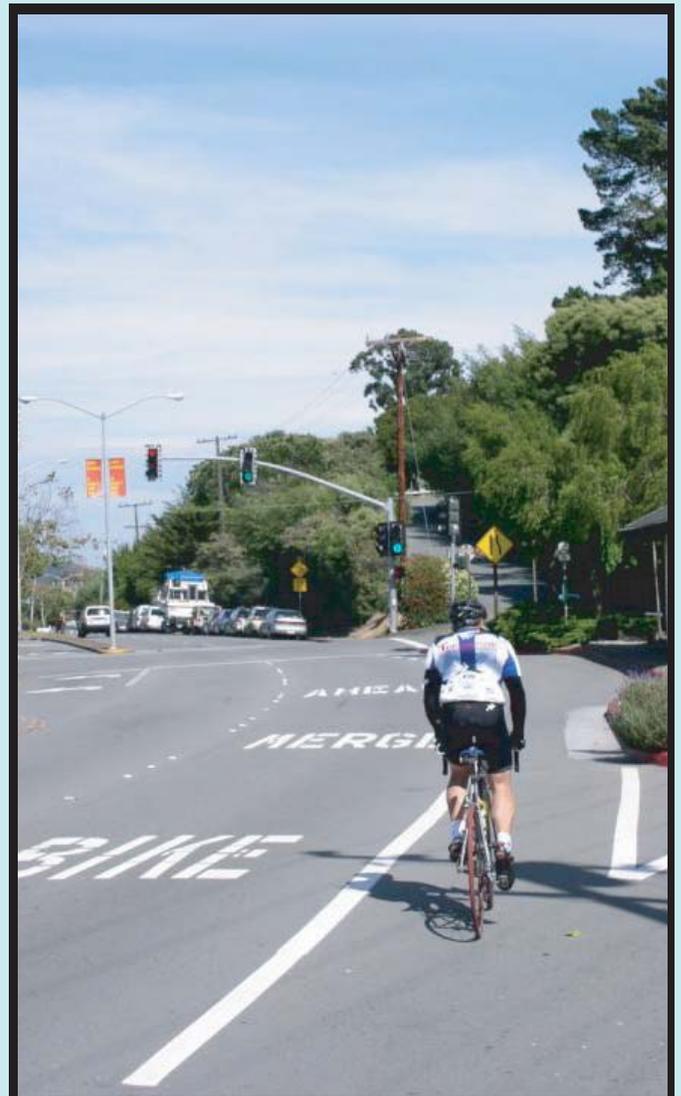


City of Sausalito

# BICYCLE MASTER PLAN

2008 Update



Prepared by

Alta Planning + Design



## **City Council**

Amy Belser, Mayor  
Paul Albritton, Vice Mayor  
Mike Kelly  
Jonathan Leone  
Herb Weiner

## **Planning Commission**

Janelle Kellman  
Bill Keller  
Stan Bair  
Cheryl Bossio  
Barry Peterson

## **Pedestrian and Bicycle Task Force**

Paul Albritton, City Council Representative  
Bill Keller, Planning Commission Representative  
Melissa Mooney, Parks & Recreation Commission Representative  
Todd Teachout, City Engineer  
Michael Fabian, Sausalito Business Community Representative  
Dorothy Gibson, Resident Pedestrian Advocate  
Allan Nichol, Resident Bicycle Transportation Advocate

## **Participating Agencies**

Carey Lando, Transportation Authority of Marin

## **City Staff**

Todd Teachout, City Engineer

## **Consultants**

Alta Planning + Design  
Michael Jones, Principal-in-Charge  
Eric Anderson, Project Manager  
Matthew Lasky, Planner  
Adrian Leung, Planner

## **Alta Planning + Design**

707 C Street  
San Rafael, California 94901  
(415) 482-8660 phone  
(415) 482-8603 fax  
[www.altaplanning.com](http://www.altaplanning.com)

## Table of Contents

---

<b>1.0 Introduction.....</b>	<b>3</b>
<b>2.0 Principles, Goals and Programs .....</b>	<b>9</b>
2.1 Principles of the Bicycle Master Plan.....	9
2.2 Goals of the Bicycle Master Plan.....	10
<b>3.0 Background &amp; Existing Conditions .....</b>	<b>16</b>
3.1 Relationship to Other Marin County Plans.....	16
3.2 Regional Bicycle and Pedestrian Plans.....	19
3.3 Relevant Legislation and Policies.....	20
3.4 Definition of Bikeways.....	21
3.5 Existing Bicycle Facilities .....	22
3.6 Bicycle Parking Facilities .....	24
3.7 Multi-Modal Connections.....	25
3.8 Existing Education and Enforcement Programs .....	28
<b>4.0 Needs Analysis.....</b>	<b>31</b>
4.1 Land Use Demand.....	36
4.2 Commuter and Recreational Bicycle Needs .....	38
4.3 Crash Analysis .....	43
<b>5.0 Proposed System &amp; Improvements .....</b>	<b>46</b>
5.1 Creating a Bikeway System.....	46
5.2 Proposed Bikeway Improvements .....	47
Bridgeway Bikeway North.....	51
North-South Recreational Bikeway.....	52
Open Space Access Bikeways.....	54
Bicycle Parking and Other Support Facilities .....	55
Enforcement, Education and Maintenance Programs.....	57
Community and Employer Outreach.....	59
Shoreline Public Pathway.....	62
Fort Baker Shuttle Service.....	62
Bridgeway Bikeway South .....	63
North-South Recreational Bikeway.....	65
<b>6.0 Implementation Strategy.....</b>	<b>64</b>
6.1 Implementation of Bikeway Projects.....	64
6.2 Cost Breakdown.....	64
6.3 Maintenance.....	65
6.4 Funding Opportunities .....	67

### List of Figures

---

Figure 1-1 Existing and Proposed Bikeways.....	8
Figure 3-1 Class I, II, and III Bikeways.....	22
Figure 3-2 Class II Bike Racks.....	26
Figure 3-3 Example Class II Rack Styles.....	27
Figure 3-4 Proportions Favoring Various Proposals.....	33

Figure 3-5	Proportions Favoring Various Transportation Proposals.....	34
Figure 3-6	Frequency of Use For Transportation Proposals.....	35
Figure 4-1	Sausalito Zoning Map.....	37
Figure 4-2	City of Sausalito Bicycle Crashes (2003-2008).....	45
Figure 5-1	Buffered Bike Lane.....	64

**List of Tables**

---

Table 3-1	Jurisdictions with Bicycle/Pedestrian Master Plans.....	18
Table 3-2	BTA Compliance Checklist.....	20
Table 3-3	Existing Bikeways.....	23
Table 3-4	Sausalito Safe Routes to Schools Programs.....	30
Table 4-1	Sausalito Commute Mode Split.....	40
Table 4-2	Bicycle Commute and Air Quality Projections.....	42
Table 5-1	Proposed Bikeways.....	49
Table 6-1	Proposed Bikeways Cost Estimates.....	66

**Appendices**

Appendix A	Supplemental Bicycle Facility Design Guidelines.....	A-1
------------	--	-----

## 1.0 Introduction

Surrounded by the spectacular San Francisco Bay and hills of the Marin Headlands, Sausalito enjoys one of the finest settings of any city in California. Residents of Sausalito have access to the Golden Gate National Recreation Area, the numerous parks and open space areas of Marin, the Pacific Coast and San Francisco Bay, as well as the City of San Francisco and its commercial and cultural amenities.

Strategically located on the southern tip of Marin County, just across the Golden Gate Bridge from San Francisco, Sausalito is the gateway to Marin County and the North Bay for bicycles. The City is connected to other regional centers through ferry service, provided by the Golden Gate Ferry and the Blue and Gold Fleet, as well as Golden Gate Transit. Significantly, Sausalito is a major regional and international visitor destination and is one of the major tourist attractions in the Bay Area, primarily by visitors coming from San Francisco by ferry, bus, or vehicle.

Historically life in Sausalito has centered around the small commercial districts along Bridgeway and Caledonia Street, plus the former shipyards along the waterfront now turned into commercial and office uses.

Why does Sausalito need a Bicycle Master Plan? One reason is the high and growing demand for cycling along the north-south corridor in the City. Another is the importance of establishing Sausalito as a transportation junction to all modes of travel and improving its facilities as the gateway to bicycle transportation in the North Bay for commuters and visitors. Simply put, one of the top positive attributes of Sausalito identified by visitors is the town's walkable and rideable scale. In order to encourage visitors to walk or bike to and from Sausalito (rather than drive), the bicycling and walking environment in Sausalito must be enhanced. Having a planning document that identifies facility priorities will enable the City to create an attractive and usable infrastructure.

Another reason is the enjoyment and quality of life for the residents of Sausalito. Since walking and bicycling are some of the most popular forms of recreational activity in the United States (with 84% walking and 46% of Americans bicycling for pleasure), we can assume that about 6,000 residents in Sausalito walk and 3,300 bicycle purely for pleasure at least occasionally.

Safety is a primary reason to improve bicycling conditions in Sausalito. Concerns about safety are the single greatest reason people don't commute by bicycle, according to a 1991 Lou Harris Poll. Addressing those concerns for bicyclists through physical and program improvements is another major objective of the Master Plan.

Finally, decreasing energy supplies and the increasing cost of gasoline are a critical factor that adds particular urgency to the need for bicycle improvements. As energy costs continue to rise, commuters will turn to more energy-efficient and less costly means of transportation such as bicycling and transit. Sausalito must be ready to meet those needs.

## **There are Four Issues that Sausalito must address to become a Bicycle Friendly City**

Safety, access, quality of life, and effective implementation are imperative elements for Sausalito's success as a bicycle-friendly city.

**Safety** is the number one concern of citizens, whether they are avid or casual recreational cyclists or bicycle commuters. In some cases, bicyclists can use back streets and pathways to avoid traffic on Bridgeway. However, a consistent bicycle network with either bike lanes or wider curb lanes and improved pavement surface, and signing and stenciling is generally lacking in the city. In many instances historic design decisions have been made to increase vehicular traffic and/or parking capacity and speeds at the expense of bicyclists.

**Access** for bicyclists to shopping, work, recreation, school, and other destinations is somewhat hampered by traffic volumes and constrained travel lanes on Bridgeway. Movement along Bridgeway is hampered by the sheer volume of traffic (especially during the summer season) even at signalized intersections.

This Plan takes measurable steps toward the goal of improving every Sausalito citizen's **Quality of Life**, creating a more sustainable environment, reducing traffic congestion, vehicle exhaust emissions, noise, and energy consumption. The importance of developing a bicycle system that is attractive and inviting is a key element in preserving Sausalito as a city where people want to live, work, and visit. The attractiveness of the environment not only invites bicyclists to explore Sausalito, but more importantly, a beautiful environment helps to improve everyone's positive feelings about the quality of life in Sausalito.

Education, enforcement, engineering, and funding are the basic components of an **Effective Implementation** Program for this Master Plan. Education must be targeted to the bicyclist as well as to the motorist regarding the rights and responsibilities of the bicyclist, pedestrian, and automobile driver. Comprehensive enforcement of existing traffic and parking laws, coupled with the implementation of sound design and engineering principles for bike corridors is also critical. This plan also proposes systematic review of all new development projects, including public works efforts, to

assure compliance with planning and building codes and the principles of this Master Plan. Finally, this plan proposes an aggressive strategy for obtaining grants and competing for other funding sources in order to realize the physical improvements identified as the highest priorities.

## **Community Participation**

Sausalito City Council Resolution 4489 created the first official Pedestrian and Bicycle Task Force to develop the 1999 *Sausalito Bicycle Master Plan* as an implementation tool of the *Sausalito General Plan – Circulation and Parking Element* (1997). The task force was reauthorized on 6/12/2007 to 6/30/2010 per City Council Motion and tasked with updating the 1999 Plan. The task force met four times from February through June of 2008 to discuss and complete updates to this Plan. Meetings were agendized and noticed by Town Staff and were open to the public. In addition, public input was received at three countywide public meetings, the Southern Marin Countywide Bicycle and Pedestrian Master Plan Update Public Workshop (held Thursday, November 2, 2006 from 7:00 to 9:00 PM at the Mill Valley Community Center, Mill Valley) and two Nonmotorized Transportation Pilot Program Public Workshops (held Thursday November 29, 2006 at the Embassy Suites Hotel, San Rafael and Monday March 12, 2007 at the San Rafael Community Center, San Rafael).

## **Expected Benefits of the Bicycle Master Plan**

Save lives. Reduce the accident and fatality rate for bicyclists through design standards and guidelines, education, and enforcement.

Provide needed facilities and services. Meet the demand and increased use of bicycles as a means of travel around the city. See Chapter 3 for more details about existing and forecasted bicycle use.

Improve the quality of life in Sausalito. Design and build people-friendly streets, sidewalks, paths, trails, and activity centers available to everyone, and support sustainable community development. Reduce traffic congestion, vehicle exhaust emissions, and noise and energy consumption by encouraging healthier and more active forms of travel. Encourage visitors to stop and enjoy Sausalito on bicycle and foot. This will intern support the numerous businesses in Sausalito.

Maximize funding sources for implementation. Equip Sausalito to successfully compete for state and federal funding, by meeting the requirements of the California Bicycle Transportation Act and the federal Safe Accountable Flexible Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU).

## Major Recommendations of the Bicycle Master Plan

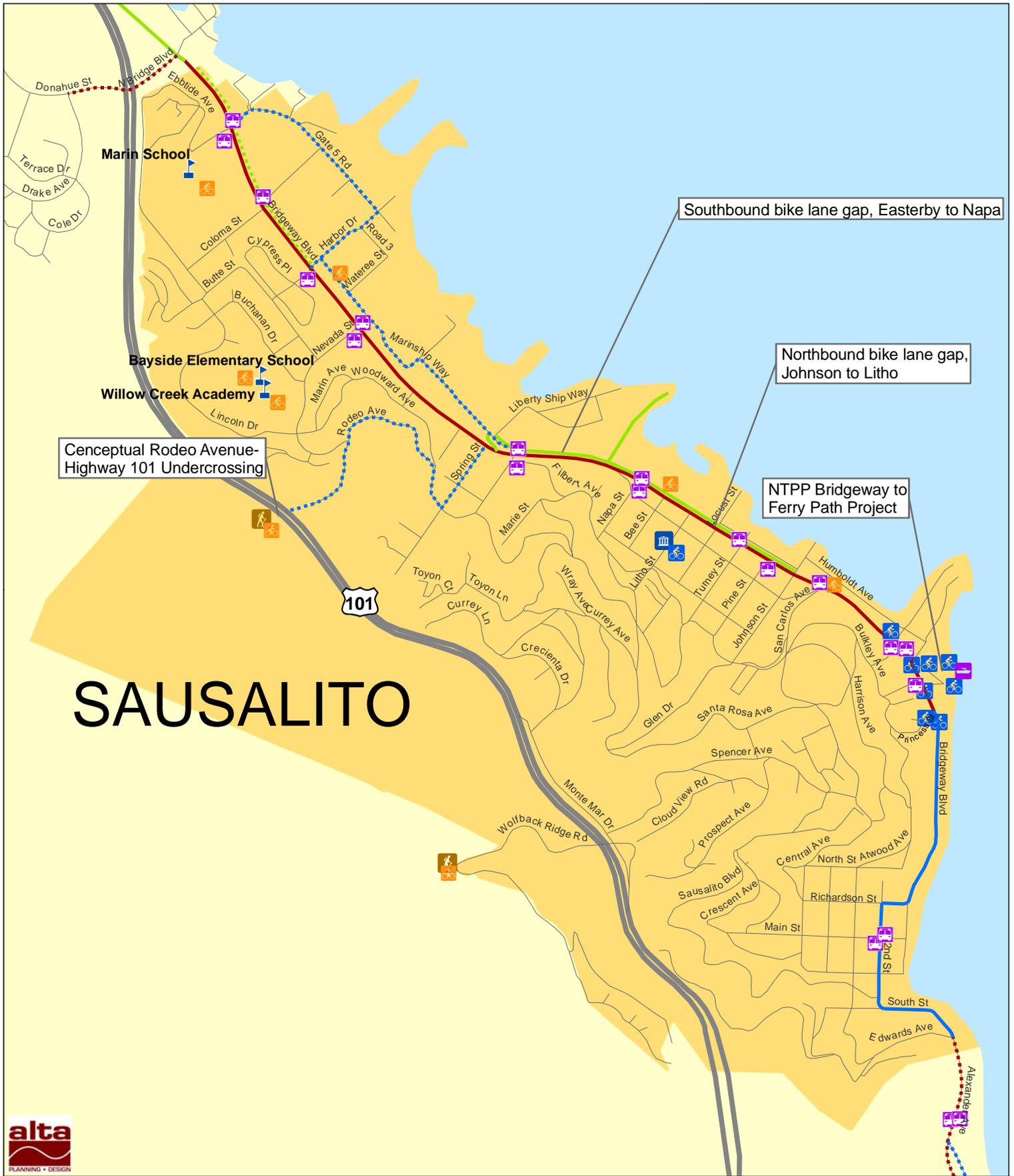
The plan identifies five short-mid term projects (years 1-10) and two mid to long term projects (years 10-20), however, the actual schedule is highly dependent on outside factors such as obtaining competitive funding. The top short-mid term projects are:

1. **Bridgeway Bicycle Lanes (Class II):** Completion of gaps in existing bike lanes, including northbound segment from Johnson to Litho and southbound segment from Easterby to Napa. (See page 48 for more details)
2. **North-South Bikeway (Class I/III):** development of an enhanced alternate bikeway from the ferry dock northward for less experienced and recreational bicyclists utilizing improved existing and new pathways and Class III bike routes on quiet side streets. (See page 49 for more details)
3. **South Sausalito Bikeway (Bridgeway/Richardson/2<sup>nd</sup>/South/Alexander):** Improvements to this important regional bike route connecting Sausalito to the Golden Gate Bridge and San Francisco. (See page 46 for more details)
4. **Enforcement, Education, and Maintenance Program:** improvements in all of these areas for both motorists and bicyclists, focusing on making Sausalito a bicycle-friendly community, and improving safety especially on those constrained corridors where bicyclists and motorists must share the roadway. (See page 55 for more details)
5. **Bicycle Parking:** improvements to bicycle parking and other support facilities in Sausalito for both recreational and commuter bicyclists, including changes to the zoning code and adopted design standards. (See page 53 for more details)

Mid to long term projects to be implemented over the next 20 years include:

1. **Shoreline Pathways:** development of a shoreline pathway along the northern waterfront over time as the area redevelops, providing for a shared pedestrian and bicycle facility. (See page 61 for more details)
2. **Fort Baker Shuttle:** work with the Golden Gate National Recreation Area to develop a shuttle system between Fort Baker and Sausalito that, aside from reducing the number of automobiles in Sausalito, can be used by bicyclists as needed to bypass the most constrained portions of Bridgeway and Alexander Avenue. This shuttle is intended as a supplement to the urgently needed bikeway improvements described in this plan. (See page 62 for more details)
3. **Bridgeway Bikeway South – Long-term Alternative:** work with the Golden Gate National Recreation Area, the County of Marin and other agencies to develop a continuous separated Class I pathway from the Golden Gate Bridge to Sausalito. (See page 63 for more details)

The plan also recognizes the need to further explore alternative solutions to the physically constrained corridor south of the downtown which experiences significant amounts of both motorist and bicyclist traffic. Potential alternative solutions are discussed in later chapters of this report. However, no specific project is proposed at this time as the funding and manpower requirements for design study, environmental analysis, public hearing and construction far exceed the resources of the City at this time. The City anticipates that the development of any such alternative will require cooperative funding efforts with other regional agencies, such as the GGNRA and/or the County of Marin.



# SAUSALITO



## SAUSALITO BICYCLE PLAN EXISTING AND PROPOSED BIKEWAYS



DATA SOURCE  
MARINMAP



Bikeways		
Existing	Proposed	Trailheads
		Schools
		City Hall
		Bus Stops
		Ferry
Bicycle Parking		
	Existing	
	Proposed	

## **2.0 Principles, Goals and Programs**

The Bicycle Master Plan has been created through the diligent efforts of the City, its Pedestrian and Bicycle Task Force, and citizens interested in improving the bicycling environment in Sausalito. Without the sustained efforts of these people, this Plan would not have been conceived and written.

### **2.1 Principles of the Bicycle Master Plan**

This Bicycle Master Plan provides a tool by which to plan, design, implement, and maintain bicycle infrastructure in Sausalito. This Plan serves to identify existing and future needs, and provide specific recommendations for bicycle facilities and programs over the next 20 years. The goals and implementation programs of this Plan have been developed at the direction of the Bicycle Safety Task Force, an appointed group of local citizens and business representatives, bicycle advocates, and various professional staff, and with public input provided through surveys, workshops, study sessions, and public hearings before the Sausalito City Council and Planning Commission. To effectively implement this Plan, the following principles have been, and will continue to be, implemented for the life of the Plan:

- 1** The Plan shall be consistent with all existing City, regional, State, and Federal policy documents, and consistency between the Plan and other General Plan Elements shall be required.
- 2** The Plan shall be updated on a regular basis, consistent with CalTrans and General Plan standards.
- 3** Community participation in the planning and implementation of the bicycle system and updates of the Plan shall be encouraged through local coordination with City staff and the public hearing process.
- 4** Community involvement in the planning process shall be maximized through workshops, surveys and coalitions with businesses the bicycle system serves as well as local clubs and organizations.
- 5** The City Engineer shall serve as the City Bicycle Coordinator to: (a) maximize coordination between Sausalito and neighboring jurisdictions on issues of mutual concern; (b) provide support and information to the public; (c) act as a liaison to the City Council and appointed Boards and Commissions; (d) act as a liaison to local bicyclists, the media, and the community in general; (e) review and/or complete funding applications; and (f) provide inter-departmental coordination.

## 2.2 Goals of the Bicycle Master Plan

Goals provide the context for the specific policies and recommendations discussed in the Bicycle Master Plan. The goals provide the long-term vision and serve as the foundation of the plan. The goals are broad statements of purpose that do not provide details, but show the plan's direction and give overall guidance. Programs provide a bridge between general goals and actual implementation guidelines, which are provided in the Implementation chapters.

The following Goals and Programs are intended to guide bicycle planning, design, and implementation.

### **Goal 1.0 Plan and implement bicycle improvements in Sausalito.**

Programs:

- 1.1 Prioritize the implementation of bicycle improvements that are already funded.
- 1.2 Implement, and maintain a Bicycle Master Plan which identifies existing and future needs, and provides specific recommendations for facilities and programs over the next 20 years.
- 1.3 Update the Plan on a regular basis (consistent with Caltrans/General Plan standards).
- 1.4 Ensure that the Plan is consistent with all existing City, regional, state, and Federal policy documents, and encourage consistency between the Plan and other General Plan elements.
- 1.5 Encourage development concepts (such as mixed use projects) that have as a goal the reduction of the dependency on the automobile for short commute, shopping, and recreational trips.
- 1.6 Maximize coordination between Sausalito and neighboring jurisdictions using a designated City staff person or persons as a means to review and comment on issues of mutual concern.
- 1.7 Work with private property owners to secure easements for bicycle access through parking lots along the waterfront where appropriate, feasible and safe for all users.
- 1.8 Work with TAM or other countywide agency to identify support staff for local cities and towns in Marin, such as a Countywide Bicycle Coordinator.

**Goal 2.0      Involve the community in the planning and implementation of the bicycle system by encouraging public participation through local coordination with City staff.**

Programs:

- 2.1 Identify a designated City staff person or persons whose responsibility it is to (a) provide support to the public, (b) act as a liaison to the City, (c) act as a liaison to local bicyclists, the media, and the community in general, (d) review and/or complete funding applications, and (e) provide inter-departmental coordination.
- 2.2 Public involvement in the planning process should be maximized through workshops, surveys and other means.
- 2.3 Build coalitions with businesses the bicycle system serves as well as local clubs and organizations.

**Goal 3.0      Build upon and enhance the existing bikeway system, programs, and resources in Sausalito.**

Programs:

- 3.1 Identify existing and proposed bike paths, lanes, and routes and develop a citywide system to maximize use to the extent feasible.
- 3.2 Encourage the use of existing natural and manmade opportunities such as shorelines and abandoned railroad right-of-ways for future bike path alignments.
- 3.3 Identify existing bicycle education programs and target future expansion as need warrants.
- 3.4 Study the feasibility of extending the Sausalito-Mill Valley multi-use pathway into downtown Sausalito as an alternative to Bridgeway.
- 3.5 Create an enjoyable, safe, scenic walk and leisurely bike path, close to the waterfront from Main Street to the northern limits of Sausalito, as an alternative route to Bridgeway.

**Goal 4.0:      Develop a city-wide bicycle system which meets the needs of commuter and recreational users, helps reduce vehicle trips, and links residential neighborhoods with local and regional destinations.**

Programs:

- 4.1 Develop a commuter system which provides direct routes between residential neighborhoods and regional employment centers, transit/ferry stops/stations, and schools.

- 4.2 Develop a recreational system which uses lower traffic volume streets, off-street bike paths, and serves regional historic and natural destinations, including trailheads, wherever possible.
- 4.3 Develop a citywide system that is accessible from any residential neighborhood in Sausalito, and provides opportunities for local connections to the citywide system.
- 4.4 Develop a bicycle network which balances the need for directness with concerns for safety and user convenience. Where needed, develop a dual system which serves both the experienced and inexperienced bicyclist, and separates bicyclists, pedestrians, other recreational users and cars.
- 4.5 Consider opportunities for including bicycle lanes on streets where curb-to-curb width, traffic volumes, parking demand, and service to major activity centers are appropriate.
- 4.6 Use and supplement design guidelines to outline development standards for bike lanes and paths to encourage a safe and inviting environment.
- 4.7 Create connections between bike lanes, pedestrian nodes, and other transportation nodes.
- 4.8 Using landscaping, public art and other methods, create inviting places (plazas, lookouts and other bicycle destinations) and public service amenities such as toilets and water at key destinations such as along Sausalito's Waterfront.

**Goal 5.0: Maximize multi-modal connections to the bicycle system.**

Programs:

- 5.1 Ensure that the citywide system (including bike racks and lockers) is integrated into existing transit/ferry stops/stations and services in Sausalito.
- 5.2 Work with Golden Gate Transit to install bike lockers and racks where possible, and to install/maintain bike racks on buses.
- 5.3 Permit bike rental opportunities at the ferry terminal and other locations where visitors are entering Sausalito.

**Goal 6.0: Improve bicycle safety conditions in Sausalito.**

Programs:

- 6.1 Monitor bicycle-related accident levels regularly, and target a 40 - 50% reduction on a per capita basis over the next twenty (20) years.

- 6.2 Provide comprehensive bicycle education and safety program to all school children in Sausalito through the TAM Safe Routes to Schools program.
- 6.3 Develop a system for identifying, evaluating, reporting and responding to maintenance and safety problems on the existing bikeway system.
- 6.4 Incorporate bicycle safety curriculum into existing motorist education and training.
- 6.5 Coordinate with the Sausalito Police Department to determine strategies of education and enforcement and participate in the Marin County Bicycle Coalition's Share the Road program.
- 6.6 Evaluate existing traffic controls (Stop signs, crosswalks, walk cycles) to ensure that adequate facilities are being provided in Sausalito.
- 6.7 Utilize local police bike patrol units to monitor bikeways and enforce bicycle-related laws and educate the community on safe and proper bicycle use.

**Goal 7.0      Develop and prioritize detailed improvements in the Bicycle Master Plan that target those areas with the highest need and benefits.**

Programs:

- 7.1 Identify the top five (5) bicycle improvements to be completed in the short term based on a variety of objective and subjective criteria, including number of activity centers served, closure of critical gaps, immediate safety hazards, existing bicycle use, and input from the public and staff.
- 7.2 Develop detailed implementation information on each recommended segment, including length, classification, adjacent traffic volumes and speeds, environmental impact, activity centers served, cost, and overall feasibility.
- 7.3 Design and construct all improvements according to Caltrans Chapter 1000 of the Highway Design Manual and established national standards and best practices.
- 7.4 Complete feasibility studies for all priority proposed bicycle facilities in order to determine accurate cost and other implementation information.
- 7.5 Develop education and maintenance programs which may be adopted by local jurisdictions.
- 7.6 As funding permits, conduct regular bicycle counts and other data collection as a means of documenting bicycle use and prioritizing improvements to maximize benefits of transportation investments.

**Goal 8.0 Identify bicycling as a significant transport mode and develop coordinated strategies to develop support facilities and programs in Sausalito that support bicycling.**

Programs:

- 8.1 Contribute to a bikeway map for public distribution that shows existing and recommended bicycle routes.
- 8.2 Sponsor annual bicycle, running, and hiking events such as Bike to Work Day and adult safety courses in conjunction with regional efforts.
- 8.3 Promote use of bicycles as a safe and convenient alternative mode of transportation.
- 8.4 Amend parking ordinance to require adequate and appropriately located bicycle parking to meet demand.
- 8.5 Develop a unique and distinctive logo for the Sausalito Bikeway System and locate on citywide system along with appropriate directional and warning signs.

**Goal 9.0 Maximize the amount of state and federal funding for non-motorized improvements that can be received by Sausalito.**

Programs:

- 9.1 Identify current regional, state, and federal funding programs, along with specific funding requirements and deadlines.
- 9.2 Encourage multi-jurisdictional funding applications.
- 9.3 Develop a prioritized list of improvements along with detailed cost estimates, and identify appropriate funding sources for each proposal.
- 9.4 Include non-motorized improvements in the City's Capital Improvement Plans.
- 9.5 Develop mitigation standards for all major residential and commercial development projects to provide bicycle improvements or a donation into a transportation improvement fund based on a viable nexus.
- 9.6 Encourage private and corporate donations and grants that may be used to support non-motorized facilities and programs.

**Goal 10.0 Implement the proposed bicycle system and provide comprehensive maintenance to the existing system.**

Programs:

- 10.1 Examine the adopted land use element to determine areas of potential growth and development in the City. Be aware of development projects that are submitted for review and examine possible impacts these developments might have along existing and proposed bicycle corridors, and require dedication of land and development of project when feasible.
- 10.2 Create incentives for use of alternative modes of transportation during review of new development projects.
- 10.3 Enforce the adopted General Plan 10' "special setback" along South Street from 2<sup>nd</sup> to Alexander where opportunities for widening to improve bicycle conditions is needed.
- 10.4 Permit the use of Travel Demand Management (TDM) programs for employment sites of more than 20 employees to mitigate traffic impacts. Voluntary TDM programs for all employers should be encouraged.
- 10.5 Undertake routine maintenance of bikeway facilities, such as sweeping bicycle lanes and sidewalks and removing vegetation which impinges on bikeways. Provide a means for the public of notifying the City of routine maintenance needs.
- 10.6 Conduct an annual review and evaluation of bicycle and pedestrian facilities such as condition of striping, signing and surfaces. Remedy as-needed and seek funding for such major maintenance.
- 10.7 Ensure that repair or construction of any transportation facility minimizes disruption to the cycling environment and that safe, direct alternate routes are designated prior to start of construction, with signs notifying motorists of the presence of bicycles and/or pedestrians in the area.
- 10.8 Ensure that repair or construction of any transportation facility does not result in the permanent removal or downgrading of an existing bicycle facility.

**Goal 11.0 Develop a downtown bicycle corridor and promote downtown Sausalito as a bicycle friendly tourist destination**

Programs:

- 11.1 Provide bicycle access through Downtown and to the waterfront.
- 11.2 Utilize traffic calming devices to enhance the safety, accessibility and internal movement for bicyclists.
- 11.3 Encourage the bicycle rental businesses in the downtown.
- 11.4 Maximize the amount of bicycle support facilities in the downtown available to residents and visitors.
- 11.5 Recognize the significance of agencies such as the Chamber of Commerce to help encourage bicycle tourism and promote Sausalito's bicycle amenities for visitors.

## 3.0 Background & Existing Conditions

### 3.1 Relationship to Other Marin County Plans

The studies or planning efforts listed below have been reviewed and consulted, studied for consistency, and where appropriate, incorporated into the Sausalito plan update.

#### **Nonmotorized Transportation Pilot Program (NTPP)**

Marin County is one of four communities nationally that has been selected by Congress to participate in a Nonmotorized Transportation Pilot Program (NTPP) and receive \$20 million for improvements for walking and bicycling. The funds were allocated through Section 1807 of SAFETEA-LU, the six-year federal transportation funding bill adopted in 2005. The purpose of the pilot program is to demonstrate “the extent to which bicycling and walking can carry a significant part of the transportation load, and represent a major portion of the transportation solution, within selected communities.

The County Department of Public Works, as local administrator of the NTPP, conducted an extensive outreach process in conjunction with this plan update to solicit project and program ideas. Through a screening and ranking process, the Board of Supervisors adopted a funding plan for all of the NTPP funds in April, 2007. The selected projects and programs will be implemented over the course of the Pilot, which concludes in 2010. A summary of funding projects in Sausalito is found below:

- **Bridgeway to Ferry Path:** \$200,000 of capital funding to design and build a pedestrian and cycling path to connect Bridgeway to the Sausalito Ferry Terminal, currently separated by a large parking lot.
- **Bridgeway Path:** \$100,000 of planning funds for a feasibility study of a proposed Class I pathway from Gate 6 Road to the Sausalito Ferry Terminal as an alternate to the Bridgeway bicycle lanes.
- **Personal Travel Planning:** \$320,000 of program funding to implement an individualized marketing approach to encourage residents to shift from drive-alone trips to healthier trips on foot, by bike or on transit. More details are provided in Chapter 4.
- **Countywide projects:** Sausalito is also eligible to apply for funding from each of four countywide project categories, listed below:
  - o Bicycle Parking - \$533,000
  - o Signing/Striping (Class II bike lanes, Class III bike routes including signs and stencils) - \$536,000
  - o Intersection Improvements (safety improvements) - \$922,000
  - o Steps, Lanes, Paths (stairways, pedestrian pathways and connections) - \$1,634,000 (total available funding). Sausalito has been awarded \$340,000 in Steps, Land and Paths grant funding to construct the following projects selected from a list prioritized by the Sausalito City Council:

- Sausalito/Prospect (\$195,000)
- Cazneau Steps (\$145,000)

### **Southern/Central Marin Transit Study (Proposed, 2008)**

This proposed study is designed to produce, in the areas of the county not served by the proposed SMART system, a plan for improving the way ferry and trunk line US 101 bus service operated by Golden Gate Transit (GGT) works in conjunction with local connecting services operated by Marin Transit. The study is intended to examine speed and efficiency improvements (such as BRT-“Light”) to both trunk line and connector services and improvements to the physical connections between the two, including the best location and conceptual design of a Southern Marin transit “hub.”

As reported in January of 2008, the study budget is proposed to be \$250,000. Included in this will be \$25,000 each from study partners GGT and Marin Transit. The remainder of the budget will be furnished from available S.T.I.P. Planning, Programming and Monitoring funds.

The study may also include consideration of a trolley system to link Southern Marin communities. Sausalito, Mill Valley and the County have each contributed \$5,000 to include study of a trolley system. As currently envisioned, the electric trolley would run on tracks that would be built into the road and flow with car traffic.

### **Imagine Sausalito (2007)**

Imagine Sausalito is a planning effort that was undertaken as a special project of the Sausalito Business Visioning Advisory Committee, an official committee which advises the City Council. This project convened a number of ad-hoc committees and groups, including the Pedestrian and Bike Vision Sub-Group. This group met several times throughout 2006 and 2007 to discuss the vision for walking and biking in Sausalito. Overall goals and policies were identified as well as specific needs for studies, physical improvements and programs. These concepts were folded into the Bicycle Master Plan, as appropriate.

### **Marin County Transit District Short-Range Transit Plan (2006)**

The Marin County Transit District Short Range Transit Plan (SRTP) includes a complete assessment of the current Marin County transit system and its riders, as well as an identification of transit needs and alternative ways to meet those needs. The goal of the plan is to develop a financially sustainable transit system for Marin County that maximizes productivity and mobility for everyone who travels within the County. A majority of Measure A Transportation Sales Tax revenues fund local transit service. Per Measure A requirements, this plan will be updated every two years. In terms of bicycle access to transit, the plan includes a statement that higher capacity bicycle racks are recommended for new buses. This plan also includes bus stop amenity standards, which include the provision of appropriate bicycle storage and/or parking at all high use transit stops with usage of over 100 passengers per day.

## **Marin County Unincorporated Areas Bicycle and Pedestrian Master Plan Update (2008)**

This plan was completed for the Marin County Department of Public Works in 2001 and updated in 2006-2008. The plan outlines improvements to the unincorporated areas of the County of Marin and includes routes of countywide and regional significance, including the North-South Bikeway through Sausalito as well as highlighting key improvements from the incorporated communities of Marin.

### **Local Bicycle and Pedestrian Master Plans**

The following jurisdictions have adopted bicycle or bicycle/pedestrian master plans which are being updated concurrently. Special consideration has been given to locations where countywide and regional facilities cross jurisdictional boundaries in order to coordinate improvements among multiple jurisdictions.

Table 3.1-Jurisdictions with Bicycle/Pedestrian Master Plans Being Updated

<b>Community</b>	<b>Year of Plan Adoption</b>
Novato	2007
Sausalito	1999/2008
Tiburon	2001/2008
Corte Madera	2001/2008
Fairfax	2001/2008
San Anselmo	2001/2008
San Rafael	2002/2008
Larkspur	2003/2008
Mill Valley	2003/2008
Larkspur	2007/2008
Ross	2008
Unincorporated Marin County	2008

### **Marin County North-South Bikeway Feasibility Study (1994)**

The purpose of the Marin County North-South Bikeway Feasibility Study was to identify and develop a safe and efficient north-south bikeway from the Golden Gate Bridge to the Sonoma County line, generally following the old Northwestern Pacific Railroad right-of-way. The Study was never officially adopted. The Plan's recommendations included development of a long-term "North-South Greenway" alignment along the Northwest Pacific Railroad right-of-way through much of the County. However, the Study recognized the short-term difficulties in this alignment due to the intended use of the right-of-way for transit, cost, rebuilding of tunnels, and private site development. Thus it also recommended a short-term alignment that runs mostly along existing streets and paths, with improvements in signing, striping, and pavement.

### **Marin County Bicycle Plan (1975)**

In 1975, Marin County's Board of Supervisors adopted a document entitled "A Bikeway Policy for Marin County," which emphasized the need for safe accommodation for bicycling in all public streets and roads." The policies called for the County to design

new road construction and repair projects to safely accommodate bicycles, integrate bicycle planning into transportation planning and construction, provide recreational bikeways, develop uniform standards for bikeway design, support bicycle safety education, and rules.

The 1975 Plan called for the delineation of over 400 miles of bike routes, the provision of bicycle parking at locations with an apparent demand for such facilities, a bicycle educational and safety program be initiated in all elementary schools, and the introduction of a bicycle registration program to help recover stolen bicycles. The total cost of the Plan was estimated at \$3.5 million.

### **Countywide Bicycle Route Guide Signage Project (in progress)**

As proposed in the 2001 County bicycle plan, the Marin County Department of Public Works has developed and is in the process of implementing a numbered countywide Bicycle Route Guide Signage Project. The system will guide riders around the county between destinations, providing direction and destination information at decision points. As of this writing, signs had been installed throughout the County with the exception of Novato where the process of surveying for and installing signs is underway.

## **3.2 Regional Bicycle and Pedestrian Plans**

### **Regional Bicycle Plan (2001, Metropolitan Transportation Commission)**

The Metropolitan Transportation Commission's 2001 Regional Bicycle Plan is a component of the 2001 Regional Transportation Plan for the San Francisco Bay Area, which establishes the region's 25-year transportation investment plan. The plan identifies a bikeway network over 1,600 miles in length, which includes all 400 miles of the Bay Trail, the multiuse pathway that will ultimately ring San Francisco Bay. The creation of the Regional Bicycle Network will provide better access to the region's transit network and activity centers, as well as serving the goal of encouraging greater use of the bicycle as a transportation mode.

### **The Bay Trail Plan (1989)**

The Bay Trail Project is a nonprofit organization administered by the Association of Bay Area Governments (ABAG) that plans, promotes and advocates for the implementation of a continuous 500-mile bicycle, pedestrian, multi-use path around San Francisco Bay. When complete, the trail will pass through 47 cities, all nine Bay Area counties, and cross seven toll bridges. To date, slightly more than half the length of the Bay Trail alignment has been developed. The Bay Trail designated a 'spine' for a continuous through-route around the Bay and 'spurs' for shorter routes to Bay resources. The goals of the Plan include providing connections to existing park and recreation facilities, creating links to existing and proposed transportation facilities, and preserving the ecological integrity of the Bays and their wetlands. Major Marin sections that have been completed include the Tiburon Bicycle Path, the Mill Valley-Sausalito Bicycle Path, the Corte Madera-Larkspur Bay Trail and sections of the San Rafael Shoreline Park Pathway.

### 3.3 Relevant Legislation and Policies

The Federal Safe Accountable Flexible Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU) provides bicycle and pedestrian funding opportunities including funding for the Nonmotorized Transportation Pilot Program.

On a state level, according to the California Bicycle Transportation Act (1994), all cities and counties should have an adopted bicycle master plan. The Caltrans BTA requirements – and how this Plan complies with them for Marin County – are detailed in **Table 3-1 California Bicycle Transportation Act (1994) Requirements** below. The *Caltrans Highway Design Manual* contains specific, mandatory design requirements for facilities recommended in those plans. The basic design parameters of on-street and off-street bicycle facilities are defined in ‘Chapter 1000: Bikeway Planning and Design’ of the Manual. In addition to BTA and design requirements, Caltrans Deputy Directive 64 (DD-64) also applies to projects within Caltrans jurisdiction or funded by Caltrans moneys. The document states: "The Department fully considers the needs of non-motorized travelers (including pedestrians, bicyclists and persons with disabilities) in all programming, planning, maintenance, construction, operations and project development activities and products."

Table 3-2- BTA Compliance Checklist

BTA 891.2	Required Plan Elements	Location Within the Plan
(a)	The estimated number of existing bicycle commuters in the plan area and the estimated increase in the number of bicycle commuters resulting from implementation of the plan.	Table 4-2 (p. 42)
(b)	A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, and major employment centers.	Figure 4-4 (p. 37)
(c)	A map and description of existing and proposed bikeways.	Figure 1-1 (p. 6)
(d)	A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.	p. 24
(e)	A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals.	p. 25
(f)	A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.	p. 61-62, p. 67
(g)	A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code.	Section 5.2
(h)	A description of the extent of citizen and community involvement in development of the plan.	p. 63-64

(i)	A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans.	Section 3.1 – 3.3
(j)	A description of the projects proposed in the plan and a listing of their priorities for implementation.	Section 5.2 and 6.1
(k)	A description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area.	Table 6-1 Section 6.1 - 6.3

The Metropolitan Transportation Commission (MTC) is the regional transportation funding agency in the San Francisco Bay Area and requires that pedestrian and bicycle facilities be routinely considered in roadway projects. In 2006, MTC passed Resolution #3765 which states that “Projects funded all or in part with regional funds (e.g. federal, STIP, bridge tolls) shall consider the accommodation of non-motorized travelers, as described in Caltrans Deputy Directive 64.” MTC Resolution 875 details requirements for Bicycle Advisory Committees in the development and updating of local bicycle plans and the prioritization of TDA Article 3 funding.

### 3.4 Definition of Bikeways

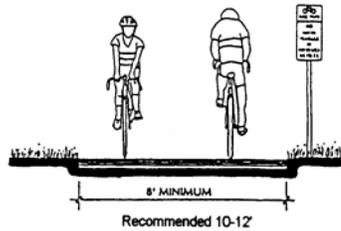
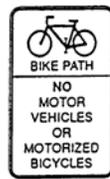
Bikeways are described by Caltrans in Chapter 1000 of the Highway Design Manual as being one of three basic types (see Figure 2-1).

**Class I Bikeway** Variously called a bike path or multi-use trail. Provides for bicycle travel on a paved right of way completely separated from any street or highway.

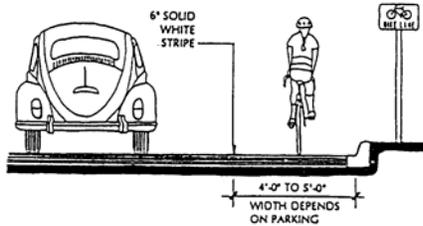
**Class II Bikeway** Referred to as a bike lane. Provides a striped and stenciled lane for one-way travel on a street or highway.

**Class III Bikeway** Referred to as a bike route. Provides for shared use with pedestrian or motor vehicle traffic and is identified only by signing and sometimes “Shared Roadway Bicycle Marking” stencils.

### BIKE PATH



### BIKE LANE



### BIKE ROUTE

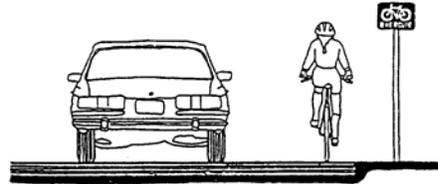


Figure 3-1: Class I, II and III Bikeways

## 3.5 Existing Bicycle Facilities

The City has a history of major capital investments in bicycle infrastructure. In 2003 the City completed the Bridgeway bicycle lanes project, which cost approximately \$1.5 million. The City paid approximately 15 percent of the total cost, and the rest was paid for with various grants, including funding in connection with the Bay Trail project. Additional investments have been in the form of development and maintenance of bicycle facilities as part of road improvement or other larger projects or developments.

The existing Sausalito bikeway system is shown in Table 3-2 and consists of a total of approximately 3.63 miles of bikeways, including .85 miles of multi-use pathway located next to Bridgeway, 2 miles of Class II Bicycle Lanes along Bridgeway and .78 miles of Class III Bicycle Routes along Bridgeway (south of Princess), Richardson, 2<sup>nd</sup>, South and Alexander. The pathway parallel to Bridgeway is fragmented and too narrow in many locations to meet Caltrans criteria for a Class I bike path, and tends to be avoided by the commuter and recreational cyclist who comprise the majority of users. The existing bicycle lanes have two gaps, one northbound between Johnson and Litho and one southbound between Easterby and Napa. Existing signed bicycle routes were installed as part of the County's Bicycle Route Guide Signage project and are marked with numbered Bike Route signs.

**Table 3-3- Existing Bikeways**

<b>Class I Facilities - Multi-Use Paths (Off-Street)</b>				
<b>Segment Name</b>	<b>Begin</b>	<b>End</b>	<b>Class</b>	<b>Length</b>
Bridgeway Pathway (north segment)	Liberty Ship Wy.	Napa St.	I	0.28
Bridgeway Pathway (south segment)	Napa St.	Johnson St.	I	0.36
Bridgeway Pathway Spur	Bridgeway Blvd.	Marinship Wy.	I	0.04
Sausalito Shoreline Pathway	Sausalito Shore	Bridgeway Path (north)	I	0.18
<b>Total Class I</b>				<b>0.85</b>
<b>Class II Facilities - Striped Bicycle Lanes (On-Street)</b>				
<b>Segment Name</b>	<b>Begin</b>	<b>End</b>	<b>Class</b>	<b>Length</b>
Bridgeway Blvd.	Donahue St	Princess St.	II	2.00
<b>Total Class II</b>				<b>2.00</b>
<b>Existing Class 3 Bikeways - Signed Bicycle Routes</b>				
<b>Segment Name</b>	<b>Begin</b>	<b>End</b>	<b>Class</b>	<b>Length</b>
2nd St.	Richardson St.	South St.	III	0.20
Alexander Ave.	South St.	Edwards Ave.	III	0.06
Bridgeway Blvd.	Princess St.	Richardson St.	III	0.37
Richardson St.	Bridgeway Blvd.	2nd St.	III	0.05
South St.	2nd St.	Alexander Ave.	III	0.09
<b>Total Class III</b>				<b>0.78</b>
<b>Total Existing Bikeways</b>				<b>3.63</b>

A lack of a completed bikeway system does not mean that people are not riding. Key observations on existing bicycling conditions include:

- Sausalito is the “gateway” to bicycling in Marin County and the North Bay and provides access to scenic resources and international visitor destinations such as the Golden Gate Bridge, Mt. Tamalpais, Fort Baker, and other destinations. The Golden Gate Bridge Highway and Transportation District has reported bridge bicycle counts as high as 4814 per day. Many of those riders are bound for Sausalito.
- Bridgeway a major bicycle commuter route running north-south through the heart of the city and is used extensively by the local bicycling community and the recreational cyclist taking longer rides through the region. These cyclists, many of whom utilize the ferries to access the town, stop in Sausalito to access the many services and businesses offered along the route.
- Certain segments of the major north-south corridor, particularly at the south end of the city, do not provide usable shoulders or are otherwise extremely narrow which, when combined with heavy traffic volumes, serves to constrain bicycle riding.
- There is a need for additional directional signage for popular tourist destinations such as the ferry terminal, the Mill Valley-Sausalito Bike Path, the Marin Headlands, and Fort Baker.

- There is a need for improved bike parking in the downtown area and throughout the city.
- The Ferry Terminal has a need for improved long-term bicycle storage.
- There is a need for bicycle sensitive loop detectors at signalized intersections throughout the city.
- Metal trench plates used during street construction can be an extreme hazard to cyclists.
- Debris from the hillside often litters the roadway on Alexander Avenue.

### 3.6 Bicycle Parking Facilities

Bicycle parking facilities are classified as follows:

- Class I:** Class 1 bicycle parking facilities consist of bicycle lockers, or a secure area that may be accessed only by bicyclists.
- Class II:** Class 2 bicycle parking facilities are bicycle racks that provide support for the bicycle but do not have locking mechanisms.

Typically, Class I facilities (lockers) are located at large employment centers, schools and transit facilities. Typically, Class II facilities (racks) are located at schools, commercial locations, and activity centers such as; parks, libraries, retail locations, and civic centers. Bicycle parking includes bike racks, lockers, and corrals. Racks are low cost devices that typically hold between 2 and 8 bicycles, allow bicyclists to securely lock their frames and wheels, are secured to the ground, and are located in highly visible areas. Bike lockers are covered storage units that typically accommodate one or two bicycles per locker, and provide additional security and protection from the elements. Bike racks are most often found in commercial areas where regular commuters can take advantage of the multi-modal connections and feel safe in leaving their bicycle. Bike corrals can be found at schools, stadiums, special events, and other locations, and typically involve a movable fencing system that can safely store numerous bicycles. Security is provided by either locking the enclosure or locating it near other activities so that it can be supervised.

Existing bicycle parking in Sausalito is located at City Hall on Litho Street and along Bridgeway in the downtown area, most adjacent to bus stops and the Ferry Terminal. However, there remains a lack of bike racks throughout the community. Bicyclists visiting stores, restaurants, places of employment, schools, open space and community facilities are largely left to their own devices to temporarily store their bicycles. The lack of secure parking has become a major consideration in Sausalito and around the country, the result of the increased value of bicycles. Most bicycles today range in value from \$350 to over \$3,000. Specific recommendations on the bicycle storage type, amount, location, and other details are provided in the ensuing chapters.

To date, the best guidelines for selection and placement of bike racks is provided by the Association of Pedestrian and Bicycle Professionals and is provided free of charge.:

<http://www.apbp.org/pdfsanddocs/Resources/Bicycle%20Parking%20Guidelines.pdf>

In addition to permanent bicycle parking, the City has partnered with the Marin County Bicycle Coalition to provide temporary valet parking using a claim check system at major events such as the Sausalito Spring Faire, Caledonia Street Fair and Art Festival. The locations of the City's existing bicycle parking facilities are shown on the Sausalito Bicycle Plan map. Figures 3-2 and 3-3 illustrate the recommended Class I (bike locker) and Class II (bike rack) configurations. Figure 3-3 provides examples of Class II bicycle parking facilities.

### **3.7 Multi-Modal Connections**

An integral part of every bikeway system is the support facilities that aid cyclists at multi-modal connections. These facilities include bike racks on busses, bike storage on ferries and other transit, and bike parking at transit stations and stops.

The use of public transit for commuting and other daily trips is higher in Sausalito than any other Marin Community. The City does not directly provide any public transit services but works with Golden Gate Transit to provide necessary support services such as transit shelters which improve the quality of transit service.

#### Golden Gate Transit Bus Service

Golden Gate Transit offers connections region wide through bus service. Currently all Golden Gate Transit buses have racks that transport two bicycles, either front-mounted or underfloor in the luggage compartment.

#### Golden Gate Ferry

Golden Gate Ferry provides daily service to San Francisco. Ferries serving Sausalito accommodate 70 bicycles.

#### The Blue and Gold Fleet

The Blue and Gold Ferry Fleet offers daily ferry service to San Francisco and accommodates bicycles onboard ferry vehicles.

#### Park and Ride

One park and ride area exists within the City at Spencer Avenue and Highway 101. This area is used extensively by commuters.

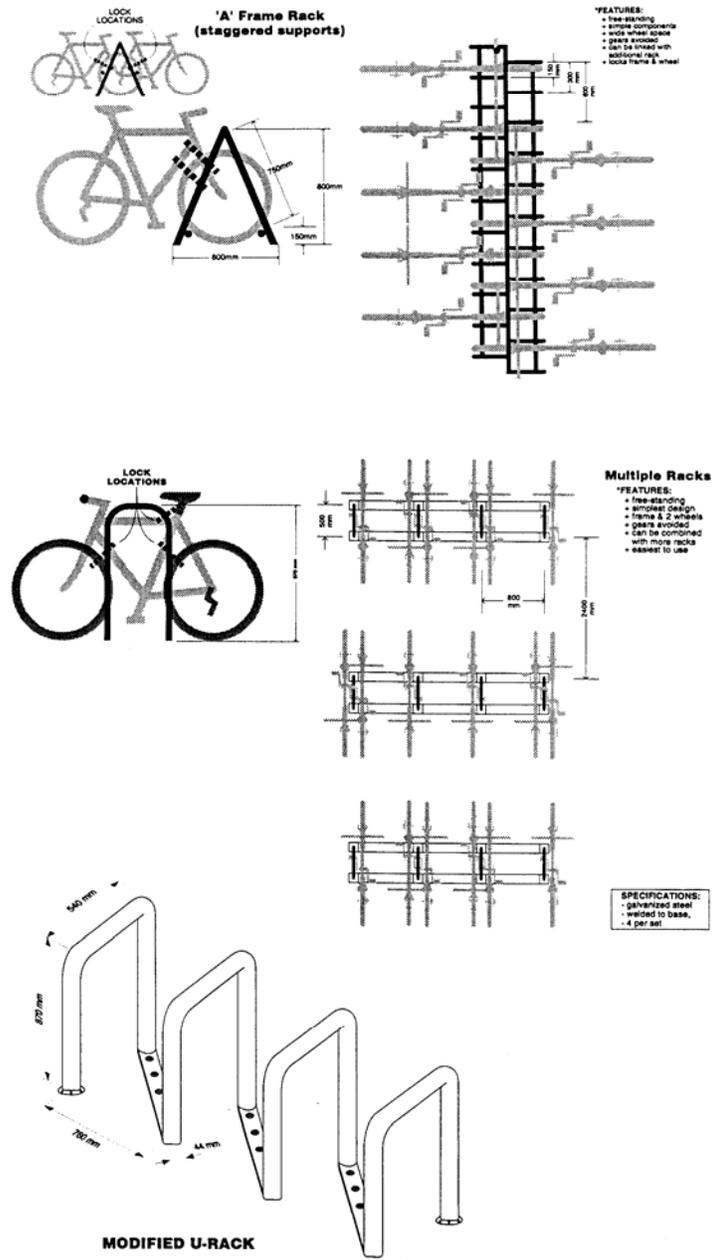


Figure 3-2: Class II Racks



Figure 3-3: Class II Rack Examples

### **3.8 Existing Education and Enforcement Programs**

Changes in the physical environment for bicycling and supported by program efforts which promote safe behavior on the part of all road users. The following details efforts to reach out to adults and children in the city.

#### **Sausalito Police Department**

In response to the large numbers of cyclists passing through Sausalito – particularly on the weekend, in large group rides from San Francisco – the Sausalito Police Department has engaged in targeted enforcement of cyclists. In these efforts cyclists who are violating the California Vehicle Code or local laws are pulled over and given a warning or a citation. Typical violations include failure to stop at stop signs and failure to yield to other road users such as motorists or pedestrians.

#### **Share the Road**

The Sausalito Police Department participates in the Marin County Bicycle Coalition’s Share the Road Campaign. The campaign includes three components: checkpoints, basic street skills classes, and public presentations.

At checkpoints, uniformed police, highway patrol officers and volunteers from the bicycle coalition stop vehicles, cyclists and pedestrians and provide them with share the road flyers. Flyers contain California Vehicle Code information, codes of conduct for bicyclists and motorists, and additional safety tips to prevent road rage. Sausalito hosted checkpoints on Bridgeway Boulevard and the Mill Valley-Sausalito Pathway in 2005, 2006 and 2007.

Basic Street Skills Classes are provided free of charge by the Marin County Bicycle Coalition. Classes provide information on how to avoid collisions and citations, how to ride safely, improve visibility and the legal rights of cyclists. Cyclists who have received a bicycle violation may attend this class to reduce their fine to \$50.

The Marin County Bicycle Coalition also provides a Share the Road presentation for the public. The presentation is available by request, and includes information on the rights and responsibilities of cyclists and drivers and focuses on ways each group can behave courteously to avoid collisions.

#### **Safe Routes to Schools**

The countywide Safe Routes to Schools program began in 2000 as an effort to reduce congestion and encourage healthy exercise and transportation habits among school aged children in Marin County. The program has since expanded to its current level, with 45 schools and over 18,470 students participating countywide. Each year, the program has successfully decreased the percentage of drive-alone students at participating schools through innovative classroom activities, contests and events, and initiation of engineering improvements. Currently there are no schools in the Sausalito Marin City School District participating in this program.

The program consists of five key components – education, engineering, encouragement, enforcement, and evaluation – which are described below.

- **Education** - Classroom lessons teach children the skills necessary to navigate through busy streets and show them how to be active participants in the program.
- **Engineering** - The Program’s licensed traffic engineer works with schools and the City in developing a plan to provide a safer environment for children to walk and bike to school. The focus is on creating physical improvements to the infrastructure surrounding the school, reducing speeds and establishing safer crosswalks and pathways.
- **Encouragement** - Events, contests and promotional materials are incentives that encourage children and parents to try walking and biking.
- **Enforcement** – Police officers, crossing guards and law enforcement officials participate throughout the Safe Routes process to encourage safe travel through the community. Targeted enforcement of speed limits and other traffic laws around schools make the trip to school more predictable for students. This plan also includes enforcement enhancements and outreach to drivers through driver safety campaigns.
- **Evaluation** – Program participation is regularly monitored to determine the growth in student and parent participation.

Chapter 5 includes proposals for growing participation in the Safe Routes to Schools Program in Sausalito.

Table 3-4- Sausalito Safe Routes to School Education and Encouragement Programs

			Education											Encouragement					
Participants	Grades	Enroll.	CT	FT	CT	CT	FT	FT	TM	CT	CT	CT	CT	EV	TM	SP	CN	CN	WK
			SL&L	WB	HS	JEOP	Rodeo	OTB	Clubs	S.Art	Yikes	Earth	Fam M	IWA LK	W2SD	SP	W&BA	FRM	WA
Sausalito	K-8	300					X				X								

**Key:**

X - Completed This Month

X- Previously Completed

**Education:**

SL&L - Stop Look and Listen; WB - Walk Around the Block; HS - Helmet Safety; Jeop - Jeopardy; Rodeo - Bicycle Rodeo; OTB - On the Bike (Middle School), Clubs - EcoVelocity Clubs; S. Art - Safety Art; Yikes - Assembly; W2SD - Parade Prep; Earth - Earth Day Classes; Fam M - Family Management; NR - Neighborhood Rides

**Encouragement:**

Iwalk - International Walk to School Day, W2SD - Ongoing Walk to School Days; SP - SchoolPool; W&BA - Walk and Bike Across America; FRM - Frequent Rider Miles Contest

**Notes:**

On the bike can only be offered to 2-3 schools this year. Family Maintenance Clinics and Neighborhood Rides are new, so it is difficult to gauge who will use them this year.

## 4.0 Needs Analysis

As described in the Introduction, public meetings were held in 2006 and 2007 to collect input on needs for bicycling. In addition, the Pedestrian and Bicycle Task Force met four times to assist with the update to this plan. Input from the Imagine Sausalito process was also consulted and included. Results of these meetings, the input of the bicycling community and bicycle counts are presented below.

- Significant numbers of commuter and recreational bicyclists ride through Sausalito daily. According to Golden Gate Bridge Highway and Transportation District, counts of over 3,900 cyclists in a single weekday have been made on the Golden Gate Bridge, most of whom will pass through Sausalito on the Bridgeway corridor. Substantially higher volumes use the corridor on weekends.
- Counts conducted for the Nonmotorized Transportation Pilot Program in 2007 showed that the intersection of Bridgeway and Princess was the second highest volume location in the county for combined bicycle and pedestrian activity. Between 1999 and 2007 peak-hour bicycle volumes on the weekday, likely reflecting an increase in commuting and weekday recreational riding.
- Bridgeway, the main north/south route through town, has been substantially improved since the previous plan was adopted, but is in need of improvements including completing the two remaining bike lane gaps, installing loop detectors at all signalized intersections and signs to increase motor vehicle and bicyclist awareness.
- Cyclists note that a wider uphill lane, regular debris removal and maintenance, and better lighting and signage (including “Share the Road” & “Do Not Pass”) would improve safety on Alexander Avenue at the south end of town.
- Bicyclists cite the flyaway at Napa Street, the “Y” configuration at Anchor Street, the striping southbound between Spring and Easterby Streets, and the concrete median along the waterfront as impediments to safe through travel on Bridgeway.
- Regular maintenance of the pavement on Second Street and Alexander Avenue in south end of town will improve the safety of bicyclists in this critical area where they mix with autos at high speeds on the downhill stretch into town.
- Traffic volumes and speeds during commute periods increases conflicts with bicyclists.
- Although parking has been improved, there may continue to be a shortage of bicycle parking throughout the City. This is particularly true in the downtown area and at the ferry terminal, which have a lack of adequate short-term bike storage for visitors and long-term storage for commuters.

## **Bicycle Survey Results - 1999**

For the 1999 Plan, a public survey regarding cycling in Sausalito was conducted. The following documents the results of that survey.

The majority of the survey respondents:

- prefer on-street facilities;
- own three or more bicycles;
- ride one to six times per week;
- describe their trip purpose as work related 50% of the time or greater;
- cite concerns about safety as the number one reason they don't ride more often;
- marked Bridgeway as the major corridor they travel on; and
- identified the top five constraints as:
  - Narrowness of travel lanes south bound on Alexander;
  - Lack of directional signage and stenciling;
  - Need for bike lanes on Bridgeway
  - Need for a bicycle sensitive loop detector on Bridgeway at Gate 6 Road; and
  - The speed of traffic and aggressiveness of drivers.

## **Sausalito Business Vision Poll – 2006**

A telephone survey regarding issues important to Sausalito residents was conducted in September 2006. The following documents the bicycle related results of that survey.

As shown in **Figures 4-1 through 4-3**, the majority of the survey respondents:

- Favor a continuous waterfront pedestrian and bicycle pathway;
- Favor improving and expanding bicycle facilities;
- Would use improved and expanded bicycle facilities.

The results of the 1999 and 2006 surveys, updated with input from recent public workshops, Task Force meetings and comments from the bicycling community, were used to help create an updated bicycle plan.

Figure 4-1

## Proportions Favoring Various Proposals

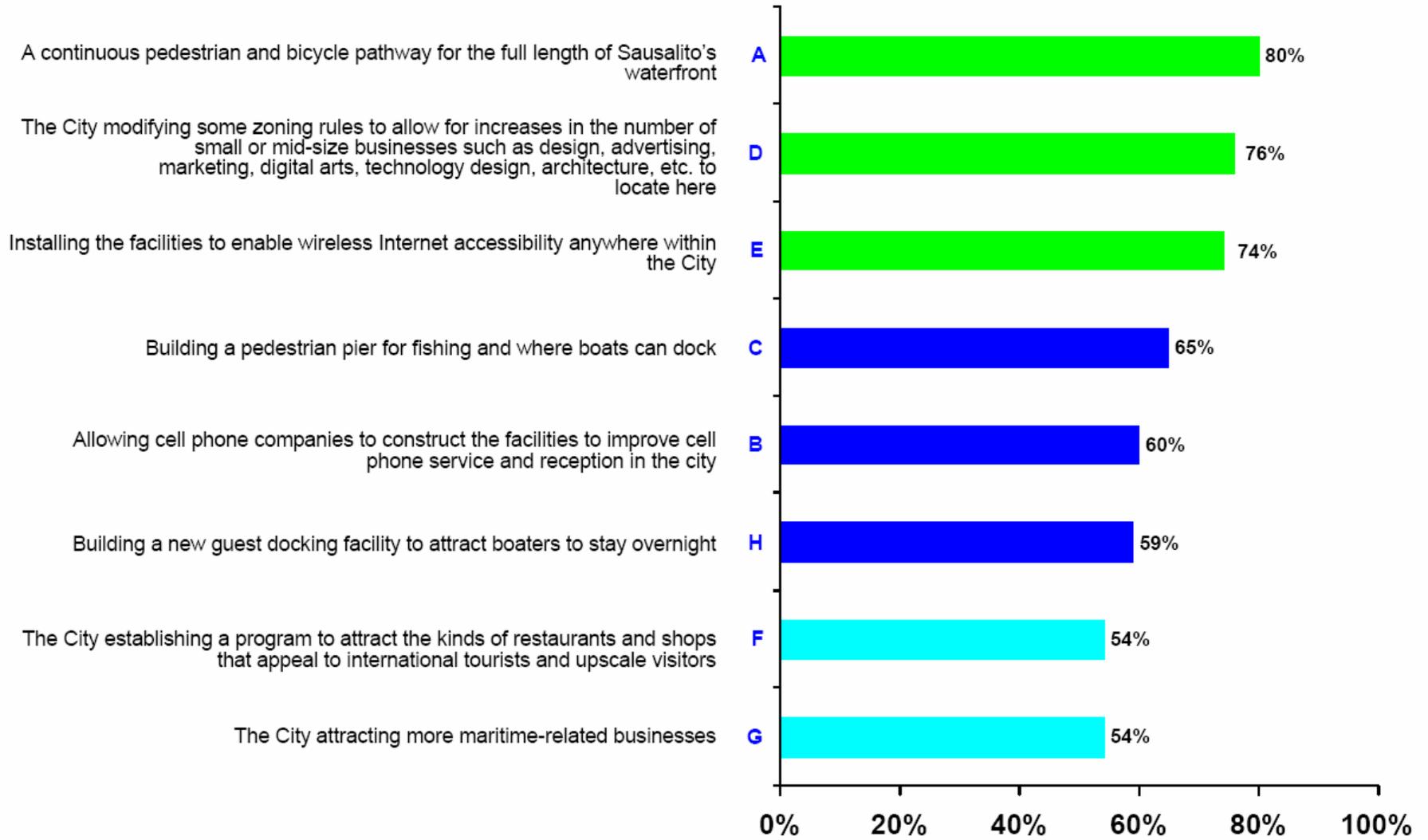


Figure 4-2

# Proportions Favoring Transportation Proposals

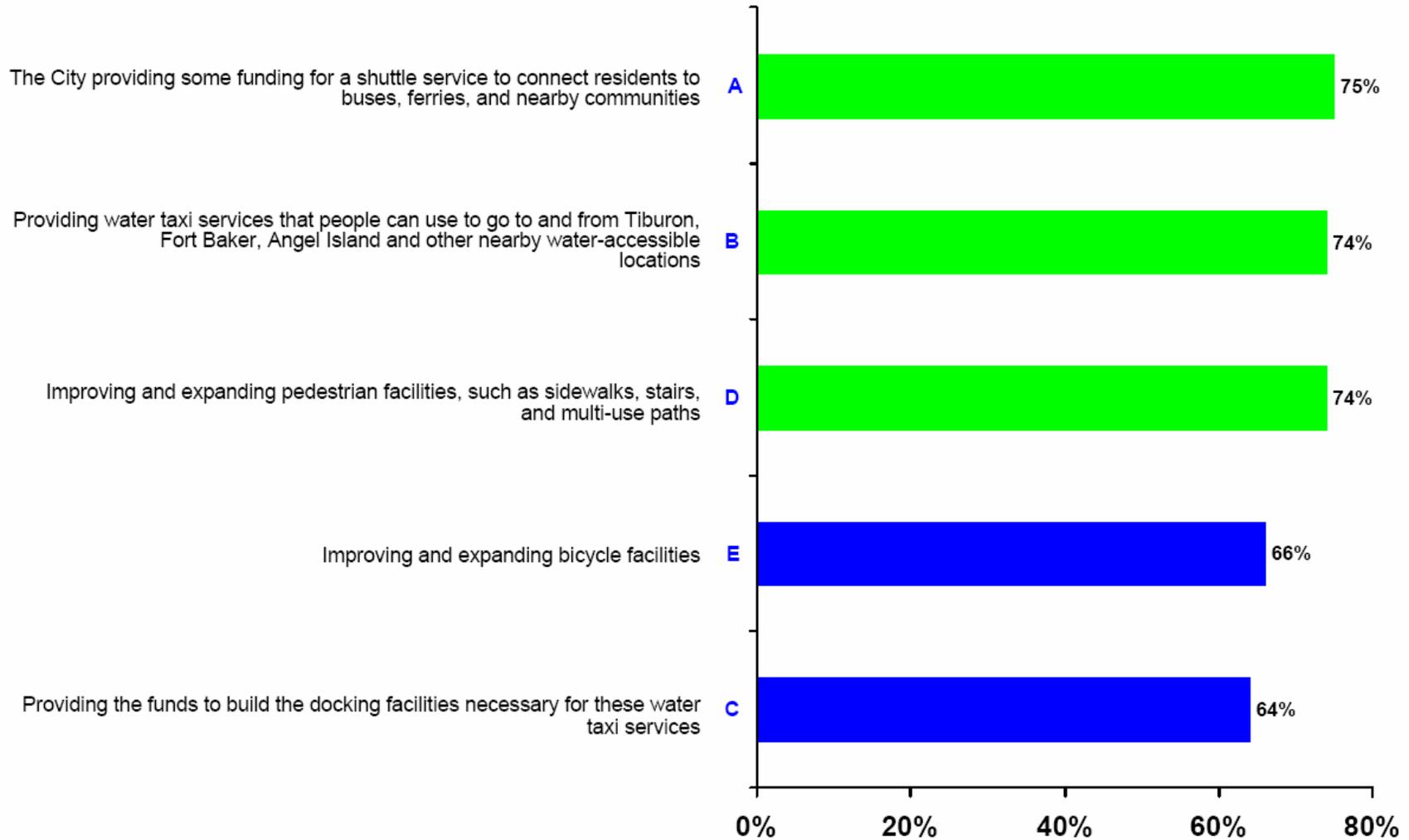
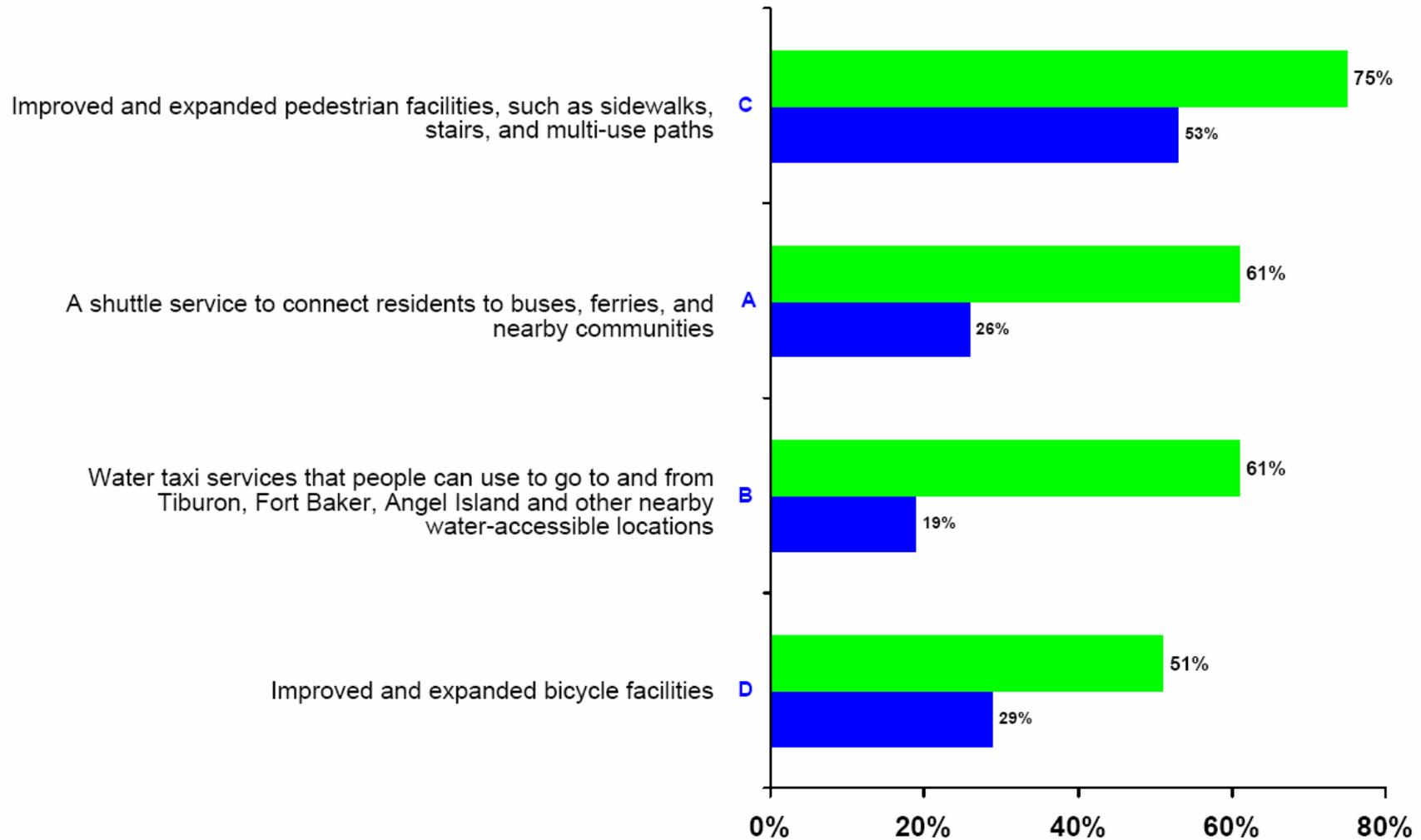


Figure 4-3

# Frequency of Usage For Transportation Proposals



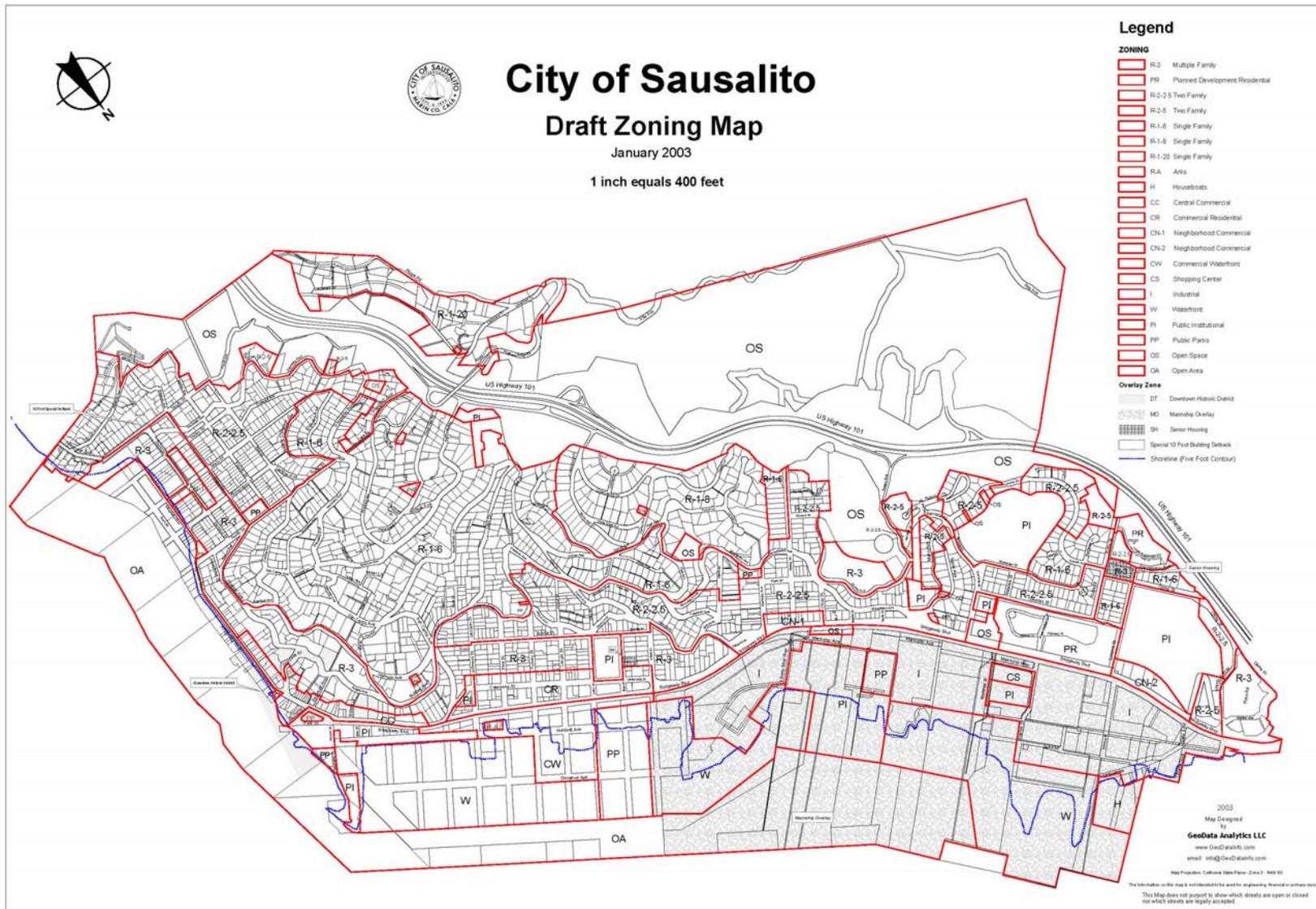
## 4.1 Land Use Demand

The “demand” for bicycle facilities can be difficult to predict. Unlike automobile use, where historical trip generation studies and traffic counts allow one to estimate future “demand” for travel, bicycle trip generation methods are less advanced and standardized. Land use patterns can help predict demand and are important to bikeways planning because changes in land use (and particularly employment areas) will affect average commute distance, which in turn affects the attractiveness of bicycling as a commute mode. **Figure 4-4**, the Zoning Map from the Sausalito General Plan, is included on the next page.

The Sausalito bikeways network will connect the neighborhoods where people live to the places they work, shop, engage in recreation, or go to school. An emphasis will be placed on regional bikeways and transit connections centered on the major activity centers in Sausalito, including:

- Downtown commercial district
- Civic buildings such as community centers, senior centers and libraries
- Schools
- Transit Hubs
- Neighborhood parks and regional recreational areas
- Shopping Centers
- Major Employers

Figure 4-4: Sausalito Zoning Map, Draft 2003



## 4.2 Commuter and Recreational Bicycle Needs

The purpose of reviewing the needs of recreational and commuter bicyclists is twofold: (a) it is instrumental when planning a system which must serve both user groups and (b) it is useful when pursuing competitive funding and attempting to quantify future usage and benefits to justify expenditures of resources. An April 2003 national survey conducted by America Bikes showed that Americans want to bicycle more and support building infrastructure to achieve this: "Over half of Americans (52%) want to bike more than they do now and a majority of the public (53%) favors increasing federal spending to build more bike paths for easier and safer bicycling." In short, there is a large reservoir of potential bicyclists in Sausalito who don't ride (or ride more often) simply because they do not feel comfortable using the existing street system and/or don't have appropriate bicycle facilities at their destination.

Key general observations about bicycling needs by group in Sausalito include:

- **Bicyclists are typically separated between experienced and casual riders.** The U.S. Department of Transportation identifies thresholds of traffic volumes, speeds, and curb lanes where less experienced bicyclists begin to feel uncomfortable. For example, on an arterial with traffic moving between 30 and 40 miles per hour, less experienced bicyclists require bike lanes while more experienced bicyclists require a 14 or 15 foot wide curb lane.
- **Casual riders include those who feel less comfortable negotiating traffic.** Others such as children and the elderly may have difficulty gauging traffic, responding to changing conditions, or moving rapidly enough to clear intersections. Other bicyclists, experienced or not, may be willing to sacrifice time by avoiding heavily traveled arterials and using quieter side streets. In some cases, casual riders may perceive side streets (or sidewalks) as being safer alternatives than major through routes, when in fact they may be less safe. Other attributes of the casual bicyclist include shorter distances than the experienced rider and unfamiliarity with many of the rules of the road. The casual bicyclist will benefit from route markers, bike lanes, wider curb lanes, and educational programs. Casual bicyclists may also benefit from marked routes which lead to parks, museums, historic districts, and other visitor destinations.
- **Experienced bicyclists include those who prefer the most direct, through route between origin and destination, and a preference for riding within or near the travel lanes.** Experienced bicyclists negotiate streets in much the same manner as motor vehicles, merging across traffic to make left turns, and avoiding bike lanes and shoulders that contain gravel and glass. The experienced bicyclist will benefit from wider curb lanes and loop detectors at signals. The experienced bicyclist who is primarily interested in exercise will benefit from loop routes which lead back to the point of origin.
- **Bicycles themselves range in cost from about \$350 to over \$12,000 for adult models.** The most popular bicycle type today is the hybrid mountain bike or BMX. These relatively light weight bicycles feature wider knobby tires that can handle both on-road and off-road conditions, from 10 to 27 gears, and up-right handlebars.

Advanced versions have features such as front and rear shocks to help steady the rider on rough terrain. The 10-speeds of years past has evolved into a sophisticated ultra-light ‘road bicycle’ that is used primarily by the serious long distance adult bicyclists. These expensive machines feature very narrow tires that are more susceptible to flats and blow-outs from debris on the roadway.

- **Who rides bicycles?** While the majority of Americans (and Sausalito residents) own bicycles, most of these people are recreational riders who ride relatively infrequently. School children between the ages of about 7 and 12 make up a large percentage of the bicycle riders today, often riding to school, parks, or other local destinations on a daily basis weather permitting. The serious adult road bicyclist who may participate in races, ‘centuries’ (100 mile tours) and/or ride for exercise makes up a small but important segment of bikeway users, along with serious off-road mountain bicyclists who enjoy riding on trails and dirt roads. The single biggest adult group of bicyclists in Sausalito is the intermittent recreational rider who generally prefers to ride on pathways or quiet side streets.

#### **4.2.1 Bicycle Commuter Needs**

Commuter bicyclists in Sausalito range from employees who ride to work to a child who rides to school to people riding to shops. Bicycling requires shorter commutes, which runs counter to most land use and transportation policies which encourage people to live farther and farther from where they work. Access to transit helps extend the commute range of cyclists, but transit systems also face an increasingly dispersed live-work pattern which is difficult to serve. Despite these facts, Sausalito has a great potential to increase the number of people who ride to work or school because of (a) the small size of the city, (b) moderate density residential neighborhoods near employment centers, (c) a favorable climate, and (d) a high percentage of work trips that are less than 15 minutes.

Key bicycle commuter needs in Sausalito are summarized below.

- Commuter bicycling typically falls into one of two categories: (1) adult employees, and (2) younger students (typically ages 7-15).
- Commuter trips range from several blocks inside the city limits to several or more miles for those commuters traveling beyond the city limits.
- Commuters typically seek the most direct and fastest route available, with regular adult commuters often preferring to ride on arterials rather than side streets or off-street facilities.
- Commute periods typically coincide with peak traffic volumes and congestion, increasing the exposure to potential conflicts with vehicles.
- Places to safely store bicycles are of paramount importance to all bicycle commuters.
- Major commuter concerns include changes in weather (rain), riding in darkness, personal safety and security.
- Rather than be directed to side streets, most commuting adult cyclists would prefer to be given bike lanes or wider curb lanes on direct routes.

- Unprotected crosswalks and intersections (no stop sign or signal control) in general are the primary concerns of all bicycle commuters.
- Commuters generally prefer routes where they are required to stop as few times as possible, thereby minimizing delay.
- Many younger students (ages 7-11) use sidewalks for riding to schools or parks, which is acceptable in areas where pedestrian volumes are low and driveway visibility is high. Where on-street parking and/or landscaping obscures visibility, sidewalk riders may be exposed to a higher incidence of crashes. Older students (12 years or older) who consistently ride at speeds over 10 mph should be directed to riding on-street wherever possible.
- Students riding the wrong-way on-street are common and account for the greatest number of recorded crashes in California, pointing to the need for safety education.

#### 4.2.2 Commute Patterns

A central focus of presenting commute information is to identify the current “mode split” of people that live and work in Sausalito. Mode split refers to the choice of transportation a person selects to move to destinations, be it walking, bicycling, taking a bus, or driving. One major objective of any bicycle facility improvement is to increase the percentage of people who choose to bike rather than drive or be driven. Every saved vehicle trip or vehicle mile represents quantifiable reductions in air pollution and can help in lessening automobile traffic congestion.

Journey to work and travel time to work data were obtained from the 2000 US Census for Sausalito, Marin County, California, and the United States. Primary mode of journey to work data is shown in **Table 4-1**.

**Table 4-1**  
**Sausalito Commute Mode Split Compared to the State and Nation**

Mode	Nationwide	Statewide	Marin County	Sausalito
Bicycle	0.4%	0.9%	1.1%	1.2%
Walk	3.0%	3.0%	3.3%	6.9%
Public Transit	4.9%	5.3%	11.1%	17.4%
Drove Alone	78.2%	74.7%	71.8%	62.5%
Carpool	12.6%	15.1%	11.8%	10.2%
Other	0.5%	1.1%	0.6%	1.8%
Data from US Census 2000				

As shown, about 1.2% of all employed Sausalito residents commute primarily by bicycle. Census data do not include the number of people who bicycle for recreation or for utilitarian purposes, students who bicycle to school, and bicycle commuters who travel

from outside Sausalito, and are therefore likely to undercount true cycling rates. Recreational cycling is especially popular in Sausalito, with its easy access to popular recreational routes in the Marin Headlands.

Sausalito has a very high percentage of commuters who take public transit to work—over 17% compared with 5.3% for the state. Two percent of Golden Gate Transit riders arrive at bus stops by bicycle.<sup>1</sup> If bicycle connections to Golden Gate Transit stops are improved, and especially if these connections are coupled with improved bicycle storage, it would be possible to shift some vehicle trips to the bus stops into bicycle trips.

### 4.2.3 Potential Future Air Quality Improvements

Sausalito lies within the San Francisco Bay Area Basin, which is regulated by the Bay Area Air Quality Management District (BAAQMD). According to the California Air Resources Board, as of July 2005, the air quality in the San Francisco Bay Area Basin did not meet the minimum State health-based standards for one-hour concentrations ground-level ozone and the State standards for Particulate Matter (PM10) and Fine Particulate Matter (PM2.5).<sup>2</sup> Currently, the Basin is classified as marginal non-attainment area for the Federal 8-hour ozone standard.

According to the BAAQMD, motor vehicles are responsible for approximately 75 percent of the smog in the Bay Area. Reducing vehicle miles traveled (VMTs) is a key goal of the BAAQMD, and fully implementing Sausalito's bicycle network will help achieve this goal by providing residents safe and functional ways to get to work, school, or shopping without relying on motor vehicles. Based on data from the 2000 Census and estimates of bicycle mode share for students, the current number of daily bicycle commuters in Sausalito is estimated to be 238 riders, making 475 daily trips and saving an estimated 1,550 VMTs per weekday.

**Table 4-2** quantifies the estimated reduction in VMTs in Sausalito following a slight increase in bicycle mode and the estimated reduction in air pollutants based on the best available local and national data. It is estimated that the total number of work and school commuters could increase from the current estimate of 238 to 264. This would result in an estimated decrease of 5 kg/day of HC, 37 kg/day of CO, and 1 kg/day of NOX.

This improvement in air quality could be greater assuming that if conditions for bicyclists improve and attract new Sausalito-based riders, the same conditions may attract bicyclists to the City whose trips originate outside of Sausalito. This analysis includes only Sausalito-based riders, although many of the riders in the city are from adjacent communities or San Francisco. Sausalito's mild climate and rising fuel costs will also encourage additional cycling as more attractive routes and gap closures are accomplished.

---

<sup>1</sup> Marin County Transit District. "Marin County Transit Short Range Transit Plan". March 2006.

<sup>2</sup> BAAQMD. Ambient Air Quality Standards & Bay Area Attainment Status. Last updated July 15, 2005. [http://www.baaqmd.gov/pln/air\\_quality/ambient\\_air\\_quality.htm](http://www.baaqmd.gov/pln/air_quality/ambient_air_quality.htm)

Table 4-2 - Bicycle Commute and Air Quality Projections

<b>Current Commuting Statistics</b>		<b>Source</b>
Sausalito Population	7,325	2000 US Census
Number of Commuters	4,542	2000 US Census (Employed persons minus those working at home)
Number of Bicycle-to-Work Commuters	56	2000 US Census
Bicycle-to-Work Mode Share	1.23%	Mode share percentage of Bicycle to Work Commuters
School Children Grades K-8	143	2000 US Census, population ages 5-14
Estimated School Bicycle Commuters	7	Lamorinda School Commute Study (Fehr & Peers Associates, 1995) and San Diego County School Commute Study (1990). (5%)
Number of College Students	236	2000 US Census
Estimated College Bicycle Commuters	12	National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995. Review of bicycle commute share in seven university communities (5%)
Average Weekday Transit Ridership	8,136	Average of weekday system wide boardings on Bus and Ferry Routes serving Sausalito Routes (Marin Transit Data Request)
Number of Daily Bike-Transit Users	163	GGT Existing Conditions System Levels Analysis Report 2005, Page 4-24
Estimated Total Number of Bicycle Commuters and Utilitarian Riders	238	Total of bike-to-work, transit, school, college and utilitarian bicycle commuters Does not include recreation.
Estimated Adjusted Mode Share	3.2%	Estimated Bicycle Commuters divided by population
<b>Estimated Current Bicycle Trips</b>		
Total Daily Bicycle Trips	475	Total bicycle commuters x 2 (for round trips) plus total number of utilitarian bicycle trips
Reduced Vehicle Trips per Weekday	340	Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children
Reduced Vehicle Miles per Weekday	1,550	Assumes average one-way trip travel length of 4.6 miles for adults/college students and 0.5 mile for schoolchildren
<b>Potential Future Bicycle Commuters</b>		
Number of workers with commutes nine minutes or less	637	US Census 2000
Number of workers who already bicycle or walk to work	370	US Census 2000
Number of potential bicycle commuters	267	Calculated by subtracting number of workers who already bicycle or walk from the number of workers who have commutes 9 minutes or less
Future number of new bicycle commuters	27	Based on capture rate goal of 10% of potential bicycle riders
Total Future Daily Bicycle Commuters	264	Current daily bicycle commuters plus future bicycle commuters
Future Total Daily Bicycle Trips	529	Total bicycle commuters x 2 (for round trips)
Future Reduced Vehicle Trips per Weekday	386	Assumes 73% of bicycle trips replace vehicle trips

Future Reduced Vehicle Miles per Weekday	1,776	Assumes average one-way trip travel length of 4.6 miles for adults. Assumes 12 mph average bicycle speed; 23 minute average travel time. Travel time data from NHTS 2001 Trends, Table 26.
Future Reduced Vehicle Miles per Year	470,510	256 weekdays per year
<b>Future Air Quality Benefits</b>		
Reduced HC (kg/weekday)	5	(0.0028 kg/mile)
Reduced CO (kg/weekday)	37	(0.0209 kg/mile)
Reduced NOX (kg/weekday)	2	(0.00139 kg/mile)
Reduced CO2 (kg/weekday)	195,497	(.4155 kg/mile)
Reduced HC (metric tons/year)	1	1000 kg per metric ton; 256 weekdays/year
Reduced CO (metric tons/year)	9	1000 kg per metric ton; 256 weekdays/year
Reduced NOX (metric tons/year)	1	1000 kg per metric ton; 256 weekdays/year
Reduced CO2 (metric tons/year)	50,047	1000 kg per metric ton; 256 weekdays/year
Emissions rates from EPA report 420-F-00-013 "Emission Facts: Average Annual Emissions and Fuel Consumption for Passenger Cars and Light Trucks." 2000.		

#### 4.2.4 Recreational Needs

The needs of recreational bicyclists in Sausalito must be understood prior to developing a system or set of improvements. While it is not possible to serve every neighborhood street and every need, a good plan will integrate recreational needs to the extent possible. The following points summarize recreational needs:

- Recreational bicycling in Sausalito typically falls into one of three categories: (1) exercise, (2) non-work destination such as a park or shopping, or (3) touring.
- Recreational users range from healthy adults to children to senior citizens. Each group has their own abilities, interests, and needs.
- Directness of route is typically less important than routes with less traffic conflicts. Visual interest, shade, protection from wind, moderate gradients, or other features are more important.
- People exercising or touring often (though not always) prefer a loop route rather than having to back-track.
- Recreational cyclists include those wanting to access open space, who could benefit from clearly signed routes to reach bike-legal trailheads and hiking trailheads where bike racks should be provided.

### 4.3 Crash Analysis

#### Crash Analysis (1996-1998)

The following collision analysis was completed for the 1999 Plan.

Bicycle-related crashes were collected for the three years from 1996-1998 in Sausalito. A total of fifteen (15) bicycle-related crashes occurred in 1996, eighteen (18) in 1997, and seventeen (17) in 1998. While the number of incidents and a variety of other potential factors make it difficult to draw a conclusion from this data, it is apparent that bicycle-related incidents are at the very least stable. Compared to other communities in California on the number of incidents per 1,000 persons, Sausalito's rate (2.39 incidents per 1,000 persons) is considerably higher than the average of .67 incidents per 1,000 persons. This rate does not account for the fact that in some communities, such as Sausalito, there are more people bicycling than average and therefore there will be a higher crash rate. More importantly, the high number of non-resident bicyclists riding through Sausalito, combined with the narrow roads, high traffic, and inexperience of many visitors, contributes to this high accident rate.

The top five bicycle-related crash locations in Sausalito are:

1. Richardson & 2<sup>nd</sup> Street (8 crashes)
2. Bridgeway & Princess (6 crashes)
3. Bridgeway & El Portal (5 crashes)
4. Alexander & South Street (4 crashes)
5. Harbor & Marinship Way (3 crashes)

This list indicates a high incidence of crashes on the major transverse corridor. The accident data revealed that over half (64%) of the incidents occurred on weekend days. Figure 6 illustrates the bicycle accident locations in Sausalito over the last 3 years.

### **Crash Analysis (2006-2008)**

Bicycle-related crashes were collected for the past three years (2006-2008) in Sausalito. A total of sixteen (16) bicycle-related crashes occurred in 2006, eight (8) in 2007, and six (6) through April 2008. The number of incidents decreased by fifty (50) percent from 2006 to 2007, however the number of incidents four months into 2008 nearly equals the number in 2007. The accident data revealed that over half (59%) of the incidents occurred on weekend days.

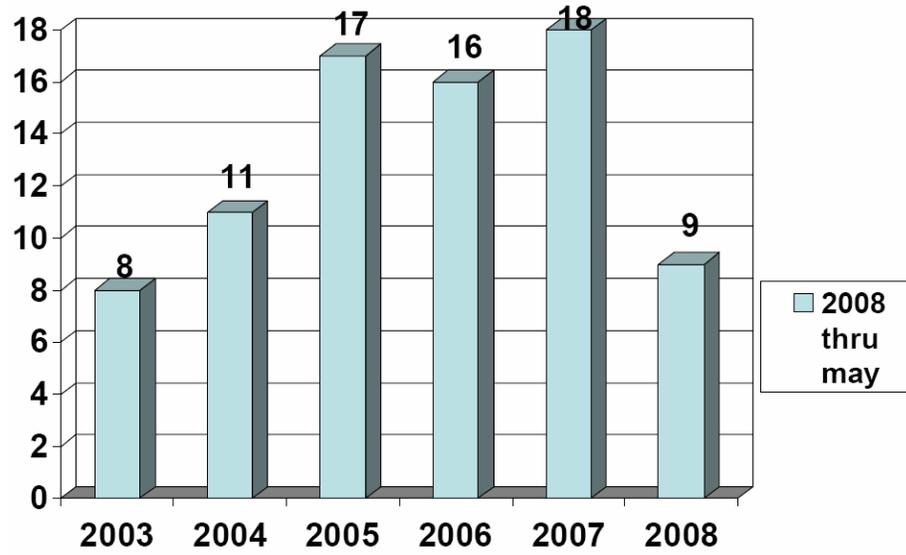
The top two bicycle-related crash locations in Sausalito are:

1. 400 block of Bridgeway (5 crashes)
2. 500 block of Bridgeway (3 crashes)

Pedestrian related crashes were collected for two years (2006-2007). A total of three (3) pedestrian related crashes occurred in 2006 and three (3) in 2007. Unlike bicycle related crashes, the majority (83%) of pedestrian related crashes occurred on week days. However, like bicycle related crashes, the 500 block of Bridgeway is a top crash location.

The recommended bikeway system will address these problem areas by identifying specific countermeasures to reduce crashes, including physical improvements and/or identifying alternative routes as well as safety education programs.

Figure 4-5: City of Sausalito Bicycle Crashes, 2003-2008



## 5.0 Proposed System & Improvements

A bikeway 'system' is primarily a network of bicycle routes that, for a variety of reasons including safety and convenience provide a superior level of service for bicyclists and/or are targeted for improvements by the City due to existing deficiencies. It is important to recognize that, by law, bicyclists are allowed on all streets and roads (except where specifically prohibited) regardless of whether they are a part of the bikeway system. The bikeway system is a tool that allows the City to focus and prioritize implementation efforts where they will provide the greatest community benefit.

The recommended system and improvements consists of two distinct components:

**Bicycle Facilities:** including bikeway system, parking, and support facilities.

**Bicycle Programs:** as related to safety, education, and community and employer outreach.

### 5.1 Creating a Bikeway System

A bikeway 'system' is a network of bicycle routes that, for a variety of reasons including safety and convenience provide a superior level of service for bicyclists and/or are targeted for improvements by the City due to existing deficiencies. It is important to recognize that, by law, bicyclists are allowed on all streets and roads except where specifically prohibited regardless of whether they are a part of the bikeway system. **The bikeway system is a tool that allows the City to focus and prioritize implementation efforts where they will provide the greatest community benefit.**

There is an established methodology for selecting a bikeway system for any community. The primary method is to receive input from the local bicycling community and local staff familiar with the best routes and existing constraints and opportunities. Input can be received through a variety of means, but typically is through the public workshop format. Two public workshops were held in Sausalito in 1999 and three subsequent workshops have been held in Southern Marin and countywide in 2006 and 2007, where citizens were asked to identify the routes they regularly ride plus corridors they saw as either opportunities or constraints. In addition, in 1999 an extensive survey was conducted and responses collected that helped identify the types and locations of improvements designed to meet citizen's needs.

The following criteria are typically used to develop a bicycle system:

1. Existing Bicycling Patterns
  - a. Connectivity
2. Traffic volumes and travel speeds
3. Amount of side friction (driveways, side streets)
4. Curb-to-curb width
5. Pavement condition
6. Access from residential areas
7. Number of destinations served
  - a. Schools

- b. Parks
  - c. Employment Centers
- 8. Topography
- 9. Integration into the regional system
- 10. Adjacent land use
- 11. On-street parking
- 12. Accident data and safety concerns
- 13. Existing bottlenecks or constraints
- 14. Existing opportunities such as planned roadway improvements

The Sausalito bikeway system was developed focusing on connecting existing segments of bike lane, addressing routes used by bicyclists, and focusing on specific opportunities and constraints. The street network and topography of Sausalito is such that there is only one primary north-south corridor (on or parallel to Bridgeway). Much of residential Sausalito is located on such steep terrain with such narrow streets that bicycling is extremely difficult and narrow hillside roadways present limited opportunities for bikeway improvements.

Once a bikeway system has been identified, the greatest challenge is to identify the top segments that will offer the greatest benefit to bicyclists in the next five years. Aside from the criteria used in developing the system as a whole, selection of these top projects is based on:

- (1) The number of schools served;
- (2) The number of recreational centers served. If the segment is a Class I bike path, the pathway itself may qualify as a recreational destination.
- (3) The number of employment centers served;
- (4) The number of areas where bicycle safety is addressed, i.e., corridors with high traffic volumes and narrow travel lanes; and
- (5) Segments which help overcome existing gaps in the bicycling system.

Finally, it is important to remember that the bikeway system and the top projects are flexible concepts that serve as guidelines to those responsible for implementation. The system and segments themselves will change over time as a result of changing bicycling patterns and implementation constraints and opportunities.

## **5.2 Proposed Bikeway Improvements**

The proposed bicycle circulation strategy consists of a spine bikeway system on Bridgeway plus other routes, lanes, and paths connecting residential neighborhoods in Sausalito with the schools, parks, library, downtown, and other destinations. The proposed bikeway system is shown in Figure 1-1.

The proposed Sausalito Bikeway system is characterized by improvements to (1) on-street facilities on Bridgeway and Alexander Avenue, (2) improvements to the recreational bikeway from the ferry terminal north, and (3) a variety of other programs and facilities. At a minimum, all bicycle routes identified on the Plan will be Class III

bike routes and include intersection protection where needed, wider curb lanes where possible, traffic calming where needed to slow traffic, shoulder striping where feasible, and signing. Finally, new bicycle support facilities such as bicycle parking are proposed for the city, which are detailed later in this report.

Short term and long-term bikeway projects were selected by City staff, the public, and bikeway specialists based on their local knowledge and cycling experience, the orientation of funding programs, and the planning criteria outlined in the Master Plan (coverage, connectivity, user groups, implementation, local input, funding sources).

Based on the criteria described previously, the top priority short to mid term bikeway projects in Sausalito are:

### **Short-Mid Term Bikeway Projects**

1. Bridgeway Bikeway South
2. Bridgeway Bikeway North
3. North-South Recreational Bikeway
4. Bicycle Parking
5. Enforcement, Education, and Maintenance Programs
6. Community and Employer Outreach

### **Mid-Long Term Projects**

1. Shoreline Public Pathway
2. Fort Baker Shuttle
3. Bridgeway Bikeway South
4. North-South Recreational Bikeway

The six short term projects meet immediate needs in Sausalito, help overcome existing barriers, serve virtually all of the City's activity centers, and link most activity centers in the community. Four long term projects are proposed to complement the short term bikeway projects and address safety and connectivity issues along the waterfront and along the primary transportation corridor north-south through the city. Long term projects are expected to take longer to implement due to financial costs, physical constraints, and coordination with private property owners and outside agencies.

The City will continue to explore alternative solutions to create Class I or II bike facilities from the Downtown to the South City limits to ameliorate or bypass the most constricted and congested conditions in that area. Although no specific projects have been proposed at this time, four potential long-term alternatives are discussed at the end of this chapter.

A detailed description of each project and its discreet segments is presented in the text below and in **Table 5-1**. Estimated costs of the various bikeway segments are provided in Chapter 6. The identified projects, programs, and the alternatives are each presented on their own Project Sheet, which provides key information on the location, proposed improvements, and/or action programs. The Project Sheets are designed to be used as a direct resource and addendum to funding applications.

**Table 5-1- Proposed Bikeways**

<b>Class I Facilities - Multi-Use Paths (Off-Street)</b>					
<b>Segment Number</b>	<b>Facility Name</b>	<b>Begin</b>	<b>End</b>	<b>Class</b>	<b>Length</b>
14	Sausalito N-S Recreational Bikeway	Sausalito City Limit	Marinship Way.	I	0.51
9	Bridgeway Pathway	Johnson St.	Locust St.	I	0.17
10	N-S Recreational Bikeway (Mono St. gap closure)	Napa St.	Liberty Ship Wy.	I	0.02
18	Rodeo Highway 101 Undercrossing (conceptual)	Rodeo Trailhead (west side Hwy 101)	Rodeo Ave. (east side Hwy 101)	I	0.20
<b>Total Class I</b>					<b>0.90</b>
<b>Class II Facilities - Bicycle Lanes (On-Street)</b>					
<b>Segment Number</b>	<b>Facility Name</b>	<b>Begin</b>	<b>End</b>	<b>Class</b>	<b>Length</b>
1	Alexander Ave.	Edwards Ave	City Limits	II	0.05
8	Bridgeway Blvd. (southbound only)	Easterby St.	Napa St.	II	0.25
7	Bridgeway Blvd. (northbound only)	Johnson St.	Litho St.	II	0.22
<b>Total Class II</b>					<b>0.52</b>
<b>Class III Facilities - Signed Bicycle Routes (On-Street)</b>					
<b>Segment Number</b>	<b>Facility Name</b>	<b>Begin</b>	<b>End</b>	<b>Class</b>	<b>Length</b>
4	2nd St.	Richardson St.	South St.	III-Shar	0.20
2	Alexander Ave.	South St.	Edwards Ave.	III-Shar	0.06
6	Bridgeway Blvd.	Princess St.	Richardson St.	III-Shar	0.37
13	Gate 5 Rd.	Harbor Dr.	Bridgeway Blvd.	III-Shar	0.36
12	Harbor Dr.	Gate 5 Rd.	Bridgeway Blvd.	III-Shar	0.02
11	Marinship Wy.	Harbor Dr.	Bridgeway Blvd.	III-Shar	0.53
<b>Segment Number</b>	<b>Facility Name</b>	<b>Begin</b>	<b>End</b>	<b>Class</b>	<b>Length</b>
5	Richardson St.	Bridgeway Blvd.	2nd St.	III-Shar	0.05
17	Rodeo Ave.	Spring St.	Rodeo Ave. Trailhead	III	0.63
3	South St.	2nd St.	Alexander Ave.	III-Shar	0.09
15	Spring St.	Rodeo Ave.	Bridgeway Blvd.	III	0.15
16	Woodward Ave.	Spring St.	Rodeo Ave.	III	0.08
<b>Total Class III</b>					<b>2.56</b>
<b>Total All Proposed Bikeways</b>					<b>3.98</b>

## **Bridgeway Bikeway South**

### **City of Sausalito**

---

The Bridgeway Bikeway South, from the South City limits to the intersection of Johnson Street, is the only available north-south through route between San Francisco and the entire North Bay Area. This condition results in a confluence of vehicles, local bicyclists, and all levels of commuter and recreational cyclists from surrounding areas on this stretch of road. As such, improvements to this portion of Bridgeway can be considered a regional priority. However, existing private development, constricted rights-of-ways, and needed on-street parking at several locations along this route preclude the potential to readily create Class I or II bike facilities. The plan seeks to improve on the existing conditions to enhance this section of road as a Class III Bike Route while installing Class II facilities where feasible. The majority of this project is existing Class III facility, for which this plan proposes adding Shared Roadway Bicycle Markings. Note that addition of Shared Roadway Markings in areas without parallel parking is currently a non-standard treatment in California. However, proposed Federal stencil guidelines and ongoing safety research indicates that “Sharrows” improve cyclist positioning on the roadway and may improve safety for these segments.

#### Segment #1: Alexander Avenue (Class II)

Improvements to a short segment just inside the city limits to enhance bicycle safety and connect to the planned Class II bike facility on Alexander Avenue between Sausalito and the Golden Gate Bridge. Proposed improvements include installation of striping, bike lane stencils, and bike lane signs. These improvements are necessary so that lane widths, striping, and signage correspond to proposed improvements to Alexander Avenue outside the City limits in GGNRA jurisdiction.

#### Segment #2: Alexander Avenue (existing Class III)

Improvements to Alexander Avenue from the South City limit to South Street to enhance bicycle safety and ease of movement as a Class III bike facility. The steep, narrow curve where Alexander Avenue meets South Street has been identified as a major area of vehicle/bicycle conflict, particularly in regard to traveling south in the uphill direction. Proposed improvements include re-striping of lanes and installation of Shared Roadway Bicycle Marking stencils and Share the Road signs.

### Segment #3: South Street (existing Class III)

Improvements to South Street from Alexander Avenue to Second Street to enhance bicycle safety and ease of movement as a Class III bike facility. Proposed improvements include re-stripping of lanes and installation of Shared Roadway Bicycle Marking stencils and Share the Road signs.

### Segment #4: Second Street (existing Class III)

Improvements to Second Street from South Street to Richardson Street to enhance bicycle safety and ease of movement as a Class III bike facility. Proposed improvements include re-stripping of lanes and installation of Shared Roadway Bicycle Marking stencils and Share the Road signs.

### Segment #5: Richardson Street (existing Class III)

Improvements to Richardson Street from Second Street to Bridgeway to enhance bicycle safety and ease of movement as a Class III bike facility. The slope and curves at each end of this section creates an awkward transition between Bridgeway and Second Street that would benefit from a Class II bike facility. Proposed improvements include the installation of Shared Roadway Bicycle Marking stencils and Share the Road signs.

### Segment #6: Bridgeway South (existing Class III)

Improvements to Bridgeway from Richardson Street to the Princess Street intersection to enhance bicycle safety and ease of movement as a Class III bike facility. Short-term improvements include the installation of Shared Roadway Bicycle Marking stencils. The emergency median and west side street parking create a confused travel lane that result in conflicts between bicyclists and fast moving vehicles, parked delivery vehicles, and slow moving or parked visitors (tourists). Long-term improvements include the installation of 2" AC overlay to eliminate the center median, striping of vehicle lanes and a multipurpose lane for bicycles and delivery/emergency parking, and installation of bike stencils and advisory signs.

## **Bridgeway Bikeway North**

### **City of Sausalito**

---

The north portion of Bridgeway, from Johnson Street to the Gate 6 intersection, will continue to be used by bicyclists of moderate and advanced expertise seeking the most direct and unobstructed route through the City. This route is particularly attractive to both commuters and recreational touring cyclists who travel at higher speeds and wish to avoid conflicts with slower riders and pedestrians. Currently bicycle lanes extend the full

length of this section, with two short gaps. The project seeks to complete the Class II bike lanes on Bridgeway, closing the following two gaps in the existing bike lanes:

Segment #7: Johnson to Litho Streets, Northbound (partial existing Class II)

Improvements to Bridgeway from the Johnson Street intersection to the Litho Street intersection to complete the gap in the existing Class II bike facility. Required improvements include striping of Class II Bike lanes, and installation of bike stencils and bike lane signs. Design options to achieve the necessary width to close the gap in the northbound bike lane include removing parking, removing the center turn lane and reconfiguring the landscape buffer/sidewalk/pathway area. However, no traffic or feasibility studies have been completed on any of these design options and would be required as a first step in completing this segment.

Segment #8: Easterby to Napa Street, Southbound (partial existing Class II)

Improvements to Bridgeway from Easterby to Napa Street to complete the gap in the existing Class II bike facility. Required improvements include striping of Class II Bike lanes, and installation of bike stencils and bike lane signs. Design options to achieve the necessary width to close the gap in the southbound bike lane include removing parking, or narrowing the existing median area which is approximately 12 feet in width for most of the segment. However, no traffic or feasibility studies have been completed on any of these design options and would be required as a first step in completing this segment.

## **North-South Recreational Bikeway**

### **City of Sausalito**

---

A patchwork series of off-street pathways connect the Sausalito Downtown to the Mill Valley-Sausalito Bike Path beginning at the North City limits. This bikeway will continue to be used by recreational and less experienced cyclists seeking an alternative to using Bridgeway. This route also avoids the grade between Napa Street and Harbor Drive. However, this section of bikeway presently contains gaps consisting of deteriorated private roadways, substandard bike paths, and areas where no defined path exists. The plan seeks to improve upon existing conditions to create standardized Class I Bike Path along the majority of the section and to improve signage and intersection configurations to enhance safety and reduce conflicts between vehicles, pedestrians and bicyclists. Currently the City of Sausalito has received a \$100,000 planning grant from the Nonmotorized Transportation Pilot program to study these and other North-South Recreational Bikeway segments parallel to Bridgeway.

Segment #9: Johnson to Locust Streets (existing substandard Class I)

Improvements to the existing substandard bike facility adjacent to Bridgeway from Johnson Street to Locust Street to provide a standardized Class I Bike path separate from the pedestrian sidewalk. The existing path consists of two narrow paths, creating a restricted and poorly defined travel lane that result in conflicts between bicyclists and pedestrians. Improvements include the removal of existing landscaping and installation of new Portland Cement Concrete (PCC), and installation of a new curb & gutters, striping, and advisory signs. This project would be designed in conjunction with completion of the bike lanes along Bridgeway between Johnson and Litho Streets.

Segment #10: Napa to Liberty Ship Way Streets (Class I - Mono Street gap closure)

Installation of approximately 75 feet Class I Bike Path. This gap in the bikeway presently relies upon an unpaved area for the transition between two adjacent segments of existing Class I pathway. If none currently exists and this segment is found to be on private property, an easement may be required.

Segment #11: Liberty Ship Way to Harbor Drive (Class III)

Improvements to Marinship Way from Liberty Ship Way to the Harbor Drive intersection to enhance bicycle safety and ease of movement as a Class III bike facility. This section of travel presently consists of a series of substandard streets of varying dimensions, surface types, and condition, with two ninety (90) degree turns. As such, the road provides poorly defined travel lanes for vehicles and bikes. Proposed improvements include installation of bike route signs, Shared Roadway Bicycle Marking stencils and traffic calming as appropriate. Note that addition of Shared Roadway Markings in areas without parallel parking is currently a non-standard treatment in California. However, proposed Federal stencil guidelines and ongoing safety research indicates that “Sharrows” improve cyclist positioning on the roadway and may improve safety for this segment. Traffic calming should be installed only after careful study of the impact on existing truck and boat trailer traffic along the roadway. Speed humps or curb extensions may be incompatible with vehicle clearances or turning radius requirements.

Segment #12: Bridgeway to Gate 5 Road (Class III)

Improvements to Harbor Drive from Bridgeway to Gate 5 Road intersection to enhance bicycle safety and ease of movement as a Class III bike facility. Existing conditions for this segment include sections with and without parallel parking. Proposed improvements include installation of bike route signs, Shared Roadway Bicycle Marking stencils and traffic calming as appropriate. Note that addition of Shared Roadway Markings in areas without parallel parking is currently a non-standard treatment in California. However, proposed Federal stencil guidelines and ongoing safety research indicates that

“Sharrows” improve cyclist positioning on the roadway and may improve safety for this segment. Traffic calming should be installed only after careful study of the impact on existing truck and boat trailer traffic along the roadway. Speed humps or curb extensions may be incompatible with vehicle clearances or turning radius requirements.

#### Segment #13: Harbor Drive to Gate 6 Road (Class III)

Improvements to Gate 5 Road from Harbor Drive to Gate 6 Road intersection to enhance bicycle safety and ease of movement as a Class III bike facility. Existing conditions for this segment include sections with and without parallel parking. Proposed improvements include installation of bike route signs, Shared Roadway Bicycle Marking stencils and traffic calming as appropriate. Note that addition of Shared Roadway Markings in areas without parallel parking is currently a non-standard treatment in California. However, proposed Federal stencil guidelines and ongoing safety research indicates that “Sharrows” improve cyclist positioning on the roadway and may improve safety for this segment. Traffic calming should be installed only after careful study of the impact on existing truck and boat trailer traffic along the roadway. Speed humps or curb extensions may be incompatible with vehicle clearances or turning radius requirements.

#### Segment #14: Bridgeway Sidepath - Marinship Way to Gate 6 Road (existing substandard Class I)

Improvements to the existing substandard pathway adjacent to Bridgeway from Marinship Way to Gate 6 Road at the North City limits to provide a standardized Class I Bike path separate from the pedestrian sidewalk. Previously existing bollards and surface ruptures along this portion of bike path have recently been removed and repaired. The existing path contains several street trees and inadequate widths, creating a restricted and poorly defined travel lane that result in conflicts between bicyclists and pedestrians. Improvements include the relocation and/or replacement of approximately 59 street trees, removal of existing AC pavement and installation of new eight (8) foot wide PCC, striping, and advisory signs. This segment may also require minor right-of-way acquisition and improvements on lands within Marin County jurisdiction.

## **Open Space Access Bikeways**

### **City of Sausalito**

---

This project consists of signing routes which local residents and visitors can ride to access open space opportunities in the hills above Sausalito. Treatments for these routes

would be limited to Class III bicycle route signage which would provide wayfinding direction guiding users of these routes to open space destinations.

Segments 15 through 18 mark a route leading from the intersection of Spring St. and Bridgeway up to trailhead access at Rodeo Avenue on the west side of Highway 101. Note that a new overcrossing or undercrossing would be required to connect Rodeo Avenue on the east side of Highway 101 with the trailhead on the west side. Bicycle parking is planned for the trailhead once the crossing of Highway 101 is complete.

Segment #15: Spring Street, Bridgeway to Woodward Avenue (Class III)

Segment #16: Woodward Avenue, Spring Street to Rodeo Avenue (Class III)

Segment #17: Rodeo Avenue, Woodward Avenue to west side Highway 101 (Class III)

Segment #18: Conceptual Highway 101 Undercrossing, Rodeo Trailhead to Rodeo Avenue (Class I)

## Bicycle Parking and Other Support Facilities

### City of Sausalito

---

Bicycle parking and other support facilities (such as shower and changing facilities) are critical for recreational and commuter bicyclists alike. In the following sections, this Plan provides specific recommendations on items such as:

- (1) Type, location, and number of bicycle parking racks and lockers;
- (2) Zoning requirements for the provision of bicycle parking to be implemented through the permit process; and
- (3) Zoning requirements for the provision of shower and changing facilities to be implemented through the permit process.

A systematic program to improve the quality and increase the quantity of bicycle parking facilities would be beneficial to Sausalito. The proposed standards are presented in the following recommendations:

#### Program #1: Public Bike Parking Facilities

Bike parking should be provided at all public destinations, including

- Parks (e.g. Dunphy Park)

- All schools
- Along Bridgeway in downtown at commercial destinations (e.g. Café Trieste, other restaurants and cafes)
- Near bus stops
- Ferry Terminal
- Trailheads (e.g. Wolfback Ridge Road)

All bicycle parking should be in a safe, secure, covered area (if possible). Bicycle parking in public areas will be provided by the City. Bicycle parking on sidewalks in commercial areas will be provided according to specific design criteria, reviewed by merchants and the public, and installed as demand warrants. As a general rule, ‘U’ type racks bolted into the sidewalk are preferred on downtown sidewalks, to be located at least every 250 feet or at specific bicycle destinations (such as bike shops), at least 2 feet from the curb and between marked parking spaces, and leave a minimum of 4 feet clear for pedestrians in compliance with ADA accessibility guidelines.

Program #2: Private and Commercial Bike Parking Facilities

All new commercial development or redevelopment in excess of 5,000 gross leasable square feet should be required to provide one space in an approved bicycle rack per 10 employees. All bicycle racks should be located in safe, secure, covered areas, be anchored to the ground, and allow bicycles to lock both frame and wheels. Figures 3-2 and 3-3 illustrate the recommended Class I (bike locker) and Class II (bike rack) configurations. Class I facilities will generally not be located in unsupervised public areas.

Program #3: Bike Parking for Existing Uses

Bicycle parking for existing non-residential uses should be implemented through one or a combination of the following two methods. (1) Require existing non-residential uses to provide bicycle parking per the requirements described above as part of the building permit process. (2) Subsidize the cost of bicycle parking through small advertisements on the racks themselves and/or through grants from public or private sources (see Funding section).

Program #4: Bike Corrals at Schools

A special program to construct bicycle corrals where needed at Bayside School and other schools should be continued and enhanced where needed. These simple enclosed facilities are locked from the beginning to the end of school, and address the theft and vandalism concerns of students.

Program #5: Bike Storage at Ferry Dock

The City will work with Golden Gate Transit to construct a bicycle storage facility near the ferry dock, possibly in tandem with a new bike rental operation. This facility would

help increase the attraction of the ferry-bicycle connection, and should be enclosed and easy-to-use on a daily or monthly basis. Explore the feasibility of establishing a bike station at the Ferry Terminal. Bike Stations enhance multi-modal connections. Stations are typically leased by a private vendor and provide bicycle parking, showers, rest rooms, and bicycle services such as sales, maintenance, rentals, and concessions.

#### Program #6: Bike Corrals at Community Events

The City should continue its existing program to provide closed-in secure valet bicycle corrals at all major special events (such as the Art & Jazz Festivals) in Sausalito, to encourage residents and visitors to bicycle rather than attempt to drive. The City should continue to sponsor this valet bike parking and work with the Marin County Bicycle Coalition or other non-profits to provide volunteers to staff the corral during the events.

## **Enforcement, Education and Maintenance Programs**

### **City of Sausalito**

---

The Sausalito Bicycle Master Plan provides both physical recommendations (such as bike lanes) and program recommendations. Some of the program recommendations, such as changes in zoning requirements for bicycle parking, have already been covered. This section covers future efforts to educate bicyclists and motorists, and efforts to increase the use of bicycles as a transportation alternative.

There is a need for improved enforcement of existing traffic regulations, improved bicyclist and motorist education, and improved maintenance. All of these recommendations are addressed in more detail in this Plan, and consist of the following elements:

- (1) Make it clear through signing and other methods that traffic regulations for bicyclists and motorists in Sausalito are strictly enforced, including the requirement to share travel lanes with bicyclists in congested areas.
- (2) Improve bicyclist and motorist education through a variety of methods including participation in the Safe Routes to Schools and Share the Road programs.
- (3) Adopt specific maintenance and construction standards that take into consideration bicyclists, including pavement surface tolerances, gutter lips, crack repair, temporary and permanent grates, and regular sweeping on bicycle routes.

Standards for enforcement signing are detailed in Appendix A: Supplemental Bikeway Design Guidelines. Maintenance practices and standards are discussed in Chapter 6: Implementation Strategy. Education of the bicyclist and general public remains a key element in achieving bicycle safety.

As described in Chapter 3, the School District, Police Department, and the Department of Public Works have a long history of trying to improve safety conditions for bicyclists and pedestrians. Unfortunately, the lack of education for bicyclists, especially younger students, continues to be a leading cause of accidents. Many less-experienced adult bicyclists are unsure how to negotiate intersections and make turns on city streets.

Motorist education on the rights of bicyclists and pedestrians is virtually non-existent. Many motorists mistakenly believe, for example, that bicyclists do not have a right to ride in travel lanes and that they should be riding on sidewalks. Many motorists do not understand the concept of 'sharing the road' with bicyclists, or why a bicyclist may need to ride in a travel lane if there is no shoulder or it is full of gravel or potholes.

#### Program #1: Share the Road

As described in Chapter 3, Sausalito has participated in the Share the Road program, a public-private partnership between Marin County law enforcement and the Marin County Bicycle Coalition. Through its participation the City has begun to address many of the adult cyclist and general public outreach and safety education goals that were first identified in the 1999 Bicycle Master Plan.

Checkpoints have been held in Sausalito in 2005, 2006 and 2007. This plan recommends that Sausalito continue checkpoints on an annual or biannual basis. In addition, this plan recommends that the City work with the Marin County Bicycle Coalition and other government agencies to hold Share the Road safety presentations that reach out to both cyclists and motorists with on-road safety messages. Additionally, the City should help to promote Basic Street Skills Classes to the cycling community to improve safe riding.

These recommendations are highly cost-effective for the City, since all activities are currently offered free of charge by the bicycle coalition. The only expense would be for law enforcement staff hours to participate in checkpoints. Details regarding the Share the Road Program can be found at:

<http://www.marinbike.org/Campaigns/ShareTheRoad/Index.shtml>

#### Program #2: Safe Routes to Schools

Identifying and improving routes for children to walk or bicycle to school is an effective means of reducing morning traffic congestion and addressing potential safety concerns around schools. Most effective school commute programs are joint efforts of the school district and City or County, with parent organizations adding an important element. The traffic calming, route maps and infrastructure improvements that result from an extensive Safe Routes to School plan benefit not only students walking and biking to school, but also other cyclists and pedestrians that are using routes near schools.

The 1999 *Sausalito Bicycle Master Plan* identified a need for future school education, curriculum development and development of an engineering toolbox to address physical issues in the areas surround schools. Many of these issues have begun to be addressed through the Safe Routes to Schools program described in Chapter 3.

The City of Sausalito should continue its support of the Safe Routes to Schools program within public and private schools. Safe Routes infrastructure improvement plans at local schools should be coordinated with town-wide bicycle infrastructure improvements to create a seamless network by which school-aged children can travel by bicycle and on foot. The availability of Safe Pathways funding through Marin's Measure A supports the city in this effort (see Chapter 6 for more details regarding funding sources).

The following five recommendations are incorporated from the Transportation Authority of Marin's SR2S Program Evaluation for 2005-2006:

- Expand to Any Non-Participating Schools
- Utilize the Measure A Safe Pathways Capital Funding Program to fund priority projects for example access to Bayside School via a Class II or III bikeway along Nevada and Buchanan.
- Sustain and Increase Participation, Enthusiasm, and Continuity
- Continue to Remove Barriers to Alternative Modes
- Increase Transit Availability

More details are available on the TAM website: <http://www.tam.ca.gov>

## **Community and Employer Outreach**

### **City of Sausalito**

---

Without community support, a bicycle plan lacks the key resources that are needed to ensure implementation over time. While the City Public Works Department may be responsible for designing and constructing physical improvements, strategies for community involvement will be important to ensure broad-based support--which translates into political support--which can help secure financial resources. Involvement by the private sector in raising awareness of the benefits of bicycling and walking range from small incremental activities by non-profit groups, to efforts by the largest employers in the City. Specific programs are described below.

#### Program #1: Bicycle Donation Program

A fleet of lender bicycles available to employees to use as a commute alternative has proved successful in Portland and other U.S. cities. The bicycle may be purchased new or obtained from police auctions, repaired, painted and engraved with ID numbers, and made available free of charge to employees. Depending on demand, bicycles may be

made available through reservations or on a rotating basis. The bicycles themselves should be lower-end heavy-duty bicycles that have minimal re-sale value. Employer's responsibilities would be limited to an annual maintenance inspection and repairs as necessary. The objective of the program is to encourage employees to try bicycling to work as an alternative, without making a major investment. Employers may wish to allow bicycle commuters to leave 15 minutes early from work, or some other type of incentive to encourage use of the bicycles. The City of Sausalito may consider such a program and may wish to encourage private employers to follow suit by offering TDM credits or subsidized purchases of bicycles.

#### Program #2: Bicycle Clunker and Parts Program, Bicycle Repair Program

This program, which already exists in San Rafael as the 'Trips for Kids' program, ties directly into the previous program by obtaining broken, stolen, or other bicycles and restoring them to working condition. The program's dual mission is also to train young people (ages 12-18) how to repair bicycles as part of a summer jobs training effort. Bicycles are an excellent medium to teach young people the fundamentals of mechanics, safety, and operation. Young people can use these skills to maintain their own bicycles, or to build on related interests. The program is often staffed by volunteers from local cycling organizations and bicycle shops, who can help build an interest in bicycling as an alternative to driving. The seed money to begin this program often comes from a local private funding source. The proposal submitted to this source should clearly outline the project objectives, operating details, costs, effectiveness evaluation, and other details. The bicycles themselves could be derived from unclaimed stolen bicycles from the police department, or from donated bicycles. The program will need to qualify as a Section 501C(3) non-profit organization to offer tax deductions.

#### Program #3: Bicycle Facilities Map

Work with the Parks & Recreation Department, the School District, Chamber of Commerce, and local businesses to produce a bicycle/walking map that shows existing and recommended touring and commuting bicycle routes, access to regional mountain bike trails, historic walking tours, and school commute routes.

#### Program #4: Community Adoption

Programs to have local businesses and organizations 'adopt' a pathway similar to the adoption of segments of the Interstate Highway system. Supporters would be identified by small signs located along the pathway, acknowledging their contribution. Support would be in the form of an annual commitment to pay for the routine maintenance of the pathway, which in general costs about \$10,578 per mile. This program may be administered by Parks & Recreation or other groups.

#### Program #5: Employer Incentives

Beyond programs described earlier such as the Bicycle Donation Program, employer incentives to encourage employees to try bicycling or walking to work include sponsoring bike races and events, providing bicycle lockers and shower facilities, and offering incentives to employees who commute by bicycle or walk by allowing for more flexible arrival and departure times, and possibly paying for transit or taxis during inclement weather. The City may offer incentives to employers to institute these improvements through air quality credits, lowered parking requirements, reduced traffic mitigation fees, or other means.

#### Program #6: Bike-to-Work and Bike-to-School Days

Bike-to-work days could be sponsored by the City, possibly in conjunction with other countywide agencies such as TAM, to help promote bicycling as a commute alternative. Bike-to-school days could be jointly sponsored with the School District, in conjunction with the TAM SR2S program which coordinates Bike and Walk to School Day countywide.

#### Program #7: Bike Races and Events

The City is well positioned to capitalize on the growing interest in on-road and off-road bicycle races and criteriums. Events would typically be sponsored by local businesses, and involve some promotion, insurance, and development of adequate circuits for all levels of riders. It is not unusual for these events to draw up to 1,000 riders, which would bring additional revenue into the town.

The City can assist in developing these events by acting as a co-sponsor, and expediting and possibly underwriting some of the expense of--for example--police time. The City should also encourage these events to have races and tours that appeal to the less experienced cyclist. For example, in exchange for underwriting part of the costs of a race the City could require the event promoters to hold a bicycle repair and maintenance workshop for kids, short fun races for kids, and/or a tour of the route lead by experienced cyclists who could show less experienced riders how to safely negotiate city streets.

An example of a bike race coordinated with the City is the Amgen Tour of California. The Tour is a professional cycling road race which takes place each February. Sausalito was the 2008 host city for the first stage of this event. This 'Tour de France-style' cycling road race is staged across many California communities. This event draws thousands of spectators and brings a significant amount of economic activity to Sausalito each year.

## **Shoreline Public Pathway – Long-term Project**

### **City of Sausalito**

---

Shoreline public access in the form of boardwalks and pathways already exists in Sausalito, including a boardwalk from Bay Street northward and pathways near Dunphy Park and Marinship Park. The General Plan identifies a shoreline pathway eventually connecting from Dunphy Park all the way to Gate 5 Road (Varda Landing Road), to be implemented as the area re-develops in the future. This vision was confirmed through the Imagine Sausalito process which identified a potential route along with opportunities and constraints. Much of the existing shoreline is currently a working waterfront, which is also strongly supported by City policy and is not typically compatible with public access. In some cases, the shoreline pathway may be diverted to City streets to circumvent marine industrial areas. While the shoreline pathway is not seen as an official Class I bicycle facility, it should be constructed to accommodate slow-moving bicyclists. This includes providing a paved surface at least six feet wide (preferred to be 8 feet) with unpaved 2 feet wide shoulders. The pathway design and construction specifications and easement requirements should be clearly identified in General Plan and zoning language and will require a future feasibility study.

## **Fort Baker Shuttle Service – Long-term Project**

### **City of Sausalito**

---

Even with the recommended improvements in this Plan, lower Bridgeway and Alexander Avenue will remain major constraints to bicyclists, especially recreational and less experienced users. A new shuttle service between Fort Baker and downtown Sausalito would serve many purposes, from helping to minimize traffic into the downtown area to helping bicyclists and pedestrians avoid the narrow stretch on Alexander Avenue. Experience on other shuttle services for visitor destinations has shown that, to attract visitors, four basic items must be met: (1) visitors must be signed to the remote lot preferably with a real-time electronic sign indicating the lack of parking and traffic congestion in the downtown, (2) the remote lot must be secure and well lit, (3) shuttle vehicles themselves should be fun and part of the visitor experience, and (4) scheduled headways should not exceed 15 minutes. Any new shuttle service between Sausalito and Fort Baker should be designed to accommodate bicycles.

## **Bridgeway Bikeway South - Long Term Alternative**

### **City of Sausalito**

---

The short term bikeway projects are intended to improve the Bridgeway Bikeway South as a Class III Bike Route. However, the amount and variety of both vehicle and bicycle traffic on that roadway justify eventual improvement as a Class I or II facility. The City will continue to explore alternative solutions to provide additional Class I and II facilities to either ameliorate or bypass the most constricted and/or congested conditions at Alexander Avenue, South Street, Second Street, and Bridgeway south of Downtown. Four potential alternate solutions **are** described below, each with varying costs and benefits. However, all feasible solutions should be considered. Although such alternatives would serve to significantly enhance safety and reduce conflicts between vehicles and bicyclists along this vital corridor, all are subject to substantial design analysis, public review, and construction costs. Collaboration with other regional agencies that are served by this corridor, such as the County of Marin and the GGNRA, will be necessary to realize such improvements. **Note: These are long-range, conceptual alternatives only. Further design study, environmental analysis, and public review will be required prior to any potential implementation of any of these alternatives.**

#### Alternate Segment #1-2: Alexander Avenue Widening (Class II)

Widen Alexander Avenue to provide a Class II bike facility on the southbound (uphill) lane and a pedestrian sidewalk on the east edge of street. The northbound lane may be maintained as a Class III bike facility if further widening proved infeasible. Existing buildings and driveway and access improvements create a constricted and hazardous condition at Alexander Avenue and will make widening difficult. The costs of this alternate are high and it is considered a long-term goal that would be beneficial regardless whether the proposed improvements to Alexander Avenue, as specified under Segments Nos. 1 and 2, are completed. Improvements include construction of several retaining walls, road widening, new sidewalk, and installation of striping and advisory signs.

#### Alternate Segment #1-3: Bypass Tunnel (Class I)

Construction of a bypass tunnel from East Road to the South end of Second Street. This alternative would provide a Class I bike facility to avoid the constricted and hazardous condition at Alexander Avenue and South Street. The costs of this alternate are high and it is considered a long-term goal that would be beneficial regardless whether the proposed improvements to Alexander Avenue and South Street, as specified under Segments Nos. 1 and 2, are completed. Improvements include construction of a new tunnel of approximately 1400 feet in length and installation of striping and advisory signs at each entrance to the tunnel.

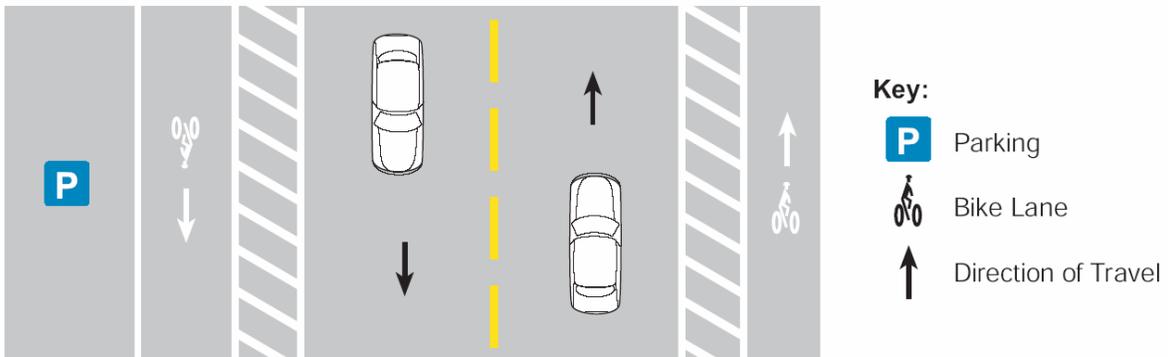
Alternate Segment #6A: Bridgeway South (Class II)

Improvements to Bridgeway from Richardson Street to the Princess Street intersection to enhance bicycle safety and ease of movement as a Class II bike lane facility. The emergency median and west side street parking create a confused travel lane that result in conflicts between bicyclists and fast moving vehicles, parked delivery vehicles, and slow moving or parked visitors (tourists). Improvements include the installation of 2" AC overlay to eliminate the center median, striping both vehicle lanes and bicycle lanes with a striped buffer area (space permitting) between the two. The combined width of the bicycle lane and buffer zone would allow sufficient width for emergency vehicles and temporary parking. Note that this concept must be verified with an accurate field survey to confirm available width for improvements.

Alternate Segment #6B: Bridgeway Boardwalk (Class II)

Construction of a pedestrian boardwalk and improvements to Bridgeway from Richardson Street to the Princess Street intersection to enhance bicycle safety and ease of movement as a Class II bike facility. This alternative would allow a widening of the street onto the current sidewalk in order to provide lane widths to create a Class II bike facility and maintain the emergency median strip. The costs of this alternate are high and it is considered a desirable long-term goal. Improvements include construction of a new boardwalk structure of approximately 1860 feet in length over existing rip-rap, removal of existing curb & gutter, expanded AC paving, installation of a new curb & gutter, retaining wall, striping, and advisory signs.

Buffered Bike Lane



## North-South Recreational Bikeway – Long-term Alternative

### City of Sausalito

---

As noted previously, a series of off-street pathways and boardwalks connect the Sausalito Downtown to the Mill Valley-Sausalito Bike Path at the North City limits. The need for a pathway or “greenway” has been identified in a number of planning documents and processes, such as the 1994 North-South Bikeway Feasibility Study and the Imagine Sausalito process. Such a facility would be separated from Bridgeway, connecting the Ferry Terminal and the Mill Valley-Sausalito Pathway as an alternate to the busy on-street route. Short-term projects included in this plan are intended to address the connection in the area from Johnson Street north to Gate 6 Road. Existing on-street bicycle lanes already serve the section of Bridgeway south of Johnson. However, there are two sections where potential alignments for a Class I pathway separated from Bridgeway are more problematic and may require long-term study and solutions. Pathway alignments for these sections are not clearly identified at this time and may be infeasible. Other projects such as the Shoreline Pathway may provide a more feasible alternative for a continuous north-south pathway through the city. Currently the City of Sausalito has received a \$100,000 planning grant from the Nonmotorized Transportation Pilot program to study these and other North-South Recreational Bikeway segments parallel to Bridgeway.

#### Long-Term Segment #1: Liberty Ship Way to Harbor Drive (Class I)

Construction of a pathway parallel to Bridgeway from Liberty Ship Way to Harbor Drive faces a number of challenges. As currently configured, public right of way adjacent to Bridgeway and Marinship Way are insufficient to accommodate a parallel pathway. In addition, part of the former railroad right-of-way which would have offered a natural alignment for such a pathway has been developed as private buildings or parking lots. The alignment for a separated Class I pathway through this section is not clearly understood at this time and requires further study and coordination with other planned pathway projects.

#### Long-Term Segment #2: Johnson Street to Ferry Terminal (Class I)

Similar to segment #1, construction of a pathway parallel to Bridgeway from Johnson Street to Ferry Terminal has a number of challenges including former railroad right-of-way which has been developed as private buildings or parking lots as well as existing boardwalk areas which do not have a bicycle-friendly surface and are heavily used by pedestrians, especially on the weekend. The alignment for a separated Class I pathway through this section is not clearly understood at this time and requires further study and coordination with other planned pathway projects.

## 6.0 Implementation Strategy

This section identifies costs for the proposed bicycle improvements, plus strategies for funding and financing.

### 6.1 Implementation of Bikeway Projects

Projects identified in this Plan update have come from a variety of sources, including other project and planning documents identified in Chapter 3, as well as from comments from agency staff, the public at a series of public workshops and the Pedestrian and Bicycle Task Force. Local matching funds, such as TDA or Measure A Transportation Sales Tax, should be allocated whenever possible to projects that meet the funding criteria of those programs. The actual schedule for implementation on a year-to-year basis should be determined by (a) the readiness of each project in terms of local support, (b) CEQA approvals, (c) right-of-way control, (d) timing with other related improvements, and/or (e) success in obtaining competitive funding. Projects which are part of the Primary County System as identified in the *Marin County Unincorporated Areas Bicycle and Pedestrian Master Plan* (2008) may also be deemed higher priority projects.

The steps between the individual project concepts identified in this Plan and final completion will vary from project to project, but typically include:

1. Adoption of the Sausalito Bicycle Master Plan Update by the Sausalito City Council,
2. Preparation of a Feasibility Study involving a conceptual design (with consideration of possible alternatives and environmental issues) and a cost estimate.
3. Secure, as necessary, outside funding and any applicable environmental approvals.
4. Approval of the project by the local planning body (if applicable) and the City Council, including the commitment by the latter to provide any unfunded portion of the cost.
5. Completion of final Plans, Specifications, and Estimates (PS&E), advertising for bids, receipt of bids and award of contract(s).
6. Construction of the Project.

### 6.2 Cost Breakdown

An initial cost breakdown for bicycle and pedestrian infrastructure projects is presented in **Table 6-1**. The total capital cost is estimated to be approximately \$748,100. It is important to highlight the following major assumptions for the cost estimates:

1. All cost estimates are highly conceptual, since no feasibility or preliminary design has been completed.
2. Costs include only unfunded capital projects. No funding for programs, including outreach, education and promotion, is included in this capital cost estimate table.
3. Costs include only near and medium-term projects. No funding for long-term projects is provided, due to lack of information to estimate costs.
4. Maintenance costs are not included in this table; see Section 6.3.

5. Many of these costs reflect only a proportion of the total project cost. For example, new roadway shoulders may be partially paid for by roadway funds and partially by bicycle funds.

The projects listed in Chapters 5 and 6 are recommended to be implemented over the next ten to twenty years, or as funding is available. This system is presented as a ‘best case’ scenario for Sausalito, providing a network of bicycle facilities. Some of the more expensive projects may take longer to implement. It is important to note that many of the funding sources are highly competitive, and therefore impossible to determine exactly which projects will be funded by which funding sources. Timing of projects is also difficult to pinpoint exactly, due to dependence on competitive funding sources, timing of roadway and development projects, and the overall economy.

### **6.3 Maintenance**

The total annual maintenance cost of all existing and proposed Sausalito bikeways identified in this plan is estimated to be approximately \$12,200 (2008 dollars) when fully implemented. About three-quarters of the maintenance costs are associated with the proposed Class I paths. Class I path annual maintenance costs are based on an estimate of \$10,578 per mile<sup>3</sup>, which covers labor, supplies, and amortized equipment costs for weekly trash removal, monthly sweeping, and bi-annual resurfacing and repair patrols includes cleaning, resurfacing and restriping the asphalt path, repairs to crossings, cleaning drainage systems, trash removal, landscaping, underbrush and weed abatement (performed once in the late spring and again in mid-summer). Maintenance access on Class I paths will be achieved using standard pick-up trucks on the pathway itself. Sections with narrow widths or other clearance restrictions should be clearly marked. Class II bicycle lanes annual maintenance costs are based on an estimate of \$3,400 per mile which includes materials and labor for restriping and restenciling once every five years and sign replacement as necessary. Routine maintenance activities such as street sweeping of bicycle lanes are included by most jurisdictions in their regular street maintenance costs and so incur no additional expenses. Class III bicycle routes annual maintenance costs are based on an estimate of \$350 per mile which includes materials and labor for sign replacement as necessary.

The City of Sausalito should work with TAM and other agencies to identify a reliable source of maintenance funding to cover all new Class I, II and III bikeway construction. All proposed designs should be closely examined to minimize future maintenance costs.

---

<sup>3</sup> Transportation Authority of Marin *Marin County Bike Path Maintenance Report*, 2007

**Table 6-1- Proposed Bikeways Cost Estimates**

Class I Facilities - Multi-Use Paths (Off-Street)						
Segment Number	Facility Name	Begin	End	Class	Length	Cost*
14	Sausalito N-S Recreational Bikeway	Sausalito City Limit	Harbor Dr.	I	0.51	\$507,100
9	Bridgeway Pathway	Johnson St.	Locust St.	I	0.17	\$169,000
10	N-S Recreational Bikeway (Mono St. gap closure)	Napa St.	Liberty Ship Wy.	I	0.02	\$19,900
18	Rodeo Highway 101 Undercrossing (conceptual)	Rodeo Trailhead (west side Hwy 101)	Rodeo Ave. (east side Hwy 101)	I	0.20	[feasibility study needed]
<b>Total Class I Mileage</b>					<b>0.90</b>	<b>\$696,000</b>
Class II Facilities - Striped Bicycle Lanes (On-Street)						
Segment Number	Facility Name	Begin	End	Class	Length	Cost**
1	Alexander Ave.	Edwards Ave	City Limits	II	0.05	\$1,500
8	Bridgeway Blvd. (southbound only)	Easterby St.	Napa St.	II	0.25	\$7,700
7	Bridgeway Blvd. (northbound only)	Johnson St.	Litho St.	II	0.22	\$6,800
<b>Total Class II Mileage</b>					<b>0.52</b>	<b>\$16,000</b>
Class III Facilities - Signed Bicycle Routes (On-Street)						
Segment Number	Facility Name	Begin	End	Class	Length	Cost***
4	2nd St.	Richardson St.	South St.	III-Shar	0.20	\$3,600
2	Alexander Ave.	South St.	Edwards Ave.	III-Shar	0.06	\$1,100
6	Bridgeway Blvd.	Princess St.	Richardson St.	III-Shar	0.37	\$6,500
13	Gate 5 Rd.	Harbor Dr.	Bridgeway Blvd.	III-Shar	0.36	\$6,400
12	Harbor Dr.	Gate 5 Rd.	Bridgeway Blvd.	III-Shar	0.02	\$400
11	Marinship Wy.	Harbor Dr.	Bridgeway Blvd.	III-Shar	0.53	\$9,300
5	Richardson St.	Bridgeway Blvd.	2nd St.	III-Shar	0.05	\$900
17	Rodeo Ave.	Spring St.	Rodeo Ave. Trailhead	III	0.63	\$7,900
3	South St.	2nd St.	Alexander Ave.	III-Shar	0.09	\$1,600
15	Spring St.	Rodeo Ave.	Bridgeway Blvd.	III	0.15	\$1,900
16	Woodward Ave.	Spring St.	Rodeo Ave.	III	0.08	\$1,000
<b>Total Class III</b>					<b>2.56</b>	<b>\$36,100</b>
<b>Total All Proposed Bikeways</b>					<b>3.98</b>	<b>\$748,100</b>

\*Estimated base cost of Class I Pathway is \$994,325/mile

\*\*Estimated base cost of Class II Bicycle Lane is \$30,700/mile

\*\*\*Estimated base cost of Class III Signed Bicycle Route is \$12,600/mile

\*\*\*Estimated base cost of Class III Signed Bicycle Route with Shared Roadway Bicycle Markings is \$17,500/mile

**Note: Estimated project costs are based on per-mile estimates; actual costs will likely be much higher due to the cost of roadway changes, utility and traffic safety facility relocations, drainage changes, and right-of-way acquisition which cannot be estimated without further feasibility study.**

## 6.4 Funding Opportunities

Proposed improvements and programs to be developed over the next 20 years in Sausalito have been analyzed to determine the annual financing requirements, and to allow the City to budget its resources and target funding applications. It is important to note that the majority of funding for bicycle projects is expected to be derived from State and Federal sources. These funding sources are extremely competitive, and require a combination of sound applications, local support, and lobbying on the regional, state and national level.

### Federal Funding Sources

The primary federal source of surface transportation funding—including bicycle and pedestrian facilities—is SAFETEA-LU, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. SAFETEA-LU is the fourth iteration of the transportation vision established by Congress in 1991 with the Intermodal Surface Transportation Efficiency Act (ISTEA) and renewed in 1998 and 2003 through the Transportation Equity Act for the 21st Century (TEA-21) and the Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003 (SAFETEA). Also known as the federal transportation bill, the \$286.5 billion SAFETEA-LU bill was passed in 2005 and authorizes Federal surface transportation programs for the five-year period between 2005 and 2009.

SAFETEA-LU funding is administered through the State (Caltrans and the State Resources Agency) and regional planning agencies. Most, but not all, of these funding programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. SAFETEA-LU programs require a local match of 11.47%. SAFETEA-LU funding is intended for capital improvements and safety and education programs and projects must relate to the surface transportation system.

Specific funding programs under SAFETEA-LU include, but are not limited to:

- Congestion Mitigation and Air Quality (CMAQ) – Funds projects that are likely to contribute to the attainment of national ambient air quality standards
- Recreational Trails Program—\$370 million nationally through 2009 for non-motorized trail projects
- Safe Routes to School Program—\$612 million nationally through 2009
- Transportation, Community and System Preservation Program—\$270 million nationally over five years
- Federal Lands Highway Funds—Approximately \$4.5 billion dollars are available nationally through 2009

#### FUNDING GLOSSARY

CTC *California Transportation Commission*

FHWA *Federal Highway Administration*

MPO *Metropolitan Planning Organization*

RTIP *Regional Transportation Improvement Program*

RTP *Regional Transportation Plan*

RTPA *Regional Transportation Planning Agency*

SAFETEA-LU *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*

STIP *State Transportation Improvement Program*

## **Marin Nonmotorized Transportation Pilot Program**

Marin County is one of four communities nationally that has been selected by Congress to participate in a Nonmotorized Transportation Pilot Program under Section 1807 of the 2005 federal transportation bill, SAFETEA-LU. Section 1807 provides for \$20 million to each of the four communities for fiscal years 2006 through 2009. The legislation states that "The Secretary shall establish and carry out nonmotorized transportation pilot program to construct, in the following four communities selected by the Secretary, a network of nonmotorized transportation infrastructure facilities, including sidewalks, bicycle lanes, and pedestrian and bicycle trails, that connect directly with transit stations, schools, residences, businesses, recreation areas, and other community activity centers:

1. Columbia, Missouri
2. Marin County, California
3. Minneapolis-St. Paul, Minnesota
4. Sheboygan County, Wisconsin

The purpose of the program shall be to demonstrate the extent to which bicycling and walking can carry a significant part of the transportation load, and represent a major portion of the transportation solution, within selected communities."

As of this writing Marin County is determining the process by which funding will be distributed and local agencies will apply or submit projects for consideration.

## **Federal Lands Highway Funds**

Federal Lands Highway Funds may be used to build bicycle and pedestrian facilities in conjunction with roads and parkways at the discretion of the department charged with administration of the funds. The projects must be transportation-related and tied to a plan adopted by the State and MPO. Federal Lands Highway Funds may be used for planning and construction.

## **Transportation, Community and System Preservation Program**

The Transportation, Community and System Preservation (TCSP) Program provides federal funding for transit oriented development, traffic calming and other projects that improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services and trade centers. The program is intended to provide communities with the resources to explore the integration of their transportation system with community preservation and environmental activities. TCSP Program funds require a 20% match.

## **Regional Surface Transportation Program**

The Regional Surface Transportation Program (RSTP) is a block grant program which provides funding for bicycle and pedestrian projects, among many other transportation projects. Under the RSTP, Metropolitan Planning Organizations, such as MTC, prioritize and approve projects which will receive RSTP funds. TAMC distributes the RSTP funds to local jurisdictions.

Metropolitan planning organizations can transfer funding from other federal transportation sources to the RSTP program in order to gain more flexibility in the way the monies are allocated. In California, 62.5% of RSTP funds are allocated according to population. The remaining 37.5% is available statewide.

### **Regional Transportation Improvement Program**

The Regional Transportation Improvement Program (RTIP) is a derivative of the STIP program and identifies projects which are needed to improve regional transportation. Such projects may include bicycle and pedestrian facilities, safety projects and grade separation, among many others. RTIP project planning, programming and monitoring may be funded up to 5% of total RTIP funds in urbanized regions and 2% of total RTIP funds in non-urbanized regions. Each RTPA prepares a RTIP, consisting of projects to be funded through STIP. The RTPA's Regional Transportation Plan helps prioritize projects for the RTIP. RTIPs must be approved by the CTC. Projects to be funded by RTIP funds must be identified in the current or next Regional Transportation Plan.

### **Recreational Trails Program**

The Recreational Trails Program of SAFETEA-LU provides funds to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, and other non-motorized as well as motorized uses. In California, the funds are administered by the California Department of Parks and Recreation. RTP projects must be ADA compliant. Recreational Trails Program funds may be used for:

- Maintenance and restoration of existing trails;
- Purchase and lease of trail construction and maintenance equipment;
- Construction of new trails; including unpaved trails;
- Acquisition of easements or property for trails;
- State administrative costs related to this program (limited to seven percent of a State's funds); and
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a State's funds).

### **Land and Water Conservation Fund**

Land and Water Conservation Fund is a federally funded program that provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. The Fund is administered by the National Parks Service and the California Department of Parks and Recreation and has been reauthorized until 2015.

Cities, counties and districts authorized to acquire, develop, operate and maintain park and recreation facilities are eligible to apply. Applicants must fund the entire project, and will be

reimbursed for 50% of costs. Property acquired or developed under the program must be retained in perpetuity for public recreational use. The grant process for local agencies is competitive, and 40% of grants are reserved for Northern California.

In 2006, approximately \$480,000 was available for projects in Northern California.

### **Rivers, Trails and Conservation Assistance Program**

The Rivers, Trails and Conservation Assistance Program (RTCA) is a National Parks Service program which provides technical assistance via direct staff involvement, to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only for planning assistance—there are no implementation monies available. Projects are prioritized for assistance based upon criteria which include conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation and focusing on lasting accomplishments.

### **Statewide Funding Sources**

The State of California uses both federal sources and its own budget to fund the following bicycle and pedestrian projects and programs.

### **Bicycle Transportation Account**

The Bicycle Transportation Account (BTA) provides state funding for local projects that improve the safety and convenience of bicycling for transportation. Because of its focus on transportation, BTA projects, including trail, must provide a transportation link. Funds are available for both planning and construction. BTA funding is administered by Caltrans and cities and counties must have an adopted Bicycle Transportation Plan in order to be eligible. City Bicycle Transportation Plans must be approved by the local MPO prior to Caltrans approval. Out of \$5 million available statewide, the maximum amount available for individual projects is \$1.2 million.

### **Wildlife Conservation Board Public Access Program**

Funding for the acquisition of lands or improvements that preserve wildlife habitat or provide recreational access for hunting, fishing or other wildlife-oriented activities. Up to \$250,000 dollars available per project, applications accepted quarterly. Projects eligible for funding include interpretive trails, river access, and trailhead parking areas. The State of California must have a proprietary interest in the project. Local agencies are generally responsible for the planning and engineering phases of each project.

### **California Conservation Corps**

The California Conservation Corps (CCC) is a public service program which occasionally provides assistance on construction projects. The CCC may be written into grant applications as a project partner. In order to utilize CCC labor, project sites must be public land or be publicly accessible. CCC labor cannot be used to perform regular maintenance, however, they will perform annual maintenance, such as the opening of trails in the spring.

### **Safe Routes to School (SR2S)**

In September 2004, with the passage of SB 1087 (Soto), the State extended Safe Routes to School legislation for three additional years. The bill is scheduled to sunset on January 1, 2008, but pending legislation has been proposed to extend the SR2S program indefinitely. This program is meant to improve the safety of walking and cycling to school and encourage students to walk and bicycle to school through identification of existing and new routes to school and construction of pedestrian and bicycle safety and traffic calming projects. Caltrans is currently evaluating California's SR2S funding, in light of the new federal SR2S Program. Recent SAFETEA-LU legislation which requires each state's Department of Transportation to designate a SR2S Coordinator, also contains a SR2S program, but as of this writing, whether or not these programs will be combined in California or will remain autonomous has not yet been determined.

### **Environmental Justice: Context Sensitive Planning Grants**

The Caltrans-administered Environmental Justice: Context Sensitive Planning Grants promotes context sensitive planning in diverse communities and funds planning activities that assist low-income, minority and Native American communities to become active participants in transportation planning and project development. Grants are available to transit districts, cities, counties and tribal governments. This grant is funded by the State Highway Account at \$1.5 million annually state-wide. Grants are capped at \$250,000.

### **Office of Traffic Safety (OTS) Grants**

The California Office of Traffic Safety distributes federal funding apportioned to California under the National Highway Safety Act and SAFETEA-LU. Grants are used to establish new traffic safety programs, expand ongoing programs or address deficiencies in current programs. Bicycle and pedestrian safety are included in the list of traffic safety priority areas. Eligible grantees are: governmental agencies, state colleges, and state universities, local city and county government agencies, school districts, fire departments and public emergency services providers. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation or construction. Grants are awarded on a competitive basis, and priority is given to agencies with the greatest need. Evaluation criteria to assess need include: potential traffic safety impact, collision statistics and rankings, seriousness of problems, and performance on previous OTS grants. OTS expects to have \$56 million in funding available statewide for FY 2006/07.

### **Community Based Transportation Planning Demonstration Grant Program**

This fund, administered by Caltrans, provides funding for projects that exemplify livable community concepts including bicycle and pedestrian improvement projects. Eligible applicants include local governments, MPO's and RPTA's. A 20% local match is required and projects must demonstrate a transportation component or objective. There are \$3 million dollars available annually statewide.

### **Coastal Conservancy Non-Profit Grants Program**

The Coastal Conservancy provides grants to non-profit organizations for projects which provide access to the California coast and preserve coastal lands, including the construction of trails, public piers, urban waterfronts, and other public access facilities.

### **Regional Funding Sources**

Regional bicycle and pedestrian grant programs come from a variety of sources, including SAFETEA-LU, the State budget and vehicle registration fees.

### **AB 2766 Motor Vehicle Emission Reduction Grant Program**

The Bay Area Air Quality Management District provides a grant program in accordance with Assembly Bill 2766 which authorized air districts in California to impose a two to four dollar motor vehicle registration fee to be used for the purpose of reducing motor vehicle emissions in order for air districts to meet their responsibilities under the California Clean Air Act. Projects include bicycle facility improvements, safety and enforcement. Proposals must demonstrate the relationship between reduced motor vehicle emissions and improved air quality.

### **Transportation for Livable Communities Program**

The Transportation for Livable Communities Program (TLC) provides grant monies to public agencies to encourage land use decisions that support compact, pedestrian and bicycle friendly development near transit hubs. MTC administers the TLC program with funds from the Regional Surface Transportation Project. TLC grants are capped at \$400,000 and are competitive. Funds may be used for capital projects or planning.

### **Transportation Enhancement Program**

The Transportation Enhancement Program provides funds for the construction of projects, beyond the scope of typical transportation projects, which enhance the transportation system. Transportation Enhancement Projects may include landscaping, bicycle facilities and streetscape improvements. Transportation Enhancement projects are programmed as part of the STIP. Annual apportionment averages around \$500,000.

### **Transportation Fund for Clean Air Program (TFCA)**

TFCA funds are generated by a four dollar surcharge on automobile registration fees in the nine-county Bay Area. Approximately \$20 million is collected annually which funds two programs: 60 percent of the TFCA monies go to the Regional Fund and 40 percent go to the County Program Manager Fund. Marin County receives approximately \$375,000 annually.

The Regional Fund is administered by the Bay Area Air Quality Management District (BAAQMD). Pedestrian infrastructure improvements are eligible for TFCA funds through the Smart Growth funding category.

BAAQMD, TFCA Program: [www.baaqmd.gov/pln/grants\\_and\\_incentives/tfca/](http://www.baaqmd.gov/pln/grants_and_incentives/tfca/)

## **Regional Bicycle and Pedestrian Program (RBPP)**

The RBPP was created in 2003 as part of the long range Transportation 2030 Plan developed by the Bay Area Metropolitan Transportation Commission. The program—currently funded with Congestion Mitigation and Air Quality funds—funds regionally significant pedestrian and bicycle projects, and bicycle and pedestrian projects serving schools or transit. \$200 million dollars are committed to this program over the 25-year period. Seventy five percent of the total funds are allocated to the county congestion management agencies based on population. The remaining 25 percent of funds are regionally competitive, with the county CMAs recommending the projects to be submitted to MTC for funding consideration.

Metropolitan Transportation Commission, RBPP Program  
[www.mtc.ca.gov/planning/bicyclespedestrians/regional.htm#bikepedprog](http://www.mtc.ca.gov/planning/bicyclespedestrians/regional.htm#bikepedprog)

## **Safe Routes to Transit (SR2T)**

Regional Measure 2 (RM2), approved in March 2004, raised the toll on seven state-owned Bay Area bridges by one dollar for 20 years. This fee increase funds various operational improvements and capital projects which reduce congestion or improve travel in the toll bridge corridors.

Twenty million dollars of RM2 funding is allocated to the Safe Routes to Transit Program, which provides competitive grant funding for capital and planning projects that improve bicycle and pedestrian access to transit facilities. Eligible projects must be shown to reduce congestion on one or more of the Bay Area's toll bridges. The competitive grant process is administered by the Transportation and Land Use Coalition and the East Bay Bicycle Coalition. Competitive funding is awarded in five \$4 million grant cycles. The first round of funding was awarded in December 2005. Future funding cycles will be in 2007, 2009, 2011 and 2013.

Transportation and Land Use Coalition, SR2T Program:  
[www.transcoalition.org/c/bikeped/bikeped\\_saferoutes.html](http://www.transcoalition.org/c/bikeped/bikeped_saferoutes.html)

## **The Bay Trail Project**

The Bay Trail Grant program offers competitive grants to local governments, special districts and qualified nonprofit groups to build or design new Bay Trail segments. The program is structured to: speed Bay Trail construction by targeting high-priority, ready to build sections and closing critical gaps; leverage state dollars with significant matching funds and in-kind contributions; foster partnership by encouraging cooperative partnerships and creative design solutions; and employ the California Conservation Corps for construction, landscaping and maintenance where possible. The amount of available funding varies, depending on State bonds and grants to the Bay Trail Project. Beginning Fall 2007 the Bay Trail has a new funding program that will distribute \$2.5 million in Proposition 84 funds for the planning and construction of Bay Trail spine segments in the 9-county area. Another \$2.5 million grant program is anticipated in 2009.

Bay Trail Project Grant Program: [http://baytrail.abag.ca.gov/grants\\_2003.htm](http://baytrail.abag.ca.gov/grants_2003.htm)

## **Housing Incentive Program (HIP)**

As part of the Transportation for Livable Communities (TLC) program, the Metropolitan Transportation Commission's (MTC) Housing Incentive Program (HIP) rewards local governments that build housing near transit stops. HIP funds are intended to be used for transportation capital projects that support Transportation for Livable Communities (TLC) goals. Typical capital projects include pedestrian and bicycle facilities that connect the housing project to adjacent land uses and transit; improved sidewalks and crosswalks linking the housing to a nearby community facility such as a school or a public park; or streetscape improvements that support increased pedestrian, bicycle, and transit activities and safety.

The dollar amount of HIP funds that may be requested is determined by the density of the qualifying housing development and the number of affordable and market rate bedrooms that will be provided. The maximum grant amount per jurisdiction is \$3 million.

Regional Housing Incentive Program: [http://www.mtc.ca.gov/planning/smart\\_growth/hip.htm](http://www.mtc.ca.gov/planning/smart_growth/hip.htm)

## **Lifeline Transportation Program**

Program established to fund projects that result in improved mobility for low-income residents of the nine San Francisco Bay Area counties. The Lifeline Program supports community-based transportation projects that:

- Are developed through a collaborative and inclusive planning process that includes broad partnerships among a variety of stakeholders such as public agencies, transit operators, community-based organizations and other community stakeholders, and outreach to underrepresented stakeholders.
- Address transportation gaps and/or barriers identified through a Community-Based Transportation Plan (CBTP), countywide or regional Welfare-to-Work Transportation Plan, or are otherwise based on a documented assessment of needs within the designated communities of concern. Findings emerging from one or more CBTPs may also be applied to other low-income areas, or otherwise be directed to serve low-income constituencies within the county, as applicable.
- Improve a range of transportation choices by adding a variety of new or expanded services including but not limited to: enhanced fixed route transit services, shuttles, children's programs, taxi voucher programs, improved access to autos, capital improvement projects. Transportation needs specific to elderly and disabled residents of low-income communities may also be considered when funding projects.

Funding for the Lifeline program varies from year to year. Available funding through the end of FY 2008 is estimated at \$18M.

Lifeline Transportation Program: <http://www.mtc.ca.gov/planning/lifeline/index.htm>

## **Local Funding Sources**

### **TDA Article 3**

Transportation Development Act (TDA) Article 3 funds are state block grants awarded annually to local jurisdictions for transit, bicycle and pedestrian projects in California. Funds for pedestrian projects originate from the Local Transportation Fund (LTF), which is derived from a ¼ cent of the general state sales tax. LTF funds are returned to each county based on sales tax revenues. Eligible pedestrian and bicycle projects include: construction and engineering for capital projects; maintenance of bikeways; bicycle safety education programs (up to 5% of funds); and development of comprehensive bicycle or pedestrian facilities plans. A city or county is allowed to apply for funding for bicycle or pedestrian plans not more than once every five years. These funds may be used to meet local match requirements for federal funding sources. 2% of the total TDA apportionment is available for bicycle and pedestrian funding.

### **Measure A – Major Roads and Related Infrastructure**

These funds (approximately \$43.9 M) will be spent on the most heavily traveled and significant roads and related infrastructure in Marin County. To ensure that each community in Marin County receives an equitable share of sales tax funds, expenditures for major infrastructure projects will be distributed to the five planning areas of the County based on their population (50%) and road miles (50%). This distribution will be balanced every six years.

### **Measure A – Local Infrastructure**

The funds (approximately \$43.9 M) will be distributed on an annual basis to each city, town, and Marin County based on a combination of miles of roads to be maintained and population. Each project will be required to consider the needs of all roadway users. Where feasible, locally defined bicycle and pedestrian projects will be implemented at the time a roadway is improved. Improvements could include striping and signing for bicycle lanes and bikeways, sidewalk improvements, curb ramps, and other accessibility and safety improvements.

### **Measure A – Safe Pathways Funding**

Safe Pathways to School is the capital improvement element of the Transportation Authority of Marin's Safe Routes to Schools program. Where the Safe Routes program identifies circulation improvements needed for safe access to schools, the Safe Pathways program will provide funding for the engineering, environmental clearance, and construction of pathway and sidewalk improvements in all Marin County communities, including safety improvements at street crossings.

Safe Pathway projects are expected to attract matching funds from other sources and may be used in combination with road funds to accelerate pathway improvements in school areas.

Safe Pathways Projects are selected based on performance criteria that focus on improving safety throughout the County. All projects will come from approved Safe Routes plans, supported by parents, school officials, and the local jurisdiction.

- Relieves an identified safety or congestion problem along a major school route

- Completes a "gap" in the bicycle and pedestrian system along a major school route
- Maximizes daily uses by students and others
- Attracts matching funds
- Respects geographic equity

## **Non-Traditional Funding Sources**

### **American Greenways Program**

Administered by The Conservation Fund, the American Greenways Program provides funding for the planning and design of greenways. Applications for funds can be made by local regional or state-wide non-profit organizations and public agencies. The maximum award is \$2,500, but most range from \$500 to \$1,500. American Greenways Program monies may be used to fund unpaved trail development.

### **California Center for Physical Activity Grant Program**

The California Center for Physical Activity runs several programs related to walking and offers small grants to public health departments. Grants are in the amount of \$4,999 dollars or less and are offered intermittently.

### **Requirements for New Developments**

With the increasing support for “routine accommodation” and “complete streets,” requirements for new development, road widening and new commercial development provide opportunities to efficiently construct pedestrian facilities.

### **Impact Fees**

One potential local source of funding is developer impact fees, typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may attempt to reduce the number of trips (and hence impacts and cost) by paying for on- and off-site pedestrian improvements designed to encourage residents, employees and visitors to the new development to walk rather than drive. Establishing a clear nexus or connection between the impact fee and the project’s impacts is critical to ensure legal soundness.

### **Mello-Roos Community Facilities Act**

The Mello-Roos Community Facilities Act was passed by the Legislature in 1982 in response to reduced funding opportunities brought about by the passage of Proposition 13. The Mello-Roos Act allows any county, city, special district, school district or joint powers of authority to establish a Community Facility Districts (CFD) for the purpose of selling tax-exempt bonds to fund public improvements within that district. CFDs must be approved by a two-thirds margin of qualified voters in the district. Property owners within the district are responsible for paying back the bonds. Pedestrian facilities are eligible for funding under CFD bonds.

## **Volunteer and Public-Private Partnerships**

Volunteer programs may substantially reduce the cost of implementing some of the proposed pathways. Use of groups such as the California Conservation Corp (who offers low cost assistance) will be effective at reducing project costs. Local schools or community groups may use the bikeway or pedestrian project as a project for the year, possibly working with a local designer or engineer. Work parties may be formed to help clear the right of way where needed. A local construction company may donate or discount services. A challenge grant program with local businesses may be a good source of local funding, where corporations ‘adopt’ a bikeway and help construct and maintain the facility.

## **Appendix A: Supplemental Bikeway Design Guidelines**

This reference is provided as a supplement to the 2008 Marin County Unincorporated Area Bicycle and Pedestrian Master Plan. These basic bikeway planning and design requirements are furnished for use in developing the County of Marin bikeway system and support facilities. Where applicable, all recommendations in this appendix meet Caltrans Chapter 1000 “Bikeway Planning and Design” requirements.

### **Bikeway Facility Classifications**

According to Caltrans, the term “bikeway” encompasses all facilities that provide primarily for bicycle travel. Caltrans has defined three types of bikeways in Chapter 1000 of the Highway Design Manual: Class I, Class II, and Class III. For each type of bikeway facility both “Design Requirements” and “Additional Design Recommendations” are provided. Design requirements are those established by Caltrans Chapter 1000 “Bikeway Planning and Design”. “Additional Design Recommendations” are provided to assist with design and implementation of facilities and include alternate treatments approved or recommended by not required by Caltrans.

**Figure 1** provides an illustration of the three types of bicycle facilities.

#### **Class I Bikeway – Design Requirements**

Typically called a “bike path” or “shared use path,” a Class I bikeway provides bicycle travel on a paved right-of-way completely separated from any street or highway. The recommended width of a shared use path is dependent upon anticipated usage:

- 8’ (2.4 m) is the minimum width for Class I facilities
- 8’ (2.4 m) may be used for short neighborhood connector paths (generally less than one mile in length) due to low anticipated volumes of use
- 10’ (3.0 m) is the recommended minimum width for a typical two-way bicycle path
- 12’ (3.6 m) is the preferred minimum width if more than 300 users per peak hour are anticipated, and/or if there is heavy mixed bicycle and pedestrian use

A minimum 2’ (0.6 m) wide graded area must be provided adjacent to the path to provide clearance from trees, poles, walls, guardrails, etc. On facilities with expected heavy use, a yellow centerline stripe is recommended to separate travel in opposite directions. **Figure 2** illustrates a typical cross-section of a Class I multi-use path.

#### **Class I Bikeway - Additional Design Recommendations:**

1. Shared use trails and unpaved facilities that serve primarily a recreation rather than a transportation function and will not be funded with federal transportation dollars may not need to be designed to Caltrans standards. However, state and national guidelines have been created with user safety in mind and should be followed as appropriate. Wherever any trail facility intersects with a street, roadway, or railway, standard traffic controls should always be used.

## **Appendix A: Supplemental Bikeway Design Guidelines**

---

2. Class I bike path crossings of roadways require preliminary design review. Generally speaking, bike paths that cross roadways with average daily trips (ADTs) over 20,000 vehicles will require signalization or grade separation.
3. Landscaping should generally be low water consuming native vegetation and should have the least amount of debris.
4. Lighting should be provided where commuters will use the bike path during hours of darkness.
5. Barriers at pathway entrances should be clearly marked with reflectors and be ADA accessible (minimum five feet clearance).
6. Bike path construction should take into account impacts of maintenance and emergency vehicles on shoulders and vertical and structural requirements. Paths should be constructed with adequate sub grade compaction to minimize cracking and sinking.
7. All structures should be designed to accommodate appropriate loadings. The width of structures should be the same as the approaching trail width, plus minimum two-foot wide clear areas.
8. Where feasible, provide two-foot wide unpaved shoulders for pedestrians/runners, or a separate tread way.
9. Direct pedestrians to the right side of pathway with signing and/or stenciling.
10. Provide adequate trailhead parking and other facilities such as restrooms and drinking fountains at appropriate locations.

### **Class II Bikeway – Design requirements**

Often referred to as a “bike lane,” a Class II bikeway provides a striped and stenciled lane for one-way travel on either side of a street or highway. **Figure 3** shows a typical Class II cross-section. To provide bike lanes along corridors where insufficient space is currently available, extra room can be provided by removing a traffic lane, narrowing traffic lanes, or prohibiting parking. The width of the bike lanes vary according to parking and street conditions:

- 4’ (1.2 m) minimum if no gutter exists, measured from edge of pavement
- 5’ (1.5 m) minimum with normal gutter, measured from curb face; or 3’ (0.9 m) measured from the gutter pan seam
- 5’ (1.5 m) minimum when parking stalls are marked
- 11’ (3.3 m) minimum for a shared bike/parking lane where parking is permitted but not marked on streets without curbs; or 12’ (3.6 m) for a shared lane adjacent to a curb face

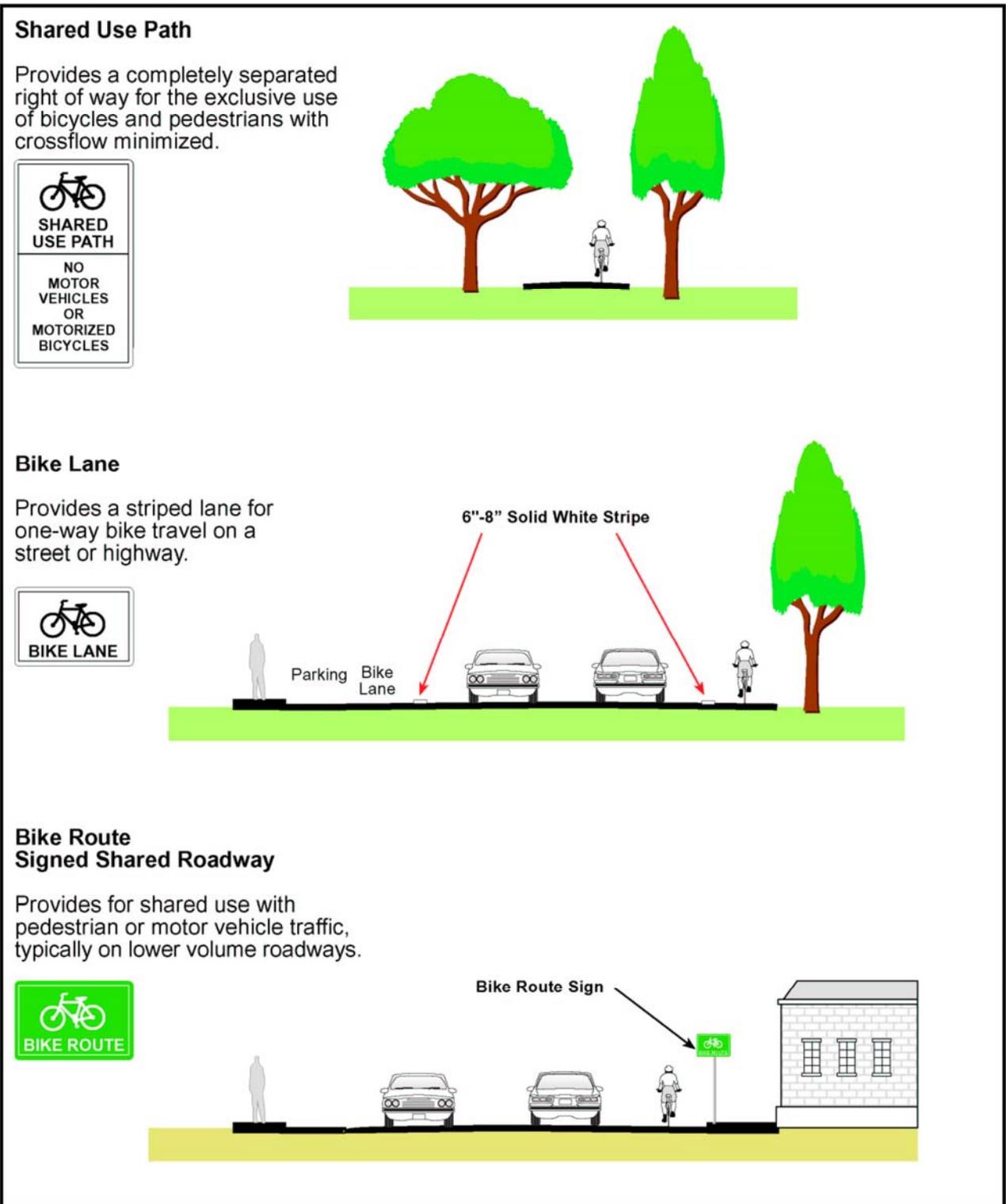


Figure 1 Bicycle Facility Types

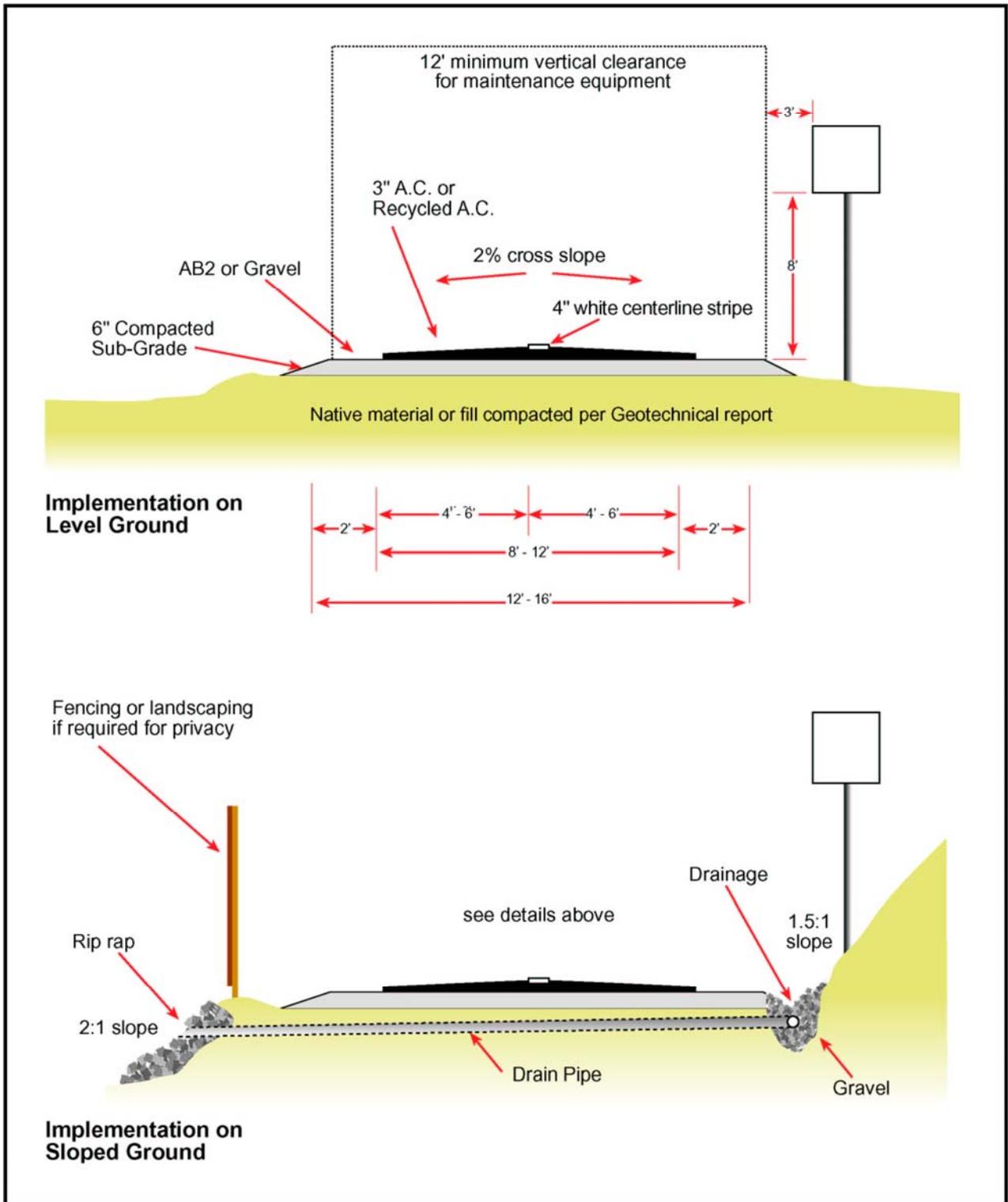


Figure 2 Class I Facility Cross-Section

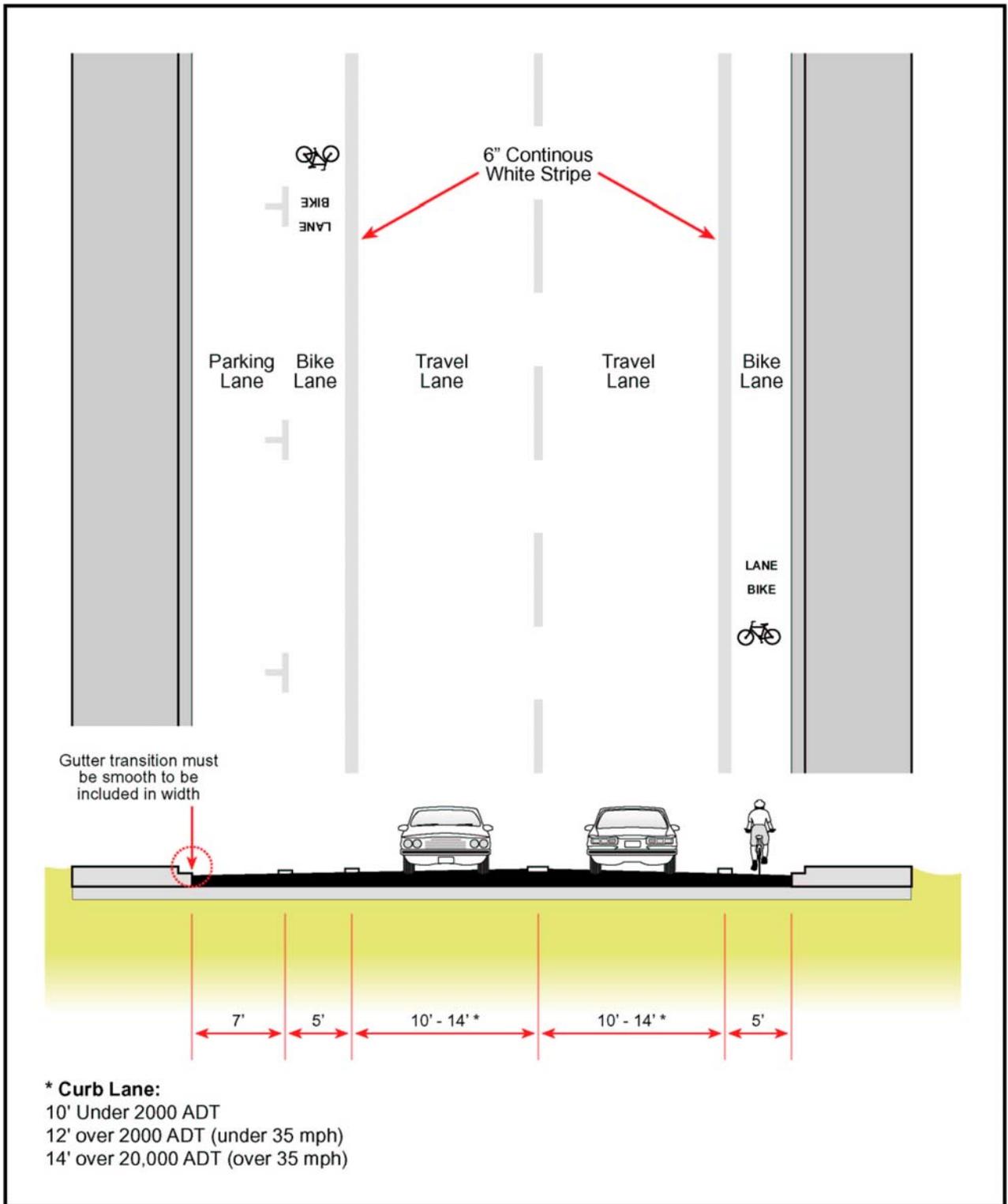


Figure 3 Class II Facility Cross-Section

**Class II bikeway - Additional Design Recommendations:**

1. Whenever possible, the Department of Public Works should recommend that wider bike lanes beyond the minimum standard be installed.
2. Intersection and interchange treatment – Caltrans provides recommended intersection treatments in Chapter 1000 including bike lane “pockets” and signal loop detectors. The Department of Public Works should develop a protocol for the application of these recommendations, so that improvements can be funded and made as part of regular improvement projects.
3. Signal loop detectors, which sense bicycles, should be considered for all arterial/arterial, arterial/collector, and collector/collector intersections. A stencil of a bicycle and the words “Bicycle Loop” should identify the location of the detectors.
4. When loop detectors are installed, traffic signalization should be set to accommodate bicycle speeds.
5. Bicycle-sensitive loop detectors are preferred over a signalized button specifically designed for bicyclists (see discussion of loop detectors, below).
6. Bike lane pockets (min. 4’ wide) between right turn lanes and through lanes should be provided wherever available width allows, and right turn volumes exceed 150 motor vehicles/hour.
7. Where bottlenecks preclude continuous bike lanes, they should be linked with Class III route treatments.
8. A bike lane should be delineated from motor vehicle travel lanes with a solid 6" white line, per MUTCD. An 8" line width may be used for added distinction.
9. Word and symbol pavement stencils should be used to identify bicycle lanes, as per Caltrans and MUTCD specifications.

Installing bike lanes may require more attention to continuous maintenance issues. Bike lanes tend to collect debris as vehicles disperse gravel, trash, and glass fragments from traffic lanes to the edges of the roadway. Striping and stenciling will need periodic replacing. Poorly designed or placed drainage grates can often be hazardous to bicyclists. Drainage grates with large slits can catch bicycle tires. Poorly placed drainage grates may also be hazardous, and can cause bicyclists to veer into the auto travel lane.

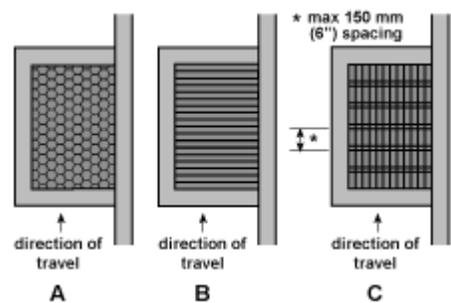


Figure 4 Examples of Bicycle-Friendly Drainage Grates

***Intersection Considerations***

Intersections represent one of the primary collision points for bicyclists. Generally, the larger the intersection, the more difficult it is for bicyclists to cross. Oncoming vehicles from multiple directions and increased turning movements make it difficult for motorists to see non-motorized travelers.

## Appendix A: Supplemental Bikeway Design Guidelines

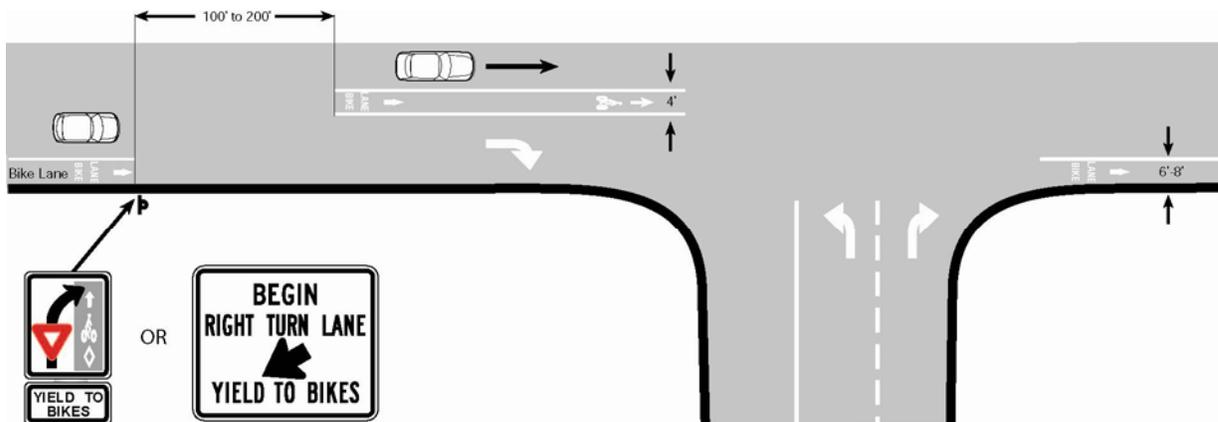
Most intersections do not provide a designated place for bicyclists. Bike lanes and pavement markings often end before intersections, causing confusion for bicyclists. Loop and other detectors, such as video, often do not detect bicycles.

Bicyclists wanting to make left turns can face quite a challenge. Bicyclists must either choose to behave like motorists by crossing travel lanes and seeking refuge in a left-turn lane, or they act as pedestrians and dismount their bikes, push the pedestrian walk button located on the sidewalk, and then cross the street in the crosswalk. Bicyclists traveling straight also have difficulty maneuvering from the far right lane, across a right turn lane, to a through lane of travel. Furthermore, motorists often do not know which bicyclist movement to expect.

Changing how intersections operate also can help make them more “friendly” to bicyclists. Improved signal timings for bicyclists, bicycle-activated loop detectors, and camera detection make it easier and safer for cyclists to cross intersections. **Figures 5 and 6** are examples of an intersection that provides bike lanes at critical locations at intersections.

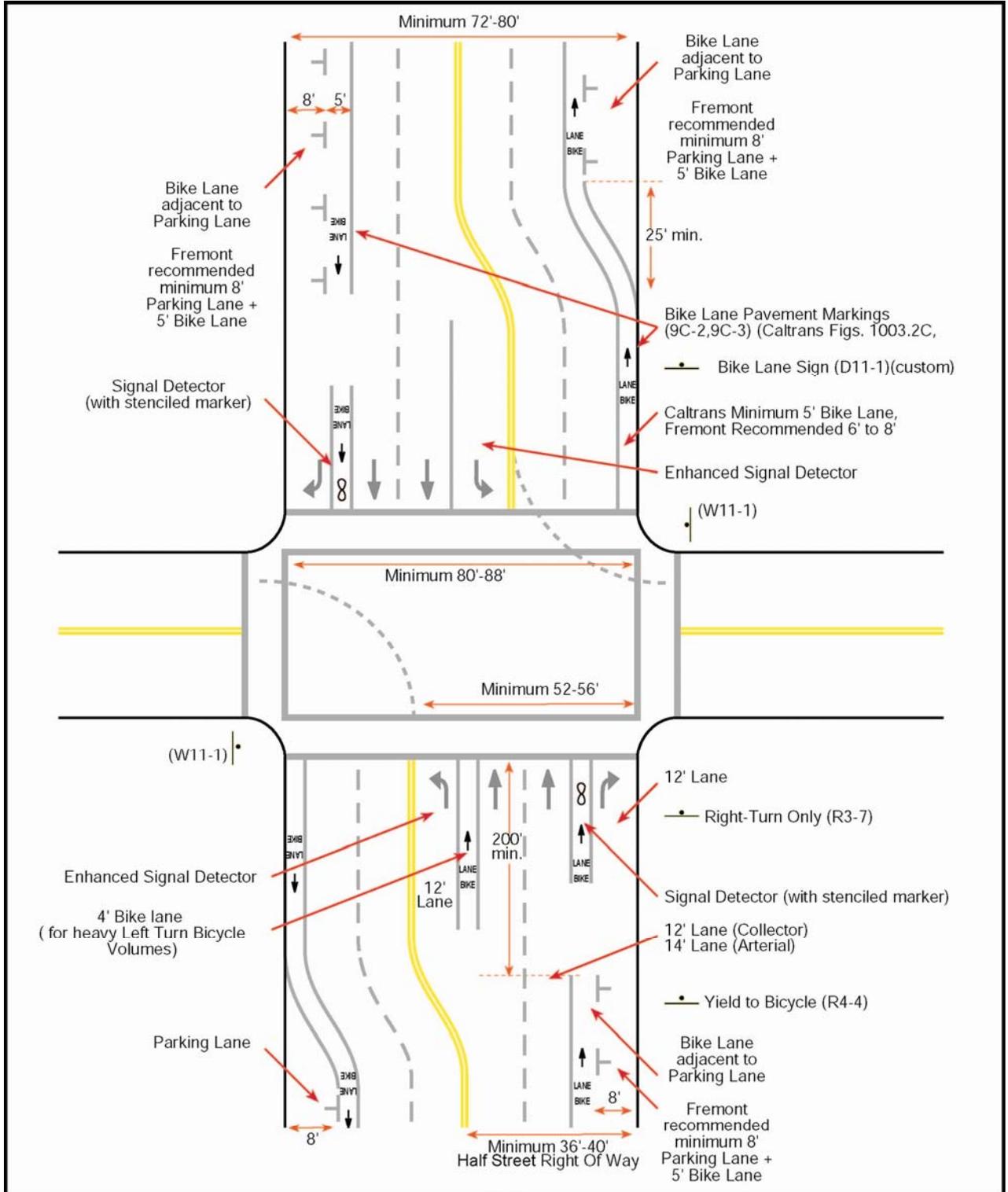
### *Bike Lane Adjacent to Right-Turn Only Lane*

Right-turn only lanes present challenges for through-cyclists who must merge to the left to position themselves in the through travel lane. Jurisdictions will sometimes stripe bike lanes on the right-side of right-turn only lanes, which places the through-cyclist in direct conflict with a right-turning vehicle. The appropriate treatment for right-turn only lanes is to either drop the bike lane entirely approaching the right-turn lane, or to place a bike lane pocket between the right-turn lane and the right-most through lane. The design below illustrates a bike lane pocket, with signage indicating that motorists should yield to bicyclists through the merge area.



**Figure 5 Bike Lane Adjacent to Right-Turn Only Lane**

**Appendix A: Supplemental Bikeway Design Guidelines**



**Figure 6 Bike Lanes at Intersection**

### **Class III Bikeway**

Generally referred to as a “bike route,” a Class III bikeway provides routes through areas not served by Class I or II facilities or to connect discontinuous segments of a bikeway. Class III facilities can be shared with either motorists on roadways or pedestrians on a sidewalk (not advisable) and is identified only by signing. There are no recommended minimum widths for Class III facilities, but when encouraging bicyclists to travel along selected routes, traffic speed and volume, parking, traffic control devices, and surface quality should be acceptable for bicycle travel. A wide outside traffic lane (14’) is preferable to enable cars to safely pass bicyclists without crossing the centerline.

### **Class III Bikeway - Additional Design Recommendations**

The following recommendations provide additional design options for the existing and proposed Class III routes identified in Marin County’s Bicycle Plan. These designs meet Caltrans requirements but are not required as elements of a Class III facility and are provided for information only. No Class III routes are currently designated for these treatments.

#### ***Shared Lane Marking***

Recently, Shared Lane Marking stencils (also called “Sharrows”), have been introduced for use in California as an additional treatment for Class III facilities. The stencil can serve a number of purposes, such as making motorists aware of bicycles potentially in their lane, showing bicyclists the direction of travel, and, with proper placement, reminding bicyclists to bike further from parked cars to prevent “dooring” collisions. **Figure 7** illustrates recommended on-street Shared Lane Marking stencil placement. The “Chevron” marking design recommended by Caltrans is shown in **Figure 8**. The following pavement markings were adopted for official use by Caltrans on 9/12/2005 as MUTCD 2003 California Supplement Section 9C.103 and Figure 9C-107. Guidance language provided by Caltrans for use of the Shared Lane Marking is as follows:

#### **Section 9C.103 Shared Roadway Bicycle Marking**

##### Option:

The Shared Roadway Bicycle Marking shown in Figure 9C-107 may be used to assist bicyclists with positioning on a shared roadway with on-street parallel parking and to alert road users of the location a bicyclist may occupy within the traveled way.

##### Standard:

The Shared Roadway Bicycle Marking shall only be used on a roadway which has on-street parallel parking. If used, Shared Roadway Bicycle Markings shall be placed so that the centers of the markings are a minimum of 3.3 m (11 ft) from the curb face or edge of paved shoulder. On State Highways, the Shared Roadway Bicycle Marking shall be used only in urban areas.

##### Option:

For rural areas, the SHARE THE ROAD (W16-1) plaque may be used in conjunction with the W11-1 bicycle warning sign (see Sections 2C.51 and 9B.18). Information for the

## Appendix A: Supplemental Bikeway Design Guidelines

practitioner regarding classification of rural versus urban roadways can be found at the following California Department of Transportation website:  
<http://www.dot.ca.gov/hq/tsip/hpms/Page1.php>

### Guidance:

If used, the Shared Roadway Bicycle Marking should be placed immediately after an intersection and spaced at intervals of 75 m (250 ft) thereafter. If used, the Shared Roadway Bicycle Marking should not be placed on roadways with a speed limit at or above 60 km/h, (40 mph).

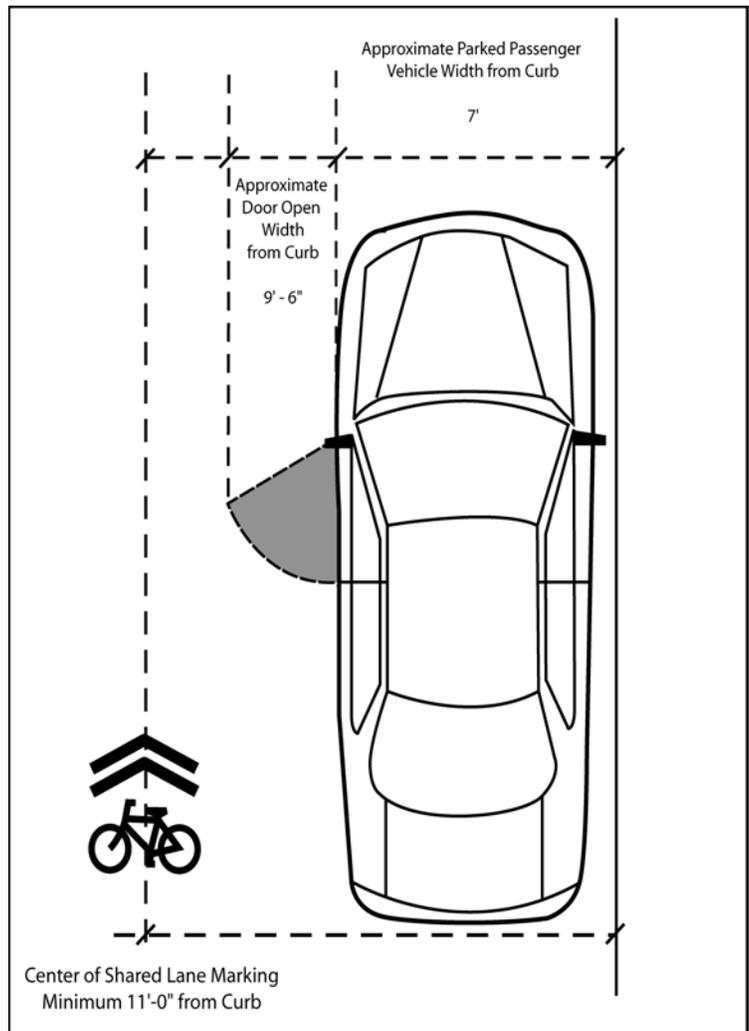
### Option:

Where a Shared Roadway Bicycle Marking is used, the distance from the curb or edge of paved shoulder may be increased beyond 3.3 m (11 ft). The longitudinal spacing of the markings may be increased or reduced as needed for roadway and traffic conditions. Where used, bicycle guide or warning signs may supplement the Shared Roadway Bicycle Marking.

### Support:

The Shared Roadway Bicycle Marking is intended to:

- \* Reduce the chance of bicyclists impacting open doors of parked vehicles on a shared roadway with on-street parallel parking.
- \* Alert road users within a narrow traveled way of the lateral location where bicyclists ride.
- \* Be used only on roadways without striped bicycle lanes or shoulders.

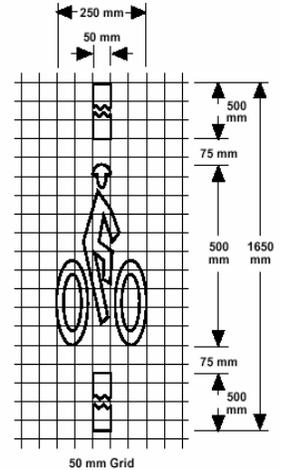


**Figure 7 Shared Lane Marking Placement**

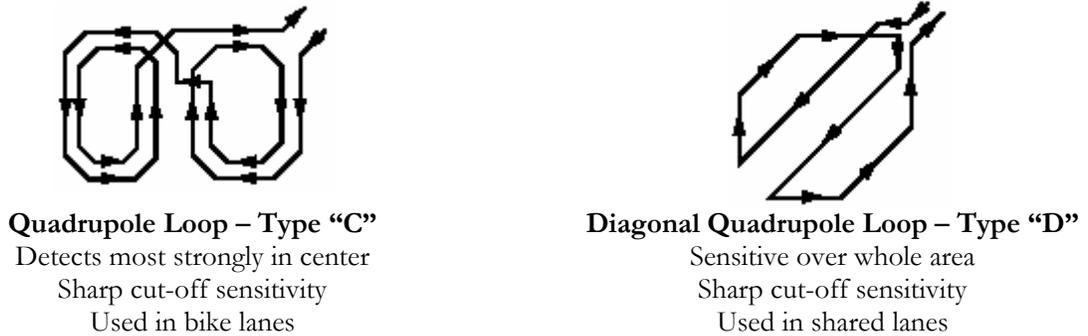


**Bicycle Loop Detectors**

The purpose of bicycle loops is to detect bicyclists waiting at intersections, and to give cyclists extra green time (e.g. five seconds) before the light turns yellow to make it through the light. Current and future bicycle detection loops should use the Caltrans Standard bicycle detection stencil shown in **Figure 10** to indicate to cyclists where to position themselves over the loop. Two loop detector types appropriate for bicycle detection, Type “C” (quadrupole) and Type “D” (diagonal slashed), are shown in **Figure 11** below. Details of saw cuts and winding patterns for inductive detector loop types appear on Caltrans Standard Detail ES5B. Loop types B (5’ square diamond), C (quadrupole), D (diagonal-slashed), Q (figure-8) and modified Type E (circle with a slash) can reliably detect bicycles across their full width. Type D loop is preferred as it has a good, fairly uniform response to bicycles across its area. Types A (6’ square) and E (unmodified circle) are not bike-sensitive in their center.



**Figure 10 Caltrans Standard Bicycle Detection Marking**



**Figure 11 Example Bicycle-Sensitive Loop Detector Types**

**Bicycle Parking**

As more bikeways are constructed and bicycle usage grows, the need for bike parking will increase. Long-term bicycle parking at transit stations and work sites, as well as short-term parking at shopping centers and similar sites, can both support bicycling. Bicyclists have a significant need for secure long-term parking because bicycles parked for longer periods are more exposed to weather and theft. Long term parking is very popular and the demand for this service often outpaces the supply.

**Bicycle Racks**

To date the best set of recommendation for bicycle parking are those developed by the Association of Pedestrian and Bicycle Professionals. Their *Bicycle Parking Guidelines* provide guidance on rack selection and placement. Among the recommendations of the APBP guidelines are:

- The rack element (part of the rack that supports the bike) should keep the bike upright by supporting the frame in two places. For a standard inverted “U” rack, the rack should be oriented so the bicycle is parked parallel to the rack, with the frame resting

## Appendix A: Supplemental Bikeway Design Guidelines

against both vertical elements of the “U.” The rack should allow one or both wheels to be secured as well as the frame.

- Position racks so there is enough room between adjacent parked bicycles. If it becomes too difficult for a bicyclist to easily lock their bicycle, they may park it elsewhere and the bicycle capacity is lowered. A row of inverted “U” racks should be situated on 30” minimum centers, oriented in the parallel direction.
- Empty racks should not pose a tripping hazard for visually impaired pedestrians. Position racks out of the walkway’s clear zone.
- When possible, racks should be in a lighted, high visibility, covered area protected from the elements. Long-term parking should always be protected.

It should be noted that the APBP *Bicycle Parking Guidelines* do not recommend use of the wave-style rack, for the reasons that bicycles parked perpendicular to wave racks are only supported on one place and more likely to fall over, and as a result a bicyclist will commonly use a wave rack as if it were a single inverted “U,” limiting its capacity.

**Table 1** provides basic guidelines on the ideal locations for parking at several key activity centers as well as an optimum number of parking spaces.

**Table 1**  
**Recommended Guidelines for Bicycle Parking Locations and Quantities**

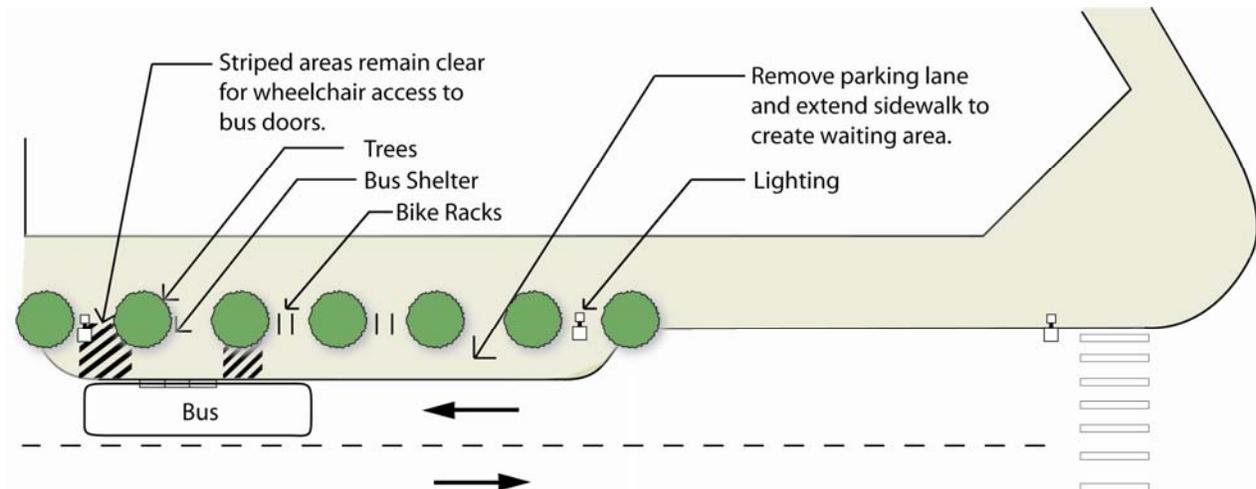
Land Use or Location	Physical Location	Bicycle Capacity
City Park	Adjacent to restrooms, picnic areas, fields, and other attractions	8 bicycles per acre
City Schools	Near school buildings, in area with good visibility	8 bicycles per 40 students
Public Facilities (city hall, libraries, community centers)	Near main entrance with good visibility	8 bicycles per location
Commercial, retail and industrial developments over 10,000 gross square feet	Near main entrance with good visibility	1 bicycle per 15 employees or 8 bicycles per 10,000 gross square feet
Shopping Centers over 10,000 gross square feet	Near main entrance with good visibility	8 bicycles per 10,000 gross square feet
Commercial Districts	Near main entrance with good visibility; not to obstruct auto or pedestrian movement	2 bicycles every 200 feet
Transit Stations	Near platform or security guard	1 bicycle per 30 parking spaces

### Attended Bicycle Parking Facilities

Attended bike parking is analogous to a coat check – your bike is securely stored until you need it in a supervised location. Attended bicycle parking is typically offered at transit hubs and some special events. For example, the Marin County Bicycle Coalition currently sponsors valet parking at many festivals in the county, the Sonoma County Bicycle Coalition sponsors valley parking at the downtown Santa Rosa Farmer’s Market, and secured bicycle parking is offered at SBC Park in San Francisco.

**Bicycle Parking At Bus Stops**

Bike parking at transit stops and stations enables bicycling as a regional mode of transportation when combined with a transit trip. When placing bicycle racks at bus stops it is critical to maintain accessibility for persons with disabilities and take care to maintain sufficient clearance for wheelchair access. In cases of limited sidewalk width where right-of-way is not available for widening the sidewalk away from the roadway, curb extensions may be necessary to provide for bicycle parking to ensure safe pedestrian and disabled user access.



Source: Improving Pedestrian Access to Transit: An Advocacy Handbook

**Figure 12 Accessible Bus Stop Layout With Bicycle Parking**