



# San Francisco Bicycle Plan

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**SFMTA**

Municipal Transportation Agency

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# EXECUTIVE SUMMARY

## BICYCLING FOR THE FUTURE

An increase in bicycling is a critical component to improving the future health and prosperity of San Francisco. With limited public investment, the City can improve conditions for bicycling in order to help achieve numerous important goals, including reducing greenhouse gas emissions, conserving energy, improving the health and physical fitness of residents, mitigating the negative effects of traffic congestion, improving air quality, providing affordable transportation alternatives and creating more livable neighborhoods.

San Francisco's temperate climate, dense neighborhoods, limited supply of automobile parking and compact geography have helped create a renewed interest in greener, more efficient transportation alternatives. With more and more people opting to bike to work, school, to run errands and for fun, San Francisco has the potential to become a world-class bicycling city.

Major infrastructure and programmatic improvements have taken place since the San Francisco Bicycle Plan was developed in 1997. Miles of new bicycle lanes have been striped; hundreds of bicycle racks have been installed; educational programs and outreach efforts have been expanded; and the percentage of San Francisco residents who commute to work by bicycle more than doubled from 1990 to 2000 and continues to increase<sup>1</sup>, while the number of bicyclist injury collisions has decreased<sup>2</sup>.

By investing in and implementing the bicycle facility improvements, educational efforts and innovative policies and programs recommended in this Plan, The City will make bicycling a more viable mobility option. Implementing the action items in this plan will ensure a major increase in the number of people that use bicycles safely as transportation. This will require strong leadership from local elected officials, cooperation between a host of City agencies, continued public involvement and a commitment to the goals contained herein.

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1 According to the U.S. Census Bureau, the percentage of San Francisco commuting workers 16 years of age and older that commuted to work by bicycle increased from 1.0 percent in 1990 to 2.1 percent in 2000, and increased to 2.5 percent in 2006, not including those who worked at home.

2 Chapter 5 provides details on bicyclist injury collisions.

## **SUMMARY OF GOALS, OBJECTIVES AND ACTIONS**

The following section summarizes the key elements of the San Francisco Bicycle Plan, including the plan's goals, objectives and action items. The action items provide key staff, agencies and local elected officials with direction on the steps required to meet the goals and objectives of the plan to improve San Francisco for bicyclists.

### **SAN FRANCISCO BICYCLE PLAN VISION AND OVERALL GOALS**

#### **VISION:**

Make bicycling an integral part of daily life in San Francisco.

#### **OVERALL PLAN GOAL:**

*INCREASE SAFE BICYCLE USE*

#### **CHAPTER GOALS:**

1. *REFINE AND EXPAND THE EXISTING BICYCLE ROUTE NETWORK*
2. *ENSURE PLENTIFUL, HIGH-QUALITY BICYCLE PARKING*
3. *EXPAND BICYCLE ACCESS TO TRANSIT AND BRIDGES*
4. *EDUCATE THE PUBLIC ABOUT BICYCLE SAFETY*
5. *IMPROVE BICYCLE SAFETY THROUGH TARGETED ENFORCEMENT*
6. *PROMOTE AND ENCOURAGE SAFE BICYCLING*
7. *ADOPT BICYCLE-FRIENDLY PRACTICES AND POLICIES*
8. *PRIORITIZE AND INCREASE BICYCLE FUNDING*

## **INTRODUCTION GOALS AND OBJECTIVES**

The introduction provides an overview of San Francisco land use, The City's demographics, a brief history of the extensive planning process conducted for this plan and a list of agency responsibilities related to plan implementation.

### **Overall Plan Goal:**

Increase Safe Bicycle Use

### **Overall Plan Objectives:**

- Increase the daily number of bicycle trips in San Francisco<sup>3</sup>
- Develop improved methods for tracking bicycle usage
- Reduce the rate of bicycle collisions as bicycle usage increases

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<sup>3</sup> The most extensive data on commute modes is collected at the national level by the U.S. Census Bureau. According to the U.S. Census Bureau 2006 American Community Survey, 2.5 percent of San Francisco commuting workers 16 years of age and older commuted to work by bicycle. These commuter data do not account for non-work travel such as recreation, shopping or school-related travel. A 2007 random telephone survey of 400 likely San Francisco voters conducted by David Binder Research indicated that 5 percent of San Francisco residents used a bicycle as their primary method of travel in The City.

## 1. BICYCLE ROUTE NETWORK GOALS, OBJECTIVES AND ACTION ITEMS

The Bicycle Route Network Chapter provides an overview of the existing bicycle route network, recommended near-term<sup>4</sup>, long-term<sup>5</sup> and minor<sup>6</sup> improvements to the bicycle route network and a discussion of bicycle facility types.

### **Chapter 1 Goal:**

Refine and Expand the Existing Bicycle Route Network

### **Chapter 1 Objectives:**

- Establish a comprehensive network of bikeways that are appropriately signed, marked and/or traffic-calmed and that provide convenient and direct connections to all of San Francisco's neighborhoods. The facilities along the bicycle route network should include the following conventional treatments depending on the design of the bicycle improvements and conditions:
  - Off-street bicycle and mixed-use paths
  - Bicycle lanes
  - On-street signed bicycle routes
  - Shared roadway bicycle markings (sharrows)<sup>7</sup>
  - Traffic-calmed streets
- Utilize innovative designs, where appropriate, to improve bicycle usage and safety
- Ensure that the bicycle route network:
  - Provides bicycle access to all commercial and residential areas
  - Provides bicycle access to all San Francisco Municipal Transportation Agency (SFMTA) Muni Metro, Bay Area Rapid Transit (BART) and Caltrain stations, ferry terminals and other major transit hubs
  - Is well signed, well striped and well paved

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4 Near-term bicycle route network improvement projects have had design options developed and are anticipated to be constructed within the next five years following completion of environmental review and approval of the Bicycle Plan.

5 Long-term bicycle route network improvement projects are either proposed along the existing bicycle route network, or consist of potential additions to the bicycle route network at a future date. Specific designs for these future projects have not been developed.

6 Minor improvements would include minor pavement marking and signage changes to improve bicycle travel such as the installation of colored pavement materials, the installation of shared roadway bicycle markings, minor changes to parking configurations and minor changes to intersection traffic signal timing plans.

7 Sharrows are a type of pavement marking placed within a traffic lane. The markings are intended to alert drivers that bicyclists share the traffic lane and also to reduce the chance of bicyclists impacting the open doors of parked vehicles. More information on sharrows can be viewed online at <http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/pdf/camutcd/CAMUTCD-Part9.pdf>

**Action 1.1**

Implement improvements to streets and paths identified as proposed near-term bicycle improvement projects and implement minor improvements to other streets and paths on the existing bicycle route network, if feasible.

**Action 1.2**

Complete the required design and engineering for improvements to streets and paths identified as proposed long-term bicycle improvement projects and implement, if feasible.

**Action 1.3**

Maintain an SFMTA Geographic Information System (GIS) database of the bicycle route network, and update the database whenever route changes occur.

**Action 1.4**

Work with other City agencies to ensure that San Francisco continues to implement the *Transit First* policy.

**Action 1.5**

Conduct a before and after study on the impacts of allowing bicycles in exclusive bus/taxi lanes.

**Action 1.6**

Review multi-lane streets for excess capacity and explore travel lane removals where excess capacity exists to accommodate bicycle lanes or other bicycle-friendly treatments.

**Action 1.7**

Work with the California Department of Transportation (Caltrans) to analyze and add bicycle facilities where appropriate on current State highways within San Francisco.

**Action 1.8**

Work with the responsible San Francisco agencies to develop revisions to San Francisco's level of service (LOS) standards and methodologies such that they better respond to the multimodal nature of San Francisco's transportation system, specifically addressing bicycles.

**Action 1.9**

Define "bicycle boulevards" and develop criteria for identifying streets that could be designated as bicycle boulevards.

**Action 1.10**

Review international best practices and implement innovative design treatments along the bicycle route network with an appropriate level of analysis and study.

**Action 1.11**

Prioritize installation of shared roadway bicycle markings where safety could be improved.

**Action 1.12**

Work with the Department of Public Works (DPW) to enforce standards that must be strictly adhered to by contractors for street excavation restoration.

**Action 1.13**

Work with the responsible San Francisco agencies to create a prioritized citywide bicycle and mixed-use pathway inventory that includes surface condition; signage and lighting status; required maintenance or improvements needed; and the agency responsible for each pathway.



**Action 1.14**

Work with the DPW and the Recreation and Park Department to maintain a regular sweeping schedule of bicycle routes on City-accepted streets and City-maintained off-street paths that are not currently cleaned on a regular schedule, in addition to sweeping bikeways whenever there is an accumulation of debris such as gravel, glass and sand.

**Action 1.15**

Work with the DPW to prioritize streets on the bicycle route network within the DPW's street resurfacing program.

**Action 1.16**

Work with the DPW to inspect streets on the bicycle route network on a yearly basis.

**Action 1.17**

Create an inventory of locations along the bicycle route network that intersect or run parallel to railroad tracks, and identify appropriate measures to mitigate the impacts of the track crossings to bicyclists.

## 2. BICYCLE PARKING GOALS, OBJECTIVES AND ACTION ITEMS

The Bicycle Parking Chapter provides an overview of the existing Planning Code Sections governing the provision of bicycle parking for public and private buildings and garages and recommends improvements for administration and enforcement of the Planning Code, as well as providing new guidelines for implementation of bicycle parking throughout the City.

### **Chapter 2 Goal:**

Ensure Plentiful, High-Quality Bicycle Parking

### **Chapter 2 Objectives:**

- Provide secure short-term and long-term bicycle parking, including support for bike stations and attended bicycle parking facilities, at major events and destinations; and
- Provide current and relevant information to bicyclists regarding bicycle parking opportunities through a variety of formats.

### **Action 2.1**

Work with the Planning Department to consolidate Sections 155.1-155.5 of the Planning Code to provide clearer regulation, guidance and exemptions related to bicycle parking.

### **Action 2.2**

Work with the Planning Department to modify the Planning Code's requirements for bicycle parking so that they are less dependent on automobile parking provisions.

### **Action 2.3**

Work with the Planning Department to amend the Planning Code to increase required bicycle parking for new residential developments.

### **Action 2.4**

Work with the Planning Department to increase monitoring and enforcement of bicycle parking provisions in the Planning Code, especially when issuing building permits.

### **Action 2.5**

Conduct the SFMTA's bicycle parking training for new Planning Department personnel as needed.

### **Action 2.6**

Work with the responsible San Francisco agencies and entities to ensure that all garage bicycle parking is secure, well monitored and well advertised at garage entrances and other appropriate locations.

### **Action 2.7**

Hold meetings as needed between SFMTA and Planning Department staff to update citywide bicycle parking compliance status and review bicycle parking information posted on the SFMTA website.

### **Action 2.8**

Ensure that all City leases are negotiated to include the required level of bicycle parking by cooperative efforts of the City Real Estate Department and the SFMTA.

**Action 2.9**

Pursue a citywide policy to provide secure bicycle parking at all City buildings in areas to be specified by the individual agencies, subject to safety regulations and available space, by cooperative efforts of the City Real Estate Department, the Planning Department and the SFMTA.

**Action 2.10**

Work with the Planning Department to amend the Planning Code to lower the number of automobile parking spaces required in buildings where Class I bicycle parking is provided.

**Action 2.11**

Work with the Planning Department to amend the Planning Code to require bicycle parking in each individual building of large, multiple-building developments.

**Action 2.12**

Work with the Planning Department to amend the Planning Code to require building owners to allow tenants to bring their bicycles into buildings unless Class I bicycle parking is provided.

**Action 2.13**

Work with the responsible San Francisco agencies to prepare additional guidelines for the placement and design of bicycle parking within City rights of way, including curbside on-street bicycle parking where feasible and “sleeve” ring racks on parking meters.

**Action 2.14**

Develop and maintain an SFMTA bicycle parking outreach campaign in various formats to provide relevant bicycle parking information such as garage locations with bicycle parking and bicycle locker availability.

**Action 2.15**

Work with the San Francisco Police Department (SFPD) to make bicycle theft investigation a higher priority and create a better system for returning recovered bicycles to their owners.

### 3. TRANSIT AND BRIDGE ACCESS GOALS, OBJECTIVES AND ACTION ITEMS

The Transit and Bridge Access Chapter addresses the linkages between bicycle trips and transit service, as well as bicycle access to local and regional bridges. By improving bicycle access to transit vehicles and stations, many opportunities are created for increasing bicycle trips. This chapter contains recommendations for creating greater bicycle access to SFMTA and other transit agencies' vehicles and to existing and future transit stops and stations and recommendations for improved bicycle access to bridges.

#### **Chapter 3 Goal:**

Expand Bicycle Access to Transit and Bridges

#### **Chapter 3 Objectives:**

- Provide bicycle access to transit vehicles whenever feasible
- Provide convenient bicycle access and bicycle parking at transit stations
- Provide bicycle access to all local bridges wherever feasible

#### **Action 3.1**

Create an SFMTA policy that explicitly permits folded bicycles on all SFMTA transit vehicles.

#### **Action 3.2**

Develop a pilot program to provide bicycle access on SFMTA light rail vehicles for a trial period that would be monitored for potential future implementation.

#### **Action 3.3**

Update the SFMTA's bicycle accessibility guidelines and widely distribute and publicize these guidelines.

#### **Action 3.4**

Create an SFMTA policy that allows bicyclists with disabled bicycles to bring them aboard SFMTA transit vehicles, interior space permitting and at the vehicle operator's discretion, when the SFMTA transit vehicle either does not have bicycle racks or when the racks are full.

#### **Action 3.5**

Install bicycle racks on all SFMTA-operated buses, and work with other transit operators with buses operating in San Francisco to install bicycle racks on their bus fleets.

#### **Action 3.6**

Work with BART to analyze existing bicycle policies, identify expanded bicycle access times and create a trial program for non-folding bicycle access in both directions on Transbay peak period trains.

#### **Action 3.7**

Work with Caltrain to expand bicycle access on its trains and to its San Francisco stations by promoting bicycling to stations and by providing secure bicycle parking at station areas.

**Action 3.8**

Ensure that all San Francisco transit stations, including the new Transbay Terminal, provide barrier-free bicycle access and state-of-the-art bicycle parking facilities, and work with the California High-Speed Rail Authority to ensure bicycles are accommodated on its long-distance trains.

**Action 3.9**

Work with San Francisco Bay Area transit operators and the Metropolitan Transportation Commission (MTC) to develop, implement, maintain, expand and enforce improved intermodal bicycle access.

**Action 3.10**

Promote bicycle parking stations at major transit hubs that provide secure, monitored bicycle parking, bicycle commuter information and bicycle maintenance services.

**Action 3.11**

Work with Caltrans and the Golden Gate Bridge, Highway and Transportation District (GGBHTD) to provide improved bicycle access to and upon all San Francisco bridges wherever feasible and appropriate.

## 4. EDUCATION GOALS, OBJECTIVES AND ACTION ITEMS

The Education Chapter provides an overview of the City's bicycle educational outreach efforts. It recommends creating a comprehensive set of general and targeted bicycling safety materials, classes and workshops. The Education Chapter addresses several aspects of bicycle safety for bicyclists, motorists and City staff to ensure that all parties are aware of bicyclists' rights and responsibilities.

### **Chapter 4 Goal:**

Educate the Public about Bicycle Safety

### **Chapter 4 Objectives:**

- Create, fund and implement bicycle safety curricula for the general public and targeted populations
- Create, fund and implement bicycle safety outreach campaigns for motorists, bicyclists and the general public

#### **Action 4.1**

Provide SFMTA bicycle safety information to diverse age, income and ethnic populations.

#### **Action 4.2**

Provide SFMTA bicycle safety information in languages that are widely used within San Francisco such as Chinese and Spanish.

#### **Action 4.3**

Partner with other agencies, where appropriate, to distribute SFMTA bicycle safety education materials in mass mailings.

#### **Action 4.4**

Work with the SFPD to create a bicycle traffic school curriculum as an option in lieu of other pecuniary penalties for traffic law violators.

#### **Action 4.5**

Increase SFMTA participation in Bike to Work Day activities by providing resources and materials as staff availability and funding allow.

#### **Action 4.6**

Implement new outreach campaigns for improved bicycle facilities.

#### **Action 4.7**

Develop SFMTA bicycle safety classes for City employees.

#### **Action 4.8**

Develop an SFMTA bicycle safety workshop for transit vehicle operators and other large fleet-vehicle operators.

#### **Action 4.9**

Develop bicycle education curricula for use in the San Francisco Unified School District (SFUSD), San Francisco public colleges and sharing with other schools.

#### **Action 4.10**

Work with the SFUSD to promote a transportation curriculum in lieu of driver's education at City high schools that provides instruction on all modes of transportation.

**Action 4.11**

Periodically evaluate and adjust, where appropriate, the SFMTA's bicycle safety program.

## 5. ENFORCEMENT AND SAFETY GOALS, OBJECTIVES AND ACTION ITEMS

The Enforcement and Safety Chapter summarizes existing traffic violations related to bicycle collisions and makes recommendations for improved enforcement of traffic laws for both motor vehicles and bicycles.

### **Chapter 5 Goal:**

Improve Bicycle Safety through Targeted Enforcement

### **Chapter 5 Objectives:**

- Increase SFPD enforcement of motorist and bicyclist traffic violations that pose the greatest threat to safety
- Provide SFMTA bicycle safety education to SFPD staff and to those cited for moving violations that focuses on safe cycling, relevant traffic laws and safe sharing of the roadway
- Increase SFMTA and SFPD enforcement of motorist violations in bicycle facilities

#### **Action 5.1**

Work with the SFPD to place a high priority on enforcement of both bicyclist and motorist violations that most frequently cause injuries and fatalities.

#### **Action 5.2**

Work with the SFPD to develop a “fix-it ticket” program for bicycle equipment violations.

#### **Action 5.3**

Work with the SFPD to develop a method to systematically share non-collision bicyclist citations with the SFMTA.

#### **Action 5.4**

Work with the SFPD and the Superior Court of California to develop and implement a bicycle traffic school program as an option for those cited for moving violations.

#### **Action 5.5**

Support efforts to change California Vehicle Code (CVC) Section 21754 (Passing on the right) so that it applies to bicycles.

#### **Action 5.6**

Increase parking enforcement and fines for violations involving vehicles parking or double-parking in bicycle lanes.

#### **Action 5.7**

Post “no stopping in bike lane” signs along bicycle lanes where double parking violations occur and work with the SFPD to increase enforcement of these violations.

#### **Action 5.8**

Work with the SFPD to increase the enforcement of the prohibition of operating motorcycles in bicycle lanes.



**Action 5.9**

Develop an SFMTA bicycle safety curriculum for all SFPD police officers that focuses on the rights and responsibilities of bicyclists and techniques required for safe and legal sharing of the roadway.

**Action 5.10**

Work with the SFPD to increase bicycle-mounted enforcement patrols.

**Action 5.11**

Work with the SFPD to develop a system for hospitals, emergency rooms and clinics to report all instances of bicyclist injuries to the SFPD and to the SFMTA.

**Action 5.12**

Inform bicyclists that they are legally entitled to file a collision report when one is not initiated by the police.

**Action 5.13**

Develop a standardized procedure for reporting bicycle-related incidents with transit vehicles and ensure that this information is readily available to appropriate City staff.

## 6. PROMOTION GOALS, OBJECTIVES AND ACTION ITEMS

The Promotion Chapter focuses on attracting new bicyclists to the streets of San Francisco, keeping existing bicyclists on the road and generally promoting awareness of the benefits that increased bicycle usage holds for the City.

### **Chapter 6 Goal:**

Promote and Encourage Safe Bicycling

### **Chapter 6 Objectives:**

- Through community partnerships, identify funding, develop and implement bicycle media campaigns and promotional materials to promote bicycling as a safe, healthy, cost-effective, environmentally beneficial transportation choice
- Target promotional materials to San Francisco's diverse population groups

### **Action 6.1**

Promote the benefits of bicycling to diverse age, income and ethnic populations.

### **Action 6.2**

Work with the Department of the Environment (SF Environment), the Department of Public Health (DPH), and other City agencies to formalize bicycle education and promotion responsibilities and to develop partnership agreements with the SFMTA.

### **Action 6.3**

Work with all City agencies to expand bicycle promotion and incentive programs for City employees to serve as a model program for other San Francisco employers.

### **Action 6.4**

Include, where appropriate, telephone and web-based contact information for the MTC "511" program on relevant SFMTA materials.

### **Action 6.5**

Encourage and promote bicycle-related businesses within San Francisco.

### **Action 6.6**

Conduct a feasibility study for a public bicycle sharing program and if feasible, develop a plan for potential future implementation including any required environmental review.

## **7. GENERAL PLAN AMENDMENTS, ENVIRONMENTAL REVIEW AND CITYWIDE COORDINATION GOALS, OBJECTIVES, AND ACTION ITEMS**

The General Plan Amendments, Environmental Review and Citywide Coordination Chapter addresses many elements that are relevant to bicycle policy consistency. This chapter focuses on recommended modifications to the General Plan's Transportation Element, Downtown Area Plan and to the City's environmental review guidelines.

### **Chapter 7 Goal:**

Adopt Bicycle-Friendly Practices and Policies

### **Chapter 7 Objective:**

- Integrate consideration of bicycle travel into all roadway planning, design and construction

#### **Action 7.1**

Incorporate this Bicycle Plan in whole by reference into the General Plan and amend sections of the General Plan that are relevant to bicycling, including the Transportation Element and relevant Area Plans, according to the goals of this Bicycle Plan.

#### **Action 7.2**

Ensure adequate and appropriate environmental review under the California Environmental Quality Act for the Bicycle Plan and all discretionary actions under the Bicycle Plan that may have a direct or indirect physical environmental impact.

#### **Action 7.3**

Work with the Planning Department to coordinate updates to the General Plan, if necessary, as subsequent amendments and updates to the Bicycle Plan and bicycle route network occur.

#### **Action 7.4**

Work with the Planning Department to ensure that all current and proposed Area Plans' objectives and policies on balance are consistent with the goals of the San Francisco Bicycle Plan.

Whenever updates or revisions are considered to existing Area Plans, especially those that do not now contain sections on bicycling, these Area Plans should include sections on bicycling consistent with the goals of the Bicycle Plan.

#### **Action 7.5**

Work with the Planning Department as transportation impact guidelines are updated to ensure impacts of new projects consider bicycles.

#### **Action 7.6**

When City transportation or development studies include non-automated traffic counts, work with the responsible San Francisco agencies to collect, where appropriate: bicycle counts; an inventory of existing bicycle parking within a two-block radius of the study site; and the project's potential impacts on any existing or proposed bikeways.

#### **Action 7.7**

Work with public agencies with jurisdiction or right of ways within San Francisco to ensure coordination of any proposed bicycle facilities.

## **8. BICYCLE FUNDING GOALS AND OBJECTIVES**

The Bicycle Funding Chapter provides a discussion of bicycle project funding, including local, regional, state and federal funding opportunities.

### **Chapter 8 Goal:**

Prioritize and Increase Bicycle Funding

### **Chapter 8 Objective:**

- Identify and pursue new and existing local, regional, state and federal funding sources for bicycle facility improvements and bicycle education and promotion programs

### **Action 8.1**

Work with appropriate agencies to identify funding to assist in achieving the goals and objectives set forth in this Bicycle Plan.

# INTRODUCTION

## OVERALL PLAN GOAL AND OBJECTIVES

### Goal:

Increase Safe Bicycle Use

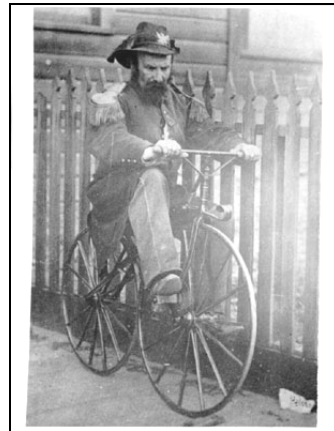
### Objectives:

- Increase the daily number of bicycle trips in San Francisco<sup>1</sup>
- Develop improved methods for tracking bicycle usage
- Reduce the rate of bicycle collisions as bicycle usage increases

## SAN FRANCISCO'S COMMITMENT TO BICYCLING

Bicycling is a clean, economical and healthy transportation mode. Since the late nineteenth century, people have ridden bicycles in San Francisco. With its temperate climate, dense neighborhoods, limited supply of automobile parking and compact geography, San Francisco continues to attract a diverse group of bicyclists: commuters, shoppers, recreational riders and tourists. The City has an established Bicycle Advisory Committee (BAC) appointed by the Board of Supervisors (BOS) and is home to a diverse, dynamic bicycle culture and a large, active advocacy group, the San Francisco Bicycle Coalition (SFBC). The San Francisco Bicycle Plan (Plan) provides a framework for improving conditions for bicycling and increasing the number of trips made by bicycle in San Francisco.

There are several unique challenges to planning for improved bicycling in San Francisco, including the City's topography, concentrated development, high motor vehicle traffic volumes and a finite amount of public right of way to accommodate multiple transportation modes. The bicycle route network



Emperor Norton II riding a "boneshaker" in San Francisco.

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<sup>1</sup> The most extensive data on commute modes is collected at the national level by the U.S. Census Bureau. According to the U.S. Census Bureau 2007 American Community Survey, 2.7 percent of San Francisco commuting workers 16 years of age and older commuted to work by bicycle. This commuter data does not account for non-work travel (such as recreation, shopping or school-related travel). As part of the SFMTA's State of Cycling Report, a 2008 survey of more than 800 San Francisco residents indicated that 6 percent of all San Francisco trips are made by bicycle.

(detailed in Chapter 1) connects the City's neighborhoods and major destinations while directing bicyclists along the flattest streets with lower traffic volumes or slow motor vehicle speeds, where possible. When improvements are made to the bicycle route network, the impacts to other modes, including pedestrians, transit and motor vehicles, must be taken into consideration and balanced with the overall vision of transportation in the City. The City's *Transit First* policy provides principles to help guide this vision for all modes.

This chapter introduces San Francisco's characteristic bicycling environment, including an overview of the City's land use, demographics and transportation policy framework. It also describes the Plan's public participation process and provides a summary of agency responsibilities for implementation of the Plan.

## **PLAN DEVELOPMENT**

An update of the 1997 San Francisco Bicycle Plan was initiated in 2002. The resulting Plan includes updated goals and objectives to encourage bicycle use in the City, describes the existing bicycle route network (a series of interconnected streets and pathways on which bicycling is encouraged) and identifies improvements to achieve the established goals and objectives. Adoption and implementation of the Plan will qualify the City for funding from the California Bicycle Transportation Account (BTA) for bicycle facilities and programs. The BTA is part of the State Transportation Fund and is administered by the California Department of Transportation (Caltrans).

In June 2005, the BOS approved the San Francisco Bicycle Plan Policy Framework, which had been determined to be exempt under California Environmental Quality Act (CEQA) Guidelines Section 15061(b)(3), General Rule Exclusion (GRE). Under a GRE, no CEQA review is required; thus, no Mitigated Negative Declaration or Environmental Impact Report (EIR) was prepared. A temporary injunction to stop implementation of the Bicycle Plan improvements was issued in June 2006 by the Superior Court of California at the request of groups seeking greater environmental review of the proposed Policy Framework. In November 2006, the Superior Court of California found that the City failed to properly evaluate the Bicycle Plan under CEQA and that an injunction would remain in effect until the City complies with CEQA. Additionally, the Court determined that the San Francisco Bicycle Plan Policy Framework and the draft Network Improvement Document should be treated as a single document. Subsequently, the City initiated environmental review and made further refinements to the Bicycle Plan in 2007-2008 to incorporate the changes requested by the Court and to reflect the citywide planning efforts that had occurred since June 2005.

Development of the San Francisco Bicycle Plan has been led by the San Francisco Municipal Transportation Agency (SFMTA) with considerable input from numerous City departments and agencies, the BAC, the SFBC and the public. The 2002-2005 bicycle planning effort was funded by the San Francisco

County Transportation Authority (SFCTA) administered Proposition K half-cent local transportation sales tax program, California's Transportation Development Act (TDA) Article 3 and Caltrans.

The 2002-2005 bicycle planning effort was based upon a significant amount of public input and thorough review by a broad-based Technical Advisory Committee (TAC) comprised of community members and representatives from many City departments and regional agencies with an interest in or responsibility for development or implementation of the recommendations in this Plan. The role of the TAC was to advise the SFMTA and its consultant team on technical matters that would impact and influence their respective departments and agencies. TAC members also served as liaisons soliciting additional feedback, comments or support from their respective departments or agencies.

The TAC members are listed below:

- Association of Bay Area Governments - Bay Trail (ABAG)
- BAC
- Bay Area Air Quality Management District (BAAQMD)
- Bay Area Rapid Transit (BART)
- Golden Gate Park Concourse Authority
- National Park Service
- Port of San Francisco
- Presidio Trust
- San Francisco Fire Department
- San Francisco Department of Public Works (DPW)
- San Francisco Planning Department (Planning Department)
- San Francisco Police Department (SFPD)
- San Francisco Recreation and Park Department
- San Francisco Redevelopment Agency
- SFBC
- SFCTA
- SFMTA Department of Parking & Traffic (DPT)
- SFMTA Municipal Railway (Muni) Capital Planning
- Muni Service Planning
- Treasure Island Development Authority

In addition to the TAC, the 2002-2005 bicycle planning effort also comprised an Oversight Committee (OC). The role of this committee was to provide general oversight and guidance on development of the vision, goals and objectives of the Plan.

The OC members are listed below:

- BAC
- DPT
- Mayor's Office

- Planning Department
- SFBC
- SFCTA
- Muni Capital Planning
- Transportation for a Livable City (TLC)

The 2007-2008 bicycle planning effort builds on the 2002-2005 bicycle planning effort. The resulting Plan provides an overview of the policies and components of a successful bicycle program. The goals and objectives (listed in the Executive Summary) for the Plan are based on the goals and objectives in the 1997 San Francisco Bicycle Plan. These updated goals and objectives reflect the City's commitment to improving the quality of life of its residents and expanding the role and importance of bicycle transportation in San Francisco. The Plan presents a framework for the City to provide the safe and attractive environment needed to promote bicycling as a transportation mode.

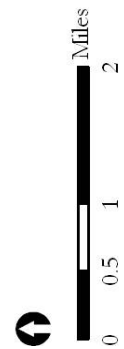
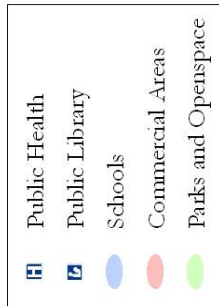
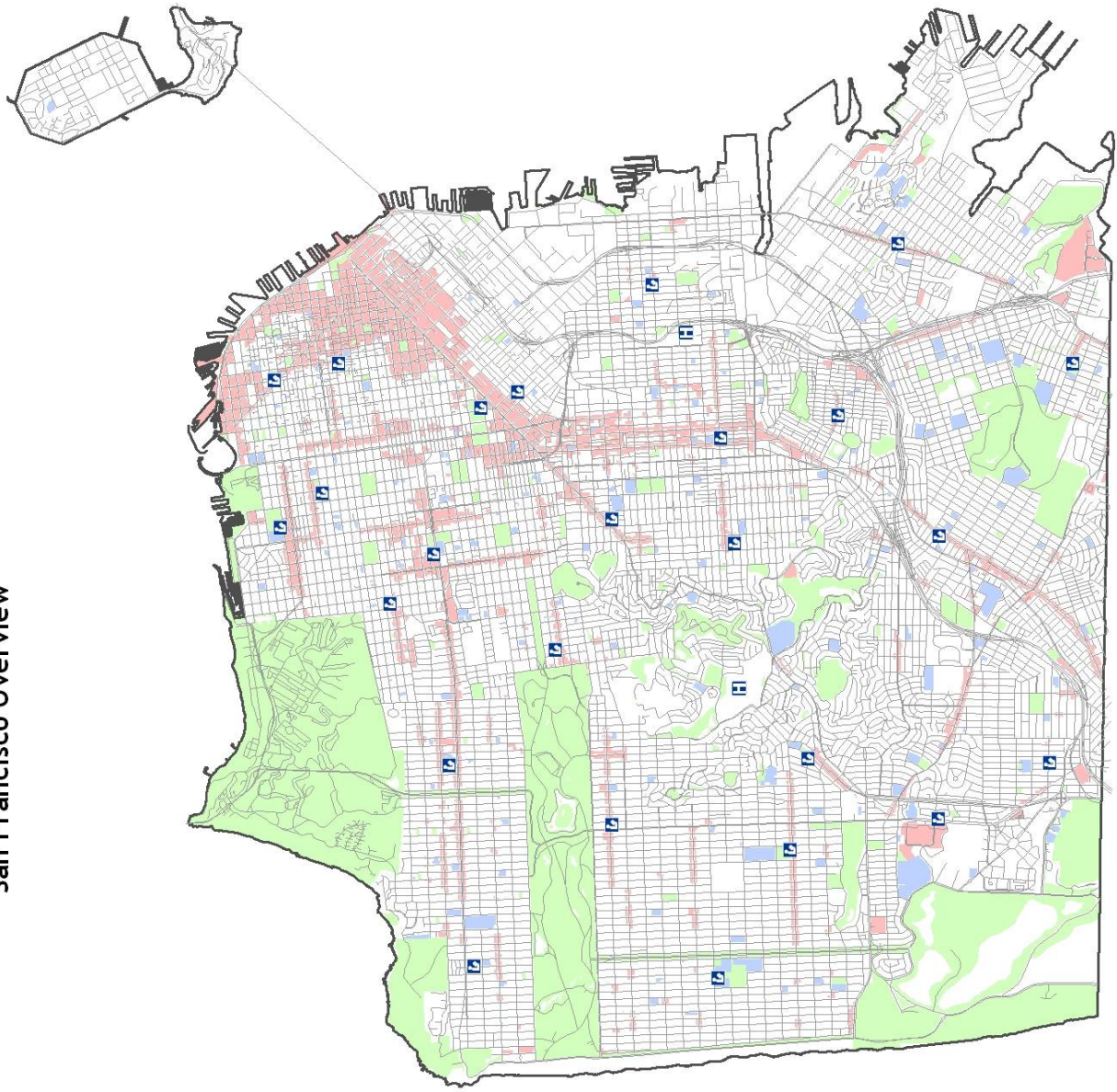
In addition to goals and objectives, the Plan includes 81 recommended action items to guide the City in becoming more bicycle-friendly. One of the key components of the Plan is a program of proposed improvements to the bicycle route network. With this planning foundation, the Bicycle Plan includes 60 near-term bicycle route network improvement projects (near-term improvements). Design options have been developed for these and they are anticipated to be constructed within five years following completion of environmental review and approval of the Plan. Long-term bicycle route network improvement projects (long-term improvements) have also been identified along the existing bicycle route network or are proposed as potential additions to the bicycle route network. Specific designs for long-term improvements have not been developed.

## **SAN FRANCISCO LAND USE AND DEMOGRAPHICS**

San Francisco has nearly 800,000 residents<sup>i</sup> within approximately 47 square miles and an average population density of 17,000 persons per square mile. San Francisco's neighborhood-based land use patterns contribute to the appeal of utilitarian and recreational bicycling. Unique City resources, such as Candlestick Point Recreation Area, Crissy Field, the Golden Gate Bridge, Golden Gate Park, John McLaren Park, Lake Merced, Ocean Beach and the Presidio provide bicycle-friendly recreation opportunities in or near most neighborhoods, while commercial activities, schools and employment centers spread throughout the City attract bicycle commuters and create many bicycle-friendly shopping opportunities. Major public buildings, such as City Hall and the Main Library are located near the center of the City where motor vehicle traffic volumes are high and automobile parking is scarce. A comprehensive network of bicycle facilities provides another viable access method to public services. It is important that the bicycle route network serve the entire City, including links to all of the different land uses described above. Introduction Figure 1 shows San Francisco's commercial districts, open space, schools, public health facilities and public libraries.



Intro Figure 1  
San Francisco Overview



Data Source: SFMTA  
August 5, 2008

## COMMUTE PATTERNS

A central focus of presenting commute information is to identify the current modal split of San Francisco's commuting population. Mode split refers to the form of transportation a person chooses, including walking, bicycling, public transit and driving. One of the objectives of the Plan is to increase the percentage of people who choose to bicycle rather than travel by private automobile. Every motor vehicle trip or vehicle mile traveled that is eliminated represents a quantifiable reduction in air pollution and traffic congestion.

## SAN FRANCISCO RESIDENTS BICYCLING TO WORK

Journey to work data from the U.S. Census Bureau 2007 American Community Survey for San Francisco, California and the United States (not including workers who worked at home) is shown in Introduction Table 1 below.

**Introduction Table 1**  
Journey to Work Data

<b>Mode</b>	<b>United States</b>	<b>California</b>	<b>San Francisco</b>
Bicycle	0.5%	0.9%	2.7 %
Drove Alone	79.3%	76.8%	41.5%
Carpooled	10.8%	12.5%	7.6%
Public Transit	5.1%	5.4%	35.4%
Walked	3.0%	3.0%	10.4%
Other	1.3%	1.4%	2.5%

Source: U.S. Census Bureau American Community Survey 2007

The percentage of San Francisco residents that commute to work by bicycle is about five times higher than the national average, and three times higher than the California average. San Francisco has the highest bicycle to work mode share of major U.S. cities having more than 500,000 inhabitants<sup>ii</sup>.

Introduction Figure 2 shows bicycle mode split by census block group, illustrating the current distribution of bicycle commuters in San Francisco and highlighting geographic areas for potential improvement of bicycle facilities.

## POTENTIAL BICYCLE COMMUTERS

Travel time to work data for the United States, California and San Francisco is shown in Introduction Table 2 below. This data provides an indication of the number of potential new bicycle commuters. The average commute time in the U.S., regardless of mode, is about 25 minutes<sup>iii</sup>.

**Introduction Table 2**  
Travel Time to Work Data

<b>Travel time</b>	<b>United States</b>	<b>California</b>	<b>San Francisco</b>
Less than 15 minutes	28.6 %	25.2 %	15.6 %
15 to 29 minutes	36.0 %	35.2 %	35.9 %
30 to 44 minutes	19.7 %	21.2 %	27.6 %
45 to 59 minutes	7.5 %	7.9 %	10.1 %
60 minutes or more	8.2 %	10.6 %	10.9 %

Source: U.S. Census Bureau American Community Survey 2007

Approximately 16 percent of San Francisco residents have a commute time of less than 15 minutes. Assuming that travel occurs primarily on local roads during peak commute periods, a motor vehicle commute time of 15 minutes or less is approximately equivalent to a bicycle commute time of 30 minutes or less on generally flat terrain. Many of the shorter (less than 15 minute) motor vehicle commute trips in San Francisco could potentially be converted to bicycle commute trips without increasing the commute time beyond the national average of 25 minutes.

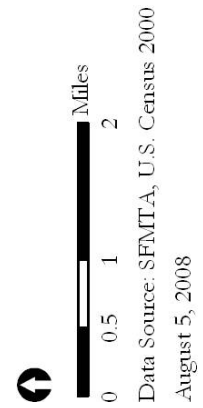
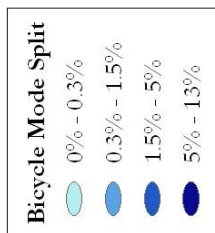
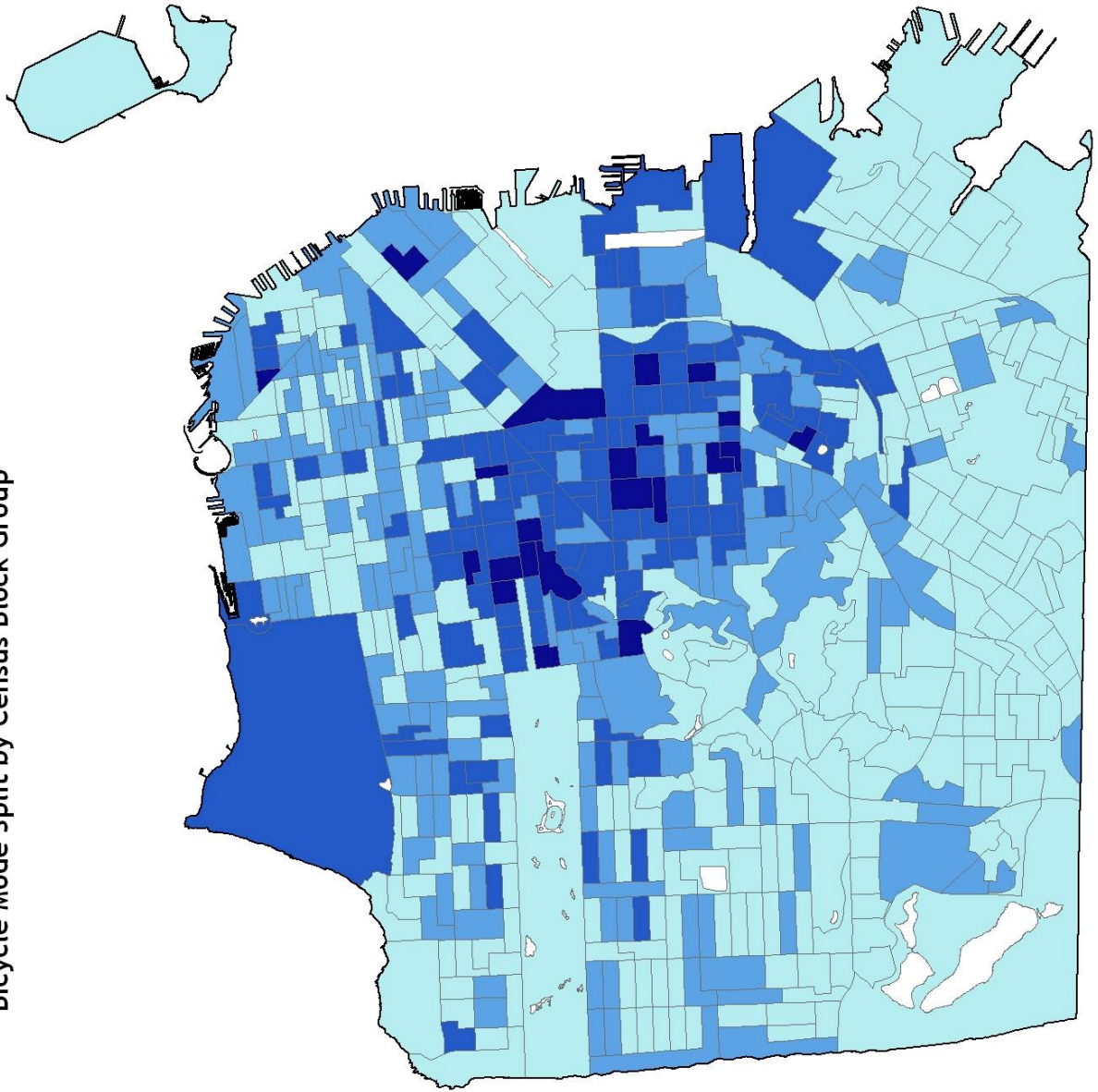
According to RIDES for Bay Area Commuters Commute Profile 2003<sup>iv</sup>, 59 percent of potential Bay Area bicyclists are male; 63 percent have an income of \$65,000 or more, and 40 percent are under the age of 40. Twenty-two percent of all Bay Area residents surveyed consider bicycling a viable option for their commute, while 32 percent of those surveyed cited travel distance as the greatest obstacle for them to bicycle to work. The average San Francisco resident travels 10 miles to work (for all modes) with three out of four residents living and working in the City, indicating a large potential bicycle commuter population in San Francisco. This information can be utilized in targeted marketing campaigns to encourage more bicycling in San Francisco and also indicates that a large potential latent demand for bicycling exists within the Bay Area and San Francisco that could shift travel modes if safer and more accessible bicycle routes are developed.

The SFMTA has recently completed a State of Cycling Report that, through count and survey data, provides more detailed information on who is bicycling in San Francisco. The State of Cycling Report seeks to answer questions such as:

- How often do people bicycle in San Francisco?
- Who is bicycling in San Francisco and who is not?
- Why are people bicycling and what motivates them to do so?
- What are the differences, if any, between people who bicycle and people who do not?

- What barriers prevent people from bicycling in San Francisco?
- How satisfied are cyclists with San Francisco's bicycling infrastructure?
- How safe and comfortable do people feel when bicycling in San Francisco?
- How well do cyclists and motorists share the road?
- How well known are the SFMTA's bicycling outreach programs?

Intro Figure 2  
Bicycle Mode Split by Census Block Group



## THE PLANNING PROCESS

San Francisco's *Transit First* policy, adopted in 1973 and last updated in 1999 as part of the City Charter, identifies transit, bicyclists and pedestrians as San Francisco's top transportation priorities. The policy states that "Within San Francisco, travel by public transit, by bicycle and on foot must be an attractive alternative to travel by private automobile," and that "Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes and secure bicycle parking." A wide variety of City policies, neighborhood plans, area plans and specific development plans also address transportation and the multi-modal use of San Francisco's transportation system. The San Francisco General Plan's Transportation Element contains official City policies on transportation. Other citywide plans are generally consistent with the General Plan, including this Plan.

Work began on the Bicycle Plan in July 2002. The first public meeting on the Plan was held in February 2003. A series of public meetings were held in spring 2003 to discuss the overall Plan and to focus on potential bicycle route network improvements and design details for these potential improvements. These meetings were cosponsored by the SFBC, whose participation was funded by the SFBC's \$300,000 Caltrans community planning grant, focused on public outreach for potential bicycle route network improvements.

Public input from this first series of meetings was used to generate a list of potential bicycle route network improvements. This list was combined with other existing proposed bicycle route network improvements (remaining recommendations from the 1997 Bicycle Plan, bicycle route network improvements previously recommended by bicycle advocates or members of the public and bicycle route network improvements recommended through SFMTA staff analysis). By mid-summer 2003, a prioritization matrix was created and applied to rank the combined bicycle route network improvements, yielding a list of approximately 20 potential bicycle route network improvements that the consultant would further develop. By early 2004, the SFBC began outreach to hundreds of individual community groups and sought input and comments on the potential bicycle route network improvement concepts that were developed by the consultants.

Since the 2002-2005 bicycle planning effort, additional potential bicycle route network improvements have been identified. This Plan contains 60 proposed near-term improvements that are anticipated to be constructed within five years following completion of environmental review and approval of the Plan. If fully implemented, these improvements would represent approximately 75 percent more miles of bicycle lanes in San Francisco. Additionally, 24 long-term improvements are proposed in this Plan. Specific designs for these long-term projects have not been developed at this time.

Public input on the proposed near-term improvements within this Plan was gathered at a citywide Bicycle Plan meeting held on March 26, 2008 and through a series of four public meetings held on May 21, May 22, June 3 and June 4, 2008.

## **AGENCY RESPONSIBILITY FOR PLAN IMPLEMENTATION**

Several key agencies are identified in the recommended action items. The responsibility of each agency in implementing the Plan and administering important support functions is summarized in Introduction Table 3 (following pages).



**Introduction Table 3**  
Agency Responsibility

Area of Responsibility	Relevant Agency	Role
Funding	SFMTA	Pursues bicycle project and program grant funding from federal (including Congestion Mitigation & Air Quality Improvement Program (CMAQ), Safe Routes to School (SRTS), Surface Transportation Program (STP) and Transportation Enhancements Activities (TEA)); state (including Bicycle Transportation Account (BTA), Community Based Transportation Planning (CBTP) Grants, Environmental Justice (EJ) Grants, Office of Traffic Safety (OTS), SR2S and Surface Transportation Improvement Program (STIP)); regional (including Bay Trail Program, Bicycle Facility Program (BFP), Lifeline Transportation Program, Regional Bicycle and Pedestrian Program (RBPP), Regional Transportation Improvement Program (RTIP), Safe Routes to Transit (SR2T), Transportation Development Act Article 3 (TDA) and Transportation for Livable Communities (TLC)) policy and city/county agencies. Works with other departments and agencies to include bicycle components in grants for non-bicycle specific projects. Refer to Chapter 8.



Area of Responsibility	Relevant Agency	Role
	SFCTA	Administers and oversees delivery of Proposition K half-cent local transportation sales tax program. Serves as San Francisco Program Manager for Transportation Fund for Clean Air (TFCA) grants, approving funding and selecting projects. Approves funding and selects projects for other state and federal funding through the Metropolitan Transportation Commission (MTC). Can act as partner applicant/grant seeking agency for funding from other agencies. Refer to Chapter 8.
Bicycle Route Network Improvements	SFMTA	Serves as lead planning and engineering agency (Bicycle Program staff and other Traffic Engineering staff) for roadway and bicycle route network improvements. Refer to Chapter 1.
	DPW	Provides engineering and contract management services for bicycle route network improvements involving major construction. Refer to Chapter 1.
Policy Changes	SFMTA	Initiates dialog with appropriate departments and agencies including the Planning Department, BOS, BAC and others to pursue policy change to improve bicycle facilities and programs.

Area of Responsibility	Relevant Agency	Role
Program Development	SFMTA	Initiates and administers programs related to bicycle education, promotion and support facilities such as bicycle parking.
	San Francisco Department of the Environment (SF Environment)	Initiates, implements and promotes energy saving and resource protection programs for City staff and residents, including air quality, transportation options, etc. Refer to Chapter 6.
Information Gathering, Tracking and Analysis	SFMTA, SFCTA, SFPD, DPW, Planning Department	Collect and track data related to bicycling.
Traffic Enforcement	SFPD	Responsible for traffic safety of motorists, bicyclists and pedestrians through law enforcement. Refer to Chapter 5.
Parking Enforcement	SFMTA	Responsible for enforcement of parking regulations, including double parking. Refer to Chapter 5.
Code Enforcement	Planning Department	Responsible for enforcing the Planning Code provisions related to bicycle facilities, including bicycle parking and access to buildings and structures. Refer to Chapter 2.
Environmental Review	Planning Department	Responsible for review of Bicycle Plan under CEQA. Refer to Chapter 7.
General Plan Conformity	Planning Department	Ensures that this Plan and bicycle improvement projects are consistent with the General Plan. Updates the General Plan Transportation Element. Ensures that all other plans are consistent with the General Plan. Refer to Chapter 7.

Area of Responsibility	Relevant Agency	Role
Transit Access	SFMTA, BART, Caltrain Joint Powers Board, Samtrans, AC Transit, Golden Gate Transit (GGT)	Responsible for management of transit infrastructure and services including provisions for bicycle access to transit vehicles and stations. Refer to Chapter 3.

## RECOMMENDED ACTION ITEMS

Implementation of the action items in this Plan will require the participation and cooperation of many different City agencies and departments. In addition to the SFMTA, recommendations are made that require direct coordination, partnership, analysis, design development and implementation in association with the following agencies and departments: Planning Department, Port of San Francisco, Recreation and Park Department, DPW, San Francisco Redevelopment Agency, SF Environment, SFPD, BART, Caltrain, Caltrans and other transit providers that operate in San Francisco. Action items are identified at the beginning of each chapter and responsible agencies are identified where applicable.

## CONSISTENCY WITH STATE REQUIREMENTS FOR BICYCLE PLANS

The State of California has set forth requirements for bicycle plans with which this plan must comply. One of the funding sources cited in the Funding Chapter of this Plan is the BTA, which funds city and county projects that improve safety and convenience for bicycle commuters. To be eligible for BTA funds, cities and counties must have a Bicycle Transportation Plan (BTP) that discusses items (a) through (k) in Section 891.2 of the California Streets and Highways Code. The city or county local agency governing board must adopt the BTP or certify that it has been updated and complies with Section 891.2 of the California Streets and Highways Code and the Regional Transportation Plan (RTP). The BTP must have been adopted no earlier than four years prior to July 1 of the fiscal year in which BTA funds are granted. The local agency must submit the BTP to the appropriate Metropolitan Planning Organization or Regional Transportation Planning Agency (MTC for San Francisco) for review and certification that it complies with Section 891.2 of the California Streets and Highways Code and the RTP. Following regional approval, the local agency must submit the BTP to Caltrans Bicycle Facilities Unit for review and approval. Introduction Table 4 below shows the BTA requirements and the corresponding pages of this Plan.

**Introduction Table 4**  
Bicycle Transportation Account (BTA) Requirements Checklist

<b>BTA Requirement</b>	<b>Plan Page(s)</b>
a. Existing and Future Bicycle Commuters	Intro-6 through Intro-8
b. Land Use Map/Population Density	Intro-4 through Intro-5
c. Existing and Proposed Bikeways	Chapter 1
d. Existing and Proposed Bicycle Parking Facilities	Chapter 2
e. Existing and Proposed Multi-Modal Connections	Chapter 3
f. Existing and Proposed Changing and Storage Facilities	Chapter 2
g. Bicycle Safety and Education Programs	Chapters 4 and 5
h. Citizen Participation	Intro-2 through Intro-3; Intro 9
i. Consistency with Transportation, Air Quality and Energy Plans	Chapter 7*
j. Project Descriptions/Priority Listings	Chapter 1
k. Past Expenditures and Future Financial Needs	Chapter 8

\*Upon approval of this Plan, the San Francisco Planning Commission will certify that this Plan is consistent with relevant City Plans, including the General Plan.

## **CONTENTS OF THIS PLAN**

### **SUMMARY OF CHAPTERS**

This Plan contains the following chapters:

#### **CHAPTER 1: BICYCLE ROUTE NETWORK**

The Bicycle Route Network Chapter provides an overview of the existing bicycle route network, recommended near-term<sup>2</sup>, long-term<sup>3</sup> and minor<sup>4</sup> improvements to the bicycle route network and a discussion of bicycle facility types.

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2 Near-term bicycle route network improvement projects have had design options developed and are anticipated to be constructed within the next five years following completion of environmental review and approval of the Bicycle Plan.

3 Long-term bicycle route network improvement projects are either proposed along the existing bicycle route network or consist of potential additions to the bicycle route network at a future date. Specific designs for these future projects have not been developed.

4 Minor improvements would include minor pavement marking and signage changes to improve bicycle travel such as the installation of colored pavement materials, the installation of shared roadway bicycle markings, minor changes to parking configurations, minor changes to intersection traffic signal timing plans.

**CHAPTER 2: BICYCLE PARKING**

The Bicycle Parking Chapter provides an overview of the existing Planning Code Sections governing the provision of bicycle parking for public and private buildings and garages and recommends improvements for administration and enforcement of the Planning Code, as well as providing new guidelines for implementation of bicycle parking throughout the City.

**CHAPTER 3: TRANSIT AND BRIDGE ACCESS**

The Transit and Bridge Access Chapter addresses the linkages between bicycle trips and transit service, as well as bicycle access to local and regional bridges. By improving bicycle access to transit vehicles and stations, many opportunities are created for increasing bicycle trips. This chapter contains recommendations for creating greater bicycle access to the SFMTA and other transit agencies' vehicles and to existing and future transit stops and stations and recommendations for improved bicycle access to bridges.

**CHAPTER 4: EDUCATION**

The Education Chapter provides an overview of the City's bicycle educational outreach efforts. It recommends creating a comprehensive set of general and targeted bicycling safety materials, classes and workshops. The Education Chapter addresses several aspects of bicycle safety for bicyclists, motorists and City staff to ensure that all parties are aware of bicyclists' rights and responsibilities.

**CHAPTER 5: ENFORCEMENT AND SAFETY**

The Enforcement and Safety Chapter summarizes existing traffic violations related to bicycle collisions and makes recommendations for improved enforcement of traffic laws for both motor vehicles and bicycle traffic.

**CHAPTER 6: PROMOTION**

The Promotion Chapter focuses on attracting new bicyclists to the streets of San Francisco, keeping existing bicyclists on the road and generally promoting awareness of the benefits that increased bicycle usage holds for the City.

**CHAPTER 7: GENERAL PLAN AMENDMENTS, ENVIRONMENTAL REVIEW AND CITYWIDE COORDINATION GOALS, OBJECTIVES AND ACTION ITEMS**

The General Plan Amendments, Environmental Review and Citywide Coordination Chapter address many elements that are relevant to bicycle policy consistency. This chapter focuses on recommended modifications to the General Plan's Transportation Element, Area Plans, the City's environmental review guidelines and the Transportation Code.

## **CHAPTER 8: BICYCLE FUNDING**

The Bicycle Funding Chapter provides a discussion of bicycle project funding, including local, regional, state and federal funding opportunities.

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i U.S. Census Bureau 2007 American Community Survey

ii U.S. Census Bureau 2000 Census

iii [http://factfinder.census.gov/servlet/GRTTable?\\_bm=y&-ds\\_name=ACS\\_2007\\_1YR\\_G00\\_&-\\_box\\_head\\_nbr=R0801&-CONTEXT=grt&-mt\\_name=ACS\\_2006\\_EST\\_G00\\_R0801\\_US30&-redoLog=false&-geo\\_id=D&-format=D&-\\_lang=en](http://factfinder.census.gov/servlet/GRTTable?_bm=y&-ds_name=ACS_2007_1YR_G00_&-_box_head_nbr=R0801&-CONTEXT=grt&-mt_name=ACS_2006_EST_G00_R0801_US30&-redoLog=false&-geo_id=D&-format=D&-_lang=en)

iv <http://rideshare.511.org/research/commuterprofile2003.asp>

# 1. BICYCLE ROUTE NETWORK

## BICYCLE ROUTE NETWORK GOAL AND OBJECTIVES

### Goal:

Refine and Expand the Existing Bicycle Route Network

### Objectives:

- Establish a comprehensive network of bikeways that are appropriately signed, marked and traffic-calmed and that provide convenient and direct connections to all of San Francisco's neighborhoods. The facilities along the bicycle route network should include conventional treatments depending on the design of the bicycle improvements and conditions such as:
  - Off-street bicycle and mixed-use paths (refer to Figure 1-1 on page 1-4)
  - Bicycle lanes (refer to Figure 1-2 on page 1-4)
  - On-street signed bicycle routes (refer to Figure 1-3 on page 1-4)
  - Shared roadway bicycle markings (sharrows)<sup>1</sup>
  - Traffic-calmed streets
- Utilize innovative designs, where appropriate, to improve bicycle usage and safety
- Ensure that the bicycle route network:
  - Provides bicycle access to all commercial and residential areas
  - Provides bicycle access to all San Francisco Municipal Railway (Muni) metro, Bay Area Rapid Transit (BART), and Caltrain stations, ferry terminals and other major transit hubs
  - Is well signed, well striped, and well paved

## INTRODUCTION

The existing bicycle route network is the result of many years of work by the San Francisco Municipal Transportation Agency (SFMTA) Bicycle Program, San Francisco Bicycle Coalition (SFBC), the Bicycle Advisory Committee (BAC) and

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<sup>1</sup> Sharrows are a type of pavement marking placed within a traffic lane. The markings are intended to alert drivers that bicyclists share the traffic lane and also to reduce the chance of bicyclists impacting the open doors of parked vehicles. More information on sharrows can be viewed online at <http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/pdf/camutcd/CAMUTCD-Part9.pdf>

many other agencies and organizations. The bicycle route network is included in the San Francisco General Plan's Transportation Element and is a component of the City's official transportation policy. This Plan aims to refine and expand the existing bicycle route network, to increase safe space for bicyclists citywide and to improve the visibility of the network on San Francisco's streets. As changes to the bicycle route network occur, corresponding updates of the Bicycle Plan and San Francisco General Plan should occur<sup>2</sup>.

This chapter provides an overview of the existing bicycle route network and outlines recommended near-term, long-term and minor improvements to the existing bicycle route network to improve its utility for bicyclists.

### **Action 1.1**

Implement improvements to streets and paths identified as proposed near-term bicycle improvement projects and implement minor improvements to other streets and paths on the existing bicycle route network, if feasible.

Near-term bicycle route network improvement projects (near-term improvements) have had design options developed and are anticipated to be constructed within the next five years following completion of environmental review and approval of the Bicycle Plan. Minor improvements include minor pavement marking and signage changes to improve bicycle travel such as the installation of colored pavement materials, the installation of sharrows, bicycle boxes, minor changes to parking configurations and minor changes to intersection traffic signal timing plans. Traffic signal timing changes will not be made if changes will substantially impede traffic flow.

### **Action 1.2**

Complete the required design and engineering for improvements to streets and paths identified as proposed long-term bicycle improvement projects and implement, if feasible.

Long-term bicycle route network improvement projects (long-term improvements) are either proposed along the existing bicycle route network or consist of potential additions to the bicycle route network at a future date. Specific designs for these future projects have not been developed.

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<sup>2</sup> Recommended amendments to the San Francisco General Plan can be found in Chapter 7 of this Plan.



## EXISTING BICYCLE ROUTE NETWORK

### BICYCLE ROUTE NETWORK FACILITY TYPES

The existing bicycle route network is composed of Class I, II and III bikeways<sup>3</sup>. Typical cross-sections of these facility types are shown in Figures 1-1 through 1-3 below. Class III bicycle facilities may consist of a variety of treatments including streets with wide curb lanes (travel lane width closest to the curb is at least 14 feet wide), sharrows, traffic calming measures or simply streets signed as bicycle routes. A summary of the total miles of each bicycle facility type on the existing bicycle route network as of 2008 is shown in Table 1-1 below.

**Table 1-1**  
Existing Bicycle Route Network Facilities

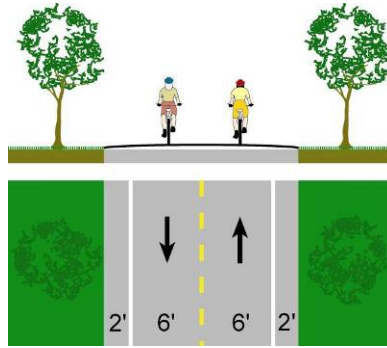
Facility Type	Mileage Total*
Bicycle Path (Class I)	23 miles
Bicycle Lane (Class II)	45 miles
Bicycle Route (Class III)**	132 miles
TOTAL***	208 miles

\* This is the approximate number of miles of City streets and pathways with bicycle facilities and not the actual number of miles of bicycle facilities, i.e., it is not 45 miles of bicycle lanes, but 45 miles of City streets with bicycle lanes (whether a two-way street with bicycle lanes in each direction or a one-way street with a bicycle lane in only one direction). For reference, San Francisco has a total of 1,029 miles of non-freeway streets.

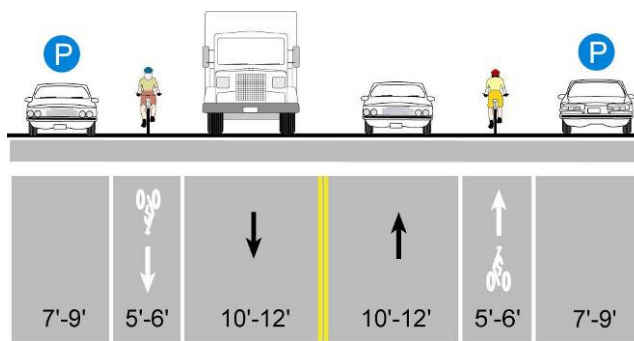
\*\* Class III bicycle routes are signed as bikeways, but do not all have bicycle-specific pavement markings installed; approximately 53 miles of Class III bicycle routes have wide curb lanes and approximately 23 miles of Class III bicycle routes have sharrows.

\*\*\* Total includes additional eight miles of unpaved paths

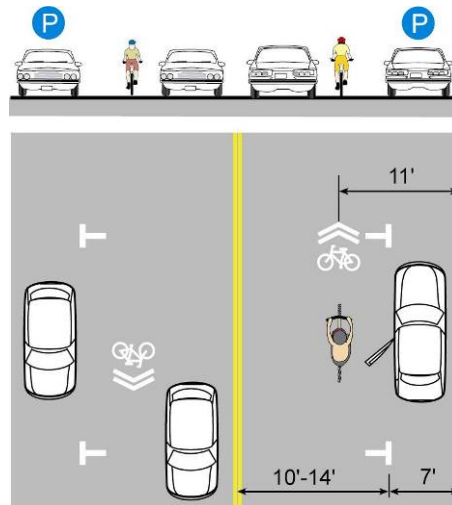
<sup>3</sup> The California Streets and Highway Code Section 890.4 defines a "bikeway" as a facility that is provided primarily for bicycle travel and provides the following definitions for bikeway facilities:  
 Class I Bikeway (Bike Path) - Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross flow by motorists 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.



**Figure 1-1: Typical Class I Facility – Bicycle Path or Multi-Use Trail**



**Figure 1-2: Typical Class II Facility - Bicycle Lane**



**Figure 1-3: Typical Class III Facility – Signed Bicycle Route**

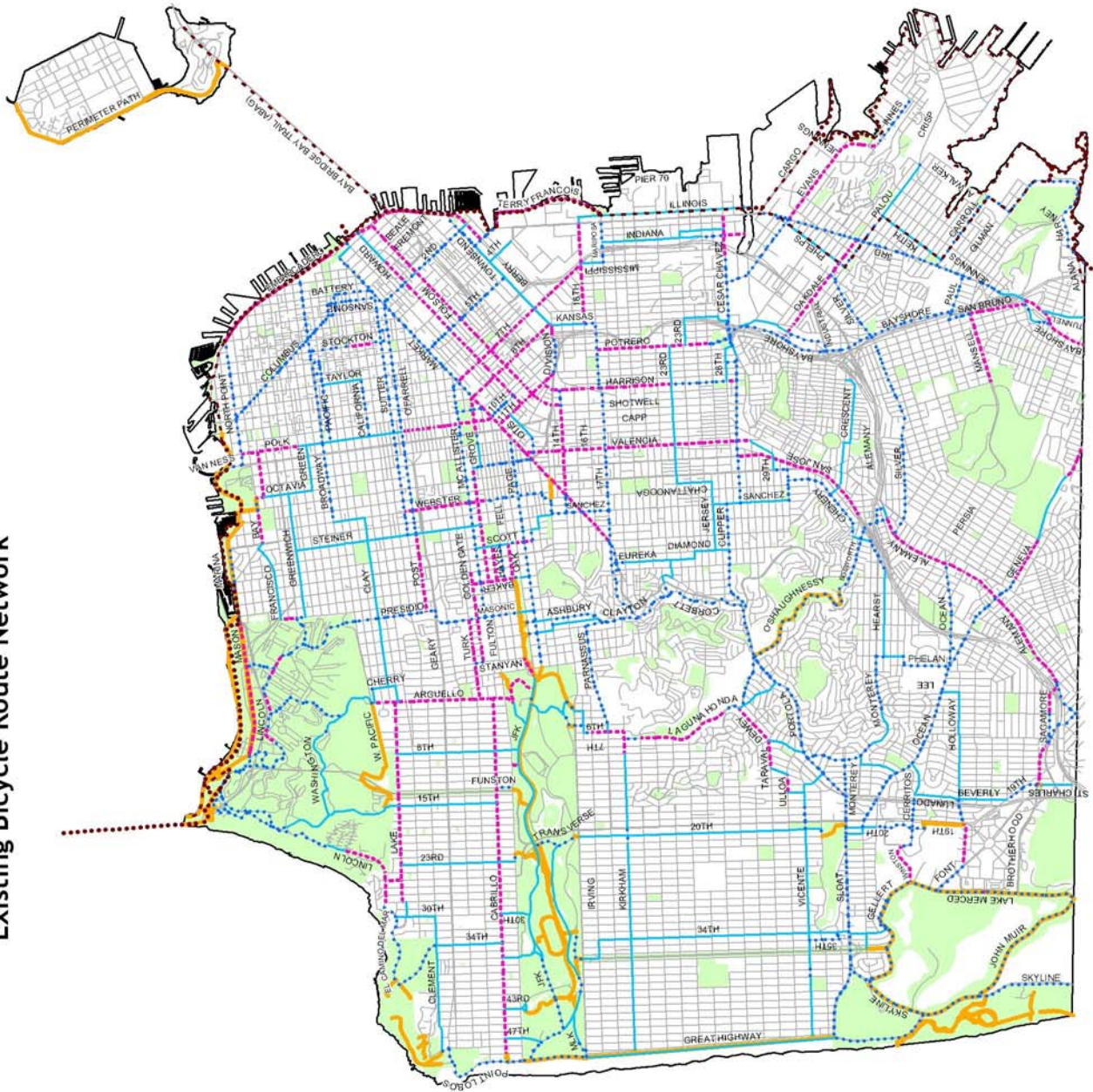
Historically, San Francisco bicycle facilities were placed only on streets where potential conflicts with other competing demands were minimal. As improvements recommended in the 1997 Bicycle Plan were implemented, bicycle facilities were increasingly installed on higher-volume, complex streets that provided greater access to the destinations that bicyclists wished to reach. Implemented bicycle facility improvements, such as the bicycle lanes on Fell, Polk, and Valencia Streets, exemplify the planning and design challenges, as well as the benefits for bicyclists, when major transportation corridors are retrofitted<sup>4</sup>.

The existing signed and numbered bicycle route network, established by the 1997 San Francisco Bicycle Plan and subsequent implementation of bicycle improvements completed since adoption of that Plan, is shown in Figure 1-4 below and is described in detail in Appendix A.

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<sup>4</sup> The Fell, Valencia and Polk Street Reports can be found on the SFMTA Bicycle Program's website – see <http://www.sfmta.com/cms/rbikes/3172.html>

Figure 1-4  
Existing Bicycle Route Network



- Existing Bicycle Route Network**
- Off-Street Path (Class I)
  - Bicycle Lane (Class II)
  - Wide Curb Lane (Class III)
  - ..... Signed Route (Class III)
- San Francisco Bay Trail (ABAG)**
- ..... Existing
  - ..... Proposed
- Parks and Openspace**
- Existing
  - Proposed

0 0.5 1 2 Miles

Data Source: SFMTA, ABAG

August 5, 2008

## CHANGES TO THE EXISTING BICYCLE ROUTE NETWORK

### Action 1.3

Maintain an SFMTA Geographic Information System (GIS) database of the bicycle route network and update the database whenever route changes occur.

The signed and numbered bicycle route network developed by the 1997 Bicycle Plan and designated within the San Francisco General Plan's Transportation Element has been updated over time. Tables 1-2 through 1-4 reflect modifications that have occurred since the 1997 Bicycle Plan was published. Many of the improvements associated with these changes to the bicycle route network have been implemented. The formal modification of these routes, however, requires approval and adoption of this Plan by the SFMTA Board of Directors. Changes to the bicycle route network have been reflected in a City-maintained Geographic Information System (GIS) database and are reflected in Figure 1-4 above. The changes are also reflected on a citywide bicycle user map that is periodically updated (this map is currently published by Rufus Graphics). As changes to the bicycle route network occur, corresponding updates of the San Francisco General Plan should occur. The primary reasons for these bicycle route network modifications are:

- Relocations of the official numbered bicycle route network from an existing street location or segment to a new location
- Addition of an official numbered bicycle route network designation to existing bicycle facilities
- Removal of the official numbered bicycle route network designation from temporary or outdated bicycle facilities recommended in the 1997 Bicycle Plan that have since been made obsolete by new or improved bicycle facilities elsewhere

The numbered bicycle route system developed by the 1997 Bicycle Plan assigned odd numbers to north-south routes and even numbers to east-west routes, with numbers ascending from north to south and from east to west. Some numbers were skipped to allow for future routes to be developed. Three-digit routes were assigned to short connector routes that primarily serve to connect two or more longer routes.

<b>Table 1-2</b> Changes to the Existing Bicycle Route Network – Network Relocations				
Route Number	Street or Path	From	To	Explanation
45	Alemany Boulevard	Rousseau Street	San Jose Avenue	Route 45 will be moved from Cayuga Avenue to Alemany Boulevard in conjunction with new bicycle lanes on Alemany Boulevard. Refer to Near-Term Improvement Project 5-3.
45	Cayuga Avenue	Geneva Avenue	Lyell Street	
25	Barneveld Avenue	Jerrold Avenue	Loomis Street	Southbound Route 25 will be moved from Bayshore Boulevard onto Jerrold Avenue, Barneveld Avenue, Loomis Street and Industrial Street. Southbound Route 25 could be returned to Bayshore Boulevard pending improvements on Bayshore Boulevard. Refer to Near-Term Improvement Project 5-4.
25	Bayshore Boulevard	Jerrold Avenue	Industrial Street	
25	Industrial Street	Bayshore Boulevard	Loomis Street	
25	Jerrold Avenue	Barneveld Avenue	Bayshore Boulevard	
25	Loomis Street	Barneveld Avenue	Industrial Street	
30	Fell Street	Baker Street	Scott Street	Addition of westbound bicycle lane on Fell Street creates an extension of the “Wiggle.” Westbound Route 30 will be moved from Hayes Street to Fell Street.
30	Hayes Street	Baker Street	Scott Street	
170	Oakdale Avenue	Mendell Street	Phelps Street	Route 170 will be moved from Palou Avenue and Phelps Street to Oakdale Avenue in conjunction with new bicycle lanes and a pedestrian plaza on Oakdale Avenue.
170	Palou Avenue	3 <sup>rd</sup> Street	Phelps Street	

**Table 1-2**  
Changes to the Existing Bicycle Route Network – Network Relocations

Route Number	Street or Path	From	To	Explanation
170	Phelps Street	Oakdale Avenue	Palou Avenue	
5	3 <sup>rd</sup> Street	Cargo Way	Terry Francois Boulevard	Route 5 moved from 3 <sup>rd</sup> Street to Illinois Street and Terry Francois Boulevard due to addition of Muni light rail line on 3 <sup>rd</sup> Street. Refer to Near-Term Improvement Project 4-3. Route 40 extended north on Illinois Street to Terry Francois Boulevard.
5	Illinois Street	16 <sup>th</sup> Street	Cargo Way	
5	Terry Francois Boulevard	3 <sup>rd</sup> Street	Illinois	

**Table 1-3**  
Changes to the Existing Bicycle Route Network – Removal of Interim 1997 Network Designations

Route Number	Street or Path	From	To	Explanation
75	Alemanya Boulevard	Arch Street	Saint Charles Avenue	1997 Bicycle Plan, pp. 3-36 discusses Route 75 interim measure that is no longer necessary. It is being eliminated because the Saint Charles Path was reconstructed and a traffic signal installed to improve bicycle circulation through this area.
75	Arch Street	Alemanya Blvd	Randolph Street	
75	Randolph Street	19 <sup>th</sup> Avenue	Arch Street	

**Table 1-4**

Changes to the Existing Bicycle Route Network – Addition of Network Designation to Existing Facilities

Route Number	Street or Path	From	To	Explanation
45	Arlington Street	Bosworth Street	San Jose Avenue southbound off-ramp	Route 45 moved from Chenery to San Jose in conjunction with new bicycle lanes on Guerrero Street and San Jose Avenue. Chenery becomes Route 145.
45	Dolores Street	30 <sup>th</sup> Street	San Jose Avenue	
45	Guerrero Street	Cesar Chavez Street	San Jose Avenue	
45	San Jose Avenue southbound	Guerrero Street	San Jose Avenue southbound off-ramp at Arlington Street	
45	San Jose Avenue northbound	Guerrero Street	Milton Street	
801	Avenue of the Palms	Avenue of the Palms	Perimeter Path	New Route 801 created on Treasure Island.
51	Golden Gate Avenue	Baker Street	Parker Avenue	Route 51 extended as alternate to Route 20 in conjunction with new bicycle lanes on Golden Gate Avenue.
51	Parker Avenue	Golden Gate Avenue	Turk Street	
106	Laguna Street	Bay Street	Marina Boulevard	Route 106 extended on Fort Mason pathway.
802	Perimeter Path	Avenue of the Palms		New route 802 created on Treasure Island.



## **RECOMMENDED IMPROVEMENTS TO THE BICYCLE ROUTE NETWORK**

As outlined in the Introduction, a list of potential bicycle route network improvements was created from extensive public comments, staff analysis, remaining, unimplemented projects from the 1997 Bicycle Plan and public workshops and surveys conducted during the 2002-2005 bicycle planning effort. Since the 2002-2005 bicycle planning effort, additional potential bicycle route network improvements have been identified through various planning efforts. This Plan contains 60 proposed near-term and 24 proposed long-term improvements to the bicycle route network. Additionally, minor improvements are proposed throughout the bicycle route network. Public input on the proposed near-term improvements within this Plan was gathered at a series of public meetings held from March to June 2008.

Recommended near-term, long-term and minor improvements to the bicycle route network are listed below and shown in Figure 1-5. Recommended near-term improvements are grouped into eight clusters, as shown in Figure 1-6. Clusters were developed, each containing near-term improvements in close geographic proximity to each other, in order to evaluate and understand the combined potential transportation-related impacts related to implementation of the near-term improvements. Detailed design options for 60 near-term improvement projects have been developed and are described in Appendix B. Specific designs for long-term and minor improvements have not been developed.

**Figure 1-5**  
**Recommended Near-Term and Long-Term Improvements to the Bicycle Route Network**

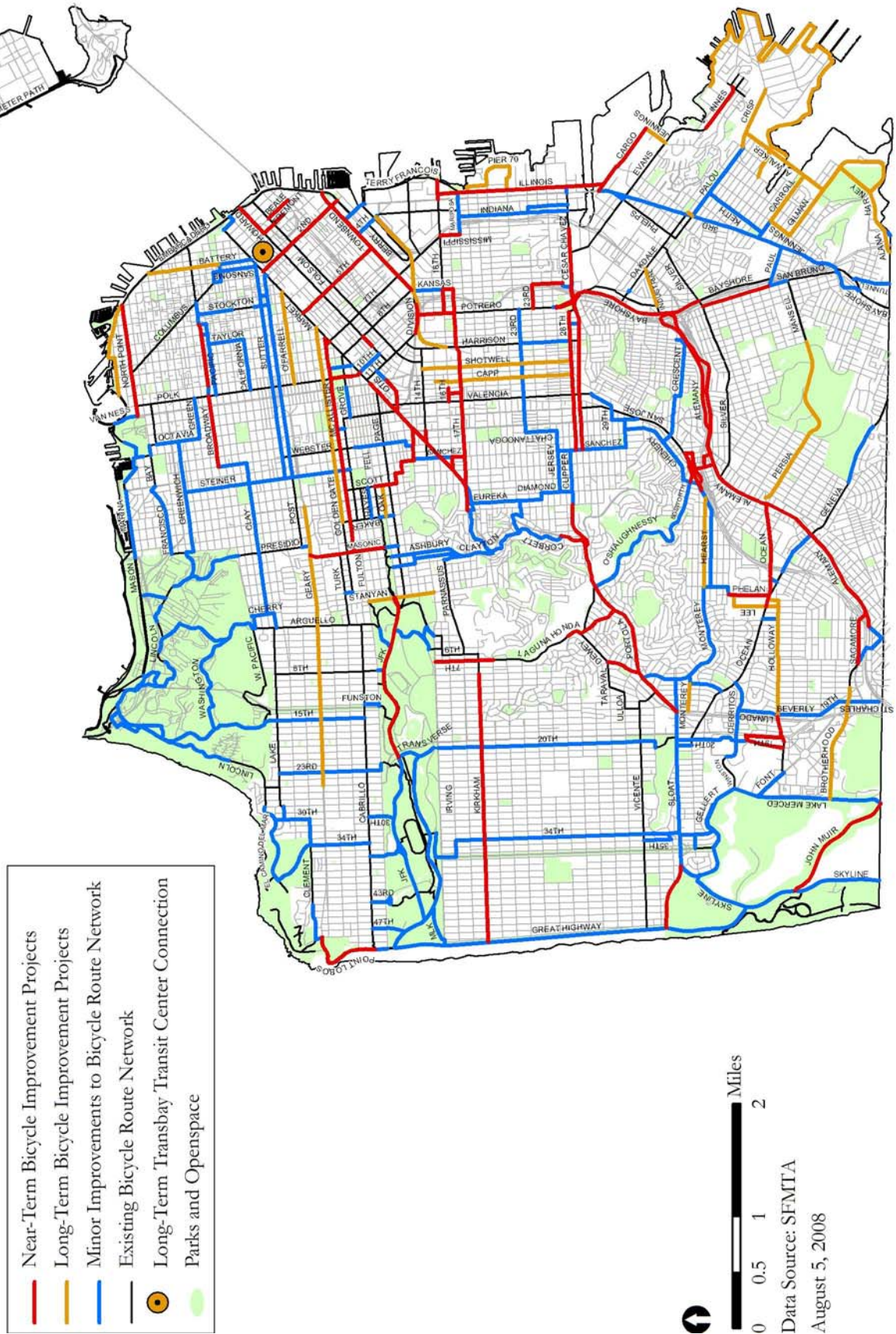
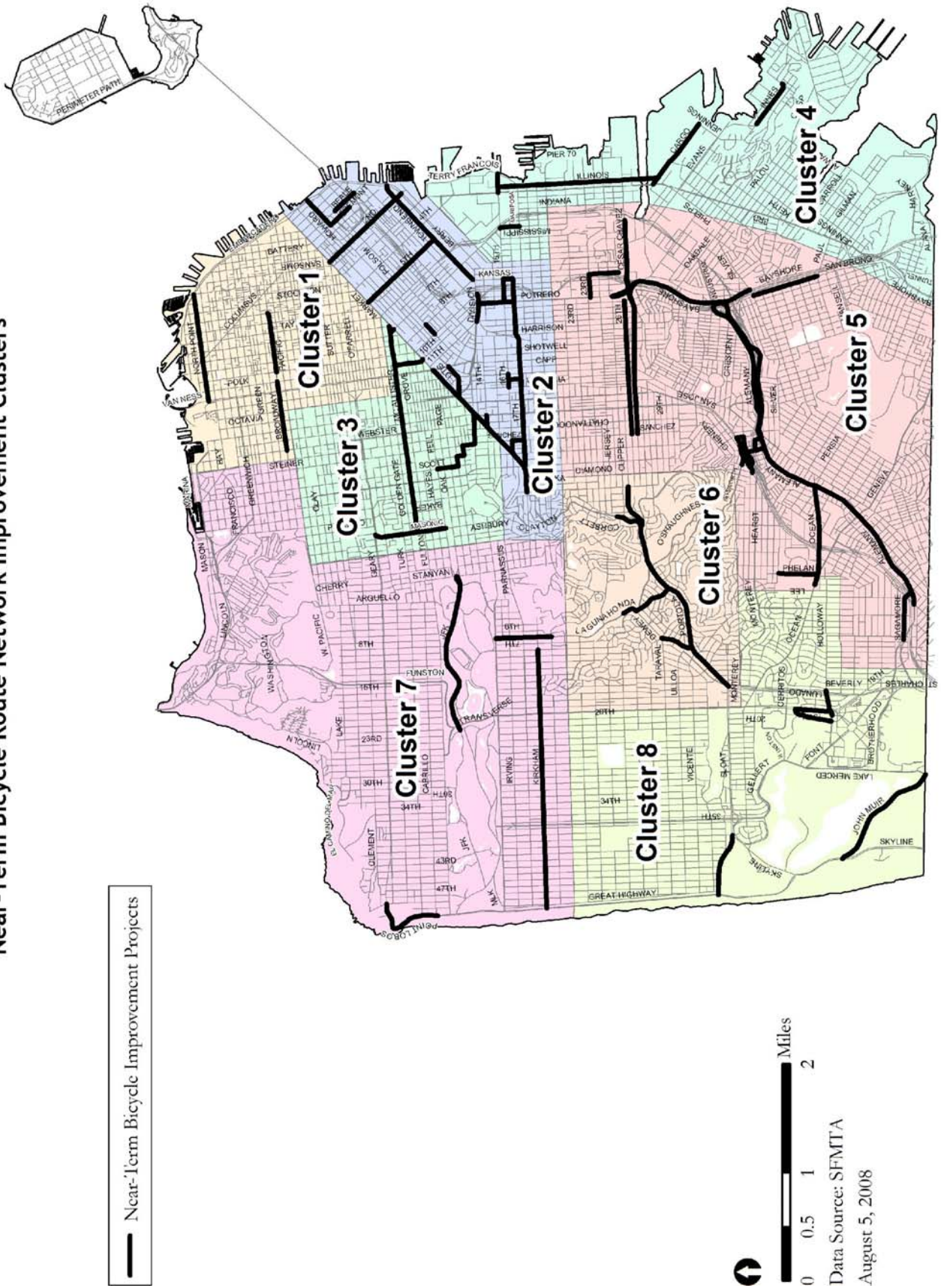




Figure 1-6  
Near-Term Bicycle Route Network Improvement Clusters



## RECOMMENDED NEAR-TERM IMPROVEMENTS

The following is a list of recommended near-term improvement projects, which are shown in Figure 1-5 (the first number for each proposed project indicates the project's cluster, as shown in Figure 1-6):

Project 1-1	Broadway Bicycle Lanes, Polk Street to Webster Street
Project 1-2	Broadway Tunnel Signage Improvements
Project 1-3	North Point Street Bicycle Lanes, The Embarcadero to Van Ness Avenue
Project 2-1	2 <sup>nd</sup> Street Bicycle Lanes, King Street to Market Street
Project 2-2	5 <sup>th</sup> Street Bicycle Lanes, Market Street to Townsend Street
Project 2-3	14 <sup>th</sup> Street Bicycle Lane, Dolores Street to Market Street
Project 2-4	17 <sup>th</sup> Street Bicycle Lanes, Corbett Avenue to Kansas Street, including connections to the 16 <sup>th</sup> Street BART Station via Hoff Street or Valencia Street and 16 <sup>th</sup> Street and to Division Street via Potrero Avenue
Project 2-5	Beale Street Bicycle Lane, Bryant Street to Folsom Street
Project 2-6	Division Street Bicycle Lanes, 9 <sup>th</sup> Street to 11 <sup>th</sup> Street
Project 2-7	Fremont Street Bicycle Lane, Howard Street to Harrison Street
Project 2-8	Howard Street Bicycle Lane, Extension at 9 <sup>th</sup> Street
Project 2-9	Howard Street Bicycle Lane, The Embarcadero to Fremont Street
Project 2-10	Market Street and Valencia Street Intersection Improvements
Project 2-11	Market Street Bicycle Lanes, 17 <sup>th</sup> Street to Octavia Boulevard
Project 2-12	Market Street Bicycle Lanes, Octavia Boulevard to Van Ness Avenue
Project 2-13	McCoppin Street Bicycle Path, Market Street to Valencia Street
Project 2-14	McCoppin Street Bicycle Lane, Gough Street to Valencia Street
Project 2-15	Otis Street Bicycle Lane, Gough Street to South Van Ness Avenue
Project 2-16	Townsend Street Bicycle Lanes, 8 <sup>th</sup> Street to The Embarcadero

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Project 3-1	Fell Street and Masonic Avenue Intersection Improvements
Project 3-2	Masonic Avenue Bicycle Lanes, Fell Street to Geary Boulevard
Project 3-3	McAllister Street Bicycle Lane, Market Street to Masonic Avenue
Project 3-4	Polk Street Bicycle Lane, Market Street to McAllister Street
Project 3-5	Scott Street Bicycle Lane, Fell Street to Oak Street
Project 3-6	The “Wiggle” Improvements, Duboce Avenue between Market and Steiner Streets, Steiner Street between Duboce Avenue and Waller Street, Waller Street between Steiner and Pierce Streets, Pierce Street between Waller and Haight Streets, Haight Street between Pierce and Scott Streets and Scott Street between Haight and Fell Streets.
Project 4-1	16 <sup>th</sup> Street Bicycle Lanes, 3 <sup>rd</sup> Street to Terry Francois Boulevard
Project 4-2	Cargo Way Bicycle Lanes, 3 <sup>rd</sup> Street to Jennings Street
Project 4-3	Illinois Street Bicycle Lanes, 16 <sup>th</sup> Street to Cargo Way
Project 4-4	Innes Avenue Bicycle Lanes, Donahue Street to Hunters Point Boulevard
Project 4-5	Mississippi Street Bicycle Lanes, 16 <sup>th</sup> Street to Mariposa Street
Project 5-1	23 <sup>rd</sup> Street Bicycle Lanes, Kansas Street to Potrero Avenue
Project 5-2	Alemanly Boulevard Bicycle Lanes, Bayshore Boulevard to Rousseau Street
Project 5-3	Alemanly Boulevard Bicycle Lanes, Rousseau Street to San Jose Avenue
Project 5-4	Bayshore Boulevard Bicycle Lanes, Cesar Chavez Street to Silver Avenue
Project 5-5	Cesar Chavez Street Bicycle Lanes, I-280 to US 101 Freeways
Project 5-6	Cesar Chavez Street/26 <sup>th</sup> Street Bicycle Lanes, Sanchez Street to US-101
Project 5-7	Glen Park Area Bicycle Lanes: a) Connection between Alemanly Boulevard and San Jose Avenue and b) Connection between Monterey Boulevard and San Jose Avenue

- a) Connection between Alemany Boulevard and San Jose Avenue via Arlington Street, Bosworth Street, Lyell Street, Milton Street, Rousseau Street and Still Street and b) Connection between Monterey Boulevard and San Jose Avenue via Monterey Boulevard and San Jose Avenue ramps
- Project 5-8 Kansas Street Bicycle Lanes, 23<sup>rd</sup> Street to 26<sup>th</sup> Street
- Project 5-9 Ocean Avenue Bicycle Lanes, Alemany Boulevard to Lee Avenue
- Project 5-10 Phelan Avenue Bicycle Lanes, Judson Avenue to Ocean Avenue
- Project 5-11 Potrero Avenue and Bayshore Boulevard Bicycle Lanes, 25<sup>th</sup> Street to Cesar Chavez Street
- Project 5-12 Sagamore Street and Sickles Avenue Bicycle Lanes, Alemany Boulevard to Brotherhood Way
- Project 5-13 San Bruno Avenue Bicycles Lanes, Paul Avenue to Silver Avenue
- Project 6-1 Claremont Boulevard Bicycle Lanes, Dewey Boulevard to Portola Drive
- Project 6-2 Clipper Street Bicycle Lanes, Douglass Street to Portola Drive
- Project 6-3 Laguna Honda Boulevard Bicycle Lanes, Plaza Street to Woodside Avenue
- Project 6-4 Laguna Honda Boulevard Bicycle Lanes, Portola Drive to Woodside Avenue
- Project 6-5 Portola Drive Bicycle Lanes, Corbett Avenue to O'Shaughnessy Boulevard
- Project 6-6 Portola Drive Bicycle Lanes, O'Shaughnessy Boulevard/Woodside Avenue to Sloat Boulevard/St. Francis Boulevard
- Project 7-1 Intersection Improvements at 7<sup>th</sup> Avenue and Lincoln Way
- Project 7-2 7<sup>th</sup> Avenue Bicycle Lanes, Lawton Street to Lincoln Way
- Project 7-3 Great Highway and Point Lobos Avenue Bicycle Lanes, El Camino Del Mar to Cabrillo Street
- Project 7-4 John F. Kennedy Drive and Kezar Drive Bicycle Lanes, Stanyan Street to Transverse Drive

Project 7-5	Kirkham Street Bicycle Lanes, 9 <sup>th</sup> Avenue to Great Highway
Project 7-6	Page and Stanyan Streets Intersection Traffic Signal Improvements
Project 8-1	19 <sup>th</sup> Avenue Mixed-Use Path, Buckingham Way to Holloway Avenue
Project 8-2	Buckingham Way Bicycle Lanes, 19 <sup>th</sup> Avenue to 20 <sup>th</sup> Avenue
Project 8-3	Holloway Avenue Bicycle Lanes, Junipero Serra Boulevard to Varela Avenue
Project 8-4	John Muir Drive Bicycle Lanes, Lake Merced Boulevard to Skyline Boulevard
Project 8-5	Sloat Boulevard Bicycle Lanes, Great Highway to Skyline Boulevard

## RECOMMENDED LONG-TERM IMPROVEMENTS

Long-term improvements are either major improvements to segments of the existing bicycle route network or are potential future additions of new streets and pathways to the bicycle route network. Currently, neither a schedule nor specific designs for these projects has been developed. The following is a list of recommended long-term improvement projects, which are shown in Figure 1-5:

- Battery Street between Clay Street and The Embarcadero
- Bay Trail improvements in the vicinity of Fisherman’s Wharf
- Bay Trail improvements in the vicinity of Hunters Point
- Bayview Transportation Improvements Project (BTIP)
- Brotherhood Way between Arch Street and Lake Merced Boulevard
- Capp Street between 15<sup>th</sup> Street and 26<sup>th</sup> Street
- Geary Boulevard between 25<sup>th</sup> Avenue and Divisadero Street
- Golden Gate Avenue between Baker Street and Market Street
- Harold Avenue between Holloway Avenue and Ocean Avenue
- Holloway Avenue between Harold Avenue and Junipero Serra Boulevard
- Industrial Street between Loomis Street and Oakdale Avenue
- Jennings Street between Cargo Way and Evans Avenue
- Lee Avenue between Holloway Avenue and Phelan Avenue
- Mansell Street/Persia Avenue between Ocean Avenue and University Street
- Mendell Street between Oakdale Avenue and Palou Avenue
- Mission Creek Bikeway between 4<sup>th</sup> Street and Harrison Street
- Monterey Boulevard between Circular Avenue and Genessee Street
- Monterey Boulevard between Junipero Serra Boulevard and San Benito Way
- Oak Street between Baker Street and Scott Street
- O’Farrell Street between Market Street and Polk Street

- Pier 70 between 18<sup>th</sup> Street and 22<sup>nd</sup> Street
- Shotwell Street between 14<sup>th</sup> Street and 26<sup>th</sup> Street
- Stanyan Street between Frederick Street and Fulton Street
- Transbay Transit Center Connection

The BTIP includes several options, as described below.

For all BTIP Build Alternatives:

Proposed relocation of Bicycle Route #805:

From: Arelious Walker Drive (between Carroll Avenue and Gilman Avenue) and Carroll Avenue (between Arelious Walker Drive and Jennings Street).

To: Gilman Avenue (between Arelious Walker Drive and Jennings Street) and Jennings Street (between Gilman Avenue and Carroll Avenue).

For all BTIP Southern Build Alternatives:

Proposed bicycle lanes on Gilman Avenue between Donahue Street and Arelious Walker Drive.

Proposed bicycle lanes on Harney Way Extension between Jamestown Avenue and Gilman Avenue.

Proposed bicycle lanes on Jamestown Avenue Extension and Hunters Point Expressway.

Proposed bicycle lanes on Alana Way between US 101 and Harney Way.

Proposed bicycle lanes on Harney Way between Alana Way and Jamestown Avenue.

For BTIP S1 - Walker Bridge Build Alternative:

Proposed bicycle lanes on Arelious Walker Drive Extension between Bancroft Avenue and Crisp Avenue.

Proposed bicycle lanes on Crisp Avenue between Arelious Walker Drive Extension and Spear Street.

Proposed bicycle path along Crisp Avenue right-of-way between the intersection of Palou/Griffith and Arelious Walker Drive Extension.

For BTIP S2 - Griffith Bridge and S3 - Ingalls Street Build Alternatives:

Proposed bicycle lanes on Crisp Avenue between the intersection of Palou Avenue/Griffith Street and Spear Street.

For BTIP S4 - Underwood Avenue Build Alternative:

Proposed bicycle lanes on Underwood Avenue between Hawes Street and Arelious Walker Drive Extension. Proposed bicycle lanes on Crisp Avenue between Arelious Walker Drive Extension and Spear Street.

Proposed bicycle path along Crisp Avenue right-of-way between the intersection of Palou Avenue/Griffith Street and Arelious Walker Drive Extension.



## RECOMMENDED MINOR IMPROVEMENTS

Minor improvements are treatments that will be implemented as necessary to improve conditions for bicycle use within the City. Minor improvements will be implemented to address gaps and deficiencies in the bicycle route network, and will generally be implemented along portions of the bicycle route network where bicycle facility improvements (excluding bicycle route network signage) have not been made in the past as shown in Figure 1-5.

## BICYCLE AND TRANSIT POLICY

### Action 1.4

Work with other City agencies to ensure that San Francisco continues to implement the *Transit First* policy.

San Francisco's *Transit First* policy supports pedestrians and bicycles in addition to transit as important non-automobile components of a balanced transportation system. San Francisco's *Transit First* policy (Section 16.102 of the City Charter) includes the following:

- "Within San Francisco, travel by public transit, by bicycle and on foot must be an attractive alternative to travel by private automobile;"
- "Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights of way by pedestrians, bicyclists and public transit;" and
- "Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes and secure bicycle parking."

Implementation of the recommendations in this Plan will help support the *Transit First* policy.

## BICYCLE FACILITIES ON TRANSIT ROUTES

This section provides a preliminary framework to guide the SFMTA, the Planning Department and other agencies in the selection of specific streets for bicycle improvements along transit routes. Bicycle improvements on transit routes should be considered on a case-by-case basis and should include technical analysis and mitigation measures appropriate to each particular case.

Appropriate agencies should work closely together to identify and mitigate, where possible, negative impacts on transit that could potentially result from implementation of bicycle improvements. Working together to create world-class facilities for both transit riders and bicyclists will result in greater mode shifts to more sustainable forms of transportation, ultimately benefiting both transit riders and bicyclists.

When bicycle facilities are proposed on streets where non-Muni transit service is operated (such as AC Transit, Golden Gate Transit, or Samtrans), the SFMTA

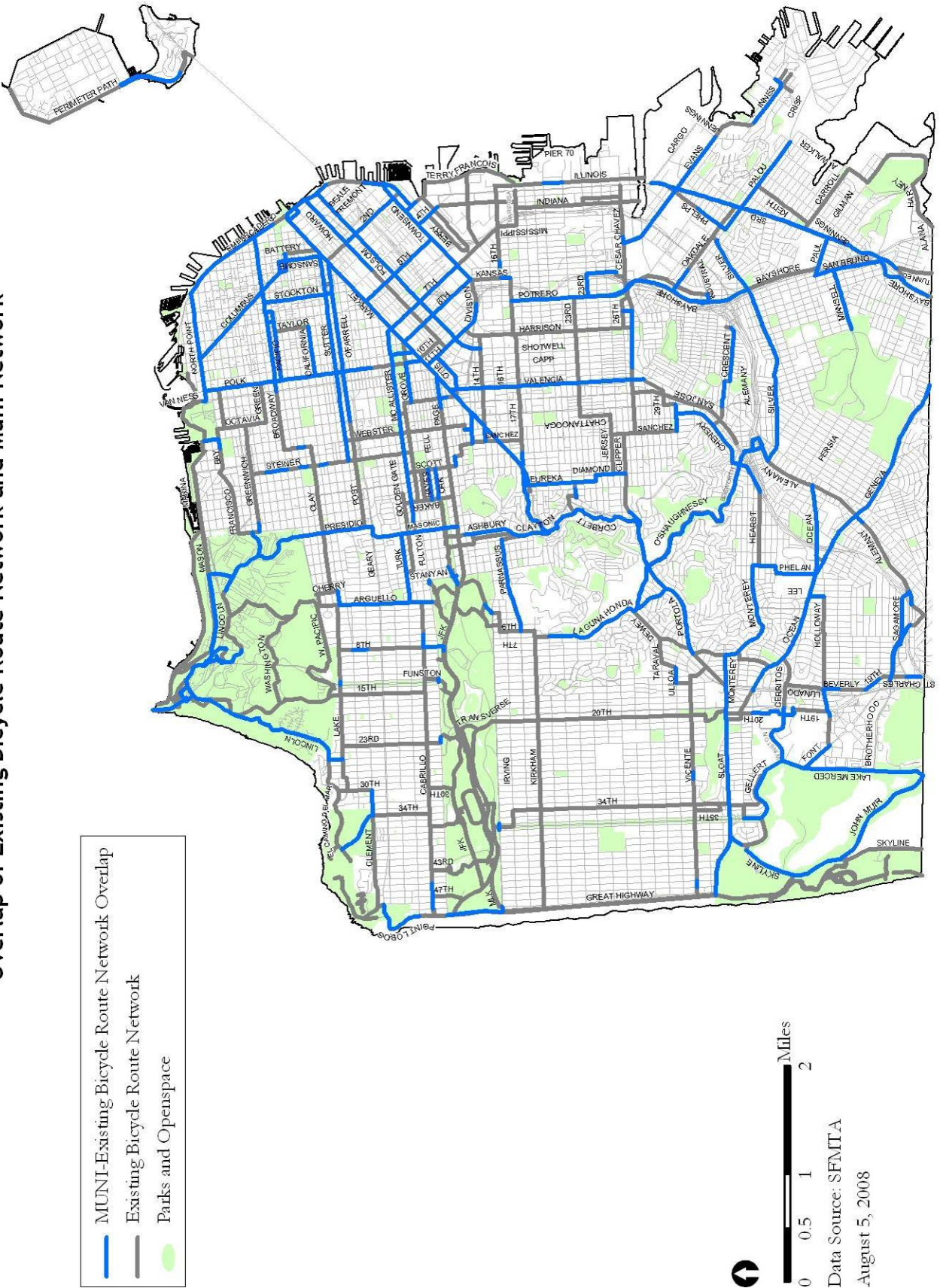
should work with these transit agencies to ensure that facilities are designed to meet the needs of both bicyclists and transit.

When a bicycle improvement is proposed along an existing transit route, SFMTA Bicycle Program staff will work with Muni Service Planning staff to review the proposed bicycle improvement and identify specific data needs and steps required to demonstrate its viability.

Bicycle improvements should not create negative impacts to transit operations (e.g., transit travel times or schedule adherence). Bicyclists' safety, however, also must be considered and balanced with the need for reliable transit service. Where a proposed bicycle improvement may result in negative impacts to transit, appropriate measures should be identified to ensure minimal transit service degradation (or potential transit service improvements), while improving conditions for bicyclists.

Figure 1-7 below shows the overlap of the existing bicycle route network and the existing Muni transit network. This map should be consulted when planning bicycle improvements.

Figure 1-7  
Overlap of Existing Bicycle Route Network and Muni Network



## **ALLOWING BICYCLES IN EXCLUSIVE BUS LANES**

### **Action 1.5**

Conduct a before and after study on the impacts of allowing bicycles in exclusive bus/taxi lanes.

Cities around the world have developed shared bus/bicycle lanes to provide both transportation modes with dedicated space separated from motor vehicle traffic. While such facilities may improve conditions for bicycles and transit by reducing conflicts with automobiles, they also have the potential to increase conflicts between bicycles and buses; therefore, safety and operational issues must be thoroughly addressed (see Action 4.8 in Chapter 4 for further discussion of bicycle and bus safety issues).

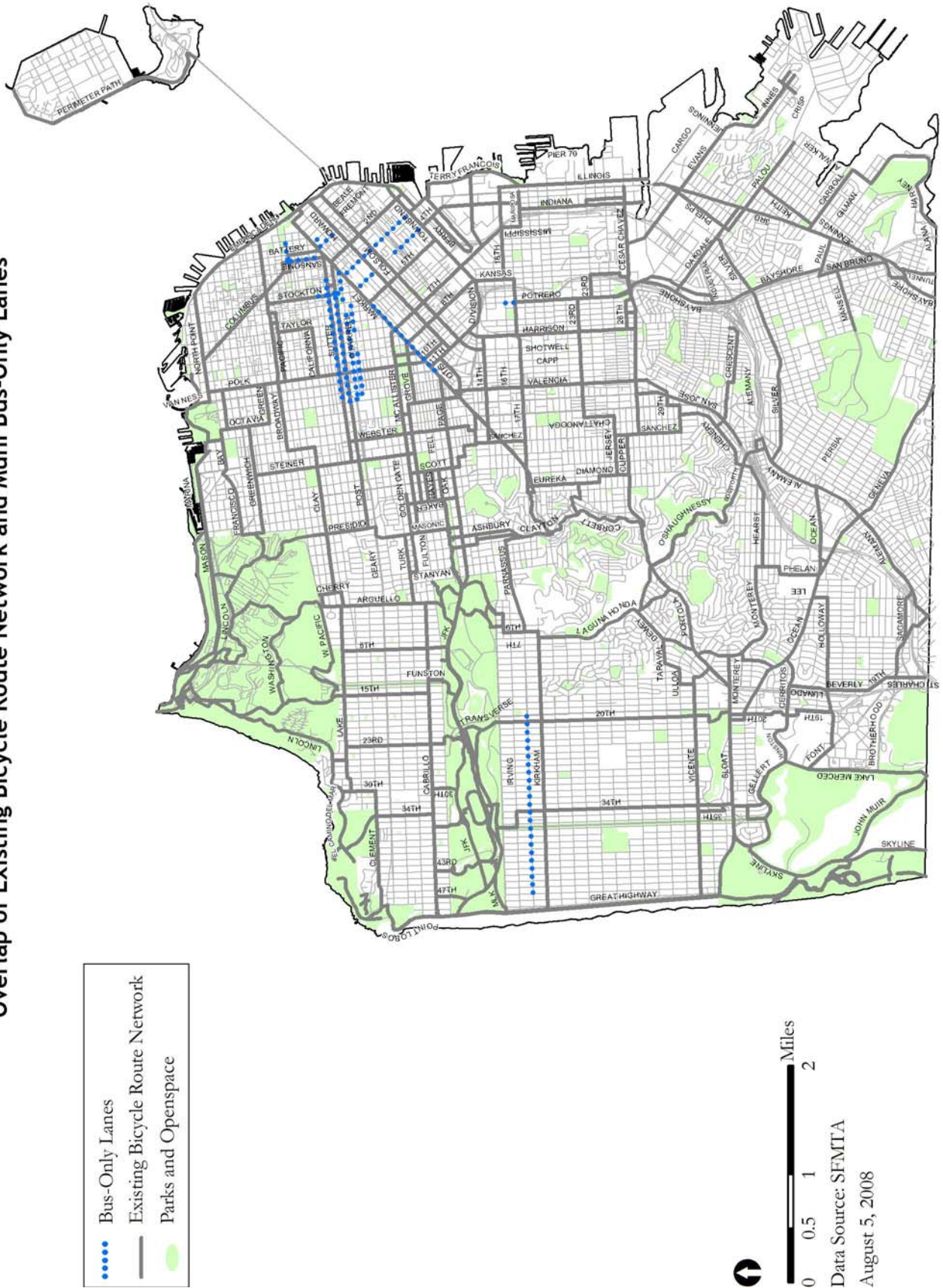
The California Vehicle Code (CVC<sup>i</sup>) Section 21655.7 allows local authorities to designate portions of highways for their exclusive use as a “public mass transit guideway.” San Francisco establishes exclusive transit areas through the San Francisco Transportation Code (SFTC) Division II, Section 601, and no vehicles except transit vehicles, taxicabs, vehicles preparing to make a turn and vehicles moving from a stopped position at the curb are permitted to use them. Exclusive transit areas are usually designated as the far-right lane, where bicyclists are generally required by law to ride (CVC Section 21202).

The lack of clarity about where a bicyclist should ride where there is a transit-only lane on the right side of the roadway creates confusion for bus operators, bicyclists and motorists. Under local law as written, bicycles could use the transit-only lanes, because the SFTC prohibits “vehicles” from using the transit-only lanes, and bicycles are not classified as “vehicles” under the CVC (Sections 231 and 670); however, San Francisco can only exercise the powers in this area that are delegated to it by the state under CVC Section 21. State law only authorizes use of transit-only lanes for “public mass transit.” Changes in designated transit-only lanes may be legislated by the SFMTA Board of Directors by amending the SFTC, but a change in state law would be required to allow bicycles to operate in transit-only lanes. If the results of a California Traffic Control Devices Committee (CTCDC) sponsored experiment show that shared use with bicycles is determined to be safe for bicyclists and would not impede the movement of transit vehicles, legislation could be drafted to amend CVC Section 21655.7 to allow bicyclists to travel in transit-only lanes.

Figure 1-8 below shows the existing bicycle route network and existing Muni bus-only lanes.



Figure 1-8  
Overlap of Existing Bicycle Route Network and Muni Bus-Only Lanes



## **ADDITIONAL CITY POLICIES**

This section recommends actions that could impact the continued expansion and refinement of the bicycle route network.

### **MULTI-LANE STREETS AND STATE HIGHWAYS**

#### **Action 1.6**

Review multi-lane streets for excess capacity and explore travel lane removals where excess capacity exists to accommodate bicycle lanes or other bicycle-friendly treatments.

The genesis for review of a multi-lane street for potential travel lane removal can occur from a variety of sources: The Department of Public Works' (DPW) planned street resurfacing, recommendations from advocacy groups or SFMTA staff recommendations. Additionally, as advances in Intelligent Transportation System (ITS) technology continue, they should be used to improve the effective capacity of existing multi-lane streets, thereby possibly allowing travel lane removal and the addition of bicycle facilities. Extra capacity on arterial streets, however, allows for the management of traffic volume fluctuations. Extra capacity is particularly relevant when there are parallel residential streets, bicycle routes or transit routes. Travel lane removals that divert traffic volumes onto residential streets, bicycle routes or transit routes should be avoided.

#### **Action 1.7**

Work with the California Department of Transportation (Caltrans) to analyze and add bicycle facilities where appropriate on current State highways within San Francisco.

The City should work with Caltrans to transfer State highways to the City where it is determined to be mutually beneficial.

### **LEVEL OF SERVICE STANDARDS AND METHODOLOGIES**

#### **Action 1.8**

Work with the responsible San Francisco agencies to develop revisions to San Francisco's level of service (LOS) standards and methodologies such that they better respond to the multimodal nature of San Francisco's transportation system, specifically addressing bicycles.

LOS measures are used to predict the impacts of proposed projects on the City's transportation system under the California Environmental Quality Act (CEQA). Existing LOS standards and methodologies used by the City are focused primarily on automobile travel, secondarily on transit travel and very little on bicycle and pedestrian travel.

The San Francisco County Transportation Authority (SFCTA) adopted a Strategic Analysis Report (SAR 02-3) "Transportation Level of Service (LOS) Methodologies" in December 2003 which concluded that conventional LOS measures, and the City's current process for evaluating transportation projects, are not consistent with the

City's General Plan policy guidance toward development of a balanced, multi-modal transportation system<sup>ii</sup>. Specifically, they conflict with General Plan Policy 10.1, which calls for the City's transportation system to be assessed in terms of the movement of people and goods rather than vehicles. Furthermore, the City's LOS measures do not incorporate factors most important to bicyclists and provide limited acknowledgement of the environmental benefits of bicycling.

An LOS technical working group (TWG), recommended in SAR 02-3, began meeting in June 2004. It consists of representatives from the SFCTA, the SFMTA, the Planning Department, Caltrans, the Association of Bay Area Governments (ABAG), a transportation consultant, an academic researcher, bicycle and pedestrian advocates and a CEQA expert from the City Attorney's Office. When the LOS TWG completes its work, it will present its recommended revisions to current City LOS standards and methodologies (a refined version of SAR 02-3's recommendations) to the SFCTA Board. The LOS TWG could make recommendations for amending existing LOS methods to better reflect the multimodal nature of travel in San Francisco. The LOS TWG is currently working to complete a study on the potential for a new measure of automobile trips generated to replace the City's LOS standards and methodologies. To implement any new recommended methodologies, the Planning Commission would have to adopt these new methodologies by revising its Guidelines for Environmental Review.

A different analytical process as part of the transportation evaluation component of environmental review might reduce the time needed for bicycle project delivery and might help reduce bicycle project costs as well.

## **TRAFFIC CALMING**

### **Action 1.9**

Define "bicycle boulevards," and develop criteria for identifying streets that could be designated as bicycle boulevards.

In 1998, the SFCTA led a citywide effort to establish Traffic Calming Guidelines. In February 2001, a new section in the SFMTA's Traffic Engineering Division was created - the Livable Streets Section – which included a Traffic Calming Program created to implement these guidelines.

The 1997 San Francisco Bicycle Plan included specific recommendations for bicycle-related traffic calming measures to be implemented by the SFMTA's Bicycle Program. However, since the creation of the SFMTA Traffic Calming Program, all traffic calming projects are managed by this program, with the SFMTA Bicycle Program serving in an advisory role. Traffic Calming projects must follow the approved Traffic Calming Guidelines.

The Traffic Calming Guidelines were established through a comprehensive citywide effort with input from many community groups including the SFBC and BAC. These guidelines were adopted by the SFMTA Board of Directors and any changes to these guidelines would require additional public outreach and approval by the

SFMTA Board of Directors. The first step in amending these guidelines to include bicycle boulevards is to define “bicycle boulevards” and then develop criteria for selecting streets as potential bicycle boulevard candidates. The 1997 Bicycle Plan’s “bicycle priority streets” provide a good starting point for defining bicycle boulevards. However, since the 1997 Bicycle Plan predated the formation of the SFMTA Traffic Calming Program and the Traffic Calming Guidelines, the selection of these “bicycle priority streets” needs to be reconsidered in terms of a new definition of “bicycle boulevards.” The “bicycle boulevards” definition should take San Francisco’s *Transit First* policy into account and be incorporated into the City’s General Plan. For the purposes of this Plan, the terms “bicycle arterial street,” “bicycle boulevard” and “bicycle priority street” are the same. Once bicycle boulevards are defined and included in the Traffic Calming Guidelines and criteria are developed for selecting streets as potential bicycle boulevards, the SFMTA Bicycle Program should work with the SFMTA Traffic Calming Program to implement bicycle boulevards.

### **SUPPLEMENTAL DESIGN GUIDELINES**

#### **Action 1.10**

Review international best practices and implement innovative design treatments along the bicycle route network with an appropriate level of analysis and study.

The Supplemental Design Guidelines were developed as a part of the 2002-2005 bicycle planning effort by the SFMTA Bicycle Program staff and a consultant team<sup>iii</sup>. They were reviewed by the Plan’s Technical Advisory Committee and approved by the Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT) in September 2003. The Supplemental Design Guidelines complement the San Francisco Bicycle Plan, and are intended to provide City staff with a more detailed and varied set of tools to apply when planning and designing improvements to the bicycle route network.

The design concepts developed in the Supplemental Design Guidelines are intended to supplement the design guidelines for typical bikeway situations provided in Caltrans Highway Design Manual (HDM) Chapter 1000 – Bikeway Planning and Design, the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities and the Federal Manual of Uniform Traffic Control Devices (MUTCD) Part 9 - Traffic Controls for Bicycle Facilities (including the associated California MUTCD). These design concepts draw upon creative solutions used in other locations in California, other states and European cities.

These designs are conceptual, and prior to application to specific situations, they should be reviewed further on a case-by-case basis. Continued development of the Supplemental Design Guidelines will allow San Francisco to improve the quality of the bicycle route network by applying the highest standards of bicycle safety, comfort and convenience.



Caltrans HDM Chapter 1000, the AASHTO Guide for the Development of Bicycle Facilities and the MUTCD should be the primary references, and the use of the Supplemental Design Guidelines augment these reference materials.

## **SHARED ROADWAY BICYCLE MARKINGS**

### **Action 1.11**

Prioritize installation of shared roadway bicycle markings where safety could be improved.

Shared roadway bicycle markings (sharrows) are a type of pavement marking placed within a traffic lane. The markings are intended to alert drivers that bicyclists share the traffic lane and to reduce the chance of bicyclists impacting the open doors of parked vehicles. A study on the effectiveness of sharrows titled “San Francisco’s Shared Lane Pavement Markings: Improving Bicycle Safety”<sup>iv</sup> found that after installation of sharrows:

- Bicyclists rode further away from the door zone
- Motorists shifted to the left and gave more room when passing bicyclists
- Fewer bicyclists rode on the sidewalk
- Fewer bicyclists rode the wrong way on the street

Sharrows were studied in mid-block locations but they also may be effective in other situations, such as intersection approaches with multiple turn lanes where a through-moving bicyclist should be positioned in the center of an optional through/turn lane. Further study of the sharrows in these types of situations should be undertaken by the SFMTA.

## **BICYCLE ROUTE NETWORK IMPROVEMENTS – STEPS FOR IMPLEMENTATION**

### **A. IMPROVEMENT IMPETUS**

A proposed bicycle route network improvement can originate from several sources:

- Noted by staff as a necessary safety improvement
- Recommended as an improvement in this Plan
- Requested by the public or advocacy group
- Requested by City officials
- Opportunity presented by another project or another agency

### **B. BICYCLE PROGRAM STAFF ANALYSIS**

In evaluating a proposed improvement, typical questions and data collection by the SFMTA Bicycle Program staff include:

#### *Design*

What is the current condition of the facility and what is being proposed?

Data: drawings and descriptions of current and proposed conditions

Problem/Solution

What is the problem and how does the proposed improvement address it?

Data: bicycle counts, collision history, prevailing motor vehicle speeds, knowledge of route and existing bicycle facilities in the project area and consideration of alternative solutions or routes

History/Background

What is the history of transportation related requests in the area?

Data: knowledge of correspondence related to the project (requests for bicycle facilities, traffic calming, tow-away changes, etc.) and existing plans for the area

Traffic Capacity

Has capacity changed in any way?

Data: recent traffic volumes

Can significant LOS/travel time degradations be addressed?

Data: proposed traffic signal changes, tow-away lanes, turn restrictions, and motor vehicle lane changes

What effect will changes have on neighboring streets?

Data: knowledge of area and potential cut-through traffic routes

Transit

Is the proposed improvement on a transit route?

Data: what route(s), what transit headway, use by "dead head" routes (transit vehicles not carrying passengers, usually operating to/from transit yards) and location of any tracks

How will it affect transit?

Data: travel time and delay studies, width of lanes used by transit vehicles, location of and effect on transit stops or zones and accommodation of transit turns

Parking

Are there any parking changes proposed?

Data: existing vs. proposed parking, number of parking spaces gained/lost and changes in colored curb zones

What is the current parking occupancy for various times of day?

Data: parking survey

What is the public response to parking changes?

Trucks

Is the proposed improvement on a truck route?

Data: approximate frequency of truck use, width of lanes used by trucks and accommodation of truck turns

Pedestrians

Will the proposed improvement improve or degrade pedestrian access or safety?

Data: traffic speed data (if the project may have a traffic calming effect) and planned pedestrian or other SFMTA Livable Streets projects

Land Use

How will the proposed improvement fit in with existing land use?

Data: knowledge of land use and location of heavily used driveways or loading docks

Other Departments or Agencies

Does the proposed improvement require outreach to other City departments or non-City agencies?

Data: evidence of outreach and departments' and/or agencies' recommendations

Will the street be repaved in the near future?

Data: Check DPW paving schedule and modify schedule for proposed improvement as appropriate.

### **C. ADDITIONAL REVIEW AND ENVIRONMENTAL ANALYSIS**

Upon completion of data collection and initial design, the SFMTA Bicycle Program reviews the proposed improvement with other City departments, external agencies, advocacy groups, and internally within the SFMTA to determine if there are any additional data needs or concerns. This review includes CEQA compliance and conformity to the San Francisco General Plan, the Bicycle Plan and other relevant planning documents.

Environmental review of proposed improvements often results in the application of a categorical exemption, or a finding resulting in a negative declaration. Some proposed improvements require an Environmental Impact Report (EIR) depending on the type of environmental impact and whether such impact can be mitigated. Historically, the SFMTA Bicycle Program has attempted to address the impacts in the steps above. Whenever possible, solutions are recommended that involve no significant negative impacts on the circulation of other vehicles or pedestrians. In some cases, it is not possible to improve conditions for bicyclists without having some impacts on other modes.

### **D. APPROVAL PROCESS**

The CVC delegates authority to implement certain traffic regulations to local jurisdictions, including the authority to establish traffic patterns, regulate traffic with traffic control devices and to establish roadway markings and design features. In San Francisco, some of these changes can be made under the authority of the City Traffic Engineer, while some can only be made following a public hearing and others require action by the SFMTA Board of Directors<sup>5</sup>. If a proposed improvement

<sup>5</sup> Refer to San Francisco Transportation Code Section 201

requires the SFMTA Board of Directors approval, the proposal is submitted to the SFMTA Board of Directors to review, generally by following the steps below.

### SFMTA Staff Meeting

Proposed improvements are discussed at a bimonthly SFMTA staff meeting and may need modification and discussion at more than one meeting.

### TASC Meeting

The Transportation Advisory Staff Committee (TASC) is chaired by an SFMTA Traffic Engineering staff member and consists of representatives of other City departments (including Public Works, Fire, Planning, Police, Public Health, Port and the Taxi Commission). TASC reviews proposed improvements when they are in their final design phase to ensure they do not interfere with other current and projected transportation uses, especially the delivery of essential services (e.g., Fire, Muni, Police etc.). Design details such as precise lane widths and curb heights, exact signage placement and compatibility with emergency response plans are reviewed by TASC. Final design details are not available for all improvements proposed in this Plan; therefore, most proposed improvements (excluding minor striping or signage recommendations) in this Plan will need to be submitted for TASC review when they are sufficiently developed. TASC provides an opportunity for City staff to comment on proposed improvements. Proposed improvements may need modification and discussion at more than one meeting.

### BAC Meeting

The BAC may consider and take action on a resolution supporting a proposed improvement. Public comment can be heard at BAC Meetings.

### SFMTA Public Hearing

For proposed improvements requiring a public hearing, public notices are posted in the project area and on the SFMTA website and distributed to interested parties. An SFMTA staff Hearing Officer presides over the hearing and records public concerns and questions received prior to and at the hearing. Some proposed improvements are returned to staff for possible modification to address concerns raised at the hearing.

### SFMTA Board of Directors Meeting

If the SFMTA Board of Directors approves an item, it authorizes staff to take the necessary steps to begin implementation of the proposed improvements or other appropriate action. If the SFMTA Board of Directors does not approve an item, it is sent back to staff for possible modification. Additional public comment can be heard at this meeting.

## **E. IMPLEMENTATION**

After the approval process is complete, the proposed improvement can be implemented. For improvements requiring new striping, pavement quality is a major consideration. Generally, new pavement striping would occur after a roadway-

resurfacing project. Resurfacing projects are scheduled by DPW using its Pavement Management and Mapping System (PMMS).

## **BICYCLE ROUTE NETWORK MAINTENANCE STANDARDS**

Among other responsibilities, DPW is in charge of cleaning, repairing and maintaining city streets; coordinating street excavation work; removing graffiti and illegal signs; regulating street and sidewalk use; and enhancing and protecting the public right-of-way (ROW).

The City's streets can be made safer for bicycling through improved maintenance standards specifically targeting bicyclists' needs. Through its street and sewer inspection program and response to citizens' reports, DPW has developed a standard of street maintenance that primarily responds to the needs of automobiles. While damaged road surfaces may be merely a nuisance to auto users, they can present safety hazards to bicyclists.

The recommendations in this section do not create new specifications, but are recommended changes to existing DPW and SFMTA specifications, regulations, and policies. Whatever changes or refinements are made should be incorporated into the appropriate sections of the City's existing standard specifications, including the SFMTA's "Regulations for Working in San Francisco Streets"<sup>v</sup> and the DPW's "Regulations for Excavating and Restoring Streets in San Francisco"<sup>vi</sup>.

The SFMTA, the DPW, the BAC, and the SFBC should work together to ensure that all telephone, internet, print and any other public outreach materials regarding street surface issues are current and consistent. The City should also coordinate with Caltrans on information regarding street surface conditions, where needed.

The City of San Francisco has developed a single phone number for all service requests, 311. San Francisco residents should call the 311 Customer Service Center for all service requests and complaints regarding bicycle facility maintenance. The 311 system provides tracking information for service requests for numerous City departments.

### **EXISTING POLICIES**

Many DPW policies of interest to bicyclists are addressed in the 1999 revision of DPW's "Regulations for Excavating and Restoring Streets in San Francisco," adopted following approval of the 1997 Bicycle Plan. These include:

Section 6.3.A: For major projects (lasting 15 calendar days or longer), notices must be mailed (at least 30 but not more than 60 calendar days before start

of work) to the SFBC and the SFBAC when excavations occur on designated bicycle routes.

Section 9.1.D:“Excavation in concrete pavement and parking strips . . . which carry bicycle lanes shall require removal of concrete to an existing joint. Excavation and restoration in these areas shall not result in any new joints in the concrete.”

Section 12.4.A:“ACWS [asphalt concrete wearing surface] on designated bicycle routes must be removed and restored for the full width of the bicycle lane.”

The SFMTA’s “Regulations for Working in San Francisco Streets” (commonly referred to as the “Blue Book” because of its blue cover) that is referenced in the “Regulations for Excavating and Restoring Streets in San Francisco,” contains a map of all San Francisco bicycle routes and establishes rules so that work can be done both safely and with the least possible interference with pedestrian, bicycle, transit and vehicular traffic.

## **INTERDEPARTMENTAL MAINTENANCE COORDINATION**

Representatives from the DPW, the Recreation and Park Department, and the SFMTA should improve interdepartmental coordination regarding maintenance issues on San Francisco's accepted streets and paths, especially on designated bikeways. This will result in ongoing maintenance or street cleaning issues having a better chance of being aired, prioritized, and monitored for implementation.

## **“SPOT” IMPROVEMENT PROGRAM**

In 1993, a “Spot” improvement postcard program was initiated to identify and implement various bicycle-related improvements. Suggested small-scale bicycling improvements were largely identified through postage-paid mail-in postcards which were distributed through bicycle organizations and bicycle shops in the City. This program was managed by the SFMTA Bicycle Program and any needed repair work was coordinated between the DPW and the SFMTA. San Francisco residents should call 311 for all service requests and complaints regarding “spot” improvements.

## **STANDARDS FOR CONTRACT WORK**

### **Action 1.12**

Work with the Department of Public Works (DPW) to enforce standards that must be strictly adhered to by contractors for street excavation restoration.

An important step toward improving the quality of road maintenance done for the City through contract work is to develop a set of standards that must be strictly adhered to and enforced by DPW with a guarantee of a minimum of one year for replacement of any defective work. A pre-qualification of acceptable contractors who

do City work may help ensure quality work. DPW should improve enforcement of existing standards, published in “Regulations for Excavating and Restoring Streets in San Francisco,” to ensure that non-compliant contractors are cited for violations.

## **PATHWAY MAINTENANCE**

### **Action 1.13**

Work with the responsible San Francisco agencies to create a prioritized citywide bicycle and mixed-use pathway inventory that includes surface condition, signage and lighting status, required maintenance or improvements needed and the agency responsible for each pathway.

The DPW, the Recreation and Park Department, and the SFMTA should develop a bicycle pathway inventory that provides reports on the current condition of every bicycle and mixed-use pathway in the City and the agency responsible for each facility. This inventory should be kept updated through regular surface condition surveys to provide a prioritized maintenance list for all City-maintained pathways. In addition, this inventory should review the status of pathway signage, lighting and maintenance information. When maintenance is scheduled, the responsible agency should provide advanced warning of maintenance work and a traffic routing plan or detour route should be established and signed for bicyclists.

## ***SPRINKLERS***

In addition to maintaining pathways, the City should review the placement and scheduling of automatic sprinkler systems to minimize their impact on bicyclists.

## **STREET CLEANING**

### **Action 1.14**

Work with the DPW and the Recreation and Park Department to maintain a regular sweeping schedule of bicycle routes on City-accepted streets and City-maintained off-street paths that are not currently cleaned on a regular schedule—in addition to sweeping bikeways whenever there is an accumulation of debris such as gravel, glass and sand.

Broken glass, gravel and debris along roadsides and on paths can cause punctured tires and bicycle crashes. City-maintained streets in San Francisco are cleaned on a regular schedule by DPW except for streets, trails and paths in parks (maintained by the Recreation and Park Department). In addition to its full-sized mechanical street sweepers, DPW owns several small mechanical sweepers (commonly referred to as “Green Machines”), sized to sweep off-street paths and sidewalks. Currently, several off-street paths are not cleaned on a regular schedule, resulting in debris buildup. DPW and the Recreation and Park Department should maintain a regular sweeping schedule for all off-street City-maintained paths in the City, and should clean City-maintained streets after storms (especially downhill street segments) where bicyclists are more likely to lose control due to accumulated sand and gravel. San Francisco residents should call 311 for all service requests and complaints regarding street cleaning.

### **PAVEMENT**

Potholes are repaired by filling with asphalt to the level of the surrounding surface. The asphalt is compacted to prevent future settlement and is then inspected for quality compliance. DPW repairs potholes (including in City parks) within 48 hours of receiving a request during weekdays. If the repair is the responsibility of another agency, DPW notifies that agency. San Francisco residents should call 311 for all service requests and complaints regarding pavement quality.

### **PATCHING AND PAVING**

Poor pavement quality can lead to damaged bicycle wheels, or can cause bicyclists to lose control, potentially resulting in crashes. The following actions should be prioritized to ensure better pavement quality along the bicycle route network.

#### **Action 1.15**

Work with the DPW to prioritize streets on the bicycle route network within the DPW's street resurfacing program.

#### **Action 1.16**

Work with the DPW to inspect streets on the bicycle route network on a yearly basis.

DPW has established a tracking system for pavement patching and paving requests that is linked to the 311 system. DPW staff have partnered with SFBC volunteers on identifying and reporting pavement problems.

San Francisco should adopt stricter paving, compaction, and smoothness standards similar to those of Palo Alto<sup>vii</sup>. DPW should give bicycle routes higher priority than other streets when developing paving projects, since poor pavement quality can adversely impact bicycle safety. DPW currently uses a Pavement Management and Mapping System (PMMS) to prioritize street paving based upon a point system. The PMMS uses a numeric "Pavement Condition Score" based on a field inspection of three surface features: cracking, raveling (erosion) and motor vehicle ride quality. This score assesses each block's maintenance need, identifying its just-in-time maintenance time point and its relative priority. The rating system does not replace engineering judgment. The maintenance recommendation is a starting point for the engineering effort. Each block still requires an engineer's on-site assessment of its exact maintenance needs. (The Pavement Condition Score only applies to the pavement condition and does not account for traffic volume, number of citizen street-surface complaints, geographic equity or whether the street is on a bicycle or Muni route). The highest priority for street resurfacing is not always streets in the worst condition. Streets that can have their life prolonged without complete reconstruction receive higher priority so they do not deteriorate to the point where they require complete reconstruction, a more costly option. SFMTA should work with DPW to amend the PMMS so that it gives higher priority to streets on the bicycle route network.



Streets cannot be resurfaced until all the required utility clearances are received to ensure that all planned utility work is complete before they are resurfaced. This may often take several years. If a small section of street is in very poor condition and the entire block is not scheduled for repair in the near future, “patch paving” is done. This involves grinding out and replacing the pavement section. It is important that contractors and utilities be held to strict standards regarding annual re-patching and replacing of defective asphalt patches. Asphalt pavement replacement must be flush with surrounding pavement, including any adjacent concrete gutter. The Public Works Code provides that it can be inspected up to one year after installation to check for settling and the contractor should replace resurfaced pavement if found defective.

Section 8.3 of DPW’s “Regulations for Excavating and Restoring Streets in San Francisco” specifies that excavation sites shall be swept at the end of each workday. This avoids leaving loose asphalt materials that can adhere to the existing asphalt or concrete surface.

Section 10 (Trench Backfill Requirements) of DPW’s “Regulations for Excavating and Restoring Streets in San Francisco” requires that the top three feet of backfill be compacted to a relative compaction of not less than 95 percent and material below the top three feet to not less than 90 percent. Although certified compaction tests must be taken every 200 square feet of excavation or as specified by DPW, stricter compaction and smoothness standards similar to those published by the City of Palo Alto should be adopted by DPW<sup>6</sup>. Additionally, contractors and utilities need to be held to strict standards regarding re-patching and replacing of defective asphalt patches. Section 2.4.70 of the Public Works Code already obligates the owner of the facility who excavates in the public ROW to be responsible to maintain, repair or reconstruct the site of the excavation until the public ROW is reconstructed, repaved or resurfaced. Section 11 of DPW’s “Regulations for Excavating and Restoring Streets in San Francisco” details “Pavement Base Requirements,” and Section 12 details “Paving Requirements.”

## **STREET CUTS**

In accordance with the Public Works Code:

1. Open street cuts are generally marked with barriers, or covered with 2 inches of asphalt or metal plates.
2. After work is complete, all filled and repaved street cuts should be flush with the adjacent surface.

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<sup>6</sup> DPW's trench restoration standard requires that new pavement extend one foot beyond the trench line, but this "T-trenching" is only required on moratorium blocks (those blocks that have been reconstructed, repaved or resurfaced by DPW or any other owner or person in the preceding five-year period).

3. When a street is resurfaced with an asphalt overlay, the existing asphalt in the area adjacent to the gutter lip should be ground to the depth of the asphalt concrete to be placed on the street.
4. Temporary asphalt ramps should be installed at all wedge cuts located at intersections and pedestrian and bicycle crossings to provide a transition at the vertical differential.
5. When the asphalt concrete is finally placed on the street, the level of the asphalt should match the level of the gutter within a one-quarter inch to eliminate the edge.

DPW's Street Construction Coordination Center (SCCC) oversees street excavation and issues excavation permits. SCCC uses the bicycle network GIS database to determine which excavation permits involve streets on the bicycle route network. Locations of current street excavations can be found by street name on DPW's website<sup>viii</sup>.

Based on the Public Works Code, the City, utility companies or private contractors that excavate in the City's streets have 72 hours from the time the excavation-related construction is finished to complete the excavation, then 72 hours to backfill and compact a trench. They then have 72 hours from the time the excavation is backfilled to replace the pavement base. They have 72 hours after pavement base replacement to restore the finished pavement. San Francisco residents should call 311 for all service requests and complaints regarding street cuts and excavation work.

### **STEEL PLATES**

Utilities and private companies that install utility trenches on streets cover them with steel plates during construction. If care is not taken to provide a smooth transition between the plate and the street surface, the resulting vertical deflection can be a hazard to bicyclists.

Steel plates used to cover work in progress may shift position under the movement of heavy trucks and buses, leaving gaps. The DPW and the SFMTA require that steel plates have beveled edges and non-skid surfaces, that the plates are secured in place with wooden wedges, that their edges are ramped with asphalt (which must be replaced and renewed frequently) to provide a transition to the adjacent street surface, and that where multiple plates are used, they must be welded together. The surface of non-skid plates can become worn smooth with wear. If worn non-skid plates are used, they are no longer compliant with the City's requirement for non-skid plates.

## **UTILITY COVERS AND UNDERGROUND PIPES**

All utility covers should be flush with the surrounding pavement. Where underground pipes carry steam (not very common in San Francisco), the asphalt around steam utility covers can deform, causing warped pavement. Maintaining heat resistant concrete pads of at least a three-foot radius from the edge of the cover should stop warping of the asphalt near the edges. If possible, concrete should be installed above submerged steam pipes to prevent humping of the street surface.

## **CATCH BASIN GRATES**

There are over 68,000 storm sewer catch basins in the City. Many older grates are semi-circular in shape with bars parallel to the direction of bicycle travel. These parallel-bar grates have openings that can catch and destroy a bicycle wheel and cause a bicyclist to crash. Many bicyclists also swerve to avoid the grates, risking collision with motor vehicles. These grate locations were identified by the SFMTA Bicycle Program Manager and were replaced by grates with bars perpendicular to the direction of travel to improve safety for bicyclists. Sunken catch basin grates should be raised to pavement elevation to improve bicycle safety and enhance smooth riding. This is much more costly, because it requires replacement of the frame that supports the grate. San Francisco residents should call 311 to report any remaining catch basin grate issues.

## **GUTTERS**

Curb and gutter upheavals can cause “ponding” of water in bicycle lanes. A regular inspection of every linear foot of curb and gutter and along the bicycle route network should identify those that are raised, sunken or that have some vertical differential that would cause “ponding” and these should be repaired. Sometimes small asphalt dams are constructed in gutters to divert storm water into catch basins. These dams should not be constructed along the bicycle route network and existing ones should be removed where possible.

## **RAILROAD TRACKS**

### **Action 1.17**

Create an inventory of locations along the bicycle route network that intersect or run parallel to railroad tracks, and identify appropriate measures to mitigate the impacts of the track crossings to bicyclists.

Railroad tracks that are no longer used can be removed or covered with asphalt pavement. Removal is preferable, as pavement covering buried tracks often deforms around the underlying tracks. However, for tracks that cannot be removed (such as tracks that have been designated as historic resources), specially designed fabric can be placed over them before they are covered so that pavement deformation is minimized. DPW is responsible for removing or covering tracks, unless the tracks are located within another jurisdiction, such as the Caltrain Joint Powers Board, Golden Gate National Recreation Area, Port of San Francisco, or the

SFMTA, or are subject to a railroad franchise. Any track removal within the jurisdiction of the Port of San Francisco must be approved by the Port Commission.

Although some railroad tracks are considered historic resources or may contribute to the character of a neighborhood, they should be removed or covered where bicyclists' safety would be improved. Railroad track removal or covering should be prioritized according to the location and orientation to bicyclists' path of travel. Tracks on streets most heavily used by bicyclists and those situated at an oblique angle to bicyclists' path of travel should receive the highest priority for removal or covering.

### **STRIPING, PAVEMENT LEGENDS AND EDGE LINE MARKINGS**

Non-skid surfaces should be used for all traffic striping, and should conform to standards in the California MUTCD. The SFMTA currently uses thermoplastic, methyl methacrylate (MMC) and occasionally pavement marking tape for striping.

Glass beads are applied to new thermoplastic and MMC striping as a standard procedure to improve skid resistance and reflectivity. Raised pavement markers should not be used to supplement striping along bicycle routes because they present problems for bicyclists<sup>7</sup>. Where edge line raised reflectors are needed for motorists, they should be installed on the motorists' side of the line. The SFMTA has a policy of not using raised pavement markers on striping that crosses bicyclists' path of travel (such as lane guidelines through intersections). Given San Francisco's dense urban character, there are few locations where edge lines with raised pavement markers are used.

### **SIGNAGE**

Most signs are installed and maintained by the SFMTA, and should conform to standards in the California MUTCD. San Francisco residents should call 311 to report missing or damaged signs.

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i CVC 21202. (a) Any person operating a bicycle upon a roadway at a speed less than the normal speed of traffic moving in the same direction at that time shall ride as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:

- (1) When overtaking and passing another bicycle or vehicle proceeding in the same direction.
- (2) When preparing for a left turn at an intersection or into a private road or driveway.
- (3) When reasonably necessary to avoid conditions (including, but not limited to, fixed or moving objects, vehicles, bicycles, pedestrians, animals, surface hazards or substandard width lanes) that make it unsafe to continue along the right-hand curb or edge, subject to the provisions of Section 21656. For purposes of this section, a "substandard width lane" is a lane that is too narrow for a bicycle and a vehicle to travel safely side by side within the lane.
- (4) When approaching a place where a right turn is authorized.

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7 California HDM 1003.2 (2): "Raised barriers (e.g., raised traffic bars and asphalt concrete dikes) or raised pavement markers shall not be used to delineate bike lanes."

(b) Any person operating a bicycle upon a roadway of a highway, which highway carries traffic in one direction only and has two or more marked traffic lanes, may ride as near the left-hand curb or edge of that roadway as practicable.

ii SAR 02-3 can be viewed online at

[http://www.sfcta.org/images/stories/legacy/documents/FinalSAR02-3LOS\\_Methods\\_000.pdf](http://www.sfcta.org/images/stories/legacy/documents/FinalSAR02-3LOS_Methods_000.pdf).

iii The Supplemental Design Guidelines can be viewed online at

[http://www.sfmta.com/cms/uploadedfiles/dpt/bike/Bike\\_Plan/SF\\_Design\\_Guidelines\\_Feb04.pdf](http://www.sfmta.com/cms/uploadedfiles/dpt/bike/Bike_Plan/SF_Design_Guidelines_Feb04.pdf).

iv The study - "San Francisco's Shared Lane Pavement Markings: Improving Bicycle Safety" – can be viewed online at

[http://www.sfmta.com/cms/uploadedfiles/dpt/bike/Bike\\_Plan/Shared%20Lane%20Marking%20Full%20Report-052404.pdf](http://www.sfmta.com/cms/uploadedfiles/dpt/bike/Bike_Plan/Shared%20Lane%20Marking%20Full%20Report-052404.pdf).

v Regulations for Working in San Francisco Streets can be viewed online at

<http://www.sfmta.com/cms/vcons/bluebook.htm>.

vi Regulations for Excavating and Restoring Streets in San Francisco can be viewed online at

[http://www.sfgov.org/site/uploadedfiles/sfdpw/bsm/sccc/sccc\\_dpw\\_order.pdf](http://www.sfgov.org/site/uploadedfiles/sfdpw/bsm/sccc/sccc_dpw_order.pdf).

vii Information regarding the City of Palo Alto's street maintenance standards can be found by contacting the City of Palo Alto, Public Works Department, Engineering Division, 250 Hamilton Avenue, 6th Floor, Palo Alto, CA 94301.

viii [http://www.sfgov.org/site/sfdpw\\_page.asp?id=32800](http://www.sfgov.org/site/sfdpw_page.asp?id=32800).

# 2. BICYCLE PARKING

## BICYCLE PARKING GOAL AND OBJECTIVES

### **Goal:**

Ensure Plentiful, High-Quality Bicycle Parking

### **Objectives:**

- Provide secure short-term and long-term bicycle parking, including program support for bike stations and attended bicycle parking facilities at major events and destinations
- Provide current and relevant information to bicyclists regarding bicycle parking opportunities through a variety of formats.

## INTRODUCTION

The SFMTA Bicycle Program has made great strides toward realizing its vision of secure bicycle parking reasonably close to bicyclists' destinations, thereby facilitating more bicycle trips. During the past several years, the SFMTA installed approximately 1,550 bicycle racks, brought more than 50 parking garages into compliance with the City's bicycle parking requirements and established responsive communication channels for public suggestions and requests for bicycle parking. The SFMTA also reached out to the community regarding bicycle parking via brochures, posters and advertising campaigns where appropriate.

Despite this progress, many office buildings, commercial districts, public transit stations and tourist attractions still lack secure bicycle parking. Bicyclists need reasonable protection against theft, vandalism, and in some cases such as longer-term storage, protection from weather. Bicycle parking is most effective when it is located close to trip destinations, is easy to find and is accessible. Where quality bicycle parking facilities are not provided, determined bicyclists lock their bicycles to lampposts, parking meters, street signs, trees, or other street furniture, all of which are undesirable because they are often less secure, can interfere with pedestrian movement and can create liability issues or damage to street furniture or trees.

The San Francisco Planning Code provides a legal framework for bicycle parking requirements. Planning Code Section 155.1 provides bicycle parking requirements for City-owned and leased buildings; Section 155.2 provides bicycle parking requirements for parking garages with 10 or more automobile parking spaces; Section 155.3 provides requirements for shower and locker facilities in new and renovated commercial and industrial buildings (a key component to encourage bicycle commuting); Section 155.4 provides bicycle parking requirements for new and renovated commercial and industrial buildings and Section 155.5 provides bicycle parking requirements for multi-unit residential buildings.

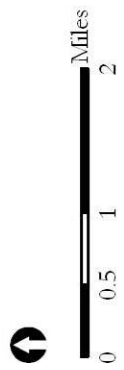
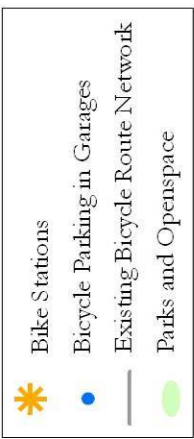
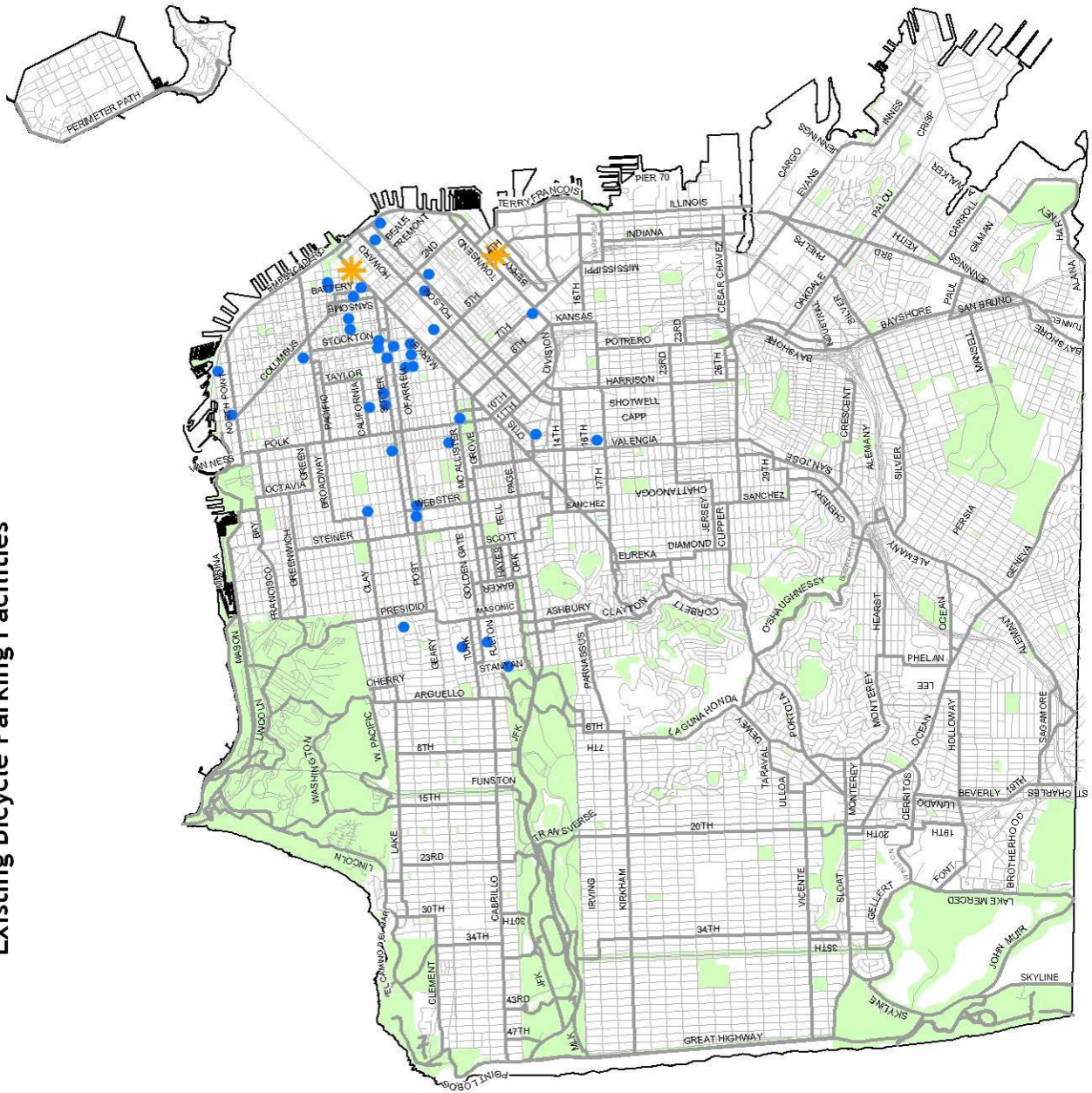
Generally, there is a need for reorganization of the existing Planning Code sections that address bicycle parking into one organized section to provide building and parking garage owners and managers with clearer direction and requirements for bicycle parking.

Figure 2-1 shows the location of publicly available bicycle parking in public and private San Francisco parking garages based upon the SFMTA Bicycle Program's database. This database should be reviewed and updated as necessary.

This chapter reviews relevant Planning Code Sections, outlines existing bicycle parking facilities and makes recommendations for bicycle parking improvements. The Planning Department is the City agency charged with updating and enforcing the Planning Code; bicycle parking requirements for land development are part of the Planning Code. Therefore, many of the recommendations in this chapter should be implemented by the Planning Department as the lead agency.

Bicycle parking facilities can be classified into two broad categories. Class I bicycle parking facilities provide secure long-term bicycle storage by protecting the entire bicycle, including its components and accessories, against theft and inclement weather. Examples include lockers, check-in facilities, monitored bicycle parking, restricted access bicycle parking and personal storage. Class II bicycle parking facilities provide short-term bicycle parking and include bicycle racks that permit the locking of a bicycle frame and one wheel and support the bicycle in a stable position without damage to wheels, frame or components.

Figure 2-1  
Existing Bicycle Parking Facilities



Data Source: SFMTA  
August 5, 2008



## BICYCLE PARKING POLICIES

### **Action 2.1**

Work with the Planning Department to consolidate Sections 155.1-155.5 of the Planning Code to provide clearer regulation, guidance and exemptions related to bicycle parking.

### **Action 2.2**

Work with the Planning Department to modify the Planning Code's requirements for bicycle parking so that they are less dependent on automobile parking provisions.

### **Action 2.3**

Work with the Planning Department to amend the Planning Code to increase required bicycle parking for new residential developments.

### **Action 2.4**

Work with the Planning Department to increase monitoring and enforcement of bicycle parking provisions in the Planning Code, especially when issuing building permits.

### **Action 2.5**

Conduct the SFMTA's bicycle parking training for new Planning Department personnel as needed.

The Planning Code governs the provision of bicycle parking for all building types. Detailed requirements are set for:

- Parking garages (both City-owned and privately-owned)
- City-owned and leased buildings
- New and renovated commercial buildings
- Residential buildings

A detailed review of the existing Planning Code should be completed by the SFMTA and the Planning Department to address and improve regulation of bicycle parking in:

- New and renovated buildings
- Existing parking garages requiring new rules and increased enforcement
- City schools and local colleges

- Residential developments requiring new ratios based on the number and occupancy of housing units or bedrooms
- City-owned and City-leased buildings requiring increased bicycle parking capacity

In addition to reviewing the existing Planning Code, the SFMTA should work with the Planning Department to modify bicycle parking requirements that are currently tied to provisions for automobile parking and should review the proportions of Class I and Class II bicycle parking facilities required.

## RESIDENTIAL BUILDINGS

Planning Code Section 155.5 requires that residential buildings with two or more units provide bicycle parking. The number of bicycle parking spaces required is determined by the number of units in a building. The City should consider modifying the requirements so that they are based on the number of bedrooms, since families with multiple bedrooms are likely to own multiple bicycles. A lack of secure residential bicycle parking is problematic in dense cities such as San Francisco with a high percentage of multi-unit residential buildings, which tend to have small dwelling units and minimal storage space. Residents of these type of buildings are often forced to carry bicycles up stairs or take them in elevators and store them in hallways, bedrooms, balconies or other inconvenient areas designated for other purposes. A recent survey of San Francisco residents revealed that over 60 percent of households citywide own at least one bicycle<sup>1</sup>. Many large developments containing hundreds of housing units each have been recently approved and will be proposed in the coming years, especially in and around downtown and other central neighborhoods that are naturally convenient for bicycling. However, under current Planning Code requirements, these developments may have a shortage of convenient residential bicycle parking. In order to encourage and support bicycle use, convenient and secure bicycle parking is needed at residences, workplaces and other destinations. The quantity of bicycle parking spaces required by the existing Planning Code is based on the number of dwelling units, as shown in Table 2-1 below.

**Table 2-1**  
Required Number of Bicycle Parking Spaces for Residential Uses

<b>Residential Use</b>	<b>Minimum Number of Bicycle Parking Spaces Required</b>
Dwelling units in all districts	For projects up to 50 dwelling units, one Class 1 space for every 2 dwelling units.  For projects over 50 dwelling units, 25 Class 1 spaces plus one Class 1 space for every 4 dwelling units over 50.

Group housing in all districts	One Class 1 space for every 3 bedrooms.
Dwelling units dedicated to senior citizens or physically disabled persons	None required

Although San Francisco has improved its residential bicycle parking requirements, several other cities require greater quantities of secure residential bicycle parking than San Francisco. For example, Vancouver, British Columbia requires 1.25 bicycle parking spaces per housing unit in all multi-unit buildings<sup>ii</sup> and Santa Cruz, California requires one bicycle parking space per housing unit for multifamily residential developments with three or more units<sup>iii</sup>.

All of these cities prohibit space within dwelling units, balconies or required open spaces from counting toward bicycle parking requirements. However, they make some allowances for flexible arrangements, such as allowing bicycle parking using wall hooks to count as a percentage of required bicycle parking spaces.

## PARKING GARAGES

### Action 2.6

Work with the responsible San Francisco agencies and entities to ensure that all garage bicycle parking is secure, well monitored and well advertised at garage entrances and other appropriate locations.

### Action 2.7

Hold meetings as needed between the SFMTA and Planning Department staff to update citywide bicycle parking compliance status and review bicycle parking information posted on the SFMTA Web site.

As of early 2004, 17 of the City's 20 City-owned parking garages were in compliance with Planning Code Section 155.2 which requires City-owned parking garages to provide bicycle parking. The SFMTA should update its existing computer database of all publicly-accessible parking facilities in the City to calculate required bicycle parking in private parking garages and track compliance in accordance with existing Planning Code Section 155.2.

Both City-owned and privately-owned parking garages (but not parking lots) are required to provide either Class I or Class II bicycle parking spaces on the same time basis as that provided to automobile parking (i.e., hourly, weekly, etc.). Parking garages may charge fees and must provide adequate signs or notices near parking garage entrances to advertise bicycle parking. The quantity of

bicycle parking spaces required by the existing Planning Code is based on the number of automobile parking spaces provided, as shown in Table 2-2 below.

**Table 2-2**  
Required Number of Bicycle Parking Spaces in Parking Garages

<b>Number of Automobile Parking Spaces</b>	<b>Number of Bicycle Parking Spaces</b>
< 120	6
120-500	1 per every 20 automobile spaces
500+	25 + 1 per every 40 automobile spaces, up to max. 50

The requirements of Planning Code Section 155.2 also apply to privately-owned parking garages, but many private parking garages do not provide the required bicycle parking and those that do often lack appropriate signage or security. The SFMTA Bicycle Program obtained a Transportation Enhancement Activities (TEA-21) grant to perform outreach to private parking garage owners, inform them of their obligation to provide (and pay for) bicycle parking hardware and offer technical expertise on installation and preferred locations that offer maximum security.

The San Francisco Garage Bicycle-Parking Compliance Report<sup>iv</sup> details SFMTA research on Planning Code compliance, efforts to educate parking garage owners and technical assistance offered to bring them into compliance. This report will assist the Planning Department in improving its enforcement efforts against non-compliant parking garages.

## CITY-OWNED AND LEASED BUILDINGS

### **Action 2.8**

Ensure that all City leases are negotiated to include the required level of bicycle parking by cooperative efforts of the City Real Estate Department and the SFMTA.

### **Action 2.9**

Pursue a citywide policy to provide secure bicycle parking at all City buildings in areas to be specified by the individual agencies, subject to safety regulations and available space, by cooperative efforts of the City Real Estate Department, the Planning Department, and the SFMTA.

The most comprehensive bicycle parking requirements in the Planning Code apply to City-owned and leased buildings, which are required to provide both Class I and Class II bicycle parking regardless of the availability of off-street automobile parking. The quantity of bicycle parking spaces required by the existing Planning Code is based on the number of building employees, as shown in Table 2-3 below. These requirements also apply to libraries, museums, sports facilities and other City-owned public service buildings with the average peak hour patron load used to determine the number of spaces required. Funding for these requirements comes from donations, grants and programmatic funding, not from General Fund revenues or from private building owners. These requirements should be reviewed to ensure that they address the needs of all building users including visitors, City contractors and City committee or commission members.

**Table 2-3**  
Required Number of Bicycle Parking Spaces in City-Owned and Leased Buildings

Number of Employees	Class I Spaces	Class II Spaces
1-20	2	2
21-40	4	2
41-50	4	4
51-100	5%, 5 min.	6
101-300	5%, 5 min.	8, 50% of which are covered
300+	3%, 16 min.	8, 50% of which are covered

## COMMERCIAL AND INDUSTRIAL BUILDINGS

The Planning Code requires bicycle parking in new and renovated commercial and industrial buildings. It specifies requirements for bicycle parking, shower facilities, and clothes lockers for both new commercial and industrial buildings and existing buildings undergoing major renovations – whether publicly or privately-owned. The quantity of bicycle parking spaces required by the existing Planning Code is based on the size of the building, as shown in Table 2-4 below.

**Table 2-4**

Required Bicycle Parking Facilities for New and Renovated Commercial Buildings

Building primary use		Required facilities		
Professional Service (sq. ft.)	Restaurants and Personal Service (sq. ft.)	Bicycle Parking Spaces	Showers	Clothes Lockers
10,000 – 20,000	25,000 – 50,000	3	1	2
20,000 – 50,000	50,000 – 100,000	6	2	4
50,000 +	100,000 +	12	4	8

**NEW AND SIGNIFICANTLY RENOVATED BUILDINGS****Action 2.10**

Work with the Planning Department to amend the Planning Code to lower the number of automobile parking spaces required in buildings where Class I bicycle parking is provided.

Concurrent modifications to on-site parking requirements for both automobiles and bicycles could yield benefits for property owners, developers and bicyclists. A more flexible program providing building owners and developers with options for provision of both automobile and bicycle parking could address perceived inequities and could result in more efficient building designs with a better mix of appropriate parking facilities.

**LARGE MULTI-BUILDING DEVELOPMENTS****Action 2.11**

Work with the Planning Department to amend the Planning Code to require bicycle parking in each individual building of large, multiple-building developments.

For large developments including multiple buildings, each building should be required to provide bicycle parking. Existing Planning Code requirements treat entire development projects as a whole and allow consolidated bicycle parking at one site within a multi-building complex. This can lead to bicycle parking that is inconvenient for bicyclists.

**EXISTING BUILDINGS****Action 2.12**

Work with the Planning Department to amend the Planning Code to require building owners to allow tenants to bring their bicycles into buildings unless Class I bicycle parking is provided.

Building managers are often reluctant to grant access to bicycles due to the perceived negative opinion of some tenants, perceived maintenance costs from bicycle dirt and grease and fire safety regulations. Action 2.12 would provide further incentive for building owners to provide secure bicycle parking.

## OTHER ON-SITE BICYCLE SUPPORT FACILITIES

### WORKPLACE SHOWERS

Workplace showers, especially when combined with convenient and secure bicycle parking, encourage bicycle commuting and benefit other employees who exercise during the workday. Some employers, such as hospitals, have showers and others give health club memberships to their employees or install their own fitness centers with showers. However, showers are not available at most workplaces.

Ordinance 343-98 added Planning Code Section 155.3, “Shower Facilities and Lockers Required in New Commercial and Industrial Buildings and Existing Buildings Undergoing Major Renovations,” requiring shower installation based upon building use and gross floor area. The shower requirements of the existing Planning Code are summarized in Table 2-5 below.

**Table 2-5**  
Showers Required in New Buildings

Use	Gross Floor Area of New Construction	Number of Showers Required
Medical, professional, general business offices, financial services, business and trade schools and general business services.	0-9,999 sq. ft.	No requirement
	10,000-19,999 sq. ft.	1
	20,000-49,999 sq. ft.	2
	50,000 sq. ft. and up	4
Retail, personal, eating and drinking services.	0-24,999 sq. ft.	No requirement
	25,000-49,999 sq. ft.	1
	50,000-99,999 sq. ft.	2
	100,000 sq. ft. and up	4

## REVIEW OF BICYCLE PARKING CLASSES

The following section reviews classes of bicycle parking, the predominant bicycle parking types and recommends areas of improvement related to administration and facilities management for each parking type.

### **CLASS I BICYCLE PARKING**

Class I bicycle parking facilities provide secure, long-term bicycle storage by protecting the entire bicycle, including its components and accessories, against theft and against inclement weather. Examples include lockers, check-in facilities, monitored bicycle parking, restricted access bicycle parking and personal storage.

Class I bicycle parking facilities are more expensive to provide than Class II facilities, but are also significantly more secure. Although many bicycle commuters are willing to pay a nominal fee to guarantee the security of their bicycle, Class I bicycle parking should be free wherever automobile parking is free. Bicycle lockers are useful at locations where regular bicycle commuters need secure long-term parking, such as at major employment sites or transit stations. Due to problems with vandalism and/or non-bicycle use of bicycle lockers, monthly rental lockers are preferred to coin-operated lockers.

San Francisco's City-operated bicycle lockers are approximately 65 percent occupied, and their availability is advertised through the SFMTA Web site. Existing bicycle locker renters tend to renew their leases year after year, and the lockers have generally been trouble-free. Although the SFMTA's existing bicycle lockers are geared toward bicycle commuters who use the lockers on a daily basis, consideration should be given to expanding the locker program to include "on-demand" electronic lockers for shorter term users.

Electronic bicycle lockers have been installed by Bay Area Rapid Transit (BART) in recent years and proved to be more efficient in serving greater numbers of cyclists than standard lockers, which are generally rented to one person for a set period of time. The SFMTA, in partnership with other agencies, should research electronic locker best practices, as well as the demand for electronic lockers and the best locations to install them.

### **CLASS II BICYCLE PARKING**

Class II bicycle parking facilities provide short-term bicycle parking and include bicycle racks that permit the locking of a bicycle frame and one wheel and support the bicycle in a stable position without damage to wheels, frame or components.

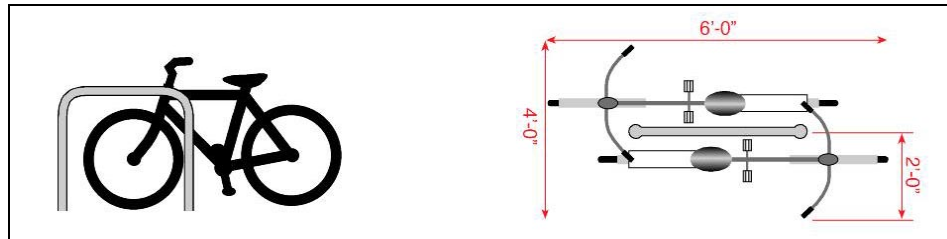
As of June 2006, the SFMTA had installed more than 1,550 bicycle racks, with 430 racks installed during 2003 alone. Many of these bicycle rack locations were requested by the public, most often by businesses, and generated by a 2003 ad campaign on San Francisco Municipal Railway (Muni) buses aimed at gathering bike rack requests. Information about SFMTA's bicycle rack program is now disseminated primarily through the SFMTA Web site and by word of mouth. Bicycle racks are currently placed on sidewalks by the SFMTA based on



requests from the public and forecasted usage. Other considerations are being evaluated, such as prioritizing where new bicycle lanes are striped and residential areas.

### ***INVERTED “U” RACKS***

Inverted “U” racks are the current preferred type of Class II bicycle parking in San Francisco. Inverted “U” racks provide two contact points to support a bicycle, are simple to use and install and require little maintenance.



Inverted “U” Rack

### ***RING RACKS***

Ring racks are an alternative type of Class II bicycle parking. Two basic designs are available: sleeve ring racks, which are mounted as a sleeve on parking meter poles and bolt-on ring racks, which are bolted to an existing pole or other structure. Stand-alone ring racks are also available. Sleeve ring racks require only removal and reinstallation of a parking meter head, while bolt-on ring racks require drilling into an existing pole. Stand-alone racks are more expensive to install, as they require anchoring in the sidewalk.

Use of bolt-on ring racks is not recommended in San Francisco due to security concerns. Sleeve ring racks specially manufactured from square tubing to minimize theft may be viable options for short-term bicycle parking in San Francisco. Sleeve ring racks are most appropriately used in commercial areas where parking meters exist and space for installation of inverted “U” racks is limited. Sleeve ring racks may be more aesthetically acceptable to merchants than inverted “U” racks, since they do not substantially change the appearance of the sidewalk space.



Sleeve ring rack



Bolt-on ring rack

### ***CURBSIDE ON-STREET BICYCLE PARKING***

Where bicycle racks cannot be installed on sidewalks (because of narrow sidewalk width, obstructions, etc.), bicycle parking can be installed in the street itself by grouping bicycle racks in automobile parking spaces protected by bollards or adding racks on sidewalk bulb-outs.



Clustered racks in a car parking space protected by bollards (Berkeley, CA).



On-street racks at the Main Library, Grove Street, San Francisco.

## **BICYCLE RACK PLACEMENT**

### **Action 2.13**

Work with the responsible San Francisco agencies to prepare additional guidelines for the placement and design of bicycle parking within City rights-of-way, including curbside on-street bicycle parking where feasible and “sleeve” ring racks on parking meters.

In 1993 the Interdepartmental Staff Committee on Traffic and Transportation (ISCOTT) approved the SFMTA Bicycle Program’s Bicycle Rack Placement Criteria that addressed the physical location of bicycle racks on public sidewalks and the minimum area required by racks<sup>v</sup>. One of the main objectives of these guidelines was to address the need to maintain adequate sidewalk clearance

width for pedestrians and to limit impediments within the public right of way (ROW).

ISCOTT no longer oversees streetscape design issues, other than the review of temporary street closures for special events. A new staff committee, the Transportation Advisory Staff Committee (TASC), now reviews items that were previously under the purview of ISCOTT. Additional guidelines should be developed for bicycle parking and reviewed by TASC. Table 2-6 below provides a framework for these additional guidelines.

**Table 2-6**  
Additional Rack Placement Guidelines

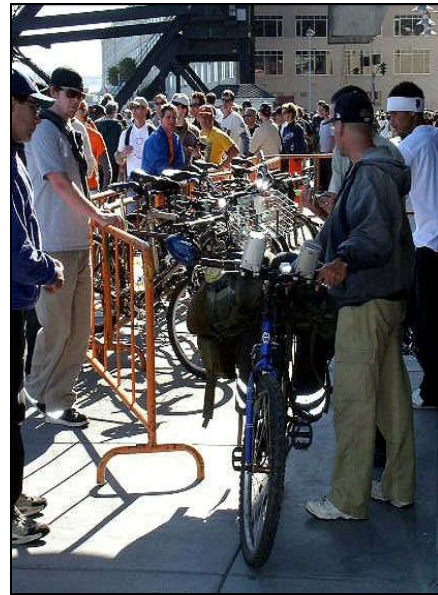
<b>Design Issue</b>	<b>Summary of New Recommended Guideline</b>
Minimum Bicycle Rack Height	To increase visibility to pedestrians, bicycle racks should have a minimum height of 33 inches or be indicated or cordoned off by visible markers. While bicycle racks installed in the past by the SFMTA have been 36 inches in height, the height of future racks may decrease due to increased steel costs.
Signing	Where bicycle parking areas are not clearly visible to approaching bicyclists, signs at least 12 inches square should direct them to the facility. Signs should give the name, phone number and location of the person in charge of the facility, where applicable. Where Class I bicycle parking is provided by restricted access, signs should state that the enclosure must be kept locked at all times.
Lighting	Lighting of not less than one foot-candle illumination at ground level should be provided in all bicycle parking areas.
Frequency of Bicycle Racks on Streets	In popular retail areas, two or more bicycle racks should be installed on each side of each block. This should not eliminate the inclusion of requests for bicycle racks from the public that do not fall in these areas. Streets designated as bicycle routes may warrant the consideration of additional bicycle racks.
Location and Access	Access to bicycle parking facilities should be convenient; where access is by sidewalk or pathway, curb ramps should be provided where appropriate. Bicycle parking facilities intended for employees should be located near the employee entrance and those for customers or visitors near the main public entrances. Convenience should be balanced with the need for security where entrances are not in well-traveled areas.

**Table 2-6**  
Additional Rack Placement Guidelines

<b>Design Issue</b>	<b>Summary of New Recommended Guideline</b>
Locations Within Parking Garages	Bicycle parking should be clustered in lots not to exceed 16 spaces each, and should be visible to garage attendants, where present. Large expanses of bicycle parking make it easier for thieves to operate undetected. A clearance of 24 inches between adjacent bicycles and 18 inches from walls or other obstructions should be maintained.
Locations Within Buildings	Bicycle racks should be located within 50 feet of the entrance. Where a security guard is present, bicycle racks should be located behind or within view of the security guard. Bicycle racks should be outside the normal flow of pedestrian traffic.
Locations Near Muni Stops	To prevent bicyclists from locking bicycles to Muni bus pole stops, which can create access problems for transit users, particularly those who are disabled, bicycle racks should be placed in close proximity to Muni stops where there is a demand for short-term bicycle parking. The location must conform to existing bicycle rack placement criteria stating that a bicycle rack may be located only within the last five feet of a bus stop and at least five feet from a crosswalk.
Locations Near Loading Zones	Installation of bicycle racks near on-street yellow commercial loading zones should not interfere with loading operations.
Locations Within a Campus-Type Setting	Bicycle racks should be located near the entrance to each building. Where bicycle racks are clustered in a single location, they should be surrounded by a fence and watched by an attendant. The attendant can often share this duty with other duties to reduce or eliminate the cost of labor being applied to the bicycle parking duties; a cheaper alternative to an attendant may be to place the fenced bicycle parking area in a highly visible location on the campus. For the long-term bicycle parking needs of employees and students, attendant parking and/or bicycle lockers are recommended.
Locations in Popular Retail Areas	In many popular retail areas, more than one bicycle rack exists on each side of a block, an increase from the past practice of locating only one rack per sidewalk segment. Streets designated as bicycle routes may warrant the consideration of additional bicycle racks, as may locations subject to public requests or observed need. On-street bicycle parking should be considered in areas where there is no space for bicycle racks on sidewalks, or where existing sidewalk bicycle racks are at capacity.

## ATTENDED BICYCLE PARKING

Attended parking is practical where there is a heavy demand for secure bicycle parking. College campuses and high schools are obvious locations, as are employment locations with large bicycle-commuter populations. Bicycle parking attendant duties become more cost-effective when shared with other duties such as parking garage attendant, security guard, or private bicycle maintenance and repair operator. Attended bicycle parking should be particularly considered for locations with heavy demand for bicycle parking but no existing bicycle parking facilities. Bicycle access to transit stations is discussed in detail in Chapter 3 - Transit and Bridge Access.



Attended bicycle parking at the Giant's Ball Park, provided by the SFBC.

San Francisco, in accordance with the San Francisco Transportation Code (SFTC) Division I Section 9.15, requires monitored bicycle parking at most large permitted public events. The SFTC authorizes ISCOTT to develop guidelines for monitored bicycle parking requirements at large permitted public events. The current guidelines require bicycle parking provisions in site plans as a permit condition for public events with 2000 or more anticipated participants.

SFTC Division I Section 9.1.5 allows event organizers to charge a fee for monitored bicycle parking service, but some organizations have provided free bicycle parking service. To encourage the use of bicycles, monitored bicycle parking should be made available at no cost or on a donation basis. Although the SFMTA does not require event organizers to use a particular bicycle parking organization, it does provide contact information for the San Francisco Bicycle Coalition (SFBC) because they have successfully provided valet bicycle parking at no cost to bicyclists for many years at many large public events utilizing volunteers and inexpensive equipment (such as portable fences, portable racks, and cables).

## EVENT PARKING FOR BICYCLES

To help relieve the impacts of traffic and parking congestion, event sponsors also should take an active role in promoting bicycling to events by advertising the availability of attended bicycle parking. Bicyclists should be encouraged to use the attended bicycle parking to minimize obstructions to pedestrian flow created by bicycles locked to trees and other street furniture.

## BICYCLE PARKING OUTREACH

Public information is important to an effective citywide bicycle parking program. Many bicycle parking facilities are not visible to the public due to their location within parking garages and are not always obvious to employees within a specific building where bicycle parking is located. Additional outreach efforts to provide information about the location and accessibility of bicycle parking will help to ensure that City investments are well used and will provide encouragement to potential bicycle commuters.

### **Action 2.14**

Develop and maintain an SFMTA bicycle parking outreach campaign in various formats to provide relevant bicycle parking information such as garage locations with bicycle parking and bicycle locker availability.

The SFMTA Bicycle Program currently advertises the availability of bicycle parking in City-owned and private parking garages by:

- Issuing signs depicting the availability of bicycle parking (to be posted on the outside of the parking garage where bicyclists are likely see it)
- Printing and distributing thousands of maps showing the location of bicycle parking
- Posting information on its Web site

The SFMTA Bicycle Program should incorporate the following components into this bicycle parking information campaign:

- Conduct a publicity campaign informing bicyclists and potential bicyclists of the availability and location of bicycle parking
- Provide an SFMTA fact sheet showing free and fee-based bicycle parking available at City-owned parking garages
- Develop and publish a comprehensive, high-quality brochure, including a map showing bicycle parking locations in appropriate detail
- Develop a Web-based map application showing bicycle parking locations

### **Action 2.15**

Work with the San Francisco Police Department (SFPD) to make bicycle theft investigation a higher priority and create a better system for returning recovered bicycles to their owners.

The SFMTA should work with the SFPD to strategize and prioritize methods to better address bicycle theft. Potential elements include education regarding bicycle theft deterrence and creation of a tracking system for reporting and recovering stolen bicycles. Outreach and publicity regarding all aspects of the program should be conducted concurrently.

A Bicycle Theft Task Force should be created in cooperation with the Bicycle Advisory Committee (BAC), the SFBC and SFPD. This task force would help determine the best ways to reduce bicycle theft within the City and recommend improvements to bicycle parking facilities where appropriate.

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i 2007 random telephone survey of 400 likely San Francisco voters conducted by David Binder Research.

ii Vancouver Parking By-law (No. 6059)

iii Santa Cruz Municipal Code Section 24.12.250

iv The Garage Bicycle-Parking Compliance Report can be viewed online at [http://www.sfmta.com/cms/uploadedfiles/dpt/bike/Bike\\_Parking/All\\_Garage\\_Compliance\\_Report\\_07\\_19\\_04\(1\).pdf](http://www.sfmta.com/cms/uploadedfiles/dpt/bike/Bike_Parking/All_Garage_Compliance_Report_07_19_04(1).pdf).

v The Bicycle Rack Placement Criteria can be viewed online at [http://www.bicycle.sfgov.org/site/uploadedfiles/dpt/bike/Bike\\_Parking/BIKEPARKINGGuidelines.pdf](http://www.bicycle.sfgov.org/site/uploadedfiles/dpt/bike/Bike_Parking/BIKEPARKINGGuidelines.pdf).



# 3. TRANSIT AND BRIDGE ACCESS

## TRANSIT AND BRIDGE ACCESS GOAL AND OBJECTIVES

### Goal:

Expand Bicycle Access to Transit and Bridges

### Objectives:

- Provide bicycle access to transit vehicles whenever feasible
- Provide convenient bicycle access and bicycle parking at transit stations
- Provide bicycle access to all local bridges wherever feasible

## INTRODUCTION

The integration of bicycle and transit use on a local and regional basis enhances the role of each mode in providing convenient transportation. This integration is essential in maximizing the utility of bicycle transportation for medium and long-range trips, whether for commute, recreational or utilitarian purposes. Bicycle access should be provided to all transit modes, including bus, streetcar, rail and ferry. Bicycle access also should be provided on San Francisco's bridges whenever feasible to ensure maximum connectivity.

Bicycle access to transit vehicles, like bicycle parking at transit stations, provides an intermodal link that improves the efficiency and range of both transit and bicycling. Bicycle access to transit vehicles themselves provides maximum mobility at both ends of a transit trip. Transit vehicles, however, are often too crowded to accommodate many bicycles. The actions in this Plan are intended to maximize the opportunity for transit users to bring bicycles on board transit vehicles while recognizing that secure bicycle parking at transit stations will facilitate many bicycle and transit intermodal trips. This Plan's recommendations for the San Francisco Municipal Railway (Muni) may be



*Photo credit: Valley Transportation Authority*

Bicycle commuter enters a VTA LRV during commute hour.



enacted by the SFMTA. San Francisco does not have jurisdiction over the other transit agencies listed, but this Plan's recommendations constitute an official request to those agencies to consider improving the utility of their transit systems for bicyclists.

Good bicycle access to transit includes two major components:

- 1) Bicycle parking at transit stops that is well promoted, including:
  - Secure facilities
  - Adequate capacity to meet demand
  - Available at an affordable cost
- 2) Bicycle transport on transit vehicles, including:
  - Bicycle access at all reasonable hours
  - Adequate capacity to meet the demand
  - No additional charge beyond the standard passenger fare

## BICYCLE ACCESS TO TRANSIT

It is important to provide bicyclists with easy and efficient access to all of the major public transit modes serving San Francisco including heavy rail, light rail, bus and ferry systems. This access must be provided to both the transit vehicles themselves and at transit stops and stations.

### MUNI ACCESS

Muni is the seventh-largest public transit system in the United States, providing local transit service by bus, light rail ("Metro"), historic streetcars and cable cars. Although bicycle racks are provided on all Muni buses, currently none of Muni's rail vehicles permit bicycles on board and bicycle racks are not yet feasible due to engineering and safety constraints. Muni's light rail vehicles (LRVs) could provide an important service for bicyclists by permitting bicycles on board. Almost every light rail system in North America allows bicycles on board (including the Santa Clara Valley Transportation Authority, Sacramento Regional Transit District and the Los Angeles County Transportation Commission).



Front-mounted bicycle rack on the 38 Geary.

### Action 3.1

Create an SFMTA policy that explicitly permits folded bicycles on all SFMTA transit vehicles.

**Action 3.2**

Develop a pilot program to provide bicycle access on SFMTA light rail vehicles for a trial period that would be monitored for potential future implementation.

A Muni pilot program to permit bicycles on LRVs would provide a test of the safety and operational impacts of allowing bicycles on board. As part of the pilot program, specific design measures should be developed to ensure that bicycle access does not interfere with other passengers' convenience or safety, particularly for the elderly, disabled and small children. Muni should implement such a pilot program, beginning on the Third Street light rail line, as proposed as a mitigation measure in the 1998 Third Street Light Rail Project Environmental Impact Report<sup>1</sup>. The SFMTA should determine LRV program regulations and the following should be considered:

- Bicycles (except folding bikes) should not be allowed on crowded LRVs
- Off-peak commute hours should first be explored in a trial allowing bicycles on LRVs, with possible exceptions for allowing bicycles on LRVs at all times between the Castro Street and West Portal Stations
- Bicyclists with proof of payment should board at one of the back doors and remain near that back door while on board

The SFMTA should develop criteria to evaluate the success of this pilot program. This pilot program should conclude with recommendations for continuation or modification to the service and accompanying regulations.

**Action 3.3**

Update the SFMTA's bicycle accessibility guidelines and widely distribute and publicize these guidelines.

SFMTA bicycle accessibility guidelines should be updated to allow folding bicycles within all Muni vehicles. These guidelines also should provide clear guidance to transit operators and bicyclists regarding the use of existing front-mounted bicycle racks on buses. Promotional materials, including directions on how to use the front-mounted bicycle racks, should be developed as part of these guidelines and be widely distributed.

**Action 3.4**

Create an SFMTA policy that allows bicyclists with disabled bicycles to bring them aboard SFMTA transit vehicles, interior space permitting and at the vehicle

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<sup>1</sup> The DEIS/DEIR finds on page 5-2 that the project "precludes the future development of a formalized (striped) bike lane" and recommends on page 3-68 "that Muni establish a policy providing for the accommodation of bicycles on the Third Street light rail vehicles."

operator's discretion, when the SFMTA transit vehicle either does not have bicycle racks or when the racks are full.

#### **Action 3.5**

Install bicycle racks on all SFMTA-operated buses and work with other transit operators with buses operating in San Francisco to install bicycle racks on their bus fleets.

All of Muni's bus fleet (about 900 buses) carries up to two bicycles on a front-mounted bicycle rack. No operational difficulties associated with this rack type have been identified and Muni should continue to provide bicycle racks on all of its buses and ensure existing racks are maintained.

#### ***MUNI BICYCLE STATION ACCESS AND PARKING***

Several Muni Metro Stations are shared with Bay Area Rapid Transit (BART) (see Table 3-1 below). These shared stations are within BART's jurisdiction. The City should assist BART in their efforts to improve bicycle access at shared stations. The SFMTA also should adopt designs similar to those being employed in BART stations to improve bicycle access and bicycle parking at Muni Metro Stations. Issues of pedestrian clearance and rider safety should be addressed. As bicycle access to Muni LRVs is instituted, signage, stair channels<sup>2</sup> and adequate bicycle parking should be installed at the Castro Street, Church Street, Forest Hill, Van Ness Avenue and West Portal Stations.

The SFMTA should pursue right of way (ROW) bicycle rack installation at non-underground Muni Metro Stations. The SFMTA's Bicycle Program has installed bicycle racks near Muni Metro and BART Stations, but has not installed racks within the stations.

#### **BAY AREA RAPID TRANSIT ACCESS**

BART provides heavy rail service for San Francisco and the Bay Area, including eight stations within San Francisco. East Bay counties are connected to San Francisco via BART's Transbay Tube and service south of the City extends to the San Francisco International Airport, with a new Caltrain transfer station in Millbrae. Because bicycles are not permitted on the San Francisco-Oakland Bay Bridge, BART provides a critical link between San Francisco and the East Bay.

#### **Action 3.6**

Work with BART to analyze existing bicycle policies, identify expanded bicycle access times and create a trial program for non-folding bicycle access in both directions on Transbay peak period trains.

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<sup>2</sup> Stair channels allow bicyclists to transport their bicycles up and down stairways without having to lift the bicycle by providing a smooth surface that bicycle wheels can roll along.

Bicycle access has improved from no access when BART first opened, to the current access rules created through BART’s Bicycle Accessibility Task Force (BBATF)<sup>i</sup>. Bicyclists can now board most trains and are allowed in all train cars except the first. Although BART allows bicycles during off-peak hours, it prohibits bicycle access on peak-hour trains in the “commute direction.” This prohibition is a strong disincentive for Transbay bicycle commuters, and limits BART as a commute option for many bicyclists, thereby impeding the advantages of intermodal bicycle commuting.

**BART BICYCLE STATION ACCESS AND PARKING**

Bicycle access to underground BART stations is restricted to stairs and elevators that were not originally designed to accommodate bicyclists. Access fare gates also are designed for pedestrians only, requiring that bicyclists use the emergency/wheelchair gate for their bicycles and then return to the pedestrian entrance. This station infrastructure should be improved through future station renovations. Recently constructed BART stations and renovated stations provide a wide fare gate that can accommodate wheelchairs and bicycles.

Table 3-1 below shows BART’s recommendations for improving bicycle access and bicycle parking in its San Francisco stations<sup>ii</sup>. The SFMTA should support and assist BART in its plan to improve station access for bicycles, specifically including the installation of bicycle parking improvements and bicycle stair channels.

**Table 3-1**  
BART’s Recommended Bicycle Access and Parking Improvements

<b>Station Location</b>	<b>Recommended Bicycle Facility Improvement</b>	<b>Status</b>
16 <sup>th</sup> Street	Parking Improvement	Completed - 77 bicycle parking spaces
16 <sup>th</sup> Street	Stair Channel Installation	Completed
24 <sup>th</sup> Street	Parking Improvement	Completed - 70 bicycle parking spaces
24 <sup>th</sup> Street	Stair Channel Installation	Under evaluation
Balboa Park*	Parking Improvement	Completed - 107 bicycle parking spaces
Balboa Park*	Stair Channel Installation	Under evaluation
Civic Center*	Parking Improvement	Completed - 63 bicycle parking spaces
Civic Center*	Smart-card bicycle cage	Seeking funding – 200 bicycle parking spaces
Civic Center*	Stair Channel Installation	Under evaluation
Embarcadero*	Bike station	Completed- 130 bicycle parking spaces

### 3. TRANSIT AND BRIDGE ACCESS

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Embarcadero*	Stair Channel Installation	Under evaluation
Glen Park	Parking Improvement	Completed - 61 bicycle parking spaces
Glen Park	Stair Channel Installation	Under evaluation
Montgomery*	Parking Improvement	Under evaluation
Montgomery*	Stair Channel Installation	Under evaluation
Powell*	Parking Improvement	Completed - 7 bicycle parking spaces
Powell*	Stair Channel Installation	Under evaluation

\* Denotes a Shared Muni and BART station

## CALTRAIN ACCESS

### Action 3.7

Work with Caltrain to expand bicycle access on its trains and to its San Francisco stations by promoting bicycling to stations and by providing secure bicycle parking at station areas.

Caltrain provides commuter rail service to downtown San Francisco's Fourth and Townsend Streets Station from 32 stations to the south, including Millbrae, Hillsdale, Palo Alto, San Jose and Gilroy. Caltrain operates two distinct types of rolling stock which are not interchangeable: Gallery and Bombardier. Each train set comprises cars of one type or the other. The Gallery bicycle car can accommodate up to 32 bikes, while the Bombardier bicycle car can hold up to a maximum of 16 bikes. Each bicycle car in a train set is indicated by a decal on the side of the train. Some train sets will contain two bicycle cars, such that if there are two Gallery bicycle cars, a train set will hold up to a maximum of 64 bikes, while two Bombardier bicycle cars on a train set can hold up to 32 bikes per train set. Current protocol is that bicyclists board and exit trains after other passengers. Detachable or collapsible trailers or large, bulky attachments that expand bicycle width, such as saddlebags, backpacks or briefcases, are not permitted. Bicyclists must be at least 12 years old. Bicycle capacity should be increased along this regional rail line.



Photo credit: BikeMap.com  
Commuter bicycles on the Caltrain Cab Car.

Caltrain's onboard bicycle program is very popular and well utilized. It maintains the highest carrying capacity of bicycles of any commuter rail service in the nation. Even with relatively high capacity, a number of peak period passengers with bikes are unable to board due to capacity constraints. This is commonly referred to as "bumping." Passengers with bumped bicycles can still board the train, but must leave their bike at the station. Bumping happens in peak periods; at stations with very high bicycle traffic volumes and at the preceding stations of a peak direction run (because some passengers with bikes will have alighted by the time the train reaches later stations).

Caltrain is currently working to identify potential operational solutions to reduce occurrences of bumping, such as providing timely bicycle capacity information as well as boarding and alighting protocols for bicycles, conducting feasibility studies for additional wayside options such as bike sharing programs and continuing to pursue long-term investments, such as the Caltrain 2015 program. The Caltrain 2015 program serves to increase capacity for all riders by providing more frequent service in the peak hours. Caltrain is also working on a system-

wide access policy to both address the needs of all Caltrain riders and guide future investment decisions.

#### ***CALTRAIN BICYCLE STATION ACCESS AND PARKING***

##### **Fourth and Townsend Streets Station**

See the discussion below under the Bike Stations heading.

##### **Twenty-Second Street Station**

Bicycle access and parking improvements are strongly recommended at this station. The current stair access to the train platforms is inadequate to encourage more bicyclists to use this station and secure bicycle parking is limited. Previously, bicycle lockers existed at Muni's Woods Maintenance Yard adjacent to the station. These lockers served bicycle commuters accessing Caltrain's 22<sup>nd</sup> Street Station, but were removed due to security concerns after September 11, 2001. Muni and Caltrain should work together to resolve security issues and reinstall bicycle lockers.

#### **REGIONAL BUS TRANSIT ACCESS**

Buses provide a critical trip link for many bicyclists traveling longer commute distances, shopping where larger purchases limit safety or ability to complete a round trip solely by bicycle or when weather conditions limit the desirability and comfort of a bicycle trip.

Unless noted otherwise, all bus transit providers serving San Francisco:

- Do not charge an additional fare for bicycles
- Use front-mounted bicycle racks that hold two bicycles
- Allow only single-rider, two-wheel bicycles
- Require bicyclists to be able to load and unload their bicycles without help from the bus operator

The San Francisco Bay Area is served by many transit operators. AC Transit, Amtrak, GGT, and SamTrans each accommodate bicycles on their buses, as described below. Since multimodal bicycle commuters and recreational riders depend on one or more of these transit operators, City staff should work with the MTC and regional transit operators to improve the capacity and convenience of intermodal bicycle access to San Francisco.

#### ***AC TRANSIT BUS ACCESS***

AC Transit, operated by the Alameda-Contra Costa Transit District, serves 13 cities and adjacent unincorporated areas in Alameda and Contra Costa Counties. AC Transit operates local East Bay bus service and 26 commuter bus routes

from the East Bay to the Transbay Terminal in downtown San Francisco. All AC Transit buses are equipped with front-mounted bicycle racks that hold two bicycles. Two additional bicycles can be stored on commuter coaches in the cargo bays (one per bay) when the front-mounted rack is full. On selected commuter coaches crossing the San Mateo and Dumbarton bridges, custom-made undercarriage racks allow four additional bicycles to be stored.

### ***AMTRAK CAPITOL CORRIDOR BUS ACCESS***

The Capitol Corridor links Amtrak intercity train service with feeder bus service throughout Northern California. All trains on the Capitol Corridor allow bicycles onboard. Service to and from downtown San Francisco is provided by buses that connect to the Emeryville train station. Each bus can accommodate bicycles within luggage storage bins.

### ***GOLDEN GATE TRANSIT BUS ACCESS***

GGT provides regional bus service in San Francisco, Marin and Sonoma Counties, as well as limited local service within Marin and Sonoma Counties. GGT buses up to 40 feet long have front-mounted bicycle racks and space for two additional bicycles in their luggage bays. GGT should outfit their 45-foot vehicles with front-mounted bicycle racks as now permitted by state law and already implemented by AC Transit (see above). GGT tries to schedule its buses without bicycle racks solely along routes with frequent service to ensure bicyclists' potential waiting time for a bus with a rack is minimized.

### ***SAMTRANS BUS ACCESS***

SamTrans, operated by the San Mateo County Transit District, provides bus service throughout San Mateo County and into parts of San Francisco and Palo Alto. The entire SamTrans fleet of buses is equipped with front-mounted bicycle racks. Two additional bicycles are allowed inside buses, depending on passenger loads.



### FERRY BICYCLE ACCESS

Two ferry operators provide service to San Francisco: Golden Gate Ferries and Blue & Gold Ferries. Both services allow bicycles on board free of charge. Golden Gate Ferries operate from San Francisco to Larkspur and Sausalito and provide 25 bicycle spaces per boat (15 on catamarans) on a first-come, first-serve basis. Blue & Gold Ferries operate from San Francisco to Sausalito, Tiburon, Vallejo, Alameda/Oakland and Angel Island and allow up to 20 bicycles per boat at the discretion of the captain. No policy changes are recommended at this time.



Bicyclist accessing the Blue & Gold Ferry.

### TRANSIT STATION ACCESS

#### Action 3.8

Ensure that all San Francisco transit stations, including the new Transbay Terminal, provide barrier-free bicycle access and state-of-the-art bicycle parking facilities and work with the California High-Speed Rail Authority to ensure bicycles are accommodated on its long-distance trains.

The planned new Transbay Terminal will serve as the City's major transit hub, linking bus and light rail lines, as well as Caltrain commuter rail service and potentially high-speed intercity rail service. The new multimodal station, which will be built on and around the current location, has received environmental clearance and is estimated to be complete by 2019. Additionally, the surrounding redevelopment plan calls for thousands of new housing units, offices and retail space. Large numbers of automobiles move through the streets surrounding this employment center and major public transportation hub every day. In such a compact downtown neighborhood, bicycle facilities can help relieve congestion.

In all new and existing transit facilities, the City should be involved in the planning and design processes to ensure that convenient bicycle access by way of elevators, ramps or escalators is provided to all building levels, particularly those with train platforms.

#### Action 3.9

Work with San Francisco Bay Area transit operators and the Metropolitan Transportation Commission (MTC) to develop, implement, maintain, expand and enforce improved intermodal bicycle access.

The existing Transbay Terminal serves approximately 20,000 bus passengers per day and the newly renovated Caltrain 4th & King Streets Station serves approximately 12,200 rail passengers daily. The planned extension of Caltrain to the new Transbay Terminal will likely bring an increase in the demand for bicycle facilities in and around the station, such as access to all platforms, secure bicycle parking and convenient bicycle routes to and from the station.

The existing Transbay Terminal will be replaced by an intermodal facility serving AC Transit, Amtrak bus service, BART (via an underground tunnel), Caltrain, Golden Gate Transit (GGT), Greyhound, Muni and SamTrans. The new Transbay Terminal will connect all of these transit systems to downtown San Francisco and address the Bay Area's most pressing need for greater interconnectivity of transit service. By the year 2020 the Transbay Terminal will potentially serve 10,000 bus passengers and 12,000 train passengers during peak hours, with capacity for considerably more. A total of 50 bus bays will meet the 2020 growth forecast for all transit operators currently using the Transbay Terminal and it will have sufficient latent capacity to meet further transit service expansion. It is critical that the overall design for this new facility address bicycle access, circulation and secure storage in order to promote multimodal commute trips.

For projects in San Francisco under the jurisdiction of the San Francisco Redevelopment Agency (SFRA) and joint powers agencies such as the Transbay Joint Powers Authority (Transbay Terminal), these agencies should consult with the SFMTA to ensure adequate bicycle facilities and bicycle access are provided on all street and building designs.

## **BIKE STATIONS**

### **Action 3.10**

Promote bicycle parking stations at major transit hubs that provide secure, monitored bicycle parking, bicycle commuter information and bicycle maintenance services.

Bike stations promote intermodal transportation. Bike stations allow commuters, shoppers and tourists to bicycle to a transit hub, switch to the transit system and also receive affordable, secure bicycle parking or repair services. San Francisco currently has two bike stations: at the Embarcadero BART Station and the Caltrain Fourth and Townsend Streets Station. Caltrain secured three-year grant funding and opened a bike station at the Fourth and Townsend Streets Station in early 2008. This facility is within Caltrain's jurisdiction and is funded and supported by several agencies and organizations including the San Francisco Department of the Environment (SF Environment), the San Francisco Bicycle Coalition (SFBC), and the SFMTA Bicycle Program.

## BICYCLE ACCESS TO BRIDGES

### Action 3.11

Work with Caltrans and the Golden Gate Bridge, Highway and Transportation District (GGBHTD) to provide improved bicycle access to and upon all San Francisco bridges wherever feasible and appropriate.

San Francisco is served by two major regional bridges: the Golden Gate Bridge to the north and the San Francisco-Oakland Bay Bridge to the east. Several local bridges within San Francisco also exist. Whenever new local bridges are constructed, bicycle travel should be accommodated.

### GOLDEN GATE BRIDGE

The Golden Gate Bridge is operated by the GGBHTD. Cycling distance across the bridge is 1.7 miles including the bridge approaches. Bicyclists approach the bridge from San Francisco through the Presidio by way of Lincoln Boulevard, and from Marin County by way of Alexander Avenue from downtown Sausalito or from the Marin Headlands or Fort Baker. Raised sidewalks provide direct two-way bicycle access on both sides of the bridge, although bicyclists may only use one side of the bridge at a given time per the schedule presented below in Table 3-2.

**Table 3-2**  
Bicycle Access on the Golden Gate Bridge

Day	November-March Standard Time	March –November Daylight Saving Time	Weekdays	Weekends/ Holidays
Morning	5:00am to 3:30pm	5:00am to 3:30pm	East Sidewalk	West Sidewalk
Evening	3:30pm to 6:00pm	3:30pm to 9:00pm	West Sidewalk	West Sidewalk
Night	6:00pm to 5:00am	9:00pm to 5:00am	East Sidewalk	East Sidewalk

Since 1992, bicyclists have been allowed nighttime access to the Golden Gate Bridge via a monitored security gate. The security gate access program was financed through San Francisco’s Transportation Development Act Article 3 funds, and was a cooperative venture involving the GGBHTD, the San Francisco Bicycle Advisory Committee (BAC), the SFBC and the SFMTA Bicycle Program.

With significant input from the SFMTA Bicycle Program and the SFBC, the GGBHTD added safety railings between the bicycle and pedestrian paths and

the roadway on the Golden Gate Bridge to improve bicyclist and pedestrian safety in 2003.

Bicycle access improvements should be made to the southern approach to the west sidewalk of the Golden Gate Bridge. The existing path approach includes sharp turns and a narrow transition to and from the bridge sidewalk, which are difficult for bicyclists to navigate. Alternative designs and routes should be analyzed in an engineering feasibility study to determine if bicycle safety and convenience approaching the bridge can be improved. Direct, straight-line access to the west sidewalk should be considered.



*Image credit: NewBayBridge.com, 2004*

Photo rendering of the proposed Bay Bridge bicycle and pedestrian pathway (view heading toward Oakland).

### SAN FRANCISCO-OAKLAND BAY BRIDGE

Once completed, the new east span of the San Francisco-Oakland Bay Bridge will accommodate bicyclists from Oakland to Yerba Buena Island, but no bicycle or pedestrian path is currently planned for the west span (connecting Yerba Buena Island to San Francisco) of the bridge. Bicycles are accommodated in this corridor at various times on AC Transit, BART and via the Caltrans Bicycle Commuter Shuttle. The shuttle service consists of a 12-passenger van that tows a specially built trailer with 12 bicycle racks. It operates nonstop between the Transbay Terminal in San Francisco and the MacArthur BART Station in Oakland only during peak commute periods on a 45-minute headway. The fare is \$1.00 each way. This shuttle service is funded as part of the Bay Bridge operational budget. The new Transbay Terminal must provide a conveniently located shuttle stop (both convenient to bicyclists and to bridge access).

Once the new east span of the Bay Bridge is complete, bicyclists will be able to travel between Oakland and Yerba Buena and Treasure Islands, and will be able to connect to downtown San Francisco via Muni bus service. Additionally, draft plans for future development on Treasure Island include the addition of ferry service between Treasure Island and downtown San Francisco, which could provide bicyclists with another option for traveling between the East Bay and San Francisco.

### ***BICYCLE PATH ON THE BAY BRIDGE***

The main span of the new east span of the Bay Bridge will be a single-tower self-anchored suspension design. In 1998, MTC (acting as the Bay Area Toll Authority, or BATA) approved \$50 million to incorporate a bicycle/pedestrian path on the new bridge. The 15.5-foot-wide two-way path will run along the southern

edge of the eastbound deck, from Yerba Buena Island to Oakland and will be positioned one foot above the motor vehicle deck to shield users from traffic noise and exhaust.

In 2000, Caltrans launched a \$3 million study (funded by MTC/BATA) to look at the technical feasibility and cost of extending the path to the west span of the Bay Bridge (connecting Yerba Buena Island to San Francisco). Completed in 2001, the study found that a west span path could technically be constructed; however, it would cost at least \$160 million<sup>iii</sup>.

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i A full description of the BART Bicycle Rules can be viewed online at <http://www.bart.gov/guide/bikes/index.aspx>.

ii BART Bicycle Access and Parking Plan; Volume 1.

iii [http://www.mtc.ca.gov/planning/bay\\_bridge/bbbike.htm](http://www.mtc.ca.gov/planning/bay_bridge/bbbike.htm)

# 4. EDUCATION

## EDUCATION GOAL AND OBJECTIVES

### **Goal:**

Educate the Public about Bicycle Safety

### **Objectives:**

- Create, fund and implement bicycle safety curricula for the general public and targeted populations
- Create, fund and implement bicycle safety outreach campaigns for motorists, bicyclists and the general public.

## INTRODUCTION

Bicycle-safety education can be divided into two major categories: education that develops safety awareness by providing information to the public through outreach channels such as media campaigns, brochures and websites; and education that teaches specific bicycle handling and traffic negotiation skills through classroom instruction combined with on-bike training.

Both motorists and bicyclists have rights and responsibilities for safe roadway sharing. Motorists endanger bicyclists' safety when they do not view bicyclists as legitimate road users. Furthermore, both motorists and bicyclists endanger themselves and others by violating certain traffic laws. Ambiguities in the California Vehicle Code (CVC) or road users' education, when combined with unaccommodating roadway designs, can exacerbate confusion and conflicts between automobile and bicycle traffic.<sup>1</sup>

Although completion of the bicycle route network improvements recommended in Chapter 1 of this Plan and revisions to traffic codes, when necessary, can improve safety, bicycle safety education for motorists and bicyclists that teaches proper roadway behavior is an essential ingredient for improving bicyclists' safety in San Francisco.

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<sup>1</sup> For example, CVC references to a bicyclist using a crosswalk when crossing a roadway from a multi-use path are vague. Motorist education is vague for how to share roads with bicyclists. Many motorists do not realize that they shall make right turns from the bicycle lane per CVC Section 21717.

## 4. EDUCATION

The following sections present information on bicycle-safety education in San Francisco for the general public and targeted populations. While similar safety themes are relevant for all audiences, each group requires a tailored approach. This chapter recommends actions that will enhance the City's bicycle-safety education program, by drawing upon existing national best practices, improvements to existing bicycle educational materials and adaptation of bicycle safety specifically to San Francisco's unique bicycling environment.

In addition to local efforts, San Francisco should support efforts at the State level for reforming the existing Driver Education Program into a broader transportation education program that includes bicycling as a viable transportation mode.

### EDUCATING THE GENERAL PUBLIC

#### **Action 4.1**

Provide SFMTA bicycle safety information to diverse age, income and ethnic populations.

#### **Action 4.2**

Provide SFMTA bicycle safety information in languages that are widely used within San Francisco such as Chinese and Spanish.

#### **Action 4.3**

Partner with appropriate agencies to distribute SFMTA bicycle safety education materials in mass mailings.

The purpose of general bicycle-safety classes or media campaigns is to educate the general public about the rights and responsibilities of bicyclists and motorists and to improve the overall perception of bicycle transportation. This Plan discusses previous and existing bicycle-safety campaigns in San Francisco and makes recommendations for improvements.

The League of American Bicyclists (LAB) curriculum provides a strong foundation for the creation of a bicycle safety program. It should continue to be locally adapted to address San Francisco's unique cycling environment and to targeted populations such as existing urban bicyclists, potential bicyclists, motorists, young adults, children, commuters and City employees.

The following general actions provide a framework for improving the City's bicycle-related mass media educational outreach campaigns. The City has made much progress over the past several years in promoting awareness of bicycle-safety issues and encouraging bicycle use. Events such as Bike to Work Day, and the distribution of materials such as the San Francisco Bicycle Guide<sup>i</sup> booklet and the implementation of media campaigns, such as the Coexist Campaign, are examples of this progress. SFMTA Bicycle Program staff should

explore additional opportunities for creative and effective dissemination of bicycle-safety education.

The City should continue to expand upon existing educational media campaigns, including: printed brochures, maps, stickers, posters, radio and television ads, events, mailings (such as Public Utilities Commission bills), online information, billboards and ads posted on public transit vehicles, stops and stations. Each of these tactics can encourage bicycling, while building a fundamental awareness of bicycle safety.

## **BICYCLE SAFETY OUTREACH**

### **Action 4.4**

Work with the SFPD to create a bicycle traffic school curriculum as an option in lieu of other pecuniary penalties for traffic law violators.

The SFMTA should work with the SFPD to create a web-based bicycle education traffic school option for traffic violators. Since motorists already have a strong incentive to participate in some type of traffic school to mitigate issues surrounding their driver's license record and insurance costs, they are more likely to sign up. This is an excellent outreach opportunity because it pairs motorists who are already experiencing the consequences of their roadway behavior with exposure to how traffic maneuvers impact bicyclists. The program also would be valuable for bicyclists cited for moving violations. The curriculum should cover relevant traffic laws, share-the-road concepts and traffic maneuvering skills.

### **COEXIST CAMPAIGN**

As a result of the City's compact geography and multimodal transportation system, bicyclists must often share the road with automobiles. In response to growing concerns over how to encourage motorists and bicyclists to operate in a legal and safe manner, the SFMTA and the San Francisco Bicycle Coalition (SFBC) jointly developed the Coexist Campaign. Important concepts used in developing this campaign included:

- Promotion of safe bicycling behavior
- Encouragement of respect among road users
- Creation of a positive image for both bicyclists and motorists



#### 4. EDUCATION

In addition to placing posters (with the message of encouraging motorists and bicyclists to share roadway space safely) on SFMTA Municipal Railway (Muni) buses and at transit shelters throughout the City, the Coexist Campaign also involved installation of permanent “Bicycles Allowed Full Use of Lane (BAFUL)/Change Lanes To Pass” signs alerting motorists and bicyclists that CVC Section 21202 permits bicycles to use the full lane<sup>ii</sup>. On certain streets, the “door zone” (the area next to parked cars into which a car door can be abruptly opened) extends so far into a lane that bicyclists must position themselves fully in the lane to operate safely.

#### **PRINTED MATERIALS**

The San Francisco Bicycle Guide is a 50-page handbook that covers a wide range of topics for beginner, intermediate and advanced bicyclists. The handbook can be downloaded from the Bicycle Program website or obtained for free from the SFMTA. The handbook covers urban riding skills, including more advanced techniques for lane positioning and intersection movements, tips for using transit, riding at night, riding in inclement weather, information on road users’ rights and responsibilities, bicycle fit and equipment, proper helmet use, simple maintenance checks and secure bicycle parking. Bicycle safety and promotion materials could be included with residential parking permits or other mass mailings distributed by the City. An annual mailing of a simple brochure or pamphlet on safe bicycle practices might be included in existing mailings from a variety of agencies and companies.



SFBC volunteers install batteries in bike lights for the fall 2007 Bike Light Campaign



Fall 2007 Coexist campaign advertisement encouraging bicyclists to light their bikes at night was combined with a public distribution and installation of 2,000 bike lights.



Winter 2007/08 Coexist campaign advertisement urging motorists to keep bike lanes clear.

#### **ELECTRONIC MATERIALS**

The SFMTA Bicycle Program

website is an affordable, flexible way to reach many San Francisco residents, commuters and tourists from around the world.

The SFMTA Bicycle Program Home Page, <http://www.sfmta.com/bikes>, provides educational materials and informational resources such as San Francisco's official Bike Map, the San Francisco Bicycle Guide, relevant reports and studies and links to other useful websites.

## ***EVENTS***

### **Action 4.5**

Increase SFMTA participation in Bike to Work Day activities by providing resources and materials as staff availability and funding allow.

Events such as Bike to Work Day are an effective way to promote bicycle transportation and encourage driver (and media) awareness of bicycle commuting. In previous years the SFMTA, the SFBC and the Metropolitan Transportation Commission (MTC) have taken a very active role in organizing Bike to Work Day. The SFMTA should continue its participation level in this event. Similar events could include bicycle safety presentations made by volunteers to give interested community members basic bicycle safety tips as well as maintenance and riding techniques. These organized events also present opportunities to distribute safety materials such as bicycle lights, helmets, reflective leg bands, stickers, real-view mirror decals and bumper stickers, as funding allows. Refer to Chapter 6 for additional Bike to Work Day discussion.

## ***REGIONAL INFORMATION PROGRAMS***

Partnerships with regional agencies such as the Bay Area Bicycle Coalition (BABC) and the MTC are the most efficient and effective way for City staff to undertake large-scale regional education programs. Recent regional information distribution efforts including the 511 telephone hotline, for example, could target bicyclists from other cities that frequent San Francisco. San Francisco routinely attracts many visiting motorists to its employment centers, restaurants and cultural offerings. It is important, therefore, for the City to collaborate regionally in order to educate Bay Area motorists to increase the chance that commuters and visitors will properly share San Francisco streets with bicyclists.



San Francisco Mayor Gavin Newsom with SFBC staff, SFMTA staff and others during the 2004 Bike to Work Day.

## 4. EDUCATION

The SFMTA Bicycle Program should continue to be actively involved in the Bay Area regional LAB education program. Under contract with the SFMTA, the SFBC has been teaching monthly four-hour indoor classes and six-hour LAB Road I<sup>iii</sup> classes. The City's official bicycle-safety classes are consistent with LAB's BikeEd<sup>iv</sup> concepts and national best practices adapted to the particular challenges, such as steep hills, found in San Francisco. The SFMTA Bicycle Program should continue to take the primary role in bicycle education for the City and County of San Francisco and develop regional opportunities for collaboration. Bicycle safety education classes throughout the Bay Area are listed on the 511.org website.<sup>v</sup>

### ***BICYCLE FACILITIES EDUCATION***

#### **Action 4.6**

Implement new outreach campaigns for improved bicycle facilities.

Electronic and printed educational materials can educate people about the City's bicycle route network, secure bicycle parking, bicycle shops and rental locations, traffic laws and safe bicycling techniques. The City should explore innovative techniques, such as using private business funds to distribute bicycle-safety materials in exchange for advertising and celebrity involvement in educational campaigns to generate wider appeal. In addition to general bicycle transportation awareness, outreach campaigns also should educate the public about the proper meaning and use of specific bicycle-facilities.

Newly introduced traffic control devices, such as the shared roadway bicycle markings (sharrows) require specific educational outreach to the public. Though the SFMTA conducted a public outreach campaign on this new type of traffic control device in 2004, a sustained educational campaign is still needed to communicate the intended behavior signaled by sharrows. A study on the effectiveness of sharrows titled "San Francisco's Shared Lane Pavement Markings: Improving Bicycle Safety"<sup>vi</sup> explains the need for such an educational outreach campaign in greater detail. In summary, the study found that although sharrows had positive effects on motorists' and bicyclists' behavior and lane placement, the intended message of the markings was poorly understood by a significant percentage of survey respondents. Recommended themes for campaigns and public service announcements include:

- Encouraging motorists to respect bicyclists' legal right to use the road
- Encouraging drivers to open car doors with caution to avoid "dooring" collisions (collisions that result when an opened door of a parked car impacts a bicyclist)
- Encouraging safe cycling and driving practices including discouraging double-parking in bicycle lanes
- Informing bicyclists' that they are required to follow the rules of the road

## TARGETED BICYCLE EDUCATION

### CITY EMPLOYEES

#### **Action 4.7**

Develop SFMTA bicycle safety classes for City employees.

Since City employees routinely use vehicles in San Francisco, they should be formally trained in how to safely share the streets with bicycles. SFMTA Bicycle Program staff should develop educational materials to teach employees of all City departments safe bicycling techniques. There were almost 30,000 City employees in June 2008 (prior to recent layoffs)<sup>vii</sup>. A concerted bicycle education effort for all City departments could encourage an increase in the bicycle commute mode share for San Francisco, encourage use of bicycles for City business, and educate City employees about the proper sharing of the road with different modes of travel.

### TRANSIT OPERATORS

#### **Action 4.8**

Develop an SFMTA bicycle safety workshop for transit vehicle operators and other large fleet vehicle operators.

Because many Muni vehicles share the roadway with bicyclists, SFMTA Bicycle Program staff should work with Muni to develop a comprehensive training program for transit vehicle operators that promotes bicycle-safety awareness and effective road sharing techniques. Such a program also should be targeted toward shuttle and taxi drivers. Additionally, effective road-sharing techniques should be included in all bicycle-safety curricula for bicyclists.

### BICYCLE EDUCATION FOR CHILDREN, YOUTH, AND ADULTS

#### **Action 4.9**

Develop bicycle education curricula for use in the San Francisco Unified School District (SFUSD), San Francisco public colleges and sharing with other schools.

#### **Action 4.10**

Work with the SFUSD to promote a transportation curriculum in lieu of driver's education at City high schools that provides instruction on all modes of transportation.

### **CHILDREN**

Bicycling and walking are the only independent transportation modes available to children. Bicycling allows children to explore their neighborhood, get exercise and gain valuable skills that are useful throughout their lives. Before the age of nine, most children do not have the maturity and cognitive skills required to ride a

#### 4. EDUCATION

bicycle in urban traffic situations. These skills include the development of wider peripheral vision and the ability to judge the spatial movement of objects, especially the speed and direction of automobiles. Parents of children under nine, therefore, should supervise their children's bicycle use by first learning the essential bicycle safety concepts themselves such as proper fit and type of bicycle equipment and basic mechanical skills needed to start, balance, steer and stop a bicycle.



San Francisco bicycle education in progress.

For elementary school children over eight years old, bicycle-safety education should include both students and their parents. Although educational materials, along with donated helmets and bicycle accessories should be distributed to school-aged children, parents should be included in young children's education in order to reinforce messages and lessons. Studies have shown that "videos, flyers, posters, coloring books and assemblies are effective at introducing traffic safety rules, but unfortunately they have little bearing on child behavior. Safe bicycling requires skills that can best be learned through repetitive practice..."<sup>viii</sup>

Some of the child-targeted bicycle education events conducted in the City have included: school and community-based bicycle safety skills training "roadeos," the annual Safe Awareness for Everyone (SAFE) Bicycle Safety Fair, Family Bike Days, Freedom from Training Wheels classes, Walk n' Wheels Bike Fair and various grassroots earn-a-bike programs. The City also maintains a Safe Moves Trailer that contains mock traffic signals, plywood automobile and house cut-outs, and other props that enable SFMTA staff and community partners to build simulated roadway conditions to teach bicycle safety at neighborhood schools and community events throughout San Francisco. City staff should evaluate these and other bicycle education programs for children and prioritize funding for those that are deemed the most effective in teaching bicycle handling skills.

#### **YOUTH**

Qualified City staff should work with the SFUSD to develop bicycle safety curricula for all SFUSD classrooms that includes on-bike safety skills training. The LAB, the Federal Highway Administration's Bicycle Safety Education Resource Center and best practices from other cities should all be considered when developing these classes.

In addition to technical skill and traffic laws, bicycle safety education for youth should promote bicycling as an enjoyable transportation method with positive

lifestyle, health and environmental benefits. Programs and practices that will make bicycling to school easier and safer, such as the Safe Routes to Schools Program, should continue to be promoted.

The recommended curricula to teach youth bicycle safety should include:

- Recognition and avoidance of the most common bicycle collisions
- Motorists' and bicyclists' rights, responsibilities and safe roadway sharing behaviors
- Proper lane placement for typical bicycle maneuvers
- Bicycle handling skills
- Other urban traffic riding skills
- Proper bicycle helmet adjustment and fit<sup>2</sup>
- Bicycle purchase, maintenance and repair
- Physical, social and economic consequences of bicycle collisions
- Environmental, economic and health benefits of bicycling
- Proper bicycle locking techniques

## **ADULTS**

Many teenage and adult bicyclists have not had formal bicycle education outside of learning the basic bio-mechanics required to ride a bicycle. Additionally, misconceptions, myths and outdated advice can further erode adult bicyclists' safety (for instance, some believe that one should ride a bicycle on the left side of the street, facing traffic, rather than with the flow of traffic).

San Francisco has the highest percentage of bicycle commuters of any U.S. city with a population of over 500,000 people<sup>ix</sup>. These riders are often familiar with the basics of safe cycling, but they have limited formal training in the proper techniques of bicycling in urban traffic. The compact nature of the City's streets and San Francisco's high volume of traffic underscore the importance of teaching adults effective urban cycling skills. The SFMTA, therefore, should create a strategic plan for teaching bicycle safety to the City's diverse adult population.

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<sup>2</sup> Although helmets are not a legal requirement in California for adult bicyclists, they have been shown to reduce or prevent head injuries in bicycle collisions. Many adults, however, do not wear helmets while riding a bicycle and those that do often wear them incorrectly, greatly diminishing their potential to prevent injury in the event of a collision.



## 4. EDUCATION

The SFMTA should also create a plan for offering the City's official bicycle education curriculum at local college and university campuses.

Possible topics to be addressed in adult bicycling education classes include:

- Traffic maneuvers: lane positioning and safe turns
- Riding predictably while scanning for conflicts and traffic
- Visibility techniques: see and be seen
- Relevant traffic laws
- Advanced bicycle commuting skills: intermodal transit; and load distribution to maximize bicycle transportation utility
- "Door zone" awareness
- Crash avoidance maneuvers
- Helmet fitting demonstrations and tips
- Securely locking and parking a bicycle
- Bicycle maintenance and repair
- Proper bicycle sizing, type, components and accessories

## PROGRAM EVALUATION

### **Action 4.11**

Periodically evaluate and adjust, where appropriate, the SFMTA's bicycle safety program.

Periodic program evaluation of outreach, advertising and class offerings is needed to improve quality and help the bicycle safety program achieve its intended effect. This should be an interactive process that monitors the efficacy of classes, workshops and educational materials and allows changes to program elements where appropriate. Shifts in popular culture or demographics can have an impact on the program. Program evaluations can reveal opportunities and challenges for specific safety messages as well as identify new populations for targeted outreach. At each periodic review, the SFMTA should try to identify subpopulations that have not been historically targeted, consider them for specific campaigns and try to determine the effectiveness of such an approach.

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- i The San Francisco Bicycle Guide can be viewed online at <http://www.sfmta.com/bikes>.
  - ii A Report on BAUFL signs can be viewed online at [http://www.sfmta.com/cms/uploadedfiles/dpt/bike/Article\\_BAUFL\\_Sign.pdf](http://www.sfmta.com/cms/uploadedfiles/dpt/bike/Article_BAUFL_Sign.pdf).
  - iii <http://www.bikeleague.org/programs/education/courses.php#road1>
  - iv <http://www.bikeleague.org/programs/education/>
  - v <http://bicycling.511.org>.
  - vi “San Francisco’s Shared Lane Pavement Markings: Improving Bicycle Safety” can be viewed online at [http://www.sfmta.com/cms/uploadedfiles/dpt/bike/Bike\\_Plan/Shared%20Lane%20Marking%20Full%20Report-052404.pdf](http://www.sfmta.com/cms/uploadedfiles/dpt/bike/Bike_Plan/Shared%20Lane%20Marking%20Full%20Report-052404.pdf).
  - vii Based on annual data from the Controller’s Office Report, Comprehensive Annual Financial Report, June 2008.
  - viii DiBrito, Roger and Sharon et al. Left, Right & Left Again, Volume I. 1994. Ride Safe, Inc., Warrenville, IL.
  - ix U.S. Census Bureau 2000 Census



# 5. ENFORCEMENT AND SAFETY

## ENFORCEMENT AND SAFETY GOAL AND OBJECTIVES

### **Goal:**

Improve bicycle safety through targeted enforcement

### **Objectives:**

- Increase San Francisco Police Department (SFPD) enforcement of motorist and bicyclist traffic violations that pose the greatest threat to safety
- Provide San Francisco Municipal Transportation Agency (SFMTA) bicycle safety education to SFPD staff and to those cited for moving violations that focuses on safe cycling, relevant traffic laws and safe sharing of the roadway
- Increase SFMTA and SFPD enforcement of motorist violations in bicycle facilities

## INTRODUCTION

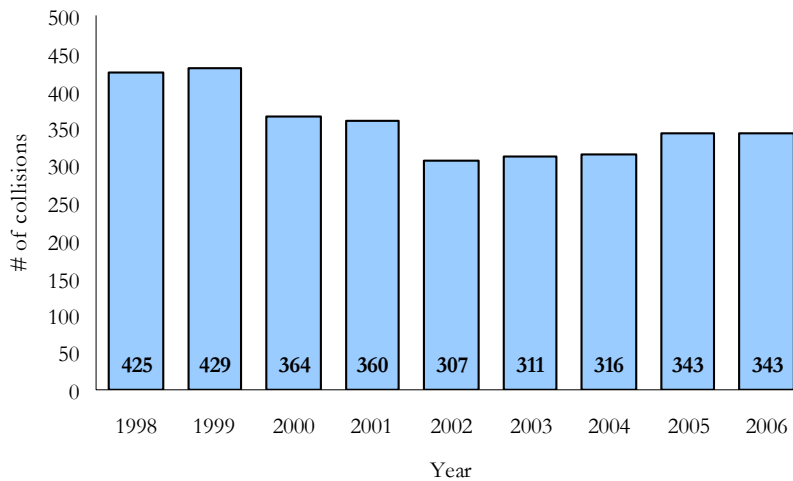
This chapter presents recommendations for increased traffic law enforcement as well as bicycle safety education to improve bicycling safety in San Francisco. When combined with well-planned facilities and educational programs, enforcement can be an effective means of enhancing safety for all road users. Reported bicyclists injury collisions have declined from 425 in 1998 to 343 in 2006, as shown in Chart 5-1 below<sup>1</sup>, while the number of people bicycling in San Francisco has increased. According to the U.S. Census, the number of bicycle commuters in the City more than doubled between 1990 and 2000 and continues to grow<sup>2</sup>. Furthermore, the SFMTA's citywide bicycle counts, conducted at 33 locations throughout the City, reveal a 43 percent increase in bicycle ridership from 2006 to 2008. Finally, Bike to Work Day in 2008 saw a record number of bicyclists, with 858 bicyclists counted in one hour during the morning commute at the intersection of Market Street and Van Ness Avenue – an increase of more than 400 percent since 2005.

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1 Does not include an average of eight reported non-injury, property-damage only bicycle collisions per year over the period analyzed.

2 According to the U.S. Census Bureau, the percentage of San Francisco commuting workers 16 years of age and older that commuted to work by bicycle increased from 1 percent in 1990 to 2.1 percent in 2000 and increased to 2.7 percent in 2007, not including those who worked at home.

**Chart 5-1**  
Bicyclist Injury Collisions in San Francisco: 1998-2006<sup>3</sup>



Although there is evidence that bicycle collisions are underreported<sup>4</sup>, those that do get reported provide a strong indication of roadway behaviors that negatively impact bicyclists' safety. Careful review of these bicycle collisions can help identify which violations should be prioritized for increased education and enforcement, assist with the planning of new bicycle facilities and provide safety education opportunities. The discussion of recommended policies below is based on data from reported traffic collisions covering January 1, 1998 to December 31, 2006. All recommendations are based on analysis of this data and the knowledge that some collisions go unreported (Actions 5.11, 5.12 and 5.13 specifically address unreported collisions).

## ANALYSIS OF MOTORIST AND BICYCLIST MOVING VIOLATIONS

From January 1, 1998 to December 31, 2006, motorists were cited as the party at fault in a slight majority (51 percent) of the nearly 4,000 reported bicycle collisions. Bicyclists, however, shared responsibility in some of the high-frequency collision categories. Regardless of the primary cause of an automobile/bicycle collision, bicyclists are far more likely to be injured than motor vehicle operators. For example, bicyclists were injured in almost all reported collisions analyzed.

<sup>3</sup> This table uses Statewide Integrated Traffic Records System (SWITRS) data from 01/01/1998 to 12/31/2006.

<sup>4</sup> Anecdotal evidence comes from collisions or near-misses that resulted in very minor or no injury, but were still caused by some of the same unsafe roadway behaviors outlined in this chapter.

Improving bicycle safety in San Francisco is the primary goal of this Plan's proposed bicycle education and enforcement strategies. Education and enforcement, therefore, should focus on violations that most frequently cause personal injury. Based upon the latest understanding of bicyclists' and motorists' behaviors and collision data, this Plan recommends the creation of an SFMTA Bicycle Citation Diversion Education Program (a bicycle violator "traffic school") that builds upon existing education efforts (Chapter 4) and renewed enforcement of a few high-frequency violations by both bicyclists and motorists.

Any increased enforcement effort, however, also should include bicycle safety training for all police officers to enhance their understanding of the proper operation of a bicycle in traffic and to ensure more equitable assessments at collision scenes. Education should include crucial bicycle traffic knowledge such as: bicyclists passing stopped buses; double-parked vehicles; right-turning vehicles on the left; lane positioning techniques for bicyclists to establish their proper and legal right in a travel lane; stopping at red lights; and the necessity of avoiding the "door zone" (the area next to parked cars into which a car door can be abruptly opened). Bicyclists also should be educated regarding the conflicts of these and other cycling maneuvers. In issuing citations, police officers must be able to distinguish between legitimate bicycle maneuvers and those that violate the Vehicle Code. For example, a bicyclist legitimately passing on the right of a slow-moving motor vehicle, whether in a striped bicycle lane or a shared travel lane, is appropriate as opposed to a bicyclist passing on the right when passing on the left is recommended. The City should continually evaluate which motorist and bicyclist violations are the most common sources of collisions and tailor enforcement efforts to discourage these behaviors. The City also should explore education and facility improvements that encourage motorists and bicyclists to share the road.

### **MOTORIST MOVING VIOLATIONS**

Analysis of recent collision data indicates that a few common motorist behaviors contribute to the majority of automobile-bicycle collisions. The five most common reported behaviors of motorists that result in collisions with bicycles from 1998-2006 are shown in Table 5-1 below.

Opening a car door when unsafe (resulting in what is commonly known as a "dooring" collision) is the most frequent motorist violation. The second and third-most common motorist violations involve failure to yield to bicyclists who, by law, had the right-of-way, and unsafe turns without signaling. The fourth and fifth-most frequent violations are two types of unsafe traffic maneuvers that lead to collisions with bicyclists. As outlined in Table 5-3, motorists were responsible for 51 percent of the ten most common collision categories, yet a minority (48 percent) of all bicycle-related collisions as shown in Table 5-4. Bicyclists, however, suffered all of the injuries and fatalities. Only 12 of 1,375 motorist-caused bicycle collisions (.009 percent) involved drugs or alcohol, as shown in

Table 5-4. It also should be noted that motorists, while assigned fault, were not often cited for their violations.

**Table 5-1**  
**Bicycle/Automobile Collisions in San Francisco Where Motorists Were Most Frequently Assigned Fault [1998-2006]<sup>5</sup>**

Ranking	Description	CVC Section	Number of Collisions	% of Total Collisions	No Fault or other Assigned <sup>6</sup>	# of Motorists Assigned Fault	% of Motorists Assigned Fault <sup>7</sup>	# of Bicyclists Assigned Fault	% of Bicyclists Assigned Fault <sup>8</sup>
1	Opening Car Door when Unsafe	22517	285	9	9	276	100	0	0
2	Failure to Yield when Turning Left	21801.a	252	8	9	227	93	16	7
3	Unsafe Turn and/or without Signaling	22107	208	7	6	165	82	37	18
4	Unsafe Speed	22350	342	11	4	107	32	231	68
5	Failure to Stop at Red Light Limit Line	21453.a 21453.c	281	9	10	83	31	188	69
<b>TOTALS</b>			<b>1,368</b>	<b>43</b>	<b>38</b>	<b>858</b>	<b>65<sup>9</sup></b>	<b>472</b>	<b>35<sup>10</sup></b>

The Right Of Way violations, ranked second and third in Table 5-1, could indicate that motorists are either not “seeing” bicyclists lawfully operating as traffic or simply disregarding bicyclists’ rights to the road. Although it is encouraging that the SFPD is assigning fault to motorists in these cases, they have not often cited

5 This table uses Statewide Integrated Traffic Records System (SWITRS) data from 01/01/1998 to 12/31/2006.

6 The number of collision reports that did not assign fault to either party.

7 These percentages were calculated after the number of collisions for which no fault was assigned were subtracted.

8 Id.

9 This represents the percentage of collisions from these five categories only (Table 5-1).

10 Id.

motorists for the violations. To reinforce proper roadway behavior, it is recommended that SFPD pursue more rigorous enforcement of such violations.

### **BICYCLIST MOVING VIOLATIONS**

From 1998-2006, bicyclists were most frequently assigned fault in collisions for: unsafe speed, failure to stop at the limit line for red lights, riding on the wrong side of the roadway, failure to yield to approaching traffic and failure to stop at the limit line for STOP signs, as shown in Table 5-2.

Because unsafe speed was the most common primary collision factor for which bicyclists were assigned fault, it is one bicyclist behavior recommended for targeted public outreach and enforcement. During the period 1998–2006 there were 342 bicycle injury collisions for which unsafe speed was the primary collision factor. Of these collisions, twice as many bicyclists were reported at fault as motorists, as shown in Tables 5-1 and 5-2. The speed of motor vehicles involved in collisions with bicyclists significantly impacts the degree of injury suffered by bicyclists. However, bicyclists also commonly exhibit unsafe speeds resulting in injury crashes, pointing to an overall need for the City to promote slower speeds by both modes in bicycle/motor vehicle conflict areas. This should be accompanied with targeted public outreach and focused traffic enforcement to reduce unsafe speeds by motor vehicles and bicycles.

Red light running is another primary collision factor for which bicyclists are often assigned fault, which should be a focus for targeted enforcement. The size and geometry of some San Francisco intersections combined with relatively low cycling speeds sometimes contributes to bicyclists not being able to clear an intersection before a traffic signal changes to red. In this situation, the bicyclist has a right to clear the intersection with oncoming traffic legally required to wait. Police should not cite bicyclists under these circumstances. Before proceeding at a green traffic signal, however, bicyclists must allow vehicles and pedestrians who have entered the intersection legally to clear the intersection.

Curtailling red light running is important. The City should combine enforcement with roadway improvements and bicycle traffic education to achieve improved safety for bicyclists. For example, roadway upgrades, such as bicycle boxes at intersections and shared roadway bicycle markings (sharrows) for narrow lanes, are potential solutions for proper bicyclist lane positioning. Bicycle safety education for both bicyclists and police officers should include lessons on how to distinguish between legitimate bicycle maneuvers and those that violate the Vehicle Code. One example is a bicyclist legitimately passing slow-moving motorists, whether in a striped bicycle lane or not, as opposed to a bicyclist passing on the right when she should pass on the left (such as when passing a stopped bus, passing a double-parked vehicle or passing a right-turning vehicle).

**Table 5-2**  
Bicycle/Automobile Collisions in San Francisco Where  
Bicyclists Were Most Frequently Assigned Fault [1998-2006]<sup>11</sup>

Ranking	Description	CVC Section	Number of Collisions	% of 5-Year Total	No Fault or other Assigned <sup>12</sup>	# of Motorists Assigned Fault	% of Motorists Assigned Fault <sup>13</sup>	# of Bicyclists Assigned Fault	% of Bicyclists Assigned Fault <sup>14</sup>
1	Unsafe Speed	22350	342	11	4	107	31	231	68
2	Failure to Stop at Red Light Limit Line	21453.a 21453.c	281	9	10	83	31	188	69
3	Wrong Side of Roadway	21650 21650.1	189	6	5	10	5	174	95
4	Yield to Approaching Traffic	21804.a 21804.b	187	6	2	26	14	159	86
5	Failure to Stop at STOP sign Limit Line	22450	163	5	4	35	22	124	78
<b>TOTALS</b>			<b>1,162</b>	<b>36</b>	<b>25</b>	<b>261</b>	<b>23<sup>15</sup></b>	<b>876</b>	<b>77<sup>16</sup></b>

**Table 5-3**  
Summary: Most Frequent Bicycle-Related Collisions  
(Based on 3,198 total collisions, 1998-2006)

# Motorists responsible for Ten Most Frequent Collision Types	1,046
# Bicyclists Responsible for Ten Most Frequent Collision Types	1,001
# Collisions Where "No Fault/Other" Assigned	50
Total Collisions from Ten Most Frequent Collision Types	2,097
% Motorists Responsible for Ten Most Frequent Collision Types	51%

11 This table uses Statewide Integrated Traffic Records System (SWITRS) data from 01/01/1998 to 12/31/2006.

12 The number of collision reports that did not assign fault to either party.

13 These percentages were calculated after the number of collisions for which no fault was assigned were subtracted.

14 Id.

15 This represents the total percentage of collisions from these five categories only (Table 5-2).

16 Id.

% Bicyclists Responsible in Ten Most Frequent Collision Types	49%
Top Ten Collisions as % of All Collisions	66%

## ENFORCEMENT AND SAFETY ACTION FRAMEWORK

### MOVING VIOLATIONS

#### Action 5.1

Work with the SFPD to place a high priority on enforcement of both bicyclist and motorist violations that most frequently cause injuries and fatalities.

#### Action 5.2

Work with the SFPD to develop a “fix-it ticket” program for bicycle equipment violations.

#### Action 5.3

Work with the SFPD to develop a method to systematically share non-collision bicyclist citations with the SFMTA.

#### Action 5.4

Work with the SFPD and the Superior Court of California to develop and implement a bicycle traffic school program as an option for those cited for moving violations.

An active campaign to involve the SFPD in enforcement of traffic safety laws directly affecting bicyclists should be carried out by the SFMTA Bicycle Program. A task force with the SFPD and the SFMTA should be set up to develop priorities for enforcement of both motorists’ and bicyclists’ infractions. Priority for issuing citations should be given to the motorist and bicyclist violations identified above that most frequently cause collisions with bicyclists.

When cited for riding without lights and/or reflectors, bicyclists should have the option to avoid a fine if they present evidence of properly equipping their bicycle within a reasonable time period. Such a “fix-it ticket” policy already exists for motor vehicles not equipped with the proper safety equipment and those not operating properly. This policy could also address the enforcement of other bicycle safety violations, such as properly operating bicycles and requiring helmets on child bicyclists.

In order for the SFMTA Bicycle Program to accurately gauge common bicyclist behaviors that lead to cited violations of the CVC or the San Francisco Transportation Code, augmenting injury and non-injury collision data with non-collision bicycle citations will provide a more complete picture of the risks facing bicyclists and identify locations for targeted outreach and education on common

violations. The SFMTA Bicycle Program should work with the SFPD to regularly receive data on non-collision related bicyclist citations.

Citations issued for moving violations are bicycle-safety education opportunities. While proactive measures are best, classes to correct errant roadway behavior should be developed by the SFMTA and offered as “bicycle traffic school” using best practices from other California communities with similar programs already in place. San Francisco’s curriculum should focus primarily on cycling in traffic skills, “share the road” concepts, and the rights and responsibilities of both bicyclists and motorists. As an alternative to a fine for a bicycle-related violation, offenders should be given the option of enrolling in a traffic school program with an emphasis on bicycle issues. Such a program also could be an option for non-bicycle related traffic infractions.

## **BICYCLES PASSING ON THE RIGHT**

### **Action 5.5**

Support efforts to change California Vehicle Code (CVC) Section 21754 (Passing on the right) so that it applies to bicycles.

The 1997 Bicycle Plan recommended that the City ask the state legislature to correct an apparent oversight in CVC Section 21754 which allows passing on the right under certain circumstances:

The driver of a motor vehicle may overtake and pass to the right of another vehicle only under the following conditions: (a) When the vehicle overtaken is making or about to make a left turn; (b) Upon a highway within a business or residence district with unobstructed pavement of sufficient width for two or more lines of moving vehicles in the direction of travel; (c) Upon any highway outside of a business or residence district with unobstructed pavement of sufficient width and clearly marked for two or more lines of moving traffic in the direction of travel; (d) Upon a one-way street; (e) Upon a highway divided into two roadways where traffic is restricted to one direction upon each of such roadways. The provisions of this section shall not relieve the driver of a slow moving vehicle from the duty to drive as closely as practicable to the right hand edge of the roadway.

CVC Section 21754 allows motor vehicles to pass on the right of left-turning vehicles, when there is room for at least two lines of moving traffic in the direction of travel or on a one-way street or divided highway, and it seems within the spirit of the CVC for a bicyclist to be able to legally overtake a motorist on the right within a travel lane wide enough to accommodate a line of moving bicycles and motor vehicles side-by-side. This clearly would be the case where there is a



bicycle lane or shoulder provided adjacent to a travel lane. In other places, it depends on the width and condition of the travel lane and on traffic speed and volume.

As currently written, CVC Section 21754 refers only to *motor* vehicles, not to vehicles in general and is therefore not made applicable to bicycles by CVC Section 21200. This seems to be an oversight on the Legislature's part, because if construed literally, CVC Section 21754 would require bicyclists to pass even left-turning motorists on the left. Note that Action 5.5 does not recommend unrestricted passing on the right by bicyclists.

Because this is a statewide issue, it would be more properly initiated by a regional body such as the Metropolitan Transportation Commission or the California Bicycle Coalition but such changes should be endorsed by the City.

## **BLOCKING OF BICYCLE LANES**

### **Action 5.6**

Increase parking enforcement and fines for violations involving vehicles parking or double-parking in bicycle lanes.

### **Action 5.7**

Post “no stopping in bike lane” signs along bicycle lanes where double-parking violations occur and work with the SFPD to increase enforcement of these violations.

### **Action 5.8**

Work with the SFPD to increase the enforcement of the prohibition of operating motorcycles in bicycle lanes.

While enforcement of double-parking in bicycle lanes has improved since 1997, automobiles are still blocking the free movement of bicyclists.

As a result of the 1997 Bicycle Plan, an SFMTA Parking Control Officer (PCO) has been assigned to bicycle lane duty during the morning peak period. The SFMTA also has actively identified and re-designated some curb zones in areas where double-parking in bicycle lanes was a problem (such as along Valencia and Market Streets). This measure addressed some of the double-parking by providing more short-term parking through colored curb short-term parking zones. This measure should be expanded. The SFMTA should undertake a thorough analysis of the PCO enforcement beat structure, double-parking violation locations, and land use data to improve its enforcement and to create additional mitigation measures (as specified above) for double-parking. As staff resources permit, a team of PCOs should be assigned to patrol bicycle lanes to

cite double-parked vehicles at all times of day, with a particular focus on morning and evening peak periods.

As gas prices continue to rise and two-wheeled transportation gains popularity, so does the number of motorcycles, mopeds and scooters illegally using bicycle lanes to circumvent traffic queues, often dangerously passing bicycles operating legally in bicycle lanes. The SFMTA should work with the SFPD to prioritize enforcement of illegal operation of all motor vehicles in bicycle lanes, focusing on motorcycles, mopeds and motorized scooters. The SFMTA Bicycle Program should complement this enforcement with public outreach to inform the drivers of motorcycles, mopeds and motorized scooters that they are prohibited from driving in bicycle lanes.

### **CITY DEPARTMENT OUTREACH ON BICYCLE ENFORCEMENT ISSUES**

A variety of City departments have influence over the proper enforcement, acceptance and management of bicycling. In order for these departments to more effectively and judiciously manage bicyclists' behavior and collect bicycle-related traffic and collision data, additional action is required by the City.

#### ***SAN FRANCISCO POLICE DEPARTMENT***

##### **Action 5.9**

Develop an SFMTA bicycle safety curriculum for all SFPD police officers that focuses on the rights and responsibilities of bicyclists and techniques required for safe and legal sharing of the roadway.

##### **Action 5.10**

Work with the SFPD to increase bicycle-mounted enforcement patrols.

The SFPD has made progress in addressing bicycle collision reporting issues in the City<sup>17</sup>. Building upon this success, the SFMTA should provide bicycle traffic education to police officers focusing on the rights and responsibilities of bicyclists and the practice of proper bicycle positioning techniques in traffic. The curriculum and materials for this education effort should draw from relevant sources such as the League of American Bicyclists, the CVC and the San Francisco Transportation Code.

Bicycle traffic education should be integrated into trainings for all SFPD police officers. In addition to developing awareness of the challenges of maneuvering a bicycle in traffic, a bicycle-safety training course should provide a list of guidelines to assist with bicycle-related collision reports to help ensure valuable

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<sup>17</sup> During 1996 and 1997 the SFPD underreported bicycle-related collisions to the State. This underreporting has been addressed; however it has created a two-year gap in reliable bicycle Statewide Integrated Traffic Records System (SWITRS) data for San Francisco.

documentation of information for public health studies regarding injury prevention. The bicycle-safety education training should be administered by a certified instructor as opposed to simply showing officers educational videos. Support from the Chief of Police is essential and a meeting between the Chief of Police, the SFMTA Executive Director, the SFPD Traffic Company and bicycle-mounted police is recommended as a first step.

Consistent with the City's *Transit-First* policy, the beat structure for the SFMTA Enforcement Division should be restructured to better serve transit, pedestrians and bicyclists. Individual beats should incorporate transit and bicycle corridors rather than using such corridors as divisions between beats. For example, it would be preferable to include both sides of a section of Market Street in one beat, rather than use this section of Market Street as the boundary of two beats. With Market Street being the boundary, each direction of the street falls into separate beats.

Because the District Attorney's Office staff has to review cases involving conflicts and collisions between motorists and bicyclists, they should be included in bicycle safety training. Such training could be integrated with the recommended police trainings or with workshops offered at other City departments as proposed in Chapter 4.

Bicycle-mounted police officers are more sensitive to bicyclists' rights and bicycle safety issues due to their increased understanding of the physical characteristics of bicycles, the relationship of bicyclists to motorists in traffic situations and the challenges of bicycle operation in an urban environment. As police departments have learned throughout the country, bicycle patrols are very effective in dealing with crimes that take place where police cars cannot go or where they cannot go without being noticed.

While patrol car beats and patrol car back-ups will always be required, the SFPD should evaluate the potential of expanding bicycle patrols into more neighborhoods, as well as into open space and downtown settings.

The City should encourage written contributions from police officers to neighborhood and bicycling publications to present their perspectives on bicycling issues to motorists and bicyclists alike.

## **DEPARTMENT OF PUBLIC HEALTH AND EMERGENCY SERVICES AGENCIES**

### **Action 5.11**

Work with the SFPD to develop a system for hospitals, emergency rooms, and clinics to report all instances of bicyclist injuries to the SFPD and to the SFMTA.

### **Action 5.12**

Inform bicyclists that they are legally entitled to file a collision report when one is not initiated by the police.

The collision data presented in this chapter, while useful in identifying the most crucial roadway behaviors that lead to bicyclist injuries, does not include the many unreported bicycle collisions believed to occur in San Francisco. To better understand the current state of cycling conditions and best improve bicyclists' safety, this Plan recommends the injury/collisions reporting actions 5.11, 5.12, and 5.13. The information gathered from these actions will help improve the City's understanding of patterns and causes of injuries and assist with Bicycle Program injury prevention and education efforts.

Currently, San Francisco General Hospital (SFGH) is not obligated to report bicycle injuries to the SFPD. This is left up to the injured parties. EMS (ambulance services) are supposed to report bicycle injuries, but many are not reported. Comparing police collision reports with SFGH emergency room visits or hospital admissions shows that approximately 20 percent of pedestrian injuries (caused by a collision with a motor vehicle) did not show up in police collision reports in 2000 and 2001. The rate for bicycle injuries is probably similarly under-reported. The SFMTA should collaborate with the San Francisco Department of Public Health (SFDPH), the SFPD, EMS providers and the Medical Examiner to collect and analyze all instances of bicycle related injury and fatality that are not reported in the Statewide Integrated Traffic Records System (SWITRS).

The City should work to educate law enforcement officers and bicyclists about bicyclists' legal right to file a police report about collisions or threatening behavior by motorists. In addition, there is an issue of confidentiality if collision data is reported without the individual's consent. Therefore, improved injury reporting and coordination between departments is necessary.

## **MUNI INCIDENT REPORTS**

### **Action 5.13**

Develop a standardized procedure for reporting bicycle-related incidents with transit vehicles and ensure that this information is readily available to appropriate City staff.

To maintain a relevant bicycle safety and education program, it is important to have the most accurate data available on bicycling conditions. Because police reports do not have a standardized method for reporting transit/bicycle collisions, finding data for these incidents is time consuming and impedes the SFMTA's bicycle-safety efforts. Police reports sometimes place transit/bicycle collision data in ambiguous categories such as "Other" and "Other Bus" which could be a private bus, an airport shuttle, a taxi or a trailer. For example, when the SFMTA queried several different category combinations from 3/31/1998 to 6/01/2003 in search of transit/bicycle collisions, individual police reports had to be pulled and reviewed to determine how many collisions (approximately 50 percent or 33 collisions) involved Muni, with one additional collision that involved Golden Gate Transit. This data, especially when combined with other sources, helps SFMTA staff with bicycle facility improvements and bicycle safety education. The SFPD and transit agencies, therefore, should make standardized collision and incident data more comprehensive and available to SFMTA staff in a useful format.

Muni currently tracks collisions (and other incidents) in a separate, internal database – the TransitSafe Incident database. This database tracks all incidents that cause delay to Muni vehicles. All Muni/bicycle collisions could be queried and tracked within this database, if the appropriate query attributes were added. In its current format, this database is not very useful in analyzing conflicts between bicyclists and Muni vehicles. If improved, this database would be a valuable resource for analyzing and improving bicycle safety in San Francisco. This database would be able to track police reported collisions and bicycle/Muni conflicts that currently go unreported. Every effort within the SFMTA should be made to improve Muni's TransitSafe Incident reporting to make it a more a useful tool for improving general traffic safety as well as bicyclist safety.

**Table 5-4**Summary: Injury Related Bicycle Collisions in San Francisco by CVC Violation (1998-2006)<sup>18</sup>

Description	CVC Section	# of collisions	No fault or other assigned <sup>19</sup>	# Motorists assigned fault	% Motorists assigned fault <sup>20</sup>	# Bicyclists assigned fault	% Bicyclists assigned fault <sup>21</sup>
Unsafe Speed	22350	342	4	107	31.7	231	68.3
Opening Car Door when Unsafe	22517	285	9	276	100.0	0	0.0
Failure to Stop at Red Light Limit Line	21453.a 21453.c	281	10	83	30.6	188	69.4
Failure to Yield when Turning Left	21801.a	252	9	227	93.4	16	6.6
Various Descriptions Given <sup>22</sup>	Not cited	248	192	19	33.9	37	66.1
Unsafe Turn and/or without Signaling	22107	208	6	165	81.7	37	18.3
Wrong Side of Roadway	21650 21650.1	189	5	10	5.4	174	94.6
Yield to Approaching Traffic	21804.a 21804.b	187	2	26	14.1	159	85.9
Failure to Stop at STOP sign Limit Line	22450	163	4	35	22.0	124	78.0
Unsafe Pass on Left	21750	95	0	68	71.6	27	28.4
Unsafe Lane Change	21658.a	95	1	49	52.1	45	47.9

18 This table uses Statewide Integrated Traffic Records System (SWITRS) data from 01/01/1998 to 12/31/2006.

19 The number of collision reports that did not assign fault to either party.

20 These percentages were calculated after the number of collisions for which no fault was assigned were subtracted.

21 Id.

22 Since so many collisions do not have a CVC violation cited, it is difficult to analyze these collisions in a meaningful way. It indicates a need to improve police reportage at bicycle collision scenes.

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Passing on Right When Unsafe	21755	74	1	4	5.5	69	94.5
Starting/Backing when Unsafe	22106	65	0	57	87.7	8	12.3
Failure to Yield ROW Entering Highway	21802.a 21802.b	64	3	44	72.1	17	27.9
Bicycle Operation on Roadway	21202 21202.a	50	1	4	8.2	45	91.8
Failure to yield ROW at Intersection	21800.a 21800.b 21800.c	43	1	20	47.6	22	52.4
Wrong-way travel	21657	38	0	5	13.2	33	86.8
Failure to Yield to Pedestrian in Crosswalk	21950.a	36	0	15	41.7	21	58.3
Following too Closely	21703	32	0	15	46.9	17	53.1
Driving Under the Influence	23152.a 23153.a	32	0	12	37.5	20	62.5
Pedestrian ROW in Crosswalk	21950.b	29	22	0	0.0	7	100.0
Driving on Sidewalk	21663	26	0	0	0.0	26	100.0
Yield ROW to vehicle making U-turn	21801.b	25	1	2	8.3	22	91.7
Failure to Obey Traffic Signal for Turn at Intersection	22101 22101.d	24	1	15	65.2	8	34.8

**Table 5-4**Summary: Injury Related Bicycle Collisions in San Francisco by CVC Violation (1998-2006)<sup>18</sup>

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Improper Position for a Right-Turn at Intersection	22100.a	21	0	19	90.5	2	9.5
Proceed at Green Light but Yield to Pedestrians/ Vehicles Lawfully in Intersection	21451.a	21	1	10	50.0	10	50.0
Improper Position for a Left-Turn at Intersection	22100.b	19	1	3	16.7	15	83.3
Pedestrians outside a x-walk	21954.a	18	15	1	33.3	2	66.7
Yield ROW on turn at Red Light	21453.b	17	1	15	93.8	1	6.3
Illegal U-Turn in Business District	22102	15	0	14	93.3	1	6.7
Failure to obey Traffic Signal	21461.a	15	1	5	35.7	9	64.3
Passing on Right	21754	14	0	2	14.3	12	85.7
Crossing b/t controlled intersections	21955	14	14	0	0.0	0	0.0
Pedestrian Signal Violation	21456.a 21456.b	13	12	0	0.0	1	100.0
Motor Vehicle Turning Unsafely Into Bicycle Lane	21717	12	0	12	100.0	0	0.0
Crossing Double Yellow Line	21460.a 21460.b	12	1	3	27.3	8	72.7



**Table 5-4**Summary: Injury Related Bicycle Collisions in San Francisco by CVC Violation (1998-2006)<sup>18</sup>

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Riding bicycle under the influence	21200.5	10	0	0	0.0	10	100.0
Illegal Operation on Divided Highway	21651.a 21651.b	9	0	4	44.4	5	55.6
Laws Applicable to Bicycle Use	21200.a	8	0	0	0.0	8	100.0
Permitted Movements from Bicycle Lanes	21208.a 21208.b	8	0	0	0.0	8	100.0
Peace officer exemption	21200	8	2	0	0.0	6	100.0
Circular Green or Green Arrow	21451.b 21451.c	7	2	3	60.0	2	40.0
Bicycle Equipment Requirements - Lights	21201.d	7	0	0	0.0	7	100.0
Bicycle Equipment Requirements - Brakes	21201.a	6	0	0	0.0	6	100.0
Illegal U-Turn in Residence District	22103	5	0	4	80.0	1	20.0
Passing w/o sufficient clearance	21751	5	0	2	40.0	3	60.0
Motorized Vehicle Illegally Operated in Bike Lane	21209.a	4	0	4	100.0	0	0.0
ROW on sidewalk	21952	4	0	1	25.0	3	75.0
Failure to Yield at Flashing Light	21457.a 21457.b	4	0	0	0.0	4	100.0

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Unsafe Passing on Left/ Obstructed View	21752.c 21752.d	4	0	0	0.0	4	100.0
Stop at limit line on Red - Peds	21453.d	4	4	0	0.0	0	0.0
Minimum Speed Law	22400.a	3	0	2	66.7	1	33.3
Failure to Yield ROW at Yield Sign	21803.a 21803.b	3	0	1	33.3	2	66.7
Failure to Yield ROW at Left or U-Turn	21801	2	0	2	100.0	0	0.0
Obstruction of bicycle facilities	21211.a 21211.b	2	0	2	100.0	0	0.0
Signal When Stopping	22109	2	0	2	100.0	0	0.0
Overtaking vehicle stopped at x-walk	21951	2	0	1	50.0	1	50.0
Duration of Signal	22108	2	0	1	50.0	1	50.0
Obstruction of x-walk	22526.a	2	0	1	50.0	1	50.0
Hitching rides	21203	2	0	0	0.0	2	100.0
Designated Lanes for Certain Vehicles	21655.b	2	1	0	0.0	1	100.0
Duty to Stop at Scene of Accident	20001.a	1	0	1	100.0	0	0.0

**Table 5-4**Summary: Injury Related Bicycle Collisions in San Francisco by CVC Violation (1998-2006)<sup>18</sup>

Description	CVC Section	# of collisions	No fault or other assigned <sup>19</sup>	# Motorists assigned fault	% Motorists assigned fault <sup>20</sup>	# Bicyclists assigned fault	% Bicyclists assigned fault <sup>21</sup>
Disobey traffic directions of local official	21100.3	1	0	1	100.0	0	0.0
U-Turn at Controlled Intersection	22100.5	1	0	1	100.0	0	0.0
Circular Yellow or Yellow Arrow	21452.b	1	0	0	0.0	1	100.0
Failure of Slow Moving Vehicles to Turn Out	21656	1	0	0	0.0	1	100.0
Failure to Yield to Emergency Vehicle	21806.a	1	0	0	0.0	1	100.0
Reckless Driving: Bodily Injury	23104.a	1	0	0	0.0	1	100.0
Tailgating	21704.a	1	1	0	0.0	0	0.0
Pedestrian in bicycle lane	21966	1	1	0	0.0	0	0.0
<b>TOTALS</b>		<b>3,198</b>	<b>329</b>	<b>1,375</b>	<b>47.9</b>	<b>1,494</b>	<b>52.1</b>

# 6. PROMOTION

## PROMOTION GOAL AND OBJECTIVES

### **Goal:**

Promote and Encourage Safe Bicycling

### **Objectives:**

- Through community partnerships, identify funding, develop and implement bicycle media campaigns and promotional materials to promote bicycling as a safe, healthy, cost-effective, environmentally beneficial transportation choice
- Target promotional materials to San Francisco's diverse population groups.

## INTRODUCTION

As part of a multi-faceted program to attract more San Franciscans to bicycle use, promotional strategies should be pursued to enhance awareness of the benefits of bicycling for commute, shopping and recreational purposes, as well as to encourage safe bicycling practices. In addition to seeking funding for physical improvements that benefit bicyclists, the City should seek funds to promote and encourage bicycling.

The 1997 Bicycle Plan included a presentation of focused research on regional and local bicycle promotion programs existing at that time. The findings of this research included:

- Employers' concerns for employee safety and employer liability limit the development of bicycle commute promotion programs;
- The success rate of City and employer sponsored bicycle promotion programs is difficult to assess due to the fact that information on bicycle commuters before and after program implementation is not readily available
- Bicycle commuting is generally overlooked as an automobile trip-reduction strategy

Since this research was completed, bicycle promotion has evolved in San Francisco with multiple City agencies, non-governmental organizations and employers expanding their promotion efforts. Before bicycling will be seriously considered as a transportation mode by large numbers of commuters, the availability, feasibility and benefits of bicycle commuting must be more widely

known. Many people are unaware of the opportunities that bicycle commuting can provide. Several strategies for promoting bicycle use for commuting and other purposes are discussed below. Recommendations are presented for the continued development and improvement of each strategy.

It is important to recognize that there is substantial overlap between bicycle education, as presented in Chapter 4 of this Plan and bicycle promotion as discussed in this chapter. The primary distinction is that bicycle promotion focuses on appealing messages and incentives to attract people to the benefits of bicycling. Because of the need to diversify transportation options in the City and the desire to attract new bicyclists to the streets and pathways of San Francisco's bicycle route network, City resources should be dedicated to actively promote bicycling to new markets. Once new markets are identified through promotional activities, educational efforts can then be more effectively employed to turn new bicycle riders into safe and committed bicyclists.

Promotional activities should be targeted utilizing the demographic information generated by San Francisco's State of Cycling Report<sup>i</sup> to reach the expressed latent demand. Promotional activities that reach out to new audiences and segments of San Francisco's population also should be undertaken. For example, assisting the San Francisco Bicycle Coalition (SFBC)'s outreach efforts, like the SFBC's Women and Bikes Profile<sup>ii</sup>, could assist in reaching many of San Francisco's diverse communities.

## PROMOTION OF BICYCLE ROUTE NETWORK

### **Action 6.1**

Promote the benefits of bicycling to diverse age, income and ethnic populations.

The City should promote the bicycle route network to make potential users more aware of potential citywide bicycle trips between multiple neighborhoods, shopping districts, employment centers and other origins and destinations. Specific strategies for promoting the bicycle route network include:

- Distribute complimentary printed bicycle route network maps through appropriate channels, including employer commute programs, bicycle related events, bicycle shops, City-sponsored events and other sources
- Develop a Web-based bicycle trip planning system
- Post bicycle route network maps in high-visibility public locations such as transit stops, bus shelters, libraries, college campuses and tourist destinations
- Nominate San Francisco for official recognitions, such as the League of American Bicyclists (LAB) Bicycle Friendly Community award

As the City continues to refine the bicycle route network as detailed in Chapter 1 of this Plan, new bicycle facilities and major bicycle facility improvements should be promoted to encourage their proper use. SFMTA Bicycle Program staff should seek opportunities to partner with local nonprofit organizations, neighborhood groups and other City agencies to educate City officials, City staff, local employers and other citizens to further promote the benefits of these new facilities. An explanation of the benefits of each bicycle facility should be developed as part of the project development and should be used to promote both its implementation and use.



The San Francisco City Hall bike room provides secure bike parking and locker facilities for City staff.

## DEVELOP CITY-SPONSORED BICYCLE PROMOTION

### Action 6.2

Work with the Department of the Environment (SF Environment), the Department of Public Health (DPH), and other City agencies to formalize bicycle education and promotion responsibilities and develop partnership agreements with the SFMTA.



Ribbon cutting for the Duboce Pathway.

The SFMTA Bicycle Program should serve as the coordinating agency for all City-sponsored bicycle promotion efforts. Other City agencies should also consult with the SFMTA Bicycle Program regarding proposed bicycle promotion campaigns. The SFMTA Bicycle Program should work cooperatively with the SF Environment, the DPH and the SFMTA Municipal Railway (Muni) on future promotional events by developing a task force to determine priorities and funding strategies.

Once these responsibilities are determined by an interagency operating agreement, the SFMTA and other City agencies should work to promote a better understanding of the benefits of bicycling for utilitarian and recreational purposes. Environmental, health and cost benefits are examples of areas in which

promotional efforts could focus. The SFMTA Bicycle Program Web site should be updated to include features on the benefits of bicycling and should provide links to other City Web sites that promote the benefits of bicycle use. When the SFMTA partners with major cultural and civic attractions, including museums, parks and tourist destinations to provide traveler information, it should include bicycling as an option, including suggested bicycle directions to such attractions.

The above discussion of agency responsibility and the City's role in promoting the benefits of bicycling to the general public is also discussed in detail in Chapter 4, Education, under Actions 4.1 and 4.2.



San Francisco Mayor Gavin Newsom with SFBC staff, SFMTA staff and others during the 2004 Bike to Work Day.

## BICYCLE EVENTS

Themed events held in San Francisco often attract regional and national attention. They offer the City and other organizations an opportunity to reach many people with promotional messages. To make the most of the promotional potential of these events, messages should be targeted to likely audiences. Potential audiences include existing bicycle commuters, potential bicycle commuters, recreational bicyclists and non-bicyclists.

### BIKE TO WORK DAY

Bike to Work Day is an annual event celebrated in many municipalities across the country that encourages people to commute by bicycle. In San Francisco, participants enjoy complimentary coffee, treats and free "goodies" in tote bags from one of many neighborhood "energizer stations" located throughout the City. Participants also are eligible for a regional prize drawing. The collaboration between the SFMTA and the SFBC has produced record-breaking participation in each Bike to Work Day over the past several years.

The involvement of the San Francisco Mayor and members of the Board of Supervisors has served to elevate the event's profile. Additional participation from appropriate City agencies, including the SF Environment and the DPH, could serve to expand the scope, participation and influence of this event. The participation of greater numbers of City employees could serve to expand the scope of the event significantly.

Bike to Work Day is an opportunity for expanded promotional efforts related to bicycle commuting. Bike to Work Week, “Ciclovías (temporary street closures to automobiles),” Sunday Parkways, Car-Free Day and Earth Day are other existing events which could be expanded to encourage more participation. Refer to Action 4.5 in Chapter 4 for additional Bike to Work Day discussion.

### **BICYCLE RACING AND BICYCLE EVENTS**

San Francisco serves as host to a growing number of recreational and competitive bicycle events, of an increasingly international stature. Partnerships with race promoters or organizations (such as the Northern California/Nevada Cycling Association<sup>iii</sup>) could serve to incorporate broader bicycle promotion into the theme of these events.

There are several other bicycle events held in or passing through San Francisco. Among these are two AIDS fundraising bicycle rides, The Tour de Fat, Giro di San Francisco, and the Go Greenbelt! bicycle tour that circumnavigates the entire San Francisco Bay to promote open space preservation. Each of these events provides an opportunity for distributing bicycle safety and promotional materials. The SFMTA, the SFBC and the Department of the Environment (SF Environment) have distributed bicycle promotional materials at past events and should work with other City agencies to expand their efforts.

### **STREET FAIRS AND FESTIVALS**

Other large public events in San Francisco such as neighborhood street fairs, the Festival d'Italia, the Cherry Blossom Festival and July 4<sup>th</sup> fireworks are required to provide bicycle access with secure bicycle parking (see Chapter 2). As part of the event advertising, suggested bicycle routes to each event should be published, along with the location of the bicycle parking. Street fairs and festivals are also potential distribution sites for bicycle promotion materials.

### **STREET CLOSURES**

Street closures are another opportunity to conduct bicycle education for all ages and to promote bicycling. The opportunity to borrow bicycles for use during street closure events can provide an incentive for new bicyclists to try bicycling and riding on streets closed to automobile traffic can help take the fear out of urban cycling for novices.

## **CITY STAFF PROGRAMS AND POLICIES FOR BICYCLE USE**

### **Action 6.3**

Work with all City agencies to expand bicycle promotion and incentive programs for City employees to serve as a model program for other San Francisco employers.



There are a wide variety of potential strategies available to the City that can be used to promote increased bicycle use by City employees for both commute to work and on the job purposes.

The following specific programs should be implemented:

- The existing City bicycle fleet, similar to the existing shared fleet of City motor vehicles, should be expanded and made available to all City employees. The SFMTA Bicycle Program should continue working with the SF Environment's Clean Air Program to acquire bicycles for this purpose. Bicycle parking facilities, helmets, safety vests and training should also be included
- Development of a reimbursement program for City employees' use of personal bicycles, similar to existing programs for reimbursement of personal vehicle mileage or use of a City CarShare vehicle
- Development of a program to substitute fleet purchase of City vehicles with bicycles for specific agencies and positions where bicycles could provide a viable means of job-related transportation
- Development of specific campaign efforts to include bicycle promotion materials in City correspondence, such as a special message from the Mayor's Office, agency and department directors or as an inclusion in City paycheck distributions

There is direct overlap with the discussion of City staff bicycle promotion in Chapter 4, Education, under Actions 4.7 and 4.8

## **BICYCLE INFORMATION RESOURCES: MTC 511 PROGRAM**

### **Action 6.4**

Include, where appropriate, telephone and Web-based contact information for the MTC 511 program on relevant SFMTA materials.

The MTC 511 program is a “toll-free phone and Web service that consolidates Bay Area transportation-related information into a one-stop resource. This easy three-digit number provides up-to-the-minute information on traffic conditions and incidents, details on public transportation routes and fares, instant carpool and vanpool referrals, bicycling information and more.”<sup>iv</sup>

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## BICYCLE-RELATED BUSINESSES

### **Action 6.5**

Encourage and promote bicycle-related businesses within San Francisco.

Promotional efforts encouraging bicycling in the City should be developed to centralize information regarding pedicabs (bicycle taxis), bicycle rentals, bicycle shops, bicycle messenger services and stores that are bicycle friendly (allowing bicyclists to bring their bicycles inside, offering “shop by bike discounts”, providing secure bicycle parking, etc.). This material could serve many different bicycle users within the City, from the visiting tourist to the everyday resident bicycle commuter.

## BICYCLE SHARING

### **Action 6.6**

Conduct a feasibility study for a public bicycle sharing program, and if feasible, develop a plan for potential future implementation including any required environmental review.

As bicycle sharing programs become more and more popular in cities worldwide, San Francisco should study bicycle sharing programs and their potential application here, then develop an implementation plan, including conducting any required environmental review.

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<sup>i</sup> The 2008 San Francisco State of Cycling Report can be viewed online at <http://www.sfmta.com/cms/rbikes/3172.html>.

<sup>ii</sup> SFBC's Women and Bikes Profile can be viewed online at [http://www.sfbike.org/download/tubetimes/tt\\_040203.pdf](http://www.sfbike.org/download/tubetimes/tt_040203.pdf).

<sup>iii</sup> Information on the Northern California/Nevada Cycling Association can be viewed online at <http://www.ncnca.org>.

<sup>iv</sup> <http://www.511.org>

# 7. GENERAL PLAN AMENDMENTS, ENVIRONMENTAL REVIEW, AND CITYWIDE COORDINATION

## GENERAL PLAN AMENDMENTS, ENVIRONMENTAL REVIEW, AND CITYWIDE COORDINATION GOAL AND OBJECTIVES

### **Goal:**

Adopt Bicycle-Friendly Practices and Policies

### **Objective:**

Integrate consideration of bicycle travel into all roadway planning, design and construction.

## INTRODUCTION

The General Plan is a comprehensive planning document that guides City decision-making on land use issues for both public and private property. San Francisco's General Plan contains the following major elements: air quality, arts, commerce and industry, community facilities, community safety, environmental protection, housing, recreational and open space, transportation and urban design. The General Plan also contains 11 Area Plans, which focus on specific geographic regions within the City.

In conjunction with the completion and adoption of this Bicycle Plan, a number of amendments are proposed to San Francisco's General Plan, particularly the Transportation Element and the Area Plans that currently contain sections on bicycling, in order to consistently achieve the goals of the San Francisco General Plan and the 2009 Bicycle Plan. The proposed amendments to the San Francisco General Plan include specific mention of and reference to the 2009 Bicycle Plan. This chapter recommends that consideration be given to updating the San Francisco General Plan, including its individual Elements and Area Plans, if it is deemed appropriate, when considering making updates and revisions to the 2009 Bicycle Plan and bicycle route network proposed in the Bicycle Plan.

This chapter also recommends that the “Planning Department’s Guidelines for Environmental Review: Transportation Impacts” be amended to ensure impacts of new projects consider bicycles and that City transportation or development studies account for bicycles. Finally, this chapter recommends coordination among public agencies in the planning of future bikeways.

## **RECOMMENDED AMENDMENTS TO THE TRANSPORTATION ELEMENT OF THE GENERAL PLAN**

### **Action 7.1**

Reference the 2009 Bicycle Plan in the San Francisco General Plan and consider amending sections of the General Plan that are relevant to bicycling, including the Transportation Element and relevant Area Plans, according to the goals of the 2009 Bicycle Plan.

### **Action 7.2**

Ensure adequate and appropriate environmental review under the California Environmental Quality Act for the Bicycle Plan and all discretionary actions under the Bicycle Plan that may have a direct or indirect physical environmental impact.

### **Action 7.3**

Work with the Planning Department to coordinate updates to the General Plan, if necessary, as subsequent amendments and updates to the Bicycle Plan and bicycle route network occur.

The Transportation Element of the General Plan contains sections dealing with important components of the local and regional transportation system. Section 7 deals with Bicycle Transportation. The introduction to this section states:

The bicycle is a desirable alternative to the automobile as a means of urban transportation in San Francisco. It can successfully be used for most transportation needs, including commuting, shopping, errands and recreation. Active encouragement of bicycle use as an alternative to automobile use, whenever possible, is essential in light of the continually increasing traffic congestion caused by motorized vehicles which aggravates air pollution, increases noise levels and consumes valuable urban space. The bicycle is a practical and economical transportation alternative that produces no emissions or noise. In addition, each bicycle user enjoys health benefits through increased physical activity.

To enable a large number of San Franciscans to use the bicycle as a transportation option, several significant needs must be met. The needs include, among others, safe and comfortable space on the roadway for bicyclists, a properly signed Bicycle Route Network that directs bicyclists to major destinations, safe and secure bicycle parking and education of both bicyclists and motorists about the safe sharing of the roadways.

The Transportation Element was last amended and adopted in 1995. This amendment process was concurrent with the 1997 Bicycle Plan planning process and many of the 1997 Bicycle Plan's recommendations for changes to the Transportation Element were incorporated during the General Plan amendment process. However, these amendments did not include specific mention of, or reference to, the Bicycle Plan as an adopted complementary component of the City's General Plan. Based upon the 1997 Bicycle Plan, a map of the bicycle route network was included and designated within the San Francisco General Plan's Transportation Element. As changes to the bicycle route network occur, periodic updates of the Bicycle Route Network Map within the San Francisco General Plan should occur.

## RECOMMENDED AMENDMENTS TO OTHER AREA PLANS

### **Action 7.4**

Work with the Planning Department to ensure that all current and proposed Area Plans' objectives and policies on balance are consistent with the goals of the San Francisco Bicycle Plan. Whenever updates or revisions are considered to existing Area Plans, especially those that do not now contain sections on bicycling, these Area Plans should include sections on bicycling consistent with the goals of the Bicycle Plan.

While the Downtown Area Plan already contains a section that deals specifically with bicycling, several of the General Plan's Area Plans do not now address bicycling or do not address it fully. When undertaking updates or revisions to existing Area Plans (including planning efforts meant to supplement or replace existing Area Plans), or when adopting new Area Plans, the Planning Department should ensure that their goals and objectives are generally consistent with the goals and objectives of the San Francisco Bicycle Plan and include sections on bicycling as appropriate.

## RECOMMENDED AMENDMENTS TO GUIDELINES FOR ENVIRONMENTAL REVIEW: TRANSPORTATION IMPACTS

### **Action 7.5**

Work with the Planning Department as transportation impact guidelines are updated to ensure impacts of new projects consider bicycles.

The "Transportation Impact Analysis Guidelines for Environmental Review," published by the Planning Department for consultants who are conducting transportation analyses for both Environmental Impact Reports and Negative Declarations, should be amended. The Guidelines were last updated in 2002 and cite the 1997 Bicycle Plan as a source. The Guidelines include Section E, Bicycle Impacts in the Transportation Impact Analysis portion of the Study Report Preparation Guidelines:

The existence of current or future bicycle facilities in the area should be identified from the San Francisco Bicycle Plan and by consultation with the Department of Parking and Traffic. The analysis should examine possible impacts on bicycle traffic on the streets in the vicinity of the project. This would include potential conflicts between auto, truck and bus traffic serving the project during loading and unloading, and potential conflicts due to turning movements across bicycle lanes or routes. Potential barriers or hazards to safe bicycle operations near the project should also be identified. Other conditions that may have a notable negative or positive impact on use, such as bicycle parking or the provision of shower facilities, should also be stated. Details regarding the location and access to any bicycle facilities included in the project should be described in the textual discussion and clearly shown on the site plan included in the background transportation report. The information provided needs to be sufficient to ascertain whether the proposed bicycle facilities would be secure and practical for bicyclists to use.

If sufficient bicycle traffic exists or is anticipated on a study area street, it may be necessary to include a quantitative analysis of the impacts using the methodology in the 2000 Highway Capacity Manual or some similar technique.

The Guidelines state that if “sufficient bicycle traffic exists or is anticipated on a study area street, it may be necessary to include a quantitative analysis of the impacts...” The Guidelines should be updated to specifically define “sufficient bicycle traffic,” using a quantifiable standard.

The Guidelines require that a Transportation Impact Report be prepared if a proposed project has elements that have the potential to adversely affect bicycle safety or the adequacy of nearby bicycle facilities.

The Transportation Impact Report Project Description Section must include:

- Identification of the location, number and type of bicycle parking spaces provided and Illustration of all designated bicycle routes in the study area

The Transportation Impact Report Project Setting Section must include:

- Illustration of all designated bicycle routes in the study area

- Description of existing treatments for bicycles and any proposed treatments for bicycle routes, as well as general characterization of the extent of bicycle usage

The Transportation Impact Report Transportation Impact Analysis Section must include:

- Comparison of the amount of parking to be provided for bicycles with Code requirements, as well as the access to, safe and secure character of, and provisions for associated showers and lockers for all bicycle parking spaces whenever required or provided
- Possible impacts on bicycle traffic on the streets in the vicinity of the project, including potential conflicts between auto, truck and bus traffic serving the project during loading and unloading; potential conflicts due to turning movements across bicycle lanes or routes; identification of potential barriers or hazards to safe bicycle operations near the project and other conditions that may have a notable negative or positive impact on use, such as bicycle parking or the provision of shower facilities

#### **Action 7.6**

When City transportation or development studies include non-automated traffic counts, work with the responsible San Francisco agencies to collect appropriate bicycle counts, inventories of existing bicycle parking within a two-block radius of the study site and the project's potential impacts on any existing or proposed bikeways.

The City's "Transportation Impact Analysis Guidelines for Environmental Review" should be amended to include the following items where appropriate:

- All non-automated traffic counts conducted as part of the study should include bicycle counts
- An inventory of existing bicycle parking must be conducted within a two-block radius of the study site
- The project's potential impacts on any existing or proposed bikeways must be evaluated

The San Francisco Municipal Transportation Agency (SFMTA) reviews transportation impact analysis reports prepared as part of environmental review documents. Proposed street changes that could result from new development, including parking modifications and changes to roadway configurations, such as the addition or elimination of turn lanes at a specific intersection, and impacts on

the bicycle route network, are assessed by the SFMTA as part of the review process. The impacts of street changes are specifically addressed and recommendations are often made to improve conditions for all travel modes including bicycling. The review of proposed street changes includes review of:

- Bicycle parking supply and demand
- Provision of bicycle parking as required under the Planning Code
- Potential conflicts between bicyclists and other modes of transportation including cars, transit and trucks that are loading or unloading freight
- Consistency with the General Plan and Bicycle Plan
- Impacts on the existing bicycle route network
- Safety of bicycle operations based on the proposed street changes' conformity to accepted design standards and guidelines

## RECOMMENDED TRANSPORTATION CODE AMENDMENTS

This section deals with portions of the San Francisco Transportation Code (SFTC) that relate specifically to the bicycle route network. Among these items, the ones of most immediate and lasting importance to bicyclists deal with the planning, design, and maintenance of roadways.

### LEGISLATION

Traffic law is regulated by the California Vehicle Code (CVC). Cities and counties may not regulate traffic on their streets, except where they are expressly authorized to do so by the CVC. As part of this regulation, bicycles are generally required to obey the same rules of the road as motor vehicles. To the extent that San Francisco is allowed to regulate bicycle traffic, it does so through the SFTC.

### *SAN FRANCISCO TRANSPORTATION CODE*

To provide clear, useful and uniform regulation with simple administrative procedures to implement policies, portions of the SFTC should be amended<sup>1</sup>.

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1 Several sources offer guidance for this examination, such as the Model Traffic Ordinance (MTO) of the National Committee on Uniform Traffic Laws and Ordinances (NCUTLO) and the model ordinance published by the National Institute of Municipal Law Officers (NIMLO), an association of city and county attorneys. California Senate Concurrent Resolution 47 of 1973 created a Statewide Bicycle Committee – often referred to as the SCR 47 Committee – to review California bicycle law and recommend revisions, many of which were subsequently adopted. This committee's report includes a Model Bicycle Ordinance (MBO) – also called a Uniform Bicycle Ordinance (UBO) – for the guidance of local jurisdictions. This ordinance is patterned after and is intended to supplement the League of California Cities' Uniform Traffic Ordinance.



SFTC Division II, Section 201, Procedures for Implementing Parking and Traffic Controls, (added by SFMTA Board Resolution 08-120, July 2008) specifies that certain changes related to bicycling may not be implemented without action by the SFMTA Board of Directors<sup>2</sup>.

### ***BICYCLING ON SIDEWALKS***

Bicycling on the sidewalk is generally inappropriate, as the Caltrans HDM indicates<sup>1</sup>. Only under the following special considerations should sidewalk bikeways be considered:

- (a) To provide bikeway continuity along high speed or heavily traveled roadways having inadequate space for bicyclists and uninterrupted by driveways and intersections for long distances
- (b) On long, narrow bridges. In such cases, ramps should be installed at the sidewalk approaches. If approach bikeways are two-way, sidewalk facilities should also be two-way

To determine the feasibility of allowing bicycling on sidewalks, studies will be necessary and should be conducted on a case-by-case basis. If such a review recommended a location for sidewalk bicycle riding, an amendment to the existing San Francisco codes prohibiting sidewalk bicycle riding would be required. In the absence of a legislative change, bicyclists over the age of 13 years are legally required to dismount when traveling on a sidewalk. Children under the age of 13 are legally allowed to ride their bicycles along sidewalks, but should always exercise due care.

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<sup>2</sup> SFTC Division II, Section 201c, SFMTA Board of Directors' Action Required. The following Parking and traffic measures may not be implemented without prior approval of the SFMTA Board of Directors, taking into consideration the recommendation of the City Traffic Engineer:

- (4) Install or remove bicycle lanes and regulate the location and use of motor vehicles and bicycles with respect to each other
- (5) Implement the following changes within the bicycle route network, as defined in the most recent update of the Transportation Element of the San Francisco General Plan:
  - (A) The narrowing of right-hand travel lanes with parking, including turn lanes to less than 22 feet or the narrowing of right-hand travel lanes without parking, including turn lanes to less than 14 feet
  - (B) The narrowing or elimination of any bicycle lanes, bicycle paths or bicycle routes
  - (C) The addition of traffic lanes, except where such lanes consist of left-turn or right-turn pockets
  - (D) Subsections (c)(5)(A) through (c)(5)(C) shall not apply to construction zones involving temporary changes to lane widths or lane configurations

## COORDINATION WITH OTHER JURISDICTIONS WITHIN SAN FRANCISCO

### **Action 7.7**

Work with public agencies with jurisdictions or rights of way within San Francisco to ensure coordination of any proposed bicycle facilities.

The SFMTA Bicycle Program meets as necessary with staff of other agencies that have jurisdiction or rights of way within San Francisco or make funding decisions related to such facilities to discuss proposed bicycle plans and facilities within San Francisco. These agencies include the Association of Bay Area Governments (San Francisco Bay Trail), the California Department of Transportation, the Caltrain Joint Powers Board, City College of San Francisco, the Golden Gate Bridge, Highway and Transportation District, the Golden Gate National Recreation Area, the Metropolitan Transportation Commission, the Port of San Francisco, the Presidio Trust, the San Francisco County Transportation Authority, the San Francisco Redevelopment Agency, San Francisco State University, the San Francisco Unified School District and the University of California. The SFMTA Bicycle Program also meets as necessary with various non-profit groups working on bicycle planning issues in San Francisco.

The SFMTA Bicycle Program, as the City's liaison to other agencies on San Francisco bicycle planning, projects and programs, should continue to meet with these agencies' staff members. The staff of these other agencies should include SFMTA Bicycle Program staff in all discussions and review of any proposed bicycle projects in San Francisco.

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i California Highway Design Manual can be viewed online at <http://www.dot.ca.gov/hq/oppd/hdm/hdmtoc.htm>.

# 8. BICYCLE FUNDING

## BICYCLE FUNDING GOAL AND OBJECTIVE

### **Goal:**

Prioritize and Increase Bicycle Funding

### **Objective:**

Identify and pursue new and existing local, regional, state and federal funding sources for bicycle facility improvements and bicycle education and promotion programs.

## INTRODUCTION

Funding is perhaps the most critical component to ensuring that San Francisco's residents, employees and visitors are able to safely use bicycles for their daily transportation. Bicycle lanes and racks, on-the-road training classes, education campaigns and promotional activities all require some level of funding. Due to competing demands for limited City funds, outside funding plays a crucial role in successful implementation of these programs.

Since fiscal year 2001-02, San Francisco has spent approximately \$5 million on bicycle facilities. It is estimated that up to \$18 million will be required over the next five years to complete the near-term bicycle route network improvements identified in this Plan. Approximately \$8 million in potential funding has been identified, leaving a financial need of roughly \$10 million.

There are two general types of funding sources: those that are bicycle-specific and those that are not specific to bicycles, but that can fund some types of bicycle projects and programs. Many of these non-specific funding sources can be used only for bicycle projects under very specific conditions or in conjunction with other projects. Most of these programs are highly competitive and securing funding can be extremely difficult.

An excellent and exhaustive list of both bicycle-specific and general funding sources is the "Guide to Bicycle Project and Program Funding in California,"<sup>ii</sup> (a combined effort of the California Bicycle Coalition, California Department of Transportation (Caltrans) Bicycle Facilities Unit and the Planning and

Conservation League Foundation). It provides an update on available bicycle project and program funding sources in California and identifies key contacts to help obtain federal, state, local and private monies. Excerpts from that guide are included in this Chapter.

A guide to general transportation funding in the San Francisco Bay Area is "Moving Costs: A Transportation Funding Guide for the San Francisco Bay Area,"<sup>iii</sup> published by the Metropolitan Transportation Commission (MTC) in January 1999 and revised in the spring of 2000. This guide consists of detailed tables summarizing federal, state and local sources of money, indicating the amount available, eligible uses and potential Bay Area candidates. A summary of bicycle funding sources is shown in Table 8-1 below.

**Table 8-1**  
Overview of Bicycle Funding Sources

<b>Funding Program</b>	<b>Granting Agency</b>	<b>Administering Agency</b>	<b>Applications Due</b>
Bay Trail Program	Association of Bay Area Governments (ABAG)	ABAG	Varies
Bicycle Facility Program (BFP)	Bay Area Air Quality Management District (BAAQMD)	BAAQMD	June
Bicycle Transportation Account (BTA)	Caltrans	Caltrans	December
Community Based Transportation Planning (CBTP) and Environmental Justice (EJ) Grants	Caltrans	Caltrans	January
Congestion Mitigation & Air Quality Improvement Program (CMAQ)	MTC by way of San Francisco County Transportation Authority (SFCTA) selection process	Caltrans	Varies
Lifeline Transportation Program	MTC	SFCTA	August
Office of Traffic Safety (OTS)	OTS	OTS	January
Proposition K (formerly Proposition B) Half-Cent Sales Tax (Prop K)	SFCTA	SFCTA	April/May Annual Call + Monthly Applications
Regional Bicycle and Pedestrian Grant Program (RBPP)	MTC	SFCTA	May

**Table 8-1**  
Overview of Bicycle Funding Sources

<b>Funding Program</b>	<b>Granting Agency</b>	<b>Administering Agency</b>	<b>Applications Due</b>
Safe Routes to Transit (SR2T)	MTC	Transportation and Land Use Coalition (TALC) and MTC	Varies
Safe Routes to School (SR2S) - Federal	Caltrans	Caltrans	Summer
Safe Routes to School (SR2S) – State	Caltrans	Caltrans	Fall
Surface Transportation Program (STP)	Federal	Various - funds many different transportation programs	Varies
Transportation Development Act Article 3 (TDA)	MTC	SFCTA	March-June
Transportation Enhancements Activities (TEA)	MTC by way of SFCTA selection process	Caltrans	Varies
Transportation for Livable Communities (TLC) – Station Area Planning	MTC	MTC	Varies
Transportation for Livable Communities (TLC) – County	MTC by way of SFCTA selection process	Caltrans	February
Transportation Fund for Clean Air (TFCA) – Program Manager	BAAQMD	SFCTA	March
Transportation Fund for Clean Air (TFCA) – Regional	BAAQMD	BAAQMD	June

Outside funding sources used in the past by the San Francisco Municipal Transportation Agency (SFMTA) Bicycle Program include:

- BTA
- Golden Gate Park Concourse Authority
- OTS
- RBPP
- SR2S
- SR2T

- Prop K
- State Transportation Improvement Program (STIP)
- Transportation Development Activities (TDA) Article 3
- Transportation Enhancement Activities (TEA)
- TFCA

## FUNDING BICYCLE ACTIVITIES

### Action 8.1

Work with appropriate agencies to identify funding to assist in achieving the goals and objectives set forth in this Bicycle Plan.

Successfully supporting existing and future bicycle programs and activities requires the City to receive funding from a variety of sources. In deciding which funding sources to tap, the City should consider the following:

- Administrative costs – some funding sources have extensive reporting, invoicing and contracting requirements. In some cases the cost of administering these grants can exceed the value of the grant itself
- Appropriateness – eligible activities, budget limits and schedule should be analyzed to identify the most appropriate projects for specific funding sources
- Staffing capacity - grants are not an end unto themselves, they should be used to further SFMTA Bicycle Program goals and objectives. Applying for and administering projects without adequate staff to manage them reduces the bicycle staff's ability to efficiently and effectively complete existing projects.

The following sections highlight those funding sources from which the SFMTA Bicycle Program might reasonably be expected to receive funding.

### LOCAL FUNDING SOURCES

Currently, the primary sources of local funding for bicycle activities are: San Francisco's half-cent transportation sales tax (Proposition K), the operating budgets of City and County of San Francisco departments, the local Transportation Fund for Clean Air (TFCA) and the Golden Gate Park Concourse Authority.

- **City and County of San Francisco.** Multiple San Francisco agencies have programs that directly or indirectly support bicycling, and the following is not a comprehensive list. As of 2008, the SFMTA funds staff in its Bicycle Program through its general operating budget. Prior to that time, the SFMTA Bicycle Program was funded primarily through grant funds. In addition to the Bicycle Program, the SFMTA also funds other

mobility-related activities, including a Pedestrian Program and a Traffic Calming Program, and oversees traffic, transit, and parking operations in San Francisco. The Department of Public Works maintains San Francisco's streets through its paving and rehabilitation programs. The San Francisco Department of Public Health spearheads various initiatives to improve health and safety, including the promotion of physical activity. The Recreation and Park Department has jurisdiction over multi-use paths and other bicycle facilities in the City's parks, playgrounds and open spaces. The San Francisco Police Department enforces and educates drivers and bicyclists about safety and traffic laws. The Department of the Environment promotes driving alternatives such as bicycling through activities and promotions to City employees and San Francisco employers. The San Francisco Planning Department leads both citywide and specific area planning efforts, including streetscape design efforts.

- **Half-cent local transportation sales tax program (Proposition K).** When San Francisco voters approved Prop K in November of 2003, they also approved an expenditure plan that determines eligibility for projects and programs and sets funding caps for them. The San Francisco County Transportation Authority (SFCTA) administers and oversees the delivery of the Expenditure Plan. Prop K calls for the development of five-year prioritization plans for its programmatic categories (e.g., traffic calming, transit enhancements, bicycle circulation/safety), development of the Strategic Plan (a 10+-year look ahead at Proposition K programming) and allocation of funds to specific projects and programs.

The primary programs for bicycle activities are Bicycle Circulation/Safety and Pedestrian and Bicycle Facility Maintenance. Over the 30-year life of Prop K, the new expenditure plan includes \$19.1 million for Pedestrian and Bicycle Facility Maintenance and \$56.0 million for Bicycle Circulation/Safety. Bicycle projects and programs also could be eligible for funding from the following expenditure plan categories: BART Station Access, Safety and Capacity; New and Upgraded Streets; New Signals and Signs; Advanced Technology and Information Systems; (Maintenance of) Signals and Signs; Traffic Calming; Transportation Demand Management/Parking Management; and Transportation/Land Use Coordination.

- **Transportation Fund for Clean Air (TFCA).** TFCA funds pedestrian, bicycle and other transportation projects to improve air quality by reducing motor vehicle emissions. The SFCTA is the TFCA Program Manager for San Francisco. Bicycle projects funded in the past include painting bicycle stencils on bicycle routes, installing bicycle racks and installing bicycle lanes.

## REGIONAL FUNDING SOURCES

The Bay Area has a number of regional programs that can be used to fund bicycle projects. The majority of these programs are administered by the MTC, but other regional agencies, such as the Association of Bay Area Governments (ABAG) and the Bay Area Air Quality Management District (BAAQMD), play a role in bicycle funding. The major regional programs are:

- **Bay Trail Project** – An ABAG-administered program that funds projects that complete the San Francisco Bay Trail, a continuous 500-mile regional network of bicycling and hiking trails adjacent to the San Francisco Bay. “The San Francisco Bay Trail Gap Analysis Study” identifies missing segments of the Bay Trail in San Francisco along with (2005) cost estimates for their completion.
- **Bicycle Facility Program (BFP)**<sup>1</sup> – The BFP program, administered by the BAAQMD, seeks to reduce motor vehicle emissions through the implementation of new bicycle facilities. Eligible activities include bicycle lanes, bicycle racks on transit vehicles, bicycle lockers and bicycle parking. Education or promotional activities are not eligible.
- **Lifeline Transportation Program** – The Lifeline Transportation Program supports community-based transportation projects to improve mobility for low-income residents. Projects resulting from a Community-Based Transportation Plan (CBTP) are given preference.
- **Regional Bicycle and Pedestrian Program (RBPP)** – The MTC created RBPP in 2003 to fund construction of the Regional Bicycle Network, regionally significant bicycle and pedestrian projects. Seventy-five percent of the program funds are allocated to the county congestion management agencies (the SFCTA in San Francisco) and the remaining 25 percent are allocated through a regional competitive process. The MTC is in the process of its five-year update to the Regional Transportation Plan (RTP), known as the Transportation 2035 Plan. A budget of \$1 billion has been proposed for the RBPP over a 25 year period.
- **Regional Transportation Improvement Program (RTIP)**<sup>iii</sup> – The RTIP is the Bay Area's proposal to the State of California for how the region's STIP funds should be spent on transit, state highway, local road, bicycle and pedestrian projects over a five-year period. As the congestion management agency (CMA) for San Francisco, the SFCTA follows the MTC's guidelines and develops the San Francisco list of projects to be funded in the STIP. As the regional transportation planning agency (RTPA) for the Bay Area, the MTC approves the region's funding priorities

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1 Within the TFCA, bicycle facility improvements are now handled under a separate Bicycle Facility Program and not under the TFCA Regional Fund process.



for the STIP and submits the projects to the California Transportation Commission (CTC) by way of the RTIP.

- **Safe Routes to School (SR2S)** – The MTC is currently exploring, as part of its Transportation 2035 Plan, the creation of a regional SR2S program.
- **Safe Routes to Transit (SR2T)** – In 2004 Bay Area voters approved a \$1 toll increase (known as Regional Measure 2) on all Bay Area bridges, with a portion of the revenue to fund the SR2T program. For this fund source, eligible bicycle-related projects include: secure bicycle storage at transit stations; safety enhancements for pedestrian and bicycle station access to transit stations; removal of pedestrian and bicycle barriers near transit stations; and system-wide transit enhancements to accommodate bicyclists or pedestrians. There are five funding cycles – 2005, 2007, 2009, 2011 and 2013 – at roughly \$4 million per cycle.
- **Transportation Development Act Article 3 (TDA)** – State legislation enacted in 1971 required that a quarter of every cent of retail sales tax generated within a county be used to fund transportation projects. Funds are predominantly spent on transit related projects, but TDA Article 3 requires that 2 percent of the funds be allocated to bicycle and pedestrian projects such as the elimination or improvement of an identified safety problem; roadway or route improvements; bicycle parking; bicycle racks on transit; maintenance of facilities; bicycle safety, education, and promotional activities; projects that improve regional connections and bicycle plans. Funds are allocated by the MTC to county congestion management agencies (the SFCTA in San Francisco).
- **Transportation for Livable Communities (TLC)** – The MTC created the TLC program in 1998 with the goal of supporting more community-based transportation projects that provide a range of transportation choices, support connectivity and are developed through an inclusive community planning effort. Bicycle improvements funded under this program are typically infrastructure projects that improve bicycle access to transit facilities.

## STATE FUNDING SOURCES

California has a number of programs that may fund bicycle projects, most are administered by Caltrans. In recent years, several policy changes have been implemented within Caltrans to improve planning for bicyclists, fund improvements for bicyclists and ensure the routine accommodation of bicyclists in roadway projects. The major state programs that fund bicycle projects are:

- **Bicycle Transportation Account (BTA)** – The BTA is a flexible, discretionary program that funds a wide variety of bicycle projects, programs and planning initiatives. These include new bikeways; bicycle parking; bicycle-carrying facilities on public transit vehicles; installation of traffic control devices; elimination of hazardous conditions on existing bikeways; and improvement to and maintenance of bikeways. The BTA also funds project planning, engineering and right of way acquisition. Funding levels for the BTA are set during the annual state budget process and tend to fluctuate.
- **Community Based Transportation Planning (CBTP) and Environmental Justice (EJ) Grants** – These grant programs are designed to promote more inclusive planning processes for transportation projects throughout California. While the grants are not specific to bicycles, they do fund a number of bicycle-related project activities, such as complete street studies or plans; pedestrian/bicycle/transit linkage studies or plans; and “green” transportation infrastructure planning. These grants are subject to the annual State budget process and funding levels have historically fluctuated.
- **Office of Traffic Safety (OTS)** – OTS grants fund bicycle education and enforcement programs. OTS funds originate from the National Highway Transportation Safety Agency and have stringent reporting, invoicing, and timely-use-of-funds requirements.
- **Safe Routes to School (SR2S)** – The State SR2S program funds a variety of infrastructure improvements using federal funds that may directly or indirectly benefit bicyclists, such as bicycle lanes, bicycle parking, new or improved traffic signals and traffic calming projects. To be eligible, projects must have a school nexus. SR2S does *not* fund non-infrastructure projects. All K-12 schools are eligible for SR2S funding. Funding levels for SR2S are set during the annual State budget process and can fluctuate from year to year.
- **Surface Transportation Improvement Program (STIP)** – The STIP is California's major expenditure plan for capital transportation projects. Project lists, including bicycle and pedestrian projects, are developed by the MTC and submitted to the CTC (see description for “RTIP”).

### FEDERAL FUNDING SOURCES

Preceded by the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 and the Transportation Equity Act for the 21st Century (TEA-21) in 1998, the latest iteration of the federal transportation law is the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, better known as SAFETEA-LU. SAFETEA-LU was signed into law in 2005 and continued many

of the programs of its predecessors. SAFETEA-LU expires in September of 2009 and it is unclear whether the basic structure of the legislation will be revised.

At the federal level there are dozens of programs that can directly or indirectly fund bicycle projects, yet a small number of them provide the majority of funding. Federal funding sources tend to be the most competitive and tend to have the most requirements of how money is spent and projects are administered. These include:

- **Congestion Mitigation & Air Quality Improvement Program (CMAQ)** - The CMAQ program was designed to enable "non-attainment" areas under the Clean Air Act to fund certain types of transportation programs to improve air quality. Eligible projects include both construction and non-construction activities, such as: bicycle facilities (planning, engineering and construction), bicycle racks on buses, bicycle parking, trails, bicycle route maps, bicycle-activated traffic lights, bicycle safety and education programs and bicycle promotional programs. In the Bay Area, CMAQ funds are distributed through various funding programs by the MTC, including RBPP and TLC.
- **Safe Routes to School (SR2S)** – While California has had a SR2S program since 1999, SAFETEA-LU established the first such federal program. SR2S grants can fund both “infrastructure” projects such as: sidewalk improvements, traffic calming, crossing improvements and bicycle parking; and “non-infrastructure” projects, such as: public outreach campaigns, traffic education and enforcement, bicycling classes and SR2S coordinator positions. Under SAFETEA-LU only schools K-8 are eligible for SR2S funding. Caltrans administers this federal program through its state Safe Routes to School Coordinator.
- **Surface Transportation Program (STP)** – This funding program is intended to be the primary federal source for pedestrian and bicycle projects. Eligible bicycle activities include on-road facilities, off-road trails, sidewalks, crosswalks, bicycle and pedestrian signals, bike parking and other ancillary facilities. "Non-construction" projects are also eligible and include maps, brochures or public service announcements. STP funds also may be used to bring sidewalks and intersections into compliance with the Americans with Disabilities Act (ADA). Finally, STP funds can also be spent on bicycle and pedestrian coordinator positions.
- **Transportation Enhancements Activities (TEA)** – Three of the twelve eligible activities within the TEA program are directly related to bicycling. They are: 1) pedestrian and bicycle facilities, which include: sidewalks, walkways or curb ramps; bike lane striping, wide paved shoulders, bike parking and bus racks; off-road trails; bike and pedestrian bridges and

underpasses; 2) pedestrian and bicycle safety and educational activities; and 3) conversion of abandoned railway corridors to trails.

In the Bay Area, much of the funding associated with these federal programs is funneled through the MTC and is utilized for regional funding programs.

### **NON-TRADITIONAL FUNDING SOURCES**

In addition to the traditional funding sources described above, there are also a variety of non-traditional funding sources that might be appropriate for the long-term implementation of project and program recommendations contained in this Plan. These include:

- San Francisco-based foundations (such as Bechtel Foundation, S.H. Cowell Foundation, Swig Foundation and National Energy Foundation)
- Alliances with organizations (such as the San Francisco Convention and Visitors Bureau and the SFBC), corporations (such as Sports Basement, Levi Strauss Company, Nike, Gap and Bank of America), and agencies (such as the National Park Service/Golden Gate National Recreation Area) that have related interests
- Development or redevelopment projects (such as development impact fees or tax increment financing)
- Adopt-a-Trail/Path programs
- Memorial funds

Because the SFMTA Bicycle Program has a very good track record of obtaining traditional types of grants and the Proposition K half-cent transportation sales tax program includes more than \$75 million over 30 years for Pedestrian and Bicycle Facility Maintenance and Bicycle Circulation/Safety, it is recommended that the Program focus on continuing funding from existing grant sources and seek non-traditional funding sources where appropriate.

Included below are some suggestions for bicycle funding that were made during this Plan's public outreach process. They involve City policy decisions that must be made by the Board of Supervisors or the voters. The City should:

- Dedicate funding for multimodal transportation and not reduce funding for transportation when there is a City budget crisis
- Secure dedicated funding from the City's transportation budget for specific bicycle facilities and enhancements.

In addition, the SFCTA can be a resource in identifying and advocating for new funding sources. If the MTC moves forward with levying a regional gas tax, the

SFMTA should advocate for an equitable share of those revenues for bicycle projects.

Please make sure all footnotes, like the ones below, are lined up on their appropriate pages. This may take restructuring of certain pages to ensure space to accommodate any or all footnotes for that page.

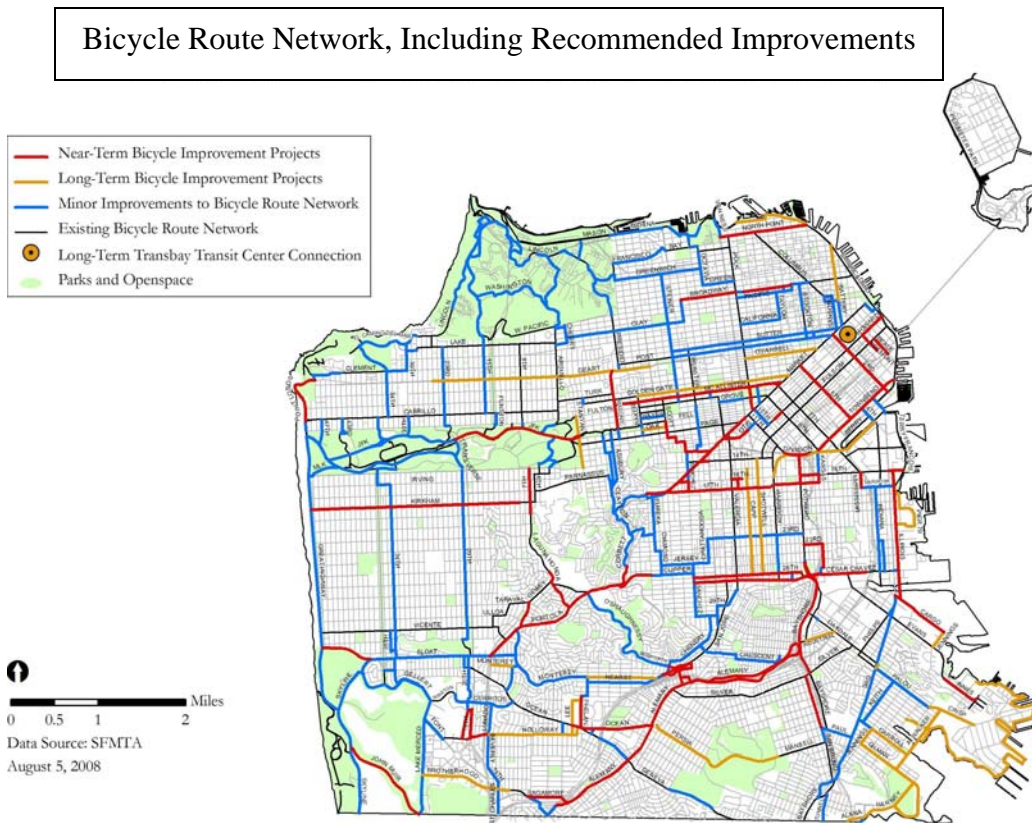
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i The “Guide to Bicycle Project and Program Funding in California” can be viewed online at <http://www.calbike.org/pdfs/Funding-Guide.pdf> or by visiting the California Bicycle Coalition’s website at <http://www.calbike.org>.

ii “Moving Costs: A Transportation Funding Guide for the San Francisco Bay Area” can be viewed at [http://mtc.ca.gov/library/funding\\_guide/index.htm](http://mtc.ca.gov/library/funding_guide/index.htm). A printed copy can be ordered by contacting the MTC-ABAG Library (510) 464-7836 or [library@mtc.ca.gov](mailto:library@mtc.ca.gov)

iii Information on the RTIP can be viewed online at <http://mtc.ca.gov/funding/STIP/>.

# APPENDIX 1: BICYCLE ROUTE NETWORK MAP



# APPENDIX 2:

## BICYCLE ROUTE NETWORK

### **Route 2: The Embarcadero to the Golden Gate Bridge**

Route 2 begins at The Embarcadero and North Point Street and continues on North Point Street to Van Ness Avenue and then north on Van Ness Avenue, where it connects with the pathway along the north edge of Fort Mason. From Fort Mason, the route connects to Marina Boulevard, and then continues through the Presidio on Old Mason Street to Crissy Field Avenue. Due to the one-way segment of Crissy Field Avenue, the east and westbound routes then diverge. Westbound, the route continues via Crissy Field Avenue and Lincoln Boulevard to Merchant Road. The eastbound route is via Lincoln Boulevard, Cowles Street, McDowell Avenue, and Crissy Field Avenue.

### **Route 4: Polk Street to the Golden Gate Bridge**

Route 4 begins at Polk and Francisco Streets and continues via Francisco Street to Laguna Street and then along Bay Street between Fillmore and Laguna Streets. Route 4 then follows Cervantes Boulevard, Alhambra Street, Francisco Street and Lyon Street south to the Presidio entrance at Lombard Street. West of Lyon Street, this route continues to the Golden Gate Bridge via Lombard Street, Presidio Boulevard, and Lincoln Boulevard.

### **Route 5: North Point Street to the San Mateo County Line**

Route 5 begins at North Point Street and the Embarcadero and continues south along the Embarcadero. King Street connects the route from the Embarcadero to Route 536 (Third Street), and the route continues south on Third Street across the China Basin Channel. Route 5 then continues along China Basin Street and Terry A. Francois Boulevard before connecting to Illinois Street. At Cesar Chavez Street the route goes west for one block before continuing south on 3<sup>rd</sup> Street to Paul Avenue. Southbound Route 5 follows Paul Avenue west to San Bruno Avenue and south on San Bruno Avenue where it connects to Bayshore Boulevard. Northbound Route 5 from San Mateo follows Bayshore Boulevard to 3<sup>rd</sup> Street.

### **Route 6: Polk Street to the Presidio**

Route 6 begins at Polk and Green Streets and continues west on Green Street to Route 106 (Octavia Boulevard), which connects the route north to Greenwich Street. The route follows Greenwich Street to Lyon Street, where access is provided to the Presidio via Lyon and Lombard Streets.

**Route 7: Mission Bay to Bayview**

Route 7 begins on Mariposa Street at Route 5 (Illinois Street) and continues west on Mariposa Street and then south on Indiana Street to 23<sup>rd</sup> Street. Southbound bicyclists are routed from Indiana Street via 23<sup>rd</sup> and Minnesota Streets to Route 60 (Cesar Chavez Street). Northbound bicyclists can connect from Route 60 at Cesar Chavez Street via 23<sup>rd</sup> Street. The route continues east on Cesar Chavez Street to Illinois Street. Route 5 (Third St) is used between Cesar Chavez and Phelps Streets (Illinois and Phelps do not intersect), so that Islais Creek can be crossed via the Illinois Street Bridge. Route 7 continues south on Phelps Street where it connects with Route 68 (Evans Street) and with Routes 170 (Oakdale Avenue) and 70 (Palou Avenue). The route then continues southeast on Palou Avenue to Keith Street before connecting with Route 805 at Carroll Avenue.

**Route 10: The Embarcadero to Sutro Heights**

Route 10 provides direct access across San Francisco from the Embarcadero to the Cliff House. Beginning at Broadway and The Embarcadero, the route continues west on Broadway, avoiding the Broadway Tunnel in the westbound direction by following the Broadway frontage road to Mason Street and Pacific Avenue to Polk Street and back onto Broadway, while in the eastbound direction the route continues on Pacific Avenue to Powell Street and back onto Broadway (eastbound access through the Broadway Tunnel is provided by Route 210). West of Polk Street, Route 10 continues via Broadway, Webster, and Clay Streets into the Richmond District. The route continues via Cherry Street, Sacramento Street, and Arguello Boulevard to Lake Street. From Lake Street the route continues via 30<sup>th</sup> Avenue, Clement Street, Seal Rock Drive, El Camino del Mar and Point Lobos Avenue to the Cliff House.

**Route 11: Fisherman's Wharf to AT&T Park**

Route 11 connects Fisherman's Wharf with North Beach, the Financial District, and the South of Market Area including the AT&T Park and the Caltrain Station on 4<sup>th</sup> Street. The route follows Columbus Avenue from North Point Street to the Washington Street/Clay Street one-way couplet, which connects to the Sansome Street/Battery Street one-way couplet to provide access to the Financial District. It continues on Market and then south via 2<sup>nd</sup> Street to Route 5 (King Street/The Embarcadero). The route also connects with Route 36 at Townsend Street.

**Route 16: Market Street to Presidio Avenue**

In the westbound direction, Route 16 begins at Market Street and Sutter Street and moves west along Sutter Street to Steiner Street, then along Post Street to Presidio Avenue. In the eastbound direction, Route 16 begins at Post Street and Presidio Avenue and moves east along Post Street to Market Street.

**Route 17: Chinatown to Union Square**

Beginning at Stockton and Broadway Streets, Route 17 continues south through the Stockton Tunnel to Post Street. Bicyclists cannot access northbound Route 17 from eastbound Route 16 (Post Street) because Stockton Street is one-way



southbound between Sutter and Market Streets. Route 17 connects to both Route 10 at Broadway Street and Route 16 at Sutter Street.

**Route 19: Market Street to Townsend Street**

Route 19 connects Route 50 (Market Street) to Route 36 (Townsend Street) via 5<sup>th</sup> Street. It also connects to westbound Route 30 at Howard Street and eastbound Route 30 at Folsom Street.

**Route 20: Market Street to Ocean Beach**

Westbound Route 20 starts at Market Street and McAllister Street and travels west along McAllister Street through the Western Addition to Baker Street (westbound Route 20 also connects 7<sup>th</sup> Street to McAllister Street via Charles J. Brenham Street). At Baker Street, westbound and eastbound Route 20 travel along the same streets: Baker Street, Golden Gate Avenue, Parker Avenue, Turk Street, Arguello Boulevard, and Cabrillo Street to The Great Highway. The eastbound route starts at Cabrillo Street and The Great Highway and follows the westbound route in reverse until Baker Street, where the eastbound route continues on Baker Street to Fulton Street, Octavia Street, and Grove Street to Market Street.

**Route 23: Civic Center to Mission Bay**

Route 23 travels on the 7<sup>th</sup> Street/8<sup>th</sup> Street one-way couplet that connects South of Market, China Basin, and Potrero Hill. North of Townsend Street, 7<sup>th</sup> Street serves as the northbound connection to Market Street, while 8<sup>th</sup> Street serves as the southbound route. South of Townsend Street, Route 23 continues via the two-way portion of 7th Street, Mississippi Street, and Mariposa Street, where it connects with Route 7 (Indiana Street) and Route 5 (Illinois Street).

**Route 25: Aquatic Park to Visitation Valley**

Route 25 begins at Route 2 (North Point Street) and proceeds on Polk Street to Market Street. Larkin Street, however, is the designated northbound route between Market and McAllister Streets because Polk Street is one-way southbound. South of Market Street, northbound bicyclists are routed along 11<sup>th</sup> Street, while southbound bicyclists are routed on 10<sup>th</sup> Street until Howard Street, where the route reconnects to 11<sup>th</sup> Street. The route continues from 11<sup>th</sup> Street to Harrison Street. From Harrison Street the route continues east to Potrero Avenue via Route 40 (17<sup>th</sup> Street).

From Potrero Avenue the route continues south to the intersection with Cesar Chavez Street and Bay Shore Boulevard interchange at US 101. To continue on Route 25 in either direction through this interchange, bicyclists can use Cesar Chavez Street, which travels under the freeway, to Bay Shore Boulevard. Another alternative is Route 525 (23rd Street and Kansas Street). After the interchange, southbound bicyclists are diverted to Jerrold Avenue, Barneveld Avenue, Loomis Street, and Industrial Street before reconnecting with Bay Shore Boulevard.

Route 25 continues via Bay Shore Boulevard to Route 5 (3<sup>rd</sup> Street) at Paul Street, and then south on San Bruno Avenue back to Bay Shore Boulevard.

### **Route 30: The Embarcadero to Ocean Beach via Golden Gate Park**

Beginning at The Embarcadero and the Howard Street (westbound)/Folsom Street (eastbound) one-way couplet, Route 30 connects to 11th Street, where the eastbound and westbound routes diverge until the intersection of Duboce, Sanchez, and Steiner Streets. The westbound route from Howard Street to the Duboce/Sanchez/Steiner Streets intersection is via 11th, Mission, Otis, McCoppin, and Market Streets and Duboce Avenue. The eastbound route from Duboce/Sanchez/Steiner Streets to Folsom Street is via Sanchez, 14<sup>th</sup>, and Folsom Streets. Both directions of Route 30 continue from the intersection of Duboce/Sanchez/Steiner Streets together via the "Wiggle"<sup>1</sup> (Steiner, Waller, Pierce, and Scott Streets) to Fell Street. The westbound route follows Fell Street to the Panhandle Park multi-use pathway, and the eastbound route continues from the multi-use pathway on Baker, Hayes, and Scott Streets back to Haight Street. Route 30 continues on the Panhandle multi-use pathway to Golden Gate Park. A westbound connection from the Panhandle Park multi-use pathway to Golden Gate Park is provided along Fell Street between Shrader and Stanyan Streets, while the eastbound connection from Golden Gate Park onto the Panhandle Park multi-use pathway is provided at the intersection of Fell Street with Kezar Drive and Stanyan Street. Within Golden Gate Park, the route follows Kezar Drive and John F. Kennedy Drive to The Great Highway.

### **Route 32: Golden Gate Park to Market Street**

Route 32 is located on Page Street between Golden Gate Park and Market Street. Within Golden Gate Park, Route 32 connects with Route 365 (Kezar Drive multi-use pathway) and with Route 30 (John F. Kennedy Drive) via multi-use pathways.

### **Route 33: Harrison Street**

Route 33 connects Route 25 (11th Street/Harrison Street) to Route 60 (Cesar Chavez Street) via Harrison Street.

### **Route 34: Middle Drive and Martin Luther King, Jr. Drive**

Route 34 begins on Middle Drive West at Transverse Drive and travels along Middle Drive West to Martin Luther King Jr. Drive and Lincoln Way, ending at The Great Highway.

### **Route 36: Division Street and Townsend Street**

Route 36 begins at 14<sup>th</sup> and Folsom Streets, and follows 14<sup>th</sup>, Harrison, 11<sup>th</sup>, Division, and Townsend Streets to The Embarcadero.

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<sup>1</sup> The "Wiggle" is the name local bicyclists have given to the relatively flat bicycle route connecting Market Street at Duboce Avenue to the Panhandle. It avoids hills by "wiggling" with many turns along various streets.

**Route 40: Mission Bay to Ocean Beach**

Route 40 begins at 16<sup>th</sup> Street and Terry A. Francois Boulevard and continues west on 16<sup>th</sup> Street to Kansas Street, then follows Kansas Street to 17<sup>th</sup> Street and continues west via 17<sup>th</sup> Street, Corbett Avenue, Clayton Street, Parnassus Avenue, 6<sup>th</sup> Avenue, and then west on Kirkham Street to Ocean Beach.

**Route 44: San Francisco general Hospital to Upper Market**

Route 44 begins at San Francisco General Hospital on Potrero Avenue and follows 22<sup>nd</sup>, Chattanooga, and Jersey Streets to Noe Valley. The route continues on a portion of Route 49 via Diamond, 23<sup>rd</sup>, and Eureka Streets before following 21<sup>st</sup> Street, Grand View Avenue, and Romain Street. The route crosses Market Street via a bicycle and pedestrian over-crossing at Romain Street and ends at Corbett Avenue.

**Route 45: Marina to Daly City**

Route 45 begins at Route 6 (Steiner Street at Greenwich Street) and continues south on Steiner Street through Pacific Heights and the Western Addition, merging with Route 20 at Fulton Street. The route continues on Fulton Street before going south via Octavia Boulevard and connecting to Valencia Street via McCoppin Street and a pathway connecting McCoppin Street to the intersection of Market Street and Octavia Boulevard. The route continues south along Valencia Street, Tiffany Avenue, and 29<sup>th</sup>, Dolores, and 30<sup>th</sup> Streets before connecting to San Jose Avenue (the northbound route follows San Jose Avenue to 29<sup>th</sup> Street). Route 45 continues to San Mateo County from San Jose Avenue via Arlington Street, Bosworth Street, Lyell Street and Alemany Boulevard before reconnecting with San Jose Avenue. In the northbound direction, the connection between Alemany Boulevard and San Jose Avenue near Glen Park is via Rousseau, Still, Lyell, Bosworth, and Milton Streets.

**Route 47: Scott Street and Sanchez Street**

Route 47 begins at Route 20 (McAllister and Scott Streets) and continues south via the “Wiggle” (Haight, Pierce, Waller, and Steiner Streets) to Sanchez Street. The route ends at Route 40 (17th Street), which provides a connection to the Mission District and Potrero Hill.

**Route 49: The Castro to Noe Valley to San Jose Avenue**

Route 49 begins on Eureka Street in the Castro and travels to Noe Valley via Eureka, 23<sup>rd</sup>, Diamond, Jersey, Sanchez, and 30<sup>th</sup> Streets. In the northbound direction, bicyclists are routed from Eureka Street to Corbett Avenue via Market and Douglass Streets because the northernmost block of Eureka Street is one-way southbound. Route 49 is coincident with Route 44 between the Sanchez Street/Jersey Street intersection and the Eureka Street/21<sup>st</sup> Street intersection.

**Route 50: The Embarcadero to The Great Highway and San Francisco Zoo**

Route 50 Begins at The Embarcadero and Mission Street and continues via Mission and Steuart Streets to Justin Herman Plaza where the route follows

Market Street to the intersection of 17<sup>th</sup> and Castro Streets. In the westbound direction, Route 50 follows 17<sup>th</sup> Street from Castro Street to Corbett Avenue. In the eastbound direction, the route follows Corbett Avenue, 17<sup>th</sup> Street, and Eureka Street to Market Street because 17<sup>th</sup> Street is one-way westbound east of Eureka Street.

From Corbett Avenue, the route continues on Portola Drive and Sloat Boulevard, and ends at The Great Highway. Eastbound Route 50 bicyclists can avoid the triple left-turn lane at the intersection of Sloat Boulevard and Portola Drive (Saint Francis Circle) by continuing east onto St. Francis Boulevard, turning left at San Fernando Way, and then turning right onto Portola Drive.

### **Route 51: Baker Street**

Route 51 begins on Baker Street at Page Street (Route 32) and continues north on Baker Street where it provides a connection to Route 20 at McAllister Street westbound and Fulton Street eastbound. Route 51 intersects Route 30 at the Panhandle Pathway (westbound) and Hayes Street (eastbound).

### **Route 55: Crissy Field to Upper Market Street and Glen Park BART**

Beginning at Old Mason Street in the Presidio, Route 55 travels through the Presidio via Halleck Street, Lincoln Boulevard (Route 4), and Presidio Boulevard south to Geary Boulevard. Route 55 then continues on Masonic Avenue until it connects with the multi-use pathway in the Panhandle.

From the Panhandle, Route 55 continues southbound via Clayton, Waller, and Downey Streets, while using Ashbury Street for northbound travel. Route 55 continues south coincident with Route 40 (Clayton Street) before proceeding on Corbett Avenue and Portola Drive coincident with Route 50 to O'Shaughnessy Boulevard. Route 55 continues on O'Shaughnessy Boulevard and Bosworth Street, past Glen Canyon Park to the Glen Canyon neighborhood, where access is provided to Route 45 and Route 70.

### **Route 60: Illinois Street to The Great Highway**

Route 60 begins at Illinois Street and Cesar Chavez Streets, and follows Cesar Chavez, Sanchez, and Clipper Streets to Portola Drive. In the westbound direction, Route 60 follows Portola Drive, Woodside Avenue, and Laguna Honda Boulevard to Dewey Boulevard. In the eastbound direction, Route 60 follows Laguna Honda Boulevard directly to Portola Drive. From Dewey Boulevard, Route 60 follows Taraval Street, Forest Side Avenue, Ulloa Street, and 15<sup>th</sup> Avenue to connect to Vicente Street and west to Ocean Beach.

### **Route 61: Arguello Boulevard and Sheridan Avenue in the Presidio**

Route 61 connects Lincoln Boulevard and Arguello Boulevard via a short north-south segment. From Route 4 (Lincoln Boulevard), this route uses Sheridan Avenue, Infantry Terrace, and Thomas Avenue to connect to Route 65 (Arguello Boulevard).

**Route 65: The Presidio to SF State University**

From Routes 2 and 95 along Lincoln Boulevard in the Presidio, southbound Route 65 travels via Ralston Avenue, Greenough Avenue, Kobbe Avenue, Harrison Boulevard, and Washington Boulevard to Arguello Boulevard. Northbound Route 65 within the Presidio follows Arguello, Washington, and Lincoln Boulevards to Route 95 (Merchant Road) and through the Toll Plaza undercrossing.

Heading southbound out of the Presidio, Route 65 continues via Arguello Boulevard to Golden Gate Park. In the park, the route connects to Bowling Green Drive via Conservatory Drive and JFK Drive. Route 65 exits Golden Gate Park via a short pathway to Lincoln Way at 5<sup>th</sup> Avenue. The route continues on Hugo Street, then south on 6<sup>th</sup> Avenue where the route connects with Route 40 at Parnassus Avenue. From 6<sup>th</sup> Avenue Route 65 jogs west on Kirkham Street, and then continues south on 7<sup>th</sup> Avenue. The route continues via Laguna Honda Boulevard, Dewey Boulevard, Claremont Boulevard, Portola Drive, and Santa Clara Avenue. At Monterey Boulevard, the route goes west for a block before continuing south on San Benito Way, Ocean Avenue to Cerritos Avenue, and ending at Route 75 (Lunado Way) at Mercedes and Lunado Ways.

**Route 66: Bernal Heights**

Route 66 provides east-west access across Bernal Heights. It begins on Putnam Street north of Crescent Avenue and continues west via Crescent Avenue, Murray Street, Richland Avenue, and Miguel Street, terminating at Chenery Street.

**Route 68: Hunter's Point to Cesar Chavez Street**

Until general access is permitted to the Hunter's Point Naval Shipyard site, Route 68 will begin at Innes Avenue and Donahue Street. Route 68 follows Innes Avenue, Hunters Point Boulevard, and Evans Avenue to Cesar Chavez Street.

**Route 69: The Presidio to Golden Gate Park**

Route 69 provides a connection between Route 65 (Washington Boulevard) in the Presidio and Route 30 (JFK Drive in Golden Gate Park) in Golden Gate Park. From Washington Boulevard in the Presidio, this route follows Battery Caulfield Road, Wedemeyer Street, 15<sup>th</sup> Avenue, Cabrillo Street, Funston Avenue, and the existing multi-use pathway to Route 30.

**Route 70: Hunter's Point to West Portal**

Until general access is permitted to the Hunter's Point Naval Shipyard site, Route 70 will begin at Griffith Street and Palou Avenue. Route 70 follows Palou Avenue to Phelps Street, Oakdale Avenue, and Silver Avenue to Alemany Boulevard. Between Alemany Boulevard and Diamond Street, westbound Route 70 follows Rousseau, Still, Lyell and Bosworth Streets, while eastbound Route 70 follows

Bosworth and Lyell Streets. where it intersects Route 55 (Bosworth Street/O'Shaughnessy Boulevard). Route 75 continues via Circular and Hearst Avenues to Genessee Street. The route then continues via Monterey Boulevard, Santa Clara Avenue, and Saint Francis Boulevard to Saint Francis Circle.

### **Route 75: Seacliff to Daly City BART**

Beginning on 25<sup>th</sup> Avenue between El Camino del Mar and Lake Street, Route 75 jogs east via Lake Street before heading south on 23<sup>rd</sup> Avenue. The route continues east on Fulton Street and south into Golden Gate Park via an off-street pathway at 22<sup>nd</sup> Avenue. It continues via Transverse Drive to Martin Luther King Jr. Drive, where another off-street pathway connects to 20<sup>th</sup> Avenue at Lincoln Way. A traffic signal at this intersection facilitates bicyclists crossing Lincoln Way.

Route 75 moves south via 20<sup>th</sup> Avenue to Stern Grove, where it follows Wawona Street to 21<sup>st</sup> Street, and then moves through Stern Grove via an off-street pathway to Sloat Boulevard at 19<sup>th</sup> Avenue. The southbound route continues west on Sloat Boulevard and south on 21<sup>st</sup> Avenue to Ocean Avenue, east on Ocean Avenue and south again on 20<sup>th</sup> Avenue. The northbound route from Eucalyptus Drive travels on 20<sup>th</sup> Avenue, east on Sloat Boulevard to the off-street pathway through Stern Grove.

South of Ocean Avenue, the route continues south via 20<sup>th</sup> Avenue, through the Stonestown Shopping Center, east on Winston Drive and Mercedes Way, south on Lunado Way, Beverly Street, 19<sup>th</sup> Avenue, and Saint Charles Avenue. Two pathways connect the dead-end segments of Saint Charles Avenue to Brotherhood Way. A traffic signal facilitates bicyclists crossing Brotherhood Way south to Saint Charles Avenue and the Daly City BART Station.

### **Route 84: Ocean Avenue**

Route 84 uses Ocean Avenue as an east-west connection between Route 75 at 20<sup>th</sup> Avenue, Route 90 on Ocean and Geneva Avenues, and Route 45 on Alemany Boulevard. It also directly connects to Route 65 at San Benito Way.

### **Route 85: Legion of Honor to San Mateo**

Route 85 begins along Legion of Honor Drive at El Camino del Mar and continues south on 34<sup>th</sup> Avenue. Route 85 then jogs to 36<sup>th</sup> Avenue at Cabrillo Street (Route 20) and continues south into Golden Gate Park. It continues south through the park via the north access road to the Polo Field, the Polo Field bicycle track, a pathway to Martin Luther King Jr. Drive, and exits the park on Sunset Boulevard. Outside Golden Gate Park Route 85 continues on Sunset Boulevard to Irving Street, and then south on 34<sup>th</sup> Avenue. The route then travels south on 34<sup>th</sup> Avenue to Clearfield Drive.

From the intersection of Clearfield Drive and Ocean Avenue, the southbound route is Ocean Avenue, the off-street pathway just west of Sunset Boulevard,

and Lake Merced Boulevard. The northbound route is Middlefield Drive, Gellert Drive, and Clearfield Drive. The pathway west of Sunset Boulevard provides access to either Lake Merced Boulevard or the adjacent multi-use pathway around Lake Merced (Route 885).

**Route 86: Winston Drive/Lake Merced Boulevard**

Route 86 travels west from Route 84 at Ocean Avenue via Cerritos Avenue, Mercedes Way, Winston Drive, and Lake Merced Boulevard to its junction with Route 91 (Skyline Boulevard). At Lake Merced Boulevard, connections can be made with Route 85 south to San Mateo County and north to both the Sunset and Richmond districts.

**Route 90: Bayshore Boulevard to Lake Merced**

Beginning at Route 5 on Bayshore Boulevard, Route 90 runs west along Geneva Avenue before it connects to Holloway Avenue via Plymouth Avenue. Route 90 runs south of SF State before continuing on Font Boulevard, which connects the route to Route 85 on Lake Merced Boulevard.

**Route 91: Skyline Boulevard and John Muir Drive**

Route 91 begins at Route 50 at Sloat Boulevard and connects to Route 85 (Lake Merced Boulevard) via Skyline Boulevard and John Muir Drive on the west side of Lake Merced. It also provides a connection with Route 95 (Skyline Boulevard/The Great Highway). As an alternative to this on-street route, bicyclists can use the paved pathway along Lake Merced.

**Route 95: Lincoln Boulevard/El Camino del Mar/Great Highway/Skyline Boulevard**

Route 95 crosses San Francisco from the Golden Gate Bridge to San Mateo County. It connects the Presidio, Sea Cliff, Outer Richmond, Golden Gate Park, Outer Sunset, Parkside, and Lake Merced. In addition, it is the San Francisco portion of the Pacific Coast Bicycle Route, a state marked route along the coast.

Beginning at the Golden Gate Bridge, this route continues south via the Toll Plaza undercrossing, Merchant Road, Lincoln Boulevard, El Camino del Mar, and Route 10 (30<sup>th</sup> Avenue/Clement Street/Seal Rock Drive). It continues to El Camino del Mar, and Point Lobos Avenue to the Great Highway.

The Great Highway offers two routes for bicyclists to choose from: an on-street route on the Great Highway and a parallel multi-use pathway between the roadway and the beach. Route 95 continues to San Mateo County via Skyline Boulevard (State Highway 35).

**Route 98: Sagamore Street and Brotherhood Way**

Route 98 connects Route 45 at Alemany Boulevard and Route 75 at the St. Charles Avenue Pathway via Sickles Avenue, Sagamore Street, and Brotherhood Way.

**Route 106: Francisco Street to Green Street Connector**

Route 106 provides a north-south connection between Route 4 at Francisco Street and Route 6 at Green Street via Octavia Street.

**Route 123: Kansas Street Connector**

Route 123 utilizes Kansas Street (Henry Adams Street) to connect Route 23 (7th Street/8th Street) and Route 36 (Townsend Street) at Division Street with Route 40 at 16<sup>th</sup> Street.

**Route 125: Eleventh Street (Southbound between Market and Howard Streets) Connector**

Route 125 is a two block connector between eastbound Route 50 (Market Street) and southbound Route 25 (11th Street) or westbound Route 30 (Howard Street).

**Route 130: Baker Street Connector**

Route 130 connects the Panhandle Park multi-use pathway (Route 30) and Page Street (Route 32) via Baker Street.

**Route 134: Middle Drive West Multi-Use Pathway Connector**

Route 134 connects Route 75 (Transverse Drive) to Route 34 (Middle Drive West) via a multi-use pathway along Overlook Drive.

**Route 165: Jackson Street and Cherry Street Connector**

Route 165 provides southbound bicyclists on Route 65 (Presidio Avenue) a short-cut to Route 10 (Clay Street). The route begins on Route 65 (Arguello Boulevard) at Jackson Street and proceeds east to Cherry Street and then south to Clay Street.

**Route 170: Oakdale Avenue Connector**

Route 170 serves as a connector, via Oakdale Avenue, between Route 5 at 3<sup>rd</sup> Street and Route 25 at Bay Shore Boulevard. It also connects to Route 7 (Phelps Street) and Route 70 (Silver Avenue).

**Route 195: Kobbe Avenue Connector**

Route 195 is a one block connector between Route 95 (Lincoln Boulevard) and Route 65 (Washington Boulevard) in the Presidio.

**Route 198: Goethe Street Connector**

Route 198 provides a direct route to Route 45 (San Jose Avenue) from eastbound Route 98 (Brotherhood Way) via Alemany Boulevard, Crystal Street, and Goethe Street.

**Route 202: Battery East Road Multi-Use Pathway Connector**

Route 202 connects Route 2 (Lincoln Boulevard) and Route 95 (Golden Gate Bridge walkways) via a multi-use pathway along Battery East Road. It provides



an alternative to cycling through the Golden Gate Bridge parking lot roadway (Route 295).

**Route 210: Broadway Tunnel Connector**

Route 210 provides an alternate routing for eastbound Route 10 within the Broadway Tunnel between Polk and Powell Streets.

**Route 234: McClain's Bend Connector**

Route 234 connects Route 34 (Martin Luther King Jr. Drive) to Route 30 (John F. Kennedy Drive) within Golden Gate Park via Bernice Rogers Way.

**Route 295: Golden Gate Bridge Parking Lot Roadway Connector**

Route 295 connects Route 2 (Lincoln Boulevard) and Route 95 (Golden Gate Bridge walkways) via the Golden Gate Bridge parking lot roadway.

**Route 310: Taylor Street and California Street Connector**

From Pacific Avenue at Taylor Street, Route 310 follows Taylor and California Streets to Polk Street.

**Route 325: Eleventh Street (between 13<sup>th</sup> and Harrison Streets) Connector**

Route 325 is a one block connector between Route 25 (11<sup>th</sup> Street) and Route 36 (13<sup>th</sup> Street).

**Route 330: Eighth Avenue Connector**

Route 330 connects Route 10 (Lake Street) to Route 20 (Cabrillo Street) and Route 30 (John F. Kennedy Drive) via 8<sup>th</sup> Avenue (north of Fulton Street) and a multi-use pathway in Golden Gate Park.

**Route 345: Webster Street Connector**

Route 345 connects Route 16 (Sutter Street/Post Street one-way couplet) and Route 30 (Duboce Avenue) via Webster, Hermann, and Church Streets.

**Route 350: Duboce Avenue Connector**

Route 350 provides an eastbound connection from the "Wiggle" at the intersection of Duboce, Sanchez, and Steiner Streets to Market Street via Duboce Avenue and a mixed-use pathway along the Duboce Avenue right-of-way between Church and Market Streets.

**Route 365: Kezar Drive Multi-use pathway Connector**

Route 365 connects Route 32 and Route 65 via the Kezar Drive multi-use pathway within Golden Gate Park and 3<sup>rd</sup> Avenue and Hugo Street outside of the park.

**Route 395: El Camino del Mar Connector**

Route 395 connects Route 95 at 30<sup>th</sup> Avenue to Route 85 at Legion of Honor Drive via El Camino del Mar. From Legion of Honor Drive bicyclists can continue

to the Great Highway via Clement Street or continue on Route 85 to Golden Gate Park.

**Route 525: Twenty-Third Street and Kansas Street Connector**

Route 525 directs bicyclists around the Potrero Avenue/Cesar Chavez Street/Bayshore Boulevard/US 101 interchange. The route begins at Route 25 on Potrero Avenue and moves east across US 101 via 23<sup>rd</sup> Street, continuing south on Kansas, 26<sup>th</sup>, and Vermont Streets to Route 60 (Cesar Chavez Street).

**Route 530: 30<sup>th</sup> Avenue Connector**

Route 530 connects Route 20 (Cabrillo Street) to Route 30 (John F. Kennedy Drive) in Golden Gate Park via 30<sup>th</sup> Avenue.

**Route 534: Martin Luther King, Jr. Drive Connector**

Route 534 is a one block connector between Route 34 (Martin Luther King Jr. Drive) and Route 85 (Sunset Boulevard and 34<sup>th</sup> Avenue) via Martin Luther King Jr. Drive.

**Route 536: Third Street Connector**

Route 536 connects Route 5 (King Street) and Route 36 (Townsend Street) via 3<sup>rd</sup> Street.

**Route 545: McCoppin Street Connector**

Route 545 connects eastbound Route 50 (Market Street) to southbound Route 45 (Valencia Street) and connects northbound Route 45 (Valencia Street) to westbound Route 50 (Market Street) via McCoppin Street.

**Route 565: Martin Luther King Jr. Drive Connector**

Route 565 connects Route 365 (Kezar Drive multi-use pathway) to Route 65 (Bowling Green Drive) via Martin Luther King Jr. Drive.

**Route 705: Paul Avenue and Mansell Street Connector**

Route 705 connects Route 5 (3<sup>rd</sup> Street) and Route 25 (Bayshore Boulevard) via Paul Avenue. Route 705 also connects Routes 5 and 25 on San Bruno Avenue to McLaren Park via San Bruno Avenue and Mansell Street.

**Route 730: 43<sup>rd</sup> Avenue and Chain of Lakes Drive West Connector**

Route 730 connects Route 20 (Cabrillo Street) to Route 830 (Martin Luther King Jr. Drive and Middle Drive West Pathway Connector) via 43<sup>rd</sup> Avenue and the multi-use pathway along Chain of Lakes Drive West. In the northbound direction, the route briefly jogs onto Chain of Lakes Drive East to avoid the one-way section of Chain of Lakes Drive West that is open to motor vehicles.

**Route 749: Diamond Street Connector**

Route 749 is a two block route on Diamond Street that connects Route 49 at Jersey Street with Route 60 at Clipper Street.

**Route 760: 14<sup>th</sup> Avenue Connector**

Route 760 provides a connection between Route 60 (Vicente Street) and Route 50 (Portola Drive) via 14<sup>th</sup> Avenue and Vicente Street.

**Route 765: Northeast outlet pathway in Golden Gate Park Connector**

In the northeast corner of Golden Gate Park, Route 765 connects Route 65 on Conservatory Drive East to Fulton Street via an off-street pathway.

**Route 770: Phelan Avenue Connector**

Route 770 starts at the Genessee Street and Hearst Avenue intersection and continues south via Genessee Street, Judson Avenue, and Phelan Avenue to Route 84 (Ocean Avenue).

**Route 775: San Francisco State University Connector**

South of Eucalyptus Drive, Route 775 follows 20th Avenue and then directs bicyclist to the Stonestown Shopping Center parking lot's access road to the southerly part of Buckingham Way. Please refer to Route 75.

**Route 785: Sunset Boulevard Pathway and Ocean Avenue Connector**

Route 785 provides a connection from eastbound Lake Merced Boulevard (Routes 86 and 885) and the Lake Merced Pathway to northbound Route 85 (Clearfield Drive/34th Avenue). It crosses Lake Merced Boulevard at the marked and signed crosswalk just west of Sunset Boulevard and follows southbound Route 85, but in the opposite direction.

**Route 801: Treasure Island Connector**

Route 801 starts at Yerba Buena Island and continues to the east span of the Bay Bridge and Treasure Island, where it meets Route 802.

**Route 802: Treasure Island Connector**

On Treasure Island, Route 802 runs along the western and northern perimeters.

**Route 805: Monster Park and Candlestick Point Connector**

From 3<sup>rd</sup> Street, Route 805 follows Carroll Avenue, Fitch Street (Arelious Walker Drive), Gilman Avenue, Hunters Point Expressway, and Jamestown Avenue. West of Monster Park, Route 805 continues on Harney Way, Alana Way, and Beatty Road.

**Route 830: Martin Luther King Jr. Drive and Middle Drive West Pathway Connector**

Route 830 begins at Route 30 (John F. Kennedy Drive) across from Lloyd Lake and runs south of Speedway Meadows, the Polo Field, Middle Lake, and the Bercut Equitation Field, ending near the intersection of Lincoln Way and The Great Highway. Route 830 offers bicyclists in Golden Gate Park an off-street

alternative to Route 34 (Middle Drive West/Martin Luther King Jr.) and Route 30 (John F. Kennedy Drive).

**Route 885: Lake Merced Boulevard/John Muir Drive/Skyline Boulevard Connector**

Route 885 is an on-street loop route that provides a guide for bicyclists who wish to circle Lake Merced. It consists of parts of Routes 85, 86, 91, and 95. In the clockwise direction, Route 85 follows Lake Merced Boulevard, John Muir Drive, and Skyline Boulevard back to Lake Merced Boulevard. In the counter-clockwise direction, in order to avoid the narrow lanes of Lake Merced Boulevard and the busy intersection of Sunset and Lake Merced Boulevards, Route 885 deviates from the lake at the north end. It is routed via the streets that are used for both northbound and southbound Route 85: Middlefield Drive, Gellert Drive, Clearfield Drive, Ocean Avenue, and the pathway just west of Sunset Boulevard back to Lake Merced Boulevard.

**Route 905: Tunnel Road Connector**

Route 905 travels on Tunnel Road between Route 5 on Bayshore Boulevard and the San Mateo County line.

**Route 907: Indiana Street Connector**

Route 907 is a two block route that begins at Route 60 (Cesar Chavez Boulevard) and travels south on Indiana Street to Tulare Street.

**Route 925: Blanken Avenue Connector**

Route 925 connects Route 905 at Tunnel Road with Route 5 at Bayshore Boulevard via Blanken Avenue.

**Route 930: 47<sup>th</sup> Avenue and Dutch Windmill Connector**

Route 930 connects Route 20 (Cabrillo Street) to Route 30 (John F. Kennedy Drive) via 47<sup>th</sup> Avenue.

**Route 990: City College Overcrossing of Ocean Avenue Connector**

Route 990 connects westbound Route 90 (Geneva Avenue) with City College via the non-motor vehicle overcrossing of Ocean Avenue. There is no connection from eastbound Route 90 with City College via this overcrossing, as the eastbound and westbound lanes of Geneva Avenue are at different grades and are separated by a wall. Access to City College from the west is via Route 770 (Phelan Avenue).

# APPENDIX 3:

## GLOSSARY OF TERMS

ACWS	Asphalt Concrete Wearing Surface
ABAG	Association of Bay Area Governments
BBATF	BART Bicycle Accessibility Task Force
BAAQMD	Bay Area Air Quality Management District
BAC	Bicycle Advisory Committee
BART	Bay Area Rapid Transit
BAFUL	Bicycles Allowed Full Use of Lane
BATA	Bay Area Toll Authority
BFU	Caltrans Bicycle Facilities Unit
BOS	Board of Supervisors
BTP	Bicycle Transportation Plan
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CTCDC	California Traffic Control Device Committee
CVC	California Vehicle Code
CMA	Congestion Management Agency
DPT	Department of Parking and Traffic
DPH	Department of Public Health
DPW	Department of Public Works
EMS	Emergency Medical Services Division
EIR	Environmental Impact Report
GGBHTD	Golden Gate Bridge Highway and Transportation District
GGNRA	Golden Gate National Recreation Area
GGT	Golden Gate Transit
GIS	Geographic Information System
HDM	Caltrans Highway Design Manual
HNBD	Has Not Been Drinking
ISCOTT	Interdepartmental Staff Committee on Traffic and Transportation
ISTEA	Inter-modal Surface Transportation Efficiency Act
ITS	Intelligent Transportation System
LAB	League of American Bicyclists
LOS	Level of Service
LRV	Light Rail Vehicle
MEA	Major Environmental Analysis
MMC	Methyl Methacrylate
MPO	Metropolitan Planning Organization

MTA	San Francisco Municipal Transportation Agency
MTA CAC	Municipal Transportation Agency Citizen's Advisory Council
MTC	Metropolitan Transportation Commission
MUTCD	Federal Manual of Uniform Traffic Control Devices
Muni	San Francisco Municipal Railway
OTS	Office of Traffic Safety
OC	Oversight Committee
PCO	Parking Control Officer
PJPB	Peninsula Joint Powers Board (Caltrain)
PMS	Pavement Management System
ROW	Right-Of-Way
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
SAR	Strategic Analysis Report
SCCC	Street Construction Coordination Center
SFBC	San Francisco Bicycle Coalition
SFCTA	San Francisco County Transportation Authority
SF Environment	Department of the Environment
SFFD	San Francisco Fire Department
SFGH	San Francisco General Hospital
SFPD	San Francisco Police Department
SFRA	San Francisco Redevelopment Agency
SFUSD	San Francisco Unified School District
Sharrow	Shared Lane Pavement Marking
SR2S	Safe Routes to School
STIP	State Transportation Improvement Program
SWITRS	Statewide Integrated Traffic Records System
TC	San Francisco Traffic Code
TDA	Transportation Development ACT
TEA-21	Transportation Equity Act of the 21st Century
TFCA	Transportation Fund for Clean Air
TWG	Technical Working Group