FINAL.pdf

**East Bay Regional Park District Master Plan**

The East Bay Regional Park District (EBPRD) serves as a regional park agency for Contra Costa and Alameda counties, acquiring, developing, managing and maintaining parkland. It encompasses more than 98,000 acres, with 65 parks and over 1,100 miles of mostly unpaved trails. The trails are designed to connect parks and communities and use publicly owned rights-of-way in cooperation with other agencies, with the goal of developing a regional trail network that provides nonmotorized transportation and recreational opportunities.

EBPRD’s most recent master plan was adopted in 1997. Trails-related priorities in the plan include completing the missing sections of the San Francisco Bay Trail (see above) and Bay Area Ridge Trail, and developing key trail segments in eastern Alameda and Contra Costa counties. The district hopes to begin updating its master plan in 2010. In the meantime, it updated the master plan map in 2007, showing all existing and potential parklands and trails in its system, including 84 trail gap segments needed to complete the district’s trail network. In and near Richmond, EBP RD’s network of existing and potential trails encompasses much of the San Francisco Bay Trail (see above), the Richmond and Ohlone greenways, Wildcat Creek Trail, and the East Bay Skyline National Recreation Trail through Wildcat Canyon Regional Park.
MTC’s Complete Streets/Routine Accommodation Policy

“Routine accommodation” refers to the practice of considering the needs of pedestrians and bicyclists habitually in the planning, design, funding, and construction of transportation projects. “Complete streets” is a related concept that describes roadways designed and operated for safe and convenient access by all users, including bicyclists, pedestrians, and transit riders.

In June 2006, the Metropolitan Transportation Commission (MTC) adopted a complete streets/routine accommodation policy for the region. The policy states that projects funded all or in part with regional funds “shall consider the accommodation of bicycle and pedestrian facilities, as described in Caltrans Deputy Directive 64” (see below) in the full project cost. The policy requires that sponsors of transportation projects—which could include the City of Richmond—complete a project checklist for any project submitted for funding to MTC that has the potential to impact bicycle or pedestrian use negatively. The checklist is meant to ensure that project sponsors evaluate the need for bicycle and pedestrian facilities as part of project planning—ideally at the earliest stage—and accommodate such facilities in the design and budget of their projects.

www.mtc.ca.gov/planning/bicyclespedestrians/routine_accommodations.htm

State Plans

Caltrans’ Complete Streets Policy

In 2001, the California Department of Transportation (Caltrans) adopted a routine accommodation policy for the state in the form of Deputy Directive 64, “Accommodating Nonmotorized Travel.” The directive was updated in 2008 as “Complete Streets—Integrating the Transportation System.” The new policy reads in part:

The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.

The Department develops integrated multimodal projects in balance with community goals, plans, and values. Addressing the safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding, is implicit in these objectives. Bicycle, pedestrian and transit travel is facilitated by creating “complete streets” beginning early in system planning and continuing through project delivery and maintenance and operations....

The directive establishes Caltrans’ own responsibilities under this policy. Among the responsibilities that Caltrans assigns to various staff positions under the policy are:

- Ensure bicycle, pedestrian, and transit interests are appropriately represented on interdisciplinary planning and project delivery development teams.
- Ensure bicycle, pedestrian, and transit user needs are addressed and deficiencies identified during system and corridor planning, project initiation, scoping, and programming.
- Ensure incorporation of bicycle, pedestrian, and transit travel elements in all Department transportation plans and studies.
• Promote land uses that encourage bicycle, pedestrian, and transit travel.
• Research, develop, and implement multimodal performance measures.

▶ http://www.calbike.org/pdfs/Caltrans_DD-64.pdf

California Complete Streets Act

Assembly Bill 1358, the “California Complete Streets Act of 2008,” requires “that the legislative body of a city or county, upon any substantive revision of the circulation element of the general plan, modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users [including] motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation....” This provision of the law goes into effect on January 1, 2011. The law also directs the Governor’s Office of Planning and Research to amend its guidelines for the development of circulation elements so as to assist cities and counties in meeting the above requirement.

▶ leginfo.ca.gov/pub/07-08/bill/asm/ab_1351-1400/ab_1358_bill_20080930_chaptered.html
This chapter lays out the policy framework for the Richmond BMP. The framework begins with a long-range vision for bicycling in Richmond, followed by a set of four overarching goals. Each goal is accompanied by an objective designed to gauge progress in achieving the goals. Goals are typically implemented through policies and actions dealing with more specific issues. Instead of formulating new, separate policies and actions, the BMP incorporates the bicycling-related ones that were developed recently during the update of the city’s General Plan. Lastly, subsequent chapters of the BMP include recommendations, implementation tasks and next steps that are even more specific.

**Vision statement**

The policy framework begins with an overarching vision statement, which expresses what bicycling will be like in Richmond in the future if the City successfully implements the BMP. The vision statement for the BMP is:

Richmond will have an extensive and well-connected system of bicycle routes and parking facilities that provide easy access to jobs, homes, schools, transit, the shoreline and other key destinations throughout the city and surrounding areas. A variety of programs, incentives and activities will promote bicycling among Richmond’s diverse communities. The city government will accommodate the needs and concerns of bicyclists when planning, designing, building and maintaining all transportation projects and when reviewing and approving all development projects. Thanks to these improvements, bicycling in Richmond will be much safer, more convenient and more pleasant than it is today. As bicycling becomes a mainstream activity and a dignified way to get around the city, many more people of all ages who live, work, go to school, shop and play in Richmond will bicycle for transportation and recreation. This will contribute to the
health, well-being and environmental sustainability of the community and make Richmond a regional bicycling destination and hub.

**Goals**

The BMP contains a set of four goals. These are broad ends or statements of purpose, each dealing with a separate topic, designed to support implementation of the long-term vision for bicycling in Richmond over the next 5-10 years. The goals set the overall directions and provide guidance on the general subject areas in which the City should concentrate its efforts related to bicycling.

**Goal 1**: Expand the city's bicycle routes and parking facilities into an extensive, well-connected and well-designed network, and improve and maintain these facilities over time. TRAC suggests adding the following goal to the 8/05/10 draft Policy Framework for Richmond’s BMP.

**Objective**: Increase the number of bikeway miles by 50 percent, complete all gaps in the Bay Trail and double the number of bicycle parking spaces.

**Goal 2**: Increase the number of people of all ages and backgrounds who bicycle for transportation, recreation and health.

**Objective**: Double the number of trips made by bicycle.

**Goal 3**: Make the streets safer for bicyclists, not only during the day but also at night.

**Objective**: Reduce the number of bicycle fatalities and injuries by 25 percent (even as the number of bicyclists increases).

**Goal 4**: Incorporate the needs and concerns of cyclists in all transportation and development projects.

**Objective**: Adopt and implement a "Complete Streets" and "Routine Accommodation" policies, and bicycle-friendly design standards and guidelines for streets and developments.

**Policies and actions**

Policies and actions are more specific and detailed statements meant to support and help implement the goals. The residents of Richmond recently developed numerous bicycling-related policies and actions through the process to update the city’s General Plan. The Plan, entitled “Shaping the New 100 Years,” was prepared beginning in [date?] and was adopted in [date?]. Because the General Plan was developed recently and through an extensive public-outreach process, the BMP incorporates the bicycling-related policies and actions from that plan rather than establish entirely new, separate ones.
The General Plan addresses locally relevant planning issues under 15 subject-specific “elements,” or chapters. Most of the bicycling-related policies and actions appear in the Circulation Element (Element 4), with additional ones scattered throughout other elements. Below, organized according to element, are the policies and actions from the General Plan that are related directly to bicycling (some appear in more than one element). [Check numbering of policies against adopted version of General Plan.]

Circulation Element (Element 4)

Policy CR1.1 Balanced Modes of Travel: Encourage multiple modes of travel in the City to enhance mobility for all....

Policy CR1.3 An Interconnected Street System: Promote an interconnected system of streets that adequately serves current and future travel needs. By promoting an interconnected system for streets along with pedestrian, bicycle and transit facilities, the City can support streets that are compatible with surrounding land uses, street function and community character.

Policy CR1.6 Safe and Convenient Walking and Bicycling: Promote walking and bicycling as a safe and convenient mode of transportation.

Policy CR1.7 Comprehensive Network of Multi-Use Trails: Develop a comprehensive network of multi-use trails....

Policy CR1.10 Level of Service Standard: Allow flexible Level of Service (LOS) standards to create streets that balance all modes of travel. Future improvements to major streets and intersections will consider design solutions that support walking, bicycling, and provide comfortable public spaces while continuing to function as thoroughfares that support the movement of vehicles....

Action CR1.C Bicycle and Pedestrian Networks: Develop citywide bicycle and pedestrian routes to make Richmond a more pedestrian and bicycle-friendly City. Identify gaps in the network, major travel routes and priority safety improvements. Expand the network of multi-use trails and off-street paths. Include connections to open space amenities...the Downtown, recreation destinations, commercial and mixed-use streets, transit stations and schools. Address pedestrian and bicycle connections in parking lots. Ensure links to the regional trail network including the San Francisco Bay Trail, and consistency with the County Bicycle and Pedestrian Plan....

Action CR1.D Bicycle and Pedestrian Standards: Implement the highest industry standards for bicycle and pedestrian improvements and amenities in new development and redevelopment projects. Include adequate, safe and accessible bicycle parking, drinking fountains, public restrooms, benches, landscaping and lighting. Provide adequate connections to the existing and proposed bicycle and pedestrian network....[R]equire owners of property along the shoreline to provide maximum feasible public access to the shoreline. Wherever feasible, include a condition to contribute to Bay Trail improvements as part of any large project approval.

Action CR1.E Trails and Greenway Program: Expand multi-use trails and greenways in the City. Provide connector trails and linkages to improve access from inner city neighborhoods to the regional open space in the hills and along the shoreline. Address barriers such as freeways, the Richmond Parkway and railroad tracks that limit shoreline access....

Policy CR2.2 Complete Streets: Promote mixed-use urban streets that balance public transit, walking and bicycling with other modes of travel....

Policy CR2.3 Integrated Bicycle and Pedestrian System: Plan, construct and maintain a safe, comprehensive and integrated bicycle and pedestrian system....
**Action CR2.A**  **Community Access and Mobility:** Develop access and mobility in new development.... Access and mobility design features should:... Promote bicycle and pedestrian-friendly routes including completion of major trails and pathways like the San Francisco Bay Trail and Richmond Greenway... Include provisions to extract an easement for the completion of the Bay Trail along the Richmond Shoreline; Strategically coordinate new park development and upgrades with street improvements (green streets, bicycle and pedestrian improvements); [and] propose locations for creek daylighting, creekside trails and other pedestrian-friendly corridors....

**Action CR2.B**  **Safe Routes to School:** Develop safe routes to school in collaboration with West Contra Costa Unified School District and other educational institutions and service providers. Improve walking and bicycling access and safety to schools and after-school programs.

**Action CR2.C**  **Streetscape Improvement:** Enhance access, safety and the streetscape experience for pedestrians, bicyclists and transit riders. Focus 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....

**Action CR2.D**  **Street Design:** New development and redevelopment should include street design that supports public transit, bicycles and walking on all streets, consistent with and tailored to street or trail function and adjacent land use type.... Bicycle-friendly design should address lane widths, street and intersection crossings and parking areas....

**Action CR2.E**  **Signage and Wayfinding:** Install comprehensive signage and wayfinding elements that addresses all modes of travel including transit, trucks, bicycles, multi-use trails and cars....

**Action CR2.F**  **Lower Speed Limit Zone Study:** Explore the potential to designate streets around schools, parks and public gathering places as safety zones where the vehicular speed limit may be lowered to 20 miles per hour....

**Policy CR3.1**  **Safety and Accessibility:** Enhance safety and accessibility for pedestrians, bicyclists and public transit riders. Promote walking, bicycling and transit use by improving: key intersections and streets... transit stations and stops... at-grade railroad crossings... and streetscape design....

**Policy CR3.2**  **Adequate Maintenance:** Ensure adequate maintenance of transportation facilities such as streets, trails, sidewalks and bicycle paths.

**Policy CR3.3**  **Concurrent Infrastructure Development:** Require concurrent infrastructure development for new and redevelopment projects that may have a significant impact on the existing circulation system including streets, trails, sidewalks, bicycle paths and public transit.

**Action CR3.A**  **At-Grade Railroad Crossings Improvements:** Work with the railroads to improve safety at at-grade railroad crossings. Provide fair-share contributions to improvements where grade separations will enhance safety, community linkages and access for pedestrians, bicyclists and public transit....

**Action CR3.B**  **Traffic Calming:** Develop strategies to calm traffic on streets that experience speeding or cut-through traffic. Engineering measures should consider emergency vehicle access as well as pedestrian and bicycle circulation and may include traffic circles, curb extensions, stop signs, narrow travel lanes, fewer travel lanes, landscaping and plantings.

**Action CR3.C**  **Goods Movement:** Identify priority improvements such as grade separation and safety improvements for at-grade railroad crossings to reduce conflicts between different modes of travel.... [E]nsure that track capacity expansion...
in Richmond is accompanied by safety improvements including grade separation at crossings that carry high traffic, pedestrian and/or bicycle volumes, or have high accident rates.

**Action CR5.A**  **Transportation Demand Management:** Encourage use of public transit, bicycling and walking in existing and proposed developments through measures that may include transit subsidies, carshare service, parking cash-out programs, bicycle-share programs, bicycle amenities and facility enhancements.

**Action CR5.D**  **City Vehicles Transition:** Increase the share of climate-friendly vehicles and use of climate-friendly fuels in the City and consider including bicycles in a corporate fleet where feasible.

**Economic Development Element (Element 1)**

**Action ED5.A**  **San Pablo Avenue Specific Plan:** ...complete and implement the San Pablo Avenue Specific Plan.... Include design and infrastructure features in the Plan that support higher-density and mixed-use development, pedestrian and bicycle uses, public safety and active use and public transit service.

**Action ED5.B**  **23rd Street Specific Plan:** ...complete and implement the 23rd Street Specific Plan.... Include design and infrastructure features in the Plan that support higher-density and mixed-use development, pedestrian and bicycle uses, public safety and active use and public transit service.

**Policy ED8.4**  **Public Access to the Shoreline:** Improve public access to the Bay. The City supports the expansion of trails, viewpoints and supporting infrastructure to fully capitalize on the Southern Shoreline’s prime access to the Bay.

**Action ED8.A**  **Southern Shoreline:** Guide improvements in the Southern Shoreline Area...including...public access to the shoreline...bicycle and public transit service and amenities that link this area to the rest of the City...and infrastructure improvements such as streetscape, pedestrian-scale lighting, landscaping and grade separations at railroad crossings.

**Land Use and Urban Design Element (Element 3)**

**Policy LU1.3**  **A Range of High-Quality Community Facilities and Infrastructure:** Maintain high-quality facilities and infrastructure to serve diverse community needs...[including] multi-use trails....

**Policy LU3.3**  **Recreation and Tourism Industry:** ...Expand and complete the Bay Trail to enhance regional connections with Richmond’s shoreline...

**Policy LU4.1**  **Richmond Shoreline:** ...develop shoreline parks and trails to increase public access; encourage recreation and tourism activities; and enhance and showcase historic and cultural resources....

**Policy LU6.1**  **Pedestrian and Transit-Oriented Urban Environment:** ...Support complete and balanced streets and an ex-
expanded multimodal circulation system.... Require new development and improvements to include amenities for pedestrians, bicycles and transit users....

**Energy and Climate Change Element (Element 8)**

**Policy EC2.6**  
**Private Automobile Use:** Work toward creation of an urban landscape that will reduce reliance on private automobiles. Provide amenities and infrastructure that encourage safe and convenient use of public transit, walking and bicycling....

**Action EC2.F**  
**Promote Bicycle Use:** Encourage safe and convenient bicycle use by residents, employees and visitors. Consider strategies that expand bicycling as a viable mode of transportation for people of all ages and abilities. Encourage businesses to provide bicycle amenities such as secured bicycle parking, showers and lockers for employees who bike to work.

**Parks and Recreation Element (Element 10)**

**Policy PR1.2**  
**Multimodal Connections to Parks, Open Space and Recreational Facilities:** Improve connections to parks, open space and recreational facilities through an interconnected network of pedestrian-friendly green streets, multimodal corridors and trails. The City should enhance trails and greenways to provide recreational opportunities for residents, connect neighborhoods and community uses, improve access to natural resources and the shoreline and promote walking and bicycling. On-street connections should be pedestrian and bicycle-friendly and incorporate green infrastructure where possible....

**Action PR1.D**  
**Parkland Acquisition Plan:** Develop a parkland acquisition plan for achieving better distribution of parks in all neighborhood planning areas of the City and accomplishing an integrated system of parks.... Include considerations for trail and greenway expansion....

**Action PR1.F**  
**Shoreline Parks Plan:** ...Trails and greenways along the scenic shoreline should be enhanced to provide recreational opportunities and circulation access and to develop the shoreline as a visitor destination.... The plan should also include: an analysis of gaps and opportunity sites for completing and expanding the Bay Trail; identification of routes and improvements needed to connect the shoreline with core urban areas of the City; bicycle and pedestrian trails to provide local connections between the waterfront and surrounding neighborhoods; and provisions to complete planned regional trails including the San Francisco Bay Trail, Richmond Greenway and Wildcat Creek Regional Trail....

**Action PR1.K**  
**Inter-Agency Collaboration:** Collaborate with the East Bay Regional Park District (EBRPD), California Department of Parks and Recreation (DPR), University of California and the National Park Service (NPS) to ensure coordinated management of Richmond’s many parks and trails....

**Action PR3.A**  
**Sustainability Guidelines for Parks and Recreation Facilities:** ...Key components of Richmond’s parks and open space system should include...using green streets and multi-use trails to link open spaces...[and] [r]etrofitting streets to be bicycle and pedestrian-friendly and developing multi-use trails to encourage non-vehicular modes of transit.

**Action PR4.C**  
**Bay Trail and Shoreline Access Ordinance:** Develop and adopt an ordinance that requires future developments near the shoreline to provide public access where the San Francisco Bay Trail is planned and to provide public access to the shoreline where feasible.
Community Health and Wellness Element (Element 11)

Policy HW1.1 An Integrated System of Parks, Plazas, Playgrounds and Open Space: Provide a comprehensive and integrated system of parks, plazas, playgrounds, trails and open space....The City should ensure adequate maintenance of these facilities to encourage safe and active use.

Action HW1.D Parks Maintenance Plan: Update the maintenance plan for all City-owned and operated parks, trails, landscapes and greenways. Include funding mechanisms to support ongoing operations and life-cycle replacements....

Policy HW4.3 Safe and Convenient Walking and Bicycling: Promote walking and bicycling as a safe and convenient mode of transportation. Continue to improve pedestrian and bicycle amenities to serve the recreation and travel needs of residents and visitors in all parts of Richmond. Where feasible, the City should: connect major destinations such as parks, open spaces, civic facilities, employment centers and retail and recreation areas with pedestrian and bicycle infrastructure; promote shared roadways in residential streets; require new development and redevelopment projects to provide pedestrian and bicycle amenities, streetscape improvements and linkages to planned and completed City and regional multi-use trails; and develop safe routes to schools and out-of-school programs that allow access by bicycle and pedestrian paths or reliable and safe transit. Support construction of provide enhanced bicycle and pedestrian facilities, explore innovative solutions such as bicycle-sharing programs, encourage businesses, schools and residential developments to provide secure bicycle parking.

Policy HW8.1 Investment in Public Facilities: Prioritize public investment and improvements for public facilities and amenities that provide significant social, economic and community benefits in underserved neighborhoods...[including] streetscape improvements such as pedestrian-scale lighting, safe pedestrian and bicycle routes, landscaping and traffic calming....

National Historical Park Element (Element 15; refers to the Rosie the Riveter/World War II Home Front National Historical Park)

Policy NP1.2 Access to Resources: Support the expansion of transportation options to National Historical Park resources and sites in the City. Prioritize access by public transit, bicycling and walking....

► Richmond General Plan: www.cityofrichmondgeneralplan.org
4. Background Conditions

**Land Use and Settlement Patterns**

The city of Richmond is located on the western edge of Contra Costa County. It was incorporated in 1905 and has a population of approximately 104,000 and a land area of 30.4 square miles, making it the second largest city in Contra Costa on both counts. Like much of the rest of the Bay Area, Richmond has Mediterranean climate with mild year round temperatures and rain free summers.

The City’s land area is essentially divided into three sections, with its northern portions separated from central and south Richmond by the City of San Pablo and a relatively large pocket of unincorporated Contra Costa County. A third portion is located in the El Sobrante Valley on the inland side of the coastal hill range to the east. This eastern portion is mostly hilly while the other two portions are generally flat,
with the exception of the, Point Richmond and Point San Pablo peninsula, along the western shoreline the Hilltop district in the north and portions of the Richmond Annex (south). San Pablo and San Francisco bays surround Richmond along the northwest, west and south, giving it the longest shoreline of any city in the Bay Area.

Richmond encompasses approximately 18,800 acres (see next page for the map of Richmond land use designations, from the City’s General Plan). The largest component by land use is parks and open space, which make up 5,900 acres, or 31 percent of the total (however, the vast majority of this acreage is private, otherwise inaccessible to the public or does not border residential areas of Richmond). This is followed by residential neighborhoods (4,600 acres; 24 percent), industrial and port activities (4,100 acres; 22 percent), commercial uses (900 acres; 5 percent) and a variety of other uses. The open space and park lands are primarily found on the city’s periphery; these include the Point Pinole, Point San Pablo, Point Molate, Miller-Knox and Point Isabel shorelines; the Rosie the Riveter/World War II Home Front National Historical Park, also on the shoreline; and, along the city’s eastern edge, Wildcat Canyon and Sobrante Ridge. Smaller, urban parks are scattered throughout the city.

The residential areas are concentrated in the City’s central and southern portion with smaller but significant clusters in north Richmond, Parchester Village the Hilltop district and the El Sobrante Valley. Owing to Richmond’s history as a seaport, industrial activities are clustered along the waterfront west of Garrard and south of I-580 or near rail lines in north Richmond. The main commercial areas are the City’s downtown, Hilltop district and a regional-serving retail district near Point Isabel; smaller, local-serving retail districts are scattered throughout. Major employment centers include the Downtown, the port area, the Hilltop district and Chevron’s Point Molate facility (Chevron is by far the city’s largest employer).

There is a concentration of public buildings in the Downtown’s civic center, including City Hall, Memorial Auditorium, Convention Center, main branch of the Richmond Public Library, and Richmond Art Center. There are 36 schools scattered throughout the city, including 16 elementary schools, seven elementary/middle schools, three middle schools, seven high schools (of which two are charters) and three adult education schools.

In terms of development patterns, Richmond can be categorized into pre- and post-World War II areas. The City’s southern portion was mostly developed in the first half of the 20th Century. This section of the City tends to feature the urban forms and patterns of that era: short blocks set on a grid, narrower streets, frequent intersections, mixture of land uses, moderately high development densities and small footprint buildings with sidewalks on nearly every block—all factors that contribute to bicycling (and walking). Following World War II, development spread to the city’s northern and eastern parts. Development forms and patterns found in these more recently developed areas include wide, non-linear streets, long blocks, infrequent intersections and crossing points and segregated land uses with low development densities.
Map 1 | City of Richmond Land Uses
Unique Opportunities for Bicycling in Richmond

The urban fabric of Richmond is distinctive. It faces many challenges with respect to being divided by freeways, railroads and major industrial sites, as well as high crime rates that affect people’s sense of personal safety in public places. However, these challenges, along with a host of incredible opportunities, make Richmond a place that could experience dramatic change when these obstacles are overcome. Furthermore, there is considerable reason to believe that Richmond is ripe for change.

Good walking and bicycling bones

The City was originally developed around pedestrian travel and the streetcar, and continues to be a transit rich, transit oriented community today. Central Richmond has a uniform grid of small blocks and a good mix of land uses including diverse commercial streets well distributed throughout the City. The intermodal transit station in downtown Richmond provides convenient access to destinations throughout the Bay Area via AC Transit and BART, as well as destinations throughout the U.S. via Amtrak. The diversity and density of land uses, combined with excellent transit service provides the ideal environment for a thriving bicycle-friendly community.

Funding eligibility

From climate change initiatives to safe routes to school programs, there are multiple funding sources on both the regional and state level that are appropriate for Richmond. In addition, the City stands to benefit from the new Federal focus on healthy communities. Details on these funding opportunities are described in Chapter XX: Cost Estimates & Funding. However, a key constraint for implementing future projects is the City’s limited capacity for project management and delivery. A dedicated, full-time staff position to coordinate pedestrian and bicycle projects will be instrumental in the successful implementation of this plan and the forthcoming Pedestrian Master Plan.

Underused rights of way

Historically, an expansive arterial road network was developed to support Richmond’s major employers at the shipyards. As the Bay Area developed, several major freeways including I-80, I-580 and the Richmond Parkway were developed on top of the existing roadway network. As employment shrunk considerably since that time, the City now has many overly wide and redundant connector streets such as Cutting Boulevard, Harbour Way, Marina Bay Parkway, Barrett Avenue, and Carlson Boulevard. This excessive right of way provides many immediate opportunities to enhance the bicycle and pedestrian realm by expanding sidewalks, installing bike lanes and creating inviting public spaces along community activity and connector streets.

As noted, Richmond has the longest and most scenic section of the Bay Trail and is blessed with more open space and parks than most cities. As such, the City has the potential to be a magnet for people seeking healthy lifestyles, particularly as the City’s bicycle network develops.
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 vehicles 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.

**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 1 | **Bikeway facility types**

**CLASS I BIKEWAY (Bike Path)**
Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with crossflow minimized.

**CLASS II BIKEWAY (Bike Lane)**
Provides a striped lane for one-way bike travel on a street or highway.

**CLASS III BIKEWAY (Bike Route)**
Provides for shared use with pedestrian or motor vehicle traffic.
**Bicycle Ridership**

**Means of Transportation**

Knowing how many people bicycle, and for what purposes can help the City develop projects and programs to better serve current and future cyclists. The table below shows the means of transportation used by workers 16 years and older in Richmond to commute from home to work, according to the latest U.S. Census (2000). For context and purposes of comparison, the table also shows this information for Contra Costa County, the nine-county Bay Area, California and the United States. The table shows that bicycling accounts for 0.6 of commute trips among Richmond workers; this is a higher share than for the county and U.S. but lower than for the Bay Area as a whole and the state at large. Drive-alone is the predominant means of commuting in Richmond but commands a significantly lower share than at the county, regional, state and national levels. Conversely, carpooling and public transportation are more common ways to commute in Richmond than elsewhere.

**Bicycle Commuting in Richmond**

Of the 41,745 workers in Richmond counted in the 2000 Census 239, or 0.6 percent of the total, bicycled to work. Since this information is 10 years old, it is possible that the figure has changed. Bicycle commuters also include people who bike to school and those who bike to transit before continuing to work. More recent data for these two commuter categories can be extrapolated from the American Community Survey [ACS], a project of the Census Bureau which collects information every year instead of every 10 years but does not break out bicycling as a separate commute mode.

### Table 2 | Home-to-work means of transportation (%; 2000 U.S. Census)

<table>
<thead>
<tr>
<th>Means of Transportation</th>
<th>Richmond</th>
<th>Contra Costa County</th>
<th>Bay Area</th>
<th>California</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive-alone</td>
<td>59.3</td>
<td>70.2</td>
<td>68.0</td>
<td>71.8</td>
<td>75.7</td>
</tr>
<tr>
<td>Carpool</td>
<td>19.6</td>
<td>13.5</td>
<td>12.9</td>
<td>14.5</td>
<td>12.2</td>
</tr>
<tr>
<td>Public transportation</td>
<td>14.5</td>
<td>9.0</td>
<td>9.7</td>
<td>5.1</td>
<td>4.7</td>
</tr>
<tr>
<td>Bicycle</td>
<td>0.6</td>
<td>0.5</td>
<td>1.1</td>
<td>0.8</td>
<td>0.4</td>
</tr>
<tr>
<td>Walk</td>
<td>1.9</td>
<td>1.5</td>
<td>3.2</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Other&lt;sup&gt;3&lt;/sup&gt;</td>
<td>4.3</td>
<td>5.4</td>
<td>5.1</td>
<td>4.8</td>
<td>4.1</td>
</tr>
</tbody>
</table>

<sup>3</sup> Includes work-at-home, motorcycle and taxicab

Below are estimates of bicycle ridership among these two later groups, followed by a table summarizing the total estimated daily number of bicycle commuters in Richmond.

- **Students biking to school**: According to the 2008 ACS, there were 28,026 enrolled students from Grade 1 to graduate school in Richmond. Assuming that five percent of them bicycle to school means an additional 1,401 bicyclists.

- **Workers biking to transit**: The 2008 ACS counted 7,160 Richmond workers who commuted to work by transit. Assuming that two percent of them bike to transit before continuing on their way to work—percentages cited at various times by BART and AC Transit for—means another 143 bicycle commuters.
Table 3  |  Daily bicycle commuters

| Workers | 239 |
| Students | 1,401 |
| Bike-to-transit riders | 143 |
| **Total** | **1,783** |

**Non-commute bicycle ridership**

Commute trips represent a minority of bicycle trips. To get a fuller sense of bicycling in a community, it is essential to account for the other reasons, apart from commuting, that people use bicycles. The *National Bicycling & Walking Study*, published by the Federal Highway Administration in 1995, estimated that for every commute trip made by bicycle there were 1.74 trips made for shopping, social and other utilitarian purposes.

We can estimate the number of these other bicycle trips in Richmond as follows:

- **Number of daily bicycle commuters:** 1,783 (per Table 2)
- **Number of daily trips per commuter:** 2 (assumed; one trip from home to work and one trip back)
- **Number of daily bicycle commute trips:** 3,566 (1,783 x 2)
- **Daily bicycle trips for non-commute purposes:** 6,205 (3,566 x 1.74)

Lastly, many people ride bicycles primarily for recreation. While the Richmond Bicycle Master Plan focuses on bicycling for transportation, it is important to keep recreational riders in mind in the formulation of projects and programs: with enough encouragement, including supportive infrastructure, many recreational riders can be expected to make the transition to bicycle commuters. While we do not have reliable figures, Richmond likely has a substantial number of recreational cyclists. The City is blessed with mild weather; generally flat terrain; large expanses of open space and park lands; the longest shoreline of any city in the Bay Area; and attractive off-street cycling facilities, including the Richmond Greenway, the Wildcat Creek Trail and, of course, some of the longest and most scenic stretches of the San Francisco Bay Trail.

**Projected Bicycle Ridership**

If other communities are any indication, implementation of this plan will result in a sizable increase—at least in relative terms—in bicycle ridership and daily trips. Not surprisingly, bicycling studies from around the country have found a correlation between bikeway miles per capita in a given community and its number of bicyclists. In a case study of three cities (Portland, San Francisco and Seattle) that implemented bicycle improvements, “after” bicycle ridership on improved corridors was between double and triple the “before” numbers. (This is consistent with an observation in the National Bicycling & Walking Study that “There are … three times more commuter cyclists in cities with higher proportions of bike lanes.”) Implementation of an interconnected network of facilities—as opposed to a system of improved, but not necessarily linked, corridors—would likely have an even more pronounced effect. Bicycling in Richmond could see particularly strong growth if efforts are made to improve personal safety and security and to deter bicycle theft through secure bike parking.

Assuming such a tripling in the ridership, the implementation of the Bicycle Master Plan would result in approximately 5,349 daily bicycle commuters throughout the City (1,783 [from Table 2] multiplied by 3).
Similarly, daily bicycle trips for shopping, social and other utilitarian purposes would increase to 18,615 (6,205 [from Table 2] multiplied by 3). These are order-of-magnitude estimates based on limited data and informed suppositions. In any event, it is reasonable to expect that implementation of the Bicycle Master Plan would yield handsome environmental and quality-of-life dividends associated with more bicycling and less driving.
5. Existing Bicycle Network

To be eligible for grant funds under Caltrans’ Bicycle Transportation Account, a city or county must have adopted a bicycle plan that includes certain components outlined in Section 891.2 of the Streets and Highways Code. This chapter addresses the components required under Sections 891.2 (a), (b), (c), (d), (e) and (f).

**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.

**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 and Pedestrian Advisory Committee and general public, and extensive field visits. The City currently has approximately 10 miles of on-street bikeway facilities and 21 miles of multi-use paths, consisting of approximately:

- 23.7 miles of Class I multi-use paths
- 5.9 miles of Class II bike lanes
- 5.3 miles of Class III bike routes

The Existing Bikeway Network map (Figure 3) shows locations for all existing bikeways.

**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 26 miles of Bay Trail had been built in Richmond, with an additional 15 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

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

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 4 | Existing Class I multi-use paths

<table>
<thead>
<tr>
<th>Path</th>
<th>From</th>
<th>To</th>
<th>Class</th>
<th>Length (miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay Trail</td>
<td>Point Isabel</td>
<td>Point Pinole</td>
<td>I</td>
<td>19.80</td>
</tr>
<tr>
<td></td>
<td>Regional Shoreline</td>
<td>Regional Shoreline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Richmond Greenway</td>
<td>2nd Street</td>
<td>San Pablo Avenue</td>
<td>I</td>
<td>2.42</td>
</tr>
<tr>
<td>Garrard Boulevard</td>
<td>Ohio Avenue</td>
<td>Barrett Avenue</td>
<td>I</td>
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</tr>
<tr>
<td>Regatta Boulevard</td>
<td>Marina Bay</td>
<td>Marina Way South</td>
<td>I</td>
<td>0.63</td>
</tr>
<tr>
<td>Wildcat Creek Trail</td>
<td>Richmond</td>
<td>Shoreline</td>
<td>I</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Total 23.66

Table 5 | Existing Class II bike lanes

<table>
<thead>
<tr>
<th>Street</th>
<th>From</th>
<th>To</th>
<th>Class</th>
<th>Length (miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hensley Street*</td>
<td>Ohio Avenue</td>
<td>Bissell Avenue</td>
<td>II</td>
<td>0.15</td>
</tr>
<tr>
<td>Amador Street</td>
<td>Clinton Avenue</td>
<td>McBryde Avenue</td>
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<td>0.51</td>
</tr>
<tr>
<td>Hall Avenue*</td>
<td>Harbour Way</td>
<td>Marina Way</td>
<td>II</td>
<td>0.51</td>
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<tr>
<td>South Garrard Avenue*</td>
<td>Ohio Avenue</td>
<td>Cutting Boulevard</td>
<td>II</td>
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<td>Hoffman Boulevard</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Canal Boulevard*</td>
<td>Seacliff Drive</td>
<td>Cutting Boulevard</td>
<td>II</td>
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<tr>
<td>Wright Avenue*</td>
<td>Harbor Way</td>
<td>Marina Way</td>
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<tr>
<td>Harbour Way***</td>
<td>Wright Avenue</td>
<td>Hall Avenue</td>
<td>II</td>
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<tr>
<td>Key Boulevard</td>
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<td>II</td>
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</table>

Total 5.89

*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 bike facilities.

*Part of Bay Trail
**Class II northbound only
Table 6 | **Existing Class III bike routes**

<table>
<thead>
<tr>
<th>Street</th>
<th>From</th>
<th>To</th>
<th>Class</th>
<th>Length (miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting Boulevard</td>
<td>31st Street</td>
<td>Carlson Boulevard</td>
<td>III</td>
<td>0.08</td>
</tr>
<tr>
<td>Carlson Avenue</td>
<td>Cutting Boulevard</td>
<td>Potrero Avenue</td>
<td>III</td>
<td>0.38</td>
</tr>
<tr>
<td>Potrero Avenue</td>
<td>Carlson Boulevard</td>
<td>Ohlone Greenway</td>
<td>III</td>
<td>1.05</td>
</tr>
<tr>
<td>Clinton Avenue</td>
<td>Amador Street</td>
<td>Sonoma Street</td>
<td>III</td>
<td>0.23</td>
</tr>
<tr>
<td>Regatta Boulevard*</td>
<td>Marina Way</td>
<td>Marina Bay Parkway</td>
<td>III</td>
<td>0.73</td>
</tr>
<tr>
<td>Harbour Way*****</td>
<td>Wright</td>
<td>Hall</td>
<td>III</td>
<td>0.60</td>
</tr>
<tr>
<td>Marina Bay Parkway/23rd Street*</td>
<td>Ohio Avenue</td>
<td>Harbor View Drive</td>
<td>III</td>
<td>1.69</td>
</tr>
<tr>
<td>Marina Way*</td>
<td>Wright Avenue</td>
<td>Hall Avenue</td>
<td>III</td>
<td>0.51</td>
</tr>
</tbody>
</table>

**Total** 5.27

*Part of Bay Trail
** Class III southbound only
Map 2 | Existing bicycle network
**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 following map.

- Atlas Road Entry to Point Pinole (2010)
- West County Landfill Loop & Wildcat Creek Connection (2010)
- Donation of Trail Easement by Chevron to Point San Pablo (2009)
  - Connection Point San Pablo
- MacDonald Avenue Streetscape Improvements (Phase II) (2010)
  - Sidewalk & Intersection Improvements
  - Lighting & Landscaping
  - Public Art
  - Angled Parking
- Point Richmond/Richmond-San Rafael Bridge Path (2009)
  - Design study to link bridge to Bay Trail
- Harbor Way Bike Lanes (2009)
- Keller Beach to Ferry Point Bay Trail Segments (2010)
- 23rd Street Streetscape Improvements (2008)
  - Two-way conversion & lane reduction
  - Sidewalk & Intersection Improvements
  - Lighting & Landscaping
  - Coordination with 22nd Street improvements
- Nevin Avenue Streetscape Improvements (2010)
  - Sidewalk & Intersection Improvements
  - Traffic Calming
  - Lighting & Landscaping
  - Class III Bike Facility
- MacDonald Avenue Streetscape Improvements (Phase I) (2009)
  - Sidewalk & Intersection Improvements
  - Street Trees
  - Lighting & Landscaping
- Richmond Greenway-Ohlone Greenway Crossing (2010)
  - New signalized crossing at San Pablo Avenue
- Ferry Point Loop Trail Guide (2009)
- Ford Point Bay Trail Loop (2009)
- Hall Avenue Bike Lane Racks (2009)
Map 3 | On-going projects

- Atlas Road Entry to Point Pinole (2010)
- West County Landfill Loop & Wildcat Creek Connection (2010)
- Donation of Trail Easement by Chevron to Point San Pablo (2009)
- MacDonald Avenue Streetscape Improvements (Phase II) (2010)
- Point Richmond/Richmond-San Rafael Bridge Path (2009)
- Harbor Way Bike Lanes (2009)
- Keller Beach to Ferry Point Bay Trail Segments (2010)
- 23rd Street Streetscape Improvements (2008)
- Ninem Avenue Streetscape Improvements (2010)
- MacDonald Avenue Streetscape Improvements (Phase I) (2009)
- Ferry Point Loop Trail Guide (2009)
- Point Pinole Trail Loop (2009)
- Hall Avenue Bike Lane Racks (2009)
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

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 an 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.
**Existing Bicycle Network**

**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 rail yards 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, 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 this area to Wildcat Creek and the West County Landfill remains a significant challenge.

- 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.

**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 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 Sobrante 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, however, remain a challenge:

- Freeways and freeway interchanges
- Railroad crossings
- San Pablo Avenue
- Richmond Parkway
- 23rd Street/Carlson Boulevard/ Broadway

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.

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 on street network. Please refer to the Design Guidelines specifications on signage.

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.
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, and all other BART trains during non-commute hours (4 AM to 6:30 AM, 8:30 AM to 3:30 PM, and 6:30 PM - Closing) and all day on weekends and holidays. During AM peak periods (6:30 AM to 8:30 AM), westbound bicycles are not allowed in stations between Richmond and Powell Street and eastbound bicycles are not permitted between the San Francisco Airport station and Montgomery Street station. In the PM peak period (3:30 PM to 6:30 PM), westbound bicycles are not allowed in the stations between Embarcadero and Daly City and eastbound bicycles are not allowed in stations between Civic Center and San Leandro.

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 and two bike lockers.
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
(http://www.redoveryellow.com/railroad/_page1.html)
To be eligible for grant funds under Caltrans’ Bicycle Transportation Account, a city or county must have adopted a bicycle plan that includes certain components outlined in Section 891.2 of the Streets and Highways Code. This chapter addresses the components required under Sections 891.2 (a), (b), (c), (d), (e) and (f).

While all streets should be designed to accommodate bicycles, the proposed bikeway network consists of routes that are designed to be the primary system for bicyclists traveling through Richmond. The bikeway network is a tool that allows the City to focus and prioritize implementation efforts where they will provide the greatest community benefit. Streets or corridors selected for inclusion in the network should be targeted for specific improvements, such as the installation of bicycle lanes, off-street paths, or signage. It is important to recognize that by law, unless explicitly prohibited (as they are on the Richmond-San Rafael Bridge, I-580 and I-80), bicyclists are allowed on all streets and roads regardless of whether the streets and roads are a part of the bikeway network. Once completed, the proposed network will provide safer and more direct travel paths throughout the city.

The proposed system was developed according to the following planning criteria:

**Comfort & Access:** The system should provide equitable access from all areas of the city to both commute and recreation routes, and should be designed for bicyclists of all levels of ability. Ideally, the system should provide a bicycle path, lane, or route within one-half mile of any residential street.

**Purpose:** Each link in the system should serve one or a combination of these purposes: recreation, commuting, and provide a connection to the citywide bike network. On-street facilities should be continuous
and direct, and off-street facilities should have a minimal number of arterial crossings and uncontrolled intersections.

Connection to Transit and Employment/Retail Centers: 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.

Connection to Schools and other Community Facilities: Schools and community facilities such as Richmond High School, recreational centers and the Civic Center area should be accessible by bike.

Connection to the Waterfront, Parks and Open Space: Richmond’s waterfront, parks and open spaces should be accessible so that residents are able to bike from home to both local and regional recreation.

Connection to Regional Bikeways: The bikeway system should provide access to regional bikeway routes, regional trails, and routes in adjacent communities.

Table 7 | **Length of bikeway system** (miles)

<table>
<thead>
<tr>
<th>Bikeway Classification</th>
<th>Existing</th>
<th>Proposed</th>
<th>Total</th>
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<tbody>
<tr>
<td>Class I</td>
<td>23.7</td>
<td>29.6</td>
<td>53.3</td>
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<tr>
<td>Class II</td>
<td>5.9</td>
<td>28.1</td>
<td>34.0</td>
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<tr>
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<td>5.3</td>
<td>42.5</td>
<td>47.8</td>
</tr>
<tr>
<td>Total</td>
<td>34.9</td>
<td>100.2</td>
<td>134.1</td>
</tr>
</tbody>
</table>

Map 4 illustrates the Citywide Existing and Proposed Bikeway Network. The following map provides a close-up map of Central Richmond. The proposed system includes a total of approximately 100 miles of new bikeway facilities in addition to the 35 miles currently in place. The table above shows the number of proposed miles for each bikeway classification.

A complete list and description of proposed bikeways is included in Appendix A and is organized in the following way:

- Central Richmond – North-south and east-west routes
- Hilltop Area
- El Sobrante Valley
- The Bay Trail and Wildcat Creek Trail segments

A primary goal is to provide continuous bicycle facilities with the greatest degree of bicycle comfort possible. These on- and off-street bicycle facilities will provide local and regional access across Richmond and to neighboring jurisdictions. Where appropriate, City staff should coordinate the planning of these facilities with the Cities of El Cerrito, San Pablo, Pinole and Hercules to ensure continuity across city boundaries.
Map 4 | Existing and proposed bicycle network
Map 5 | Existing and proposed bicycle network in Central Richmond
Central Richmond

The proposed on-street facility improvements for Central Richmond are organized from north to south and east to west. These include many Class II bike lane segments and Class III routes, as well as several Class I path connections across railroad tracks, and through schools and neighborhood parks. In addition, several short- and long-term recommendations are provided that also aim to calm traffic and enhance the pedestrian environment. For example, the newly built eastern and western spans of the Richmond Greenway have several critical gaps that have been identified as high priorities for the proposed system. Map 5 includes the proposed network for Central Richmond.

Many of these recommendations are also included in the Pedestrian Master Plan, and should be coordinated to the fullest extent possible.

Hilltop Area

Several bikeways are proposed for the Hilltop area and surrounding neighborhoods of North Richmond. Wherever possible, Class I paths and Class II bike lanes are recommended. A primary objective for the bike network in these neighborhoods is to provide access to the Bay Trail, and regional access to neighboring jurisdictions and Central Richmond.

El Sobrante Valley

Neighborhoods in the El Sobrante Valley area have a more suburban-rural character, and are defined by the surrounding East Bay Hills and Sobrante Regional Preserve. Access to open space and regional connections are a primary focus for these communities.

The Bay Trail and Wildcat Creek Trail

Richmond’s system of trails and greenways boasts some of the best multi-use paths in the Bay Area. Thanks to the hard work of TRAC and many others, 26 miles of the Bay Trail have already been completed and an additional 15 are proposed. In addition, the Wildcat Creek Trail provides a scenic ride along the creek, and will benefit from an at-grade crossing at the Richmond Parkway.

Key proposed Class I projects include, but are not limited to:

- All proposed Bay Trail improvements included in the San Francisco Bay Trail Plan
- Improvements around the Plunge and tunnel entrances in Point Richmond
- Wildcat Creek Trail – at-grade signalized crossing at the Richmond Parkway

Focus Areas

As part of the master planning process, several focus areas were identified for site-specific recommendations and conceptual plans. The recommendations include short- to long-term improvements, and should be considered as a resource for best practices in bikeway design for other areas in the city. In addition, these plans can be used to pursue project-specific grant funding. The focus areas include the following:

1. Key Bicycle Corridors
2. Road Diets
3. Neighborhood Routes
4. Connecting the west and east spans of the Richmond Greenway
5. Improving safety and access along freeways and through interchanges
6. Improving access to the Bay Trail and waterfront
7. Pt Richmond Bay Trail Improvements at the Plunge

**Focus Area 1 – Key Bicycle Corridors**

Much of Richmond has a well connected street network which provides an excellent opportunity for the City to develop a two-tiered bicycle network for both beginner and more advanced bicyclists. Many residential and regional collector streets provide the most direct connections, but also have heavier and fast-moving vehicle traffic. Wherever possible, Class II bike lanes are recommended for the majority of these streets and should be protected from vehicle traffic to the fullest extent possible. These bikeways may be most appropriate for commuting purposes and access to regional destinations, and will likely attract more experienced bicyclists.

As detailed in the Design Guidelines, bike lanes should be a minimum of five feet wide with a preferred width of six feet, measured from the face of the curb with a minimum area outside of the gutter pan of four feet (three feet for a five foot bike lane). A four foot lane is allowed where there is no on-street parking and no gutter, but is not preferred. When necessary to provide this width, vehicle lanes should be narrowed to 11 feet and in some circumstances a 10 foot curb-side lane. Parking lanes can be narrowed to seven feet. In implementing projects, the City should endeavor to avoid discontinuous segments.

In all cases, bicycle lanes should be striped and marked on both sides of the roadway at one time to provide continuity and discourage wrong-way riding. “Bikes Wrong Way” should be used on the backs of bike lane signs (only visible to riders traveling in the wrong direction). If there are shorter segments of the corridors where there is insufficient width for bicycle lanes, it may be appropriate to provide on-street signage or stencils to raise the visibility of bicyclists and alert motorists that they are likely to encounter cyclists.

In addition to standard bike lanes, several bicycle design and traffic calming treatments should be considered to enhance the comfort and safety along specific routes. These treatments are described in detail in the Design Guidelines. Examples of key corridors in Richmond include, but are not limited to:

- Barrett Avenue
- Cutting Boulevard
- Carlson Boulevard
- Harbour Way
- Marina Bay Pkwy/23rd St
- 37th Street
- San Pablo Avenue
- Hilltop Drive
- Blume Drive
- San Pablo Dam Road

The following graphics provide illustrative examples of proposed improvement options for Key Corridors.

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**Recommended Bicycle Facilities for Key Corridors**

The following bicycle-friendly treatments may be considered along key corridors. These treatments are described in detail in the Design Guidelines.

- 6’ bike lanes
- Physically separated bike lanes with buffer
- Colored bike lanes
- Bicycle loop detection
- Bike boxes
- Super Sharrows
- Accommodation at large intersections and freeway interchanges
- Signage & Wayfinding
- Back-in Angled Parking when angled parking is present
Harbour Way – Existing Roadway

Harbour Way – Proposed Bike Lanes with Back-In Angled Parking

Harbour Way – Proposed Bike Lanes with Parallel Parking and Center Turn Lane

Graphic Source: Richmond Pedestrian Master Plan, MIG and the Local Government Commission
37th Street – Existing Roadway

37th Street – Proposed Bike Lanes with Buffer
37th Street – Proposed Bike Lanes with Back-in Diagonal Parking

Graphic Source: Richmond Pedestrian Master Plan, MIG and the Local Government Commission
Focus Area 2 – Road Diets

Many of Richmond’s collector streets are excellent candidates for a road diet. A road diet refers to street improvements in which the number of vehicle travel lanes is reduced by adding bicycle and parking lanes, widening sidewalks, and converting parallel parking to angled or perpendicular parking. In addition to creating more space for bicyclists and pedestrians, road diets are also a good traffic calming and traffic safety tool. Roadways with surplus roadway capacity (typically multi-lane roadways with less than 15,000 to 17,000 vehicles per day) and high bicycle volumes, and roadways that would benefit from traffic calming measures are most appropriate for this type of treatment.

For example, proposed road diet improvements to the Kearny Street overpass include sidewalk improvements and a physically separated two-way bike lane. These facilities will improve bicycle and pedestrian access to the Iron Triangle and North Richmond neighborhoods.
Focus Area 3 – Neighborhood Routes

To compliment key corridors, a complete system of neighborhood routes are proposed along residential streets which have lighter and slower moving traffic, and provide access to local destinations such as schools and parks. Class III bike routes are most appropriate for these streets, which are relatively narrow and require less separation from auto vehicles. Specifically, bicycle boulevards are the recommended facility for many of these routes, which will facilitate and prioritize bicycle travel through various traffic calming treatments and appropriate traffic controls. These neighborhood routes will be appropriate for bicyclists of all ages and abilities, and ideally, encourage new users to the bicycle network. Neighborhood routes include, but are not limited to:

- Maricopa/ Costa Avenue
- Garvin Avenue
- Roosevelt Avenue
- Nevin Avenue
- Wall/ Central/ Maine Avenue
- 6th/ 7th Street
- Marina Way
- 18th/ 19th Street
- 24th Street
- 29th/ 30th/ 33rd Street
- Wilson Avenue

As shown in the complete table of proposed projects in Appendix A, these routes are connected through a series of secondary on- and off-street segments.

**Bicycle Facilities for Neighborhood Routes**

The following bicycle-friendly treatments may be considered along neighborhood routes. These treatments are described in detail in the Design Guidelines.

- Traffic calming to reduce vehicle speeds such that they mix well with bicyclists and limit non-local traffic
- Changes to stop controlled intersections to reduce stops on the bikeway
- Traffic circles and mini roundabouts
- Curb extensions
- Traffic control at busy intersections
- High-visibility crosswalks
- Landscaping
- Signage & Wayfinding
Focus Area 4: Connecting the west and east spans of the Richmond Greenway

The intersections of Carlson Boulevard/Broadway, the railroad tracks, and 23rd Street/Ohio Avenue comprise one of the most significant barriers on the City’s bicycle network. Located in Central Richmond, just south of the Richmond BART Station and Civic Center area, this site is defined by a series of railroad and BART tracks that restrict bicycle and pedestrian access to key destinations, including the Richmond Greenway, Bay Trail, BART Station and Downtown.

The area’s current configuration provides poor bicycle and pedestrian access. Both 23rd Street and Carlson Boulevard have fast-moving vehicle traffic and poor sightlines. At the Carlson Boulevard/Broadway intersection, overhead BART tracks are supported by columns that reduce visibility around the intersection, and at-grade railroad tracks are a significant barrier to east-west connections. Additionally, 23rd Street runs below grade in this location, further limiting east-west access.

As the roadway and railroad track configuration is confusing, bicyclists and pedestrians would benefit from signage and wayfinding directing users to surrounding destinations.

The western portion of the Richmond Greenway ends at Ohio Avenue and 23rd Street, where there is little accommodation for bicyclists or pedestrians. To connect the eastern portion of the Richmond Greenway, users are supposed to travel under the railroad tracks on 23rd Street, and then loop back to the Greenway on Carlson Boulevard. This route is neither direct nor intuitive, and as a result path users often use an unmarked trail across private property and cross the railroad tracks to Carlson Boulevard. Once at Carlson Boulevard, there is no marked crosswalk or signal in this location for bicyclists and pedestrians to safely cross. Current efforts to fence the railroad tracks may deter people from using the at-grade crossing route, however the suggested route is not viable and vandalism will likely continue to be an issue along the at-grade route.

The eastern portion of the Richmond Greenway ends at Carlson Boulevard, where there is no comfortable access to and from the north. The Greenway entrance lacks a curb cut, so northbound bicyclists ride on the sidewalk, and southbound bicyclists entering Greenway must cut across several lanes of fast moving traffic. There is also an opportunity to provide a Class I connection along east side of Carlson Boulevard adjacent to sidewalk, which may require right-of-way acquisition.

In the short-term, the following improvements may be considered:
- Improve crosswalks at the Carlson Boulevard/Broadway intersection
- Install Class II physically separated bike lanes on Carlson Boulevard
- Install a bike box on 23rd Street at Bissell Avenue to transition bicyclists east. Consider a two-way side path on the 23rd Street frontage road to provide a direct connection between 23rd Street bike lanes and the eastern span of the Richmond Greenway
- Potential lane narrowing or lane reduction on Carlson Boulevard
- Install wayfinding and signage
- Improve the Ohio Avenue crossing for bicyclists and pedestrians
In the medium-term, the following improvements may be considered:

- At-grade bicycle and pedestrian railroad crossing, and associated crosswalk improvements across Carlson Boulevard and 23rd Street to connect the east and west portions of the Richmond Greenway. Right-of-way acquisition may be necessary to provide a pathway connection from 23rd Street to the railroad tracks. Permission from the Public Utilities Commission to construct a new at-grade railroad crossing at this location may be difficult. This improvement should likely be considered in combination with safety enhancements of other nearby railroad crossings at Carlson Boulevard/Maine Avenue and Carlson/Cutting Boulevard.

- Install a staggered crosswalk with median refuge across Carlson Boulevard to connect to the railroad crossing

- 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.

In the long-term, the following improvements may be considered:

- Grade-separated bicycle and pedestrian crossing over 23rd Street to connect the east and west portions of the Richmond Greenway
Richmond Greenway gap closure at Carlson Boulevard/RR tracks/23rd Street—Proposed short- and long-term improvements

Graphic Source: Richmond Pedestrian Master Plan, MIG and the Local Government Commission
Focus Area 5: Improving safety and access along freeways and through interchanges

Barrett Avenue/ Wilson Avenue/ San Pablo Avenue/I-80 interchange

This area serves as a major interchange for vehicle traffic traveling between San Pablo Avenue (SR 123) and I-80, as well as traveling to Downtown Richmond along Barrett Avenue. This is an area of high volumes of high-speed vehicle traffic, which presents significant challenges to creating an area that is safe and comfortable for bicyclists. Nevertheless, many bicyclists already ride on these streets, demonstrating the demand for improved facilities. In addition, bikeway facilities are proposed for a majority of streets surrounding the interchange, including Wilson, Barrett, Roosevelt and San Pablo Avenue. Engineering and design improvements surrounding the interchange will be critical to completing the bicycle network in this area of the city.

In the short-term, the following improvements may be considered:

- Improve the pathway between Wilson Avenue and San Pablo Avenue at Roosevelt Avenue:
  - Realign the path to improve visibility and sightlines
  - Remove debris and improve landscaping
  - Widen the path to 10’-12’. Install ADA-accessible curb ramps

In the medium- to long-term, the following improvements may be considered:

- Improve bicycle and pedestrian access at the Barrett Avenue/44th Street intersection
  - Provide bicycle and pedestrian access between the north side of Barrett Avenue and 44th Street
  - Stripe a crosswalk on the west side of Barrett Avenue

- Move the eastbound vehicle queue back to stop at the new crosswalk
- Provide a pedestrian/bicycle actuated signal with a dedicated phase
- Make 44th Street two-way, in coordination with local residents
- Improve sightlines and install advanced pedestrian crossing signage at the southbound I-80 off-ramp
- Improvements at the I-80/San Pablo Avenue/Roosevelt Avenue intersection
  - Install bike lanes on both sides of San Pablo Avenue in coordination with Caltrans. Special care should be taken to designing these bike lanes to safely facilitate vehicles merging across bike lanes as they enter and exit I-80 from San Pablo Avenue (SR 123).
  - Consider removing the through lane from NB I-80 off-ramp to NB on-ramp and installing a median to protect cyclists heading north on San Pablo Avenue. Preclude the straight-across movement to the on-ramp for all except possibly emergency vehicles (aided by lights and sirens to make this occasional movement safely.
  - Consider squaring up on-ramp configuration to slow traffic and lower the exposure of the bicyclists and pedestrians crossing there.
  - On the approach to the northbound I-80 on-ramp from San Pablo Avenue, consider eliminating the double right turn, and create room for a through bike lane, to the left of the right-turn lane.
Barrett Avenue/ Wilson Avenue/ San Pablo Avenue/I-80 interchange
Proposed short- and long-term improvements

Graphic Source: Richmond Pedestrian Master Plan, MIG and the Local Government Commission
Focus Area 6: Improving access to the Bay Trail and waterfront

Marina Bay Parkway/I-580 interchange

Bicycle access between downtown Richmond and the waterfront is severely impeded by I-580, which connects the Richmond-San Rafael Bridge to I-80. While the freeway itself is a lineal barrier and cuts off many residential streets to the north, the I-580 freeway interchanges also present challenges to bicycle safety and comfort that may deter people from bicycling to and from destinations along the waterfront, including the Bay Trail. Marina Bay Parkway, itself a wide collector street with fast moving vehicle and truck traffic, currently lacks any bicycle facilities. However, with improved accommodation for both bicyclists and pedestrians, this interchange could provide excellent access to important amenities and destinations to the south, including the new Officer Moody Class I path, the existing Bay Trail system, and several commercial and residential areas. Heading north on 23rd Street, access to the Richmond Greenway, downtown Richmond, Civic Center area and the Richmond Intermodal Transit Station should also be improved.

In the short-term, the following improvements may be considered:
- Stripe and sign bike lanes along Marina Bay Parkway. Connect bike lanes to the Officer Moody Class I path at Meeker Avenue/Marina Bay Parkway intersection.
- Consider narrowing or removing travel lanes on South 23rd Street to provide a bicycle and pedestrian connection to downtown Richmond.
- Stripe crosswalks at freeway ramps for pedestrian and bicycle travel across ramps. Locate crosswalks for optimal sightlines and convenience to pedestrians and bicyclists

In the medium- to long-term, the following improvement may be considered:
- Square the freeway off-ramps to slow speeds and improve sightlines between drivers and bicyclists/pedestrians

Marina Bay Parkway/I-580 interchange

Proposed short- and long-term improvements

Graphic Source: Richmond Pedestrian Master Plan, MIG and the Local Government Commission
Focus Area 7 – Bay Trail Improvements at the Plunge

There are several opportunities to improve connections to the existing and proposed Bay Trail in Point Richmond, particularly around the Plunge and tunnel entrances in Point Richmond.

The following graphics illustrate proposed improvements at the Plunge in Point Richmond.

Graphic Source: Bruce Brubaker, TRAC
Ongoing Improvements

The proposed bicycle network improvements for Richmond also include several projects that may be implemented immediately, or prioritized as part of ongoing City efforts. These include:

- **Repaving** – Streets designated as bikeways should be prioritized for repaving. Specifically, sections of Cutting Boulevard, Carlson Boulevard, Harbor Way and 7th Street have poor pavement conditions such as cracked asphalt and uneven lip between the roadway and gutter.

- **Bicycle Loop Detectors** – Signalized intersections along bikeways should have functioning loop detection for bicyclists. The City should develop a citywide program for installing and maintaining bicycle loop detectors, as described in the Design Guidelines. The following intersections have been identified as areas that do not detect bicyclists:
  - Ohio Avenue/23rd Street
  - MacDonald Avenue/16th Street BART entrance
  - Ohio Avenue/ Garrard Avenue
  - Cutting Boulevard/ Canal Boulevard
  - Regatta Boulevard/ Marina Bay Parkway
  - Harbor Way South/ Hoffman Boulevard
  - Marina Bay Parkway/ Department of Public Health complex exit
  - Intersections along Barrett Avenue

- **Street Sweeping** – Roadway debris such as glass, dirt and rocks are frequently blown into bikeways and can be a major deterrent to bicycling. The City should develop a bicycle network maintenance plan which includes regular sweeping so that all bikeways continue to operate optimally.

- **Richmond Greenway Maintenance and Operations** – The Richmond Greenway is the backbone of the City’s existing bikeway network, and has the potential to help transform surrounding neighborhoods for the better. However, issues related to vandalism and theft must be resolved in order for it to achieve its full potential. The City, in collaboration with Rails to Trails, should seek grant funding for a focused study on construction practices and materials, and maintenance and operations to help the City deter crime and vandalism.

**Regional Coordination**

Many of Richmond’s proposed bikeways provide access to neighboring jurisdictions where facilities are already existing or proposed. The City should work with these jurisdictions to ensure a continuous and connected bicycle network throughout West County. In particular, the San Pablo Dam Road/I-80 interchange in the City of San Pablo, and the Central Avenue/I-580/I-80 interchanges at the Richmond/Albany border are significant barriers to bicycle travel to and from Richmond.
7. Bicycle Parking

This section addresses BTA requirement (e): “A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.”

**Introduction**

After on- and off-street bikeways, bicycle parking is the most important element of a community’s bicycling system. Parking is a low-cost yet effective way to encourage cycling and improve the functionality of a bikeway network; it reduces the threat of theft, makes bicyclists feel welcome and increases the visibility of bicycling.

Bicycle parking facilities may be classified either as long-term (also known as Class I) or short-term (Class II). Class I parking 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. Class I facilities are secure and weather-protected; examples include bike lockers and “bicycle corrals” (fenced-in areas usually secured by lock and opened by keys provided to users).
Class II, or short-term parking, is meant for visitors, customers at stores and other users who normally park for less than two hours. The most common example of Class II parking is bicycle racks. Racks should be installed according to manufacturers’ guidelines; be located in secure, well-lighted and highly visible areas; be located as close as possible to the main entrance and no farther from the entrance than the nearest non-handicapped car parking space; be anchored to the ground; and allow for the locking of both the frame and wheels of a bicycle. Guidance on recommended bicycle parking facility types and proper installation is provided in the Design Guidelines.

**Existing Parking Facilities**

The City of Richmond does not require bicycle parking at employment sites or as part of new development projects; it also lacks formal standards, guidelines or recommendations related to bicycle parking. Unlike some other jurisdictions in the Bay Area, the City also does not have a program to install bicycle racks on request on sidewalks, at community facilities or at private sites. Despite these shortcomings, bicycle parking has sprung up in many places throughout the city, in large part through the initiative of individual agencies, organizations and businesses. The following is a list and map of public locations in Richmond where bicycle parking—racks, in almost every case—can be found:

- Civic Center
  - City Hall
  - Macdonald Senior Center
  - Main Library
  - Memorial Auditorium
  - Richmond Art Center

- Parks
  - Bay Vista
  - Booker T. Anderson Jr.
  - Boorman
  - Central Park
  - Hilltop
  - Hilltop Lake
  - Lucretia Edwards
  - Nevin
  - North Richmond Ball
  - Olinda School Field
  - Parchester
  - Richmond Greenway (on east side of Carlson and at access at South 42nd Street)
  - Shields-Reid
  - South Side
  - Vincent

- Other community facilities
  - Bayview Branch Library
  - Contra Costa County Employment and Human Services Department building at 1305 Macdonald Avenue
  - May Valley Community Center
  - Point Richmond Community Center
  - Richmond Swim Center
  - Richmond Recreation Complex
  - Rubicon & 24th Street/Bissell Avenue

Bike racks at the Richmond BART Station are a type of Class II parking facility.
• Souper Center
• West Side (Point Richmond) Branch Library

Transit
• Hilltop Park & Ride lot
• Richmond BART station (downstairs and at the transit station building)

Employment and commercial
• Kaiser Permanene Medical Center
• Pacific East Mall
• Rubicon Employment Services
• Parking lot on northwest corner of Macdonald and San Pablo avenues

Streets and sidewalks
• Macdonald Avenue:
  • at Harbour Way (northeast corner)
  • between Harbour Way and 11th Street (north side)
  • between 11th and 12th Streets (north side)
  • at 12th Street (northeast and northwest corners)
  • between 12th and 13th Streets (north side)
  • at Marina Way (northwest corner)
  • between Marina Way and 15th Street (south side)
  • at 15th Street (southeast corner)
  • at 16th Street (southeast corner)
  • at Civic Center Street (southwest corner)
  • Nevin Avenue at 5th Street (south side)
Map 6 | Bicycle parking locations
Recommendations for Bicycle Parking

There are three strategies that the City of Richmond can adopt to increase the provision of bicycle parking: it may install parking itself on City-controlled property; it may collaborate with other public agencies on installation at locations controlled by them; or it may require private-property owners—including developers, employers, homeowners’ associations and building owners—to provide parking on their property. (These are the same strategies that are used, at much greater expense, to provide car parking.) Below are several recommendations for implementing these strategies.

1. Install bicycle parking at all City facilities

Install both long- and short-term bicycle parking, as appropriate, at all City-owned and -operated facilities. Such facilities include parks, playgrounds and other recreational facilities, community centers, and office buildings and other workplaces for City staff. In addition, all schools should provide bicycle parking not only for students but also for faculty and other staff. Bicycle parking should always be incorporated in the development of new City facilities, while existing facilities that lack bicycle parking may be retrofitted easily and inexpensively. 511 Contra Costa—the transportation demand management program sponsored by all the county’s local jurisdictions—provides free bicycle racks and lockers for public buildings as well as for retail centers and private employment sites.

2. Institute a program to install sidewalk racks on request

Institute a program to install bicycle racks at public sidewalk locations requested by the public at large (inverted “U”-type racks, which could be produced locally, bolted into the sidewalk are generally the best option). The program could begin by prioritizing locations in the downtown, commercial areas and other key destinations or requests by merchants for parking in front of their stores. Ultimately, there should be bike racks on both sides of every block of all commercial corridors in the city. In particular, racks should be located in front of food stores, restaurants, delis, drugstores, neighborhood-serving retail stores and other business that people visit frequently and for short periods of time, and that are often located near people’s homes. The City of Oakland has a well-established sidewalk rack program that could be used as a model; since 1999, that program has installed almost 1,400 racks (and lockers) in commercial districts throughout the city, using sales-tax funds and various other funding sources.

- City of Oakland’s “CityRacks” bicycle parking program:
  www.oaklandbikes.info/Page127.aspx#racks

3. Install bicycle parking at priority AC Transit bus stops

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 and ranked them as follows:

1. Richmond Bart Station
2. San Pablo Ave: Moeser Lane
3. San Pablo Ave: Bayview Ave
4. San Pablo Ave: Stockton Ave
5. San Pablo Ave: Manila Ave
6. Macdonald Ave: 7th St
7. Macdonald Ave: 12th St
8. Cutting Blvd: S 41st St
9. Cutting Blvd: S 38th St
10. Central Ave: Belmont Ave
11. 22nd St: Bissell Ave
12. Macdonald Ave: Marina Way
13. Macdonald Ave: 21st St
14. Macdonald Ave: 13th St
15. San Pablo Ave: Garvin Ave
16. Macdonald Ave: 25th St
17. San Pablo Ave: Garvin Ave
18. Macdonald Ave: Harbour Wy
19. San Pablo Ave: Panama Ave
20. San Pablo Ave: Lincoln Ave
21. Filbert St: Duboce St
22. Filbert St: Chesley Ave
23. Cutting Blvd: S 49th St
24. Cutting Blvd: S 45th St (Kennedy Sr High School)
25. Cutting Blvd: S 37th St
26. Cutting Blvd: S 35th St
27. 23rd St: Rheem Ave
28. 23rd St: Downer Ave
29. 23rd St: Alfreda Blvd (Richmond High School)
30. Marina Wy: Nevin Ave
31. Macdonald Ave: 1st St
32. 3rd St: Grove Ave
33. San Pablo Ave: Schmidt Lane
34. Macdonald Ave: Civic Center Plaza
35. Macdonald Ave: 37th St
36. Macdonald Ave: 33rd St
37. Macdonald Ave: 31st St
38. Macdonald Ave: 27th St
Macdonald Ave: 23rd St

Most, if not all, of these locations are under the jurisdiction of the City of Richmond. At such locations, the installation and maintenance of bicycle parking facilities is the responsibility of the City. The City should use the results of the study report to prioritize bus stop locations for improvements and, in collaboration with AC Transit, to plan for the appropriate quantity, installation and maintenance of bicycle parking facilities.

4. Adopt an ordinance to require bike parking as part of development projects

Adopt an ordinance requiring that both secure and weather protected long- and short-term bicycle parking, as appropriate, be included in all new residential, commercial, office, institutional and industrial development projects and remodels meeting certain size criteria. The City of Richmond may want to use the Oakland bicycle parking ordinance as its model. Oakland’s ordinance contains requirements for the design, location and installation of bicycle parking facilities and minimum number of parking spaces. The required number of spaces varies according to the project’s land use or activity, as categorized by the City’s planning code. The table below includes the long- and short-term parking-space standards for the most common types of development projects; where proposed land uses do not conform to the descriptions in the table, one bicycle parking space should be provided for every 20 vehicle parking spaces.
<table>
<thead>
<tr>
<th>Type of activity</th>
<th>Long-term</th>
<th>Short-term</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-family dwelling</td>
<td>No spaces required</td>
<td>No spaces required</td>
</tr>
<tr>
<td>Multifamily dwelling without private garage for each unit</td>
<td>1 space for each 4 dwelling units. Minimum requirement is 2 spaces.</td>
<td>1 space for each 20 dwelling units. Minimum requirement is 2 spaces.</td>
</tr>
<tr>
<td>General retail sales</td>
<td>1 space for each 12,000 s.f. of floor area. Minimum requirement is 2 spaces.</td>
<td>1 space for each 5,000 s.f. of floor area. Minimum requirement is 2 spaces.</td>
</tr>
<tr>
<td>General food sales (grocery stores, restaurants)</td>
<td>1 space for each 12,000 s.f. of floor area. Minimum requirement is 2 spaces.</td>
<td>1 space for each 2,000 s.f. of floor area. Minimum requirement is 2 spaces.</td>
</tr>
<tr>
<td>Office</td>
<td>1 space for each 10,000 s.f. of floor area. Minimum requirement is 2 spaces.</td>
<td>1 space for each 20,000 s.f. of floor area. Minimum requirement is 2 spaces.</td>
</tr>
</tbody>
</table>

The Oakland ordinance also contains requirements for shower and locker facilities in very large commercial projects; considerations for granting variances under the ordinance; and a provision for reducing the required number of off-street car parking spaces based on the number of bike parking spaces provided in excess of the requirements.

- **Consider requiring valet bike parking at large events**

  Consider requiring sponsors of large public events, such as concerts and fairs, to provide and publicize attended, or valet, bicycle parking in secure, fenced-in “corrals” as a way to mitigate the transportation impacts of such events. Valet bike parking would not only be a welcome service to regular cyclists but also encourage others to ride instead of drive. Event sponsors would need to set aside some space for the corral and use either paid staff or volunteers to park and retrieve the bikes. The East Bay Bicycle Coalition provides valet bike parking as a public service at various community events throughout the year in Contra Costa.

- **Seek opportunities to design and fabricate bicycle racks within the City**

  To support local jobs and economic development within Richmond, the City should take advantage of opportunities to employ local metalworkers to manufacture bicycle racks for installation throughout the City.

- **Parking webpage of the city of Oakland’s bicycle program:**
  www.oaklandbikes.info/Page127.aspx
INTRODUCTION

While traffic collisions can affect anyone, they have a disproportionate impact on bicyclists, who along with pedestrians are the most vulnerable users of the transportation system. Data on collisions involving bicyclists can help planners and other decision-makers identify specific locations and support programs—safety, education or enforcement—on which to focus efforts. The data presented in this section comes from the California Highway Patrol’s Statewide Integrated Traffic Records System (SWITRS), a database of traffic collisions as reported to and collected by local police departments and other law enforcement agencies across the state.

We examined data for the five-year period from 2004 to 2008, 2008 being the latest full year for which data is available. Because SWITRS consists only of reports taken by officers in the field, the incidents in the database represent only a portion of all collisions; it also means that the incidents in SWITRS are more likely to be serious ones, since minor collisions are less likely to be reported to a police officer and lead to police response. Despite these limitations, SWITRS remains the most comprehensive source of information about traffic collisions involving bicyclists not only in Richmond but throughout most of the state.

When reading this section, it is worth keeping in mind that most bicycle collisions do not involve motor vehicles. Hospitalization data have shown that a majority of bicycle injuries involve collisions with stationary objects, other cyclists or pedestrians. Such collisions are unlikely to be included in SWITRS (for a number of reasons that are beyond the scope of this section) and are therefore not reflected in our analysis.

► CHP’s Statewide Integrated Traffic Records System (SWITRS):
  http://www.chp.ca.gov/switrs/index_menu.html
**Fatalities and Injuries**

For the 2004–2008 period, SWITRS reports precisely 100 traffic collisions involving bicyclists. These collisions resulted in six bicyclists killed and 100 injured (Table 8). The range of annual fatalities was 1–3 and the average was 1.2; the range of annual injured was 11–27 and the average was 20.0. The numbers show no discernible trend between 2004 and 2008 in the number of bicyclists killed or injured. For context, the numbers for all of Contra Costa County bicycle collisions are also given. The county, which has a population roughly ten times greater than Richmond’s, had 23 bicycle fatalities and 1,193 injured during the same time period.

Available data (not shown here) supports the observation that bicyclists in Richmond suffer disproportionately from traffic collisions (as do pedestrians); this is a pattern replicated in most other communities. In Richmond, bicycling accounts for less than 2 percent of primary work trips and commuting. However, in 2004–2008 bicyclists made up over 15 percent of all traffic fatalities in the city (6 out of 39). In terms of injuries, the numbers are more proportionate, with bicyclists constituting just over 3 percent of all people injured in traffic collisions (100 out of 3,124).

<table>
<thead>
<tr>
<th>Table 8</th>
<th>Bicyclists killed and injured (2004-2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Richmond</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Killed</strong></td>
</tr>
<tr>
<td>2004</td>
<td>1</td>
</tr>
<tr>
<td>2005</td>
<td>0</td>
</tr>
<tr>
<td>2006</td>
<td>3</td>
</tr>
<tr>
<td>2007</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td><strong>Annual average</strong></td>
<td>1.2</td>
</tr>
</tbody>
</table>

The following is comparative collision data from the California Office of Traffic Safety, which shows that for 2008 bicycle collisions, Richmond ranks 36th out of 52 California cities with a similar population size.

<table>
<thead>
<tr>
<th>Table 9</th>
<th>Traffic collisions and rankings (and percentile), 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of collision</strong></td>
<td><strong>Victims killed and injured</strong></td>
</tr>
<tr>
<td>Bicyclists</td>
<td>24</td>
</tr>
<tr>
<td>Bicyclists &lt; 15</td>
<td>2</td>
</tr>
</tbody>
</table>

Collisions hot spots

As the map of collision locations shows, the vast majority of bicycling fatalities and injuries occurred in an area bound roughly by Cutting Boulevard to the south, Garrard Boulevard/Richmond Parkway to the west, Costa Avenue/Maricopa Avenue to the north and the city limits to the east. While this area makes up only a third or so of Richmond’s total land mass, it should not be surprising that most bicycling fatalities and injuries occur here: this is the area of the city where most bicycling occurs; it is flat and compact; encompasses most of the population’ contains many of the city’s key destinations (including the BART station, Civic Center and Kaiser Permanente Medical Center) and has a higher percentage of zero-car households.

Even within the concentrated area mentioned above, there appear to be four main “hot spot” corridors. Roughly, these are:

- 13th Street/Harbour Way between Hellings and Barrett avenues, and west on Barrett Avenue to 2nd Street
- Macdonald Avenue between 24th and 2nd streets and again between 39th Street and San Pablo Avenue
- 22nd and 23rd streets and adjacent streets between Costa and Potrero avenues
- Cutting Boulevard between 41st Street and Marina Bay Parkway

While the hotspots listed above, and central Richmond in general, experience most of the bicycle collisions, it should not be assumed that these places are the riskiest or most hazardous for bicyclists. When evaluating the safety of an area, the number of collisions tells only part of the story. For a more meaningful evaluation, the data need to be adjusted for the number of bicycle commuters or of bicycling trips in the area, to account for bicyclists’ “exposure.” It is possible—indeed, likely—that the places mentioned above have the most collisions simply because they also have the highest bicycle volumes. If that is the case, the risk of any given bicyclist being hit by a motor vehicle might even be lower in an area that experiences more collisions. Unfortunately, at this time there is no reliable systematic method for estimating bicycle exposure and, therefore, the relative safety of an area.
Map 7 | Bicycle-vehicle collisions, 2004-2008
Other factors

Besides raw numbers and location, there are other ways in which it is useful to analyze collision data involving bicyclists. For example, of the 100 collisions involving bicyclists in Richmond between 2004 and 2008, 60 took place at intersections; the rest took place on straightaways. Other relevant factors are considered in the tables below. They include party at fault (Table 10), primary collision factor (Table 11), violation (Table 12), time of day (Table 13) and bicyclist’s age (Table 14).

Table 10, below, shows that the bicyclist was found to be at fault almost 60 percent of the time in the Richmond collisions and almost twice as often as the driver. This strongly suggests the need for more training and education of bicyclists on safe riding techniques and, more generally, on their responsibilities on the road. Of course, since drivers were at fault more than 30 percent of the time, more education of drivers on the rights of bicyclists should also be part of the city’s efforts to promote traffic safety.

Table 11 breaks down the Richmond collisions by “primary collision factor” (in the reports, “R-O-W ped” is used to refer not only to pedestrians’ right-of-way but also to bicyclists’). By far the most common primary collision factor was the bicyclist riding on the wrong side of the street. This is followed by “R-O-W auto” (the reports’ citation of this factor is confusing: depending on which party was at fault, it could mean either the bicyclist not yielding to the driver’s right-of-way or the driver observing his or her right-of-way improperly). The third most common primary collision factor was failure to stop at a sign or signal. These three factors accounted for almost 70 percent of collisions.

The numbers suggest that targeted efforts to reduce the incidence of wrong-way bicycle riding promise the greatest reduction in bicycle-related collisions. Such efforts could consist of training and education on safe riding or of engineering fixes that address bicyclists’ real or perceived need to ride on the wrong side of the street. An example of an engineering solution would be to convert a one-way street used as a bike route into a two-way street.

Table 11 | Collisions by primary collision factor

<table>
<thead>
<tr>
<th></th>
<th>Bicyclist at fault</th>
<th>Driver at fault</th>
<th>Other at fault / not stated</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong side</td>
<td>29</td>
<td>1</td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>R-O-W auto</td>
<td>11</td>
<td>9</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>Stop sign / signal</td>
<td>11</td>
<td>4</td>
<td>--</td>
<td>15</td>
</tr>
<tr>
<td>R-O-W ped</td>
<td>--</td>
<td>6</td>
<td>--</td>
<td>6</td>
</tr>
<tr>
<td>Improper turn</td>
<td>3</td>
<td>4</td>
<td>--</td>
<td>7</td>
</tr>
<tr>
<td>Improper pass</td>
<td>--</td>
<td>3</td>
<td>--</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Not stated</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>31</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 12 lists the violations of the California Vehicle Code related to the primary collision factors. The results generally mirror those in tables 2 and 3.
Table 12 | **Collisions by California Vehicle Code violation**

<table>
<thead>
<tr>
<th>Violation Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>21650.1 (bicycle riding on wrong side of the street)</td>
<td>16</td>
</tr>
<tr>
<td>21202 (bicyclist not riding as close as practicable to the right-hand curb)</td>
<td>12</td>
</tr>
<tr>
<td>22450 (not stopping at stop sign)</td>
<td>11</td>
</tr>
<tr>
<td>22107 (unsafe or improper turning)</td>
<td>7</td>
</tr>
<tr>
<td>21802 (not yielding to other stopped vehicle at stop sign)</td>
<td>8</td>
</tr>
<tr>
<td>21950 (not yielding to pedestrian at crosswalk)</td>
<td>6</td>
</tr>
<tr>
<td>21453 (not stopping at traffic light)</td>
<td>5</td>
</tr>
<tr>
<td>21804 (not yielding when entering or crossing a street)</td>
<td>5</td>
</tr>
<tr>
<td>21800 (not yielding to vehicle in an intersection)</td>
<td>4</td>
</tr>
<tr>
<td>21801 (not yielding to oncoming vehicle when turning)</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
</tr>
<tr>
<td>Not stated</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 13 categorizes the collisions by the time of day in which they occurred. Almost three quarters of collisions occurred in the afternoon and evening. The fact that almost 40 percent of collisions occurred in the afternoon suggests that many bicyclists in Richmond ride outside of the regular morning and evening commute hours.

Table 13 | **Collisions by time of day**

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning (6:00–11:59 am)</td>
<td>22</td>
</tr>
<tr>
<td>Afternoon (12:00–4:59 pm)</td>
<td>37</td>
</tr>
<tr>
<td>Evening (5:00–9:59 pm)</td>
<td>37</td>
</tr>
<tr>
<td>Night (10:00 pm–5:59 am)</td>
<td>3</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 14 lists the bicyclists involved in collisions by age group. (Tables 8-13 refer to collisions involving bicyclists, whereas Table 14 refers to the bicyclists involved. It totals more than 100 because some collisions involved more than one bicyclist.) The age range of the bicyclists was 5–77. A majority were in the 35–64 age group and almost three quarters were between 18 and 64 years old. This strongly suggests the need for more bicycle training and education oriented toward adults.

Table 14 | **Bicyclists involved in collisions by age group**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–12</td>
<td>15</td>
</tr>
<tr>
<td>13–17</td>
<td>9</td>
</tr>
<tr>
<td>18–34</td>
<td>23</td>
</tr>
<tr>
<td>35–64</td>
<td>51</td>
</tr>
<tr>
<td>65 and older</td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>103</strong></td>
</tr>
</tbody>
</table>

**Conclusions**

Below are key findings and conclusions related to our analysis of bicycle collision data:

**Trend:**

The numbers of bicyclists killed or injured in Richmond between 2004 and 20008 show no discernible trend. Fatalities spiked from zero in 2005 to three in 2006 but dropped back to zero in 2007. The number injured dropped significantly from 27 to 11 between 2005 and 2006 but has since crept up to 23, the level at which it was in 2004.
Hot spots

The vast majority of bicycling fatalities and injuries occurred in central Richmond, and four collision hot spots have been identified. These are not necessarily the most hazardous places for cyclists in relative terms, once exposure is taken into account; they are, however, the most dangerous in terms of absolute numbers of collisions, fatalities and injuries. For this reason, collision hot spots should be prioritized for physical improvements to increase bicycling safety. The plan chapter on the bicycle network will determine the types of improvements that are best for various streets while the chapter on implementation will establish priorities among these improvements. The location of collision hotspots, and bicycling safety in general, will be crucial considerations in the process to select and prioritize improvements.

Party at fault and primary collision factor

Bicyclists were found to be at fault in almost 60 percent of the collisions. By far the most common primary collision factor was wrong-way bicycle riding. Consistent with this, the most common violation was bicycle riding on the wrong side of the street; this was followed by not riding as close as practicable to the right-hand curb and not stopping at the stop sign (this one is applicable to both bicyclists and drivers). The data strongly suggests the need for more training and education of bicyclists on safe riding techniques, especially on riding in the direction of traffic. It also suggests the need for more motorist education on dealing with bicycles in traffic. The plan chapter on support programs will recommend education and law-enforcement programs—or efforts within existing programs—to promote safer bicycling.

Time of day and bicyclists’ age

Almost three quarters of collisions occurred in the afternoon and evening, evenly split between the two periods. The fact that almost 40 percent of collisions occurred in the afternoon suggests that many bicyclists in Richmond ride outside of the regular morning and evening commute hours. A majority of bicyclists involved in collisions were in the 35–64 age group and almost three quarters were between 18 and 64 years old. This strongly suggests the need for more bicycle training and education oriented toward adults. The plan chapter on support programs will incorporate suggestions for safety, education and law-enforcement efforts that target different age groups and types of bicyclists.

Recommendations

Collision trends evolve over years rather than months, so we do not suggest conducting an analysis of the data as thorough as this one on an annual basis. However, this analysis should be thoroughly updated at least every five years. In the meantime, we recommend several monitoring and reporting actions related to bicycle collisions that should be conducted annually. (As mentioned in the previous section, other plan chapters will include recommendations on physical improvements and support programs.)

These recommendations are consistent with Chapter 14.08 of the Richmond Municipal Code, which requires the Police Department to: maintain traffic collision reports; share such reports with the Public Works Department; and submit annual traffic safety reports to the City Council containing not only raw collision information but also “[t]he plans and recommendations of the [uniform division of the Police Department] for future traffic safety activities.” Unless indicated otherwise, our recommendations are directed at the Richmond Police Department.
Department. Again, the recommended actions should be conducted annually.

SWITRS reports
- Obtain standardized SWITRS reports for collisions in Richmond involving bicyclists for the latest available calendar year (SWITRS data is typically seven months behind the current date).
- Share the reports with the Public Works Department and the Community & Economic Development Department.
- Make the reports publicly available on the City’s website, both as PDFs and as database-importable data, ideally in a new section dedicated to bicycle collisions.
- Maintain publicly available reports online covering at least the previous five years (start out by making available reports for 2004–2008).

Trends
- Compare the numbers of bicycle collisions, fatalities and injuries for the previous five years; look for significant or consistent increases or decreases in the numbers.
- If any trends or significant changes are observed, hold a meeting with engineering and planning staff from the Public Works and Community & Economic Development departments to discuss possible causes and brainstorm potential solutions.
- Include information about trends, causes and solutions in the annual traffic safety report to the City Council.
- Make the annual traffic safety reports publicly available on the City’s website.

Hot spots
- Using SWITRS data, create a map of the locations of collisions involving bicyclists for the previous five years; on the map, differentiate collisions involving fatalities, injuries and neither fatalities nor injuries.
- Share the maps with the Public Works Department and the Community & Economic Development Department.
- Make the maps publicly available as PDFs on the City’s website, ideally in the same section as the SWITRS reports.
- Examine the maps for hot spots, or concentrations of collisions; look for a string of collisions on the same street, for a cluster at or near the same intersection or for a cluster on several nearby street blocks.
- If a hot spot is found that is not mentioned or is not visible on the map in this chapter, hold a meeting with engineering and planning staff from the Public Works and Community & Economic Development departments to discuss possible causes and brainstorm potential solutions.
- Include information about bicycle collision locations and hot spots in the annual traffic safety report to the City Council.
This section addresses BTA requirement (g): “A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicyclists.”

Existing Programs

Education is a critical element for a complete and balanced approach to improving both bicycling and pedestrian safety in Richmond. Education campaigns could include residents of all ages, especially emphasizing education of school children where safe bicycling habits may be instilled as lifelong lessons. The following organizations and projects are involved in bicycle education initiatives in Richmond.

Safe Routes to School

Richmond has applied for multiple state and federal Safe Routes to Schools grants in recent years and has been awarded more than five grants, primarily for infrastructure improvements. Richmond has used Safe Routes to School funds for pedestrian infrastructure such as sidewalks, bulb-outs, and in-pavement flashers. In addition, Contra Costa Health Services (CCHS) conducts pedestrian and bicycle safety education and Safe Routes to School activities in selected Richmond middle and elementary schools. At the elementary level, activities include classroom presentations and the use of educational incentive items. CCHS also implemented the West Contra Costa Street Smarts Campaign; a media/materials based traffic safety education campaign in Richmond and elsewhere in West County. The latter is a partnership with the City through the West Contra Costa Transportation Advisory Committee; however this program is no longer funded.
Contra Costa Health Services

CCHS has been actively involved in bicycle and pedestrian safety efforts in Richmond. Since 2003 the CCHS Injury Prevention Project has made strides towards locating and prioritizing hotspots and improving pedestrian and bicycle safety through prevention. The Project has resulted in key traffic safety profiles, identification of hotspot intersections and improvement recommendations for areas such as the North and East neighborhood, where prevalent speeding on local streets is a critical concern.

Richmond Spokes

Richmond Spokes is a 501(c)3 entrepreneurial youth training program focused on the bicycling industry. The non-profit organization empowers young entrepreneurs to design, plan, market and execute their ideas. Youth participants in Richmond Spokes provide local, national and international cyclists with professional bicycle services, sales and accessories. Staff identify as cycle cultured adults who partner with youth participants to make Richmond greener, safer and more sustainable city. Through education, empowerment, employment, and engagement Richmond Spokes encourages self-sufficiency, job skill training, educational opportunities and a culture of stewards who use cycling and sustainable transportation to enable physical, personal, and professional mobility.

http://sites.google.com/a/richmondspokes.org/about/

The Yellow Brick Road

The Yellow Brick Road is a youth conceived Safe Routes to Schools project that would be based in the Iron Triangle neighborhood of Richmond. The project would be led by Opportunity West, a community center that provides support to high-risk families and youth. Thus far, the Yellow Brick Road project has conducted walking audits and workshops to identify opportunities for safety improvements.

Recommendations

The focus in bicycling planning is often on building capital projects. Support programs are important because they increase the safety, utility and viability of those projects. Municipalities provide support to, and even administer, a broad range of programs and activities related to bicycling safety, education, promotion and law enforcement as a way to complement their project-building efforts. Below is a list of programs and activities that have proven effective in other jurisdictions and which the City of Richmond could choose to offer its residents.
**Education**

- Provide funding and logistical support to the East Bay Bicycle Coalition for safe riding classes in Richmond.
- Offer bicycle rodeos ("road-eos") at public schools to teach children the basics of safe bicycling (and walking) in their neighborhood and to school.
- Distribute brochures to the public—especially to motorists—on traffic laws and bicyclists’ right to use the road.
- Require that City planners and engineers attend trainings on bicycle planning and design.

**Encouragement and promotion**

- Provide funding and logistical support toward Bike to Work Day activities, and help publicize the event.
- Print and distribute full-color copies of maps of the city’s existing and proposed bikeway system—including key destinations and bike parking facilities—to schools, major employers and community organizations, among others.
- Publicize and distribute the Bicycle Master Plan among City staff, appointed and elected officials, and neighborhood and other community groups.
- Develop a bicycle fleet for use by City staff for work trips.
- Provide financial incentives—as well as lockers and showers—for employees who bike to work.
- Provide funding and logistical support to community-based organizations that offer bicycle repair and maintenance workshops for children.

**Law Enforcement**

- Enforce traffic laws for both motorists and bicyclists.
- Train police officers on the rights of bicyclists.

- Establish a bicycle patrol unit within the Richmond Police Department.
- Hand out “safe riding” tickets to children to reinforce positive behaviors.
10. Funding and implementation

**Funding Strategy**

There are numerous funding sources at the federal, state, regional, county and local levels that are potentially available to the City of Richmond to implement the bicycle projects and programs in the BMP. The City should expect that one of the main funding sources—if not the main one—will be Measure J, the local half-cent sales tax for transportation, which was approved by county voters in 2004. Below is a description of the most promising funding programs, organized into two categories: programs under Measure J, which are administered by the Contra Costa Transportation Authority (CCTA); and programs administered by other agencies and organizations.

**Measure J**

Measure J authorized a number of funding programs that may be used for bicycle projects and programs. These are listed below (including the amount of funding available under each program) and are described in more detail in the expenditure plan for the measure.

- **Measure J expenditure plan:**
  www.ccta.net/assets/documents/Measure%20J_expenditure%20plan.pdf

**Pedestrian, Bicycle and Trail Facilities ($23.3 million)**

This is the single most important source of funds for bicycle projects under Measure J. It amounts to $23.3 million, or 1.5 percent of the total revenue authorized by Measure J, over 25 years. Two-thirds of the funds, or $15.5 million, are to “complete projects in the Countywide Bicycle and Pedestrian Plan.” The remaining one-third ($7.8 million) is “to be allocated to the EBRPD for the development and rehabilitation of paved regional trails.”
Local Streets and Road Maintenance

According to the expenditure plan, funds under this program “may be used for any transportation purpose eligible under the Act .... Pedestrian and bicycle facilities are an important part of the regional transportation system. Moreover, as appropriate, components for routine accommodation of bicycle and pedestrian travel shall be incorporated as part of construction projects.”

Contra Costa Transportation for Livable Communities (CC-TLC) ($77.5 million)

From the expenditure plan: “The CC-TLC Program is intended to support local efforts to achieve more compact, mixed-use development, and development that is pedestrian-friendly or linked into the overall transit system. The program will fund specific transportation projects that: (a) facilitate, support and/or catalyze developments, especially affordable housing, transit-oriented or mixed-use development, or (b) encourage the use of alternatives to the single occupant vehicle and promote walking, bicycling and/or transit usage. Typical investments include pedestrian, bicycle, and streetscape facilities, traffic calming and transit access improvements. Both planning grants and specific transportation capital projects may receive funding under this program....”

Commute Alternatives ($15.5 million)

“This program will provide and promote alternatives to commuting in single occupant vehicles, including carpools, vanpools and transit. Eligible types of projects may include but are not limited to: parking facilities, carpooling, vanpooling, transit, bicycle and pedestrian facilities (including sidewalks, lockers, racks, etc.), Guaranteed Ride Home, congestion mitigation programs, SchoolPool, and clean fuel vehicle projects.”

Major Streets: Traffic Flow, Safety, and Capacity Improvements ($62.3 million)

Funds under this source will be available to all local jurisdictions for “Improvements to major thoroughfares including but not limited to installation of bike facilities, traffic signals, widening, traffic calming and pedestrian safety improvements, shoulders, sidewalks, curbs and gutters, bus transit facility enhancements such as bus turnouts and passenger amenities.”

Additional Funding for Livable Communities ($6.2 million)

“This program will provide additional funding for West County to supplement the overall Transportation for Livable Communities Program, with specific projects to be identified by WCCTAC.” WCCTAC represents West County jurisdictions, including the City of Richmond.

Additional Pedestrian, Bicycle and Trail Facilities ($0.6 million)

“WCCTAC will propose programming these funds for additional trail/pedestrian/bicycle capital projects, and/or facility maintenance in West County.”

Eligible project types under Measure J funding sources

<table>
<thead>
<tr>
<th>Pedestrian, Bicycle and Trail Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pedestrian, bicycle and trail facilities that “complete projects in the Countywide Bicycle and Pedestrian Plan”</td>
</tr>
</tbody>
</table>
• Development and rehabilitation of paved EBRPD trails, to be spent equally in each subregion

Local Streets and Road Maintenance
• Generally any transportation purpose, including pedestrian and bicycle facilities

Contra Costa Transportation for Livable Communities
• Transportation projects that: (a) facilitate, support and/or catalyze developments, especially affordable housing, transit-oriented or mixed-use development, or (b) encourage the use of alternatives to the single occupant vehicle and promote walking, bicycling and/or transit usage
• Examples: pedestrian, bicycle, streetscape facilities, traffic calming and transit access improvements
• Both planning and capital projects

Commute Alternatives
• Alternatives to commuting in single occupant vehicles
• Examples: parking facilities; carpooling; vanpooling; transit, bicycle and pedestrian facilities; Guaranteed Ride Home; congestion mitigation programs; SchoolPool; and clean fuel vehicle projects

Major Streets: Traffic Flow, Safety, and Capacity Improvements
• Improvements to major thoroughfares
• Examples: traffic signals; widening; traffic calming and pedestrian safety improvements; bike facilities; shoulders; sidewalks; curbs and gutters; and bus transit facility enhancements

Additional Funding for Livable Communities
• Same as under Transportation for Livable Communities (see above), but only in West County

Additional Pedestrian, Bicycle and Trail Facilities
• Pedestrian, bicycle and trail facilities in West County
• Both capital and maintenance projects

**Other Funding Sources**

Below is a list of funding programs besides Measure J that routinely fund the development of bicycle facilities and programs in cities throughout the Bay Area. The first five are administered by MTC while the rest are administered by other agencies and organizations, as described below. It should be kept in mind that most of these sources are highly competitive and require the preparation of extensive and time-consuming applications.

**Regional Bikeway Network Program**

MTC’s “Regional Bicycle Plan for the San Francisco Bay Area” designates a regional bikeway network covering approximately 2,140 miles throughout the nine Bay Area counties. MTC has pledged $1 billion to fully fund this regional bikeway network (with the exception of links on toll bridges) and will create a funding program with the intention of completing construction of the network by 2035. This program will replace the expired Regional Bicycle and Pedestrian Program.

**Transportation Enhancements**

Under the Transportation Enhancements (TE) program, California receives approximately $60 million per year from the federal government to fund projects and activities that enhance the surface transportation system. The program funds projects under 12 eligible categories, including the provision of bike lanes, trails, bicycle parking and other bicycling facilities; safety-education activities for pedestrians and bicyclists; landscaping, streetscaping and other scenic beautification projects; and the preservation of abandoned railway corridors and their conversion to trails for nonmotorized transportation. In California, 75 percent of TE funding is distributed by the regional transportation planning agencies. For the Bay Area, MTC allocates the money
through its Transportation for Livable Communities program (see below). The remaining 25 percent is allocated by Caltrans at the district level.

**Transportation for Livable Communities**

MTC created the Transportation for Livable Communities (TLC) program—not to be confused with the CC-TLC program under Measure J—in 1998. It provides technical assistance and funding to cities, counties, transit agencies and nonprofit organizations for capital projects and community-based planning that encourage multimodal travel and the revitalization of town centers and other mixed-use neighborhoods. The program funds projects that improve bicycling to transit stations, neighborhood commercial districts and other major activity centers.

- **MTC’s TLC program:** [www.mtc.ca.gov/planning/smart_growth/ tlc_grants.htm](http://www.mtc.ca.gov/planning/smart_growth/ tlc_grants.htm)

**Transportation Development Act (TDA), Article 3**

TDA Article 3 is perhaps the most readily available source of local funding for bicycle projects. TDA funds are derived from a statewide quarter-cent retail sales tax. This tax is returned to the county of origin and distributed to the cities and county on a population basis. Under TDA Article 3, two percent of each entity’s TDA allocation is set aside for pedestrian and bicycle projects; this generates approximately $3 million in the Bay Area annually. Eligible projects include the design and construction of walkways, bike paths and bike lanes, and safety education programs. According to MTC Resolution 875, these projects must be included in an adopted general plan or bicycle plan and must have been reviewed by the relevant city or county bicycle advisory committee.

- **MTC’s Procedures and Project Evaluation Criteria for the TDA Article 3 program:** [www.mtc.ca.gov/funding/STA-TDA/RES-0875.doc](http://www.mtc.ca.gov/funding/STA-TDA/RES-0875.doc)

**Climate Action Program**

In partnership with the Bay Area Air Quality Management District, Bay Conservation Development Commission and the Association of Bay Area Governments, MTC is sponsoring a transportation-oriented Climate Action Program, designed to reduce mobile emissions through various strategies, including a grant program. The grant program will provide funding for bicycle projects through new Safe Routes to School and Safe Routes to Transit programs, with total funding expected to be approximately $400 million. This funding will be in addition to the state and federal Safe Routes to School programs and MTC’s existing Safe Routes to Transit program.

**Bicycle Transportation Account (BTA)**

The BTA is a Caltrans-administered program that provides funding to cities and counties for projects that improve the safety and convenience of bicycle commuting. Eligible projects include secure bike parking; bike-carrying facilities on transit vehicles; installation of traffic-control devices that facilitate bicycling; planning, design, construction and maintenance of bikeways that serve major transportation corridors; and elimination of hazards to bike commuters. In fiscal year 2008/09, the BTA provided $7.2 million for projects throughout the state. To be eligible for BTA funds, a city or county must prepare and adopt a bicycle transportation plan that meets the requirements outlined in Section 891.2 of the California Streets and Highways Code.

- **Bicycle Transportation Account:** [www.dot.ca.gov/hq/LocalPrograms/bta/btawebPage.htm](http://www.dot.ca.gov/hq/LocalPrograms/bta/btawebPage.htm)
Safe Routes to Transit (SR2T)

SR2T is a grant-funding program that emerged out of the Bay Area’s Regional Measure 2, which instituted a $1 toll increase on the Bay Area’s seven state-owned toll bridges. Through the SR2T program, up to $20 million is to be allocated through 2013 on a competitive basis to programs, planning efforts and capital projects designed to reduce congestion on toll bridges by improving bicycling and walking access to regional transit services that serve toll-bridge corridors. Funds can be used for secure bike storage at transit; safety enhancements and barrier removal for bike access to transit; and systemwide transit enhancements to accommodate bicyclists. The SR2T program is administered by two nonprofit organizations, TransForm and the East Bay Bicycle Coalition, with MTC serving as the fiscal agent. The program awarded approximately $3.9 million during each of its first two cycles, in 2005 and 2007. Future funding cycles are scheduled to occur in 2009, 2011 and 2013.

- Bay Area Safe Routes to Transit funding program:
  www.transformca.org/campaign/sr2t

Safe Routes to School (SR2S)

California’s Safe Routes to Schools program (SR2S) is a Caltrans-administered grant-funding program established in 1999 (and extended in 2007 to the year 2013). Eligible projects include bikeways, walkways, crosswalks, traffic signals, traffic-calming applications, and other infrastructure projects that improve the safety of walking and biking routes to elementary, middle and high schools, as well as “incidental” education, enforcement and encouragement activities. Planning projects, on the other hand, are not eligible. In fiscal year 2007/08, approximately $25.5 million was available in grant funding.

- Caltrans Safe Routes to School program:
  www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm

Bay Trail grants

The San Francisco Bay Trail Project—a non-profit organization administered by the Association of Bay Area Governments—provides grants to plan, design and construct segments of the Bay Trail. The amount, and even availability, of Bay Trail grants vary from year to year, depending on whether the Bay Trail Project has identified a source of funds for the program. In recent years, grants have been made using funds from Proposition 84, the 2006 Clean Water, Parks and Coastal Protection Bond Act; however, this is a limited-term source of funds.

- Bay Trail grants: www.baytrail.org/grants.html

Transportation Fund for Clean Air (TFCA)

TFCA is a grant program administered by the Bay Area Air Quality Management District (BAAQMD). The purpose of the program, which is funded through a $4 surcharge on motor vehicles registered in the Bay Area, is to fund projects and programs that will reduce air pollution from motor vehicles. A sub-program of the TFCA is the Bicycle Facility Program (BFP), which provides funding for bicycle paths, lanes, signed routes, bicycle parking, bus racks and other bicycle-related projects. Grant awards are generally made on a first-come, first-served basis to qualified projects. Funding for bicycle projects is also available through the TFCA’s County Program Manager Fund. Under that sub-program, 40 percent of TFCA revenues collected in each Bay Area county is returned to that county’s congestion management agency (CMA) for allocation (the CCTA, in Contra Costa’s
case). Applications are made directly to the CMAs, but must also be approved by the BAAQMD.

- **TFCA Bicycle Facility Program:**
  www.baaqmd.gov/pln/grants_and_incentives/bfp/index.htm

- **TFCA County Program Manager Fund:**
  www.baaqmd.gov/pln/grants_and_incentives/tfca/cpm_fund.htm

### Measure WW

In 2008, Contra Costa and Alameda County voters approved EBRPD’s Measure WW, the “Regional Open Space, Wildlife, Shoreline and Parks Bond.” This extension of a similar 1988 bond measure allocates $33 million specifically to trail projects in the county. In addition, the measure will provide $48 million directly to cities, the county and special park and recreation districts for their park and recreation needs, including trails and other nonmotorized transportation projects.

- **Measure WW:** www.ebparks.org/ww

### Hazard Elimination Safety

Administered in California by Caltrans, the federal Hazard Elimination Safety (HES) program provides funds to eliminate or reduce the number and severity of traffic collisions on public roads and highways. Cities and counties compete for HES funds by submitting candidate projects to Caltrans for review and analysis. Caltrans prioritizes these projects statewide and approves priority projects for funding through its annual HES program plan. Historically, only about 20 percent of applications are approved for funding. In the 2005-2006 program cycle, Caltrans awarded approximately $16 million under the HES program.

- **Hazard Elimination Safety program:**
  www.dot.ca.gov/hq/LocalPrograms/hesp/hesp.htm

### Eligible project types under other funding sources

<table>
<thead>
<tr>
<th>Regional Bikeway Network Program (MTC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Projects on the Bay Area regional bikeway network, except links on toll bridges</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transportation Enhancements (MTC, Caltrans)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Twelve categories of projects and activities that enhance the surface transportation system, including: bike lanes, trails, bicycle parking and other bicycling facilities; safety education activities for pedestrians and bicyclists; landscaping, streetscaping and other scenic beautification projects; and the preservation of abandoned railway corridors and their conversion to trails for nonmotorized transportation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transportation for Livable Communities (MTC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Capital projects and community-based planning that encourage multimodal travel and the revitalization of town centers and other mixed-use neighborhoods</td>
</tr>
<tr>
<td>• Projects that improve bicycling and walking to transit stations, neighborhood commercial districts and other major activity centers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transportation Development Act, Article 3 (MTC, Authority)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pedestrian and bicycle projects in an adopted general plan or bicycle plan</td>
</tr>
<tr>
<td>• Examples: design and construction of walkways, bike paths and bike lanes; safety education programs; the preparation of comprehensive bicycle or pedestrian plans</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Climate Action Program (MTC, BAAQMD, BCDC, ABAG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pedestrian and bicycle projects as part of safe routes to school and safe routes to transit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bicycle Transportation Account (Caltrans)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Projects that improve the safety and convenience of bicycle commuting</td>
</tr>
</tbody>
</table>
• Examples: secure bike parking; bike-carrying facilities on transit vehicles; installation of traffic-control devices that facilitate bicycling; planning, design, construction and maintenance of bikeways that serve major transportation corridors; and elimination of hazards to bike commuters

**Safe Routes to Transit (TransForm, EBBC)**

• Programs, planning efforts and capital projects that will improve bicycling and walking access to regional transit services that serve toll-bridge corridors

• Examples: secure bike storage at transit; safety enhancements and barrier removal for pedestrian or bike access to transit; systemwide transit enhancements to accommodate bicyclists or pedestrians; access improvements to car-sharing pods

**Safe Routes to School (Caltrans)**

• Bikeways, walkways, crosswalks, traffic signals, traffic-calming applications, and other infrastructure projects that improve the safety of walking and biking routes to elementary, middle and high schools

• “Incidental” education, enforcement and encouragement activities

**Bay Trail Grants (Bay Trail Project)**

• Planning, design and construction of segments of the Bay Trail

**Transportation Fund for Clean Air (BAAQMD)**

• Projects and programs that will reduce air pollution from motor vehicles

• Examples: Bicycle paths, lanes, signed routes, bicycle parking, bus racks and other bicycle-related projects

**Measure WW (EBRPD)**

• EBRPD trail projects

• Park and recreation needs of cities, the county and special park and recreation districts, including trails and other nonmotorized transportation projects

**Hazard Elimination Safety (Caltrans)**

• Projects that eliminate or reduce the number and severity of traffic collisions on public roads and highways
Current and Past Expenditures

Over the past ten years, the City of Richmond has spent approximately $XX on bicycle facilities. Annual expenditures over this period were as follows:

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2001</td>
<td>$</td>
</tr>
<tr>
<td>FY 2002</td>
<td>$</td>
</tr>
<tr>
<td>FY 2003</td>
<td>$</td>
</tr>
<tr>
<td>FY 2004</td>
<td>$</td>
</tr>
<tr>
<td>FY 2005</td>
<td>$</td>
</tr>
<tr>
<td>FY 2006</td>
<td>$</td>
</tr>
<tr>
<td>FY 2007</td>
<td>$</td>
</tr>
<tr>
<td>FY 2008</td>
<td>$</td>
</tr>
<tr>
<td>FY 2009</td>
<td>$</td>
</tr>
<tr>
<td>FY 2010</td>
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</table>

These expenditures were spent on the installation (signing and striping) and maintenance of bike lanes, routes, and paths throughout the City of Richmond. Understanding the City’s investment in the existing bikeway system and what is required to complete the system is important in developing a funding strategy. With an approximate length of 34 miles, the existing bikeway system represents a substantial investment.

Prioritization

The methodology employed to prioritize the bikeway projects was developed by Fehr & Peers specifically for the City of Richmond, but is similar to that used by other Bay Area agencies in their bikeway plans. There are a total of 19 possible points based on five elements:

- Connectivity
- Activity centers
- Safety
- Regional access
- Relative ability to implement

The methodology used to score projects within each element is described below:

Connectivity (five points)

This criterion evaluates the ability of a bicycle facility to provide access to major streets, to provide connections between activity centers, and to connect to and extend existing bicycle facilities and to link neighborhoods and/or overcome physical barriers between them. Projects with high connectivity received five points, moderate connectivity received two points, and low connectivity received one point. A more detailed description of how each proposed bikeway was evaluated is shown below.

5 points: A proposed bikeway that meets one of the following conditions:
- connects to existing bikeways and/or activity centers on both ends
- bridges a gap in an existing "crucial" bikeway (defined as a bikeway that provides cross-town access or is on a major arterial)
- serves as a collector of other bikeways or residential streets
- passes through the entire city

2 points: A proposed bikeway meets the following conditions:
- does not qualify for five points, but
- connects to existing bikeways and/or activity centers on one end
- serves as a bypass to busy arterial streets
1 point: A proposed bikeway that meets the following conditions:
• does not qualify for two or five points, but
• connects to a proposed bikeway on one or both ends

Activity centers (three points)
The number of local and regional activity centers on or near a proposed bikeway was counted. Activity centers include existing or planned parks and recreation centers, shopping and medical centers, schools, and large employment centers. Examples of activity centers in Richmond are the Richmond intermodal (BART/Amtrak) transit center and El Cerrito Del Norte BART Station, Civic Center, Hilltop Mall, Point Richmond, Downtown Richmond, the Bay Trail, Point Pinole Regional Park, and Miller Knox Regional Shoreline, Ford Point, Contra Costa College, and commercial areas along MacDonald Avenue, and San Pablo Avenue. The total number of activity centers along a bikeway route was averaged on a per-mile basis.

• 3 points: Projects with three or more activity centers per mile
• 2 points: Projects with between two and three activity centers per mile
• 1 point: Projects with fewer than two activity centers per mile

Safety (three points)
On-street projects: The methodology for assessing the safety of on-street bicycle trails is based on the potential for conflicts with motor vehicles:

• 3 points: Intersection improvement projects and grade separation projects
• 3 points: Trail and path projects that cross roads and driveways fewer than one time per mile
• 2 points: Trail and path projects that cross roads and driveways fewer than two times per mile
• 1 point: Trails and path projects that cross roads and driveways fewer than three times per mile
• 1 point: Allow bicyclists to avoid mid-block crossings

Regional access (five points)
The methodology for assessing regional access for each project was as follows:

• 5 points: Projects that provide access across a freeway or railroad crossing
• 3 points: Projects that provide access to a regional trail or bikeway or a bikeway in an adjacent city

The City may choose to reevaluate the safety of a proposed project based on community safety concerns & priorities, including information collected on future bicycling audits and Reality Rides assessments.
Relative ease of implementation (three points)
The relative ease of project implementation was determined through a review of existing plans, field review of the study area, and level of construction required for implementation. The methodology for assessing ability to implement each project was as follows:

**On-street projects**
- **3 points:** High implementation ability: projects that do not require repaving, re-striping, modification of existing street layout, ROW acquisition, or converge with the City’s overall planning priorities
- **2 points:** Moderate implementation ability: projects that require repaving, re-striping and minor modifications to the existing layout
- **1 point:** Low implementation ability: projects that require major construction, ROW acquisition, or inter-jurisdictional coordination

**Off-street projects**
- **3 points:** High implementation ability: projects along existing maintenance or access roads that do not require significant grading or ROW acquisition
- **2 points:** Moderate implementation ability: projects that require moderate grading and construction
- **1 point:** Low implementation ability: projects that require ROW acquisition, major construction, significant grading, bridges, or require coordination with multiple agencies

Prioritization Results
The projects identified in Chapter 6 were scored and ranked using the methodology described above, and then sorted by estimated cost. Projects were then assigned to short-term (12-19 points; 1-5 years), medium-term (8-11 points; 6-10 years), or long-term/opportunistic (4-7 points; 11-20 years) categories. Tables 18-20 summarizes the list of projects by priority and cost.
### Table 15 | Short-term priorities

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<tr>
<th>Segment #</th>
<th>Name</th>
<th>From</th>
<th>To</th>
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<td>Cost</td>
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### Bicycle Master Plan

#### Funding and implementation

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<th>To</th>
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<th>Distance</th>
<th>Cost</th>
<th>Prioritization Score</th>
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### Medium-term priorities

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<td>Pt Richmond</td>
<td>Ferry Point Tunnel</td>
<td>Intersection of Garrard Ave &amp; Cutting Blvd</td>
<td>1</td>
<td>0.10</td>
<td>$120,000</td>
<td>10</td>
</tr>
<tr>
<td>CT-4</td>
<td>Wildcat Creek Trail Crossing</td>
<td>Richmond Parkway</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>$400,000</td>
<td>10</td>
</tr>
<tr>
<td>BT-5</td>
<td>Shipyard 3 Bay Trail to Brickyard Cove Road</td>
<td>Road opposite Mallard Dr</td>
<td>Garrard Blvd</td>
<td>1</td>
<td>0.64</td>
<td>$769,779</td>
<td>10</td>
</tr>
<tr>
<td>CR-EW-2</td>
<td>Emeric Avenue/ Chesley/ Gertrude Avenue</td>
<td>26th St</td>
<td>McKosken Rd</td>
<td>1, 3</td>
<td>1.38</td>
<td>$140,000</td>
<td>10</td>
</tr>
<tr>
<td>CR-NS-16</td>
<td>37th Street, Cerrito Avenue/ 38th Street</td>
<td>Cerrito Ave</td>
<td>Garvin Ave</td>
<td>2, 3</td>
<td>1.49</td>
<td>$178,000</td>
<td>10</td>
</tr>
<tr>
<td>CR-EW-13</td>
<td>Wall Avenue/ 41st St/Center Ave/ Maine Avenue</td>
<td>49th St</td>
<td>2nd St</td>
<td>1, 3 (Bike Blvd)</td>
<td>3.30</td>
<td>$769,000</td>
<td>9</td>
</tr>
<tr>
<td>BT-10b</td>
<td>Richmond Avenue/ Castro Street</td>
<td>Railroad Ave</td>
<td>Tewksbury Ave</td>
<td>3</td>
<td>0.28</td>
<td>$4,200</td>
<td>9</td>
</tr>
<tr>
<td>Segment #</td>
<td>Name</td>
<td>From</td>
<td>To</td>
<td>Class</td>
<td>Distance</td>
<td>Cost</td>
<td>Prioritization Score</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------------------------</td>
<td>-----------------------</td>
<td>---------------------</td>
<td>-------</td>
<td>----------</td>
<td>---------</td>
<td>----------------------</td>
</tr>
<tr>
<td>BT-10a</td>
<td>Richmond Avenue</td>
<td>Garrard Ave</td>
<td>Railroad Ave</td>
<td>2</td>
<td>0.10</td>
<td>$8,000</td>
<td>9</td>
</tr>
<tr>
<td>HT-13</td>
<td>Goodrick Avenue</td>
<td>Parr Ave</td>
<td>Richmond Pkwy</td>
<td>2</td>
<td>0.38</td>
<td>$8,000</td>
<td>9</td>
</tr>
<tr>
<td>CR-EW-20b</td>
<td>Regatta Boulevard</td>
<td>Marina Way</td>
<td>I-580 overpass</td>
<td>2</td>
<td>1.64</td>
<td>$33,000</td>
<td>9</td>
</tr>
<tr>
<td>BT-1</td>
<td>Central Avenue</td>
<td>South from EBRPD Class I trail along Rydin Road</td>
<td>Caltrans Class I trail along I-580, Albany</td>
<td>1</td>
<td>0.10</td>
<td>$120,000</td>
<td>9</td>
</tr>
<tr>
<td>CT-3</td>
<td>Wildcat Creek Trail</td>
<td>Giant Rd</td>
<td>City Limit</td>
<td>1</td>
<td>0.12</td>
<td>$141,058</td>
<td>9</td>
</tr>
<tr>
<td>CT-1</td>
<td>Brookside Trail</td>
<td>Giant Rd</td>
<td>City Limit/RR tracks</td>
<td>1</td>
<td>0.14</td>
<td>$168,000</td>
<td>9</td>
</tr>
<tr>
<td>BT-2</td>
<td>S. 32nd Street connection</td>
<td>Regatta Blvd</td>
<td>Meeker Creek</td>
<td>1</td>
<td>0.15</td>
<td>$180,000</td>
<td>9</td>
</tr>
<tr>
<td>BT-7</td>
<td>Brickyard Cove Road loop south of Miller Knox Regional Shoreline</td>
<td>East end of Dorman Dr</td>
<td>Brickyard Cove Rd</td>
<td>1</td>
<td>0.62</td>
<td>$251,048</td>
<td>9</td>
</tr>
<tr>
<td>BT-27</td>
<td>Point Pinole Regional Shoreline</td>
<td>Point Pinole Regional Shoreline</td>
<td>Point Wilson, Pinole</td>
<td>1</td>
<td>0.58</td>
<td>$670,949</td>
<td>9</td>
</tr>
<tr>
<td>BT-22</td>
<td>Wildcat Creek Trail North</td>
<td>Wildcat Creek Trail western Terminus</td>
<td>Richmond Parkway</td>
<td>1</td>
<td>1.10</td>
<td>$1,320,000</td>
<td>9</td>
</tr>
<tr>
<td>CT-2</td>
<td>Creek Trail</td>
<td>I-80</td>
<td>Contra Costa College</td>
<td>1</td>
<td>1.17</td>
<td>$1,408,486</td>
<td>9</td>
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<tr>
<td>BT-28</td>
<td>Atlas Road</td>
<td>Richmond Pkwy</td>
<td>Point Pinole Regional Park</td>
<td>1</td>
<td>1.18</td>
<td>$1,416,000</td>
<td>9</td>
</tr>
<tr>
<td>BT-26</td>
<td>Goodrick Avenue</td>
<td>Goodrick Ave</td>
<td>Bay View Trail in Point Pinole Regional Shoreline</td>
<td>1</td>
<td>1.30</td>
<td>$1,561,462</td>
<td>9</td>
</tr>
<tr>
<td>BT-4</td>
<td>Canal Blvd south to Point Potrero</td>
<td>465' north of Seacliff Dr</td>
<td>Whirley Crane</td>
<td>1</td>
<td>2.43</td>
<td>$2,916,000</td>
<td>9</td>
</tr>
<tr>
<td>CR-NS-26</td>
<td>Canal Boulevard</td>
<td>Cutting Blvd</td>
<td>400' north of E Richmond Ave</td>
<td>2 (SB only)</td>
<td>0.30</td>
<td>$6,000</td>
<td>8</td>
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<tr>
<td>CR-EW-16</td>
<td>Berk Avenue</td>
<td>49th Street</td>
<td>Cutting Blvd</td>
<td>3</td>
<td>0.50</td>
<td>$8,000</td>
<td>8</td>
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</table>
### Table 17 | Long-term and opportunistic priorities

<table>
<thead>
<tr>
<th>Segment #</th>
<th>Name</th>
<th>From</th>
<th>To</th>
<th>Class</th>
<th>Distance</th>
<th>Cost</th>
<th>Prioritization Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT-16</td>
<td>Pt Molate</td>
<td>Shoreline of former Point Molate Naval Fuel Depot</td>
<td>Castro St</td>
<td>1</td>
<td>0.27</td>
<td>$148,886</td>
<td>7</td>
</tr>
<tr>
<td>CR-NS-20</td>
<td>51st Street</td>
<td>East Montgomery Ave</td>
<td>Bay Trail</td>
<td>1</td>
<td>0.22</td>
<td>$269,000</td>
<td>7</td>
</tr>
<tr>
<td>BT-17</td>
<td>Pt Molate - Pt San Pablo</td>
<td>Northern boundary of former Point Molate Naval Fuel Depot</td>
<td>Southern boundary of City of Richmond’s Point San Pablo Property</td>
<td>1</td>
<td>0.54</td>
<td>$648,000</td>
<td>7</td>
</tr>
<tr>
<td>CR-EW-21</td>
<td>Commodore Drive/ Seaport Avenue</td>
<td>51st St</td>
<td>Regatta Blvd</td>
<td>1</td>
<td>0.66</td>
<td>$792,000</td>
<td>7</td>
</tr>
<tr>
<td>Segment #</td>
<td>Name</td>
<td>From</td>
<td>To</td>
<td>Class</td>
<td>Distance</td>
<td>Cost</td>
<td>Prioritization Score</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------</td>
<td>-------------------------------------------</td>
<td>--------------------------------------------</td>
<td>-------</td>
<td>----------</td>
<td>------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>BT-15</td>
<td>Pt. Richmond - Pt Molate</td>
<td>North side of Richmond/San Rafael Bridge</td>
<td>Point Molate beach at boundary of former Naval Fuel Depot</td>
<td>1</td>
<td>1.26</td>
<td>$925,417</td>
<td>7</td>
</tr>
<tr>
<td>CR-EW-22</td>
<td>Bayview Avenue</td>
<td>55th St</td>
<td>51st St</td>
<td>2, 3</td>
<td>0.71</td>
<td>$34,000</td>
<td>7</td>
</tr>
<tr>
<td>CR-NS-14</td>
<td>Meade Street</td>
<td>Regatta Blvd</td>
<td>51st St</td>
<td>1, 2</td>
<td>0.83</td>
<td>$290,000</td>
<td>7</td>
</tr>
<tr>
<td>BT-20</td>
<td>Point San Pablo Yacht Harbor</td>
<td></td>
<td></td>
<td>1</td>
<td>0.31</td>
<td>$372,000</td>
<td>6</td>
</tr>
<tr>
<td>CR-NS-18</td>
<td>46th Street</td>
<td>Seaver Ave</td>
<td>Bay Trail</td>
<td>1</td>
<td>0.57</td>
<td>$688,000</td>
<td>6</td>
</tr>
<tr>
<td>BT-19</td>
<td>Pt San Pablo</td>
<td>Northern boundary of City of Richmond’s Point San Pablo Property</td>
<td>Point San Pablo Yacht Harbor</td>
<td>1</td>
<td>0.48</td>
<td>$718,362</td>
<td>6</td>
</tr>
<tr>
<td>CR-NS-2</td>
<td>Shared Use Path along RR ROW</td>
<td>Brookside Drive</td>
<td>Chesley Ave</td>
<td>1</td>
<td>0.68</td>
<td>$816,000</td>
<td>6</td>
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<tr>
<td>BT-18</td>
<td>Pt Molate - Pt San Pablo</td>
<td>Point San Pablo former Terminal 4</td>
<td></td>
<td>1</td>
<td>1.53</td>
<td>$843,688</td>
<td>6</td>
</tr>
<tr>
<td>BT-21</td>
<td>Bay Trail: Chevron Property</td>
<td>Point San Pablo</td>
<td>Chesley Ave</td>
<td>1</td>
<td>3.32</td>
<td>$3,987,252</td>
<td>6</td>
</tr>
<tr>
<td>CR-EW-18</td>
<td>Meeker/ Wright Avenue</td>
<td>Marina Bay Ave</td>
<td>Marina Way</td>
<td>2, 3</td>
<td>0.60</td>
<td>$22,000</td>
<td>6</td>
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<tr>
<td>CR-NS-4</td>
<td>RR frontage stub</td>
<td>Richmond Pkwy</td>
<td>Chesley Ave</td>
<td>1</td>
<td>0.96</td>
<td>$1,152,000</td>
<td>5</td>
</tr>
<tr>
<td>CR-EW-19</td>
<td>Southern RR frontage</td>
<td>Marina Way</td>
<td>Meade St/ I-580 &amp; S. 47th St spur</td>
<td>1</td>
<td>1.62</td>
<td>$1,940,000</td>
<td>4</td>
</tr>
</tbody>
</table>
Cost of New Bicycle Facilities

Table 18 provides a unit cost summary for the construction of bikeway facilities in Richmond. These estimates are based on costs experienced in Richmond and other communities throughout the State, with small increases to account for engineering, construction management, inspection, and contingency costs. More detailed estimates should be developed following the preliminary engineering stage as individual projects advance towards implementation. Table 19 summarizes the total costs of the entire proposed network.

For purposes of this Bicycle Master Plan, conceptual construction costs for the proposed system were based on the following assumptions:

- New Class I facilities would be constructed on generally flat right-of-way with no grade separation and minimal grading needed given the existing topography within the City; cost of right-of-way acquisition is not included.
- New Class II facilities would require minimal or no roadway improvements.
- New Class III facilities would require signing only (with optional stencils). An adjustment to account for traffic control costs is included.

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Improvement</th>
<th>Estimated Cost Per Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I Bike Path</td>
<td>Construct Path with Minimal Grading Needed</td>
<td>$1.2 million</td>
</tr>
<tr>
<td>Class II Bike Lane</td>
<td>Signing/Striping Only</td>
<td>$20,000</td>
</tr>
<tr>
<td>Class II Bike Route</td>
<td>Signing/Striping with Minor Improvements</td>
<td>$80,000</td>
</tr>
<tr>
<td>Class III Bike Route</td>
<td>Signing Plus Stencils</td>
<td>$15,000</td>
</tr>
<tr>
<td>Class III Bike Boulevard</td>
<td>Signing/Stencils Plus Traffic Calming</td>
<td>$250,000</td>
</tr>
</tbody>
</table>

*Costs are in 2010 dollars, excluding right-of-way costs.

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Length of Proposed Segments</th>
<th>Estimated Cost (2010 $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Richmond Class I Bike Path</td>
<td>6.5 miles</td>
<td>$818,200</td>
</tr>
<tr>
<td>Class II Bike Lane</td>
<td>19.3 miles</td>
<td>$1,267,000</td>
</tr>
<tr>
<td>Class II Bike Route</td>
<td>18.3 miles</td>
<td>$499,000</td>
</tr>
<tr>
<td>Class III Bike Boulevard</td>
<td>16.5 miles</td>
<td>$4,228,000</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td>$14,176,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Length of Proposed Segments</th>
<th>Estimated Cost (2010 $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hilltop &amp; El Sobrante Valley Class I Bike Paths</td>
<td>1.0 miles</td>
<td>$1,255,000</td>
</tr>
<tr>
<td>Class II Bike Lane</td>
<td>9.6 miles</td>
<td>$287,000</td>
</tr>
<tr>
<td>Class III Bike Route</td>
<td>5.5 miles</td>
<td>$93,000</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td>$1,635,000</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Length of Proposed Segments</th>
<th>Estimated Cost (2010 $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay &amp; Creek Trails Class I Bike Paths</td>
<td>21.1 miles</td>
<td>$24,131,437</td>
</tr>
<tr>
<td>Class II Bike Lane</td>
<td>0.1 miles</td>
<td>$9,000</td>
</tr>
</tbody>
</table>
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

The estimated annual maintenance expenses for Class I bike paths is approximately $25,000 per mile. If all of the proposed bike paths were implemented, there would be a total of 53 miles of Class I facilities, including the Bay Trail. The annual maintenance cost for Class I facilities is estimated at about $1,325,000.

For Class II bike lanes, the cost consists of maintaining pavement markings and striping. The estimated annual cost is $54,000 for a full build-out of 34 miles of Class II facilities.

Lastly, Class III facilities will require maintenance of bike signs located along the bike route. For approximately 48 miles of Class III bike routes at full build-out, the annual cost is estimated at $7,000.
### Table 20 | Conceptual Annual Maintenance Costs

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Length of Existing &amp; Proposed Segments</th>
<th>Estimated Cost (2010 $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>Bike Paths</td>
<td>53 miles</td>
</tr>
<tr>
<td>Class II</td>
<td>Bike Lane</td>
<td>34.3 miles</td>
</tr>
<tr>
<td>Class III</td>
<td>Bike Route/Bike Boulevard</td>
<td>47.8 miles</td>
</tr>
</tbody>
</table>

**Total Estimated Annual Maintenance Costs**  
$1,386,000