March 2008

Marin County Unincorporated Area
Bicycle and Pedestrian Master Plan

Adopted by the Marin County Board of Supervisors
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1.0 Introduction

This update to the Marin County Unincorporated Area Bicycle and Pedestrian Master Plan (the “Plan”) was created through the coordinated efforts of the Transportation Authority of Marin (TAM), the Marin County Public Works Department, the Marin County Bicycle Advisory Group, and citizens interested in improving the bicycling and pedestrian environment in unincorporated Marin County. Without the sustained efforts of these organizations and citizens, the continuing improvements to the cycling and pedestrian environment throughout the County would not be realized. This Plan is one component of the continued effort towards making bicycling and walking an integral part of daily life in Marin County.

This plan was completed for the unincorporated area for the Marin County Department of Public Works in 2006-2008 as a part of a countywide effort to update all local bicycle master plans. While the plan serves as a coordinating and resource document for the entire county, its focus is on specific recommendations for the unincorporated areas which must be adopted by the Board of Supervisors. It is important to note that some of the county's unincorporated areas are adjacent to or islands surrounded by incorporated cities and towns. Although the plan makes recommendations for many of these enclaves of unincorporated development, their size and geographic isolation means that bicycle and pedestrian planning and project development will require coordination with the incorporated community to avoid disjointed or discontinuous facilities. By referencing local plans being developed concurrently with this effort, the County plan attempts to reconcile local and countywide planning efforts to create a seamless and intuitive network of facilities across jurisdictions.

1.1 Pedestrian and Bicycle Improvements

Bicycles

Like many communities around the United States, Marin County continues to experience strong growth of bicycling as a means of transportation. The bicycle is a low-cost and effective means of transportation that is quiet, non-polluting, extremely energy-efficient, versatile, healthy, and fun. Bicycles also offer low-cost mobility to the non-driving public, especially the young.

Bicycling as a means of transportation has been growing in popularity as many communities work
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to create more balanced transportation systems and reclaim streets from auto dominance. In addition, recent national and local surveys find that more people are willing to cycle more frequently if better bicycle facilities are provided.¹

Marin County stands poised to make major gains in increasing bicycle use, thanks to several factors:

First, Marin County has many of the attributes needed to become a bicycle-friendly community. This includes smaller, compact towns and cities, a moderate climate, and a population interested in health, environment, and livable neighborhoods. The popularity of recreational bicycling in Marin County has significantly increased bicycle ridership. This plan addresses bicycles as a transportation mode of travel, defined as any trip that replaces a vehicle trip whether it be for commuting, shopping, traveling to and from school, or to reach a recreational destination.

Second, there is a long history of cycling and bikeway planning in Marin County. As more residents have been cycling for recreation, more have been commuting as well. Consequently, more have been advocating for improved bicycling conditions. As early as 1975, with the creation of Marin County’s first Bicycle Plan, residents expressed a desire for more miles of bicycle lanes, bicycle boulevards, and off-street paths; more bicycle parking; and better maintenance of existing facilities, all of which have encouraged more bicycle riding.

Third, policy support and additional funding have recently been made available for bicycle transportation improvements. This has been true on the local, state and national level thanks to the passage of the Measure A half-cent Transportation Sales Tax, the 1994 California Bicycle Transportation Act, the state and federal Safe Routes to Schools programs, and, perhaps most importantly, selection of Marin County as a Nonmotorized Transportation Pilot Program (NTPP) community, making available nearly $25 million dollars in funding for bicycle and pedestrian facilities.

The increased ridership, resulting advocacy, and increased policy and financial support from all government levels have resulted in a desire for significant bicycle transportation improvements. The following Bicycle and Pedestrian Master Plan is a direct result of these changes and is intended to set a proactive course toward making bicycling and walking an integral part of daily life in unincorporated Marin County.

More information about specific policies can be found in Chapter 2, Goals, Objectives and Policy Actions. Details about funding opportunities are provided in Chapter 7, Implementation Strategy.


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Marin County Unincorporated Area Bicycle and Pedestrian Master Plan • Adopted March 25, 2008
Pedestrians

Throughout this document, all references to pedestrians are inclusive of persons with disabilities who use mobility aids (scooters, manual and powered wheelchairs) to access public pedestrian walkways.

Walking is the oldest and most basic form of human transportation. It is clean, requires little infrastructure, and is integral to the health of individuals and communities. People who walk know their neighbors and their neighborhood. A community that is designed to support walking is desirable.

Although pedestrians have been valued for their contribution to urban vitality, walking, like bicycling, has not always been considered a legitimate means of transportation in the United States. Thanks in part to the passage of the 1991 ISTEA legislation and continuing with the development of subsequent federal, state, and local funding opportunities and policy directives, this has begun to change. Communities are recognizing the need for and value of developing pedestrian facilities, whether it be to enhance safety, health, or for commuting.

Marin County’s beautiful scenery has long attracted pedestrians. But getting from housing areas to employment areas or transit by foot can be challenging. Many streets in Marin’s unincorporated villages have discontinuous sidewalks and crossing streets can be intimidating. In some cases, adding sidewalks is expensive and is seen as taking away from a street’s rustic quality. On the other hand, the trade-off in choosing to retain ‘rustic’ or ‘rural’ road characteristics may be adverse to pedestrian and bicycle safety.

Opportunities certainly exist for improving the pedestrian system in Marin’s unincorporated communities, thereby offering more residents the option of walking to school, shop, work or play. These opportunities will be discussed in the subsequent sections.

1.2 Setting

Marin is defined by its topography and geography. Mt. Tamalpais dominates southern and central Marin County. Rugged hills and ridges separate communities, creating distinctive communities but making intercity travel difficult for bicyclists and pedestrians. The beauty of Marin’s waterfarts, mountains, parks, and towns attracts people to visit and to live here—providing a livable scale within sight of downtown San Francisco.

Of the County’s total estimated population of 247,289 (2000 Census), approximately 70,596 residents live in unincorporated areas, which include communities such as Tamalpais Valley,
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Greenbrae, Kentfield, Marin City, Strawberry, Santa Venetia, Marinwood, Bel Marin Keys, Black Point, Loma Verde, Wild Horse Valley and all of West Marin. Marin County’s residents have an average per capita income of $52,941 (2005 American Community Survey) and are statistically older than average.

Marin County is well connected via major transportation corridors, with Highway 101 providing north-south connections to San Francisco (via the Golden Gate Bridge) and Sonoma County, and I-580 connecting to the East Bay via the Richmond Bridge. Highway 37 provides east-west connections to Vallejo and Napa, while Highway 1 (Shoreline Highway) links popular visitor destinations such as Stinson Beach, Muir Woods and Pt. Reyes National Seashore.

Local transit service in Marin County is provided by the Marin County Transit District through its local service with Golden Gate Transit and the West Marin Stagecoach and community shuttles as well as paratransit service provided by Whistlestop Wheels. Marin County is connected to other regional centers by scheduled regional bus transit service provided by Golden Gate Transit, Sonoma County Transit and Greyhound. Transbay ferry service is provided by the Blue and Gold Fleet and Golden Gate Ferry. Regional airport access in Marin County is provided by the Marin Airporter to San Francisco International Airport and by the Sonoma County Airport Express to Oakland International Airport. Significantly, Marin County is a major regional visitor destination and is served by numerous tour bus operators primarily out of the San Francisco area.

1.3 Why does Unincorporated Marin County Need a Bicycle and Pedestrian Plan?

In order to qualify for available funding, the State of California requires that communities applying for funding have an adopted master plan that includes 11 specific elements which are identified in Table 1.0 preceding this chapter and again in Table 2.1 in the following chapter. Similar to Marin’s incorporated cities and towns, the unincorporated areas in Marin will require an adopted plan to qualify for funding. This plan meets that specific purpose.

Another important reason why a bicycle and pedestrian plan is needed is the fact that traffic congestion threatens the very reasons so many residents choose to live in Marin. While Marin is perfect for walking and bicycling in many respects, many residents choose to drive even for short trips of a block or two–adding to the very traffic problems they dislike. This Plan is one step in addressing traffic congestion in the County.

Another reason is the enjoyment and quality of life for the residents of Marin County. Since walking and bicycling are among the most popular forms of recreational activity in the United States (with 84 percent of Americans walking and 46 percent bicycling for pleasure\(^2\)) we can assume that thousands of Marin County residents walk and bicycle at least occasionally.

Safety concerns are one of the primary reasons to improve bicycling conditions in Marin County. Concerns about safety are the single greatest reason people do not commute by bicycle,\(^2\)

\(^2\) President’s Report on Outdoor Recreation, 1986.
according to a 1991 Lou Harris Poll. Addressing those concerns for pedestrians and bicyclists through physical and program improvements is another major objective of the Master Plan.

1.4 Progress Since Adoption of the 2001 Marin County Unincorporated Area Bicycle and Pedestrian Master Plan

Substantial progress has been made in Marin County toward realizing the goals established in the 2001 Unincorporated Marin County Bicycle and Pedestrian Master Plan. This progress is due in large part to the partnership between public agencies and non-profit organizations. The County of Marin Department of Public Works, the Transportation Authority of Marin, Caltrans, Golden Gate Bridge, Highway and Transportation District, California State Parks, the National Park Service, Bay Trail project, local cities and towns, other agencies and local advocacy groups have all played a key role in the progress since the adoption of the previous plan. Specific accomplishments are summarized below. More detailed information can be found in Chapters 2 and 3.

Unincorporated Area and Countywide Policy, Planning and Programs

Numerous policy and planning efforts have taken place that encourage nonmotorized transportation in Marin County. The passage of Measure A Transportation Sales Tax, which included policies for the inclusion of walking and bicycling, and the release of a County Department of Public Works multi-modal policy directive are both policy developments at the local level which support the goals of the 2001 plan. The Golden Gate Bridge Highway and Transportation District adopted an internal policy that all new bus-mounted bicycle racks will hold three bicycles, upgraded from the previous capacity of two. The following plans promote walking and/or bicycling:

- DPW Multi-modal Policy (2006): “At the outset of all projects, other than routine maintenance, an analysis shall be performed to ensure the inclusion of all necessary, appropriate and reasonable multi-modal facilities and improvements. The analysis shall include facilities related to transit, bike and pedestrian access, disability access, and transit safety.”
- SMART FEIR (2006) – This Environmental Impact Report for a planned commuter rail line laid out detailed plans for a rail-with-trail project including a continuous bikeway and safe station access for bicycles and pedestrians.
- Corte Madera Bay Trail Feasibility Study (2004) – This plan fleshed out the local alignment through Corte Madera of a regionally significant San Francisco Bay Trail bicycle and pedestrian route.
- Marin Countywide Plan – This plan, adopted in late 2007, provides countywide policy guidance on integration of bicycling, walking, and accessibility into the transportation network.
- Nonmotorized Transportation Pilot Program (NTPP) – Begun in 2006 and continuing through 2010, the program allocates $25 million to bicycle and pedestrian projects. Included was an extensive public outreach and planning process to identify, rank, and select infrastructure projects and educational programs to be funded by the program.
• Central Marin Ferry Connection Project Feasibility Study (2004) – This study carried forward one of the top priority projects from the 2001 plan and proposed a preferred alternative along with other options.

• Marin County Transit District Short-Range Transit Plan (2006) – The document 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.

• Safe Routes to Schools – Safe Routes to Schools has expanded rapidly in Marin County, fulfilling a key recommendation of the 2001 plan. The Safe Routes to Schools program began in 2000 as a grassroots effort to reduce congestion and encourage healthy habits among school-aged children in Marin County. The Marin County Bicycle Coalition initially developed the program with funding from the National Highway Transportation Safety Administration as one of two model programs nationwide. Safe Routes to Schools subsequently became a Transportation Authority of Marin program, receiving funding by the Measure A Transportation Sales Tax. Safe Routes to Schools has increased participation countywide. A record 45 schools, representing over 18,000 students, currently participate in the program.

• Share the Road – Since 2001, the Share the Road Campaign has been a partnership with Marin law enforcement and bicycle advocacy groups with funding from the National Highway Traffic Safety Administration. The campaign includes three components: bicycle and driver safety checkpoints similar to sobriety checkpoints, free basic street skills classes for cyclists, and public “Share the Road” presentations targeted at both cyclists and motorists.

• Alto Tunnel Scoping Study, Volumes I and II (2001) – This preliminary study collected background documents and laid out the scope of a future feasibility study for reopening the Alto. More details are provided in Chapters 2 and 5.

• Canal Community-Based Transportation Plan – In May 2005 the Transportation Authority of Marin (TAM) received a grant of $60,000 from the Metropolitan Transportation Commission (MTC) to conduct a community-based transportation planning process with the Canal Neighborhood. The plan was a collaborative project between TAM and City of San Rafael staff and resulted in a report that recommended improvements for transit, walking, bicycling and other transportation needs.

• Crossing Guards – The November, 2004 Measure A sales tax measure included a strategy to reduce school-related congestion, including the use of crossing guards at selected intersections on school routes. Up to 70 locations countywide are funded.

• Path Maintenance Program – TAM has adopted a policy to use Measure A interest funds for a path maintenance program in which up to 50% of the routine maintenance costs can be reimbursed for regional connector pathways maintained by the County or any of the cities or towns and which were constructed after January 1, 2008.
Many infrastructure improvements have been completed countywide since adoption of the 2001 Unincorporated Marin County Bicycle and Pedestrian Master Plan:

- **Atherton Avenue Bike Lanes** – The County, as part of a roadway repaving project in unincorporated Novato, added Class II bike lanes along Atherton Avenue from Bugeia Lane to School Road.

- **Share the Road Signs and Stencils** – Throughout the time since the previous plan adoption, the County of Marin Department of Public Works has installed Share the Road signs at a number of locations, including key transportation and recreation routes such as Paradise Drive and Sir Francis Drake Boulevard. Signs have also been installed by Caltrans along Shoreline Highway and by Sausalito, Mill Valley and Fairfax at key locations. Over 100 signs have been installed since 2001. In addition, in 2007 the County DPW began testing Share the Road pavement stencils on North San Pedro Road.

- **Civic Center Bicycle and Pedestrian Access Improvements** – In 2002 bicycle lanes were installed on North San Pedro Road between Highway 101 and Civic Center Drive as a part of a City of San Rafael resurfacing project. In 2004, the City of San Rafael installed a solar-powered in-pavement lighting system to light a crosswalk across Civic Center Drive between a heavily-used parking lot and the Marin County Civic Center.

- **Mahon Creek Pathway** – The City of San Rafael opened this Class I pathway between the Andersen Drive Bicycle Lanes and the San Rafael Transit Center in 2001, closing a gap in the existing North-South Greenway.

- **High Canal Bridge** – A key gap in the North-South Bikeway was filled in late 2001 with the installation of this bridge by the Town of Corte Madera, connecting the Sandra Marker trail in Larkspur to the Wornum Pathway in Corte Madera.

- **Sandra Marker Trail** – This segment of the North-South Greenway was paved by the City of Larkspur in 2003 to close the previous gap in Larkspur between existing paved segments to the south and east in Corte Madera.

- **Bike Access to Transit** – In 2006 Golden Gate Transit purchased and installed underfloor style racks that hold two bicycles in the luggage compartment of their 45-foot long buses, ensuring that all fleet buses now have bicycle storage areas. In 2005, secure weather-protected bicycle parking was installed inside the paid area of the Larkspur ferry terminal. December 2003 marked the completion of a safety barrier along the pathway on either side of the Golden Gate Bridge, separating bicycles and pedestrians from motorized traffic.

- **Inkwells Bridge** – Completing a critical gap in the East-West Bikeway identified in the 2001 plan, this bridge was installed in 2005 by the County of Marin through a partnership between the County, Marin Municipal Water District, and California State Parks.

- **Vista Point Bicycle, Pedestrian and Disability Access improvements** – Caltrans completed improvements to the north side of the Golden Gate Bridge in 2005, adding separate wheelchair ramps, stairs, sidewalks and a bike path, including an improved crossing area to reduce motorized conflicts with other users.

- **Corte Madera Creek Overcrossing Safety Improvements** – In response to a collision in which two pedestrians were injured, Caltrans constructed a solid barrier, completed in
2006, separating the sidewalk along the northbound Highway 101 offramp at Corte Madera Creek from the motorized travel lanes.

- Caltrans Pathway and Bikeway Maintenance -- Since adoption of the previous plan, Caltrans has undertaken maintenance activities on two of the pathways that parallel Highway 101 and along some state highways. In 2002 Caltrans repaved the heavily-used Alto Hill pathway connecting Mill Valley and Corte Madera, a key segment of the existing North-South Bikeway. In 2006, in response to a landslide blocking the path caused by heavy rains earlier in the year, Caltrans undertook a hill stabilization project along Alto Hill. Also in 2006 Caltrans made spot improvements to the shoulders along segments of Shoreline Highway and completed some routine maintenance along the Merrydale Pathway in San Rafael.

- Civic Center Improvements – Employee showers were constructed at the Marin Civic Center in 2005 to encourage County employees to walk or bike to work, or exercise during lunch. A common deterrent to bicycling or walking to work over longer distances is that ‘working clothes’ are not suitable for such trips and getting cleaned up after such a trip is not feasible without showers and changing rooms being available at the workplace.

- Brown Bridge – The Brown Bridge, spanning an ongoing slide area of Sir Francis Drake Boulevard above Baywood Canyon west of Fairfax, was completed in 2002. The bridge includes wide shoulders for cyclists and pedestrians, removed the off-camber turns and cracked present in the previous road alignment, and improved a key connection between the Ross Valley and West Marin.

Infrastructure Improvements in Progress

- Cal Park Hill Tunnel Rehabilitation and Pathway Project – This project carries forward one of the key gap closure projects proposed in the 2001 plan. The project is currently in final design. All rail-related costs are funded through SMART, the commuter rail agency. The project is fully funded, with the majority of funding coming from Regional Measure 2 funds earmarked to TAM and SMART. Additional funding is secured through Marin County, State and Federal grants.

- Los Ranchitos Bicycle Lanes – This project is at 30% level of design and is partially funded through a $160,000 grant from the Bay Area Air Quality District. The Nonmotorized Transportation Pilot Program has allocated funds to complete design and construction of this gap closure in the North-South Bikeway between the areas of downtown and north San Rafael. As of this writing, the total cost for the project is estimated at nearly $1.2 million.

- Countywide Bicycle Route Guide Signage Project – As proposed in the 2001 plan, the County has developed and is in the process of implementing a number countywide bicycle route sign system. As of this writing, signs had been installed throughout the eastern, urban corridor, excluding Ross, Novato, and Marinwood.

- Puerto Suello (Lincoln) Hill Multi-Use Pathway Project -- This project was identified as a priority in the 2001 plan as the Puerto Suello Gap Closure Project and fills the remaining gap south of the proposed Los Ranchitos Bicycle Lanes, completing the North-
South Greenway between the areas of downtown and Puerto Suello summit. This project is included as part of the Highway 101 Gap Closure project.

- **Alameda del Prado** – While most of this roadway is in the City of Novato and has bike lanes, the remaining unincorporated segment is narrow and meandering. This project will provide a vehicle lane, a bike lane, and a parking lane in each direction by narrowing the existing, overly wide median. This will close a key gap in the North-South Bikeway. The NTPP is funding this project.

- **Tennessee Valley/Manzanita Pathways** – The current Tennessee Valley pathway, between the Sausalito-Mill Valley path and Shoreline Highway is of substandard width and is routinely subject to tidal flooding. This project will correct the deficiencies in the existing path and extend it south along Coyote Creek to the Tam Community Center. A separate spur will connect this path with the Manzanita Park and Ride lot and a new pedestrian bridge over Coyote Creek will be constructed. Funding for this project is through the NTPP.

- **Bolinas School Path** – The Bolinas School path is expected to be completed in 2008. The path will provide a separated connection to the school from Mesa Road where a BPUD trail will provide connections to downtown and the mesa.

**Funding**

Marin County has received a substantial boost from numerous funding sources in the years since the adoption of the previous plan. In addition to project-specific funding, other major funding opportunities include Measure A Transportation Sales Tax, which can be spent on stand-alone bicycle and pedestrian improvements, and the Nonmotorized Transportation Pilot Program (NTPP), which provides funding specifically for a countywide bike and pedestrian network.

### 1.5 Becoming a Pedestrian and Bicycle Friendly Community

As Marin County moves forward, safety, access, quality of life, and effective implementation are imperative elements for Marin County’s continued success as a bicycle and pedestrian-friendly community.

**Safety** continues to be the number one concern of citizens, whether they are avid or casual recreational cyclists or walkers or pedestrian/bicycle commuters. In many cases, bicyclists and pedestrians must share narrow, high volume roadways and cross busy intersections. A uniform and complete bicycle network consisting of off-street pathways and either bike lanes or wider curb lanes is generally lacking in the County. As of this writing the County is in the process of implementing a countywide Bicycle Route Guide Signage project, detailed under ongoing projects in Chapter 3 – Existing Conditions and shown on the map in Appendix E. For pedestrians, factors such as steep terrain and narrow rights-of-way have resulted in a minimal and frequently discontinuous sidewalk system in many neighborhoods, especially along busy streets and in older areas, which forces pedestrians to walk in the street.
Access improvements for bicyclists and pedestrians are important to help improve the ability to take utilitarian trips to destinations like shops, work, and school. Currently, U.S. 101 presents a number of barriers in accessing key destinations, and forces people to negotiate busy interchanges. Additionally, Marin County suffers from a lack of continuous and connected bikeways and walkways into the County’s village centers, schools, parks, and employment and shopping areas.

This Plan urges Marin County to take measurable steps toward the goal of improving the Quality of Life for the county’s residents, creating a more sustainable environment, reducing traffic congestion, vehicle exhaust emissions, noise, and energy consumption. The importance of developing a bicycle and pedestrian system that is attractive and inviting is a key element in preserving Marin County as a place where people want to live, work, and visit. The attractiveness of the environment not only invites bicyclists to explore Marin County, but more importantly, a beautiful environment helps to improve everyone’s positive feelings about the quality of life in Marin County.

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 and the pedestrian as well as to the motorist regarding the rights and responsibilities of the bicyclist, pedestrian, and automobile driver. Also critical are comprehensive enforcement of existing traffic and parking laws and the implementation of sound design and engineering principles for bikeways. 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.

1.6 Major Recommendations of the Unincorporated Marin County Bicycle and Pedestrian Master Plan

The Plan contains recommendations that, if implemented over the next 20 years, will make unincorporated Marin County a model community for bicycling and walking in the United States. Since the development of the 2001 Unincorporated Marin County Bicycle and Pedestrian Master Plan the public and community leaders continue to ask for a bold vision for the county that will dramatically alter conditions for those who choose to walk or bicycle. The public continues to cite concerns about traffic congestion, safety, and general livability of our towns and cities as the primary impetus to implement the Plan. Key community members for whom the complete bicycle and pedestrian system is being developed includes new riders, non-cyclists most likely to start cycling when safety considerations and infrastructure are put into place, and
recreational cyclists. Additionally, the following two groups have been identified as important future beneficiaries of the Plan:

**School Children**
Parents have indicated a desire for improvements that will allow their children to walk or bicycle to school. It is estimated that as much as 20 to 30 percent of traffic near schools in the weekday mornings is attributable to school trips. Safe Routes to School is aimed at promoting walking, bicycling, taking transit or carpooling to school; planning safer walking and bicycling routes to schools; funding the construction of safe pathways to school; and providing crossing guards at major intersections.

**Senior Citizens and People with Disabilities**
Demographically, senior citizens and people with disabilities represent a growing proportion of the county’s population. Senior citizens need access to more facilities to encourage bicycling or walking away from busy streets, as well as improvements to Marin County’s existing sidewalks, such as curb cuts, to allow them access to their destinations and for exercise.

In addition, expected benefits of the Plan include:

1. Improved safety
2. Increased opportunities for exercise
3. A reduction in vehicular traffic and congestion
4. Enhancing public streets and making use of other routes for walking and bicycling
5. Increase bike-to-transit and walk-to-transit trips, helping to bolster transit, bicycling and walking as legitimate transportation options
6. Reduction of greenhouse gas emissions through increased mode shift to bicycling and walking

It is highly desirable that an integrated, complete network of bicycle paths, lanes, routes, and pedestrian improvements be developed in Marin. Transportation systems that thrive require complete system integration and complete networks at the regional, community, and neighborhood levels. One aspect of this system may be the use of the old Northwestern Pacific Railroad right-of-way, tunnels, and bridges to help connect neighborhoods and overcome the steep terrain, to the extent it is compatible with future rail service plans in the county.

Finally, it is the goal of this Plan to dramatically increase the number of people walking or bicycling for utilitarian trips, such as for work, school, shopping, or recreation. Each trip made by walking or bicycling takes one more car off the road, helping to reduce pollution and alleviate the traffic congestion that plagues so many communities.

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3 Lamorinda School Commute Study (Fehr & Peers Associates 1995).
Types of Recommendations

There are three distinct types of recommendations in the Plan: 1) Bicycle Facilities, 2) Pedestrian Facilities, and 3) Bicycle and Pedestrian Programs. These are discussed in more detail in Section 5.0, Proposed System & Improvements. Physical projects such as new bikeways or walkways are broken down between short-term (1 to 5 years), mid-term (5 to 15 years), and long-term (over 15 years). They are grouped into four categories of improvements: 1) Countywide projects/programs, 2) Local bikeway network gap closure projects, 3) Local community bicycle and pedestrian projects, 4) Pedestrian projects. These projects generally derive from the recommendations of local Advisory Committees, but are packaged to make them more feasible and competitive for funding.

Companion documents to this Plan are Chapter 1000 of the Caltrans Highway Design Manual, Caltrans Manual on Uniform Traffic Control Devices, and AASHTO manuals on highway, bikeway, and pedestrian facility design. On a case-by-case basis, local agencies may seek design exceptions to established State and Federal standards based on local conditions and environmental and economic issues. All projects must be approved by the applicable Public Works Director or City Engineer and in some cases Caltrans or the Federal Highway Administration.

Finally, the Plan provides recommendations for education, outreach, and other programs that will ultimately be implemented by public or private groups.

Long Term System

The 15 - 20-year time horizon of this Plan calls for the completion of a network of primary and secondary bikeways. It also calls for the completion of pedestrian improvements, some of which (such as multi-use pathways) are linear in nature and others of which are more local by nature. The ultimate system will connect all of the major destinations in unincorporated Marin as well as to each adjacent community.
On-Street versus Off-Street

In Marin, as everywhere, there is a tremendous diversity of opinion on what is the best type of bikeway to focus on constructing. Caltrans identifies three types of Bikeways in Chapter 1000 of its Highway Design Manual as follows:

**Multi-Use Pathway:** Many paved pathways exist in Marin County that do not conform to established Caltrans design standards. This plan documents those paved pathways as functional transportation and recreational facilities. All new facilities are proposed to be built to Caltrans standards.

**Class I Bikeway:** Typically called a bike path. Provides for bicycle travel on a paved right of way completely separated from any street or highway. Could also be a shared bike and pedestrian use.

**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, is identified by signing and may include the use of “sharrows” (Shared Roadway Bicycle Marking stencils).

Multipurpose Trail: If a pathway is to be used primarily for recreational use and will not be constructed with transportation funding, it may be constructed to reflect local conditions and needs and need not necessarily meet Caltrans standards.

Class III/Shoulders: In addition, in many areas (such as in rural areas), separate bicycle lanes are often not feasible. For this reason, the designation “Class III/Shoulders” has been developed for this plan, to capture the existing and proposed shoulder conditions along certain roads.
Introduction

One of the greatest divergences of opinion lies between those who feel paved bike paths, separated from roadways, should be constructed wherever physically possible, versus those who feel more comfortable riding on streets on lanes or routes. This preference is usually based on personal feeling regarding comfort and safety. This Plan took the following approach in selecting the most appropriate treatment for each proposed bikeway.

First, Class I bike paths are typically more popular than on-street routes because they attract a broader variety of people (including many non-bicyclists). Many people simply do not feel comfortable riding with auto traffic. Conversely, more experienced cyclists often avoid bike paths because they are crowded and full of unpredictable users. There is some evidence that suggests that there are more conflicts on bike paths than riding on-street, though proper user separation can reduce conflicts. There is also evidence that suggests that bike paths may increase conflicts where they have numerous driveways or uncontrolled street crossings combined with limited visibility.\(^4\) Where bike paths terminate, half the bicyclists must cross the road to be able to ride with traffic. Finally, bike paths cost about ten times more to build per mile than on-street bikeways. Based on this, the Plan recommends Class I bike paths where they will serve a reasonable transportation function and do not duplicate adjacent on-street bike routes that offer a reasonable degree of comfort for the average user. In addition, the plan references other projects such as the SMART pathway and the Bay Trail, which plan for Class I pathways based on other criteria. For example, the Bay Trail’s goal is establishment of a Class I pathway regardless of transportation function or parallel duplicative on-street facilities.

There are also people who argue whether Class II bike lanes are ineffective or, conversely, that bike lanes should be installed wherever possible. Recent studies suggest that bike lanes improve safety\(^5\) and help delineate the travelway for motorists and may help channelize motor vehicles.\(^6\) Bike lanes provide an additional buffer between traffic and sidewalks, aiding pedestrians. When properly designed, bike lanes help improve the visibility of bicyclists. On certain streets with low traffic volumes and speeds (under 5,000 vehicles per day, 25 mph), bike lanes may not be needed at all. This is based on the potential for serious conflicts in certain instances being so low that installing bike lanes is not warranted.

The Primary Network

The Primary Network in Marin consists of key north-south and east-west corridors that form the backbone of bicycle and pedestrian facilities and provide connectivity between Marin’s communities and the greater region (See Marin County - Primary Bikeway Network Map in Section 5). The Primary Network includes many portions of the historic rail lines that traverse the county, including the SMART right of way; routes along key arterials providing access to local communities and key destinations; and major roadways in west Marin. Of the Primary Network, three major corridors have been identified and developed starting with the first Marin

\(^4\) AASHTO Guide to the Development of Bicycle Facilities (1999, currently being updated)
\(^5\) New York City Department of Transportation, 2005
\(^6\) University of North Carolina.
County Bicycle Plan in 1975: the North-South Greenway, North-South Bikeway, and East-West Bikeway.

**North-South Greenway**

The legacy of the old Northwestern Pacific Railroad in Marin along with the natural geography of the county makes the creation of a North-South Greenway a logical primary spine. The North-South Greenway starts at the Golden Gate Bridge and connects Sausalito, Mill Valley, Corte Madera, Larkspur, San Rafael, Novato, and Sonoma County, generally following the old NWP alignment.

The recommendations from the 1994 North-South Bikeway Plan are incorporated into this Plan, which recommends implementing the North-South Bikeway (Greenway) in a series of discrete segments that best match funding sources. This strategy is intended to recognize the high cost of the bikeway as well as its enormous potential and to build the route as funding permits.

From Central San Rafael north, the final alignment is dependent on the future rail service plans developed by the Sonoma Marin Area Rail Transit (SMART) agency. Proposed facilities along the NWP from Larkspur Landing north through Novato are consistent with the SMART 2006 Final Environmental Impact Report. North of Novato the Greenway is planned to follow Highway 101 and be incorporated into the Marin-Sonoma Narrows project.

**North-South Bikeway**

Recognizing that the SMART right of way and future North-South Greenway alignment north of Puerto Suello Hill travels primarily east of Highway 101 through less-developed areas while the area west of Highway 101 is where many businesses and residential neighborhoods are located, a parallel route to the North-South Greenway is identified. Beginning at Puerto Suello Hill summit, this route travels north along roadways and Class I pathways through Terra Linda, Marinwood, and Novato. Much of the North-South Bikeway has been constructed, with remaining gaps funded through the NTPP.

**East-West Bikeway**

The East-West Bikeway was first identified in the Cross Marin Trail proposal in the 1970s. Similar to the North-South Bikeway, this bikeway would generally follow the alignment of the old NWP right-of-way from Point Reyes Station through Samuel P. Taylor State Park, Lagunitas, San Geronimo, Woodacre, Fairfax, and San Anselmo. In downtown San Anselmo, one branch of the bikeway would continue down into Ross Valley through Ross, Kentfield, and Greenbrae to Larkspur Landing and finally to San Quentin. The other branch would continue easterly into San Rafael. Between Larkspur and Lagunitas the right-of-way has been used for roadways or has been sold off and developed, necessitating consideration of alternate alignments through these communities. The final alignment is dependent on numerous factors including acquisition of property, environmental approval, condition, cost...
to rehabilitate the White’s Hill Tunnel and other issues in the developed areas. In addition, specific facilities of the East-West Bikeway are subject to the engineering judgment of the local jurisdiction and the input of local residents as detailed in the plan updates being developed concurrently with this plan. Similar to the North-South Greeway and North-South Bikeway, the Plan recommends treating the East-West Bikeway as a series of discrete segments that best match funding sources.

**Tunnels and Railroad Rights-of-Way**

The numerous railroad tunnels in Marin County, some of which were constructed in the 1880s and have been closed since the 1960s, are considered to be a unique resource and opportunity by many Marin residents. The old Northwestern Pacific Railroad once served all of Marin County on a network of level, direct commuter train routes. Some of the railroad rights-of-way have been converted to multi-use trails, such as the popular Sausalito-Mill Valley pathway, while others lay dormant and have been studied for possible future rail with trail service by SMART.

Currently plans are underway to reopen the first of these abandoned tunnels, the Cal Park Hill Tunnel, connecting San Rafael to Larkspur Landing. Plans are being finalized and funds are in place for the project which is expected to be completed in 2009.

The Plan’s recommendations include the study of two other tunnels (Alto and White’s Hill) for possible reuse as bicycle and pedestrian routes. Studies will evaluate the feasibility of various project options for potential future design and consideration and will focus on reconstruction costs, comparison with alternative improvements, safety and security, responsibility for ongoing maintenance of the tunnels, environmental impact analysis, potential number of users, emergency egress opportunities, and possible shared use with emergency vehicles. Preliminary research indicates that there are approximately 78 existing comparable tunnels in use in the United States, which will be studied for relevance to these proposals. The Alto tunnel will be studied as part of the NTPP.

**School Commute**

The Plan has school commute safety as a major priority, with many of the short to mid-term projects providing enhanced connections to schools, plus a separate School Commute Safety program and new education programs. In addition, Safe Routes to Schools efforts are detailed to ensure consistency between this program and efforts to implement the other elements of this plan.

**Environmental Issues**

The Plan offers Marin a viable strategy to mitigate the environmental impacts caused by motor vehicles, including air quality, energy consumption, noise, and use of land for roadways and parking lots. Because of the minimal construction involved with on-street bikeways and even some off-street pathways, environmental impact of bikeways is usually a non-issue, although each project proposal must go through its own environmental review. Potential environmental
impacts of the bikeway and pedestrian projects in this plan are limited almost exclusively to those projects adjacent to wetlands and habitats along the Northwestern Pacific Railroad right-of-way. The impacts of reuse of this right of way as a multi-use path have been detailed in the SMART FEIR released in 2006 with which this plan is consistent.

**New Era of Respect**

A key factor in bicycle and pedestrian-friendly communities is the mutual respect between motorists and people on bicycle or foot. While Marin prides itself on being a livable community, the public continues to express concern about the lack of respect between motorists and pedestrians and bicyclists. It is sometimes noted in the media and in public meetings how few people stop their cars or bicycles at crosswalks to allow people—even children—to cross and how few cyclists stop at stop signs. Many bicyclists tell stories of aggression towards them from motorists. It is also not uncommon to see bicyclists running stop signs or riding two or three abreast on narrow roads.

Local advocacy groups have partnered with Marin County law enforcement to develop and implement a Share the Road program, detailed elsewhere in this report. This Plan calls for continuation and expansion of these and similar efforts to achieve a new era of mutual respect between all people using public rights-of-way. The Plan identifies several strategies to educate the general public on the rights of bicyclists and pedestrians, and on the importance of sharing the road and deferring to bicyclists and pedestrians when needed. It calls on bicyclists and pedestrians to police themselves and spread the word on the importance of obeying rules-of-the-road. For example, in communities such as Davis, California Portland, Oregon, and Boulder, Colorado and bicyclists are widely accepted as having a right to use roadways, while at the same time bicyclists adhere to established rules of the road as well. The Plan emphasizes the link between this level of respect and the overall quality of life in Marin County for everyone.

### 1.7 Role of the Bicycle and Pedestrian Plan

The Unincorporated Marin County Bicycle and Pedestrian Plan (the “Plan”) is primarily a coordinating and resource document for the county, with a focus on developing a primary network of bikeways, programs, and specific pedestrian enhancements. The Plan also helps to ensure good connectivity between the county’s unincorporated communities and develop consistent design standards. Because this Plan is being updated concurrently with local bicycle plans, emphasis is on specific facilities in the unincorporated areas as well as ensuring consistent countywide and regional connections.

Projects and programs included in this Plan would be sponsored by the County and will require additional feasibility analysis, design, environmental review, and public input prior to being funded and constructed. All projects and plans would, as applicable, need to conform with local Community Plans and the Marin Countywide Plan.
1.8 Bicycle and Pedestrian Master Plan Process

This Plan update has been developed during 2006-2008 under the purview of Marin County’s Public Works Department. To fully engage residents in the production of this Plan, the sponsoring agency, Transportation Authority of Marin, hosted four public workshops (one in each of the County’s four planning areas) in November of 2006. These workshops were advertised through the media, bicycle shops, schools, city halls, and other means. In addition, the County’s Bicycle Advisory Group (BAG) and a Countywide Coordination Committee met regularly to provide input and guidance during this process. The coordination committee included staff from TAM, the County’s Department of Public Works, Community Development Agency, the Parks and Open Space Department and each local city and town as available.

1.9 Overview of the Plan

The Plan outlines the actions needed, priorities, costs, and time lines for making unincorporated Marin County truly bicycle and pedestrian friendly. Section Two summarizes the goals, policies, and objectives guiding the implementation of the Master Plan. Section Three details the existing bikeway and walkway systems in unincorporated Marin County. Section Four looks at what is needed to make bikeway and walkway improvements. Section Five outlines the recommended bikeway and walkway improvements, including bicycle parking, education programs, and maintenance needs. This includes a framework for educating youth and adult cyclists and motorists, encouraging more cycling, and increasing the number of children bicycling and walking to schools. Section Six provides references to applicable local, state and federal design guidelines for the construction of bicycle and pedestrian facilities. Section Seven outlines an implementation strategy, including feasibility analyses for some of the highest priority projects, estimated costs, and funding opportunities.

This Plan is meant as a 20-year guide for making unincorporated Marin County a national model for nonmotorized transportation. Its success will only be assured by the continued support of Marin County’s cycling community and other residents recognizing the benefits bicycling and walking bring to all residents.
2.0 Goals, Objectives, and Policy Actions

2.1 Study Area

The study area of the Marin County Unincorporated Area Bicycle and Pedestrian Master Plan (the “Plan”) includes all the unincorporated regions of the county. The primary focus of the Plan is on developing a countywide Primary Network and local feeder network of bicycle and pedestrian facilities for travel within and between the various unincorporated and incorporated communities in Marin. The plan approach includes consideration of facilities located exclusively within the County jurisdiction as well as those which serve a countywide or regional function across multiple jurisdictions.

This section establishes a policy framework to guide future transportation decisions and capital improvement programming for the unincorporated areas of Marin County. This is intended to promote regional planning and offer opportunities to coordinate infrastructure improvements among multiple jurisdictions.

2.2 Relationship to Other Marin County Plans

As described above, the Plan is intended to coordinate and guide the provision of all pedestrian and bicycle-related plans, programs, and projects in the County. It is intended to assist county staff and staff of other jurisdictions and agencies to implement their priorities, but does not mandate any particular action. This plan does not supersede any local bicycle or pedestrian plan but is intended to work in concert with them to establish a countywide nonmotorized network.

The studies or planning efforts listed below have been reviewed and consulted, studied for consistency, and where appropriate, folded into the Unincorporated Marin County Bicycle and Pedestrian Master Plan.

Marin Countywide (General) Plan

The Marin Countywide Plan is the land use ‘constitution’ for the unincorporated area and sets policy direction for the natural and built environments, as well as addressing economic and social issues. General Plans are required under State law for each county and incorporated community and are required to contain seven Elements, one of which addresses transportation and circulation issues. The first Countywide Plan was adopted in 1973 with updates adopted in 1982, 1994, and 2007. The Countywide Plan was consulted extensively in preparation of this Plan update to ensure consistency between the two documents.
Community Plans

Several Community Plans have been created for specific planning areas throughout the county. Each plan is the result of a comprehensive community planning effort and has been created to define goals, policies, and objectives for each specific community. These plans not only provide decision-makers and County staff with a framework for making decisions related to land use, density, subdivisions, design review, transportation, and other essential services and facilities, but can also serve as a design guide for architects, engineers and other building professionals.

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 $25 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, 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. Funded projects are included in this Plan.


The SMART FEIR detailed plans to establish passenger rail service, as well as a bicycle and pedestrian pathway parallel to the rail line, for the 70-mile corridor from Larkspur Landing in Marin to Cloverdale in Sonoma County. According to the FEIR, approximately 7,000 people would use the pathway on a daily basis on weekdays and over 10,000 people would use it on the weekend days. Rail stations were designed to optimize pedestrian and bicycle access, including on-site bicycle parking at all stations and space for staffed bicycle storage and maintenance facilities at the San Rafael and Santa Rosa station sites. With room being designed into rail cars for bicycle storage, passengers would be able take the train and ride their bicycles to work, school, shopping or for recreation.

One of the goals of the 2001 unincorporated County bicycle plan was the creation of a North-South Greenway along the railroad right-of-way. Because SMART owns the railroad right-of-way north of Corte Madera, all proposals for projects in the SMART Right-of-Way in this plan update and in local bicycle plans in Marin County must be reconciled with the SMART FEIR.
Goals, Objectives, and Policy Actions

Marin Transit Short-Range Transit Plan (2006)

The Marin Transit 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 riders 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.

Corte Madera Bay Trail Feasibility Study (2004)

This plan fleshed out the local alignment through Corte Madera of a regionally significant bicycle and pedestrian route. It proposes a combination of Class I, II and III bikeway facilities along Paradise Drive in Corte Madera from San Clemente to the Tiburon border. The facilities proposed in the County’s current bicycle plan are consistent with the proposal in this feasibility study.

Central Marin Ferry Connection Project Feasibility Study (2004)

This City of Larkspur and Bay Trail-funded study carried forward one of the top priority North-South Greenway projects from the 2001 plan, a proposal to connect the communities of Corte Madera and Larkspur over Corte Madera creek, which would complete a key segment of the Bay Trail, and provide improved bicycle and pedestrian access to the Larkspur Ferry Terminal and the Cal Park Hill Multi-Use Pathway. The report established a preferred alignment for the Central Marin Ferry Connection project which essentially follows the old Northwestern Pacific Railroad right-of-way between Wornum Drive in Corte Madera, across Corte Madera Creek, and across East Sir Francis Drake Boulevard on a new high-level bridge connecting to the Cal Park Hill Multi-Use Pathway. The report also identifies alternative alignments that cross Corte Madera Creek on the highway structure, connecting to proposed pathway segments on the south side of the creek.

Alto Tunnel Scoping Study, Volumes I and II (2001)

This study was completed in 2001 following adoption of the 2001 bicycle master plan. It collected background documents and laid out the scope of a future feasibility study for reopening the Alto tunnel. The studies contain detailed information about the current condition of the tunnel as known through field inspections and inferred from historical sources. The document recommends a specific strategy for further study of the tunnel’s condition.
Goals, Objectives, and Policy Actions

Marin County Unincorporated Areas Bicycle and Pedestrian Master Plan (2001)

The plan, which is the subject of the current update, was completed for the Marin County Department of Public Works. The plan outlines improvements to the unincorporated areas of the County of Marin and includes routes of countywide and regional significance, as well as highlighting key improvements from the incorporated communities of Marin.

Marin County Bicycle and Pedestrian Master Plan (2000)

The Marin County Congestion Management Agency (CMA) commissioned and received a bicycle and pedestrian master plan to embrace both incorporated and unincorporated jurisdictions within the county. Key recommendations of this plan included a North-South Bikeway, an East-West Bikeway, potential use of abandoned railroad tunnels and rights-of-way, and locating vital infrastructure improvements to promote and encourage increased bicycle and pedestrian activity.

Local Bicycle and Pedestrian Master Plans

The following jurisdictions have adopted bicycle or bicycle/pedestrian master plans which are being updated concurrently with the County unincorporated areas plan. As described above, throughout the County Unincorporated areas planning process, special consideration has been given to locations where countywide and regional facilities cross jurisdictional boundaries in order to coordinate improvements among multiple jurisdictions.

<table>
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<th>Community</th>
<th>Year of Most Recent Plan Adoption</th>
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<td>Sausalito</td>
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<td>Belvedere</td>
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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, for commuters. The Study was never officially adopted. The Plan’s recommendations included development of a long-term alignment along the Northwest Pacific Railroad right-of-way through much of the county. Although SMART did not exist at the time, the Study did recognize the difficulties in this alignment due to the intended use of the right-of-way for transit in addition
Goals, Objectives, and Policy Actions

to 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. Further discussions of the North-South Bikeway are contained in later 
chapters of this plan.

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.

2.3 Local Bikeways and Plans

Marin County’s unincorporated communities include Black Point, Bolinas, Dillon Beach, Forest 
Knolls, Greenbrae, Inverness, Kentfield, Lagunitas, Lucas Valley, Marin City, Marinwood, 
Marshall, Muir Beach, Nicasio, Olema, Pt. Reyes Station, San Geronimo, Santa Venetia, Sleepy 
Hollow, Stinson Beach, Strawberry, Almonte/Homestead/Tamalpais Valley, Tomales, and 
Woodacre. Each of these communities is primarily residential, some having local design review 
boards and/or homeowner’s associations. Bikeways and walkways in these communities that 
have been identified for this Plan are under the purview of the County of Marin.

Since adoption of the 2001 plan, planning for local walkways and bikeways has been 
accomplished in several unincorporated areas in Marin, including Tamalpais Valley, Bolinas, 
Marinwood and the Pt. Reyes-Inverness communities. These plans identify detailed, specific 
bicycle and pedestrian improvements for further consideration as to the community’s desires. 
These plans are incorporated by reference into this Plan once adopted by the Board of 
Supervisors. Elements from those plans are included in Chapter 5.0.

2.4 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. This plan is currently being updated.

*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.

### 2.5 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 (as detailed in Chapter 7) 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, and the *Caltrans Highway Design Manual* contains specific, mandatory design requirements. The Caltrans BTA requirements – and how this Plan complies with them for Marin County – are detailed in **Table 2.1 California Bicycle Transportation Act (1994) Requirements** below. The basic design parameters of on-street and off-street bicycle facilities are further 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 2.1
California Bicycle Transportation Act (1994) Requirements

<table>
<thead>
<tr>
<th>BTA Requirements</th>
<th>Location in Plan (by page #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated number of existing and future bike commuters</td>
<td>63-68</td>
</tr>
<tr>
<td>Land use and population density</td>
<td>2, 62, 63-68</td>
</tr>
<tr>
<td>Existing and proposed bikeways</td>
<td>29-46, 69-116</td>
</tr>
<tr>
<td>Existing and proposed bicycle parking facilities</td>
<td>40, 90-92</td>
</tr>
<tr>
<td>Existing and proposed multi-modal connections</td>
<td>44, 45, 94, 95</td>
</tr>
<tr>
<td>Existing and proposed changing and storage facilities</td>
<td>26, 42</td>
</tr>
<tr>
<td>Bicycle safety and education programs</td>
<td>42, 124-127</td>
</tr>
<tr>
<td>Citizen participation</td>
<td>1, 18, 38, 60-62</td>
</tr>
<tr>
<td>Consistency with transport, air quality, and energy plans</td>
<td>19-25, 62-68</td>
</tr>
<tr>
<td>Project descriptions and priority listings</td>
<td>82-118</td>
</tr>
<tr>
<td>Past expenditures and future financial needs</td>
<td>131-135, 146</td>
</tr>
</tbody>
</table>

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.

As detailed above, the County’s General Plan identifies specific local goals and policies that are relevant to the Bicycle Master Plan Update. In addition to these policies, in January of 2006 the County of Marin Department of Public Works released a Multi-modal Policy that states that “At the outset of all projects, other than routine maintenance, an analysis shall be performed to ensure the inclusion of all necessary, appropriate and reasonable multi-modal facilities and improvements. The analysis shall include facilities related to transit, bike and pedestrian access, disability access, and transit safety.”

### 2.6 Goals, Objectives, and Policy Actions

#### 2.6.1 Goals

Goals provide the context for the specific objectives and policy actions discussed in the Bicycle and Pedestrian Master Plan. The goals provide the long-term vision and serve as the foundation of the plan. Goals are broad statements of purpose that do not provide specific descriptions of the goal, while policy actions provide a bridge between general policies and actual implementation guidelines, which are provided in the Sections Four and Five. As with the Plan
recommendations, none of the Goals or Objectives are explicitly funded at this time, although funding opportunities are constantly pursued. This Master Plan and the goals, objectives, and policy actions herein do not mandate any specific action by the Transportation Authority of Marin or the County of Marin.

**Goal 1 Increased Bicycle and Pedestrian Access**

Expand bicycle and pedestrian facilities and access in and between neighborhoods, employment centers, shopping areas, schools, and recreational sites, in pursuit of the Marin Countywide Plan goal of having 20% of all trips made by walking or biking by 2020.

**Goal 2 Bicycle Transportation**

Make the bicycle an integral part of daily life in Marin County, particularly for trips of less than five miles, by implementing and maintaining a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer and more convenient.

**Goal 3 Pedestrian Transportation**

Encourage walking as a daily form of transportation in Marin County by completing a pedestrian network that services short trips and transit, improving the quality of the pedestrian environment, improving the health of all citizens, and increasing safety, convenience and access opportunities for all users.

### 2.6.2 Objectives

**Objective A**

*Implement the Bicycle and Pedestrian Master Plan, which identifies existing and future needs, and provides specific recommendations for facilities and programs over the next 20 years.*

**Objective A Policy Actions**

1. Continue to fund a bicycle/pedestrian coordinator who would help implement the county and local bicycle plans.
2. Update the Plan periodically as required by Caltrans to reflect new policies and/or requirements for bicycle and pedestrian funding.
3. Maximize coordination between all municipalities, schools, and community organizations to review and comment on bicycle and pedestrian issues of mutual concern.
4. Implement the recommendation to regularly monitor bicycle- and pedestrian-related accident levels, and seek a reduction in these accident levels on a per capita basis over the next twenty years.

**Objective B**

*Complete a continuous network of bikeways that are feasible, fundable, and that serve bicyclists’ needs, especially for travel to employment centers, schools, commercial districts, transit stations, and institutions.*
Goals, Objectives, and Policy Actions

Objective B Policy Actions
1. Seek funding for bikeway projects through current local, regional, state, and federal funding programs and encourage multi-jurisdictional funding applications.
2. Implement high priority projects, such as the north-south and east-west bikeways.
3. Complete implementation of the Countywide Bicycle Route Guide Signage Project.
4. Continue implementation of the January, 2006 DPW Multi-modal Policy.

Objective C
*Complete a network of walkways that serves pedestrian needs, especially for short trips to employment centers, schools, commercial districts, transit stations, and institutions.*

Objective C Policy Actions
1. Complete missing connections to make direct routes for walking.
2. Identify and mitigate impediments and obstacles to walking to school.
3. Continue implementation of the January, 2006 Department of Public Works Multi-modal Policy.
4. For new development projects, where appropriate, require pedestrian facilities to provide connections to nearby transit facilities.
5. Work with transit authorities to ensure that pedestrian concerns are addressed in the design of transit stops.
6. Provide opportunities for walking for recreational purposes.

Objective D
*Maintain and improve the quality, operation, and integrity of bikeway and walkway network facilities.*

Objective D Policy Actions:
1. Undertake routine maintenance of bikeway and walkway network facilities, such as sweeping bicycle lanes and sidewalks, as funding and priorities allow.
2. Ensure that repair and construction of transportation facilities minimizes disruption to the cycling and walking environment to the extent practical.
3. Ensure that new bicycle/pedestrian improvements do not have a net negative impact on the environment.
4. Maximize opportunities to ensure that the pedestrian walkway network is accessible to, and usable by, persons with disabilities.

Objective E
*Provide secure short- and long-term bicycle parking in employment and commercial areas, in multifamily housing, at schools, and at transit facilities, including covered and/or attended parking.*

Objective E Policy Actions:
1. Amend the Development Code to require bicycle parking spaces as part of new development projects.
2. Encourage the installation of short- and long-term bicycle parking in the public right-of-way.
3. Work with local elementary, middle, and high schools to promote bicycle commuting and to assist in purchasing and siting long- and short-term bicycle parking.
4. Amend the Development Code to require lockers and showers to be added to new or remodeled buildings, subject to certain thresholds.
5. Develop an ordinance to require the provision of bicycle parking at major events to help ease traffic and parking.

**Objective F**

*Increase the number of bicycle-transit trips and pedestrian access to transit.*

**Objective F Policy Actions:**
1. Support and promote bicycle access to, and parking at, bus and ferry transit services in Marin County.
2. Assist transit providers in providing and promoting secure, covered bicycle racks and lockers in the transit system to encourage bicycle use.
3. Encourage bike rental opportunities near ferry terminals, key recreation destinations, and other locations where visitors are entering Marin County.
4. Require that any future rail transit service in Marin provide adequate bicycle and pedestrian access, on-board storage capacity, and secure bike parking.
5. Support and promote transit facility enhancements, such as bus stop access improvements, that will encourage increased bicycle and pedestrian access to transit.
6. Conduct bicycle and pedestrian counts at regular intervals to evaluate usage and demand and assist in prioritization of project funding.

**Objective G**

*Develop and implement education and encouragement plans aimed at youth, adult cyclists, pedestrians, and motorists. Increase public awareness of the benefits of bicycling and walking and of available resources and facilities.*

**Objective G Policy Actions**
1. Develop adult and youth bicycle and pedestrian education, encouragement and safety programs (see Section Five).
2. Market the health benefits of walking and bicycling.
3.0 Existing Conditions

3.1 Introduction

Existing conditions in Unincorporated Marin County include both existing patterns of walking and bicycling and existing physical improvements and programs that support these activities. As in most older communities, bicycle facilities in Marin range from existing popular bike paths to serious gaps in connections between communities. The same can be said of pedestrian conditions. While Marin has some of the most walkable communities and neighborhoods in the Bay Area, pedestrians must still negotiate streets with minimal to no sidewalks, many of which are sub-standard, and try and cross busy streets with limited protection. One aspect of existing conditions that is difficult to measure but widely identified by the public is the general attitude of people toward bicyclists and pedestrians. Numerous public comments were heard about the lack of courtesy between people using the same roadway, whether they are by foot, bicycle, or car.

3.2 Bicycle Facilities

3.2.1 Existing Bikeways

The existing bikeway system in Marin’s unincorporated regions consists of an incomplete system of just over 30 miles of bikeways, including 12.7 miles of Class I Bikeway or Multi-use Pathways, just over 9 miles of Class II on-street bicycle lanes, and just over 8 miles of signed bicycle routes (see Table 3.1). The project area is shown in Figure 3.1. Maps of existing bikeways are shown in Figures 3.1 to 3.4 on the following pages.

Bikeway designations used in the plan are from Caltrans Chapter 1000 of the Highway Design Manual. Class I multi-use paths must meet specific width, clearance, curve radii, gradient, and other requirements, while Class II bike lanes and Class III bike routes must meet specific striping, signing and other requirements. While Marin County has a wide variety of existing bikeways, a substantial number do not meet the requirements to be designated Class I, II, or III bikeways as defined by Caltrans. For the purposes of this plan, only existing Class II or Class III bikeways that meet Caltrans standards have been identified in the mapping process. All pathways shown as “Class I Bikeway or Multi-use Pathway” are assumed to be paved whether or not they meet Caltrans requirements for width. Where existing pathways are too narrow or the surface is too degraded to permit safe use, such pathways have been shown as proposed and are detailed in Chapter 5. For the purposes of this plan, the designation “Class III/Sholders” was established to capture existing and proposed shoulder conditions. Class III/Sholders facilities would have a minimum treatment of Bicycle Route Signs with additional paved shoulder width as needed. Most rural roads in Marin County such as Highway 1, Sir Francis Drake (west of San Geronimo Valley), Ridgecrest Boulevard, and portions of Lucas Valley Road are narrow and winding and have high seasonal traffic volumes, shoulders of varying width, and some steep sections.
Existing Conditions

Bicycles are allowed on all paved public roadways in Marin except freeways (highways with interchanges) with the following exceptions: both shoulders of Richardson Bay Bridge including adjacent on- and off- ramps; the northbound shoulder between and including Villa Avenue on-ramp and North San Pedro off-ramp; from the South Novato Blvd/Hwy 37 ramp south to the Enfrente Rd. exit; on a short section of eastbound I-580 near San Quentin; and on U.S. 101 from the Atherton/San Marin exit north to the Sonoma County line.

Bicycles are not allowed on the Richmond-San Rafael Bridge; bicyclists must use the bus to make this connection. Bicyclists have exclusive use of the west walkway of the Golden Gate Bridge evenings and weekends, but must share the east walkway with pedestrians during the week when the west walkway is used for bridge maintenance access during the day.

Notable existing bikeways which are totally or partially in unincorporated Marin County include:

1. **Mill Valley-Sausalito Multi-use Path**: A three mile paved pathway on an abandoned railroad right-of-way that traverses wetland areas and serves numerous activity centers. This path is an important recreational and commuting route and is part of the regional Bay Trail system.

2. **Corte Madera Creek Pathway**: This paved path consists of five distinct segments, totaling three miles between Larkspur Landing and Ross. Near Larkspur Landing within Larkspur, the path is located south of Sir Francis Drake and serves the ferry terminal. West of U.S. 101, the path is located on the Creek and is popular for recreational uses. Path users must use South Eliseo for three-quarters of a mile to Bon Air Road, where another popular section of path in the unincorporated area of Kentfield serves a hospital, schools, and the College of Marin. The final segment to Ross is a narrow four to six foot path located alongside the Corte Madera Creek Channel.

3. **Pacheco Hill Pathway**: This paved path provides an important link in Northern Marin County between Miller Creek Road in Marinwood to Alameda del Prado in Ignacio. The path provides the only linkage for bicyclists and pedestrians in this entire corridor.

4. **Samuel P. Taylor Park Pathway**: This partially paved pathway extends from the Inkwells Bridge just west of Lagunitas through the park on the old NWP right-of-way to Tocaloma, and is popular with bicyclists, hikers, and equestrians.
WEST MARIN COUNTY
EXISTING BIKEWAY NETWORK
FIGURE 3.1

LEGEND
Bicycle Facilities
Existing
- Class 1 Bikeway or Multi-Use Path
- Class 2 Bicycle Lanes
- Class 3 Signed Routes/Shoulders
- Transit Hubs
- School

DATA SOURCE MARINMAP
NORTHERN MARIN COUNTY
EXISTING BIKEWAY NETWORK
FIGURE 3.4

LEGEND
Bicycle Facilities
Existing

- Class I Bikeway or Multi-Use Path
- Class II Bicycle Lanes
- Class III Signed Route/Shoulders
- Bicycle Parking
- Transit Hubs
- School
### Table 3.1

#### Existing Bikeway Facilities in Unincorporated Marin County

<table>
<thead>
<tr>
<th>Name</th>
<th>Facility Class</th>
<th>Mileage</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corte Madera Creek</td>
<td>I</td>
<td>1.9</td>
<td>Kentfield</td>
</tr>
<tr>
<td>Golden Gate Bridge Access**</td>
<td>I</td>
<td>1.4</td>
<td>Fort Baker</td>
</tr>
<tr>
<td>Horse Hill (Alto) Path**</td>
<td>I</td>
<td>0.4</td>
<td>Alto to Corte Madera</td>
</tr>
<tr>
<td>Mill Valley-Sausalito Path</td>
<td>I</td>
<td>3.0</td>
<td>Mill Valley to Waldo Point</td>
</tr>
<tr>
<td>Mission Pass Path (Fawn-Freitas)</td>
<td>I</td>
<td>0.3</td>
<td>Sleepy Hollow to Terra Linda</td>
</tr>
<tr>
<td>Pacheco Hill Path**</td>
<td>I</td>
<td>0.7</td>
<td>Novato to Marinwood</td>
</tr>
<tr>
<td>Samuel P. Taylor Pathway**</td>
<td>I</td>
<td>2.8</td>
<td>Taylor Park Campground to Platform Bridge</td>
</tr>
<tr>
<td>Stafford Lake Path</td>
<td>I</td>
<td>1.7</td>
<td>Novato City Limits to Stafford Lake</td>
</tr>
<tr>
<td>Strawberry Point School</td>
<td>I</td>
<td>0.2</td>
<td>Greenwood Bay to School</td>
</tr>
<tr>
<td>Tennessee Valley Pathway</td>
<td>I</td>
<td>0.3</td>
<td>Tam Valley</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12.7</td>
<td>Total Class I Bikeway or Multi-use Path Mileage</td>
</tr>
<tr>
<td>Almonte Boulevard</td>
<td>II</td>
<td>0.9</td>
<td>Almonte</td>
</tr>
<tr>
<td>Atherton Avenue</td>
<td>II</td>
<td>1.1</td>
<td>Novato</td>
</tr>
<tr>
<td>Bel Marin Keys</td>
<td>II</td>
<td>1.0</td>
<td>Bel Marin Keys (Unincorp Novato)</td>
</tr>
<tr>
<td>Bunker Road**</td>
<td>II</td>
<td>0.4</td>
<td>Fort Baker to Fort Cronkite</td>
</tr>
<tr>
<td>Butterfield Road</td>
<td>II</td>
<td>1.4</td>
<td>Sleepy Hollow</td>
</tr>
<tr>
<td>College Avenue</td>
<td>II</td>
<td>0.4</td>
<td>Kentfield</td>
</tr>
<tr>
<td>Las Gallinas Ave</td>
<td>II</td>
<td>0.5</td>
<td>Marinwood</td>
</tr>
<tr>
<td>Lucas Valley Road</td>
<td>II</td>
<td>2.4</td>
<td>Marinwood/Lucas Valley</td>
</tr>
<tr>
<td>Sir Francis Drake Boulevard</td>
<td>II</td>
<td>0.3</td>
<td>Greenbrae</td>
</tr>
<tr>
<td>Seminary Drive</td>
<td>II</td>
<td>0.9</td>
<td>Strawberry</td>
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<td></td>
<td></td>
<td>9.3</td>
<td>Total Class II Bikeway Mileage</td>
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<tr>
<td>Nicasio Valley Road</td>
<td>III</td>
<td>2.6</td>
<td>Nicasio Reservoir</td>
</tr>
<tr>
<td>Point Reyes-Petaluma Road</td>
<td>III</td>
<td>3.0</td>
<td>Nicasio Reservoir</td>
</tr>
<tr>
<td>Samuel P Taylor Park Road**</td>
<td>III</td>
<td>0.2</td>
<td>Taylor Park</td>
</tr>
<tr>
<td>Sir Francis Drake Boulevard</td>
<td>III</td>
<td>2.5</td>
<td>San Geronimo Valley Drive (east) to Inkwells Bridge</td>
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<td></td>
<td></td>
<td>8.3</td>
<td>Total Class III Bicycle Routes Mileage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30.3</td>
<td>Total Mileage</td>
</tr>
</tbody>
</table>

*Many of the facilities do not meet current Caltrans standards.

**These facilities may be under other agency jurisdictions.

#### 3.2.2 Bikeway Projects in Progress

The following projects were identified as high priorities in the 2001 County bicycle plan and are either fully funded, have completed the design phase and/or are in construction. Status details are provided below.
Existing Conditions

Countywide Bicycle Route Guide Signage Project

Begun in 2000, the Countywide Bicycle Route Guide Signage project was initiated to provide a comprehensive system of bike route signs that would guide cyclists along the safest and most direct routes between Marin’s cities and towns and from one end of the county to the other. The project is aimed at both experienced and inexperienced cyclists and it is hoped that the safe routes marked by the signs will encourage novice cyclists to ride their bicycles more for recreation and transportation. Installation of signage was motivated in part by feedback from the many visitors to the County that it is sometimes difficult to navigate the unfamiliar roads and paths safely.

The project is a cooperative effort led by the County of Marin in partnership with local departments of public works and Caltrans. The project was initiated by a local advocacy group, which created an early version of the numbered bike route system which the County later adapted for use in the final project.

The County began installation of the first countywide bicycle route signs in late July 2005, starting in Sausalito and Mill Valley. The Department of Public Works has since then moved north through the county, installing signs in Tiburon, Larkspur, Corte Madera, San Rafael, San Anselmo and Fairfax. County staff typically install the signs, but in certain cases, the signs are being provided to the local jurisdiction for installation by local crews.

Cal Park Hill Multi-Use Pathway Project

Identified as the “San Rafael-Larkspur Gap Closure Project” in the 2001 plan, the Cal Park and Multi-Use Pathway project is being implemented by the County of Marin in partnership with Sonoma Marin Area Rail Transit (SMART), the Transportation Authority of Marin (TAM), and other stakeholder partners. The project would open the Cal Park Hill Tunnel for bicycle/pedestrian travel and passenger rail shared use.

The 1,105-foot long tunnel, originally used for rail operations, suffered from deferred maintenance for many years and was later closed due to fire and partial collapse. It will be cleared of debris and structurally rehabilitated, to accommodate the bicycle pedestrian use, and to allow for the facility’s future use as a commuter rail tunnel. The one-mile long Class I bicycle and pedestrian path will be constructed between Andersen Drive at West Francisco Blvd. in San Rafael and Larkspur Landing Circle in Larkspur, mainly within the existing railroad right of way. The bicycle and pedestrian path will provide an important link between two major transit centers – the downtown San Rafael Transit Center and the Larkspur Ferry Terminal. This project provides the only opportunity for travel between these nodes at a reasonably level grade for cyclists. When completed, bicyclists and pedestrians will be able to travel easily and safely between the ferry terminal and downtown San Rafael with a minimum number of road crossings. Travel time for bicyclists and pedestrians traveling between these two important points will be reduced by at least 20 minutes, eliminating steep grades and traffic conflicts, and allowing for travel along an accessible path that is open to commuters, recreational cyclists and pedestrians of all ability levels. The path will provide an important link for non-drivers, including children.
In December of 2006 the project had received NEPA clearance. The project is expected to go to bid in Summer, 2008 with completion projected for 2009.

The design was influenced by input from meetings with the public, affected property owners, the City of Larkspur, the City of San Rafael, County Parks and Open Space, and emergency service providers. With the help of emergency providers, a draft emergency access plan was devised which includes recommendations to develop a Memorandum of Understanding (MOU) between the County, SMART and the Cities outlining roles and responsibilities and to provide the following security measures:

- “Blue light” stations with emergency telephones within the tunnel
- Video cameras connected via internet to emergency responders
- Cable in the tunnel to allow radio and cellular phone communications
- Mile-post markers at regularly spaced intervals within the tunnel
- Emergency vehicle access up to the tunnel entrance
- Tunnel lighting and partial pathway lighting

The tunnel will be designed to incorporate gates that can be closed during low-use overnight hours. The specific hours of operation will be designated in a Memorandum of Understanding with the County, SMART, the City of Larkspur, and the City of San Rafael. Hours of operation may be adjusted seasonally, or based on operational experience. The bridge at Auburn Street will be a steel prefabricated bridge with a concrete deck. This will provide a safe and comfortable crossing for bicyclists and other pathway users, and will minimize future maintenance needs. Amenities, including landscaping and other treatments, will be limited to the trailheads with a more significant treatment at the northern terminus in San Rafael. Trailheads will provide information about hours of operation and trail regulations. Historic markers will also be incorporated along the trail as appropriate.

As this project is one component of the North-South Greenway, the southern terminus of the project is envisioned to ultimately connect to the Central Marin Ferry Connection, providing a crossing of East Sir Francis Drake Blvd. and Corte Madera Creek.

**Puerto Suello Hill (Lincoln Hill) Multi-Use Pathway Project**

This project was identified as a priority in the 2001 plan as the Puerto Suello Gap Closure Project and fills the remaining gap south of the proposed Los Ranchitos Bicycle Lanes, completing the North-South Greenway between the areas of downtown and north San Rafael. This project is funded by a creative combination of Local Measure A Transportation Sales Tax revenues, Transportation For Clean Air (TFCA), and State Transportation Improvement Program (STIP) funds. Since 2004, TAM coordinated with SMART, Caltrans, and the City of San Rafael on the design of the pathway segment that is located parallel to and west of Highway 101 between Mission Avenue and the top of Puerto Suello (Lincoln) Hill. The pathway will include an underpass at the existing Highway 101 on/off ramp area at the top of Puerto Suello Hill and a spur pathway at Linden Lane to access the Dominican neighborhood of San Rafael. The final
Existing Conditions

phase of the Highway HOV Gap Closure Project and the Puerto Sueldo Hill Multi-Use pathway are under construction with an anticipated completion date in the fall of 2008.

Alameda del Prado Class II Lanes

Alameda del Prado provides the primary link between Novato and Marinwood. The segment of the roadway in the unincorporated area features extremely wide medians with narrow travel lanes. Combined with a substantial amount of on-street parking, bus routing, and the curving nature of the roadway, conditions for cyclists are not optimal.

The County is currently in design to construct Class II lanes on this segment to close the gap between the existing Class II lanes on either end of this segment. The lanes would be provided by narrowing the existing medians to allow for a travel lane, bike lane, and parking lane on each side of the roadway. This project is funded through the NTPP.

Tennessee Valley Pathway and Manzanita Pathway

An existing pathway connecting the Mill Valley-Sausalito Path with Shoreline Highway at Coyote Creek does not meet Class I standards and is frequently subject to tidal flooding. Further, the path does not provide a suitable connection to the Tam Junction commercial area or the surrounding neighborhoods.

The County is currently in design to upgrade the existing path to Class I standards to the maximum extent feasible, raise it up out of the floodplain, and extend the path across Shoreline Highway and along Coyote Creek to the Tam Community Center. A new pedestrian bridge will be constructed over Coyote Creek on the west side of Shoreline Highway. A spur pathway will connect this path to the Manzanita Park and Ride lot to improve connectivity between the transit hub and the residential areas to the north.

3.2.3 Bikeway Support Facilities

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." This suggests that there is a large reservoir of potential cyclists who do not ride (or do not ride more) due to a lack of appropriate facilities.

Cyclists’ needs for bicycle parking range from simply a convenient piece of street furniture, to storage in a bicycle locker that affords weather, theft, and vandalism protection, gear storage space, and 24-hour personal access. Where a cyclist’s needs falls on this spectrum is determined by several factors:

- **Type of trip being made**: whether or not the bicycle will be left unattended all day or just for a few minutes.
Existing Conditions

- **Security of area:** determined by the cyclist’s perception
- **Value of the bicycle:** the more a cyclist has invested in a bicycle, the more concern she or he will show for theft protection or how prone a given area is to bicycle theft.

A final need for some potential commuting cyclists are shower, locker, and changing rooms at trip destinations. For those cyclists needing to dress more formally, travel longer distances, or cycle during wet or hot weather, the ability to shower and change clothing can be as critical as bicycle storage. The concept of a full-service “bikestation” offering these conveniences and other services such as Class I parking, cafes, bike shops, and bicycle rentals, has spurred considerable interest in the country. Cities in California that have recently built bike stations include Palo Alto, San Francisco, Long Beach, and Berkeley. Locations within Marin County that may be able to support such a facility include the San Rafael Transit Center, San Anselmo Hub, Manzanita Park and Ride lot, and the Sausalito and Larkspur Landing ferry terminals.

Bicycle parking facilities in California are classified as follows:

**Class I:** Class I bicycle parking facilities (see Figure 3.5) accommodate employees, students, residents, commuters, and others expected to park more than two hours. This parking is to be provided in a secure, weather-protected manner and location. Class I bicycle parking will be either a bicycle locker, or a secure area like a ‘bike corral’ that may be accessed only by bicyclists.

Bike lockers are covered storage units that typically accommodate one or two bicycles per locker, and provide additional security and protection from the elements. These are typically located at large employment centers, colleges, and transit stations. Modern lockers feature card-swipe access which allow far more users to be able use the lockers over time than with a dedicated-key, personally assigned locker. 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. Either locking the enclosure or locating it near other activities so that it can be supervised provides security.

**Class II:** Class II bicycle parking facilities (see Figure 3.6) are best used to accommodate visitors, customers, messengers and others expected to depart within two hours. Bicycle racks provide support for the bicycle but do not have locking mechanisms. Racks are relatively low-cost devices that typically hold between two and eight bicycles, allow bicyclists to securely lock their frames and wheels, are secured to the ground, and are located in highly visible areas. They are usually located at schools, commercial locations, and activity centers such as parks, libraries, retail locations, and civic centers.

**Bicycle Parking**

A field review of unincorporated areas revealed a lack of official bike racks for bicyclists throughout the communities. Bicyclists visiting stores, restaurants, places of employment, 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 Marin County and around the
country, the result of the increased value of bicycles. Most bicycles today cost 350 dollars to over 2,000 dollars. Bicycles are one of the top stolen items in all communities, with individual components being stolen even when a bicycle is securely locked.

Existing bicycle parking facilities in unincorporated Marin County are found at the Civic Center, where bicycle racks are provided for visitor parking and bicycle lockers are available for employee use. Racks have been added to many of Marin’s downtown areas while both College of Marin campuses provide bike racks around the campuses. Some smaller retail areas provide bike racks (such as Woodlands Market in Kent Woodlands), but generally secure modern bike parking is not available. Opportunities such as bike stations, which are attended facilities, and other secured parking facilities would help to address the shortage of parking at major transit facilities such as the Larkspur Ferry Terminal and the San Rafael Transit Center.

Figure 3.5: Class I Bike Lockers
Figure 3.6: Class II Racks
Existing Conditions

A field review shows racks are typically provided at most elementary and middle schools throughout the county. When it occurs, vandalism and theft are due in part to poor design or placement of bicycle racks plus inadequate locking devices and techniques used by students. The lack of adequate racks is a result of many factors, including the absence of a zoning code requirement for properly designed school bicycle parking, a perceived lack of need in some cases, and a view on the part of some school administrators and parents that bicycle riding is a low priority and/or unsafe means of transportation.

No official public shower or locker facility for bicycle commuters is known to exist in Marin County although facilities are provided for employees at the Marin County Civic Center. Some employers provide private facilities, while some bicycle commuters may use facilities in local health clubs.

3.2.4 Bicycle Safety Education Programs

Education is an important element in increasing bicycling while also improving safety. Probably the most effective way to improve the safety of cycling is simply to improve the quality of bikeway facilities in the county. However, bikeways cannot do it alone. There is also a need for proper education of both youth and adult cyclists and motorists.

With the development of the Safe Routes to Schools program, formal bicycle safety education programs are now offered to schools in the county. More information on this program is provided in a following section. In addition, several nonprofits conduct bicycle safety initiatives. They are described below.

The Marin County Bicycle Coalition (MCBC), Bicycle Trails Council of Marin (BTCM) and Trips for Kids (see descriptions and contact information in Appendix B) offer skill and other education programs for adults and youth.

Since 2001, a Share the Road Campaign has been implemented by MCBC in partnership with Marin law enforcement and with funding from the National Highway Traffic Safety Administration. The campaign includes three components: checkpoints, basic street skills classes, and public presentations. Uniformed police and highway patrol officers and volunteers from local bicycle advocacy groups stop vehicles, cyclists and pedestrians at checkpoints and provide them with Share the Road flyers.

The flyers contain California Vehicle Code information, codes of conduct for bicyclists and motorists, and additional safety tips to prevent road rage. Novato, Fairfax, Larkspur and Corte Madera hosted checkpoints in 2005 and 2006. Basic Street Skills Classes are provided free of charge by local bicycle advocacy groups. Classes provide information on how to avoid collisions and citations, how to ride safely, improve visibility and the legal rights and responsibilities of cyclists. Cyclists who have received a bicycle violation may attend this class to reduce their fine to $50. Share the Road presentations are also offered 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.
3.2.5 Multi-Modal Connections

Improving the bicycle-transit link is an important part of making bicycling a part of daily life in Marin County. Linking bicycles with mass transit (bus and ferry) overcomes such barriers as crossing the Richmond-San Rafael Bridge, trips generally too long to be done solely by bike, personal security concerns, and riding at night, in poor weather, or up hills. This link also enables bicyclists to reach more distant areas and increases transit ridership on weekends and midday.

Bicycling to transit instead of driving benefits communities by reducing air pollution, demand for park-and-ride land, energy consumption and traffic congestion with relatively low cost investments.

There are four main components of bicycle-transit integration:

- allowing bicycles on transit;
- offering bicycle parking at transit locations;
- improving bikeways to transit; and
- encouraging usage of bicycle and transit programs.

About 10 percent of commuters use public transit in Marin. Local transit service is coordinated by Marin Transit, which contracts with Golden Gate Transit (GGT) and other providers for local transit and paratransit service.

The following transit services are available in Marin County: Golden Gate Transit Bus Service, Golden Gate Ferry, Whistles top (paratransit), West Marin Stagecoach, Marin Transit Community Shuttles and the Blue and Gold Fleet (daily ferry service to San Francisco).

As of January of 2007, bike storage is available on all public transit vehicles in Marin. Bike racks on transit vehicles can be used day and night and at the same fare as a regular passenger. Front-mounted bike racks with capacity for 2 or 3 bicycles are installed on all of Marin Transit’s local services including the West Marin Stagecoach and the three community shuttles. In 2006 Golden Gate Transit purchased and installed underfloor style racks that hold two bicycles in the luggage compartment of 45-foot long buses that previously had no bicycle carrying capacity due to state law limits on bus length. This improvement ensures that all transit buses in Marin now have bicycle storage capabilities. Bicycles are allowed on all ferries. In 2005, secure weather-protected bicycle parking was installed inside the paid area of the Larkspur ferry terminal to ensure adequate overflow storage if ferries reach capacity.

As part of Marin Transit’s 2006 Short Range Transit Plan, a partial inventory of bike parking available at Marin County bus stops was conducted. This information contained in Table 3.2 should not be considered comprehensive, but was compiled as part of a larger bus stops inventory in which the consultants noted bike parking when it was nearby or convenient.

According to the 2006 inventory, there are over forty bus stops with daily ridership of over 100 passengers. These highest use bus stops all need to be further evaluated to determine whether...
existing bicycle parking facilities are adequate. If they are not, then the appropriate amount and configuration of bicycle parking should be identified and installed.

Marin Transit has broken up these bus stops into two tiers:
- Tier 1 - Very High Ridership (bus stops with ridership over 300 passengers per day). This amounts to approximately 14 bus stops.
- Tier 2 – High Ridership (bus stops with ridership between 100-300 passengers per day). This amounts to approximately 30 additional bus stops.

### Table 3.2
**Marin County High Use Bus Stops 2006 (over 100 passengers per day)**

<table>
<thead>
<tr>
<th>Ridership per day</th>
<th>Community</th>
<th>Street Name</th>
<th>Cross Street - Landmark</th>
<th>Current Bike Parking Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>270</td>
<td>Corte Madera</td>
<td>Hwy 101 North</td>
<td>Tamalpais Bd / Paradise Rd Exit</td>
<td>NO</td>
</tr>
<tr>
<td>294</td>
<td>Corte Madera</td>
<td>Hwy 101 South</td>
<td>Tamalpais Dr (Paradise Exit)</td>
<td>YES</td>
</tr>
<tr>
<td>660</td>
<td>Fairfax</td>
<td>White Hill School</td>
<td>Glen Dr.</td>
<td>NO</td>
</tr>
<tr>
<td>137</td>
<td>Fairfax</td>
<td>Broadway</td>
<td>Bolinas Ave</td>
<td>YES</td>
</tr>
<tr>
<td>171</td>
<td>Greenbrae*</td>
<td>Marin General Hospital</td>
<td>Main Entrance</td>
<td>NO</td>
</tr>
<tr>
<td>105</td>
<td>Kentfield*</td>
<td>College</td>
<td>College of Marin (SFD Blvd)</td>
<td>NO</td>
</tr>
<tr>
<td>170</td>
<td>Larkspur</td>
<td>Hwy 101 North</td>
<td>Lucky Dr. Exit/Redwood Hwy</td>
<td>NO</td>
</tr>
<tr>
<td>188</td>
<td>Larkspur</td>
<td>Hwy 101 South</td>
<td>Lucky Dr. Exit</td>
<td>YES</td>
</tr>
<tr>
<td>115</td>
<td>Larkspur</td>
<td>Sir Francis Drake Blvd</td>
<td>Larkspur Landing Ferry</td>
<td>YES</td>
</tr>
<tr>
<td>3131</td>
<td>Marin City*</td>
<td>Donohue</td>
<td>Terners Dr (Marin City Shopping Center)</td>
<td>YES</td>
</tr>
<tr>
<td>330</td>
<td>Mill Valley</td>
<td>Hwy 101 South</td>
<td>E. Blithedale Exit (Tiburon Blvd)</td>
<td>NO</td>
</tr>
<tr>
<td>142</td>
<td>Mill Valley</td>
<td>Hwy 101 South</td>
<td>Seminary Drive Exit</td>
<td>NO</td>
</tr>
<tr>
<td>109</td>
<td>Mill Valley*</td>
<td>Hwy 101 North</td>
<td>North Seminary Dr Exit (@ Redwood Hwy Frontage)</td>
<td>NO</td>
</tr>
<tr>
<td>377</td>
<td>Mill Valley*</td>
<td>Hwy 101 Tiburon Blvd / E. Blithedale Northbd exit</td>
<td>Tiburon Blvd overpass</td>
<td>YES</td>
</tr>
<tr>
<td>138</td>
<td>Mill Valley</td>
<td>Sunnyside Ave</td>
<td>Miller Ave.</td>
<td>YES</td>
</tr>
<tr>
<td>152</td>
<td>Novato</td>
<td>COM Indian Valley Campus</td>
<td>COM turnaround</td>
<td>NO</td>
</tr>
<tr>
<td>151</td>
<td>Novato</td>
<td>San Marin Dr.</td>
<td>San Carlos</td>
<td>NO</td>
</tr>
<tr>
<td>119</td>
<td>Novato</td>
<td>Hwy 101 North</td>
<td>Rowland</td>
<td>NO</td>
</tr>
<tr>
<td>621</td>
<td>Novato</td>
<td>Redwood Blvd.</td>
<td>Grant Ave. (Northbound)</td>
<td>YES</td>
</tr>
<tr>
<td>553</td>
<td>Novato</td>
<td>Redwood Blvd.</td>
<td>Grant Ave. (Southbound)</td>
<td>YES</td>
</tr>
</tbody>
</table>
Table 3.2
Marin County High Use Bus Stops 2006 (over 100 passengers per day)

<table>
<thead>
<tr>
<th>#</th>
<th>Location</th>
<th>Address</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>277</td>
<td>Novato</td>
<td>Hwy 101 North</td>
<td>Bel Marin Keys Blvd (Ignacio Blvd)</td>
</tr>
<tr>
<td>116</td>
<td>Novato</td>
<td>Hwy 101 South</td>
<td>Rowland Ave.</td>
</tr>
<tr>
<td>359</td>
<td>Novato - Ignacio</td>
<td>Enfrente (bus pad)</td>
<td>Salvatore</td>
</tr>
<tr>
<td>106</td>
<td>Novato-Ignacio</td>
<td>Hwy 101 South</td>
<td>Alameda del Prado</td>
</tr>
<tr>
<td>977</td>
<td>San Anselmo</td>
<td>Center Blvd</td>
<td>btwn Bridge &amp; SFD Bd</td>
</tr>
<tr>
<td>141</td>
<td>San Rafael</td>
<td>Las Gallinas Ave</td>
<td>Northgate</td>
</tr>
<tr>
<td>121</td>
<td>San Rafael</td>
<td>Hwy 101 North</td>
<td>N. San Pedro Rd</td>
</tr>
<tr>
<td>109</td>
<td>San Rafael</td>
<td>Hwy 101 South</td>
<td>Lucas Valley Rd.</td>
</tr>
<tr>
<td>107</td>
<td>San Rafael</td>
<td>Hwy 101 North</td>
<td>Freitas Pkwy</td>
</tr>
<tr>
<td>105</td>
<td>San Rafael</td>
<td>Civic Center Dr.</td>
<td>N San Pedro Rd</td>
</tr>
<tr>
<td>158</td>
<td>San Rafael</td>
<td>3rd Street</td>
<td>Grand</td>
</tr>
<tr>
<td>142</td>
<td>San Rafael</td>
<td>Medway Rd</td>
<td>Front St</td>
</tr>
<tr>
<td>763</td>
<td>San Rafael</td>
<td>Kerner Blvd</td>
<td>Larkspur St</td>
</tr>
<tr>
<td>396</td>
<td>San Rafael</td>
<td>Canal St</td>
<td>Novato St</td>
</tr>
<tr>
<td>378</td>
<td>San Rafael</td>
<td>Canal St</td>
<td>Sonoma St</td>
</tr>
<tr>
<td>325</td>
<td>San Rafael</td>
<td>Kerner Blvd</td>
<td>Bahia St</td>
</tr>
<tr>
<td>311</td>
<td>San Rafael</td>
<td>Medway Rd</td>
<td>Mill St</td>
</tr>
<tr>
<td>285</td>
<td>San Rafael</td>
<td>Bellam Blvd</td>
<td>E Francisco Blvd</td>
</tr>
<tr>
<td>260</td>
<td>San Rafael</td>
<td>Kerner Blvd</td>
<td>Canal St</td>
</tr>
<tr>
<td>7441</td>
<td>San Rafael</td>
<td>Transit Center</td>
<td>3rd and Heatherton</td>
</tr>
<tr>
<td>182</td>
<td>San Rafael</td>
<td>Hwy 101 South</td>
<td>Freitas Pkwy</td>
</tr>
<tr>
<td>140</td>
<td>San Rafael</td>
<td>Civic Center Dr</td>
<td>Hall of Justice Arch</td>
</tr>
<tr>
<td>127</td>
<td>San Rafael</td>
<td>Hwy 101 South</td>
<td>N. San Pedro Rd.</td>
</tr>
<tr>
<td>130</td>
<td>Sausalito</td>
<td>Bridgeway</td>
<td>El Portal (&amp; Excelsior Lane)</td>
</tr>
<tr>
<td>104</td>
<td>Sausalito</td>
<td>Bridgeway</td>
<td>Anchor</td>
</tr>
</tbody>
</table>

* Located in the Unincorporated Area

3.2.6 Encouragement and Support Programs

Support Groups
There are numerous bicycle repair, supply and rental shops located throughout the county. In addition to these shops, the county is also home to several bicycle advocacy and riding groups. A listing of these groups can be found in Appendix B.

Events
Bike-to-Work Week takes place every year in May (National Bike Month). 511.org, a travel and commuter referral service sponsors it for the entire Bay Area.
Existing Conditions

While there are no support groups in Marin dedicated specifically to pedestrians, several groups include walking or hiking as part of their mission. A list of these groups can be found in Appendix B.

3.3 Pedestrian Facilities

This section briefly describes the general conditions and attributes that exist with regard to pedestrian facilities. Although the topographies, histories and populations of the various communities and villages differ, the problems faced by pedestrians are similar. This statement of existing conditions has been synthesized from a number of sources, including community workshops, pedestrian surveys, communication with residents, staff members and field inspections.

This section is divided into two parts. The first and larger part is about sidewalk issues and the second part comments on pedestrian stairways. Although many good examples of each of these kinds of facilities exist, this report has focused on deficiencies, in large part because that has been the focus of past community input.

In addition to this brief analysis, the Marin Countywide Plan contains more specific information needs in Marin County. The plan includes policies for integrating accommodation of pedestrians into the roadway design process and the development review process.

3.3.1 Sidewalks

Sidewalks are defined as “the portion of the road right-of-way, other than the roadway, set apart by curbs, barriers, markings, or other delineation for pedestrian travel.” Many of Marin’s unincorporated communities, particularly those in West Marin, are small, rural villages which generally lack sidewalk facilities. Residents have expressed a desire to balance the need to safely and adequately move about on foot with the desire to retain on-street parking and/or the rural or small-town character of their communities.

Nonexistent or Inadequate Facilities

There are numerous places where sidewalks do not exist or end abruptly. These conditions are prevalent throughout Marin’s unincorporated communities. Most neighborhoods pre-dating World War II do not have sidewalks. Steep, hilly neighborhoods and many rural subdivisions also lack sidewalks. In these areas it is necessary to walk in the roadway. For small residential streets, this is not necessarily an issue but along busier roadways walking is discouraged because of the proximity and speed of passing vehicles. Community discussions have occurred in the Greenbrae Boardwalk, Pt. Reyes Station, San Quentin Village, Stinson Beach, and Tomales on the need for continuity in pedestrian facilities in those communities.
Existing Conditions

Accessibility

In cases where sidewalks are provided some do not meet the latest ADA guidelines for accessibility. Further, these sidewalks are typically limited to the downtown commercial areas and often do not connect to the nearby residential areas. The lack of sidewalks beyond commercial areas in these communities limits the accessibility to local services by wheelchair users. While the County is actively retrofitting existing sidewalks to meet these standards, complete retrofit is a multiple-year process due to the sheer number of locations and the complicated nature of some retrofit projects.

Continuity and Connectivity

In several instances, sidewalks have been provided as part of one development where they were not required for previous developments. In areas that were developed by various parties over time, the result is a patchwork of discontinuous walkways, allowing use of the sidewalk in some sections but then having to step out into the roadway to continue one’s journey. Among the problems created by nonexistent sidewalks or those that are discontinuous is that pedestrians cannot rely on sidewalks to connect them to places to which they desire to walk. This problem is evident for various unincorporated areas such as the Tamalpais Valley, Kentfield, Sleepy Hollow, Santa Venetia, and Bayside Acres communities which are situated adjacent to incorporated areas with sidewalks.

Physical Obstacles

A problem common to many of the sidewalks and paths are utility poles, fire hydrants and other pieces of infrastructure located in the center of the intended walkway. Additionally, there are places where vegetation and other obstacles encroach upon or obstruct passage. A further challenge is ongoing enforcement of parking regulations on sidewalks and bikeways.

Safety

A number of issues related to safety have been mentioned during community meetings. In addition to excessive automobile speed, which has been cited as a problem in almost every community, a lack of signage that would aid in the increase of driver awareness of pedestrians has been often noted often as an attribute that pedestrian facilities lack.

Tripping hazards, which are generally created by the roots of invasive trees or damaged concrete, are a problem in many of the communities. Although streetlights are opposed as an urban amenity in some areas of the county, there are places, particularly in the more urbanized areas, where existing lighting is considered inadequate for pedestrian passage.

Conflicts on County multi-use trails between pedestrians and bicyclists are another safety concern. Measures to separate these groups, establish a protocol for trail behavior, and improve enforcement of regulations are needed, especially on the more popular facilities.
3.3.2 **Steps, Lanes, and Paths**

Networks of hillside paths and steps exist in many of Marin County’s communities, particularly along the old railroad routes where the steps and paths would provide direct access to the line at the bottom of the hill. Many of these steps and paths were never formally accepted by the local agency and as a result have not been maintained as public ways.

There are a number of issues that affect the pedestrian stair and path systems and negatively impact their ability to function as alternative networks to and around neighborhoods and village centers. These issues include physical neglect, in which paths have fallen into disrepair, overgrown landscaping, which has caused many paths to be hidden or inaccessible, and a general lack of knowledge by many community members of paths that exist in their neighborhoods and communities.

Mill Valley has done extensive research to catalog the extent and condition of the paths, stairs and pedestrian facilities in that community while other communities have also shown an increased interest in their own pathways and steps.

3.3.3 **Pedestrian Access to Transit**

Transit facility enhancements, such as bus stop improvements, are important for increasing pedestrian mobility and access to transit. Perceived safety concerns can discourage residents from walking to transit or from using transit at all. Continuous sidewalks with ramps at intersections to provide access to transit facilities are critical for pedestrians. Marin Transit has inventoried high-usage bus stops in Marin and identified needs to improve access to the stops. Marin Transit will need to partner with the local agencies who have responsibility over the sidewalks and paths that access the bus stops to ensure a seamless path of travel.

3.4 **Safe Routes to Schools**

Safe Routes to Schools is a Transportation Authority of Marin program funded by the Measure A transportation sales tax and combines safety education for bicycling and walking with infrastructure improvements that benefit both pedestrians and cyclists. The Safe Routes to Schools program began in 2000 as a grassroots effort to reduce congestion and encourage healthy habits among school aged children in Marin County. A local advocacy group initially developed the program with funding from the National Highway Transportation Safety Administration as one of two model programs nationwide. The program has since expanded in every year of its operation, to its current level, with 45 schools and over 18,470 students participating countywide.

Each year, the program has successfully decreased the drive-alone percentage at participating schools through innovative classroom activities, contests and events, and implementation of infrastructure improvements. The reduction is determined through “before and after” mode shift analysis and parent surveys, both administered with the help of classroom teachers. A mode
shift analysis, consisting of an in-class student survey, was conducted to determine the program’s efficacy for the most recently documented school year, 2004-05. The results showed that the program has continued to make significant progress in reducing the number of automobile trips that drop off and pick up students from school:

- A reduction of 13% in single student vehicle trips (42% in Fall 2004 compared with 55% in Spring 2005).
- An increase of 6% in walking, 2% in biking, and 7% in carpooling in Spring 2005, compared with Fall 2004 rates. Bus ridership remained constant at seven percent of mode share in both surveys.
- For private schools, a reduction of 17% reduction in single student trips, and increase in walking of 15% and bicycling 5%, over Fall 2004 rates.

In addition to the mode shift survey, a parent survey was administered for the 2005-06 school year that showed additional decreases in single student “chauffeured” trips. Parents were asked their opinion of the program and if they would consider allowing their child or children to walk, bicycle or be carpooled if currently driving their child to school. Key findings from the parent survey are summarized below:

- A reduction of 19% in single-student trips (30% in 2005-06 compared with 49% in 2004-05), with trips the share of trips shifting to walking (5%), biking (2%) and carpooling (5%).
- Approximately 75% of respondents are interested in carpooling if they knew the driver or if there was better organization
- Over 30% would allow their student to bike or walk if accompanied by another parent or student
- As a result of the program, parents cited that their children are more aware of the health aspects of walking and biking. Adults found the greatest value of the program to be its influence in decreasing congestion around schools
- At 28%, International Walk to School Day had the highest level of participation by respondents than any other event.

### 3.4.1 Program Elements

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. A Safe Routes instructor developed the curriculum that includes lessons on safety, health, and the environment. Lessons are typically offered during the physical education period of the school day.
**Existing Conditions**

- **Engineering** - The Program’s licensed traffic engineer coordinates with the local agency, schools, and other stakeholders to develop 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. The program supports and coordinates volunteer organizers and provides schools with promotional and contest materials, prizes, and ongoing consultation.

- **Enforcement** – Local police, sheriff, and CHP officers, crossing guards and other 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 and allow them to interact with motorists and other travelers in the safest possible way. This Program also includes enforcement enhancements and outreach to drivers through driver safety campaigns.

- **Evaluation** – Program evaluation is regularly conducted to ensure the success of the program. Program participation is regularly monitored to determine the growth in student and parent participation. Typically, “before and after” surveys are conducted to ascertain change in travel mode to school over the course of the year. In 2006, a parent survey was administered to obtain parent input on the program and reasons why they do or do not participate.

Marin Safe Routes to Schools works in partnership with local schools, City/Town and County public works staff members, public health staff, residents, and community and parent volunteers. All of these partners must participate to have a successful Safe Routes Program.

More details about the Marin Safe Routes to Schools program’s specific elements, including a list of participating schools in the County unincorporated areas and details regarding proposed engineering projects and education and outreach programs can be found in the 2006 TAM report *Marin County Safe Routes to Schools Evaluation and Recommendations 2005-2006*. Recommendations for future Safe Routes to Schools activities are found in Chapter 5.
4.0 Needs Analysis

4.1 Introduction

This section summarizes the needs of pedestrians and bicyclists in Marin County that have been identified by staff, the Marin Bicycle Advisory Group and the public, through a series of public workshops and meetings. This section places these needs for non-motorized transportation in the context of current and future pedestrian and bicycle usage, safety trends and potential congestion and environmental benefits. Specific proposed pedestrian and bicycle projects and programs meant to address these needs are detailed in Chapter 5.

4.2 Commuter Bicycle Needs

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." This suggests that there is a large reservoir of potential cyclists who do not ride (or do not ride more) due to a lack of appropriate facilities,

A primary focus of this Plan is commuter and utilitarian cyclists—those riding to work or school, or for shopping, errands, and other trip purposes – in short any type of trip that might otherwise be accomplished by automobile. It is important to understand the specific needs of these users and what types of improvements would most encourage more people to ride or walk for everyday trips.

Commuter bicyclists in Marin County range from employees who ride to work to a child who rides to school to people riding to shop. Bicycling requires shorter commutes, typically less than three miles, which runs counter to land use and transportation trends in the United States which have enabled 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 that is difficult to serve. Despite these facts, Marin County has great potential to increase the number of people who ride to work or school because of (1) the small size of many of the villages and communities, (2) moderate density residential neighborhoods near employment centers, (3) a favorable climate, and (4) a high percentage of work trips that are less than 15 minutes.

Major commuter concerns include traffic congestion, changes in weather (rain), riding in darkness, and personal safety and security. Commuters typically seek the most direct and fastest route available, with regular adult commuters often preferring to ride on arterials with bike lanes, wide curb lanes or shoulders, rather than side streets or off-street facilities. They generally prefer
routes where they are required to stop as few times as possible, thereby minimizing delay. Commute periods typically coincide with peak traffic volumes and congestion, increasing the exposure to potential conflicts with motor vehicles. Places to safely store bicycles are of paramount importance to all bicycle commuters. Availability of lockers and shower facilities at their place of employment is also a key factor in encouraging workers to commute by bike.

Commuter and utilitarian cyclists need improvements in the commercial and downtown areas of Marin County, as well as access to work sites outside those areas, in order to reach their destinations.

Many younger students (ages seven to 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 collisions. Older students (12 years or older) who consistently ride at speeds over 10 miles per hour (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 collisions in California, pointing to the need for safety education.

### 4.3 Bicycle Usage in Marin County

Bicycle counts taken at various unincorporated locations in Marin County show that many of the County’s existing bikeways are well used (see Table 4-1). Hourly bike traffic is presented based on counts of bicycle use shown in Table 4.1. For example, the peak hourly count on the Mill Valley Bike Path is 144 bicyclists on a weekend and 44 bicyclists on a weekday, while on the Golden Gate Bridge ranges between 160 (weekday) and 640 (weekend) bicyclists per hour. At these and most other locations, the peak usage is on the weekend, indicating high usage by recreational cyclists and visitors.

As reported in the 2006 TAM report *Marin County Safe Routes to Schools Evaluation and Recommendations 2005-2006*, noticeable increases in bicycling (and concurrent decreases in automobile trips and congestion) have occurred as a result of past implementation of the SR2S program. The report notes that public school bicycle use increased by 2% in 2004-2005 and that private schools experienced a 5% increase over the same time period. Simultaneously, these public schools experienced a reduction of 13% in single student vehicle trips (42% in Fall 2004 compared with 55% in Spring 2005). Private schools noted a reduction of 17% in single student trips.

However, despite these increases, the rate of bicycling compared to other modes remains relatively low, as noted in Figure 4-1. Recommendations on how to increase bicycling to school are contained in Chapter 5.
Figure 4-1: Travel Modes Used to Commute to School in Year 2004/05

<table>
<thead>
<tr>
<th>Mode</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walks</td>
<td>17%</td>
</tr>
<tr>
<td>Bikes</td>
<td>8%</td>
</tr>
<tr>
<td>Driven Alone</td>
<td>49%</td>
</tr>
<tr>
<td>Carpool</td>
<td>20%</td>
</tr>
<tr>
<td>Transit</td>
<td>7%</td>
</tr>
</tbody>
</table>

Table 4-1

<table>
<thead>
<tr>
<th>Streets</th>
<th>Weekday (peak hr between 4-6 pm)</th>
<th>Weekend Day (peak hr between 12-2 pm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Sep-99</td>
<td>Sep-07</td>
</tr>
<tr>
<td>Tiburon Blvd at Main Street, Tiburon</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Miller Ave. at Throckmort, Mill Valley</td>
<td>*</td>
<td>23</td>
</tr>
<tr>
<td>4th and B St.</td>
<td>*</td>
<td>31</td>
</tr>
<tr>
<td>Bridgeway at Princess St., Sausalito</td>
<td>45</td>
<td>129</td>
</tr>
<tr>
<td>San Anselmo Ave at Tunstead, Ave., San Anselmo</td>
<td>34</td>
<td>41</td>
</tr>
<tr>
<td>Broadway at Bolinas Rd., Fairfax</td>
<td>20</td>
<td>61</td>
</tr>
<tr>
<td>Grant Ave., at Redwood Blvd., Novato</td>
<td>12</td>
<td>21</td>
</tr>
<tr>
<td>Magnolia Ave. at Ward St., Larkspur</td>
<td>*</td>
<td>25</td>
</tr>
<tr>
<td>Mill Valley-Sausalito Path at E. Blithedale, Mill Valley</td>
<td>88</td>
<td>84</td>
</tr>
<tr>
<td>Mill Valley-Sausalito Path at Tennessee Valley Path Junction, Tam Junction</td>
<td>42</td>
<td>101</td>
</tr>
<tr>
<td>Tiburon Bike Path at Blackie’s Pasture, Tiburon</td>
<td>32</td>
<td>77</td>
</tr>
<tr>
<td>Larkspur-Corte Madera Path at Baltimore Wye</td>
<td>42</td>
<td>28</td>
</tr>
<tr>
<td>Corte Madera Creek Path at Bon Air Rd., Greenbrae</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>Medway Rd. at Belvedere St., San Rafael</td>
<td>*</td>
<td>55</td>
</tr>
<tr>
<td>Camino Alto at E. Blithedale, Mill Valley</td>
<td>*</td>
<td>36</td>
</tr>
</tbody>
</table>
Needs Analysis

<table>
<thead>
<tr>
<th>Streets</th>
<th>Weekday (peak hr between 4-6 pm)</th>
<th>Weekend Day (peak hr between 12-2 pm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda Del Prado at Nave Drive, Ignacio</td>
<td>Sep-99 6 %A 99-07</td>
<td>Sep-99 5 %A 99-07</td>
</tr>
<tr>
<td>Ranchitos Rd at Puerto Suello Summit, San Rafael</td>
<td>16 22 37.5%</td>
<td>Sep-99 67 %A 99-07</td>
</tr>
<tr>
<td>Doherty Dr. at Hall Middle School, Larkspur</td>
<td>Sep-99 24 %A 99-07</td>
<td>Sep-99 19 %A 99-07</td>
</tr>
<tr>
<td>Sir Francis Drake at Wolfe Grade, Kentfield</td>
<td>22 9 (59.1%)</td>
<td>Sep-99 15 %A 99-07</td>
</tr>
<tr>
<td>Andersen Drive at Cal Park Tunnel Path, San Rafael</td>
<td>* 37 %A 99-07</td>
<td>Sep-99 23 %A 99-07</td>
</tr>
<tr>
<td>South Novato Blvd. at Rowland; Novato</td>
<td>* 18 %A 99-07</td>
<td>Sep-99 13 %A 99-07</td>
</tr>
<tr>
<td>Bellam at Andersen, San Rafael</td>
<td>16 21 31.3%</td>
<td>Sep-99 8 %A 99-07</td>
</tr>
<tr>
<td><strong>Average count per location</strong></td>
<td>31.1 51.8 66.3%</td>
<td>71.1 94.6 33.2%</td>
</tr>
</tbody>
</table>

* = data unavailable

The above counts represent the most recent data available as of this writing. Some were collected on weekends and may include above average recreational usage. Note that winter counts on the Golden Gate Bridge were conducted on days with mild, warm weather and no rain.

4.4 Pedestrian Needs

This section discusses the pedestrian facility and program needs in unincorporated Marin County that were identified during community meetings, interviews with County staff, conversations with community members, and field inspections.

Multi-Modal Mindset at the Design Stage

A number of community members expressed the opinion that many of the problems facing pedestrians in unincorporated Marin are rooted in there being too many vehicles on the county’s roads, many of which are single-occupant..

Past staff and public comment on pedestrian facilities recorded for the 2001 plan included:

- Designs of new and retrofitted developments should provide equal accommodation for automobiles, transit, bicycles, and pedestrians rather than subordinating the needs of other forms of transportation to the unimpeded flow of vehicular traffic.
- Mixed-use developments with integrated land uses should be encouraged, since they can foster more pedestrian-friendly environments, generate fewer vehicle trips, and create interesting places.
- Ensure that adopted policies, development codes and zoning ordinances require the provision of sidewalks, except in rural residential areas.
• A “park once” policy, in which centralized public parking facilities would be built to serve a given area, could be instituted in core areas so as to reduce trips and the number of parking spaces required.

**Traffic Calming**

Safety has been a primary concern expressed by community members. Measures to calm vehicular traffic could be introduced to address these safety concerns. At many locations, but particularly at schools, more crosswalks and/or crossing guards may be needed.

Many crosswalks, both new and existing, might be better served by pedestrian-activated flashing lights, assuming they meet established warrants and criteria. This would be particularly appropriate near schools and on heavily traveled streets like Sir Francis Drake Boulevard. In short, anything that would mitigate the tendency of drivers to ignore pedestrians would prove useful.

A number of strategies could be introduced to calm traffic speeds, including:

- street trees and landscaping
- corner and mid-block curb bulb-outs
- narrower streets
- speed indicator signs
- signalization
- enforcement of existing speed limits

**Sidewalk Improvements**

Continued evaluation of existing sidewalks for accessibility along with consideration of new sidewalks is crucial, especially on roads providing access to schools and in other areas with high levels of pedestrian activity. When contemplating sidewalk improvements, the following should be considered:

- **Physical Condition.** The condition of many sidewalks needs to be improved. Tripping obstacles range from broken and hazardous sidewalk sections to overgrown shrubs and landscaping that block passage.
- **Accessibility.** Many intersections lack curb cuts and ramps for wheelchairs that meet current ADA guidelines. Additionally, sidewalks in some places need to be widened to provide an adequate and comfortable capacity for wheelchairs. As sidewalks are widened and made accessible by the introduction of ramps, utility poles, hydrants, and other street furniture need to be located to provide an accessible path of travel.
- **Connectivity.** One jurisdiction has noted that maintenance and improvements to existing urban trail systems would enable residents to make better use of these facilities and access transit stops for travel out of their community. Better connectivity in the framework of the pedestrian facilities can also foster a “sense of place” at town centers.
- **Signage** that makes existing amenities more available to pedestrians.
Needs Analysis

- Alleviation of congestion at school sites.
- Routes to schools.
- Accessibility to recreation.
- Provision of paths on rural streets in accordance with the California Vehicle Code.

Sidewalks are typically required as part of any new development project (e.g. new subdivisions) but there are few locations in Marin for this to be implemented because of the slow pace of development countywide and that most development is now reuse of existing sites. Rather, improved sidewalk facilities depend on retrofitting existing neighborhoods with new sidewalks and filling sidewalk gaps. The needs for this challenging process include getting adjacent property owners to support such improvements, finding funding to complete the project, and staffing the project construction.

Walking to School

Similar to the bicycling trends noted above, walking to schools in Marin County has increased as a result of the Safe Routes to Schools (SR2S) Program and implementation of capital projects that specifically support and encourage walking to schools. In addition to the single student vehicle trip reduction noted above, participating SR2S public schools experienced an increase of 6% in walking, while private schools had an increase in walking of 15% both in 2005 over Fall 2004 rates. As a result of this success, the demand for increased SR2S activities in Marin County has grown. Figure 4-1 shows rates of walking compared to other school commute modes.

Education and Awareness Building

As described in the sections on Safe Routes to Schools elsewhere in this plan, awareness of the needs of pedestrians should continue to be incorporated into school programs through the use of expanded pedestrian safety courses. Additionally, education and pedestrian awareness issues could be incorporated into Department of Motor Vehicle driver’s license tests. In addition to safety issues, the education materials should also include etiquette rules for road sharing between motor vehicles and other modes of transit.

<table>
<thead>
<tr>
<th>Table 4-2</th>
<th>Weekday and Weekend Peak-Hour Pedestrian Counts, for 1999 and 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streets</td>
<td>Weekday (peak hr between 4-6 pm)</td>
</tr>
<tr>
<td></td>
<td>Sep-99</td>
</tr>
<tr>
<td>Tiburon Blvd at Main Street, Tiburon</td>
<td>* 269</td>
</tr>
<tr>
<td>Miller Ave. at Throckmorton, Mill Valley</td>
<td>* 95</td>
</tr>
<tr>
<td>4th and B St.</td>
<td>669 *</td>
</tr>
<tr>
<td>Bridgeway at Princess St., Sausalito</td>
<td>57</td>
</tr>
</tbody>
</table>
## Needs Analysis

<table>
<thead>
<tr>
<th>Streets</th>
<th>Weekday (peak hr between 4-6 pm)</th>
<th>Weekend Day (peak hr between 12-2 pm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sep-99</td>
<td>Sep-07</td>
</tr>
<tr>
<td>San Anselmo Ave at Tunstead, Ave., San Anselmo</td>
<td>238</td>
<td>122</td>
</tr>
<tr>
<td>Broadway at Bolinas Rd., Fairfax</td>
<td>107</td>
<td>74</td>
</tr>
<tr>
<td>Grant Ave., at Redwood Blvd., Novato</td>
<td>71</td>
<td>52</td>
</tr>
<tr>
<td>Magnolia Ave. at Ward St., Larkspur</td>
<td>*</td>
<td>84</td>
</tr>
<tr>
<td>Mill Valley-Sausalito Path at E. Blithedale, Mill Valley</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>Mill Valley-Sausalito Path at Tennessee Valley Path Junction, Tam Junction</td>
<td>52</td>
<td>20</td>
</tr>
<tr>
<td>Tiburon Bike Path at Blackie’s Pasture, Tiburon</td>
<td>54</td>
<td>84</td>
</tr>
<tr>
<td>Larkspur-Corte Madera Path at Baltimore Wye</td>
<td>90</td>
<td>64</td>
</tr>
<tr>
<td>Corte Madera Creek Path at Bon Air Rd., Greenbrae</td>
<td>90</td>
<td>35</td>
</tr>
<tr>
<td>Medway Rd. at Belvedere St., San Rafael</td>
<td>*</td>
<td>244</td>
</tr>
<tr>
<td>Camino Alto at E. Blithedale, Mill Valley</td>
<td>*</td>
<td>35</td>
</tr>
<tr>
<td>Alameda Del Prado at Nave Drive, Ignacio</td>
<td>*</td>
<td>7</td>
</tr>
<tr>
<td>Ranchitos Rd at Puerto Suello Summit, San Rafael</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Doherty Dr. at Hall Middle School, Larkspur</td>
<td>*</td>
<td>38</td>
</tr>
<tr>
<td>Sir Francis Drake at Wolfe Grade, Kentfield</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td>Andersen Drive at Cal Park Tunnel Path, San Rafael</td>
<td>*</td>
<td>11</td>
</tr>
<tr>
<td>South Novato Blvd. at Rowland; Novato</td>
<td>*</td>
<td>39</td>
</tr>
<tr>
<td>Bellam at Andersen, San Rafael</td>
<td>42</td>
<td>39</td>
</tr>
<tr>
<td><strong>Average count per location</strong></td>
<td><strong>70.7</strong></td>
<td><strong>76.3</strong></td>
</tr>
</tbody>
</table>

* = data unavailable

### Access to Transit

Transit facility enhancements, such as bus stop improvements, are important for increasing pedestrian mobility and access to transit. Marin Transit has historically had no responsibility for bus stops. Marin Transit must partner with local communities to ensure that bus stops meet accessibility standards and offer a level of amenities appropriate for the amount of use the stop receives. Since Marin Transit does not have physical jurisdiction over the stops, coordination with cities, the County, Golden Gate Transit, and Caltrans will be required to make any
improvements. Both the City of Novato and the City of San Rafael have existing shelter programs with an advertising company that installs and maintains bus shelters in exchange for shared revenues from advertisements. Golden Gate Transit has a similar bus shelter advertising contract for their shelters at freeway bus pads in Marin.

Conditions at local stops in the Marin Transit system range from basic to substandard. A concentrated program of bus stop improvements is necessary to bring Marin Transit’s stops up to standard. More than any other improvement in the system, improving information and conditions at bus stops will send a positive message to customers, encourage new riders to try the system, and will increase pedestrian access across the county. Not all stops need to be treated equally. Highest priority for bus stop improvements include those stops that do not meet current ADA accessibility standards and stops with more than 100 users per day. Improvements at other stops should be prioritized by level of usage.

Safer access to freeway interchange bus pads and more bus shelters appropriate for inclement weather are two additional issues that should be addressed with regard to the interplay of pedestrian and transit facilities. Bus pads are addressed in Chapter 5.

4.5 Collision Analysis

The following section details the safety needs of pedestrians and bicyclists. Project and program countermeasures are proposed in Chapter 5.

Bicycles

Many potential bicycle commuters cite traffic as their main objection to riding a bicycle on urban streets. The County can address this by providing good bikeway facilities, particularly at intersections, where most bicycle-motor vehicle collisions occur.

However, many concerns about cycling’s level of danger are based on the misconception that most bicycle collisions involve an automobile. In fact, the vast majority of bicycle collisions do not involve a motor vehicle; rather, studies of hospital data have shown that the vast majority of bicycle collisions involve falls or collisions with stationary objects, other cyclists, or pedestrians. This points to the need for education of cyclists and motorists, enforcement of existing laws, and encouragement of safe cycling techniques.

The following analysis is based on the most recent complete information provided by the County of Marin Department of Public Works. In reviewing data available from January, 2001 through December, 2006, there were 129 reported collisions involving cyclists in the unincorporated area, all but one with a motor vehicle, for an average of 21.5 collisions per year during the period. These 122 collisions resulted in 127 injuries and three fatalities. In comparing with April 1996 to April 1999 data, where approximately 39 collisions occurred in the various
unincorporated regions of the county, or an average of 13 collisions per year during that period, the rate of collisions involving cyclists has increased 56%.

Marin County as a whole ranks 6th out of all 58 California counties in number of bicycle collisions per capita. For comparison, most of the adjacent counties, including Sonoma (16/58) and Contra Costa County (30/58) have substantially lower per capita rates of bicycle collisions. San Francisco (7/58) ranks slightly lower than Marin County.

Collision Locations
Several of the reported collisions between 2001 and 2006 occurred along major roads. Roads with multiple collisions include:

- Sir Francis Drake (Kentfield) – 3
- Sir Francis Drake (West Fairfax) – 2
- Sir Francis Drake (San Geronimo Valley) – 2
- Alexander Avenue/Sausalito Lateral – 15
- Fairfax-Bolinas Road – 4
- Kent Avenue (Kentfield) – 4
- Las Gallinas Avenue (Marinwood) – 2
- Lucas Valley Road (Lucas Valley) – 3
- Nicasio Valley Road – 6
- Northern Avenue (Tam Valley) – 2
- Panoramic Highway – 9
- Pt. Reyes-Petaluma Road – 5
- North San Pedro Road – 5
- Shoreline Highway (Tam Valley) – 15
- Shoreline Highway (West Marin) – 6
- Mill Valley-Sausalito Path at Pohono Street (Waldo Pt.) – 4
- Strawberry Drive – 2
- Tiburon Boulevard – 6
- Mesa Road (Pt. Reyes Station) – 2
- Marshall-Petaluma Road - 2

The remaining collisions during the period occurred at various locations around the unincorporated area, though the vast majority occurred on busier roads.

The three fatalities that occurred between 2001 and 2006 occurred in August, 2002 at Panoramic Highway and Bayview Drive; in October, 2002 at Pt. Reyes-Petaluma Road and Nicasio Valley road; and in August, 2006 at the Pohono Street crossing of the Mill Valley-Sausalito Path. In all three cases, the motorist was determined to be at fault in the collisions.
Needs Analysis

The recommended bikeway system will help address these problem areas by identifying specific improvements (including safety and education improvements) and/or providing alternative routes.
Pedestrians

From 2001 through 2006 there were 38 reported pedestrian-motor vehicle collisions resulting in 40 injuries but no fatalities. In 13 of these collisions, the pedestrian was determined to be at fault.

Marin County as a whole ranks 14th out of all 58 California counties in number of pedestrian collisions per capita. For comparison, most of the adjacent counties, including Sonoma (37/58) and Contra Costa County (31/58) have substantially lower per capita rates of pedestrian collisions. San Francisco’s rate (1/58) is the highest of any county in the state.

Collision Locations
There are just a few locations in unincorporated Marin with multiple reported collisions, including Donahue and Drake avenues in Marin City, Las Gallinas at Miller Creek Road in Marinwood, and the Tiburon Boulevard and Redwood Highway Frontage Road corridors in Strawberry.

4.6 Identified Needs

Public Workshops Input

As part of the Bicycle and Pedestrian Plans update process, a series of public meetings were held in November of 2006. One meeting was held in each of the four planning areas (Northern, Central, Southern, and West Marin) of Marin County. The meetings were well-attended by members of the general public, representatives of advocacy and interest groups and local agency staff and elected officials. A summary of the main comments is listed below. It should be noted that the list below is not comprehensive because there were hundreds of detailed comments recorded throughout the workshops. The top priorities will be considered in more detail in Chapter 5.

- An overwhelming demand for a continuous, high quality north-south bikeway through the county. The North-South Bikeway Study developed in 1994 and further elaborated upon in the 2001 plan provides the vision of this facility as an unbroken path following a combination of the north-south greenway, Highway 101, and local roads.

- A strong desire for an equally high quality east-west bikeway from San Quentin through Fairfax using existing roads. The route would be on a combination of on-street and off-street routes, including the Corte Madera Creek path and San Anselmo Avenue. In particular, attendees indicated a need for a safer, more direct route through the downtown area of San Rafael.

- Strong support for implementing major gap closure projects such as the Cal Park Tunnel, Alto Tunnel and Central Marin Ferry Connection Project.
• Requests for **shoulder widening** on many of the narrow, winding roads in West Marin, such as Point Reyes-Petaluma Road, Lucas Valley Road, Nicasio Valley Rd., Novato Blvd., and Tomales-Petaluma Road. Roads such as these are often very difficult to widen because of environmental impacts, terrain challenges, and safety concerns. Additionally, increasing the width of all West Marin roads would be very expensive and may impact the area’s rural feel. Section Five discusses the feasibility of such projects and potential alternative treatments.

• Implementation of a **Tam Valley Loop bikeway** to connect the communities in this area.

• Requests for **new Class II bicycle lanes** on many existing roads, such as Sir Francis Drake Boulevard (full length), Lucas Valley Road Alameda del Prado, Novato Boulevard and other Novato streets.

• Improvements to existing Class II and III routes such as **signal loop detectors**.
• Requests for **new Class I gap closure pathways**, such as the Oakview Connector in Marinwood, a 2nd street sidepath in downtown San Rafael, the Giacomini Pathway connecting Point Reyes Station and Inverness Park and the Enfrente Connector in Novato.

• Requests for **improvements to many of the existing multi-use paths**. For example, paths like those in Novato, San Rafael, Larkspur, Ross, Kentfield, Corte Madera, Tiburon, and Mill Valley have issues like poor signage, pavement quality and substandard width. Many residents have called for path improvements. Paths such as the Samuel P. Taylor Pathway are heavily used but need to paved for all-weather access.

• Requests for **safety improvements at Highway 101 interchanges** for bicycles and pedestrians.

• Addition or completion of **sidewalks** on such roads as Novato Blvd, Vineyard and Indian Valley Roads in unincorporated Novato.

• Improved **safety and wayfinding signage** including completion of the Countywide Bicycle Route Guide Signage project.

• **Improve pedestrian crossings** through better signage, enforcement, lighting, and visibility, especially at crossings to bus stops, libraries, schools, and other frequent destinations.

• The addition of high quality **bicycle parking** throughout Marin’s unincorporated communities, including covered, enclosed, secured, and/or staffed parking or bike stations.

• **Share the Road education programs** for motorists and cyclists about safe co-existence.

• Continued implementation of the Department of Public Works **Multi-Modal Policy**.
• Improve capital and routine maintenance programs and scheduling frequency.

4.7 Future Use

A key goal of the Plan is to maximize the number of local bicycle and pedestrian commuters in order to help reduce traffic congestion and air pollution. In order to set the framework for these benefits, land use, local statistics and national trends are used as a basis for determining the benefits to Marin County.

4.7.1 Land Use

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.

The unincorporated areas 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 the County, including:

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

4.7.2 Commute Patterns

Commute information is presented to identify the current “mode split” of people that live and work in Marin County. 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 “split” or 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 traffic congestion. Documenting current pedestrian and bicycle mode share and predicting future use and benefits supports these objectives. Journey to work and travel time to work data were obtained from the 2000 US Census for the unincorporated areas of Marin County, Marin County as a whole, California, and the United States. Primary mode of journey to work data is shown in Table 4-3.
Table 4-3
Marin County Unincorporated Areas Commute Mode Split in Comparison to all of Marin County, California, and the Nation

<table>
<thead>
<tr>
<th>Mode</th>
<th>Nationwide</th>
<th>Statewide</th>
<th>Marin County</th>
<th>Unincorporated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle</td>
<td>0.4%</td>
<td>0.9%</td>
<td>1.1%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Walk</td>
<td>3.0%</td>
<td>3.0%</td>
<td>3.3%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Public Transit</td>
<td>4.9%</td>
<td>5.3%</td>
<td>11.1%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Drove Alone</td>
<td>78.2%</td>
<td>74.7%</td>
<td>71.8%</td>
<td>73.4%</td>
</tr>
<tr>
<td>Carpool</td>
<td>12.6%</td>
<td>15.1%</td>
<td>11.8%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Other</td>
<td>0.5%</td>
<td>1.1%</td>
<td>0.6%</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

Data from US Census 2000

As shown, 0.9% of all employed unincorporated Marin residents commute primarily by bicycle and 3.9% commute by walking. 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 unincorporated Marin, and are therefore likely to undercount true cycling rates. According to a 2000 Metropolitan Transportation Commission study looking at all trips, in Marin County as a whole, 1.7% bike and 9.7% walk, indicating that walking and biking are more common for non-commute utilitarian trips. In unincorporated Marin, recreational cycling is especially popular, where groups of up to 15 cyclists and families out for a bike ride are a common sight on the weekends.

Though unincorporated Marin’s rate of commute cycling is low—about the same as that of Marin County as a whole—there are possibilities for improving it. Unincorporated Marin has a very high percentage of commuters who take public transit to work—nearly 10%, compared with 5.3% for the state. 2% of Golden Gate Transit riders arrive at bus stops by bicycle. If bicycle connections to Golden Gate Transit stops are improved, and especially if these connections are coupled with improved bicycle storage, it may be possible to shift some vehicle trips to the station into bicycle trips. Improving connections to future proposed SMART stations may also encourage those who are arriving in unincorporated Marin by SMART to bicycle from the station.

4.7.3 Potential Future Air Quality Improvements

The following information regarding potential air quality benefits is not intended to establish any new goals or targets for air quality attainment for Marin County. This information should not be regarded as a definitive statement of the air quality benefits that will result from the construction of pedestrian or bicycle plan improvements described in this plan. Rather, this information is

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Needs Analysis

Needs Analysis

presented in an attempt to capture, at a countywide concept level, the potential for air quality benefits that may be possible through implementation of the proposed improvements.

Unincorporated Marin County 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).\(^2\) 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 unincorporated Marin’s bicycle network could 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 unincorporated Marin is estimated to be 1,281 riders, making an estimated 2,562 daily trips and saving an estimated 3,791 VMTs per weekday.

Table 4-4 provides an example of the potential estimated reduction in VMTs and air pollutants based on the best available local and national data for unincorporated Marin. It is estimated that the total number of work and school commuters could increase from the current estimate of 1,281 to 2,734. Realizing this degree of mode shift could result in an estimated decrease of 51 kg/day of HC, 384 kg/day of CO, and 26 kg/day of NOX. Note that this is based on a dramatic increase to 9% bicycle mode share and that this estimate is based on regional and census-level data applied to local bicycle travel forecasting. However, even a fraction of this increase could result in substantial air quality benefits.

For comparison, Table 4-5 provides similar data for Marin County as a whole.

\(^2\) BAAQMD. Ambient Air Quality Standards & Bay Area Attainment Status. Last updated July 15, 2005. 
<www.baaqmd.gov/pln/air_quality/ambient_air_quality.htm>
### Needs Analysis

#### Table 4-4

Unincorporated Marin County Potential Bicycle Commute and Air Quality Projections

<table>
<thead>
<tr>
<th>Current Commuting Statistics</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unincorporated Marin County Population</td>
<td>70,596 2000 US Census</td>
</tr>
<tr>
<td>Number of Commuters</td>
<td>30,080 2000 US Census (Employed persons less those working at home)</td>
</tr>
<tr>
<td>Number of Bicycle-to-Work Commuters</td>
<td>279 2000 US Census</td>
</tr>
<tr>
<td>Bicycle-to-Work Mode Share</td>
<td>0.93% Mode share percentage of Bicycle to Work Commuters</td>
</tr>
<tr>
<td>School Children Grades K-8</td>
<td>9,324 2000 US Census, population ages 5-14</td>
</tr>
<tr>
<td>Estimated School Bicycle Commuters</td>
<td>746 Marin County Safe Routes to Schools Evaluation and Recommendations 2005-2006, TAM. (8%)</td>
</tr>
<tr>
<td>Number of College Students</td>
<td>3,983 2000 US Census</td>
</tr>
<tr>
<td>Estimated College Bicycle Commuters</td>
<td>199 National Bicycling &amp; Walking Study, FHWA, Case Study No. 1, 1995. Review of bicycle commute share in seven university communities (5%)</td>
</tr>
<tr>
<td>Average Weekday Transit Ridership</td>
<td>2,841 2000 US Census</td>
</tr>
<tr>
<td>Estimated Total Number of Bicycle Commuters</td>
<td>1,281 Total of bike-to-work, transit, school, and college bicycle commuters Does not include recreation.</td>
</tr>
<tr>
<td>Estimated Adjusted Mode Share</td>
<td>2.8% Estimated Bicycle Commuters divided by commuting population</td>
</tr>
</tbody>
</table>

#### Estimated Current Bicycle Trips

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Daily Bicycle Trips</td>
<td>2,562 Total bicycle commuters x 2 (for round trips) plus total number of utilitarian bicycle trips</td>
</tr>
<tr>
<td>Reduced Vehicle Trips per Weekday</td>
<td>1,176 Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children</td>
</tr>
<tr>
<td>Reduced Vehicle Miles per Weekday</td>
<td>3,791 Assumes average one-way trip travel length of 4.6 miles for adults/college students and 0.5 mile for schoolchildren</td>
</tr>
</tbody>
</table>

#### Potential Future Bicycle Commuters

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of workers with commutes fifteen minutes or less</td>
<td>7,132 US Census 2000</td>
</tr>
<tr>
<td>Number of workers who already bicycle or walk to work</td>
<td>279 US Census 2000</td>
</tr>
</tbody>
</table>
## Needs Analysis

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of potential bicycle commuters</td>
<td>6,853</td>
<td>Calculated by subtracting number of workers who already bicycle or walk from the number of workers who have commutes of 15 minutes or less.</td>
</tr>
<tr>
<td>New Daily Bike-Transit Users</td>
<td>369</td>
<td>Based on potential future capture rate of 15% of total transit boardings.</td>
</tr>
<tr>
<td>Future number of new bicycle commuters</td>
<td>1,083</td>
<td>Based on potential future capture rate of 15% of potential bicycle riders.</td>
</tr>
<tr>
<td>Total Future Daily Bicycle Commuters</td>
<td>2,734</td>
<td>Current daily bicycle commuters plus new bike-transit users and new bicycle commuters.</td>
</tr>
<tr>
<td>Total Future Bicycle-to-Work Mode Share</td>
<td>9.09%</td>
<td></td>
</tr>
<tr>
<td>Future Total Daily Bicycle Trips</td>
<td>5,467</td>
<td>Total future bicycle commuters x 2 (for round trips).</td>
</tr>
<tr>
<td>Future Reduced Vehicle Trips per Weekday</td>
<td>3,991</td>
<td>Assumes 73% of bicycle trips replace vehicle trips.</td>
</tr>
<tr>
<td>Future Reduced Vehicle Miles per Weekday</td>
<td>18,359</td>
<td>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.</td>
</tr>
<tr>
<td>Future Reduced Vehicle Miles per Year</td>
<td>4,865,043</td>
<td>256 weekdays per year.</td>
</tr>
</tbody>
</table>

### Potential Air Quality Benefits

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced HC (kg/weekday)</td>
<td>51</td>
<td>(0.0028 kg/mile)</td>
</tr>
<tr>
<td>Reduced CO (kg/weekday)</td>
<td>384</td>
<td>(0.0209 kg/mile)</td>
</tr>
<tr>
<td>Reduced NOX (kg/weekday)</td>
<td>26</td>
<td>(0.00139 kg/mile)</td>
</tr>
<tr>
<td>Reduced CO2 (kg/weekday)</td>
<td>2,021,425</td>
<td>(.4155 kg/mile)</td>
</tr>
<tr>
<td>Reduced HC (metric tons/year)</td>
<td>13</td>
<td>1000 kg per metric ton; 256 weekdays/year.</td>
</tr>
<tr>
<td>Reduced CO (metric tons/year)</td>
<td>98</td>
<td>1000 kg per metric ton; 256 weekdays/year.</td>
</tr>
<tr>
<td>Reduced NOX (metric tons/year)</td>
<td>7</td>
<td>1000 kg per metric ton; 256 weekdays/year.</td>
</tr>
<tr>
<td>Reduced CO2 (metric tons/year)</td>
<td>517,485</td>
<td>1000 kg per metric ton; 256 weekdays/year.</td>
</tr>
</tbody>
</table>

# Needs Analysis

## Table 4-5

### Overall Marin County Potential Bicycle Commute and Air Quality Projections

<table>
<thead>
<tr>
<th>Current Commuting Statistics</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marin County Population</td>
<td>2000 US Census</td>
</tr>
<tr>
<td>Number of Commuters</td>
<td>115,519 2000 US Census (Employed persons less those working at home)</td>
</tr>
<tr>
<td>Number of Bicycle-to-Work Commuters</td>
<td>1233 2000 US Census</td>
</tr>
<tr>
<td>Bicycle-to-Work Mode Share</td>
<td>1.07% Mode share percentage of Bicycle to Work Commuters</td>
</tr>
<tr>
<td>School Children Grades K-8</td>
<td>32,251 2000 US Census, population ages 5-14</td>
</tr>
<tr>
<td>Estimated School Bicycle Commuters</td>
<td>2580 Marin County Safe Routes to Schools Evaluation and Recommendations 2005-2006, TAM. (8%)</td>
</tr>
<tr>
<td>Number of College Students</td>
<td>14,513 2000 US Census</td>
</tr>
<tr>
<td>Estimated College Bicycle Commuters</td>
<td>726 National Bicycling &amp; Walking Study, FHWA, Case Study No. 1, 1995. Review of bicycle commute share in seven university communities (5%)</td>
</tr>
<tr>
<td>Average Weekday Transit Ridership</td>
<td>12,797 2000 US Census</td>
</tr>
<tr>
<td>Number of Daily Bike- Transit Users</td>
<td>256 Marin County Transit District. &quot;Marin County Transit Short Range Transit Plan&quot;. March 2006; 2000 US Census (2% of Journey-to-Work transit mode share for Marin County)</td>
</tr>
<tr>
<td>Estimated Total Number of Bicycle Commuters</td>
<td>4,795 Total of bike-to-work, transit, school, and college bicycle commuters Does not include recreation.</td>
</tr>
<tr>
<td>Estimated Adjusted Mode Share</td>
<td>2.7% Estimated Bicycle Commuters divided by commuting population</td>
</tr>
</tbody>
</table>

### Estimated Current Bicycle Trips

<table>
<thead>
<tr>
<th>Estimated Current Bicycle Trips</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Daily Bicycle Trips</td>
<td>9,589 Total bicycle commuters x 2 (for round trips) plus total number of utilitarian bicycle trips</td>
</tr>
<tr>
<td>Reduced Vehicle Trips per Weekday</td>
<td>4,601 Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children</td>
</tr>
<tr>
<td>Reduced Vehicle Miles per Weekday</td>
<td>15,557 Assumes average one-way trip travel length of 4.6 miles for adults/college students and 0.5 mile for schoolchildren</td>
</tr>
</tbody>
</table>

### Potential Future Bicycle Commuters

<table>
<thead>
<tr>
<th>Potential Future Bicycle Commuters</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of workers with commutes fifteen minutes or less</td>
<td>27,565 US Census 2000</td>
</tr>
<tr>
<td>Number of workers who already bicycle or walk to work</td>
<td>1,233 US Census 2000</td>
</tr>
</tbody>
</table>
### Needs Analysis

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of potential bicycle commuters</td>
<td>26,332</td>
</tr>
<tr>
<td>Calculated by subtracting number of workers who already bicycle or walk from the number of workers who have commutes of 15 minutes or less.</td>
<td></td>
</tr>
<tr>
<td>New Daily Bike-Transit Users</td>
<td>1,664</td>
</tr>
<tr>
<td>Based on a potential future capture rate of 15% of total transit boardings.</td>
<td></td>
</tr>
<tr>
<td>Future number of new bicycle commuters</td>
<td>4,199</td>
</tr>
<tr>
<td>Based on a potential future capture rate of 15% of potential bicycle riders.</td>
<td></td>
</tr>
<tr>
<td>Total Future Daily Bicycle Commuters</td>
<td>10,658</td>
</tr>
<tr>
<td>Current daily bicycle commuters plus new bike-transit users and new bicycle commuters.</td>
<td></td>
</tr>
<tr>
<td>Total Future Bicycle-to-Work Mode Share</td>
<td>9.23%</td>
</tr>
<tr>
<td>Future Total Daily Bicycle Trips</td>
<td>21,315</td>
</tr>
<tr>
<td>Total future bicycle commuters x 2 (for round trips).</td>
<td></td>
</tr>
<tr>
<td>Future Reduced Vehicle Trips per Weekday</td>
<td>15,560</td>
</tr>
<tr>
<td>Assumes 73% of bicycle trips replace vehicle trips.</td>
<td></td>
</tr>
<tr>
<td>Future Reduced Vehicle Miles per Weekday</td>
<td>71,577</td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Future Reduced Vehicle Miles per Year</td>
<td>18,967,795</td>
</tr>
<tr>
<td>256 weekdays per year.</td>
<td></td>
</tr>
</tbody>
</table>

### Potential Air Quality Benefits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Emissions rate (kg/mile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced HC (kg/weekday)</td>
<td>200</td>
<td>(0.0028)</td>
</tr>
<tr>
<td>Reduced CO (kg/weekday)</td>
<td>1,496</td>
<td>(0.0209)</td>
</tr>
<tr>
<td>Reduced NOX (kg/weekday)</td>
<td>99</td>
<td>(0.00139)</td>
</tr>
<tr>
<td>Reduced HC (metric tons/year)</td>
<td>51</td>
<td>1000 kg per metric ton; 256 weekdays/year</td>
</tr>
<tr>
<td>Reduced CO (metric tons/year)</td>
<td>383</td>
<td>1000 kg per metric ton; 256 weekdays/year</td>
</tr>
<tr>
<td>Reduced NOX (metric tons/year)</td>
<td>25</td>
<td>1000 kg per metric ton; 256 weekdays/year</td>
</tr>
<tr>
<td>Reduced CO2 (metric tons/year)</td>
<td>2,017,566</td>
<td>1000 kg per metric ton; 256 weekdays/year</td>
</tr>
</tbody>
</table>

5.0 Proposed System & Improvements

This chapter presents the proposed bicycle and pedestrian system and improvements for unincorporated Marin County. The recommended short and long term system and improvements consists of three distinct components:

1. **Bicycle Facilities**: including bikeway system, parking, and support facilities.
2. **Pedestrian Facilities**: a variety of pedestrian improvements.
3. **Bicycle and Pedestrian Programs**: as related to safety, education, and community and employer outreach.

Although the improvements described in this plan are limited to the jurisdiction of the County Department of Public Works, they are part of a larger vision for Marin County that includes the Nonmotorized Transportation Pilot Program and each of the local cities and towns’s bicycle, pedestrian and Safe Routes to Schools plans.

### 5.1 Bicycle and Pedestrian System

Marin’s various unincorporated communities and villages each have their own distinct qualities and unique attributes that contribute to the county’s quality of life. This remains evident even though many of these unincorporated communities are landlocked or are immediately adjacent to their more urban, incorporated jurisdictions. In many cases these communities are actually small residential neighborhoods. From a practical standpoint and for purposes of continuity, it makes sense for projects in these areas to be included in the adjacent incorporated jurisdiction’s bicycle and pedestrian plan.

Examples of the recommended bicycle circulation strategy consist of a comprehensive network of utilitarian bikeways connecting residential neighborhoods in Marin County with schools, parks, community centers, downtowns, transit, and other destinations. It focuses around a primary system of north-south and east-west corridors, using a combination of paths, lanes, and routes. Bikeway improvements have been broken down between a primary and secondary system, and long and short/mid-term projects. The proposed bikeway system in Figures 5.1 through 5.4 shows both unincorporated and incorporated areas for context. Note that routes in the incorporated areas may change during the updates of their respective bike and pedestrian plans that will be completed after this Plan.

Pedestrian improvements by nature are highly localized, and therefore prototype solutions have been developed that have widespread applicability in Marin County. In addition, several pedestrian treatments for specific areas were developed. In some cases, projects listed under Bikeway improvements, such as multi-use paths, are also pedestrian facilities as well.
The proposed bikeways in Marin’s unincorporated regions consist of approximately 164 miles of bikeways, including approximately 18 miles of Class I Bikeway or Multi-use Pathways, approximately 20 miles of Class II on-street bicycle lanes, and approximately 126 miles of signed bicycle routes and shoulder improvements (see Table 5.1). As described in Chapter 3, all new facilities must meet standards provided in Caltrans Chapter 1000 of the Highway Design Manual. The modified Class III/Shoulders facility type would have a minimum treatment of Bicycle Route Signs with additional paved shoulder width as needed. Note that some facilities listed below may be under other agencies jurisdictional or maintenance responsibility. In addition to the Caltrans facility designations, this plan proposes two study areas in unincorporated segments of Sir Francis Drake corridor, one in Kentfield and the other in West Marin. These complex areas have competing uses and existing parallel bicycle and pedestrian ways, meriting further study before final recommendations can be made for the corridor.

The proposed Marin County Bikeway and Pedestrian improvements are characterized by a series of priority projects that fall into one of the following four categories:

1. County-wide projects/programs
2. Local Bikeways Gap Closure Projects
3. Local Community Bicycle and Pedestrian Projects
4. Other Pedestrian projects

The top priority bikeway and pedestrian projects were selected based on:
- input from Marin County staff,
- input from the Marin County Bicycle Advisory Group
- the public (through surveys and workshops), and
- the consultant team based on their local knowledge and cycling experience, the orientation of funding programs, and the planning criteria outlined below.

5.2 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. It is important to state 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 County to focus and prioritize implementation efforts where they will provide the greatest community benefit and provide the best opportunities to attract more people to walking and biking.

There is an established methodology for selecting a bikeway system for any community. One of the major goals of the Plan is to build on local bikeway networks already approved or proposed by communities or regional plans. Thus, local community plans provide the basis for much of the primary bikeway system. Another important criterion is input from the local bicycling community and staff familiar with the best routes and existing constraints and opportunities. Input was received through four public workshops conducted in November of 2006, at which residents were asked to identify the routes they regularly ride plus corridors they saw as either
SOUTHERN MARIN COUNTY
PROPOSED BIKEWAY NETWORK
FIGURE 5.2

LEGEND
Bicycle Facilities
Existing Proposed
Class 1  Bikeway or Multi-Use Path
Class 2  Bicycle Lanes
Class 3  Signed Routes/Shoulders
Bicycle Parking
Transit Hubs
School

DATA SOURCE MARIN MAP

ALTAMAN PLANNING + DESIGN
Central Marin County
Proposed Bikeway Network
Figure 5.3

LEGEND
Bicycle Facilities
Existing

- Class I Bikeway or Multi-Use Path
- Class II Bicycle Lanes
- Class III Signed Routes/Shoulders

Transit Hubs
School

Bikeway Study Area
Sir Francis Drake

Proposed Class I Bikeway or Multi-Use Path
Class II Bicycle Lanes
Class III Signed Routes/Shoulders
### Table 5.1
Proposed Bikeway Facilities in Unincorporated Marin County

<table>
<thead>
<tr>
<th>Name</th>
<th>Facility Type</th>
<th>Mileage</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bon Air Road Sidepath</td>
<td>I</td>
<td>0.1</td>
<td>Across from Marin General Hospital</td>
</tr>
<tr>
<td>Old Lucas Valley Road</td>
<td>I</td>
<td>0.3</td>
<td>Miller Creek Rd. to Mt. Lassen</td>
</tr>
<tr>
<td>Manzanita Connector</td>
<td>I</td>
<td>0.2</td>
<td>Tennessee Valley Path to Manzanita Park and Ride</td>
</tr>
<tr>
<td>Oakview Connector</td>
<td>I</td>
<td>0.4</td>
<td>Marinwood Avenue to Los Gamos Road</td>
</tr>
<tr>
<td>Olema-Bolinas Road Path</td>
<td>I</td>
<td>0.5</td>
<td>Bolinas School to Mesa Road</td>
</tr>
<tr>
<td>SMART Pathway – St. Vincent’s-Silveira</td>
<td>I</td>
<td>2.5</td>
<td>Hamilton Field to Smith Ranch Road</td>
</tr>
<tr>
<td>Tennessee Valley Road Pathway</td>
<td>I</td>
<td>0.7</td>
<td>Mill Valley Sausalito Path to Tam Community Center</td>
</tr>
<tr>
<td>White’s Hill Tunnel/Pathway</td>
<td>I</td>
<td>1.2</td>
<td>Fairfax to Woodacre</td>
</tr>
<tr>
<td>Samuel P. Taylor Park Pathway</td>
<td>I</td>
<td>2.0</td>
<td>Inkwells Bridge to Campground</td>
</tr>
<tr>
<td>Tocaloma to Pt. Reyes Station Pathway</td>
<td>I</td>
<td>4.5</td>
<td>Tocaloma to Pt. Reyes Station</td>
</tr>
<tr>
<td>Marin-Sonoma Narrows Bikeway</td>
<td>I</td>
<td>4.8</td>
<td>Novato City Limits to Sonoma County Line along Hwy 101</td>
</tr>
<tr>
<td>Central Marin Ferry Connection</td>
<td>I</td>
<td>0.7</td>
<td>Greenbrae Boardwalk</td>
</tr>
<tr>
<td><strong>Total Class I Bikeway/Multi-use Path</strong></td>
<td></td>
<td><strong>17.9</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Facility Type</th>
<th>Mileage</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda Del Prado</td>
<td>II</td>
<td>0.4</td>
<td>Loma Verde</td>
</tr>
<tr>
<td>Alexander Ave (Sausalito Lateral)</td>
<td>II</td>
<td>0.8</td>
<td>Golder Gate Bridge to Sausalito</td>
</tr>
<tr>
<td>Atherton Ave</td>
<td>II</td>
<td>0.8</td>
<td>Armstrong to Buegia</td>
</tr>
<tr>
<td>Atherton Ave</td>
<td>II</td>
<td>1.2</td>
<td>School Road to Harbor Drive</td>
</tr>
<tr>
<td>Bel Marin Keys</td>
<td>II</td>
<td>0.7</td>
<td>Bel Marin Keys</td>
</tr>
<tr>
<td>Bon Air Road</td>
<td>II</td>
<td>0.1</td>
<td>Across from Marin General Hospital</td>
</tr>
<tr>
<td>Butterfield Road</td>
<td>II</td>
<td>0.4</td>
<td>Sleepy Hollow</td>
</tr>
<tr>
<td>College Ave</td>
<td>II</td>
<td>0.1</td>
<td>Corte Madera Creek to Sir Francis Drake</td>
</tr>
<tr>
<td>Donahue St</td>
<td>II</td>
<td>0.2</td>
<td>Marin City</td>
</tr>
<tr>
<td>E. Sir Francis Drake</td>
<td>II</td>
<td>0.6</td>
<td>Larkspur to 580</td>
</tr>
<tr>
<td>I-580</td>
<td>II</td>
<td>0.1</td>
<td>E. Sir Francis Drake to San Quentin</td>
</tr>
<tr>
<td>Lomita Dr</td>
<td>II</td>
<td>0.5</td>
<td>Alto</td>
</tr>
<tr>
<td>Los Ranchitos Rd</td>
<td>II</td>
<td>0.8</td>
<td>Puerto Suello summit to San Rafael city limits</td>
</tr>
<tr>
<td>Lucas Valley Rd</td>
<td>II</td>
<td>0.6</td>
<td>Las Gallinas Ave to 101</td>
</tr>
<tr>
<td>Lucas Valley Rd</td>
<td>II</td>
<td>0.6</td>
<td>Bridgegate to Westgate</td>
</tr>
<tr>
<td>Marinwood Ave</td>
<td>II</td>
<td>0.5</td>
<td>Marinwood</td>
</tr>
<tr>
<td>Miller Creek Rd</td>
<td>II</td>
<td>1.2</td>
<td>Marinwood</td>
</tr>
<tr>
<td>North San Pedro Road Rd</td>
<td>II</td>
<td>1.7</td>
<td>Civic Center to Vendola Dr</td>
</tr>
<tr>
<td>Olive Ave</td>
<td>II</td>
<td>0.5</td>
<td>Novato city limits to Atherton Ave</td>
</tr>
<tr>
<td>Point San Pedro Rd</td>
<td>II</td>
<td>1.3</td>
<td>Unincorporated sections</td>
</tr>
<tr>
<td>Shoreline Hwy</td>
<td>II</td>
<td>1.1</td>
<td>Tennessee Valley Path to Northern Ave.</td>
</tr>
<tr>
<td>Sir Francis Drake Blvd (special study area)</td>
<td>II</td>
<td>2.1</td>
<td>Hwy 101 to Ross town limits</td>
</tr>
</tbody>
</table>
opportunities or constraints, helping to identify the types and locations of improvements designed to meet citizen’s needs.

In addition, some of the following criteria was also considered in selecting and prioritizing projects:

<table>
<thead>
<tr>
<th>Name</th>
<th>Facility Type</th>
<th>Mileage</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith Ranch Road</td>
<td>II</td>
<td>1.1</td>
<td>Hwy 101 to Golf Course</td>
</tr>
<tr>
<td>Tennessee Valley Road</td>
<td>II</td>
<td>1.2</td>
<td>Tam Community Center to GGNRA</td>
</tr>
<tr>
<td>Tiburon Blvd</td>
<td>II</td>
<td>1.4</td>
<td>Hwy 101 to Greenwood Beach Rd</td>
</tr>
<tr>
<td>Woodland Ave</td>
<td>II</td>
<td>0.1</td>
<td>Cal Park</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>20.1 Total Class II Bikeway</strong></td>
</tr>
<tr>
<td>Bear Valley Road</td>
<td>III</td>
<td>2.2</td>
<td>Olema to Inverness Park</td>
</tr>
<tr>
<td>Belvedere Drive</td>
<td>III</td>
<td>0.7</td>
<td>Strawberry</td>
</tr>
<tr>
<td>Dillon Beach Rd</td>
<td>III</td>
<td>4.1</td>
<td>West Marin</td>
</tr>
<tr>
<td>East Rd-Murray Rd-Conzelman Cir-Saus Lateral</td>
<td>III</td>
<td>2.2</td>
<td>Fort Baker</td>
</tr>
<tr>
<td>Eliseo Dr</td>
<td>III</td>
<td>0.2</td>
<td>Greenbrae</td>
</tr>
<tr>
<td>Fawn Dr</td>
<td>III</td>
<td>0.5</td>
<td>Butterfield to Mission Pass</td>
</tr>
<tr>
<td>Greenwood Cove</td>
<td>III</td>
<td>0.3</td>
<td>Tiburon Blvd to Blackies Pasture</td>
</tr>
<tr>
<td>Kent Ave</td>
<td>III</td>
<td>0.5</td>
<td>Kentfield</td>
</tr>
<tr>
<td>Lucas Valley Rd</td>
<td>III</td>
<td>6.7</td>
<td>Westgate Drive to Nicasio Valley Road</td>
</tr>
<tr>
<td>Nicasio Valley Road</td>
<td>III</td>
<td>5.0</td>
<td>Sir Francis Drake to Pt. Reyes Petaluma Rd</td>
</tr>
<tr>
<td>North San Pedro Rd</td>
<td>III</td>
<td>3.8</td>
<td>Vendola to Biscayne</td>
</tr>
<tr>
<td>Novato Blvd</td>
<td>III</td>
<td>4.0</td>
<td>Stafford Lake to Pt. Reyes Petaluma Rd</td>
</tr>
<tr>
<td>Paradise Dr</td>
<td>III</td>
<td>5.9</td>
<td>Tiburon Peninsula</td>
</tr>
<tr>
<td>Pt. Reyes Petaluma Rd.</td>
<td>III</td>
<td>7.8</td>
<td>Pt. Reyes Station to Sonoma County Line</td>
</tr>
<tr>
<td>Railroad Ave</td>
<td>III</td>
<td>1.0</td>
<td>Woodacre</td>
</tr>
<tr>
<td>Redwood Highway</td>
<td>III</td>
<td>0.8</td>
<td>Strawberry</td>
</tr>
<tr>
<td>Ricardo Rd</td>
<td>III</td>
<td>0.2</td>
<td>Strawberry (Redwood Highway to Shoreline Highway)</td>
</tr>
<tr>
<td>San Geronimo Valley Rd – Meadow Rd</td>
<td>III</td>
<td>2.7</td>
<td>Woodacre-San Geronimo</td>
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<tr>
<td>Seminary Drive</td>
<td>III</td>
<td>0.5</td>
<td>Strawberry, Ricardo to Gilbert</td>
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<td>Shoreline Highway</td>
<td>III</td>
<td>49</td>
<td>Northern Avenue to Sonoma County Line</td>
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<td>Sir Francis Drake</td>
<td>III</td>
<td>1.9</td>
<td>Fairfax to San Geronimo Valley Dr. (east)</td>
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<td>Sir Francis Drake</td>
<td>III</td>
<td>11.8</td>
<td>Lagunitas to Olema</td>
</tr>
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<td>Sir Francis Drake</td>
<td>III</td>
<td>5.2</td>
<td>Shoreline to Camino del Mar, Inverness</td>
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<td>Tomales-Petaluma Rd</td>
<td>III</td>
<td>5.6</td>
<td>West Marin</td>
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<td>Tower-Meadow-Shell Dr</td>
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<td>0.3</td>
<td>Alto</td>
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<td>Vineyard Rd</td>
<td>III</td>
<td>2.6</td>
<td>West Novato</td>
</tr>
<tr>
<td>Wolfe Grade</td>
<td>III</td>
<td>0.6</td>
<td>Kentfield</td>
</tr>
<tr>
<td></td>
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<td></td>
<td><strong>126.1 Total Class III Bikeway/Shoulders</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>164.1 Total Facility Mileage</strong></td>
</tr>
</tbody>
</table>
1. Existing Bicycling Patterns based on counts and observation
2. Traffic volumes and travel speeds on streets
3. Amount of side friction (driveways, side streets)
4. Pavement or roadway width
5. Number of destinations served
   a. Schools
   b. Parks
   c. Employment Centers
6. Topography and gradients
7. Connectivity with the regional system
8. Presence of reasonable alternatives for bicyclists
9. Directness and connectivity to destinations
10. Accident data and safety concerns

The Marin County bikeway system was developed focusing on connecting existing segments of bikeways, addressing routes used by bicyclists, and focusing on specific opportunities and constraints. The street pattern and topography of Marin County is such that the bikeway system naturally follows primary north-south and east-west routes.

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

5.3 Long Term Vision

Marin County and its unincorporated communities are already recognized as some of the most livable communities in the country. One of the aspects that make a community livable is that people feel comfortable walking or bicycling there, whether they be school children or senior citizens. The long term vision of this Plan is to make unincorporated Marin County a model for livable communities, a place where there is a balance between the automobile and alternative modes, where the fragments of existing bikeways are connected to provide a consistent experience from community to community. In addition to the policies recommended in Chapter 2, this Plan provides the following physical and program improvements to help reach this goal. Because this plan is limited in scope to the unincorporated areas of Marin County, coordination between the County DPW, local cities and towns, the Transportation Authority of Marin, Caltrans and transit agencies, among others, will be critical to the realization of this countywide vision which goes beyond the North-South Bikeway and extends into every community in the County.

5.3.1 Primary System

The County Bikeway System is composed of a primary and secondary bikeway system, with the primary system utilizing existing and proposed local bikeways, providing critical inter-
community and regional connections, and serving all of the primary activity centers in unincorporated Marin County. Secondary and local systems provide important connections to local neighborhoods and other destinations, acting as feeder routes to the primary system. It is important to note that the portions of the primary and secondary bikeway system described here are located in unincorporated Marin County. Where the bikeway system is located in one of the numerous small pockets of unincorporated Marin County adjacent to incorporated towns and cities, this plan attempts to coordinate improvements with the plans of those incorporated areas.

5.3.2 Northwestern Pacific (SMART) Railroad Right of Way

The proposed Primary Bikeway system described in this section and the Northwestern Pacific Railroad (NWP) are so intertwined that it is useful to discuss the history of this railroad in the context of the proposed bikeway improvements. The NWP and its predecessors actually helped form the transportation system as it is known today in Marin, predating the development of a roadway system. Starting from the 1860s, a railroad system developed that eventually connected virtually all Marin communities to ferry service to San Francisco. By the early 1900s, an efficient double-track electric commuter rail operation brought commuters from the growing Marin towns to schools and work on a daily basis. By the 1940s, however, increased competition from the automobile led to the abandonment of the electric commuter service and eventually to the abandonment of the entire system south of Ignacio. North and east of Ignacio, freight service is still provided by Northwestern Pacific Railroad Authority (NWPRA).

At the time of abandonment of the tracks south of Ignacio, the Northwestern Pacific Railroad was a subsidiary of the Southern Pacific Railroad Company. Subsequently, the Southern Pacific was purchased by the Union Pacific Railroad (UPRR). For some time the area north of Larkspur Landing along the NWP right-of-way was owned by the Golden Gate Bridge District, purchased with Federal Highway Administration funds for the purposes of developing a bus way system. As of this writing, the entire NWP right of way from Cloverdale in Sonoma County to Tiburon in Marin County is under ownership of the Sonoma Marin Area Rail Transit district.

SMART was formed on January 1, 2003 as a new regional transportation district to oversee the development and implementation of a “rail with trail” passenger rail service and multi-use pathway in Sonoma and Marin Counties. In 2006 SMART released the Final Environmental Impact report for this proposal, described in detail in Chapter 2 of this plan. The SMART proposal appeared on the Marin and Sonoma ballots in November 2006 as a sales tax measure, which was defeated by voters by a 1.3% margin. The status of future SMART efforts on the NWP right of way is unknown at this time, though the agency plans to seek funding again in the future. The viability of sharing the NWP right-of-way in Marin is inextricably linked to the future rail transit use of the corridor from Larkspur Landing northward.

The legacy of the NWP system on the transportation system of Marin is strong. The general location and layout of streets and downtowns in Marin were largely determined by the railroad tracks. In many locations, such as Center Boulevard and the eastbound lanes on the Miracle Mile (Red Hill Avenue), the railroad right-of-way was used for new roadways. In other places, the railroad right-of-way was converted to multi-use trails, including most of the multi-use trails...
in southern Marin. The physical legacy of the railroad is evident in many places, such as the trestle and drawbridge over Corte Madera Creek, the San Rafael depot, the Mill Valley Depot, and the numerous tunnels.

The NWP system is strongly linked to bicycle use in the county not just because it serves, in areas, as a bikeway now, but because it duplicates many of the same routes used by bicyclists throughout the County everyday—with one major exception. While the tracks provided direct, level connections between Marin’s communities, bicyclists must now traverse steep hills to travel between towns. Bicycles, like trains, prefer the most level, direct connection possible between two points. The legacy of the NWP is the bicycling community’s desire to re-establish these corridors where they are intact, to take advantage of what is a unique historic County resource that is virtually flat and largely grade-separated from streets, roads, and highways.

The old narrow gauge section of NWP from Fairfax west through San Geronimo Valley to Pt. Reyes Station and then northward through Marshall, Tomales, and on to the Valley Ford, Russian River, and Cazadero areas that also offers a tremendous resource. The Samuel P. Taylor Park pathway already utilizes portions of this right-of-way.

5.3.3 Tunnels

There are a total of 8 historic railroad tunnels in Marin County. Most of the tunnels are within various city limits, but the portals, tunnels and approaching right of way for most tunnels are under control of the County, SMART or the railroad. The CalPark Hill tunnel is located within the Larkspur and San Rafael city limits, but is owned by SMART. The Alto Tunnel is located almost entirely within incorporated Mill Valley and Corte Madera, with a small section of the approach on the south side under the County of Marin and Union Pacific ownership.

<table>
<thead>
<tr>
<th>Tunnel</th>
<th>Length (ft)</th>
<th>Year Built</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alto Tunnel</td>
<td>2,182.9</td>
<td>1884</td>
<td>Closed with partial collapse</td>
</tr>
<tr>
<td>CalPark Hill Tunnel</td>
<td>1,104.6</td>
<td>1884</td>
<td>Closed with partial collapse</td>
</tr>
<tr>
<td>North Tomales Tunnel</td>
<td>1,706.4</td>
<td>1875</td>
<td>Rock</td>
</tr>
<tr>
<td>Puerto Suello Tunnel</td>
<td>1,350.5</td>
<td>1879</td>
<td>Closed; Good condition</td>
</tr>
<tr>
<td>Tiburon-Reed Tunnel</td>
<td>566.2</td>
<td>1884</td>
<td>Closed; unknown</td>
</tr>
<tr>
<td>Reed-Meadowsweet Tunnel</td>
<td>1,848.8</td>
<td>1884</td>
<td>Closed; unknown</td>
</tr>
<tr>
<td>South Tomales Tunnel</td>
<td>98.4</td>
<td>1874</td>
<td>Rock</td>
</tr>
<tr>
<td>Whites Hill Tunnel</td>
<td>3,190.2</td>
<td>1904</td>
<td>Closed; substantial collapse</td>
</tr>
</tbody>
</table>

All of the tunnels but one accommodated single tracks and are approximately 15-20 feet wide by almost 30 feet high. The CalPark Hill tunnel is a double-tracked tunnel which is approximately 30 feet wide.

With the exception of the Puerto Suello Tunnel (which is in good condition) and the CalPark Hill Tunnel (which is currently being designed as a pedestrian, bicycle and rail transit facility), the condition of the tunnels is not known. Jacobs Associates conducted a preliminary analysis of the Alto Tunnel as part of the North-South Bikeway Feasibility Study and in 2001 further inspection
Proposed System & Improvements

of the tunnel was conducted. All of the other tunnels are sealed off and inspection is not possible without some expenditure to assure the safety of tunnel inspectors. The Alto, White’s Hill, and Tiburon Tunnels are predominately timber lined and over time, with moisture inside the bore and no fresh air, it is likely that the supports have rotted out. It is likely that there are at least partial collapses in all but the Puerto Suello tunnel.

The CalPark Hill and Puerto Suello Tunnels are owned by SMART. The 2006 SMART FEIR stated that Puerto Suello tunnel would be re-used by rail transit as part of the SMART rail system. The County of Marin or the Union Pacific Railroad (successor of the Northwestern Pacific Railroad property) owns portions of the other tunnels.

In 2001 the Rails-to-Trails Conservancy completed their Tunnels on Trails survey of 78 tunnels in use as bikeways on 36 trails in the United States, including rural, suburban, and urban locations. According to this report and based on criteria specific to Marin County, the feasibility of reusing any of the tunnels is dependent on several factors, including:

1. The willingness of local jurisdiction(s) to become project sponsor(s) and take on the cost and responsibility of building and operating the facility
2. The political acceptability to local neighborhoods of these renewed corridors provided by re-opened tunnels
3. The lack of reasonable, less costly alternatives
4. The expectation that they will significantly increase bicycling and walking
5. Geological, drainage, or other physical factors posed by the reopening of tunnels
6. Ability of project sponsoring agencies to resolve legal issues with affected property owners
7. Cost of re-construction and available funding
8. The ability to address safety and security issues

Most people cannot imagine what it would be like to ride or walk through a tunnel, although there is a similar tunnel already in operation in Marin. The Fort Baker tunnel is one-way for vehicular traffic with an adjacent bike lane and approximately 2,400 feet long—longer than the Alto tunnel.

As part of future feasibility work for any tunnel project, a full operations and maintenance plan would be developed that also addresses safety and security. It would cover, for example, how lighting would be provided, hours of operation, possibly regular police patrols, emergency phones, and other personal safety measures. It was mentioned in public workshops that the tunnels could also serve as an emergency route for police and fire vehicles, allowing them to bypass congested highways and roads in the event of an emergency or natural disaster.

The cost of reopening the tunnels is difficult to estimate and changes quickly over time. Jacobs Associates developed costs for the CalPark Hill and Alto tunnels (North-South Feasibility Study Brady Associates, 1994) in the range of three to five million dollars. Although the scope of work has increased significantly, currently the estimated cost for reopening the Cal Park Hill Tunnel is $24M. These costs must be kept in perspective, however. A single pedestrian overcrossing of
U.S. 101 could cost in excess of 3-5 million dollars. Any future use of the tunnels for transportation purposes will have a countywide benefit. As such, the costs associated with the construction and maintenance could be considered a true multi-jurisdictional responsibility.

5.3.4 Access to Public Park and Open Space Lands

With the Golden Gate National Recreation Area, Pt. Reyes National Seashore, Muir Woods National Monument, and numerous State and County Parks, watersheds, and open space areas, Marin is a major visitor destination. While a great natural resource, these parklands also attract tremendous seasonal traffic flows to unincorporated Marin, resulting in congestion for residents and visitors alike. A key strategy being pursued by entities such as the National Park Service is measures to eliminate or minimize the use of private vehicles to access these destinations, including use of bus service and shuttles. Bicycling and walking are already very popular means of touring and sometimes accessing visitor destinations, as witnessed by the number of hotels in San Francisco that promote or offer bike rentals for visitors to Marin.

Many of the short to mid-term recommendations in this Plan directly address access to the numerous parkland destinations in Marin, including the Alexander Avenue Project, Rural Road Improvement Project, and the Samuel P. Taylor Pathway project. Additional local projects that would serve visitors and benefit locals by helping to keep bicycles and pedestrians off narrow rural roads have been mentioned in the Pt. Reyes Station and Inverness areas. Pathway improvements within the parks should be considered within the limitations on use and environmental limits set by each agency.

5.3.5 Environmental Protection

Bicycling and walking are the most environmentally sound forms of travel possible, and directly help reduce problems associated with motor vehicle use such as air, noise, and water pollution, over development, and ground covering by asphalt. At the same time, some of the more ambitious pathway proposals in this Plan may have environmental impacts of their own. Some of these may be direct, such as impacts to wetlands, and others may be indirect, such as impacts of unleashed dogs in habitat areas. All of the projects in this Plan will require additional feasibility analysis, which will include environmental analysis. Additional CEQA review will be completed as needed once the project is deemed feasible and a preliminary design developed. Once completed, the bicycle and pedestrian improvements and programs in this Plan will make unincorporated Marin one of the most environmentally sound communities in the country.

5.4 Short- and Mid-Term Priority Projects

Much of the Plan is also built on projects developed by individual communities. Based on the criteria described previously, the top priority short- to mid-term bikeway and walkway projects for unincorporated Marin County are described on the following pages.
COUNTYWIDE PROJECTS

Marin Pathway Maintenance Program

Jurisdiction(s): Transportation Authority of Marin, County of Marin, local cities and towns, Caltrans

Project Location(s): Countywide

Many residents and visitors have commented on the need to maintain and improve Marin’s existing multi-use pathways. Maintenance of some of these pathways is performed by the Marin County Parks and Open Space Department, whereas bike lanes are maintained through the Department of Public Works’ road maintenance programs. The County currently maintains sections of the Mill Valley-Sausalito Bike Path, Mission Pass Path (Fawn Drive), Corte Madera Creek Path, and Novato Bike Path (from San Marin High School to Stafford Lake) in the unincorporated county. Some of the existing pathways in are maintained in partnership with Caltrans – the Pacheco Hill Pathway in unincorporated Novato is one. Caltrans also maintains the Puerto Suello Hill Pathway (also called the Merrydale Pathway, in San Rafael at the top of Puerto Suello Hill) and the Alto Hill Pathway (also called Horse Hill Pathway, between Mill Valley and Corte Madera). The Samuel P. Taylor Park Pathway is maintained by California State Parks and the National Park Service.

The maintenance needs for these pathways typically fall into two categories – routine maintenance and major maintenance. The former consists of regular activities such as sweeping, debris removal, trimming vegetation and minor spot repairs to the pathway surface. The latter calls for extensive repaving overlays or full reconstruction of the path and associated structures. This program would consist of a variety of improvements listed below, with each pathway and section requiring different improvements. As appropriate for the individual pathway, one goal of this effort would be to bring pathways up to Caltrans minimum standards regarding width and safety of entrances and exits, to invite a wider range of users to the facility.

Details of this program are to be determined based on whether a consistent local source of funds can be used for pathway maintenance. At this time no agency has officially developed a funding program or policy and the recommendations in this Plan are presented as concept-level, subject to further development. As of this writing TAM has undertaken a pathway maintenance cost study whose purpose is to provide pathway maintenance practices and projected costs prior to further direction from the TAM Board on use of Measure A interest funds as matching funds for local maintenance expenditures.

Routine Maintenance

A common concern expressed by agency staff responsible for building and maintaining infrastructure is the lack of consistent and adequate funds for maintenance. Capital funding for
the projects identified in this Plan may be available through Federal and State sources, but maintenance funds are not included. This implementation project would seek to establish a regular source of maintenance funds for multi-use pathways, similar to the streetlight agreement already in place in the county. Recommended minimum maintenance activities and practices to be funded under this project are presented below.

Many of Marin County’s paths need maintenance attention, such as fixing broken asphalt and clearing plant overgrowth. Bike lanes need regular sweeping to clear debris. The total annual maintenance cost of all existing and planned pathways within all jurisdictions in Marin County is estimated to be $846,155 per year. Class I bike path maintenance costs are based on $10,578 per mile, which covers labor, supplies, and amortized equipment costs for weekly trash removal, monthly sweeping, and bi-annual resurfacing and repair patrols. Other maintenance costs include centerline and crosswalk restriping, sweeping debris, and tuning/equiping signals for bicycle and pedestrian sensitivity at pathway/roadway intersections. Other than the pathway elements of such facilities, maintenance for tunnels and their operation is not included in this estimate.

Maintenance access on the Class I bike path could be achieved using standard County pick-up trucks on the pathways. Sections with narrow widths or other clearance restrictions should be clearly marked. Class I bike path routine maintenance includes cleaning, spot repairs to the asphalt path, repairs to crossings, cleaning drainage systems, trash removal, and landscaping. Underbrush and weed abatement should be performed once in the late spring and again in mid-summer.

Recommendation #1: Support efforts to provide funding for routine bicycle and pedestrian pathway maintenance

This would be similar to the existing Joint Powers Agreement for streetlights in the County and would oversee a mechanism for funding pathway maintenance. The funding could be used to develop a bicycle and pedestrian maintenance request system, similar to those in Seattle, Portland, and other cities.

Recommendation #2: Consider bicycles and pedestrians in performing maintenance and repair work:

- Provide suitable construction warning signs where appropriate.
- Where necessary, provide detour routes around areas undergoing construction.

Major Maintenance

As detailed below, major maintenance is a less frequent but more costly maintenance activity. It consists of structural repairs to facilities to ensure the following standards are met and to maintain compliance with Caltrans requirements.

1. Resurfacing as needed to provide a consistent, smooth surface including centerline striping where pathway volumes are high.
2. Widening the paved section to 10 feet with unpaved shoulders on each side is mandatory unless deemed infeasible based on environmental, visual, and community review.

3. Providing a more compacted and consistent unpaved surface on one or both sides of the pathway for runners and walkers.

Improvements such as the following should be included to improve user safety, especially for the most vulnerable users such as children and the elderly, and to encourage people to walk and bicycle.

1. Evaluation of roadway crossings and improvements as needed including additional advisory and warning signs, longer signal times, etc.

2. Providing consistent pathway management signing advising users about maximum speed limits, overtaking protocol, slower traffic staying to the right, leash requirements and dog etiquette, and any applicable enforcement codes.

3. Pathway enhancements such as benches, historic markers, gateways, and/or landscaping as appropriate to make the pathway a more functional and enjoyable transportation facility.

4. Exploration of innovative techniques such as colored pavement demarking user groups if approved for use in California, or possibly through a California Traffic Control Devices Committee-approved demonstration project. Colored bikeways have proven effective in Portland, Oregon, especially where the paths cross busy roadways.

5. Raising the pathway elevation to reduce or eliminate the impacts of flooding or tidal action.

6. Improving existing bridges as needed.

7. Guide signs and informational kiosks

Recommendation #3: Apply adopted uniform standards for path width, bridge structure width and pathway/roadway intersections as goals for long-term major maintenance safety improvements.

When undertaking new construction or major rehabilitation projects, review for conformance with applicable standards, guidelines, and best practices.
COUNTYWIDE PROJECTS

Rural Roads Improvement Project

Jurisdiction(s): County, Caltrans

Project Location(s): All unincorporated areas

Bicycle use on the roads outside of the developed portions of Marin is high, and consists of both recreational and commuting use. Rural roads typically are located outside developed areas and have no (or limited) curbs, gutters, or sidewalks. Many people cited a variety of problems on rural roads throughout the County, which are packaged into one effective countywide project here. This project would provide a mechanism to address specific problems at locations along Marin’s rural roads, which could be addressed through a combination of any of the following ways:

1. Advisory and warning signs, including, where appropriate, “Share the Road” signs
2. Shoulder widening or new shoulders
3. Travel lane re-stripping where excess width is available
4. New or improved turnouts, especially in areas where shoulder widening is difficult to accomplish.
5. Enhanced roadway surface maintenance, such as increased sweeping and through a pavement management program.
6. Expansion of the County Bicycle Route Guide Signage Project into West Marin

Note that bike lanes could be included in this list, but are not commonly used in rural areas due to the large number of required signs and stencils and challenges with providing consistent additional paved width.

The 2001 County bicycle plan called for a County Stenciling and Signage Project, which has now been partially implemented. Two phases of that project, signing “primary north-south and east-west routes” and signing “secondary routes” have been completed. However, a third phase, signing “rural recreational routes” has not been implemented. As the rural roads improvement program is developed by the County, implementation of the rural portion of the countywide signing project should be integrated into that process.

Some Rural Roads Program example sections most frequently mentioned for improvements include:

1. Highway 1/Shoreline Highway between Stinson Beach and Bolinas turn-off (Caltrans)
2. Nicasio Valley Rd. between Sir Francis Drake Blvd and Nicasio School
3. Highway 1/Shoreline Highway through Tam Valley (Caltrans)
4. Paradise Drive
5. Novato Blvd. (west of Stafford Lake)
Proposed System & Improvements

6. Pt. Reyes-Petaluma Road north of Nicasio Reservoir
7. Lucas Valley Road west of Westgate Drive
8. Sir Francis Drake Blvd. between Lagunitas and Shoreline Highway
9. Olema Bolinas Road

Recommendation: Develop a Rural Roads Improvement Program that identifies segments of roadway with the goal of specifying needed improvements as described above, including full implementation of the Countywide Bicycle Route Guide Signage Project.
Figure 5.6
Rural Road Improvements

- Install turnouts where feasible
- Lower speed limits / increase enforcement
- Install "Share the Road" and other bicycle signs
- Consider narrowing lanes to 11'
- Install uphill climbing lanes
- Add 3' - 4' shoulders where feasible
Figure 5.7

Rural Road Improvements

Add roadway width where feasible

Guardrail

3' - 4'

Install drainage and shoulders

3' - 4'

Move utility poles add shoulders

3' - 4'
COUNTRYWIDE PROJECTS

Bicycle Parking Project

Jurisdiction(s): County, local cities and towns, school districts, Marin Transit, Golden Gate Transit, Caltrans

Project Location(s): Countywide

Recommended design standards for bicycle parking facilities are summarized below. In addition, the following document provides state of the art national best practices for bicycle parking layout and design: http://www.bicyclinginfo.org/pdf/bikepark.pdf. These standards are a resource available for the County and local agencies to use as they see fit.

In general, all bicycle parking should be in a safe, secure, covered area (if possible), be anchored to the ground, and allow bicycles to lock both frame and wheels. Bicycle parking on sidewalks in commercial areas would 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 intermittently and/or at specific bicycle destinations (such as bike shops). Figures 3.5 and 3.6 illustrate the recommended Class I (bike locker) and Class II (bike rack) configurations.

Bicycle parking can be provided on public property, required through development entitlements on private property, or provided to private entities on an at-cost basis.

The following bicycle parking improvements are recommended for adoption:

Recommendation #1: Countywide Bicycle Rack Program

In order to provide bike parking on the public right of way at all public buildings, shopping centers, employment centers, community facilities, libraries, parks, schools, and transit stops, the County of Marin should adopt a Countywide Bicycle Rack Program. This program would seek funding to purchase, at bulk discount, a quantity of racks in collaboration with local agencies and jurisdictions for installation at approved locations.

Recommendation #2: Require bicycle parking for non-residential public and private land uses.

As part of the Development Code update, develop bicycle parking standards for each land use category triggered at appropriate thresholds and utilizing floor area ratios, residential units, activity types, or other criteria to determine the number of spaces. In addition, bicycle parking for existing uses could be implemented by promoting bicycle parking per the adopted standards.

Recommendation #3 A special program to construct sheltered bicycle corrals where needed at Marin County Schools should be continued and enhanced where needed.
Proposed System & Improvements

A corral is a fenced-in area at a major destination, such as a school or an event, that is secured either through lock or by an attendant where bicycles can be securely parked. These simple enclosed facilities are locked from the beginning to the end of school, and address the theft and vandalism concerns of students.

 Recommendation #4: Continue and expand existing secure attended bicycle parking at all major special events, to encourage residents and visitors to bicycle rather than drive.

Since adoption of the previous bicycle plan, attended bicycle parking has been provided by the Marin County Bicycle Coalition at some special events in partnership with private sponsors and public agencies. Partnerships like this should be continued and expanded, with event sponsors seeking additional funding to defray the operating expenses.

 Recommendation #5: Encourage people to “bike to transit” by expanding bicycle parking, building bicycle stations or other support facilities at key transit facilities, and creating marketing and information materials to increase the public’s awareness of the location of bicycle-accessible transit facilities in Marin County.

Bicycle-related improvements such as increased bicycle parking (covered and/or uncovered parking or attended bicycle stations), wayfinding signage and bike and transit information kiosks can be provided as a part of larger transit facility improvement projects. Possible locations for improvements include the San Rafael Transit Center, the Marin City Transfer Station, the San Anselmo Transit Hub, the Manzanita Park and Ride, the Redwood and Grant Transit Stop in Downtown Novato, the Ignacio Bus Pad, and the Larkspur Landing, Sausalito, and Tiburon ferry terminals.

As described in Chapter 3, Marin Transit’s bus stop study identified bicycle parking needs at particular transit stops in the county transit system. This list, combined with the priorities above, should be used as documentation for grant funding applications to install bicycle racks, sheltered bicycle parking and eventually bicycle stations at the above locations and other identified locations, as needed.

In addition, increasing the public’s awareness of the location of bicycle-accessible transit facilities would help to improve cyclists’ ability to use transit. Marin Transit will seek funding for a Bikes to Transit Mapping Project that would verify the location of all bike parking facilities in Marin County, inputting the information into GIS and producing a countywide bike parking map that is overlaid with a Marin County local transit map and Marin County Bicycle Route/Trail map. A revised Bikes to Transit Brochure and Map could be made available on-line and through distribution by Marin Transit, GGT, and local advocacy groups as well as other resources.

 Recommendation #6: Improve bicycle access to transit by providing for increased bicycle capacity on transit vehicles.
Currently, bike storage is available on all public transit vehicles in Marin. In 2006 Golden Gate Transit purchased and installed underfloor style racks that hold two bicycles in the luggage compartment of 45-foot long buses which previously had no bicycle carrying capacity due to state law limits on bus length. Golden Gate’s entire fleet has the capacity to carry at least two bicycles per vehicle. Front-mounted bike racks with capacity for 2 or 3 bicycles are installed on all of Marin Transit’s local services including the West Marin Stagecoach and the three community shuttles. Both Marin Transit and Golden Gate Transit would like to identify funding sources to implement the replacement of all two-bike capacity racks with three-bike capacity racks, when feasible.
COUNTYWIDE PROJECTS

Innovative Bikeways Program

Jurisdiction(s): County of Marin, local agencies

Project Location(s): Countywide

Many attendees at the public workshops held for this plan expressed an interest in seeing innovative and progressive bicycle and pedestrian facilities implemented as a result of this plan. The attendees supported the County’s existing efforts to test new facilities, pavement markings and safety improvements such as the “Share the Road” stencils installed on North San Pedro Road. However, due to liability concerns there is widespread concern about building facilities that do not adhere to Caltrans guidelines or other standards which provide reasonable design immunity.

Caltrans’ California Traffic Control Devices Committee (CTCDC) has established a program for testing experimental treatments. This process was used to test and approve the Shared Roadway Bicycle Marking adopted by Caltrans in 2006. More information on the CTCDC process is found at http://www.dot.ca.gov/hq/traffops/signtech/newtech

The Federal Highway Administration (FHWA) has a federal program for testing experimental facilities for possible future inclusion in the Manual of Uniform Traffic Control Devices (MUTCD). More information about the FHWA process can be found at http://mutcd.fhwa.dot.gov/condexper.htm

Projects suggested by workshop attendees that could be implemented as experimental projects using the Caltrans CTCDC process, the FHWA process or another methodology include:

- Colored pavement treatments to indicate bicycle travel lanes through complicated intersections or crossings.
- “Cycle Tracks”, a style of bikeway separated from on-street traffic popularized in the Netherlands and other parts of Europe.
- Bicycle warning signs, such as those used in Portland, Oregon that effectively communicate messages such as “Bikes on Roadway” to motorists, possibly providing a clearer message than the adopted “Share the Road” signs.
- Bikeway/bike lane intersection crossing improvements such as those used in France, where bicycle stencils indicate to cyclists and motorists the path of travel of nonmotorized users through complex intersections.
- Use of raised crossings for pathway/roadway intersections, especially to provide increased protection for sidepath users.

Recommendation: Pursue innovative solutions where appropriate through the established Caltrans or FHWA process.
COUNTYWIDE PROJECTS

Bus Stop Access Improvement Program

Jurisdiction(s): County of Marin, local cities and towns, Marin Transit, Golden Gate Transit, Caltrans

Project Location(s): Countywide

Improving pedestrian, bicycle and ADA access through rehabilitation of bus stops in Marin County will improve the mobility for individuals through the county. High priority bus stops selected for this program will have one or more of the following: safety hazards, do not meet ADA accessibility standards, have more that 100 users a day, or are located near downtown areas or commercial cores. These access improvements will serve as models to the local jurisdictions, the County, Caltrans and the Marin County Transit District for demonstrating how making improvements to bus stop access can increase transit ridership, mobility, and the quality of life for the community.

The program will provide funding to bring each of the selected bus stops to the minimum bus stop amenity standards that were established as part of Marin Transit’s 2006 Short Range Transit Plan (SRTP). The chart on the next page details these standards according to bus stop usage.

Transit riders in Marin have identified bus stop improvements as a top priority for improving the transit system. In an on-board survey conducted in April 2005, availability of information at bus stops received the worst ranking of eleven service components. Improving bus shelters, posting information at stops, and providing real-time information were some of the most common suggestions from survey respondents in the open-ended section for comments and suggestions.

There are 761 bus stops on public roads in Marin County of which 168 are in unincorporated areas. Conditions at Marin County bus stops range from basic to unacceptable. A concentrated program of bus stop improvements is necessary to bring Marin County bus stops up to an acceptable standard. More than any other improvement in the system, improving information and conditions at bus stops will send a positive message to customers and improve the connection with communities, and encourage new riders to use the system.

Each bus stop rehabilitation may include the following components:
  1) Resolution of any safety concerns (inadequate sight distances, crosswalks in bus zone, etc). This may result in stop relocation, bus bulbs, and removal of obstacles.
  2) Adding or rehabilitating ramps, paths, and sidewalks to meet ADA accessibility standards.
  3) Improving connections with existing pedestrian and bicycle networks.
  4) Adding shelters where desired and physically feasible. Where a shelter is not feasible, a bench or other seating will be considered as an alternative.
5) Trash receptacles at all high usage stops or stops with shelters
6) Detailed signage to provide service information.
7) Provide bicycle parking, including lockers, at the highest volume locations, unless precluded by site constraints.

**Marin Transit Bus Stop Amenity Standards (2006 Short Range Transit Plan)**

<table>
<thead>
<tr>
<th></th>
<th>Transit Center</th>
<th>Pad Stop</th>
<th>High Use Stop (&gt;100/day)</th>
<th>Medium Use Stop (&gt; 50/day)</th>
<th>Low use Stop (&lt;50/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADA Accessibility</strong></td>
<td>Meets all requirements</td>
<td>Meets all requirements</td>
<td>Meets all requirements</td>
<td>Meets all requirements</td>
<td>Signed if not accessible</td>
</tr>
<tr>
<td><strong>Signage</strong></td>
<td>All Stops</td>
<td>All Stops</td>
<td>All Stops</td>
<td>All Stops</td>
<td>All Stops</td>
</tr>
<tr>
<td><strong>Information</strong></td>
<td>Kiosk, real time information if possible, displays of system map, route and schedule information. Identify transfer locations</td>
<td>Real time information if possible, displays of system map, route and schedule information. Identify transfer locations</td>
<td>Real time information if possible, displays of system map, route and schedule information. Identify transfer locations</td>
<td>Route map and schedule information</td>
<td>Route map and schedule where possible</td>
</tr>
<tr>
<td><strong>Shelters</strong></td>
<td>Shelters at all boarding locations</td>
<td>Shelters at all boarding locations</td>
<td>Shelters where physically feasible</td>
<td>Shelters optional</td>
<td></td>
</tr>
<tr>
<td><strong>Benches</strong></td>
<td>Benches throughout facility convenient to all boarding facilities.</td>
<td>Benches inside shelters and all boarding locations</td>
<td>Benches at all stops where physically feasible</td>
<td>Benches at all stops where physically feasible</td>
<td></td>
</tr>
<tr>
<td><strong>Other amenities</strong></td>
<td>Night Lighting, Trash receptacles, Public phones, Restrooms where possible Bicycle Storage</td>
<td>Night Lighting, Trash receptacles, Bicycle Storage</td>
<td>Night lighting, Trash receptacles, Bicycle Storage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Recommendation:** Develop a Bus Stop Access Improvement Program that supports and encourages the entities responsible for Marin County bus stops to rehabilitate bus stops in order to improve pedestrian, bicycle and ADA access throughout the county.
COUNTYWIDE PROJECTS

Interchange and Intersection Project

Jurisdiction(s): Caltrans, County of Marin, local agencies

Two areas have been identified as major safety concerns, especially for cyclists traveling between communities or across the county: freeway interchanges and locations where bike facilities cross signalized intersections.

Freeway Interchange Improvements

U.S. 101 in Marin County acts as a major barrier for bicyclists and pedestrians of all ages and abilities. Limited separated overcrossings means everyone, including young children, is forced to negotiate ramps and intersections—sometimes unprotected—with very high traffic volumes simply to reach school, work, or shopping destinations. Even transit users must negotiate these interchanges simply to reach the bus pads. A lot of public comment mentioned these locations from Novato to Sausalito as major barriers in the county.

This project recognizes both the complexity and the similar nature of the issue from interchange to interchange. Many interchanges share the same characteristics, meaning that prototype solutions probably have wide applicability. Caltrans itself has modified interchanges in Marin, notably the southbound East Blithedale off-ramp, partially to improve bicycle and pedestrian safety.

Rather than attempt to solve each interchange individually, which is beyond the scope of this Master Plan, this project encourages a multi-jurisdictional approach. A traffic engineering analysis needs to be done for each site, possibly by Caltrans itself or by the applicable jurisdiction (via a consultant if necessary), which would work with Caltrans to achieve the desired goals. The interchanges mentioned by the public and staff have been: (1) E. Blithedale/Tiburon Boulevard, (2) Tamalpais/Paradise Drive, (3) Sir Francis Drake Blvd., (4) Lucas Valley Road, (5) Ignacio/Bel Marin Keys Blvd, (6) Rowland Blvd., and (7) Atherton/San Marin. In this manner, similar problems at interchanges (such as high-speed loop ramps) can be addressed at one time rather than on a recurring basis.

Types of improvements that might be considered at interchanges include:

a. reducing the ramp entry/merge radius so that vehicles have to slow down rather than be able to accelerate
b. replacing speed ramps with signal-controlled intersections
c. improving crosswalks and warning signs
d. new or improved sidewalks or shoulders/bike lanes
e. separated facilities
Proposed System & Improvements

e. constructing new pedestrian crossings near interchanges to serve local needs, especially access to schools and parks for children. A new pedestrian/bicycle overcrossing of U.S 101 is included in the cost estimate, located in Corte Madera.

Recommendation #1: Establish a multi-jurisdictional project to identify and implement safety improvements for cyclists and pedestrians at freeway interchanges. Work with Caltrans to implement projects in conformance with Caltrans Deputy Directive 64.

Signalized Intersection Improvements

Cyclists, especially those traveling along major roads at night, are frequently faced with a dangerous double-bind when they arrive at signalized intersections. In the absence of suitable detection or push-buttons, they must frequently choose between running a red light in order to cross or waiting until a car approaches to trip the light in their favor. This creates a situation where cyclists are forced to behave illegally and thus endanger themselves and others.

Recommendation #2: Install and mark traffic detection loops or employ other detection such as video which are responsive to bicycles at all signalized intersections except timed signal locations.

New signal detectors that can detect bicycles and yet not be influenced by motor vehicles on the roadway should be installed where appropriate. Signal detectors and stencils identifying where bicyclists should place their bicycles to trigger signals should be reviewed and approved by the County Department of Public Works staff prior to implementation. Specific implementation criteria may include: sensitivity, impact of overlay projects, cost, and need. Possible alternatives to signal detectors may the use of push buttons that are convenient for bicyclists to use, although loops or video detection are preferable to ensure that cyclists remain safely visible to drivers in the roadway.
COUNTYWIDE PROJECTS

Safe Routes to Schools

Jurisdiction(s): Transportation Authority of Marin, County and local agencies, school districts, community groups

Project Location(s): All unincorporated areas

Since adoption of the 2001 bicycle plan, school commute improvements continue to be a major focus of public and staff comments, partially out of concerns about current safety and impacts of school-related traffic, and partially because of new State and Federal funding opportunities. In addition Measure A Strategies 4.1-4.3 provide local funding for Safe Routes educational and safety activities and capital improvements.

As noted in Chapter 3, the Marin Safe Routes to Schools program, now administered by TAM, has been extremely successful, both from the point of view of mode shift and traffic reduction but also because it is extremely popular with students, parents, advocates and elected officials. Given the growing size and scope of the Safe Routes program in Marin County, it is anticipated that the program will continue to produce numerous detailed infrastructure and education and safety recommendations.

Unincorporated Areas School Participation

Schools in the unincorporated areas of Bolinas, San Geronimo Valley, Tamalpais Valley, Greenbrae, Kentfield, Tomales, and Marinwood currently participate in the Safe Routes program.

Safe Routes to Schools projects and programs may be developed for other communities, such as Oak Manor, Marin City, Muir Woods, Santa Venetia, Stinson Beach and other unincorporated areas of Marin County. Virtually all schools in Marin, especially those not currently participating in the program, could use additional funds for bike racks/corrals and crossing guards, the latter of which are funded by Measure A Strategy 4.2.

More details about the Marin Safe Routes to Schools program’s specific elements, including engineering projects and education and outreach programs, can be found in the 2006 TAM report Marin County Safe Routes to Schools Evaluation and Recommendations 2005-2006. This plan encourages the implementation of the five key recommendations of that report, which follow.

Recommendation #1: Expand the Program to Other Schools

Since it began in 2000, the SR2S program has increased the number of schools that participate each year. For the 2005/2006 school year there are 45 schools participating, representing over 18,000 students. The parent survey showed a substantially higher rate of bicycle and walk commuting, and a lower rate of drive-alone commuting, at participating versus non-participating
Proposed System & Improvements

schools. These mode split differences between participating and non-participating schools demonstrate the effectiveness of the program at changing commute behavior, and indicate the need to continue to expand the program to additional schools. This recommendation includes expanding the program to encompass the unincorporated areas and projects/programs detailed above.

Recommendation #2: Utilize the Safe Pathways Program
One of the most exciting things Safe Routes has to offer parents is the opportunity to work on actual capital improvements that will make the route to school, and ultimately the whole community, safer. This requires on-going capital funding for Safe Routes projects, which the Safe Pathways to School program is meant to provide and facilitate. Where Safe Routes identifies needed circulation and safety improvements, the program is meant to provide the engineering, environmental clearance, and construction funding for pathway, sidewalk, and street-crossing improvements. The success of this program in leveraging state and federal dollars will benefit the entire community, as a safe network of bicycle and pedestrian facilities becomes a reality and local congestion is reduced. As the lack of safe pathways is the main reason why parents are unwilling to allow their children to walk or bike to school, it is in the best interest of the program to engage parents and clearly identify barriers for the implementation of traffic safety improvements. In 2007, the TAM board awarded $1.8 million to 12 projects in 9 communities. In future years approximately $500,000 annually will be available for additional projects.

Recommendation #3: Sustain and Increase Participation, Enthusiasm, and Continuity
The SR2S program success is due largely to its volunteers. The program needs to be creative and tireless at making team leader positions engaging and attractive. An email network and informal interactive events need to be established that build enthusiasm and promote participation among volunteers. Materials should also be evaluated for “user friendliness” so that team leaders are comfortable using them.

Volunteers should be encouraged to recruit and train their replacements, with positions of responsibility passing on from one year to the next. Volunteers who spend considerable time in one year should be encouraged to serve in an advisory capacity in the next year to mentor their replacements.

Recommendation #4: Continue to Remove Barriers to Alternative Modes
The parent survey revealed a high level of interest in alternative modes if the children were supervised and if the process to become involved did not require much effort. Parents would allow their children to bike or walk if accompanied by other parents or children. Carpooling would be an option if the matches were already established. These responses show that in order for alternative modes to be attractive, walk-, bike- and carpool should be organized for the parents, preferably by the team leader, to remove any barriers to participation.

Recommendation #5: Increase Transit Access
The survey also showed low public and school bus ridership among students for reasons including safety concerns at bus stops and inconvenient schedules. In its 2006 SRTP, Marin
Proposed System & Improvements

Transit established new service standards for supplemental school service in response to Measure A and implemented service changes to improve efficiencies as well as implemented a new youth transit pass program.

In the 2006-07 school year, Marin Transit implemented the Marin Transit Youth Pass Program. With the Youth Pass, registered Marin County students and youth under age 18 are able to ride on local routes in Marin without paying any additional fare during six-month periods. Marin Transit works with coordinators at Marin County Middle and High Schools to offer the Youth Pass twice per year during the Fall/Winter and Spring/Summer six-month periods. Currently, the Youth Pass costs $175 per six-month period. To participate, students must have a school-issued photo ID card upon which the Youth Pass is affixed and shown to the driver in order for the student to take the ride. Considering that the regular individual youth fare is $1 per ride, the purchase of the Youth Pass could amount to considerable cost savings as well as convenience for frequent youth riders. Students who qualify for free/reduced lunches will be eligible for free Youth Passes.

Marin Transit and Golden Gate Transit staff regularly monitor and evaluate ridership on the supplemental school routes and work to communicate any possible service changes with school and district administrators. Bi-annually, Marin Transit convenes a Marin Transit School Service Coordination meeting with school and school district representatives to discuss issues related to supplemental school service, the Marin Transit Youth Pass and any other issues or concerns related to local transit service and schools.

Marin Transit hopes that the Youth Pass program will accomplish similar objectives to the previous demonstration project by providing a convenient medium to local transit. Safe Routes to Schools should work to evaluate these changes as it continues to encourage bus ridership by Marin students.
COUNTYWIDE PROJECTS

Regional Connection Projects

Jurisdiction(s): Marin County, Caltrans, Novato, GGNRA, San Rafael, ABAG (Bay Trail), MTC

Project Location(s): Black Point, San Quentin, Ft. Baker, North Novato

Most (if not all) current intra-regional bicycle or pedestrian travel in Marin is across the Golden Gate Bridge, which carries the heaviest bicycle flows in the county. Bicyclists have been advocating for access to the Richmond-San Rafael Bridge, which has been studied but not approved by Caltrans to date. Bicyclists can use Golden Gate Transit buses which serve the Richmond BART station, and carry up to two bicycles per bus.

Other regional connections on U.S. 101 north of Novato and S.R. 37 to Black Point and Sonoma County involve the legal use of shoulders on very high speed and heavily trafficked highways. Narrow bridges without shoulders in several locations are safety concerns for cyclists. It is rare to see people walking or bicycling on either of these routes. Most bicyclists seek much longer rural road connections to Sonoma County rather than ride these busy highways. Currently the City of Novato is studying a Bay Trail connection from Bel Marin Keys to the Petaluma River Bridge as part of an alternative route along the Highway 37 corridor.

This project grouping consists of distinct components, which can be addressed jointly or separately by the appropriate agency:

1. Explore allowing bicycle access to the Richmond Bridge: Although the current configuration of the bridge is not ideal for cycling, this corridor is important for regional bicycle travel, as the only connection between Marin and Contra Costa Counties. The exact nature of a potential bicycle facility on the bridge is the subject of ongoing study by Caltrans. Current options being considered include a bikeway separated by movable barriers on one or both bridge decks, a fixed barrier on one deck or a separate bicycle and pedestrian structure parallel to the RSR Bridge.
2. Fill the gap between Marin and Sonoma counties by constructing a parallel, off-freeway route as part of the Marin-Sonoma Narrows freeway project.
3. Fill the gap between Marin and Sonoma counties by constructing a safe, continuous route along the Highway 37 through completion of this section of the Bay Trail.
4. Improve connections from Sausalito to the Golden Gate Bridge.
5. Provide shoulders, as appropriate, along Shoreline Highway, Pt. Reyes Petaluma Road, and Tomales-Petaluma Road to connect Marin with rural Sonoma County (see Rural Roads Improvement Project)

Recommendation: Partner with the appropriate agencies to support regional connections to the East Bay, Sonoma County and San Francisco as described above.
LOCAL BIKEWAY GAP CLOSURE PROJECTS – SOUTHERN MARIN

Mill Valley-Corte Madera Bikeway Project

Jurisdiction(s): Mill Valley, Corte Madera, County of Marin

Project Location(s): Unincorporated Mill Valley (Alto area)

One of the top priority projects in the county, based on public input in the 2006 public workshops and the previous outreach as a part of developing the 2001 plan, was the connection between Mill Valley and Corte Madera. Currently bicyclists use either Camino Alto or the U.S. 101 bike path via local neighborhood streets. Both of these routes are unsigned and involve climbing grades. This project involves improving the corridor between Mill Valley and Corte Madera. While most of corridor is in incorporated Mill Valley or Corte Madera, sections of the project are located within the unincorporated “Alto Area” which is situated at the northeast edge of Mill Valley. Furthermore, the County of Marin owns portions of the Alto Tunnel and its approaches and would direct its future use. This project is actually a corridor with three alternatives, including improving the existing two routes or reopening the abandoned Alto Tunnel. Only by making a comparison between the costs and benefits of each alternative can a rational decision be made. While an in-depth feasibility study is ultimately required, a preliminary analysis is presented below. Appendix C provides a comparison of distances, climbing elevations, and intersections associated with each option.

Recommendation: Based on the route comparison, the strong public support for this project and the need for further information to make an informed decision about the ultimate disposition of the tunnel, the County should conduct the Mill Valley –Corte Madera Bikeway study funded by the NTPP.

Comparison of Alternatives

U.S. 101 Bike Path (Caltrans)

This project would require improving the existing pathway, and new directional signage from the Mill Valley path and into Corte Madera. One resident suggested that this option be extended through Corte Madera to connect directly with the north-south bikeway near the High Canal Bridge.

Advantages
  a. already in-place, requiring minor improvements
  b. low cost and impacts
  c. relatively direct connection to destinations on the U.S. 101 corridor
Proposed System & Improvements

Disadvantages
   a. Less direct for users headed for the Magnolia corridor and Ross Valley
   b. Noise and pollution from the freeway
   c. Involves climb of very steep hill

Camino Alto Improvements (Mill Valley/Corte Madera)

This option would include developing two to three feet wide shoulders on the Corte Madera Grade, at least on the uphill sides, by narrowing travel lanes and/or widening the roadway as much as feasible. Camino Alto is not currently an official bike route in Mill Valley.

Advantages
   a. addresses most popular existing connection
   b. provides a safety benefit for all roadway users
   c. provides local residents a place to walk and bicyclists with a shoulder to stand on in case of emergencies

Disadvantages
   a. may be costly to construct
   b. may have negative environmental impacts
   c. does not change need to climb substantial grade

Alto Tunnel (Corte Madera/Mill Valley/County)

Many people have identified re-opening the Alto Tunnel as a top priority. As a part of the development of their local plans, both the Corte Madera BPAC and the Mill Valley BPAC were in favor of the project. Neither Mill Valley nor Corte Madera has committed to sponsoring and operating the tunnel, but both have in the past expressed support for further feasibility study. This is important because for this to be a viable option, both communities would need to support this project.

Project Background

The Alto Tunnel was built in 1884 and is located in Marin County along the former Northwestern Pacific Railroad right-of-way. On average, the tunnel is 16-feet wide and 20-feet high and served as a single-track rail tunnel for nearly ninety years, connecting Corte Madera and Mill Valley. In 1958, there was a substantial upgrade to the northern portal, which remains intact and in good condition today. The tunnel remained open until 1971, when substantial bulkheads were added at each portal to prevent entry. In 1975, a plug extending approximately 125-feet was added near the north end of the tunnel and in 1981, there was a collapse at the southern portal. The southern portal area was stabilized in 1982 with gravel and earth fill, which remains today. The middle 1600-feet of the tunnel remains sealed off from both ends today and likely has the original redwood timber support system in place though moisture and lack of ventilation have likely caused deterioration of the timbers and partial collapses in some areas.
The County of Marin owns the property on either side of the tunnel, and the railroad right-of-way has historically been regarded as a transportation corridor. Since the 1970s, the County has had plans to include the tunnel as an element of the North-South Bikeway which would run along the Northwestern Pacific Railroad right-of-way. There is currently a three-mile multi-use pathway, part of the North-South Bikeway, that extends from Sausalito through Mill Valley, terminating near the south portal of Alto Tunnel. The North-South Bikeway continues north near the north portal of Alto Tunnel, through Corte Madera and Larkspur and is ultimately planned to extend over Corte Madera Creek and East Sir Francis Drake Boulevard to connect with the Cal Park tunnel. Currently the right of way immediately adjacent to the tunnel portals has reverted to an unmaintained state and in cases has been encroached upon by surrounding property owners’ yards and gardens.

Summary of Results of Scoping Studies

In 2001 the County of Marin DPW commissioned the Alto Tunnel Scoping Study to determine the conditions inside the tunnel. Volumes I and II of the study showed that the conditions inside the tunnel vary, from structurally sound to concrete plug to stable but deteriorating and fully collapsed, as described above. The study concluded that the most cost-effective method for completing Volume III of the study would be to bore through the concrete plug at the north portal of the tunnel to make visual inspection of the tunnel interior.

Cost Estimates

There have been various estimates as to the cost of reopening the tunnel over the years but until a detailed study is conducted, the true cost cannot be known.

Conclusion

While the idea of using the tunnel has been around for some time, the notion of a bikeway tunnel in Marin is probably difficult for most people to envision what it would like or what the impact would be to bicycling and walking in the county. Most people cannot imagine being able to ride a bicycle on a level route between the two communities in about 10 minutes of easy riding. Many people have raised questions about who would operate the tunnel, how it would be lit, how much it would cost, and if it would be safe. With the reopening of the Cal Park Tunnel scheduled for 2008 many of these questions are in the process of being answered.

Research conducted around the country has revealed that there are a few bikeway tunnels in use that are longer than the Alto Tunnel, and approximately 78 existing comparable tunnels are in use in the United States. For example, the Capital Crescent trail in suburban Maryland has a bikeway tunnel that operates apparently with no significant safety or security problems. Extensive study on multi-use path safety around the country shows that crime rates are typically the same or lower than in the surrounding community.

Having said this, there is no doubt that providing a level direct connection removed from traffic between southern and central Marin would have a dramatic positive impact on bicycle and
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pedestrian usage for commuting and recreation. The connection would essentially provide a level, separated connection from Sausalito to Corte Madera, Larkspur, the upper Ross Valley, and central San Rafael. Preliminary 2001 estimates indicate that the tunnel alone could attract an additional 800 bicyclists during a typical weekday, many of whom were driving previously. The corridor study will evaluate potential users as part of its work program.
LOCAL BIKEWAY GAP CLOSURE PROJECTS – SOUTHERN MARIN

Bikeway Access Improvements – Southern Marin

Jurisdiction(s): Caltrans, County, Sausalito

Project Location(s): Sausalito/Marin City and Tamalpais Valley/Tam Junction areas

Attendees at the public meetings and Southern Marin residents have identified two key locations in Southern Marin where access to the North-South Greenway is problematic: the Gate 6 Road/Bridgeway intersection and the area in Tamalpais Valley along Shoreline Highway from Highway 101 to Almonte.

Gate 6 Road Intersection Improvements

Nonmotorized users at this intersection experience challenges in nearly every direction of travel. Southbound cyclists on the Mill Valley Sausalito pathway have no clear route to traverse the intersection to get to the southbound Bridgeway bicycle lanes. Northbound cyclists are in conflict with southbound cyclists riding the wrong way to avoid crossing the intersection. Both cyclists and pedestrians encounter conflicts from a free double right turn from Donahue Drive onto southbound Bridgeway. Possible improvements could include:

- Establishment of a clear southbound route for cyclists traveling from the pathway to the bicycle lanes. This could include standard treatments such as signal loop detectors or video detection and pavement markings. It could also incorporate innovative devices such as an advance bicycle box and pavement markings designating the path of travel through the intersection for cyclists, which may require review and approval by the CTCDC.
- Retiming of signals and resigning the intersection to eliminate the free right turn onto southbound Bridgeway.
- Retiming of signals to ensure appropriate pedestrian phase length.
- Provision of pedestrian push-buttons and countdown pedestrian signal heads.

Tam Valley Loop

The proposed Tam Valley Loop would connect together existing bikeway facilities in a route that would serve local residents, visitors and recreational riders. Improvements could include:

- Provision of Class II bicycle lanes on Shoreline Highway between the Tennessee Valley Pathway crossing at Tennessee Valley Road and Northern Avenue.
- Construction of the Tennessee Valley and Manzanita pathways connecting the Manzanita Park and Ride lot, the Mill Valley-Sausalito Pathway, and the Tam Community Center. This project is currently funded through the Nonmotorized Transportation Pilot Program.
- Pedestrian and bicycle crossing safety improvements at locations around the Manzanita park and ride and freeway interchange. Safety improvements at the southbound off ramp area at Shoreline and at the on/of ramp area on the southeast
side of the interchange at the end of Shoreline at the existing pathway are both priorities. In the short term these improvements are assumed to be at-grade although grade separated crossings should be considered for the long-term.

- Study of long-term improvements to this area, including resurfacing/reconstruction of the existing Tennessee Valley Pathway and extending the pathway to the south towards the Tennessee Valley trailhead.
- Encourage Caltrans to investigate the feasibility of utilizing colored bike lanes to delineate bicycle and vehicle travel corridors on Shoreline Highway between the Tennessee Valley Path and Almonte Blvd.

**Recommendation:** Implement near-term bike lane or pathway and crossing safety improvements on Shoreline Highway and study long-term crossing improvements as well as the pathway and bicycle lane project in Tennessee Valley.
LOCAL BIKEWAY GAP CLOSURE PROJECTS – CENTRAL MARIN

Central Marin Ferry Connection Project

Jurisdiction(s): Corte Madera, Larkspur, Marin County, GGBHTD, Caltrans, SMART

Project Location(s): Unincorporated, Larkspur, and Corte Madera

Based on existing riding and walking patterns, this multi-jurisdictional project remains one of the most important gap closure projects in Marin and is a key link in the North/South Greenway. First, it is at the crossroads of almost all trips between central and southern Marin County. Second, it serves the Larkspur Ferry Terminal, a major destination and one that should be easily reachable by walking or bicycling from many residential areas. Third, the current condition consists of a narrow sidewalk along the U.S. 101 northbound offramp over Corte Madera Creek with minimal separation from fast moving traffic. Fourth, it connects numerous destinations and bikeway segments, including the existing Sandra Marker Trail (North/South Greenway) to the Cal Park Hill Multi-Use Pathway, planned to reopen in 2009.

In 2004 the City of Larkspur and ABAG’s Bay Trail Project commissioned a detailed feasibility study to compare options for closing the gap, as recommended in the County’s 2001 bicycle plan. After reviewing the analysis presented by the feasibility study, the Technical Advisory Committee unanimously recommended the following at their February 4, 2004, meeting.

The City of Larkspur study identified the preferred alignment for the Central Marin Ferry Connection project, which essentially follows the old Northwestern Pacific Railroad right-of-way between Wornum Drive in Corte Madera, across Corte Madera Creek, across East Sir Francis Drake Boulevard on a new high-level bridge to the Cal Park Hill Pathway. The TAC concluded that this option provides the most functional, direct, and enjoyable route for pedestrians and bicyclists. Potential problems with the high-level bridge include maintenance costs and environmental impacts. The Bay Conservation and Development Commission participated in this analysis.

Should a high level bridge not be feasible for maintenance or environmental impact reasons, alternative alignments are proposed that cross Corte Madera Creek on the highway structure, providing a connection to the pathways on the south side of the creek.

Since that time the project has been incorporated into TAM’s more comprehensive and larger Greenbrae Corridor Improvements Project and some dedicated funding is secured from Regional Measure 2 funds.

Recommendation: Continue to pursue implementation of Central Marin Ferry Connection Project.
LOCAL BIKEWAY GAP CLOSURE PROJECTS – CENTRAL MARIN

Puerto Suello Hill Gap Closure Project

Jurisdiction(s): San Rafael, County of Marin, SMART, TAM, Caltrans

Project Location(s): Puerto Suello Hill/Los Ranchitos area

Unlike other gap closure projects in Southern or Central Marin, there are actually existing direct, local streets (Lincoln Avenue and Ranchitos Road) available to bicyclists and pedestrians over Puerto Suello Hill, also known as Lincoln Hill. While these routes carry moderate traffic volumes, both roadways have been identified in workshops as problem areas, due to lack of bike lanes or shoulders and, on Lincoln Avenue, on-street parking.

Ranchitos Road Bike Lanes
The County of Marin plans to provide bike lanes on Ranchitos Road between the northerly San Rafael city limit (near Northgate) to the southerly city limit at Puerto Suello Hill. This project is funded through grants and the Nonmotorized Transportation Pilot Program.

Puerto Suello (Lincoln) Hill Pathway
The Transportation Authority of Marin (TAM), Caltrans, SMART and City of San Rafael coordinated a project to complete the gap from Mission Avenue in San Rafael to the top of Puerto Suello Hill, consisting of a continuous Class I Pathway running parallel to Highway 101 on the west side. The project includes access from a spur path at Linden Lane as well as an underpass of the existing Highway 101 on/off ramp area near the top of Lincoln Avenue. This project is under construction and is expected to be completed by late 2008.

Taken together, the two projects above close a gap in the North-South Bikeway. However, the Ranchitos Road bicycle lanes do not provide any pedestrian accommodation through this area and existing pedestrian routes on Merrydale Road are steep and incomplete. During the development phase of the Puerto Suello Hill Pathway, it was decided to limit the project to the defined extents – Mission Avenue to the top of Lincoln Hill. A future direct connection between this path and the SMART path to the north is proposed as part of the SMART project.

Appendix C provides a comparison of distances, climbing elevations, and intersections associated with viable routes over Puerto Suello Hill.

Recommendation: Construct the Puerto Suello Hill Pathway through the Caltrans HOV Gap Closure Project; complete the bicycle lanes on Ranchitos Road; and pursue improvements to the Merrydale Road Class I pathway from the top of Puerto Suello Hill to North San Pedro Road as Phase II of the Puerto Suello Hill Pathway.
LOCAL BIKEWAY GAP CLOSURE PROJECTS – CENTRAL MARIN

College of Marin Bicycle Access Improvements

Jurisdiction(s): Larkspur, Ross, Marin County

Project Location(s): Kentfield, Ross, Larkspur

This project calls for improvements in the unincorporated areas surrounding the College of Marin Kentfield campus. Specific improvements would include:

- Extend the existing bike lanes on College Avenue from the Corte Madera Creek Path to Sir Francis Drake Blvd.
- Establishment of a Kent Avenue bicycle route from the Ross border to College/Magnolia, employing Shared Roadway Bicycle Markings to designate safe riding areas outside the “door zone” alongside parallel parking.
- A pedestrian beacon was installed at the pathway crossing at College Avenue. Future crosswalk improvements could include striping a high visibility crosswalk and flashing in-pavement crosswalk warning lights.
- Designation of Sir Francis Drake between Ross and Larkspur as a “Bikeway Special Study Area”. The high traffic volumes and varying geometry of this corridor make it too complex to establish one facility type along its entire length. Further study is needed to determine appropriate improvements.
- Conduct a pathway study to determine feasibility of widening the Corte Madera Creek pathway between College Avenue and Lagunitas Road in Ross. This would be a partnership between the County of Marin and the Town of Ross to address this narrow segment in both jurisdictions.
- Improve bicycle and pedestrian access and facilities at bus stops serving the college

Recommendation: Pursue near-term improvements on Magnolia, College and Kent Avenues while studying the Sir Francis Drake corridor and the Corte Madera Creek Pathway for further improvements. Work with the College of Marin to provide and/or enhance bicycle and pedestrian circulation and facilities on the campus.
LOCAL BIKEWAY GAP CLOSURE PROJECTS – NORTHERN MARIN

Oakview Connector Project

Jurisdiction(s): San Rafael, Marin County, Caltrans

Project Location(s): Unincorporated Marinwood

This project is a potential public-private partnership in which local development and construction of a new roadway would be used as an opportunity to create a key linkage through an area of unincorporated Marin.

The Oakview Connector is proposed to be a combination of Class II bike lanes and Class I Pathway between the end of Los Gamos Road at Lucas Valley Road and the end of Marinwood Avenue to the north. New street construction at the south end of Marinwood Avenue as a part of planned development would allow for on-street bike lanes to be extended south through the new neighborhood. At the point the new street ends, approximately 0.5 miles south of Miller Creek Road, a new Class I pathway would connect the neighborhood to the north end of Los Gamos. Alignment of the path would be affected by the future reconstruction of the Lucas Valley interchange.

This project has been established as a priority for four reasons. First, it serves as an important connector for the populous neighborhoods of North San Rafael which currently have limited bikeway access opportunities. Second, the project has the potential for minimal fiscal impact if it can be funded entirely through development mitigation requirements. Third, the project will connect directly to the existing Pacheco Hill Pathway that leads to Novato and to Los Gamos Drive, which provides a flat connection for cyclists and pedestrians to Terra Linda. Fourth, the project creates an important second route out of a cul-de-sac community, essential for encouraging bicycling and walking by adapting the suburban form to human-scale transportation.

Recommendation: Pursue the Oakview connector through public-private partnership as a condition of development where possible; pursue funding to design and build segments that must be completed by public agencies.
LOCAL BIKEWAY GAP CLOSURE PROJECTS – NORTHERN MARIN

Novato Bike Lane Projects

Jurisdiction(s): Novato, Caltrans, Marin County

Project Location(s): Unincorporated Novato

Staff, the public, and Committee members requested a variety of improvements to the main bicycle corridors in Novato, which already provide by far the most bike lanes in the county. One project would be the completion of Atherton Avenue Bicycle Lanes between Oak Shade Lane and Bugeia Lane and between School Road and Highway 37 so as to provide a continuous Class II bikeway between Highway 101/San Marin Drive and Highway 37/Harbor Drive. Another project funded by the NTPP will reconfigure the unincorporated section of Alameda Del Prado to provide a Class II bikeway consistent with the adjacent Class II facility within the City of Novato’s jurisdiction. The improvements would essentially involve the narrowing/reconstruction of the existing median, repaving the roadway, and restriping to designate the new bikeway. This project would also involve minor coordination with the City of Novato. The Alameda del Prado project has been consistently identified as the top priority for improvements to unincorporated Novato.

Recommendation: Implement near-term bicycle lane improvements on Atherton Avenue and construct the Alameda del Prado improvements.
LOCAL BIKEWAY GAP CLOSURE PROJECTS – WEST MARIN

Whites Hill Gap Closure Project

Jurisdiction(s): Marin County, Fairfax

Project Location(s): Trestle Glen/Baywood Canyon, Woodacre, West Marin

As with other gap closure projects defined by connecting two communities separated by hills, this project involves several alternatives. Any alternative that utilizes private property will require negotiation with the owner first. Appendix C provides a comparison of distances, climbing elevations, and intersections associated with each option.

Option #1: Improve the existing shoulders on Sir Francis Drake Blvd. between the Fairfax Town Limits and San Geronimo Valley Drive. At a minimum, shoulders should be provided in the uphill direction on both sides of the hill.

Option #2: Evaluate the White’s Hill Tunnel as a potential connection to Woodacre. While this would provide a level direct connection between Fairfax and San Geronimo Valley, it has significant obstacles. First, the tunnel is known to be at least partially collapsed. Second, both approaches have constraints including fill material on the West Side, and private property issues on the east side. Finally, the east approach would require a new undercrossing of Sir Francis Drake Boulevard so that bicyclists and pedestrians would not have to cross this road on a blind curve.

Option #3: Evaluate the use of the original NWP narrow gauge (North Pacific Coast Railroad) grade that was used between 1875-1904. This route is visible from the White’s Hill summit looking down Ross Valley and on the San Geronimo Valley side as well. This route could provide a gentle, steady grade for people climbing White’s Hill, especially from Fairfax. There are several major obstacles to this proposal, however. First, the right-of-way is partially owned by the Open Space District which may not permit paving and bridge improvements in this area, while a couple of locations are privately owned. Access on the Fairfax side would require traversing a private development. There are several major gaps where trestles once existed and where current users are required to make steep descents and ascents. Creating a grade separated pathway connection through the summit cut would be extremely expensive, and would be necessary to avoid having people crossing the roadway on a blind curve.

Due to right-of-way issues and cost, option #1 has been identified as the most viable by County DPW staff.

Recommendation: Implement Sir Francis Drake shoulder improvements through the County’s roadway rehabilitation program.
LOCAL BIKEWAY GAP CLOSURE PROJECTS – WEST MARIN

Samuel P. Taylor Bike Path/East-West Bikeway Project

Jurisdiction(s): Marin County, State Parks, GGNRA

Location(s): Lagunitas, West Marin, Tocaloma, Jewell, Pt. Reyes Station

The segment of the former NWP narrow gauge line between Woodacre and Pt. Reyes Station followed the course of Lagunitas and Papermill Creeks, creating an ideal location for a multi-use path when it was abandoned. Part of this right-of-way is already in use as a paved trail between Tocaloma and Samuel P. Taylor State Park, offering an important safety amenity to pedestrians and bicyclists moving through this corridor. It also offers a direct safety benefit to motor vehicles, by removing a large number of bikes that need to share the narrow, twisting roadway.

In 2005, the Inkwells Bridge was completed, fulfilling the first of the recommendations for this project identified in the 2001 County bicycle plan.

This project is composed of several remaining components, described below.

1. Pathway surface upgrade: It is recommended that a ten-foot hard surface be installed on the current soft-surface path to link with the existing paved segment through Samuel P. Taylor Park. A substantial area alongside the proposed hard surface area should be left as a softer surface for pedestrian and equestrian use. Where feasible, this soft surface area should be of equal width to the hard surface area, to ensure equity among users.

2. Alternative surfacing methods should be explored to provide a hard surface for the above pathway that can be efficiently maintained and provide ADA compliance while preserving the natural character of the existing facility.

3. Improve the existing paved section through Samuel P. Taylor Park to Tocaloma, especially maintenance in the winter and fall.

4. Continue to explore the feasibility of extending the trail 5.2 miles from Tocaloma to Pt. Reyes Station, through private ranchland and GGNRA property. This link would provide a total of 10.6 miles of separated pathway between the Shafter Bridge and Pt. Reyes Station, offering a uniquely level scenic route and important safety benefits to the area residents and numerous visitors. Potential constraints to this linkage, other than gaining access to private property with active cattle operations, would be environmental impacts, open space impacts, and the need to reconstruct a bridge of significant length across Lagunitas Creek near Pt. Reyes Station.

5. Support the development of a pathway or bicycle lanes (or a combination of the two, as appropriate) to connect Point Reyes Station to Inverness Park. Other segments (particularly those between Inverness and Inverness Park may need to be addressed by improvements along Sir Francis Drake in unincorporated Marin jurisdiction. This
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Segment of the project was consistently identified by West Marin residents as a top priority.

Recommendation: Pursue the above five recommendations with the goal of implementing, where possible, a continuous east-west route between Lagunitas and Inverness Park separated from automobile traffic, to the extent feasible.
5.5 Additional Local Community Bikeway and Pedestrian Project Ideas

Residents of Marin’s unincorporated communities, organizations and committees contributed a major amount of information during the development of the 2001 Plan and again through the public workshop process in 2006 during the development of this update. The following project ideas have been suggested by these individuals, local advisory committees, and/or staff. Some of these projects were carried forward from the previous 2001 plan and some were suggested during the recent public workshops.

All of the ideas identified in the following descriptions are strictly concepts at this point. The need, feasibility, impact, location, cost, or other basic information is not known. The purpose of listing ideas or concepts here is to initiate discussion and, if appropriate, additional feasibility analysis, ultimately leading to adoption by the Board of Supervisors.

Recommendation: Local planning groups, organizations, and others, in conjunction with the County of Marin, should initiate local discussions and planning for bikeway and pedestrian projects, some of which are listed below. Where needed, conduct additional analysis to determine overall project feasibility cost, impacts, and other information. Prior to implementation, additional public and CEQA input and review should be completed, along with needed funding, design, and construction.

5.5.1 West Marin

West Marin is a unique land setting of agricultural, urban, recreational, and tourism uses. West Marin comprises the area south to Stinson Beach, and north to Tomales along with the San Geronimo Valley and the Point Reyes Peninsula.

The West Marin area gets 2.6 million plus visitors per year to the Point Reyes National Seashore, and has roads not conducive to safe bicycle and pedestrian travel. Features of this area include former railway right-of-ways, levee roads, existing road rights-of-way and the possibility for roadway reconfiguration to allow for safer use by pedestrians and bicyclists.

West Marin is in need of improved routes linking its communities for safe pedestrian and bicycle travel. Specific routes to be considered in linking communities in West Marin for pedestrians and bicyclists are:

1. Tocaloma to Point Reyes Station
2. Tocaloma to Olema
3. Point Reyes Station to the Bear Valley Visitors Center
4. Point Reyes Station to Inverness
5. Olema south paralleling Highway 1 to Bolinas (Rift Zone Trail)
6. Olema to the Bear Valley Visitors Center
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7. Point Reyes to Marshall  
8. Highway 1 corridor south from Bolinas to Stinson and Muir Beach Communities

Pt. Reyes and Inverness Area

The document “West Marin Pathways Study” prepared by Brian Wittenkeller & Associates for County of Marin and community group “West Marin Paths” dated August 1988 provided detailed route information for Point Reyes Station to Inverness and the Visitor Center. Concerns with potential costs and ecological effects put the plan on hold. A portion of the path was constructed in the vicinity of White House Pool west of Point Reyes Station and is currently maintained by the Marin County Parks Department.

Consideration of the following should be made for a network of paths in this area of West Marin:

1. This Plan should be coordinated with National Park Service General Management Plan for Point Reyes National Seashore.  
2. The Rift Zone Trail should be identified as a possible bicycle and pedestrian corridor for safe travel between Olema and Bolinas.  
3. Sir Francis Drake Blvd. and Highway One in Olema are unsuitable for pedestrian foot traffic. Design considerations should be suggested to improve the safety on this stretch of road.  
4. Explore the possibility of a path from Tocaloma to Olema.

Bolinas

Since the development of the 2001 plan, the Bolinas bicycle group has made progress on two bike path projects. One connects Bolinas School to downtown Bolinas and is incorporated in the pathway recommendations elsewhere in this plan while the other connects downtown Bolinas to the Mesa neighborhood area. The former project has partial funding and is in the process of being designed.

Muir Beach

1. Improve shoulders on Panoramic Highway and Muir Woods Road where feasible.  
2. New crosswalks in heavily crossed trailhead locations, such as the Dipsea Trail and the Panoramic-Bayview intersection.

Stinson Beach

1. Intersection of Highway 1 and Calle del Mar in the center of town: need improvements for pedestrians and bicyclists to safely cross this busy intersection.  
2. Install better signage and flashing warning light at the Stinson Campus of the Bolinas-Stinson School on Highway 1.  
3. Create a designated pick up or drop off area for students. A safe walkway from this area to the school gate is needed.
4. Install bike racks or lockers at all points of use, together with informational placards to direct usage. This will encourage greater bicycle usage for local recreation and commercial business, as well as provide bicycling visitors with an opportunity to patronize local businesses and recreational facilities on foot.

5. Advisory and warning signs should be installed where appropriate at all areas of use and congestion.¹

6. Shoulders should be improved where feasible.¹

**San Geronimo Valley**

1. Consider a lighted crosswalk at Sir Francis Drake and the Old Forest Knolls garage (the west end of the “School Children’s Path”).

2. Create an improved route connecting from Meadow Way to the school. This may require the addition of a crosswalk and/or restoration of an existing short path.

3. Consider bikeway facilities on Castro Street and Meadow Way.

4. Construct a tunnel under Sir Francis Drake Blvd. between the school and Meadow Way

**5.5.2 Central Marin**

**Kentfield/Greenbrae Area**

Implement bicycle and pedestrian improvements to Wolfe Grade and Laurel Grove as appropriate and feasible.

Construct a Class I paths in and around the college campus connecting both sides of College Avenue with the Magnolia commercial area

**San Quentin**

Implement bicycle and pedestrian improvements between the prison gate and I-580 in San Quentin village as appropriate and needed.

**5.5.3 Southern Marin**

**North Strawberry & Alto**

Explore an east-west connection across U.S. 101 between the Alto Ridge and Tiburon Open Space areas.

**Tamalpais Valley/Tennessee Valley**

1. A multi-purpose pathway in the Tennessee Valley Road corridor to the GGNRA Trailhead.

¹ Under Caltrans jurisdiction.
2. Tamalpais Valley path along Highway 1 to Northern/Maple.

Almonte

The Almonte District Improvement Club has mapped locations where it would like to open steps, lanes, or paths between streets. These locations were designated with the original subdivision of the area but not accepted as public right of way at the time. Further analysis of this issue will be needed, considering cost, value, safety, egress, maintenance, and the potential role as a transportation improvement.

5.5.4 Northern Marin

Marinwood/Lucas Valley

The 2007 Marinwood/Lucas Valley Community Traffic Vision Plan outlines several proposals for projects within the community, including:

1. Construct a Class I pathway along Lucas Valley Road between Highway 101 and Westgate Drive
2. Improve intersection geometry on Lucas Valley Road to provide continuous Class II lanes and improve sight distance
3. Construct a Class I pathway or cycle tracks, roundabouts, speed tables, and high-visibility safety treatments on Las Gallinas Avenue and Miller Creek Road
4. Install bike lanes on Idylberry Road for its entirety and along Bridgegate, Westgate, and Creekside drives.
5. Connect to the future SMART pathway through St. Vincent’s/Silveira.


5.6 Pedestrian Projects

Preliminary pedestrian projects developed by Design, Community, & Environment are presented on the following pages. These recommendations consist of both prototype and site-specific types. In addition to this information, the County of Marin general plan provides policies regarding the implementation and integration of pedestrian needs into the transportation system.

New Sidewalks In Residential Neighborhoods

Many of Marin’s unincorporated communities and villages lack sidewalks. Although not every neighborhood may desire sidewalks, there will be places that could benefit from their installation. Safer trips by schoolchildren, shopping trips and recreation are just some of the reasons that a community may wish to see sidewalks built in one of their existing neighborhoods.
It is preferable that sidewalks be at least five feet wide, but in constrained situations could be four feet wide. This will allow two pedestrians to pass each other or walk abreast. Below are some basic guidelines that should be followed when installing new sidewalks.

**Sidewalks on Narrow Streets**

The illustration on this page shows the minimal solution for new sidewalks in existing neighborhoods. It shows a site constrained by a small setback to the existing house or significant landscaping and a narrow street condition that does not allow for a parking lane between the pedestrians on the sidewalk and the vehicular travel lane.
Sidewalks on Wider Streets

The illustration below demonstrates the preferred design where a lane of parking between the pedestrian way and the traffic lane. A parking lane is generally preferred for pedestrian safety since it separates pedestrians from moving cars. If the street is not wide enough to install this improvement, and the existing house or landscaping is set back far enough, the possibility of acquiring land to widen the right-of-way should be investigated.
Sidewalk with Planting Strip

The most desirable condition, as illustrated here, is for the pedestrian to be buffered from vehicular traffic by both a parking lane and a planting strip. This is particularly important on streets with higher traffic volumes. Ideally, the planting strip should contain street trees at an interval of 20 to 50 feet on center. The trees help to create a more amenable pedestrian corridor and give better spatial definition to the street. This can make the street appear narrower, which helps to slow vehicular traffic.

If the street is not wide enough to install this improvement, and the existing house or landscaping is set back far enough, the possibility of acquiring land to widen the right-of-way should be investigated.
Pedestrian Facilities On Constrained Residential Streets

Some neighborhoods in Marin County have severe constraints that prevent the installation of sidewalks. Such constraints would include the topography immediately adjacent to one or both sides of the street, significant trees or landscape features, small front yard setbacks and/or right-of-way limitations. This section shows various options for addressing pedestrian safety on these streets.

Sidewalk in Cut Slope Area

One option, as shown below, is to install a retaining wall along a hillside in order to provide preferably five feet, but minimally four feet for sidewalk access. Other topographical barriers could be overcome using similar soil retaining methods.
Access Ramps

In many locations in Marin County, corners do not have access ramps conforming to ADA standards. Improvements should be made as monies are available for projects at non-conforming intersections in accordance with applicable standards.

5.7 Enforcement, Education, and Support Programs

The Unincorporated Marin County Bicycle and Pedestrian Master Plan provides both physical recommendations (such as bike lanes) and program recommendations. Some of the program recommendations, such as possible 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. Some of these efforts will be provided by local agencies and non-profit groups, TAM’s Safe Routes to Schools Program, and in collaboration with public agencies and private sponsors.

5.7.1 Education

The school districts, police departments, and city and County departments of public works have a long history of trying to improve safety conditions for bicyclists and pedestrians. However, with the exception of the Share the Road program, motorists 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.

Recommendation #1: Expand Current School Education Programs

Per the recommendations in the previous section, existing school educational and encouragement programs should be expanded in a cooperative effort between the County, TAM, and the Marin County School Districts.

Recommendation #2: Expand and Formalize the Share the Road Program and Initiate a Share the Path Program

The existing Share the Road program consists of a partnership between the non-profit Marin County Bicycle Coalition and Marin County Law Enforcement. Currently MCBC is also working on developing a Share the Road toolkit as a part of a national model effort funded by the National Highway Traffic Safety Administration. NTPP funds are allocated for both programs through 2010, but the County of Marin or TAM should seek annual funding to continue the following elements of a Share the Road/Share the Path Program beyond 2010:
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- Checkpoints: At checkpoints, uniformed police, highway patrol officers, other law enforcement staff and volunteers stop vehicles, cyclists and pedestrians and provide them with Share the Road or Share the Path safety flyers.

- Basic Street Skills Classes: Classes are currently provided free of charge by the Marin County Bicycle Coalition and 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. TAM should seek annual funding for the provision of classes of this type, and on the bike training and on-street training for pedestrians.

- Share the Road presentation: This PowerPoint presentation was developed by NHTSA as a part of their toolkit intended for public outreach. The presentation could be presented to the public, to students through local high school drivers’ education classes and at government agencies as a standard training device, for example, for law enforcement or transit drivers.

5.7.2 Other Support Programs

Without community support, a bicycle/pedestrian plan lacks the key resources that are needed to ensure implementation over time. While the County Public Works Department may be responsible for designing and constructing physical improvements, strategies for community involvement will be important to ensure broad-based popular support. This support 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 County. Specific programs are described below.

Bicycle Donation Program

A fleet of loaner 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 County of Marin County may consider such a program and may wish to encourage private employers to follow suit by offering TDM credits or subsidized purchases of bicycles.

Bicycle Clunker and Parts Program, Bicycle Repair Program

A program already exists in San Rafael, the ‘Trips for Kids’ Re-Cyclery 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 to 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 bicycles themselves could be obtained from unclaimed stolen bicycles from the police department, or from donated bicycles. A program will need to qualify as a Section 501c(3) non-profit organization to offer tax deductions.

Community Adoption

Programs to have local businesses and organizations ‘adopt’ a Class I pathway similar to the adoption of segments of state highways. Small signs located along the pathway would identify supporters, 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. Parks & Recreation or other groups may administer this program.

Bike and Walking Fairs and Races

To encourage increased bicycling and walking, interest groups are well positioned to capitalize on the growing interest in on-road and off-road bicycle and walking races and criterions. Events would need to 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 and walkers, which could bring some additional expenditures into the area.

The County 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 County should also encourage these events to have races and tours that appeal to the less experienced cyclist. For example, in exchange for local governments underwriting part of the costs of a race, the event promoters could 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 County streets.

Employer Incentives

Beyond programs previously mentioned such as the Bicycle Donation Program, countywide employer incentives to encourage employees to try bicycling or walking to work include sponsoring bike fairs and races, providing bicycle lockers and shower facilities, providing convenient and safe bicycle parking for employees and customers, and offering incentives to employees who commute by bicycle or walking by allowing for more flexible arrival and departure times. The County may offer incentives to employers to institute these improvements through air quality credits, lowered parking requirements, reduced traffic mitigation fees, or other means. For example, the County of Marin has an award-winning Employee Commute Alternative Program designed to encourage alternative modes of transportation for their work...
Proposed System & Improvements

...commute through provision of cash stipends. This program includes incentives for bicyclists and actively participates in Bike-to-Work and Bike-to-School Days.

In addition to the existing 511.org annual bike-to-work days, the County and TAM should continue to help promote local bike or walk-to-work/school days, such as “Walk and Roll to School”. Bike-to-school days could be jointly sponsored with the School District, possibly in conjunction with bicycle education programs and through the Safe Routes to Schools Program.

5.7.3 Bikeway and Walkway Security

Unless covered by prior agreement, the Marin County Sheriff’s Department, using both bicycles and vehicles will perform enforcement of applicable laws on bike paths within the unincorporated County jurisdiction, depending on available resources and priorities. Note that additional funding for this effort will be needed. Enforcement of vehicle statutes relating to bicycle operation will be enforced on Class II and Class III bikeways as part of the department’s normal operations. No additional manpower or equipment is anticipated for Class II or III segments.

5.7.4 Marketing the Bicycle and Pedestrian Plan

The success of the Marin County Bicycle and Pedestrian Plan depends largely on the community’s acceptance and promotion of the Plan’s contents. The following are steps that will help ensure it becomes a living document, helping shape Marin County’s future.

- Most of these education and encouragement programs and activities will likely be cooperative efforts between Transportation Authority of Marin (TAM), the County of Marin, local governments, private sponsors, and community groups.

- Develop and hold bicycle and pedestrian planning and design training for all transportation engineers and planners at county and local levels.

- Implement Bicycle Friendly Businesses Program.

- Work with towing companies and emergency clean up crews so they better understand the needs of bicycles.

- Work with contractors and subcontractors and County and City maintenance and utility crews to help them better understand the needs of bicyclists and pedestrians.

- Develop, promote and publicize bicycle commuter services, such as bike shops selling commute gear and regular escorted commute rides.

- Create events such as “bicycle to the grocery store” days, when cyclists get vouchers for, or coupons off items in the store, or “walk to the movies” days, when cyclists and pedestrians receive free popcorn or a discount on a movie or refreshments.
• Create public service announcements on radio and TV to promote the health and livability benefits of bicycling and walking, as well as the detrimental effects of excessive motor vehicle use (e.g. pollution, traffic noise, congestion, loss of life and mobility).

• Work with the Department of Parks and Open Space to deliver a “benefits of bicycling and walking message” to youth that are working on water, air, and general pollution activities.

• Hold an annual community event to encourage residents to replace one car trip a week with a bicycle trip.

• Promote and publicize new and existing education and encouragement efforts by community groups and businesses.

• Support planning and implementation of an annual mass bicycling ride in Marin County to attract new riders, showcase Marin County, and demonstrate the benefits of bicycling.

• Develop and implement a public education campaign to encourage bicycling and walking, such as ads on movie screens, city bench, bicycle locker and billboard advertising, and videos on cable access television.

• Develop measures to reduce bicycle theft such as a registration program, subsidized locks, and training for proper locking techniques.

• Seek Bicycle Friendly Community certification from the League of American Bicyclists
6.0 Bikeway Design

Any bikeway that will be used primarily as a transportation (commuting) facility and will be constructed with transportation funding must conform to the Caltrans Highway Design Manual (HDM). Chapter 1000 of the HDM contains both advisory and mandatory design standards and guidelines for Class I shared use paths, Class II bike lanes, and Class III bike routes. In some cases the HDM provides very specific mandatory design standards, such as the minimum width of a bike lane. In other cases the HDM provides relatively vague guidelines, such as the description of where Class III bike routes should be located. Caltrans also provides specific standards for the type, location, and other details for bikeway-related signing. The HDM is very clear on one fact: all bikeways should be designed and approved by a licensed engineer.

The HDM provides a limited number of standards and guidelines for bikeway implementation. It does not provide, for example, specific guidelines for re-striping a roadway to accommodate a bike lane. In fact, the HDM covers roadway design for State Highways but not for local roadways. While not required, local agencies adhere to these state highway standards in some cases because they represent a widely accepted standard offer the broadest liability immunity. When a facility is constructed using design resources other than Caltrans advisory guidelines it is advisable to obtain a design exception from Caltrans or pursue the project as a part of the established Caltrans experimental project process for traffic control devices. Information on this program is provided in Chapter 5.

Aside from Caltrans, there is one other binding standard that affects bikeways: the Americans with Disabilities Act (ADA). Class I shared use paths are most often impacted by ADA in the requirements for barrier-free access and in maximum gradients.

In determining the feasibility of a proposed bikeway or the re-configuration of a street or intersection to provide a bikeway, a local agency would proceed in the same manner as they would with any public project. A feasibility study utilizing bikeway experts and a licensed engineer would reveal the type of designs that are feasible and meet accepted standards. The local agency may direct the design team to utilize Caltrans minimum standards, or allow the team to draw on other resources such as the American Association of State Highway Officials (AASHTO), which is a national organization that produces widely recognized guidelines for streets and bikeways. Local street standards for minimum travel lane widths are a matter of local preference and practice, based on sound traffic engineering principals. Outside of AASHTO recommendations, there is no current standard for minimum travel lane width on local roadways in existence in California today, but roadways that include frequent bicycle travel should be balanced with the need of safety for bicyclists, to determine appropriate and safe widths for both travel lanes and bike lanes.
7.0 Implementation Strategy

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

7.1 Implementation of Countywide Projects

Some of the primary goals of the Marin County Unincorporated Area Bicycle and Pedestrian Plan are to develop countywide projects such as bicycle parking or Safe Routes to Schools programs that serve all unincorporated areas, specific projects such as local bikeway gap closures, and multi-jurisdictional improvements on the Primary Regional Bikeway system.

Recommendation:

Projects identified in this Plan update have come from a variety of sources, including the Marin County Unincorporated Area Bicycle and Pedestrian Master Plan (June 2001), other projects and planning documents identified in Chapters 1 and 2, as well as from comments from agency staff and the public at a series of public workshops. 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 on the Primary County System may also be deemed higher priority projects.

7.2 Implementation of Local Projects

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

1. Adoption of the Unincorporated Area Plan by the Marin County Board of Supervisors,
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 Board of Supervisors, 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.
7.3 Cost Breakdown

An initial cost breakdown for bicycle and pedestrian infrastructure projects is presented in Table 7.1. The total capital cost is estimated to be approximately $62.3 million with approximately $22.5 million of funding secured and nearly $40 million remaining unfunded. 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. Funded costs include only capital projects for countywide or unincorporated area projects which have not yet been initiated (e.g. Cal-Park Hill Tunnel and Puerto Suello Hill Pathway projects are underway as of this writing and are not included). No secured funding for programs, including outreach, education and promotion, is included in this capital cost estimate table.
3. Maintenance costs are not included in this table; see sections 5.4 and 7.4 for maintenance costs.
4. Where there are several options, the most likely or cost effective option cost is used, or an average of option costs is used.
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.
6. Some capital costs are impossible to estimate at this time due to lack of data. For those projects the amount of allocated local funding for such improvements has been used as a program-level proxy for actual capital costs.

The projects listed in Section Five 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 Unincorporated Marin County, providing a network of bicycle and pedestrian 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.

<table>
<thead>
<tr>
<th>Table 7.1 Marin Bikeway &amp; Pedestrian System Cost Estimates</th>
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<tbody>
<tr>
<td><strong>HIGH-PRIORITY PROJECTS</strong></td>
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<tr>
<td>Countywide Bikeway Projects</td>
</tr>
<tr>
<td>Units/Miles</td>
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<tr>
<td>Type</td>
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## Implementation Strategy

### Countywide Bikeway Projects

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### Implementation Strategy

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<tr>
<th>Segment</th>
<th>Units/Miles</th>
<th>Type</th>
<th>Total Cost</th>
<th>Unfunded Cost</th>
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<th>Funded Cost</th>
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### Marin Bikeway & Pedestrian System Cost Estimates

#### UNINCORPORATED COMMUNITY AREA BIKEWAY PROJECTS

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<th>Segment</th>
<th>Units/Miles</th>
<th>Type</th>
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<th>Funded Cost</th>
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## Implementation Strategy

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<th>Segment</th>
<th>Units/Miles</th>
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<th>Funded Cost</th>
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<td><strong>Subtotal Community Area Projects</strong></td>
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<td><strong>Grand Total All Projects</strong></td>
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<td>$ 62,275,900</td>
<td>$ 39,677,600</td>
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1-NTPP funds allocation; actual costs may be higher
2-TAM Measure A SR2S funds allocation; actual costs may be higher
3-T3 Federal Earmark; actual costs may be higher
4-Cost estimate from 2001 Plan; engineering feasibility study needed
5-Not included in total cost estimate; more data needed
6-Funding dependent on passage of SMART ballot measure
7.4 Maintenance

The total annual maintenance cost of all existing and proposed county unincorporated area bikeways identified in this plan is estimated to be approximately $470,700 (2007 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 (2007 dollars) per mile\(^1\), 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 re-stripping 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.

Action: 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.

7.5 Security

Security may be an issue along portions of the proposed Class I bike paths, bridges, and tunnels. The following actions are recommended to address these concerns.

Action: Enforcement of applicable laws on paths will be performed using both bicycles and vehicles. In Marin’s unincorporated areas the California Highway Patrol is responsible for all vehicle code enforcement actions on all county roads, while the Marin County Sheriff’s Department is responsible for all civil and criminal matters. Enforcement of vehicle statues relating to bicycle operation will be enforced on Class II and Class III bikeways as part of the department’s normal operations. No additional manpower or equipment is anticipated for Class II or III segments. Class I paths may require additional patrol and enforcement services, whether by local police agencies or park rangers.

\(^1\) Transportation Authority of Marin Marin County Bike Path Maintenance Report, 2007
7.6 Funding Opportunities

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%. SAFETEALU 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

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..."
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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...
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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.
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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/

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

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

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

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

Sonoma-Marin Area Rail Transit (SMART)
Sonoma Marin Area Rail Transit (SMART) has been working since 1999 to plan, engineer and build passenger rail service along the former NWP right-of-way (ROW) for 70 miles from Larkspur Landing to Cloverdale. A continuous bikeway composed of a combination of multi-use pathways and on-street bikeways parallel to the rail line are included in SMART’s plans. Measure R appeared on the November 7, 2006 ballot in Marin and Sonoma Counties. The 0.25 cent sales tax ballot measure would have provided funds to establish passenger rail service, as
Implementation Strategy

well as a bicycle and pedestrian facility parallel to the rail line, for the 70-mile corridor from Larkspur Landing in Marin to Cloverdale in Sonoma. The Measure garnered more than 65% and was narrowly defeated by 1.34% between the two counties. The District has indicated that they plan to go back to voters again in November 2008 with the rail with trail plan.

SMART: http://www.sonomamarintrain.org

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**

Community Development Block Grants
The CDBG program provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements. Federal Community Development Block Grant Grantees may “use CDBG funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and
Implementation Strategy

improvements, such as streets, sidewalks, community and senior citizen centers and recreational facilities, paying for planning and administrative expenses, such as costs related to developing a consolidated Plan and managing CDBG funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs.”

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.

Other opportunities for implementation will appear over time that may be used to implement the system.

7.7 Financing

Proposed improvements and programs to be developed over the next 20 years in Marin County have been analyzed to determine the annual financing requirements, and to allow the County 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.

The County has historically invested approximately $125,000 annually in bicycle facilities. Most of these investments have been in the form of simultaneous development of bicycle facilities as part of road improvement or other larger projects or developments.
Glossary of Terms

For this study, it is important to understand the definition or use of the term ‘bikeway’. According to Caltrans, ‘bikeway’ means all facilities that provide for bicycle travel. Therefore, bikeway facilities could include bike paths, bike lanes, bike routes, and even support facilities such as parking racks and lockers. Other terms used in this report are presented below.

**ADA** - Americans with Disabilities Act.

**ADT** - Average Daily Traffic.

**BAG** - Bicycle Advisory Group – The County’s appointed advisory committee on bicycling and pedestrian matters.

**Bicycle Boulevard** - Streets designed to limit or prohibit motor vehicle traffic, using barriers or other design elements, in order to enhance bicycle safety and enjoyment.

**Bicycle Facilities** - A general term for improvements and provisions made by public agencies to accommodate or encourage bicycling, including bike racks and lockers, bikeways, and showers at employment destinations.

**Bicycle Sidewalk** – A sidewalk, typically wider than one solely for pedestrian use on which it is permissible for bicycles to ride.

**Bike Lane** - A striped lane for one-way bike travel contiguous to a travel lane on a street or highway.

**Bike Path** - A two-way facility separated from a street or highway for bicycle travel, typically along rail, water, or utility corridors.

**Bike Route** - A travel way for bicycles through a community, providing a superior route based on traffic volumes and speeds, street width, directness, and cross-street priority, denoted by signs only.

**Bikeway** - All facilities developed primarily for use by bicycles.

**Caltrans** – The California Department of Transportation

**Class I Bikeway** - See Bike Path.

**Class II Bikeway** - See Bike Lane.

**Class III Bikeway** - See Bike Route.
Appendix A

Clearance, Lateral - Width required for safe passage of a bicycle and emergency and maintenance vehicles as measured on a horizontal plane.

Congestion Management Program - A once state-mandated, now voluntary program recommending the monitoring and mitigation of increased congestion on regional highway routes and transit systems.

CMAQ - Congestion Management and Air Quality (TEA-21 funding program).

CMP - See Congestion Management Program.

CTCDC - California Traffic Control Devices Committee.

Cycle Track – A roadway intended exclusively for use by cyclists which parallels an adjacent roadway and is differentiated from a Class I path in that Class I paths may not necessarily parallel an adjacent road and may include other users. Cycle tracks can be one-way or bi-directional and may also have their own traffic control devices.

DPW - Department of Public Works

FHWA - Federal Highway Administration.

Geometry - The vertical and horizontal characteristics of a transportation facility, typically defined in terms of gradient, degrees, super elevation, and travel speed.

Grade Separation - Vertical isolation of travelways through use of a bridge or tunnel so that traffic conflicts are minimized.

Loop Detector - A device placed under the pavement at intersections which can detect a vehicle or bicycle and trigger an actuated or semi-actuated signal to turn green.

Marin County – For the purpose of this study, Marin County variously refers to the Marin County Department of Public Works, unless expressly stated otherwise.

Mode Split - Percentage of trips that use a specific form of transportation. A one percent bicycle mode split indicates that one percent of trips are made by bicycle.


NPTS - National Personal Transportation Survey.

PMS - Pavement Management System.

Reversion - Process by which bicycle facilities are removed or converted to non-bicycle use (travel or parking lanes) in the future.
Right-of-Way - The right of one vehicle or pedestrian to proceed in a lawful manner in preference to another vehicle or pedestrian. Also, the strip of land over which a transportation facility is built.

Shared Roadway - A type of bikeway (typically a bike route or bike boulevard) where bicyclists and motor vehicles share the same roadway with no striped bike lane.

Sight Distance - A measurement of the cyclist’s visibility, unobstructed by traffic or other barriers, along the normal path to the farthest point of the roadway.

STP - Surface Transportation Program (ISTEA funding program).

TAC - Technical Advisory Committee.

TAM - Transportation Authority of Marin, which serves as the Marin County Congestion Management Agency.

TCM - Transportation Control Measure.

TDA - Transportation Development Act.

TDM - See Transportation Demand Management.

TEA - Transportation Enhancement Activities.

TEA-21 - Transportation Equity Act for the 21st Century.

TMA - Transportation Management Agency.

Traffic Control Devices - Signs, signals, or other fixtures, whether permanent or temporary, placed on or adjacent to a travelway by authority of a public body having jurisdiction to regulate, warn, or guide traffic.

Traffic Volume - The number of vehicles that pass a specific point for a specific amount of time (hour, day, year).

Transportation Demand Measures (TDM) - Generally refers to policies, programs, and actions that are directed towards increasing the use of high occupancy vehicles (Transit, carpooling, and vanpooling) and the use of bicycling and walking with the express purpose of reducing or limiting vehicle cold starts and miles traveled for congestion and air quality purposes.

VMT - Vehicle Miles Traveled.

VT - Vehicle Trip.
Bicycle and Pedestrian Advocacy Groups

- Bay Area Bicycle Coalition (BABC) promotes safe and enjoyable bicycling for everyday transportation and recreation. The Bay Area Bicycle Coalition’s goal is to make the San Francisco Bay Area a national model for progressive bicycling policies, and to provide a safe and comprehensive network to facilitate bicycling throughout the region. www.bayareabikes.org

- Bicycle Trails Council of Marin (BTCM), an informational and educational non-profit founded in 1987 that sponsors free monthly skill classes and other education programs. BTCM also helps maintain and build trails. They can be reached at www.btcmarin.org or 488-1665.

- Bike the Bridge! Coalition was founded in 1996 and is working to secure bicycle access on all Bay Area bridges, including the Richmond-San Rafael Bridge. They can be reached at www.bikethebridge.org.

- Marin Center for Independent Living provides resources and support for residents of Marin County living with disabilities or mobility impairments – 710 4th Street, San Rafael, CA 94901, 415-459-6245  TTY/TDD: 7-1-1

- Marin Cyclists, a bike club featuring both road and mountain bike rides. It sponsors the popular Marin Century, and annual ride in August. They can be reached at www.marincyclists.com.

- Marin County Bicycle Coalition (MCBC), a non-profit organization founded by cyclists in 1998 to unify bicyclists in Marin. The MCBC has produced an excellent countywide bicycle map, available at bike shops. The MCBC can be reached at www.marinbike.org or (415) 456-3469.

- Marin County Bikeways Committee provides recommendations to the Board of Supervisors on bicycle policies and practices in Marin County. Contact information is available through the County.

- Marin County Naturalist Program – Address: Marin County Open Space District, 3501 Civic Center Drive, Room 415, San Rafael, CA 94903-4155. Phone: (415) 499-3647. Website: http://marinopenspace.org/openspnaturewalks.html

- Safe Routes to Schools was formed in 2000 to develop and organize a program to get more children walking and bicycling to schools and has since become a project of the Transportation Authority of Marin. They can be reached at www.saferoutestoschools.org.

- San Francisco Bay Trail Project was created in 1990 as a nonprofit organization dedicated to planning, promoting and advocating implementation of the Bay Trail. The Bay Trail is a planned recreational corridor that, when complete, will encircle San Francisco and San Pablo Bays with a continuous 400-mile network of bicycling and hiking trails. The Bay Trail project is administered by the Association of Bay Area Governments.

- Sierra Club – Local address: 827 Broadway, Ste. 310, Oakland, CA 94607. Phone: (510) 622-0290. Website: http://www.sierraclub.org/field/ca_nv_hi/

- Tamalpais Conservation Club – Phone: (415) 391-8021. Website: http://www.tamalpais.org

- Transportation Alternatives for Marin, a non-profit corporation whose mission is to promote pedestrian and cycling transportation globally by making Marin a model
community for walking and biking. Transportation Alternatives for Marin studies and recommends international best practices and works to build consensus to demonstrate that integrated bicycle and infrastructure, combined with education, is an integral part of an effective multimodal transportation system. 389-5040 x 24.

- Trips for Kids is an organization based in San Rafael that 1) takes inner city kids on mountain bike rides 2) trains kids on how to fix bikes 3) recycles bikes and 4) runs a shop with used bikes and other bike gear. They can be reached at 458-2986 or tfkbike@pacbell.net.
- Velo Club Fairfax (X) is the direct offspring of Velo Club Tamalpais, which was founded in 1972. V.C.F.X. was founded to promote cycling through the creation of competitive events such as the Marin Knobular in Fairfax. 457-8687.
- WOMBATS (Women’s Mountain Bike and Tea Society) provides mountain bike rides and skills classes. They can be reached at www.wombats.org
## Route Option Comparisons

### Table C-1
**Mill Valley-Corte Madera Route Option Comparison**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Distance (miles)</th>
<th>Total Climbing (feet)</th>
<th>No. of Intersections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U.S. 101 Route</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) E. Blithedale Avenue to Wornum Drive at Tamal Vista Boulevard.</td>
<td>3.2</td>
<td>200</td>
<td>18</td>
</tr>
<tr>
<td>b) E. Blithedale Avenue to Doherty Drive at Magnolia Avenue</td>
<td>4.4</td>
<td>205</td>
<td>27</td>
</tr>
<tr>
<td><strong>Camino Alto Route</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) E. Blithedale Avenue to Wornum Drive at Tamal Vista Boulevard</td>
<td>3.8</td>
<td>320</td>
<td>11</td>
</tr>
<tr>
<td>b) E. Blithedale Avenue to Doherty Drive at Magnolia Avenue</td>
<td>3.4</td>
<td>320</td>
<td>13</td>
</tr>
<tr>
<td><strong>Alto Tunnel Route</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) E. Blithedale Avenue to Wornum Drive at Tamal Vista Boulevard</td>
<td>3.1</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>b) E. Blithedale Avenue to Doherty Drive at Magnolia Avenue</td>
<td>2.8</td>
<td>50</td>
<td>5</td>
</tr>
<tr>
<td>a) towards San Rafael</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) towards Ross Valley</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table C-2
**Whites Hill Gap Closure Option Comparison**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Distance (miles)</th>
<th>Total Climbing (feet)</th>
<th>No. of Intersections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Option #1 – Sir Francis Drake Boulevard Whites Hill Route</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olema Road (near west end of Fairfax) to San Geronimo</td>
<td>4.0</td>
<td>385</td>
<td>5*</td>
</tr>
<tr>
<td><strong>Option #2 – Whites Hill Tunnel Route</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olema Road (near west end of Fairfax) to San Geronimo</td>
<td>3.8</td>
<td>235</td>
<td>10</td>
</tr>
</tbody>
</table>

* 5 intersections via SFD; 7 intersections via San Geronimo Valley Drive. SPD speed limit over Whites Hill is 35 mph, 55 mph beyond; residential streets are 25 mph.
Appendix D

Relevant Legislation and Policies

The following section provides information about four policies relevant to the implementation of the County of Marin Unincorporated Areas Bicycle and Pedestrian Master Plan, including Metropolitan Transportation Commission (MTC) resolution 875, MTC resolution 3765, Caltrans DD-64 and County of Marin Department of Public Works Multi-modal Policy 2006-01.

Metropolitan Transportation Commission (MTC) Resolution 875

This resolution adopts the "Transportation Development Act, Article 3, Pedestrian/Bicycle Projects" delineating procedures for submission of claims for Article 3 funding for pedestrian and bicycle facilities. It specifies requirements that local agencies must meet to receive such funding. The resolution states:

“Priority Setting

1. The county or congestion management agency shall establish a process for establishing project priorities in order to prepare an annual list of projects being recommended for funding. Each county and city is required to have a Bicycle Advisory Committee (BAC) to review and prioritize TDA Article 3 bicycle projects and to participate in the development and review of comprehensive bicycle plans. (BACs are mandated by State Transportation Control Measure [STCM #9], adopted by MTC on November 28, 1990, MTC Resolution No. 2178, Revised).

   A city BAC shall be composed of at least 3 members who live or work in the city. More members may be added as desired. They will be appointed by the City Council. The City or Town Manager will designate staff to provide administrative and technical support to the Committee.

   Cities under 10,000 population who have difficulty in locating a sufficient number of qualified members, may apply to MTC for exemption from these requirements. Cities over 10,000 population may also apply to MTC for exemption from the city BAC requirement if they can demonstrate that the countywide BAC provides for expanded city representation.

   A county BAC shall be composed of at least 5 members who live or work in the county. More members may be added as desired. The County Board of Supervisors and/or Congestion Management Agency (CMA) will appoint BAC members. The county or congestion management agency executive/administrator will designate staff to provide administration and technical support to the Committee.

   (Note: The intent is that BACs be composed of bicyclists/pedestrians.)

   2. The project lists developed by the City BACs shall be recommended to its City or Town Council. The Countywide Bicycle Advisory Committee will forward all city
project lists to the County Public Works Department or congestion management agency for evaluation/prioritization. County Committees will, at a minimum, be responsible for evaluating bicycle projects within the unincorporated portions of the county and setting a countywide prioritization list (based on city and county project lists) for annual TDA Article 3 allocations. Either the Board of Supervisors or the Congestion Management Agency (CMA) will adopt the annual countywide list and forward it to MTC for approval.”

The full policy can be found online on MTC’s website at:  
http://www.mtc.ca.gov/funding/STA-TDA/RES-0875.doc

**Metropolitan Transportation Commission (MTC) Resolution 3765**

This resolution sets forth MTC’s Regional Policy for the Accommodation of Non-Motorized Travelers during project planning, design, funding and construction. The policy states:

“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. These recommendations shall not replace locally adopted policies regarding transportation planning, design, and construction. These recommendations are intended to facilitate the accommodation of pedestrians, bicyclists, and disabled traveler needs into all projects where non-motorized travel is consistent with current, adopted regional and local plans. In the absence of such plans, federal, state, and local standards and guidelines should be used to determine appropriate accommodations.”

The full policy can be found online on MTC’s website at:  
http://www.mtc.ca.gov/planning/bicyclespedestrians/res3765final.pdf
Appendix D

California Department of Transportation
-Deputy Director Number: DD-64
Effective Date: 3-26-01
Supersedes: New Title: Accommodating Non-Motorized Travel

POLICY 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. This includes incorporation of the best available standards in all of the Departments practices. The Department adopts the best practice concepts in the US DOT Policy Statement on Integrating Bicycling and Walking into Transportation Infrastructure.

DEFINITION/BACKGROUND
The planning and project development process seeks to provide the people of California with a degree of mobility that is in balance with other values. They must ensure that economic, social and environmental effects are fully considered along with technical issues, so that the best interest of the public is served. This includes all users of California's facilities and roadways.

Attention must be given to many issues including, but not limited to, the following:
- Safe and efficient transportation for all users of the transportation system
- Provision of alternatives for non-motorized travel
- Support of the Americans with Disabilities Act (ADA)
- Attainment of community goals and objectives
- Transportation needs of low-mobility, disadvantaged groups
- Support of the State's economic development
- Elimination or minimization of adverse effects on the environment, natural resources, public services, aesthetic features and the community
- Realistic financial estimates
- Cost effectiveness

Individual projects are selected for construction on the basis of overall multimodal system benefits as well as community goals, plans and values. Decisions place emphasis on making different transportation modes work together safety and effectively. Implicit in these objectives is the need to accommodate non-motorized travelers as an important consideration in improving the transportation system.

RESPONSIBILITIES
Deputy Director, Planning and Modal Programs:

Ensures that the needs of non-motorized travelers are incorporated into the program element of Transportation Planning and the modal elements of the statewide strategy for mobility.

Deputy Director, Project Delivery:

Ensures that projects incorporate best practices for non-motorized travel in the design and construction of Capital projects.

Deputy Director, Maintenance and Operations:
Appendix D

Ensures that the transportation system is maintained and operated in a safe and efficient manner with the recognition that non-motorized travel is a vital element of the transportation system.

Ensures that the needs of non-motorized travelers are met in maintenance work zones.

District Directors: Ensure that best practices for non-motorized travel are included in all district projects and project planning. Ensure that best practices for non-motorized travel are implemented in maintenance and travel operations practices.

Chief, Division of Design
Ensures that project delivery procedures and design guidance include the needs of non-motorized travelers as a regular part of doing business.

Ensures that all Project Delivery staff is trained and consider the needs of the non-motorized traveler while developing and designing transportation projects.

Chief, Division of Planning:
Ensures incorporation of non-motorized travel elements in transportation plans, programs and studies prepared by Transportation Planning.

Ensures planning staff understand and are trained in the principles and design guidelines, non-motorized funding sources and the planning elements of non-motorized transportation.

Coordinates Caltrans projects with non-motorized interest groups.
Ensures incorporation of non-motorized travel elements in Corridor Studies prepared by Transportation Planning.

Chief, Division of Environmental Analysis:
Ensures that non-motorized travel groups potentially affected by Caltrans projects are identified and have the opportunity to be involved in the project development process.

Advocates effectively for all reasonable project-specific best practices that support or promote non-motorized travel.

Chief, Division of Maintenance:
Ensures State-owned facilities are maintained consistent with the needs of motorized and non-motorized travelers.

Provides guidance and training to those maintaining roadways to be aware of and sensitive to the needs of non-motorized travel.

Chief, Division of Traffic Operations:
Ensures that the transportation system is operated in accordance with the needs of all travelers including non-motorized travel.

Provides training and guidance on the operation of the transportation facility consistent with providing mobility for all users.

Recommends safety measures in consideration of non-motorized travel on California's transportation system.

Chief, Division of Local Assistance:
Ensures that Local Assistance staff, local agencies and interest groups are familiar with funding programs that are available for nonmotorized travelers.

Ensures that program coordinators responsible for non-motorized travel modes are familiar with non-motorized issues and advocate on behalf of non-motorized travelers.
INTEROFFICE MEMORANDUM
DEPARTMENT OF PUBLIC WORKS

January 23, 2006

TO: DPW Staff
FROM: Farhad Mansourian
Director
RE: DIRECTIVE 2006-01

Objective.

To initiate and incorporate in all projects from the time of their inception forward, a multi-modal approach that ensures inclusion in the scope of all relevant, appropriate, necessary and mandated facilities.

Directive.

Initial/Conceptual phase: At the outset of all projects, other than routine maintenance, an analysis shall be performed to ensure the inclusion of all necessary, appropriate and reasonable multi-modal facilities and improvements. The analysis shall include facilities related to transit, bike and pedestrian access, disabled access and traffic safety.

Construction drawings: The project plans and specifications shall include individual and cover sheets which clearly depict interim conditions during construction which ensure full compliance with all regulations relating to traffic striping, bike and pedestrian circulation and disability access during construction.

Waiver: It is recognized that there will be situations where it will not be possible or feasible to incorporate all such facilities into a project. In such cases, there shall be full and complete compliance with all federal, state and local codes and laws relating to documentation, justification and reasoning setting forth the inability to comply. Said documentation shall be presented to the Director or Chief Assistant Director of Public Works for approval prior to continuing work on the project. Such approval shall not be granted by the department unless the documentation clearly sets forth a full and compelling case of an inability to comply.
Appendix E

Bicycle Route Guide Signage Project Map
Marin County Bicycle Guide Sign System North

Legend

- Primary Bike Routes
- Future Connections
- City Areas

This map is representational only. Data are not survey accurate.

file: H:\DPW\Baker\BikePathNumbers_North_DD.mxd December 12, 2007

Marin County Bicycle Guide Sign System North North
Bay Trail Project Maps – Marin County Segments
EXISTING AND PROPOSED BAY TRAIL
MARIN COUNTY SEGMENTS SUMMARY
FIGURE F-1

LEGEND

Bay Trail
Existing Proposed

Freeways and Highways
Arterials
CENTRAL MARIN COUNTY
EXISTING AND PROPOSED BAY TRAIL
FIGURE F-3
LEGEND
Bicycle Facilities
Existing Proposed
Class I Bikeway or Multi-Use Path
Class II Bicycle Lanes
Class III Signed Routes/Shoulders
Bay Trail
Existing Proposed

DATA SOURCE MARINMAP
Nonmotorized Transportation Pilot Program Projects Map