City of Napa Bicycle Plan

Prepared for

Napa County Transportation & Planning Agency

City of Napa

Submitted by

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Introduction

Purpose of the Plan

The Napa Bicycle Plan was developed as a component of the Napa County Transportation Authority's *Countywide Bicycle Plan Update*. The Plan is intended to guide and influence the development of bikeways, bicycle policies, bicycle programs and bicycle facility design standards to make bicycling throughout the City of Napa and Napa County more safe, comfortable, convenient and enjoyable for all bicyclists. The overarching goal of the Bicycle Plan is to increase the number of persons who bicycle throughout the City and County of Napa for transportation to work, school, for utilitarian purposes, and recreation.

This Countywide Bicycle Plan presents a cooperatively-developed 25-year vision for building a complete bicycling system for our community. It also presents a carefully chosen set of specific goals, objectives, and policies to guide the ongoing evolution of that system.

Napa County, with its varied terrain, beautiful scenery, and mild weather is ideal for both practical and recreational cycling. Cities in the County are relatively flat and compact, characteristics that are optimal for intra-city commute and utilitarian trips. Currently, inter-city travel on the valley floor via bicycle can be challenging because of the distance between the cities, limited connections, and roads with high-speed traffic. Outside of the cities and valley floor, the County's mountains, valleys, and scenery provide a "world class" experience that is a physically challenging and attractive for recreational cyclists.

This Plan has been developed at a time when there has been a strong surge of interest in bicycling in Napa County, as well as in the Bay Area Region, the nation and the world. New programs, systems and technologies have been emerging month by month, spurred on by an intention to reduce greenhouse gas emissions, to promote more active, healthy transportation options, to reduce traffic congestion, and to provide connections between our communities. The Napa Vine Trail Coalition, dedicated to creating a Class I Multi-use Path the full length of Napa Valley, has emerged as a popular community organization, made up of 27 of the county's most influential non-profit and government groups. The Napa Bicycle Coalition, recently re-named "Napa Bike," has energized the cycling community to become an even more active participant in the development of cycling resources in the county. The local "Safe Routes to School" program has been expanding rapidly, now serving schools throughout Napa County. The Napa County Transportation and Planning Agency (NCTPA) has adopted a long range strategic goal of having 10 percent of all trips made by bicycle in Napa County. This new Countywide Bicycle Plan is one way that NCTPA looks to accomplish this goal, in close partnership with the governments, non-profit organizations and citizens of our community.

This plan has been developed to address the needs of all types of bicyclists, including novice riders and children, the average bicyclist, and advanced riders and commuters, as well as shoppers, recreational riders, and tourists. Important reasons for increasing bicycle travel include reducing congestion and greenhouse gas emissions due to automobile traffic as well as general public health benefits of active transportation. This plan is designed to address the most common reasons why people do NOT use bicycles, including lack of convenience and perceived safety concerns. Important reasons for increasing bicycle travel include reducing congestion and greenhouse gas emissions due to automobile traffic as well as general public health benefits of active transportation.

Bicycle Plan Maps including the City of Napa Bikeways Map, Planning Area – City of Napa, Planning Area – Mid Valley, Planning Area – South Valley, and Napa County Bicycle Facilities are shown in Figures 1-5 respectively. The Plan is expected to be adopted as an update of the City's General Plan.

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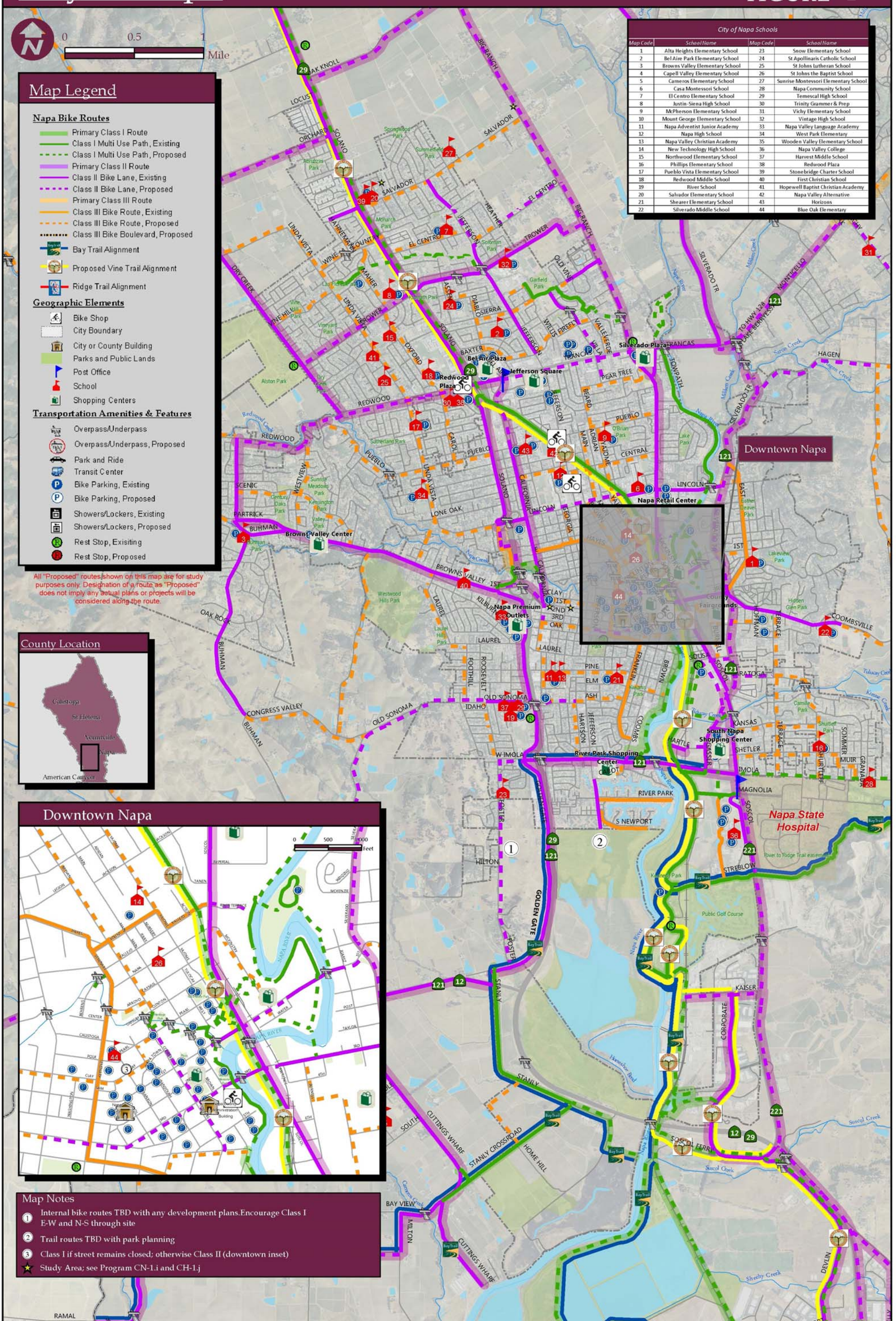
City of Napa

Napa Countywide Bicycle Plan
FIGURE 1



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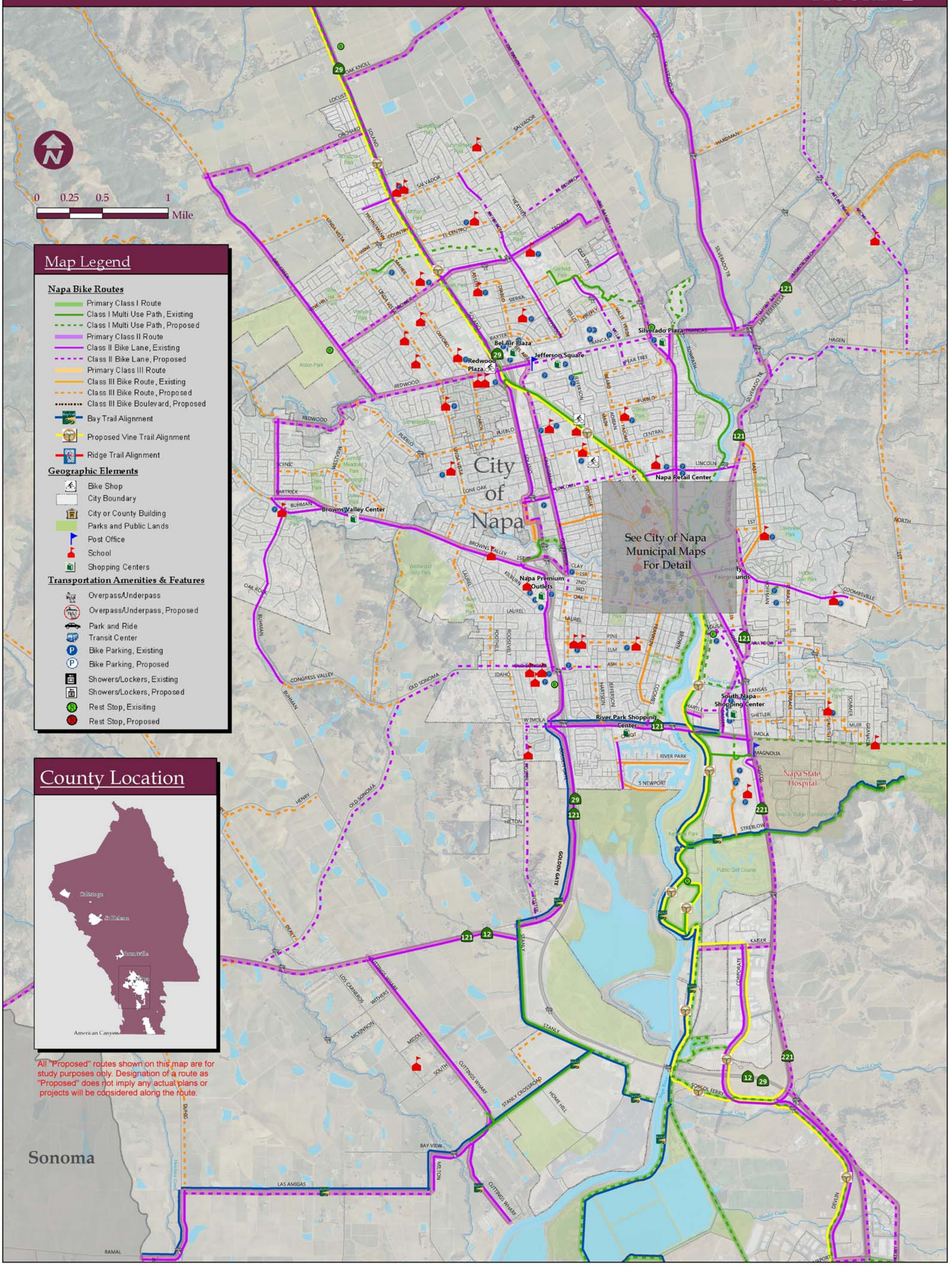
Planning Area - City of Napa

Napa Countywide Bicycle Plan

FIGURE 2



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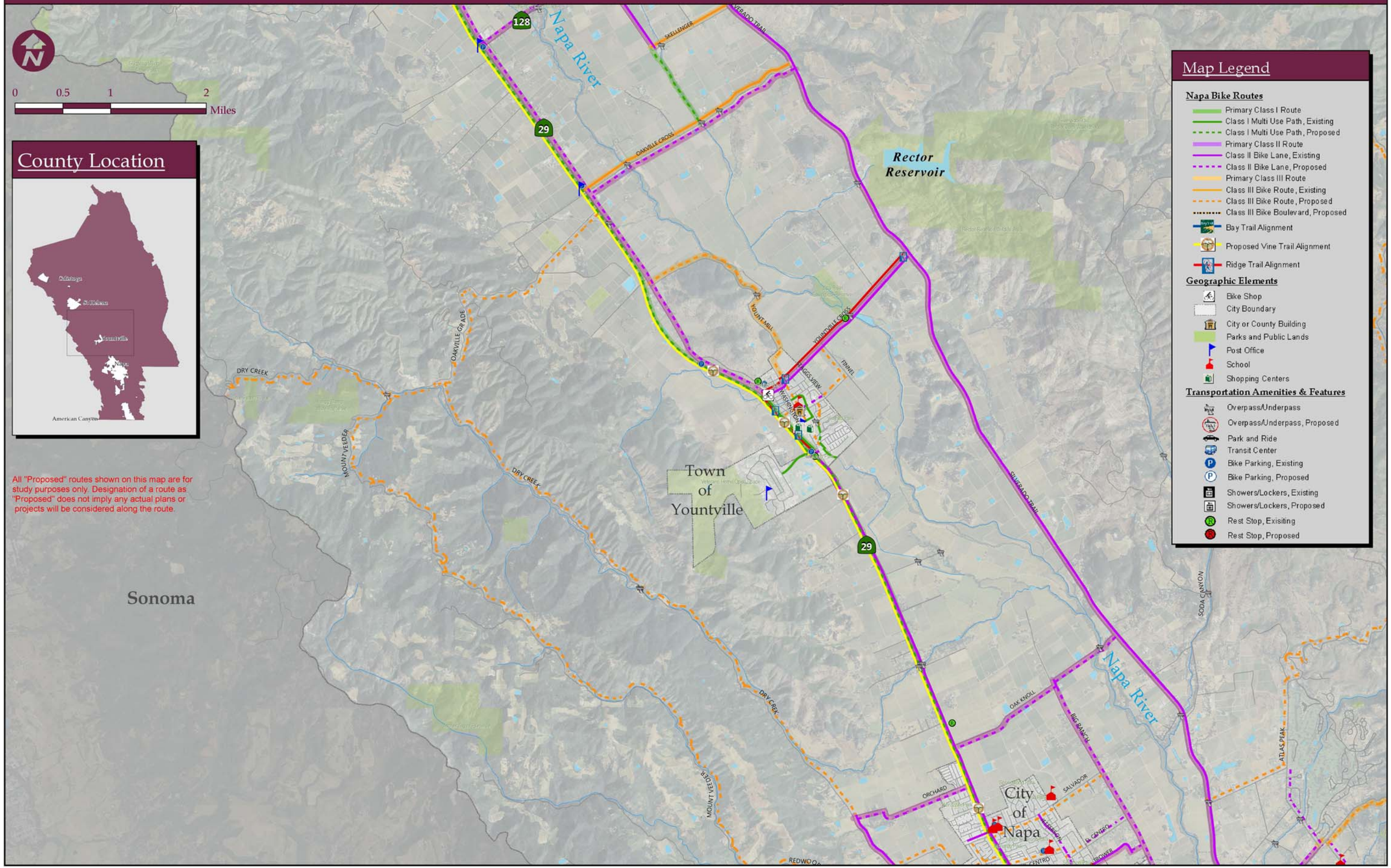
Planning Area - Mid Valley

Napa Countywide Bicycle Plan

FIGURE 3



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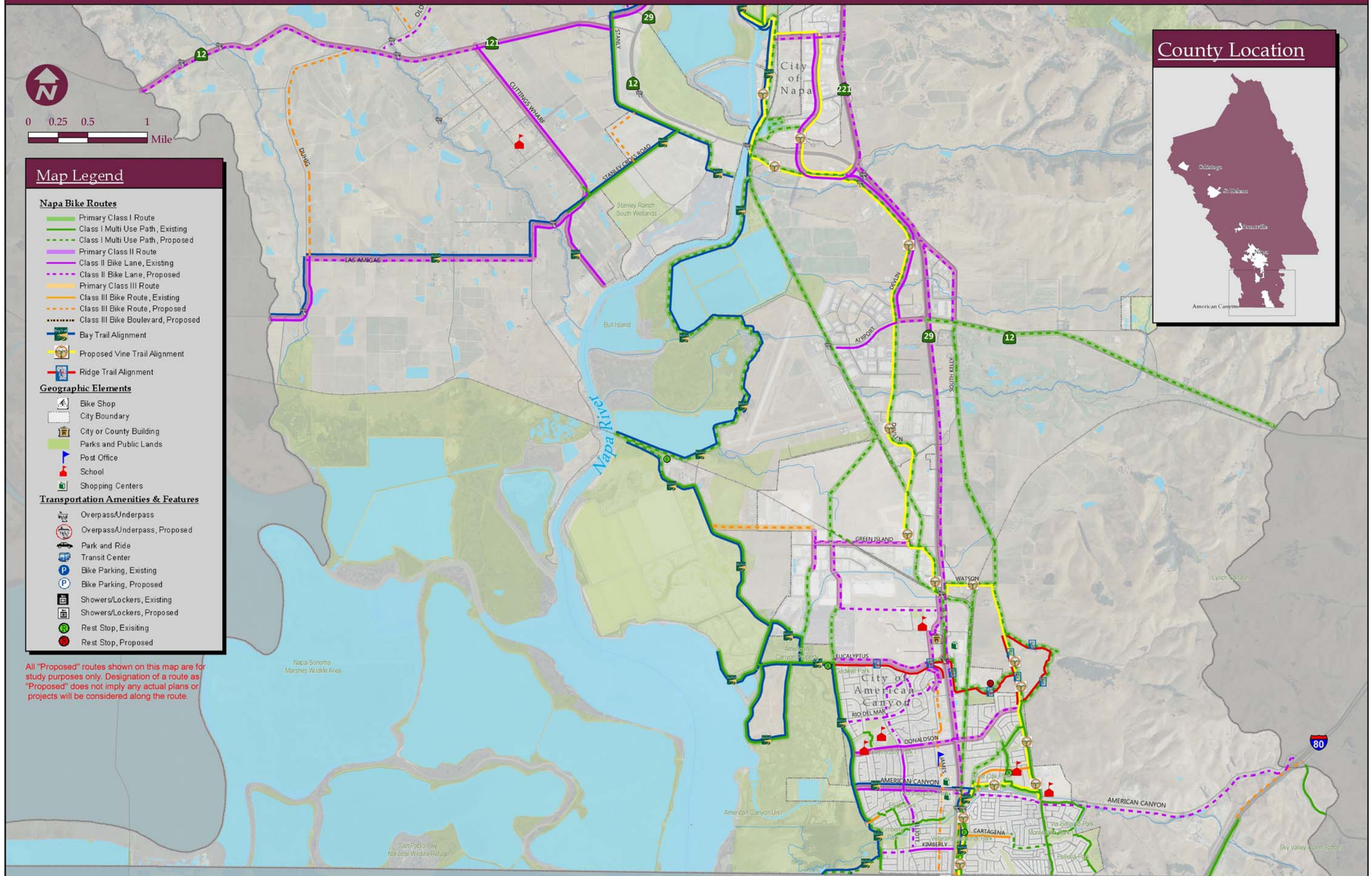
Planning Area - South Valley

Napa Countywide Bicycle Plan

FIGURE 4



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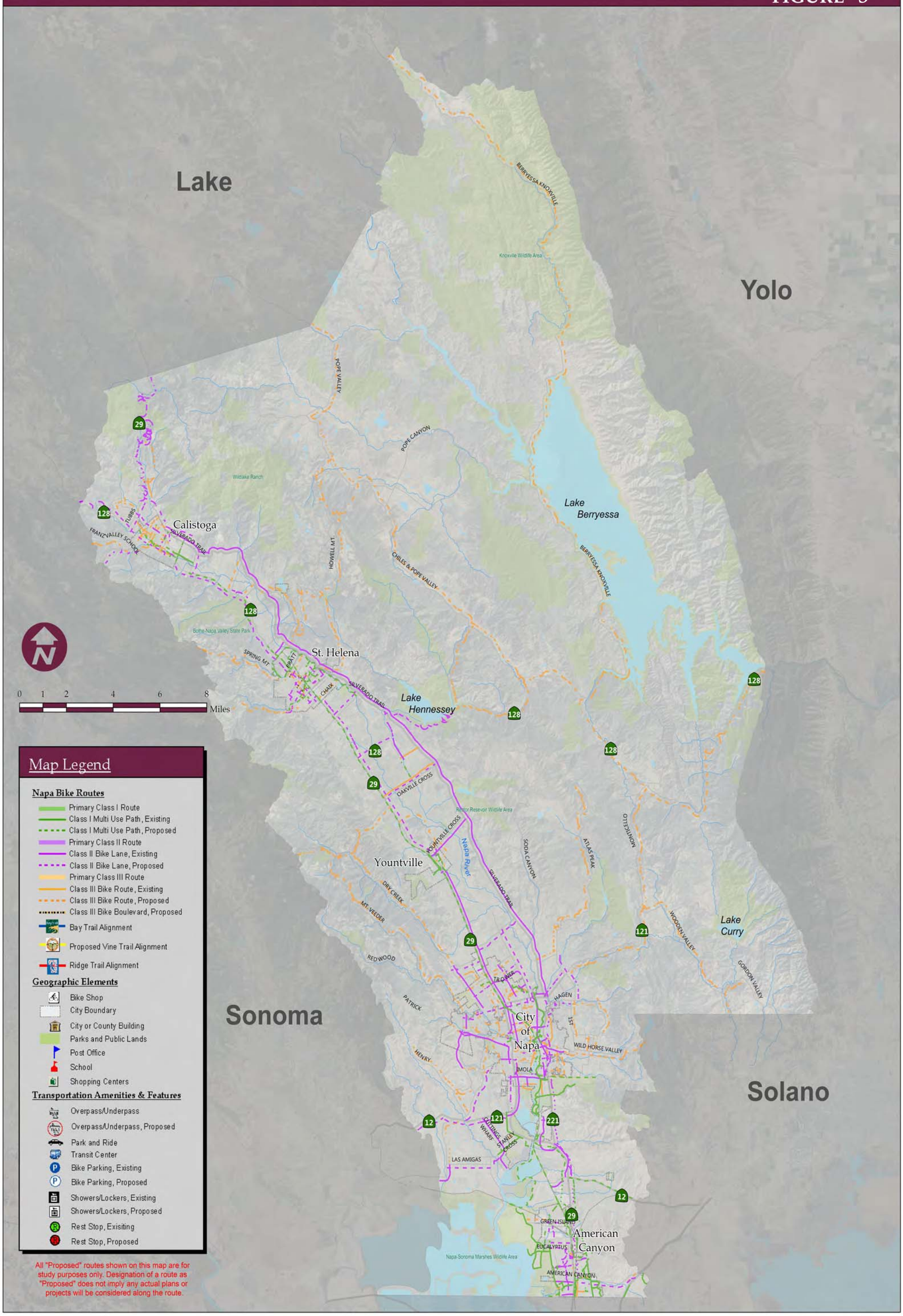
Napa County Bicycle Facilities

Napa Countywide Bicycle Plan

FIGURE 5



Map Legend

Napa Bike Routes

- Primary Class I Route
- Class I Multi Use Path, Existing
- Class I Multi Use Path, Proposed
- Primary Class II Route
- Class II Bike Lane, Existing
- Class II Bike Lane, Proposed
- Primary Class III Route
- Class III Bike Route, Existing
- Class III Bike Route, Proposed
- Class III Bike Boulevard, Proposed
- Bay Trail Alignment
- Proposed Vine Trail Alignment
- Ridge Trail Alignment

Geographic Elements

- Bike Shop
- City Boundary
- City or County Building
- Parks and Public Lands
- Post Office
- School
- Shopping Centers

Transportation Amenities & Features

- Overpass/Underpass
- Overpass/Underpass, Proposed
- Park and Ride
- Transit Center
- Bike Parking, Existing
- Bike Parking, Proposed
- Showers/Lockers, Existing
- Showers/Lockers, Proposed
- Rest Stop, Exisiting
- Rest Stop, Proposed

All "Proposed" routes shown on this map are for study purposes only. Designation of a route as "Proposed" does not imply any actual plans or projects will be considered along the route.

Name: County_Wide

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Background

This Bicycle Master Plan is Napa's first comprehensive bicycle plan, though Napa has a long history of planning bicycle facilities. Previous bicycle planning and implementation efforts have included adopting bicycle route maps, developing policies and guidance that were included in the General Plan, addressing bicycle facility planning in various specific plans, and forming a Bicycle Trails Advisory Commission.

Caltrans Compliance

The Napa Bicycle Plan was prepared in accordance with the California Bicycle Transportation Act. To be eligible for Bicycle Transportation Account Funds, the California Bicycle Transportation Act requires that cities and counties prepare and adopt a Bicycle Transportation Plan that addresses items a – k in Section 891.2 of the Streets and Highways Code. These items are outlined in Table 1. To maintain eligibility with the Caltrans BTA, Bicycle Transportation Plans must be updated every five years. Information on the Bicycle Transportation Act, Bicycle Transportation Plan (BTP) preparation and processing and eligible Bicycle Transportation Account projects is available on Caltrans' BTA webpage: http://www.dot.ca.gov/hq/LocalPrograms/bta/btawebPage.htm

Table 1
Required Bicycle Master Plan Elements

California Bicycle Transportation Act (1994)	Bicycle Plan Update Reference	Page
a. Estimated number of existing and future bicycle commuters	*Existing* – Table 4 *Proposed* – Objective 1	14 19
b. Map and description of land use settlement patterns	Setting and Land Use	11
c. Map and description of existing and proposed bikeways	Figures 1-5 *Existing* – Bikeways Inventory *Existing* – Table 12 *Proposed* – Proposed Bikeway System *Proposed* – Table 14	3-7 47 48-51 54 57-63
d. Map and description of bicycle parking facilities	Figure 1 Bicycle Parking	3 52
e. Map and description of multi-modal connections	Figure 1 Multi-Modal Connections	3 52
f. Map and description of facilities for changing and storing clothes and equipment	Figure 1 Shower and Locker Facilities	3 67
g. Description of bicycle safety and education programs	Safety, Education, and Support Programs	67
h. Description of citizen and community participation	Public Participation	10
i. Description of consistency with transportation, air quality, and energy conservation plans	Coordination and Consistency with Existing Plans and Policies	18
j. Description of proposed projects and implementation priorities	Proposed Improvements Table 14	53 57-63
k. Description of past expenditures and future financial needs for bicycle facilities	*Past* – Table 19 *Future* –Table 14	79 57-63

Public Participation

This Bicycle Plan Update was developed over an 18-month period in 2010/11. The Plan was prepared by a consulting team working closely with NCTPA staff, a Project Steering Committee, local agency staff, the Napa Bicycle and Trails Advisory Commission, other responsible groups from the County and Napa's cities, stakeholders, the bicycle community, and interested citizens. The 2011 Napa Countywide Bicycle Plan Update builds upon the efforts of NCTPA's 2003 Plan and integrates new projects, partnerships, concepts, and programs. Public participation was an important component of the Countywide Bicycle Plan Update. The NCTPA and plan participants solicited public input on existing conditions for bicyclists, potential improvement projects and programs, and site specific issues such as safety concerns, access, connectivity, bicycle parking, and other items needed to improve conditions for bicyclists in the Plan Area. The public participation process utilized an "advocacy" approach, where the general public and citizen representatives serving on advisory committees were instrumental in the development of a vision for bicycling in the community. The public participation process is summarized below.

- *Project Steering Committee* – A project steering committee comprised of local agency staff, representatives from the Napa County Bicycle Coalition, Vine Trail Coalition, Napa County Safe Routes to Schools Program, Bay Trail Project, and Napa County Parks and Open Space, bicycle advocates, and others was established to oversee the development and progress of the Plan.

- *Advisory Commission Meetings* – The project consultant and NCTPA staff attended bicycle or other responsible advisory commission meetings in each participating jurisdiction to kick off the project, collect input on issues and opportunities, and develop a vision and goals for the project. A second round of advisory commission meetings was conducted to review draft plans and project and program proposals.

- *Public Workshop #1* – The initial public workshop for the Bicycle Plan Update was held on Saturday, October 23, 2010, from 10:30 a.m. to 12:30 p.m. at the Yountville Community Center. Approximately 65 people attended the workshop, including local agency staff, elected officials, NCTPA board members, local bicycle advocates, and members of public. The purpose of the workshop was to collect input on issues, opportunities, and constraints throughout the Plan Area. Attendees were led through a series of small and large group exercises designed to solicit their input using a slide presentation, mapping exercise, issues discussion, and a visioning exercise.

- *Staff Interviews* – Members of local agency staff responsible for bikeway implementation and maintenance were interviewed to solicit their input on existing conditions, issues, opportunities, and constraints regarding Napa's bikeway system and programs.

- *Public Workshop #2* – Public Workshop #2 was held on Saturday, September 24, 2011, from 1:00 to 4:00 PM at New Technology High School in the City of Napa. Approximately 50 people attended the workshop including local agency staff, elected officials, NCTPA board members, local bicycle advocates, and members of public. The purpose of the meeting was to give the public an opportunity to comment on the draft Bicycle Plan Update. The draft Plan was presented and attendees participated in group discussions and mapping exercises. Public comments were recorded and incorporated into the Bicycle Plan Update.

- *City Council Hearings* – In early 2012, the Plan will be presented to the City Council for review and adoption.

Jurisdiction Overview Setting and Land Use

The City of Napa is located in southern Napa County along SR 29. Situated along the Napa River, the City is nestled between the foothills of the Mayacamas Mountains to the west, the Howell Mountains to the east, San Pablo Bay to the south, and agricultural lands to the north. The City of Napa is the County's largest urban center, most populous community, and the county seat. The Napa County Airport and the City of American Canyon are located to the south of Napa, and the Town of Yountville is located to the north. The City of Napa is the commercial hub for the greater Napa Valley, including regional shopping destinations, employment sites, and local and regional government offices. Downtown Napa is an international tourist destination, and a cultural and shopping hub for the greater Napa Valley.

Residential development is the predominant land use in Napa. The City's General Plan defines twelve distinct neighborhoods or planning areas: Linda Vista, Vintage, Browns Valley, Pueblo, Beard, Alta Heights, Westwood, Central Napa, Soscol, Terrace/Shurtleff, River East, and Stanly Ranch. The City's street network includes a large grid of arterials that facilitate intra-city and regional access and frame local neighborhoods with a variety of street network types including traditional grids, conventional loops and cul-de-sacs, and other variations in response to the topography and historical land use patterns. While SR 29, the Napa River, and high volume/high speed arterials impact bicycle access, especially for east-west travel, the City's mostly flat topography, relatively small land area, and development density create many opportunities for residents and visitors to bicycle throughout the community as well as to the surrounding County, area vineyards, open space, and hills. General demographic and land use information is presented in Table 2. An overview of land uses in Napa is presented in Figure 6: City of Napa Land Use Map.

Table 2
General Community Statistics

Total Population [1]		78,791
Males [1, 2]	49.10%	38,686
Females [1, 2]	50.90%	40,105
Median Age [2]		36.0
2035 ABAG Population Projections [3]		88,900
Land Area [4]	17.70	sq. mi
Average Population Density [1, 4]	4,451.47	persons/sq. mi.
Elevation [4]	17	feet

Source: [1] *CADOF 2010*
[2] *United States Census 2000*
[3] *2035 ABAG Projections, 2009*
[4] *City-data.com July 2008*

More information on issues, opportunities, constraints, and the benefits of bicycling, are presented in the NCTPA's Countywide Overview.

Demographics, Commute Patterns and Visitors

Demographics and travel information for the City of Napa were analyzed to identify *mode split* and to evaluate travel time to work. The analysis establishes base data on the existing number of bicycle commuters, and also provides an indication of the number of potential bicycle commuters in the Plan area. This information can then be used by staff and local officials to develop improvement plans and set priorities, with the objective of increasing the percentage of people who choose to bicycle rather than drive a car or be driven. Visitors are another important existing and future user group.

Mode Split is a term that describes the number of trips or the percentage of travelers using a particular type of transportation, e.g., walking, bicycling, taking a bus, driving, etc.

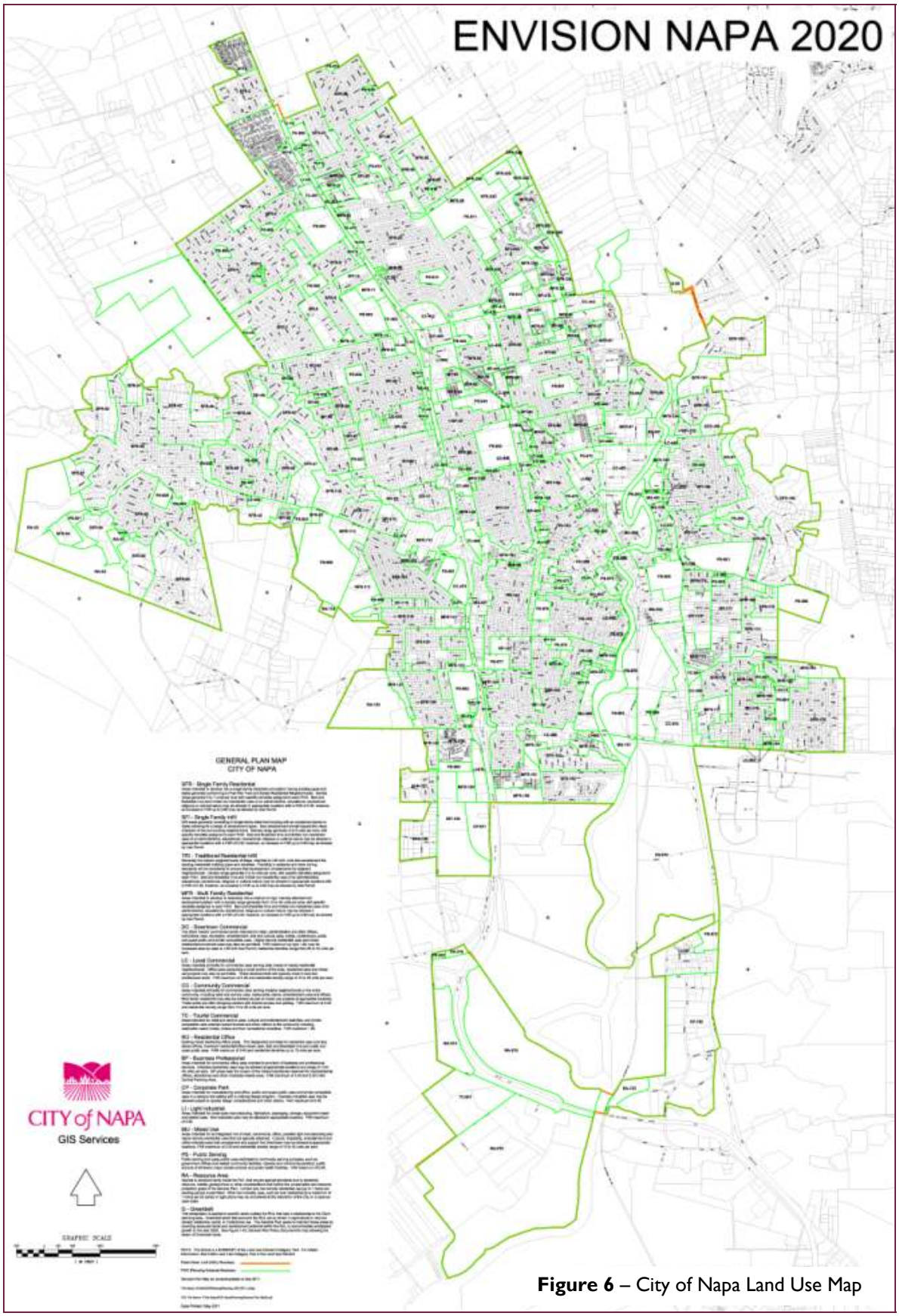

Figure 6 – City of Napa Land Use Map

For several years, the Napa Valley Vine Trail organization has been working on developing a 44-mile continuous, Class I trail from Vallejo to Calistoga through the City of Napa and its Downtown. Parts of the trail already exist and others are or will soon be under design. The organization identified the importance of such a trail in providing transportation options, tourism opportunities, and enhanced quality of life for residents throughout the valley. The trail will offer transportation, recreation, education and healthy lifestyle benefits to residents and the 4.7 million visitors who come to the Valley each year while potentially replacing the need for 150,000 automobile trips in the process. As it provides these benefits, the Vine Trail is expected to generate $75 million per year in ongoing economic impact as well as providing jobs for 60 people per mile built during construction. The Greenway Feasibility Study projected over 3 million uses per year of a completed regional Vine Trail with about half being residents; half visitors. The Napa Valley is renowned as a grape growing region making it an international tourist destination. Aside from its scenic qualities, wineries, spas, and restaurants, the Napa Valley is known for its temperate climate, making it ideal for walking and bicycling. The area was one of the first to attract bicycle touring groups, and continues to draw residents and visitors committed to an active lifestyle. Bicycle adventure tourists are a match for the Napa Destination Council's Targeted Visitor Profile. Other studies have shown that with safe bicycle/pedestrian trails such as the Vine Trail, cycle tourists stay longer, spend more and participate in more activities than non-cycle tourists, including in the shoulder seasons. Ongoing surveys among visitors continue to indicate that bicycling is one of the top ten reasons tourists choose Napa Valley as their destination.

A review of available demographic and commute statistics was performed in order to better understand the level of bicycling in the City of Napa and Napa County as a whole. Several data sources were reviewed, including California Department of Finance Population Estimates, the Bay Area Travel Survey, and Journey-to-Work (JTW) Data from the US Census Bureau.

Every ten years, the US Census Bureau attempts to count every person throughout the nation. As part of this survey process, the agency collects information on the primary mode of transportation employed people over the age of 16 used to get to work. The collective responses to the Census Bureau's question "How did you usually get to work last week?" form a set of data known as Journey-to-Work (JTW). JTW data is considered the most reliable source of transportation mode choice information available. However, while the JTW provides a glimpse of how Napa residents travel to and from work, the data source only provides a partial understanding of the travel characteristics of bicyclists within the community. This is particularly true since it does not reflect multi-modal or non-work trips. For example, survey respondents who typically use more than one method of transportation are instructed to mark the mode used for "most of the distance," thus overlooking bicycling and walking trips to transit. The survey wording leaves the response, for commuters who do not use the same mode every day, up to the respondent; and the survey takes place in the month of March, which can be rainy in Napa County and a deterrent to bicycling. Further, the JTW data does not include school, shopping, and recreational trips, which constitute much of the bicycle and pedestrian travel by Napa's student and senior populations, tourists, migrants, homeless, and others.

The 2010 Census finds that the City of Napa has a population of 76,915 persons. Based on this estimate, the City's population has grown by approximately 4,300 persons since the 2000 U.S. Census. Population projections from the Association of Bay Area Government's *Projections 2009* anticipate that the City of Napa will add approximately 10,000 additional residents by the year 2035. According to the 2000 US Census, (the most current Census for which data is available) there were 33,743 workers in the City of Napa 16 years old or older. Of these, 32,560 worked outside the home. Thirty-nine percent, or 13,284 workers, have a travel time to work of 15 minutes or less. The City of Napa has a higher than average rate of workers with a commute time of less than 15 minutes when compared to the state and nation which are at 25 percent and 30 percent respectively. This indicates that a substantial portion of the City's workers were employed within the community. Travel time to work in Napa is shown in Table 3.

As shown in Table 4, JTW data indicates that 75 percent of workers in Napa (25,320 persons) drove to work alone. Approximately 1.1 percent of the workers (375 persons) commuted to work by bicycle, a rate that is higher than the Countywide and statewide averages of 0.8 percent, and more than twice the national average of 0.4 percent. Approximately 2 percent (696 persons) of work trips were taken on foot, the second lowest walk-to-work rate in Napa County. While approximately 15 percent of workers in the City of Napa (5,211 persons) carpooled, the majority of workers drove to work alone. Given Napa's climate, topography, and percentage of commuters with a travel time to work of 15 minutes or less, a significant opportunity exists to achieve a greater bicycle mode split. Every motor vehicle trip or vehicle mile traveled that is eliminated results in less air pollution, reduced green house gas emissions, and lessened traffic congestion.

Table 3
2000 US Census – Travel Time to Work

Total Employed Persons	100.00%	33,743
Worked at home	3.51%	1,183
Less than 15 minutes	39.37%	13,284
15 to 29 minutes	27.46%	9,266
30 to 44 minutes	15.52%	5,236
45 or more minutes	14.15%	4,774
Did not work at home	96.49%	32,560

Source: *United States Census 2000*

Table 4
2000 US Census – Mode Split Data for the City of Napa

	City of Napa		Napa County		California	
Population (2000 US Census)	72,585		124,279		33,871,648	
Employed persons 16 years of age +	34,378		58,501		14,525,322	
Mode Split	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**
Mode Split	100.00%	33,743	100.00%	57,393	100.00%	14,525,322
Drove Alone	75.04%	25,320	72.65%	41,698	71.82%	10,432,462
Bike	1.11%	375	0.83%	479	0.83%	120,567
Walk	2.06%	696	4.14%	2,378	2.85%	414,581
Public Transit	1.78%	600	1.40%	803	5.07%	736,037
Carpool	15.44%	5,211	14.84%	8,519	14.55%	2,113,313
Motorcycle	0.32%	108	0.22%	127	0.25%	36,262
Other	0.74%	250	0.83%	474	0.79%	115,064
Worked at Home	3.51%	1,183	5.08%	2,915	3.83%	557,036

Source: *United States Census 2000*

Visitors and Tourism

Visitors are another important existing and future user group. The Napa Valley is renowned as a grape growing region making it an international tourist destination. Aside from its scenic qualities, wineries, spas, and restaurants, the Napa Valley is known for its temperate climate, making it ideal for walking and bicycling. The area was one of the first to attract bicycle touring groups, and continues to draw residents and visitors committed to an active lifestyle. Bicycle adventure tourists are a match for the Napa Destination Council's Targeted Visitor Profile. Other studies have shown that with safe bicycle/pedestrian trails such as the Vine Trail, cycle tourists stay longer, spend more and participate in more activities than non-cycle tourists, including in the shoulder seasons. Ongoing surveys among visitors continue to indicate that bicycling is one of the top 10 reasons tourists choose Napa Valley as their destination.

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Existing Circulation Network

Napa's street network is on a slightly skewed north-south axis. SR 29, a regional highway, forms the backbone of the City's transportation network and provides access into and from Napa County to the City of Vallejo and the Interstate 80 corridor. I-80, SR 12, SR 121, and SR 37 are primary regional routes in the vicinity of the City of Napa that connect the City with the greater San Francisco Bay Area and the greater Northern California region.

The existing circulation network within the Planning Area is composed of state highways, arterials, collectors and local streets. The City of Napa General Plan (1998) provides the definitions below for street classifications, which govern engineering design standards and the roadway level of service thresholds.

- *State Highways* – State Highways provide for intra- and inter-regional mobility with limited direct access to abutting parcels. Typical daily volumes and rights-of-way vary between urban and rural areas.

- *Arterials (Major/Minor)* – Arterials collect and distribute traffic from freeways to collector streets and vice versa. Major Arterials consist of four to six lanes and provide for a left-turn median within an 84- to 128-foot right-of-way. Minor arterials have two travel lanes. The optimum minimum distance between intersections is approximately one-half mile and driveways to major traffic generators may be permitted within the half-mile spacing. Arterial streets may carry daily volumes of up to 40,000 vehicles per day.

- *Collectors* – Collectors serve as connectors between local and arterial streets. They provide direct access to parcels and consist of two lanes of traffic, usually without a left-turn median on rights-of-way between 60 and 84 feet. At major intersections, driveways on collector streets should be no closer than 50 feet to the intersection. Non-residential driveways and/or intersecting streets should be no closer than 300 to 400 feet apart. Collectors typically carry up to 12,000 vehicles per day.

- *Local Streets* – Local streets provide access to parcels with little access restriction. They consist of two travel lanes within rights-of-way of up to 56 feet and may carry up to 5,000 vehicles per day. Local streets constitute the largest part of the City's circulation system.

The City of Napa General Plan includes a map of the street network which is displayed in Figure 7.

State Highways

SR 29 is a four-lane, median-divided state highway that primarily runs north-south connecting Napa to nearby cities and I-80.

SR 12/121 is a two- to four-lane state highway that runs primarily north-south, extending from Sonoma County in the southwest, north through the City of Napa, then northeast beyond the Napa city limits.

SR 221/Napa-Vallejo Highway (SR 221) is a north-south state highway that becomes SR 121(Soscol Avenue) at its intersection with Imola Avenue. There are two lanes in each direction divided by a raised median.

North-South Arterial and Collector Streets

The following north-south and east-west streets form the primary grid of Napa's roadway network. These streets form the base of the community's transportation system; however, there are numerous local streets that provide access for bicyclists in Napa to residential neighborhoods and destinations throughout the community.

Dry Creek Road is a two-lane minor arterial in the City's northwest quadrant that provides residential access and extends from Redwood Road into the unincorporated County. Dry Creek Road is popular with recreational bicyclists headed for the Napa's western mountains and Up Valley.

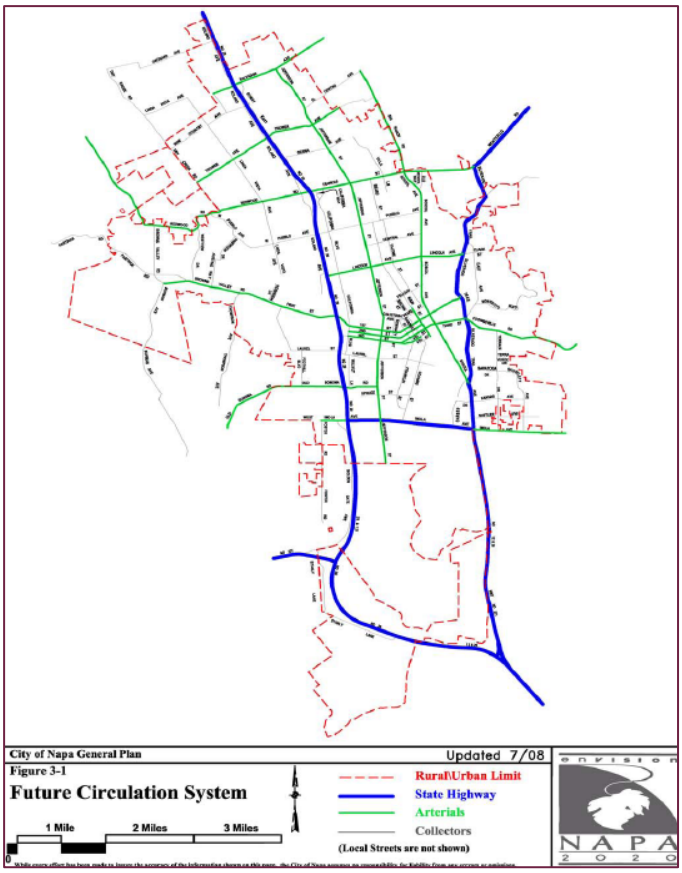

Figure 7 – City of Napa Circulation Map

Solano Avenue is a two-lane collector that extends north-south from Lincoln Avenue through central Napa all the way to Yountville. Solano Avenue is a frontage road located along the west side SR 29 adjacent to Napa Wine Train tracks, which is well used by commuter and recreational bicyclists.

Golden Gate Drive is a two-lane collector and frontage road on the west side of SR 29, extending north-south between Imola Avenue West and Carneros Highway (SR 12/SR 121) on the south side of the City of Napa. Cyclists can use the stoplight at Stanly Lane to cross SR 12/SR 121 and access the wineries and marshlands south of the City.

Jefferson Street is a two- to four-lane arterial that extends north-south through central Napa from Atrium Parkway at the southern end of the City to the northern city limit.

Soscol Avenue is a four-lane major arterial that extends north-south along the east side of the City from Imola Avenue in the south to Trancas Street.

Big Ranch Road is a two-lane collector that extends north-south from Soscol Avenue at Trancas Street. Big Ranch Road extends north into the unincorporated County to Oak Knoll Avenue.

Silverado Trail (SR 121) is a scenic two-lane major north-south collector that runs from Soscol Avenue north through the unincorporated County to Calistoga. Many wineries and vineyards are located on Silverado Trail. It is heavily traveled by visitors, residents, and employees, as well as a popular route for bicyclists.

California Boulevard is a two-lane major collector that extends north-south between Trancas Street and Laurel Street. A raised median, turning lanes, and Class II bicycle lanes on both sides of the street are present between Pueblo Avenue and 1st Street.

East-West Arterial and Collector Streets

Salvador Avenue is a two-lane collector that extends east-west near the City's northern limit between Big Ranch Road and the City's western limit at Hahnemann Lane.

Trower Avenue is a two- to four-lane arterial that runs east-west from Allston Park and Dry Creek Road, past Justin-Siena High School to Vintage High School. The road connects the east and west sides of the northern section of the City of Napa. It is planned to extend to Big Ranch Road.

Redwood Road/Trancas Street is a four-lane principal arterial that runs from Silverado Trail/SR 121 west to Dry Creek Road where it continues as a two-lane minor arterial until it reaches Browns Valley Road. Street parking and sidewalks exist along both sides of the street. Redwood Road connects residential areas with SR 29 and Trancas Street, while Trancas Street is a primary commercial corridor.

Pueblo Avenue is a two-lane major collector that extends east-west between Soscol Avenue and California Boulevard.

West Pueblo Avenue is a residential collector. It extends between Solano Avenue and Redwood Road, and primarily serves residential areas.

Lincoln Avenue is a central four-lane major collector between Silverado Trail and SR 29. Sidewalks, Class II bike lanes, and parking are located on both sides of the street throughout portions of the street. Napa High School is located on Lincoln Avenue.

Browns Valley Road is a two-lane minor arterial that generally extends east-west between Redwood Road and Laurel Street. Class II bike lanes are located on both sides of the street. It connects a large residential area on the west side of the City of Napa with 1st Street, which provides access to SR 29 and downtown Napa.

3rd Street and Coombsville Road are two-lane minor arterials extending east from California Boulevard to the City Limit and beyond. They provide access from Downtown to residential neighborhoods, Silverado Middle School and County areas. Partial Class II bike lanes exist.

Imola Avenue (SR 121) is a four-lane divided principal arterial that connects SR 29 with Napa Valley Highway/Soscol Avenue, linking the east and west sides of the City of Napa. Bike lanes and discontinuous sidewalks are located on both sides of the principal arterial. Imola Avenue continues east of Soscol Avenue and west of SR 29 as a two-lane minor arterial.

Local Streets

The City of Napa has a variety of local streets, some of which function as Class III bicycle routes and bicycle boulevards. These streets facilitate local access to schools, parks, residential areas and destinations throughout town.

Future Road and Transportation Projects

There are several road extensions planned in the City of Napa that will improve access for bicyclists and connectivity in the local area.

In addition to the future streets, the City has several existing and planned Class I paths that will significantly improve bicycle access including:

- Napa River Trail
- Vine Trail

- Bay Trail
- Ridge Trail
- Oxbow Commons
- Downtown Trails
- Salvador Creek

These Class I paths are described in greater detail on page 30.

Coordination and Consistency with Existing Plans and Policies

There are a number of federal, state, regional, and local plans, policies and standards that govern bikeway development in Napa. Preparation of the Bicycle Plan included an extensive review of the pertinent planning documents and policies. Brief summaries of these relevant efforts are provided in Appendix A. The Bicycle Plan update was undertaken in context with the projects, policies, and standards from the following local efforts:

- *Downtown Napa Mixed Use and Residential Infill Development Strategy*, City of Napa, 2004
- *Downtown Riverfront Urban Design Plan*, City of Napa, 2003
- *Envision Napa 2020: City of Napa General Plan*, City of Napa, 2007
- *Kennedy Park Master Plan*, City of Napa, 1998
- *Napa Airport Area Bicycle Route Study*, Landpeople, 2005
- *Napa Municipal Code*, Quality Code Publishing, 2011 (includes Zoning Code)
- *Napa River Parkway Master Plan*, City of Napa, 2005
- *Oxbow Commons (Bypass Channel) Betterments Design*, SWA, 2009
- *Park and Facilities Master Plan*, City of Napa, 2010
- *Public Review Draft Downtown Napa Specific Plan*, MIG, 2011
- *Residential Design Guidelines*, City of Napa, 2004
- *Soscol Gateway Vision Plan*, City of Napa, 2004
- *Stanly Ranch Subdivision and Draft EIR for St. Regis*, City of Napa, 2009
- *Trancas Crossing Park Plan*, DCE, 2M Associates, 2008

Vision, Goals, Objectives and Policies

Introduction

The following vision, goal, objectives, and common policies are meant to function as a mutually agreed upon framework applicable to both the primary countywide bicycle *system* and Napa's local bicycle Plan. The policies are designed to guide the development and maintenance of a bicycle *system* throughout Napa County and express the intent of the City of Napa, the NCTPA, and its member agencies to enhance bicycle mobility and to improve safety, access, traffic congestion, air quality, and the quality of life throughout Napa County for residents, workers and visitors. In addition to common policies that are mutually agreed to, local policies and implementing programs are included that address issues in the City of Napa and complement the common policies.

It is important to note that as projects advance or are developed, local and countywide bicycle policies should be referenced to ensure that both private development and public works projects are consistent with the mutually agreed upon countywide policies, and that planning and development projects in Napa implement the full measures of the Bicycle Plan elements. The common countywide policies were a focal point of the Bicycle Plan effort and appear in the Overview Section of the plan as well.

Definitions

For context, definitions of terms used in this report are provided below.

- *Bicycle "System"* – the whole of all of the components, including both physical and programmatic.
- *Bicycle "Network"* – the physical improvements that establish bikeways (Class I, II, or III routes).
- *Goal* – the destination or where we want to be at the end of the planning journey. Goals are usually broad, optimistic and expressive of a long-term vision.
- *Objective* – mileposts along the way to achieving the goals. They are specific, measurable steps to be achieved if the overall goals are to be met.
- *Policy* – a principle or rule to guide decisions by the local agency with regard to a particular issue or set of issues.
- *Program* – a specific action to accomplish the policy or objective.

Bicycling Vision for the Region

A comprehensive, connected bicycle system is established with supportive development patterns and programmatic practices, providing people with safe, convenient and enjoyable access throughout all Napa County jurisdictions and to destinations beyond. Bicycling is common for everyday trips and recreation, contributing to the quality of life in Napa and the health, safety and welfare of its residents, workers and visitors. Napa is known as a bicycle friendly community with a "world class" bicycling system.

> **Principal Goal:** *To develop and maintain a safe and comprehensive countywide bicycle transportation and recreation system that provides access, opportunities for healthy physical activity, and reduced traffic congestion and energy use. Policies, programs and projects work together to provide safe, efficient and enjoyable opportunities for bicyclists of all types, ages, and abilities to access public transportation, school, work, recreation areas, shopping and other activity centers, and residential neighborhoods, and to connect Napa jurisdictions to each other and the region.*

Countywide Objectives

Objective 1.0: The Countywide Bicycle Network

Establish a comprehensive, safe, connected countywide bicycle transportation and recreation system to support increases in bicycle trips made throughout the County to 10 percent of all trips by 2035.

Policies

1.1 Develop and maintain a local and countywide bicycle transportation and recreation network that connects Napa's neighborhoods and communities, and provides access to public transportation, school, work, recreation areas, shopping and other activity centers, and to regional routes according to the maps and recommendations in this plan. [NCTPA, cities, towns, County]

Summaries of Federal, State, and Regional policies regarding the importance and consideration of non-motorized modes are provided in Appendix A.

1.2 Develop and maintain continuous north-south Class I pathways to provide inter-city connections and serve as primary bikeways in the Countywide Bikeway System. [NCTPA, cities, towns, County]

1.3 Consistent with federal, state[1] and regional directives for "routine accommodation and complete streets"[2], ensure that all transportation projects on designated bicycle routes in the jurisdiction's bicycle plan include, enhance or maintain bicycle transportation facilities. [NCTPA, cities, towns, County]

1.4 Seek opportunities to work cooperatively with all responsible departments and agencies (for example, transportation agencies, flood districts, utility agencies, parks and open space districts) to close existing gaps in facilities and ensure the network is funded, designed, constructed, and maintained. [NCTPA, cities, towns, County]

1.5. Consider the needs of all types of bicyclists (commuters, recreational riders, children, and families) in planning, developing, and maintaining a bikeway network that is safe and convenient. [NCTPA, cities, towns, County]

1.6 Establish and/or maintain local and countywide bicycle advisory committees to advise staff on bicycle network issues. [NCTPA, cities, towns, County]

City of Napa Programs

CN-1.a The City shall promote development of the transportation and recreation bicycle routes shown on the City's Bicycle Route Map.

CN-1.b The City shall continue to work with the County Flood Control District and Corps of Engineers to complete the City's multi-use Napa River Trail and connect multiuse trails through the Oxbow Commons and along Napa Creek in conjunction with completion of the Napa River Flood Protection Project.

CN-1.c The City shall pursue completion of regionally significant bicycle routes through the City including the Napa Valley Vine Trail, the Bay Trail and the Ridge Trail, many segments of which are shared local/regional routes.

CN-1.d. When improvements are made within the public right of way on designated bicycle routes, the City shall assess the potential for concurrent bicycle safety improvements and implement them where feasible, for example, through improved striping, signage, bike crossing signals, etc.

CN-1.e The City shall provide for safe bicycle facilities on new or reconstructed freeway crossings. The City shall also consider modifications to existing bridges and freeway crossings to improve bicycle safety.

CN-1.f The City will seek to provide at least three north-south and three east-west routes suitable for family use.

CN-1.g The Plan identifies several routes that require bridges or undercrossings including, but not limited to, an undercrossing under Trancas Street to connect the River Trail to Trancas Crossing Park; a mid-block undercrossing under 1st Street to the Opera House Plaza; an

[1] Caltrans Deputy Directive-64-R1 (DD-64-R1), "Complete Streets-Integrating the Transportation System," a policy directive related to "Complete Streets" non-motorized travel throughout the state, was adopted by Caltrans in October of 2008. This directive is summarized in Appendix A.

[2] US DOT Policy Statement: Integrating Bicycling and Walking into Transportation Infrastructure, 2000; Assembly Concurrent Resolution 211, 2002; Caltrans Deputy Directive 64, 2001; Caltrans Director's Policy 22 (Director's Policy on Context Sensitive Solutions), 2001; Metropolitan Transportation Commission Resolution No. 3765, (Routine Accommodations), 2006

undercrossing under SR 29 between California Boulevard and Coffield; a crossing of the rail line at Tulocay Creek; and a Linda Vista bridge.

CN-1.h The General Plan calls for Solano Avenue to be extended south across Napa Creek to 1st Street. Should Solano or Coffield Street be extended to 1st Street in conjunction with this program, the design of the roadway extension shall include Class II bicycle lanes.

CN-1.i A continuous safe Class II connection from Browns Valley to Downtown between California Boulevard and Jefferson Street is desirable goal. Pending the availability of funds, design options to use 3rd Street or a parallel street to provide a bicycle-friendly solution that is also supported by the neighborhood will be evaluated.

CN-1.j Pending the availability of funds, Salvador Avenue will be studied to determine how best to address pedestrian and bicycle needs.

CN-1.k Seek funding to evaluate the potential for upgrades to priority Class III routes.

CN-1.l The General Plan calls for Linda Vista Avenue to be extended south across Napa Creek to Robinson Lane and the design of the bridge across the Creek shall include Class II bicycle lanes.

Objective 2.0: Design

Utilize accepted design standards and "best practices" to facilitate completion of a connected bicycle system that is safe, convenient and enjoyable to use.

Policies

2.1 Utilize Chapter 1000, "Bikeways Planning and Design," of the *California Highway Design Manual*, the *California Manual of Uniform Traffic Control Devices*, and the American Association of State Highway Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*, as well as evolving "best practices" for the development of bicycle facilities. [NCTPA, cities, towns, County]

2.2 Consistent with Assembly Bill 1581 (Fuller) and Caltrans Policy Directive 09-06, assure that all approaches to signalized intersections include bicycle detection devices that are operational and properly marked. [NCTPA, cities, towns, County]

2.3 Provide consistent enhanced crossing features at uncontrolled intersections with Class I paths. [NCTPA, cities, towns, County]

European Design

European cities employ a variety of bikeway designs generally known as "Cycle Tracks" that protect or separate bikeways from vehicle traffic where possible. These engineering efforts combined with a comprehensive approach to safety, encouragement, and awareness have helped to establish mode split rates where up to 40 percent of all trips are made by bicycle. Where appropriate, similar practices should be tested or employed to determine if significant mode split shifts and community can be achieved within the Napa Valley.

2.4 Where standard Class II bike lanes are infeasible under current conditions, local jurisdictions shall consider innovative approaches to safely accommodate bicycles. (Approaches may include but are not limited to: striped edge lines, signs, shared lane markings, reduced lane widths, "road diets," eliminating parking, etc.) [NCTPA, Caltrans, cities, towns, County]

2.5 Install way finding signage, markers, and stencils on off-street paths, on-street bikeways, local Class III routes, and State Routes to improve way finding for bicyclists, assist emergency personnel, and heighten motorists' awareness. [NCTPA, Caltrans, cities, towns, County]

2.6 Improve safety and access for bicyclists at all at-grade railroad crossings by providing appropriate enhancements such as proper track structure, safe crossing angles, track fillers, lighting, and adequate warning and guidance information among other features. [NCTPA, Caltrans, cities, towns, County]

City of Napa Programs

CN-2.a Install "Share the Road Signs" as directed by the City of Napa's Policy Guidelines found in Appendix B.

CN-2.b The City shall utilize an innovative design for a Class I Trail connection along the west side of Soscol Avenue to "close the gap" between the end of the Commuter Bike Path at Vallejo Street and the start of the River Trail near 3rd Street. This section is part of the regional Vine Trail route and is a key connector to other local and regional trails.

CN-2.c The City shall explore design options, including signage, striping, pavement color, wider cross sections, wide gravel shoulders, grade separations, etc. to address known use conflicts along Class I multi use paths.

CN-2.d Develop and install a prototype Class III signage program that can then be used on an ongoing basis as road improvements are implemented.

Objective 3.0: Multimodal Integration

Develop and enhance opportunities for bicyclists to easily access public transit and other transportation resources.

Policies

3.1 Require transit providers to provide and maintain convenient and secure bike parking facilities and related amenities at major transit stops and transportation centers. [NCTPA, cities, towns, County]

3.2 Require local and regional transit agencies to accommodate bicycles on all transit vehicles that serve the general public. [NCTPA]

3.3 Plan for additional bicycle storage capacity on transit vehicles to ensure capacity keeps up with demand. [NCTPA]

3.4 Consider a "Safe Routes to Transit" program that prioritizes bicycle and pedestrian access to major transit connection points and transit centers. [NCTPA, cities, towns, County]

3.5 Encourage the development of "staging areas" as a component of trail development and other bikeway projects where appropriate to accommodate recreational bicycling needs. [NCTPA, cities, towns, County]

3.6 Develop strategies and work with private landowners/business to parking spaces for bicycle parking at strategic locations. [NCTPA, cities, towns, County, NCBC]

City of Napa Programs

CN-3.a The City shall work with NCTPA and transit providers to provide for covered, well located and lighted secure bicycle parking and consider long-term bicycle storage (i.e., bike lockers) in the design of the future Soscol Gateway transportation center as well as other major transportation hubs such as park-and-ride lots.

Objective 4.0: Comprehensive Support Facilities

Ensure development of comprehensive support facilities for bicycling such as short- and long-term bicycle parking, end of trip amenities, bicycle staging areas, repair stations, and other resources such as bicycle maps, guide information, and on-line tools.

Policies

4.1 Require adequate short-term (i.e. bike racks) and long-term (i.e. bike lockers) bicycle parking for non-residential uses as provided in local standards. Nonresidential uses include private commercial and industrial uses, as well as hospitals, clinics, gyms, parks and other civic facilities. [Cities, towns, County]

4.2 Provide adequate short-term bicycle parking and long-term bicycle storage for transportation centers including transit transfer centers, park-and-ride lots, train stations, transit stops, etc. [NCTPA, Caltrans, cities, towns, County]

4.3 Work with businesses and private property owners to provide bicycle parking at existing employment, retail, and commercial sites. [NCTPA, cities, towns, County]

4.4 Encourage employers to provide secure indoor and/or covered bicycle parking for their employees. [Cities, towns, County]

4.5 Encourage major employers to provide shower and locker facilities for workers. [Cities, towns, County]

4.6 Encourage local school district to provide well located, secure bicycle parking at schools. [NCTPA, cities, towns, County]

4.7 Design Class I paths to incorporate pedestrian scale lighting, street furniture, drinking fountains, wayfinding signage, interpretive elements, high-visibility crossing treatments, and other amenities where appropriate. [NCTPA, cities, towns, County]

City of Napa Programs

CN-4.a The City shall seek funding for installation and maintenance of bicycle parking in city facilities and as part of a unified program for Downtown.

CN-4.b The City shall continue to require bicycle parking in conjunction with new non-residential development.

CN-4.c The City shall support efforts by the school district and encourage other organizations and businesses to incorporate safe and secure bicycle parking in their facilities, particularly when substantial remodels are proposed.

CN-4.d The City shall review and provide adequate standards for bicycle racks, lockers and related amenities for new and existing nonresidential uses and multifamily residential developments. Guidelines for appropriate location of bicycle parking shall be included.

Objective 5.0: Safety and Security

Create a countywide bicycle system that is perceived to be safe for bicyclists of all types and age groups, and work to reduce collisions involving bicyclists by 50 percent by the year 2035. (Use 2008 collision data as the baseline for analysis and perform periodic progress evaluations at five-year intervals to benchmark progress.)

Policies

5.1 Coordinate the delivery of bicycle Safety Education Programs to schools utilizing assistance from law enforcement agencies, bicycle advocacy groups, local bicycle shops, County Education and other appropriate organizations. [NCTPA, cities, towns, County, NCBC]

5.2 Focus on improving safety at intersections by using or installing measures such as pedestrian and bicycle push buttons; high-visibility crosswalk markings; appropriate warning and directional signs; and reassurance or directional markings for bicyclists such as shared lane markings, skip lines, etc.; and through the use of focused education.

5.3 Focus on improving safety at railroad crossings by providing safe track crossing angles for bicyclists, by using concrete panels and flangeway fillers to avoid surface irregularities, and through the use of quad crossing gates, and warning signs. [Caltrans, cities, towns, County, Napa Wine Train]

5.4 Safety improvements in the vicinity of schools, major public transit hubs, civic buildings, shopping centers, and other community destinations shall be given a high priority for implementation. [NCTPA, Caltrans, cities, towns, County]

5.5 Improve ongoing collection and analysis of collision data to assist in the identification of problem areas which may require immediate attention. [Cities, towns, County]

5.6 Promote targeted enforcement of violations that focus on primary collision factors such as riding on the wrong side of the road, riding without proper safety equipment including lights at night, and right-of-way violations, etc.

City of Napa Programs

CN-5.a The City shall, as funding and staff resources permit, continue to work with the school district on the "State's Safe Routes to Schools" Program.

CN-5.b The City shall work with bicycle groups and schools to establish regular bicycle safety classes and programs such as rodeos.

CN-5.c The City shall review collision data on a regular basis (at least annually) to identify problem areas which require immediate attention.

CN-5.d Publicize the north-south and east-west routes that have been identified by the Napa Bicycle Trails Advisory Commission as safe enough and suitable for use by children ages 9 and older.

Objective 6.0: Land Use

Support and strengthen local land use policies for compact, mixed-use development in appropriate areas, and for designing and constructing bicycle facilities in new development projects.

Policies

6.1 Consistent with federal, state, and regional directives for "routine accommodation and complete streets," condition discretionary projects to provide needed bicycle improvements on Class I, II or III routes designated in this plan, assuming a nexus is established. Improvements include easements or land dedication and route construction, maintenance or enhancement, including support facilities. Construction may be deferred until a connection to an existing route can be made at the discretion of the jurisdiction. [Cities, towns, County]

6.2 In accordance with CEQA Guidelines projects that could result in the loss of existing bicycle facilities or jeopardize future facilities included in this Plan must be mitigated.

6.3 Encourage School districts to participate in providing safe and continuous bicycle and pedestrian connections from surrounding neighborhoods when constructing new or improving existing school facilities. [NCTPA, cities, towns, County]

City of Napa Programs

CN-6.a As new private or public development is approved on or along designated bicycle routes in the City's bicycle plan, the City shall continue to require needed bicycle improvements appropriate for the type of route, including recreational multi use trail system segments (as along the Napa River and Salvador Channel) using the BTAC as a resource to review and provide recommendations regarding such projects.

CN-6.b The City shall promote bicycle access and support facilities in the design of future development.

CN-6.c Specific plans or master plans for larger properties shall incorporate bicycle routes that integrate with the overall city bicycle network. (Such routes may be specific to the property and go beyond routes currently planned.)

CN-6.d The City shall continue to promote compact, mixed use development that facilitates bicycle use in Downtown and other mixed use areas shown on the land use map.

Objective 7.0: Education and Promotion

Develop programs and public outreach materials to promote safety and the positive benefits of bicycling.

Policies

7.1 Develop and implement a multimedia countywide bicycle and pedestrian safety and education campaign to increase knowledge of riding rules, improve etiquette between motorized and non-motorized modes, to promote bicycle tourism, and increase the awareness of the benefits of bicycling and walking as transportation modes. [NCTPA, cities, towns, County – potentially jointly]

7.2 Expand the delivery of Safe Routes to Schools curriculum to all elementary and middle schools annually. [NCTPA, cities, towns, County, School Districts, NCBC]

7.3 Educate law enforcement personnel, agency staff, elected officials, and school officials about the benefits of non-motorized transportation, and the safety needs of bicyclists and pedestrians. [NCTPA, cities, towns, County, School Districts, NCBC]

7.4 Develop and maintain a public bikeway map and user guide that provides bike route, education, safety, and promotional information. [NCTPA, cities, towns, County- potentially jointly]

7.5 Distribute bicycle and pedestrian safety, educational, and promotional materials at drivers training and citation diversion programs, school orientations and community and civic events. [NCTPA, cities, towns, County, law enforcement agencies, schools, advocacy organizations]

7.6 Encourage events that introduce the public to bicycling and walking such as bike-to-work, commuter challenges, bike/walk-to-school days, elected official bike rides, etc. [NCTPA, cities, towns, County, schools, advocacy organizations]

7.7 Encourage major employment centers and employers to facilitate commuting by bicycle, including the use of flex-time work schedules to support non-rush hour bicycle commuting. [NCTPA, cities, towns, County, advocacy organizations]

City of Napa Programs

CN-7.a The City shall participate with countywide and regional agencies, and other interested partners in the preparation and distribution of up-to-date City bicycle maps for public use, and other safety, education, and promotional materials.

Objective 8.0: Planning

Continue to update and integrate bicycle-related transportation, land use and recreation plans and improvement projects.

Policies

8.1 The countywide and/or local Bicycle Advisory Committee (BAC) shall be responsible for advising staff and decision makers on the planning and policy development for, and coordination and implementation of the countywide bicycle transportation system. [County, city and town BACs]

8.2 Update and adopt the Bicycle Plan in accordance with the California Bicycle Transportation Act, and to coordinate with Regional Transportation Plan updates. [NCTPA, County, participating cities and towns]

8.3 Participating jurisdictions shall update their general plans to incorporate the key contents of this Bicycle Plan. [County, participating cities and towns]

8.4 Use local commissions and/or the Countywide BAC as a resource to review roadway improvement projects, on designated bicycle routes in the jurisdiction's bicycle plan, for bicycle safety and compatibility and consistency with the plan, except when proposed improvements meet all standards "Roadway improvements" include widening, resurfacing, rehabilitation, capacity improvements, traffic calming improvements, rumble strips, etc. *Advisory commission recommendations are part of the Metropolitan Transportation Commission review guidelines.* [NCTPA, cities, towns, County]

8.5 Proactively seek new opportunities for acquisition of abandoned rights-of-way, natural waterways, flood control rights-of-way, utility rights-of-way, and lands for the development of new Class I multi-use pathways that integrate with the planned system. [NCTPA, cities, towns, County]

8.6 Recognize the varied needs of bicyclists by striving to maintain on-street bikeways where off street pathways or alternative routes are proposed. Existing bikeways should not be altered or eliminated without the consultation of local bicycle advisory committees. [NCTPA, cities, towns, County]

8.7 NCTPA and local jurisdictions are encouraged to assign staff to assume bicycle coordination duties to oversee implementation of the Countywide Bicycle Plan and coordinate activities between affected departments and jurisdictions. [NCTPA, cities, towns, County]

City of Napa Programs

CN-8.a The City shall update its bicycle plan to incorporate the policies and maps contained herein and continue to participate in local and regional bicycle planning efforts.

CN-8.b The City shall consider the potential for new bicycle connections/routes along existing natural and man-made corridors (railroads, utility easements, creeks, under crossings, etc.) when opportunities arise. Specific connections not currently in the plan but that may be considered in the future include under crossings of 1st Street and 3rd Street at Soscol Avenue.

Objective 9.0: Maintenance

Maintain and/or improve the quality, operation, and integrity of bicycle infrastructure.

Policies

9.1 Maintain Class I paths, and maintain geometry, pavement surface condition, debris removal, markings, and signage on Class II and Class III bikeways to the same standards and condition as the adjacent motor vehicle lanes. [Cities, towns, County]

9.2 Develop or retain a maintenance reporting system with a central point of contact to report, track, and respond to routine bicycle maintenance issues in a timely manner. [NCTPA, NCBC, cities, towns, County]

9.3 Require that road construction projects minimize their impacts on bicyclists by avoiding placement of construction signs and equipment in bicycle lanes, and by providing adequate detours. [Caltrans, cities, towns, County]

9.4 Consider bicycle safety in the routine maintenance of local roads and seek to, at a minimum, include the following activities [Caltrans, cities, towns, County]:

- Trim vegetation to provide a minimum horizontal clearance of two feet from the edge of pavement and a minimum vertical clearance of eight feet.
- Clear debris from road shoulder areas to provide a clean surface for bicycling.

City of Napa Programs

CN-9.a The City shall update as necessary and utilize its existing web-based traffic hazard reporting system to log and respond to bicycle maintenance issues.

CN-9.b Encourage public-private partnerships to expand maintenance activities, for example through the city's adopt a park/trail program or an annual trail cleanup.

Objective 10.0: Funding

Work to maximize the amount of funding to implement bicycle projects and programs throughout the county.

Policies

10.1 Seek varied sources of funding, including but not limited to federal, state, and regional programs, partnerships with local non-profits and other local agencies, and local sources such as assessments to improve the bicycle system. [NCTPA, cities, towns, County]

10.2 Encourage multi-jurisdictional funding applications to implement the primary network and countywide bicycle system. [NCTPA, cities, towns, County]

10.3 Promote the availability of adequate regional, state and federal funding sources for bicycle transportation projects. [NCTPA, NCBC, cities, towns, County]

City of Napa Programs

CN-10.a The City shall continue to seek funding for bicycle improvement projects within the city.

CN-10.b The BTAC develops a prioritized a list of needed bicycle improvements. The City recognizes that some funding sources are specific to particular types of bicycle facilities, or even a specific route or operation program; however, the BTAC list will be consulted when funding opportunities arise.

Operation of Bicycles/Rules of the Road

In California, the *California Vehicle Code* (VC) is the set of traffic laws that govern the behaviors of vehicle drivers. VC 231 defines a bicycle as "a device upon which any person may ride, propelled exclusively by human power through a belt, chain, or gears and having one or more wheels." The VC does not define bicycles as vehicles, but states that persons riding bicycles have all the rights and responsibilities of the drivers of vehicles (Division 11, "Rules of the Road"). Additionally, the VC includes several sections specific to bicyclists. In general, bicyclists are required to ride according to the basic traffic laws that all drivers follow including but not limited to the following:

- Drive on the right-hand side of the roadway
- Obey traffic control devices (signs, signals)
- Yield to cross traffic
- Yield when changing lanes

Duty of Bicycle Operator: Operation On Roadway (VC 21202)

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

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

b) Any person operating a bicycle on a one-way street or highway with two or more marked traffic lanes, may ride as near the left-hand curb or edge of such roadway as practicable.

Permitted Movements from Bicycle Lanes (VC 21208)

a) Whenever a bicycle lane has been established on a roadway, any person operating a bicycle upon the roadway at a speed less than the normal speed of traffic moving in the same direction shall ride in the bicycle lane, except under the following situations.

    - When overtaking or passing another bicycle, vehicle, or pedestrian within the lane or about to enter the lane if such overtaking and passing cannot be done safely within the lane.
    - When preparing for a left turn at an intersection or into a private road or driveway.
    - When necessary to leave the lane to avoid debris or other hazardous conditions.

b) No operator of a bicycle shall leave a bicycle lane until it can be done safely and then only after giving an appropriate hand signal in the event that any vehicle might be affected by the movement.

Intersection Positioning

At intersections, bicycles should travel in the right-most lane that leads to their destination. This means that if a bicycle is preparing for a left-hand turn, they may leave the right side of the road even if a bike lane is provided.

Types of Bicyclists

Understanding the needs and preferences of the various types of bicyclists in the Plan Area is an important part of the process of evaluating existing usage, projecting future demand, and planning for improvement projects. While bicyclists' skills, confidence, and preferences can vary significantly amongst the various bicyclist types, concerns about the safety of bicycling remain paramount for all bicyclists. According to the Portland Office of Transportation, "riding a bicycle should not require bravery, yet all too often, that is the perception among bicyclists and non-bicyclists alike." The common denominator for cities around the world that have achieved a high share of bicyclists in their mode splits is that they have essentially removed the element of fear associated with bicycling in an urban environment. In regard to travel choices, it is unfortunate that fear currently exists in our society. In many cities, bicycling is often the most logical, enjoyable and cost effective choice for short trips for a substantial portion of the community, if not the majority of their populace.

Bicyclists can be categorized in a variety of ways, including age, skill, trip purpose, i.e. transportation or recreation, and even by type of bicycle ridden such as road, mountain, or recumbent bicycle. For the purpose of this Plan, bicyclists have been classified in the following categories: "Advanced Bicyclists," "Average Bicyclists," and "Novice Youth/Adult Bicyclists."

Advanced Bicyclists are typically comfortable riding anywhere they are legally allowed to operate a bicycle, including space shared with cars and trucks along arterials or rural highways. Less advanced or *Average Bicyclists* are typically more comfortable on roadways that provide space separated from motorists and/ or along separated pathways. *Novice Bicyclists*, including children and new adult riders, may be confident and have some level of bicycle handling skills; however, they often do not have the experience of seasoned riders, nor the training or background in traffic laws necessary to operate safely on the road. Bicyclist types and their preferences and needs are defined further in Table 5.

Table 5
Bicyclist Types, Preferences and Needs

Bicyclist Type	Rider Preferences	Rider Needs
Advanced Bicyclist Experienced riders who can operate under most traffic conditions	• Direct access to destinations • Operate at maximum speed with minimum delays • Sufficient roadway space or shoulder so that bicyclists and motorists can pass without altering their line of travel	• Establish and enforce speed limits • Provide wide outside lanes (urban) • Provide usable shoulders (rural)
Average Bicyclist Casual or new adult and teenage riders who are less confident of their ability to operate in traffic without special provisions for bicycles	• Comfortable access to destinations • Direct route, but on low-speed, low traffic-volume streets or on designated bicycle facilities • Well-defined separation of bicycle and motor vehicles or separate multi-use paths	• Ensure low speeds on neighborhood streets • Traffic calming • Provide interconnected network of designated bicycle facilities (lanes, multi-use paths, well-marked Class III) • Usable roadway shoulders • Interconnected Class I Network
Novice Bicyclist Young children, students, and pre-teen riders whose roadway use is initially monitored by parents, and/or adult bicyclists just beginning to ride	• Access to schools, recreation facilities, shopping, or other residential areas • Residential streets with low motor vehicle speed limits and volumes • Well-defined separation of bicycles and motor vehicles or separate multi-use paths	• Ensure low speeds on neighborhood streets • Traffic calming • Provide network of designated bicycle facilities (lanes, multi-use paths, well-marked Class III routes) • Usable roadway shoulders • Interconnected Class I Network

Source: Hawaii DOT, Minnesota DOT

Bikeway Types

The *California Vehicle Code* permits bicycling on all roads in California with the exception of access controlled freeways and expressways. Chapter 1000 of the Caltrans *Highway Design Manual* recognizes this when it states that "the needs of non-motorized transportation are an essential part of all roadway projects." Although not all streets are designated as bikeways, they are all important facilities that ensure access and connectivity for bicyclists.

Effective bikeways encourage the use of bicycles as an alternative to the automobile. The bikeways identified in this Plan include standards and designations established by Caltrans. The *Highway Design Manual* identifies three distinct types of bikeways: Class I Off-Street Bike Paths (Multi-Use Path), Class II On-Street Bike Lanes, and Class III On-Street Bike Routes. These facilities are described below and design details for each facility type are provided in Appendix C. In addition to these three basic facility types, hybrid bikeways and facility enhancements are also described below and recommended for use in appropriate locations. Each class of bikeway has its appropriate application.

Bikeway Types

Class I Multi Use Path

Class II Bike Lane

Bicycle Boulevard

Shared Lane Marking

Cycle Track

Standard Bikeways

Class I Multi Use Path

Class I facilities, typically known as bike paths, are multi-use facilities that provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.

Class II Bike Lane

Class II facilities, known as bike lanes; provide a striped and signed lane for one-way bicycle travel on a street or highway. The minimum width for bike lanes ranges between four and five feet depending upon the edge of roadway conditions (curbs). Bike lanes are demarcated by a six-inch white stripe, signage and pavement legends.

Class III Bike Route

Class III facilities, known as bike routes, provide signs for shared use with motor vehicles within the same travel lane on a street or highway. Bike routes may be enhanced with warning or guide signs and shared lane marking pavement stencils. While Class III routes do not provide measures of separation, they have an important function in providing continuity to the bikeway network.

Class III Bike Route Enhancements

Bicycle Boulevard

A bicycle boulevard is a roadway that gives priority to bicycle traffic at intersections along the route. The boulevard may also include traffic calming features that reduce the total number of vehicles that use the roadway to make the roadway more bicycle-friendly. By definition, bicycle boulevards are Class III facilities, but are not typically signed with just the basic "Bike Route" sign. The City of Napa has developed policy guidelines and standards for bicycle boulevards that are found in Appendix D: Policy Guidelines: City of Napa "Bicycle Boulevard."

Shared Lane Marking

Shared Lane Markings (SLM), known "Sharrows," are pavement legends which may be placed in the travel lane adjacent to on-street parking. The purpose of the marking is to provide positional guidance to bicyclists on roadways that are too narrow to be striped with bike lanes. SLM do not designate a particular part of the street for the exclusive use of bicyclists. They simply guide bicyclists to the best place to ride on the road to avoid the "door swing" of parked cars, and to warn motorists that they should expect to see and share the lane with bicyclists.

Non-Standard Bikeways

Cycle Track

A cycle track is a bikeway that is separated from adjacent traffic flows through the use of a visible grade change or other physical buffer between the bikeway and the roadway. Cycle tracks may provide for one- or two-way travel. Additionally, cycle tracks may be placed outside the parking lane, but in front of the sidewalk. There are no federal or State standards for cycle tracks, and they are not currently approved for use in California.

Existing Conditions

This section describes existing conditions for bicyclists in the City of Napa, including opportunities and constraints, a safety analysis, existing programs, bicycle counts, origins and destinations, schools and safe routes, bicycle parking, and a map and inventory of existing bikeways.

Opportunities and Constraints

A variety of issues and opportunities related to bicycling have been identified through the review of existing documents, maps, aerial images, and public input. These items are summarized below.

- SR 29 is a barrier to east-west travel.
- There is a need for improved east-west connectivity for bicyclists in central and northern Napa – both Class I and Class II routes are desired.
- There is a need for secure and convenient bicycle parking at parks and commercial destinations throughout the community.
- Various traffic signals throughout the community do not detect bicyclists.
- There is a need to improve safety for bicyclists at railroad crossings.
- Degrading pavement and/or a lack of maintenance along bicycle routes is a safety concern.
- Bicycle parking is needed at the City's park-and-ride lot.
- Additional wayfinding signage and safety education is needed for the large number of visitors looking for routes out of town and to the vineyards.

Safety Analysis

The following section addresses safety conditions for bicyclists in the City of Napa and includes a review of the California Office of Traffic Safety's (OTS) collision rankings, the Statewide Integrated Traffic Records System, Seasonal Trends in Napa County, an understanding of the limitations of bicycle collision reporting, an analysis of bicycle collisions in the City of Napa for a ten-year period for which collision data was available, a summary of collision findings, a location map of bicycle collisions, and a review of urban and rural bicycle crash types.

Collision Rankings

The California Office of Traffic Safety (OTS) conducts ongoing research of traffic safety statewide. OTS prepares an annual traffic safety ranking of all California cities and counties. Cities are broken into groups based on population, while all 58 counties are grouped together; however, the grouping does not take into account other local demographics or characteristics. Accordingly, any small increase or decrease in annual collisions can result in a dramatic shift in OTS rankings. Therefore, these rankings were used for a generalized look at collision performance, not as an exact metric.

Seasonal Trends

Seasonally, Napa County experiences the most bicycle collisions during the summer and early fall months, which corresponds to periods with more tourism. Additionally, most crashes occur on Friday through Monday with generally fewer collisions midweek. This also corresponds to increased tourism activity on weekends. The vast majority of collisions reported occurred during daylight and with clear weather conditions.

Collision Reporting

Collision records provided in SWITRS only include collisions reported by an involved party. In cases where there is no significant damage or injury, especially if the collision only involved a single bicyclist, the collision often is not reported. When a collision is reported, the level of detail provided can vary depending on the reporting styles and/or policies of the responding law enforcement agency or even the individual officer.

Bicycle Collision Analysis

The bicycle collision history for Napa was reviewed to determine any trends or patterns that could indicate safety issues for bicyclists. Collision data for a ten-year period from January 1, 1999, through December 31, 2008, was obtained from the California Highway Patrol (CHP) as published in their State Wide Integrated Traffic Records System (SWITRS) reports. The collected SWITRS data was verified for location references, duplicate reporting, and inconsistencies. It is important to note that SWITRS data only includes collisions that were reported, so does not necessarily reflect all incidents that occurred.

A comprehensive review of the data was performed to help understand the nature and factors involved in reported bicycle collisions. A better understanding of these factors may help planners and engineers address some of the physical environments that contribute to these incidents. For example, if it is determined that a high incidence of collisions is occurring in the evening, lighting improvements may help to correct the situation. Conversely, a high incidence of collisions attributed to riders traveling in the wrong direction or those involving children may be addressed through education and/or enforcement activities.

Statewide Integrated Traffic Records System

The California Highway Patrol (CHP) Accident Investigation Unit maintains SWITRS, which was developed as a means to collect and process data elements from a collision scene. The program ensures that local police departments and the CHP utilize and maintain uniform tools and methods to collect and compile meaningful data and statistics which can be used to improve roadway conditions and monitor the effectiveness of enforcement efforts.

The following types of data were reviewed with an emphasis on the conditions indicated to better understand the factors that may have contributed to the reported collisions:

Collisions: This information includes an analysis of the major causes of each collision, the locations of collisions, and the seasonal variation of collisions.

Conditions: Environmental conditions at or near the collision site at the time of each crash were examined. This included an analysis of weather conditions, lighting conditions, and types of traffic control devices present.

Demographics: This included a determination, by gender and age, of collision rates for bicyclists.

Locations: This portion of the analysis includes a map of reported bicycle collisions and spatial analyses of different collision types.

During the ten-year review period, more than 26,000 collisions were recorded throughout Napa County. Analysis of the data for all jurisdictions combined revealed a rise in the number of collisions per year from 1999 to 2002 to a high of 3,082 collisions annually, and then a steady decline to 1,789 collisions in 2008. Of this total number, 725 bicycle collisions were recorded throughout the County. Similarly, a general decline in the number of bicycle collisions recorded occurred over the ten-year review period. There were six bicycle fatalities during the review period.

The City of Napa had a total of 13,769 collisions reported during the ten-year study period, including 479 bicycle collisions total, with 38 to 57 collisions involving bicyclists per year. Of all cities in Napa County, the City of Napa experienced the largest number of bicycle-involved collisions, but the City also has the largest population of all cities in the county.

The two most common bicycle collision causes were riding on the wrong side of the road and auto right of way violation (where the bicyclist violates the right of way of the motorist); these accounted for about half of all reported collisions and are both collision types where the cyclist is likely at fault. The vast majority of collisions occurred during daylight hours and clear or cloudy weather conditions.

The City of Napa is in a category with 103 other California cities with populations that range from 50,001 to 100,000 persons. For 2008, the City's OTS bicycle collision ranking was in the bottom third, resulting in a higher than average number of collisions per year. However, for bicyclists under the age of 15, the City of Napa ranked mid-range, possibly indicating a successful youth safety education program, but with room for continued improvement. Bicycle collisions in Napa are mapped in Figure 8. Table 6 identifies high incident collision locations in the City of Napa by intersection; the mid-block locations are summarized in Table 7. An explanation of OTS collision rankings and collision charts and graphs is provided in Appendix E.

City of Napa Bicycle Collisions

Napa Countywide Bicycle Plan

FIGURE 8

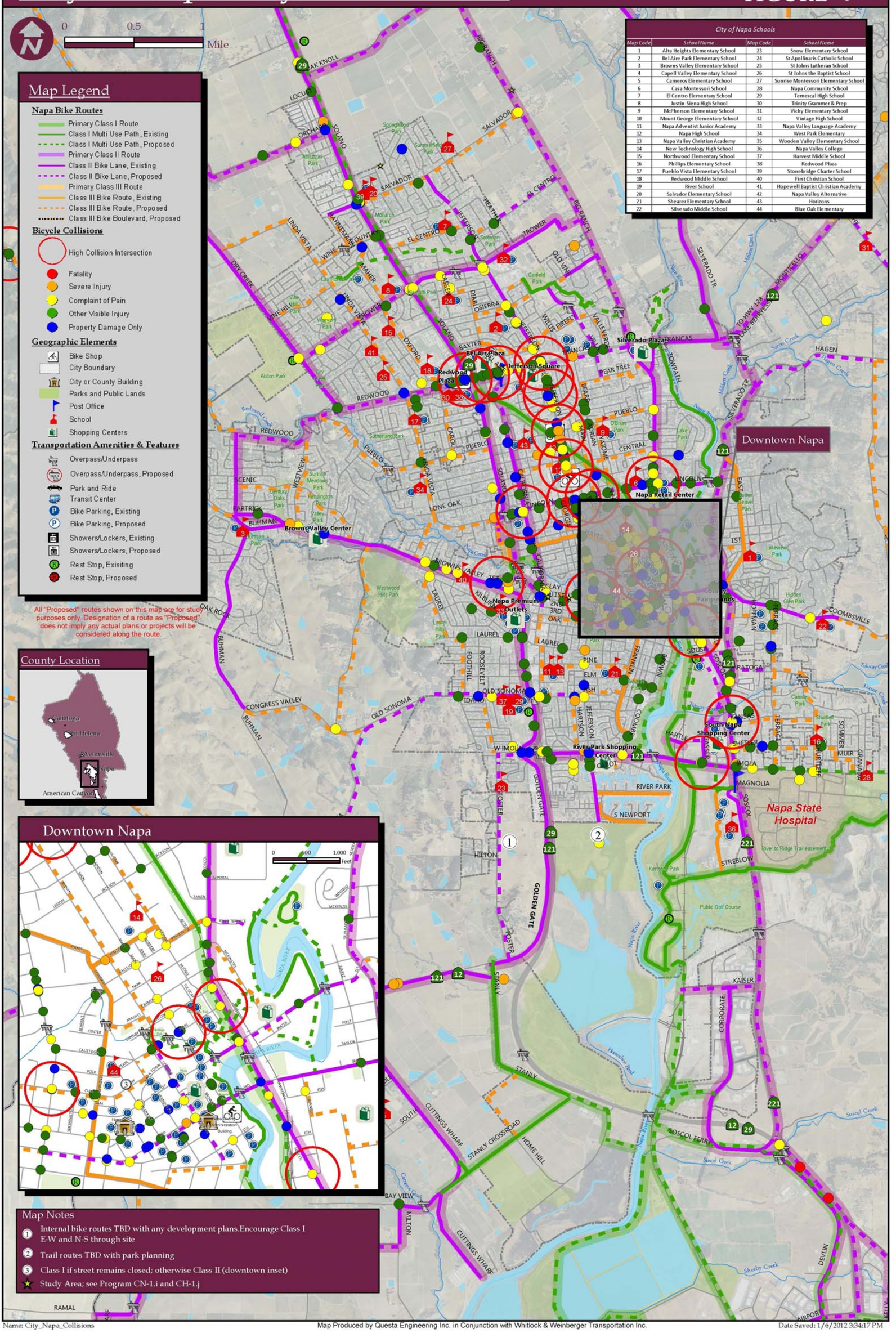

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Table 6
City of Napa Bicycle Collisions
High Incidence Intersections (January 1, 1999 – December 31, 2008)

Rank	Intersection	Total Collisions	Jurisdiction	Description of Location	Bicycle Facilities	Intersection Type	Predominant Collision Type
1	California Blvd/ Trancas St	13	City of Napa	Central Napa east of & adjacent to SR 29	Class II bike lanes on Trancas W of int	Signalized	Broadside
2	Jefferson St/ Pueblo Ave	9	City of Napa	Central Napa N of railroad	None	Signalized	Broadside
T3	1st St/ Freeway Dr	7	City of Napa	W of SR 29/1st St interchange	Class II bike lanes on 1st St, on Freeway Dr S of int	Signalized	Broadside
T3	California Blvd/ Lincoln Ave (W)	7	City of Napa	Adjacent to Lincoln/SR 29 interchange	Class II bike lanes N/S on California	Signalized	Other
T3	Soscol Ave/ Lincoln Ave	7	City of Napa	Central Napa ~0.5 mi W of Silverado Trail ~0.9 mi N of downtown	Class II bike lanes on Lincoln & Soscol – all directions	Signalized	Broadside
T3	Jefferson St/ Lincoln Ave	7	City of Napa	Adjacent to Napa High School	None	Signalized	Broadside; Other
T7	Trancas St/ Jefferson St	5	City of Napa	0.4 miles E of Trancas/SR 29 int., central Napa	None	Signalized	Broadside
T7	Lincoln Ave/ Main St	5	City of Napa	Central Napa, W of downtown	None	Side Street stop-controlled	Other
T7	Trancas St/ NB SR 29 Offramp	5	Caltrans/ City of Napa	NW of Central Napa	Class II bike lanes on Trancas	Signalized	Broadside
T7	Pearl St/ Main St	5	City of Napa	Downtown Napa	None	Signalized	Other
T7	Soscol Ave/ Pearl St (W)	5	City of Napa	E of Central Napa	Class II bike lanes on Soscol	Signalized	Other
T7	Solano Ave/ Redwood Rd	5	City of Napa	Adjacent to Trancas/SR 29 interchange	Class II bike lanes N/S of int on Solano, E of int on Redwood	Signalized	Other
T7	W Imola Ave/ Gasser Dr	5	Caltrans/ City of Napa	S Napa, E end SR 121 Napa River Br	Class II bike lanes on W Imola	Signalized	Broadside

Note: T = tie

Table 7
City of Napa Bicycle Collisions
High Incidence Mid-Block Locations (January 1, 1999 – December 31, 2008)

Rank	Roadway	Location	Total Collisions	Jurisdiction	Bicycle Facilities	Roadway Type	Predominant Collision Type
T1	Jefferson St	Trailer Park Rd to Sheridan Dr	3	City of Napa	None	Arterial	Broadside
T1	Redwood Rd	Solano Ave to Carol Dr	3	City of Napa	None	Arterial	Broadside
T1	Soscol Ave	Trailer Park Rd to 8th St	3	City of Napa	Class II Bike Lanes	Arterial	Broadside
T4	S Jefferson St	Cabot Way to Bridgegate Way	2	City of Napa	None	Arterial	Other; Broadside
T4	Jefferson St	Menlo Ave to Pueblo Ave	2	City of Napa	None	Arterial	Rear-end; Broadside
T4	Pueblo Ave	Jefferson St to Trailer Park Rd	2	City of Napa	None	Arterial	Head-On; Broadside

Note: T = tie

High Collision Location Countermeasures

Tables 6 and 7 identify the intersection and mid-block locations in the City of Napa that have experienced a concentration of bicycle collisions. The three locations having the highest number of incidents for both intersections and midblock crossings were reviewed to determine any trends that may be addressed through engineering or programmatic countermeasures. If desired, "share the road' and "wrong way" signs could be utilized as countermeasures in mid-block collision areas. The following specific countermeasures were developed to address collision histories and site-specific conditions at the City's top collision locations for bicyclists.

High Collision Intersection Locations Countermeasures

- *California Boulevard/Trancas Street* – The intersection of California Boulevard/Trancas Street had the City's highest concentration of bicycle collisions in the City of Napa for the ten-year review period with a total of 13 collisions reported. The four-legged intersection is signalized and has Class II bike lanes on the western leg of Trancas Street, where the posted speed limit is 30 mph. The predominant collision type at this intersection was broadside collisions. As cyclists travel eastbound on Trancas Street and cross California Boulevard designated bike facilities end. Bicycle lanes are planned to continue on Trancas Street and California Boulevard. To improve awareness the following measures are recommended:

  Improvement

  - As a short-term measure, install "Share the Road" signs on the westbound Trancas approach to alert motorists of cyclists.

- *Jefferson Street/Pueblo Avenue* – The intersection of Jefferson Street/Pueblo Avenue had the second highest incidence rate, with nine collisions over a ten-year period. The intersection's four approaches are controlled by a traffic signal, and the posted speed limit on Jefferson Street is 30 mph. The predominance of broadside collisions may be attributed to insufficient green time for cyclists to clear the intersection. It should be noted that intersection improvements have been implemented in the last two years to address collision. These improvements should be monitored for effectiveness. If warranted to further improve cyclist safety at the intersection, the following measures are recommended:

Improvements

- Modify signal timing to include adequate green time for cyclists to clear the intersection safely.
- Provide additional signing to inform motorists of the presence of cyclists.

- *1st Street/Freeway Drive* – 1st Street/Freeway Drive experienced seven collisions over the ten-year study period. This intersection has four approaches and is signalized, with striped bike lanes on 1st Street. The intersection widens to include right-turn pockets on the northbound and eastbound approaches. The primary collision factor at this location was broadside collisions. To improve cyclist safety at the intersection the following counter measures are recommended:

  Improvements

  - Install signing to inform motorists of cyclist activity.
  - Install bicycle signing recommended in the CA-MUTCD for bike lanes adjacent to right turn lanes on the eastbound approach to reinforce the expectation of bicyclists and promote orderly movements through the intersection for motorists.

High Collision Locations General Countermeasures

Improvements

- On both streets with bicycle facilities and those without bicycle facilities, a high percentage of bicycle collisions within the City of Napa are related to riding the wrong way or against traffic. Therefore, "wrong way" warning signs should be installed behind the "bike lane" signs to alert cyclists that they are riding in the wrong direction. Education programs would also inform users of the appropriate way to use the different bicycle facilities.
- Implement a bicycle safety education program.

Comparison of Rural and Urban Bicycle Crashes

FHWA Summary Report of Factors Contributing to Pedestrian and Bicycle Crashes on Rural Highways

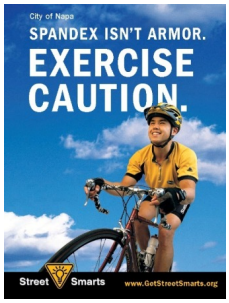
A 2010 report by the FHWA's Highway Safety Information System, *Factors Contributing to Pedestrian and Bicycle Crashes on Rural Highways*, was prepared to examine the difference between pedestrian and bicycle crashes in urban and rural settings in order to identify crash types and crash locations specific to rural highways that could be addressed through the use of existing safety treatments and/or through the development of new treatments.

According to the study, "approximately 25 percent of nationwide pedestrian and bicycle fatal and injury accidents occur on rural highways. In contrast to urban highways, rural highways have certain characteristics that can be more hazardous to pedestrians and bicyclists, such as higher average vehicle speeds and a lack of sidewalk and/or shoulder provisions." Further, limited research has been conducted on rural highways in regards to the potential to link crash data with roadway characteristics and traffic counts.

The first objective of the study was to compare general descriptive statistics of rural versus urban crashes. This general comparison is useful for indicating which factors are common to both localities as well as which factors are over-represented in a rural environment.

The most common crash types for bicyclists differed in rural and urban areas. The most common rural crashes included bicyclists turning/merging into the path of the driver and drivers overtaking the bicyclist. The most common urban crashes included drivers failing to yield, bicyclists failing to yield midblock, and bicyclists failing to yield at the intersection. One noticeable difference is that common rural crash types generally occurred on midblock segments, while urban crash types generally occurred at intersections.

Existing Bicycle Safety, Education, and Encouragement Programs



The City of Napa Transportation Engineering Division (TED) is currently implementing "Street Smarts," a multi-media traffic safety campaign. The Street Smarts traffic safety education program is designed to get people thinking to help make our streets safer. The Street Smarts program provides billboards, signs, and other media to educate motorists, bicyclists, and pedestrians, by building awareness, offering safety tips, and reminding all of us to take responsibility for our actions on the road. The program is focused on speeding, red light running, stop sign running, school zone safety, and crosswalk safety and compliance. Currently there are no other formal safety or education programs for bicyclists through the City of Napa.

Data Collection Recommendations (Bicycle Counts)

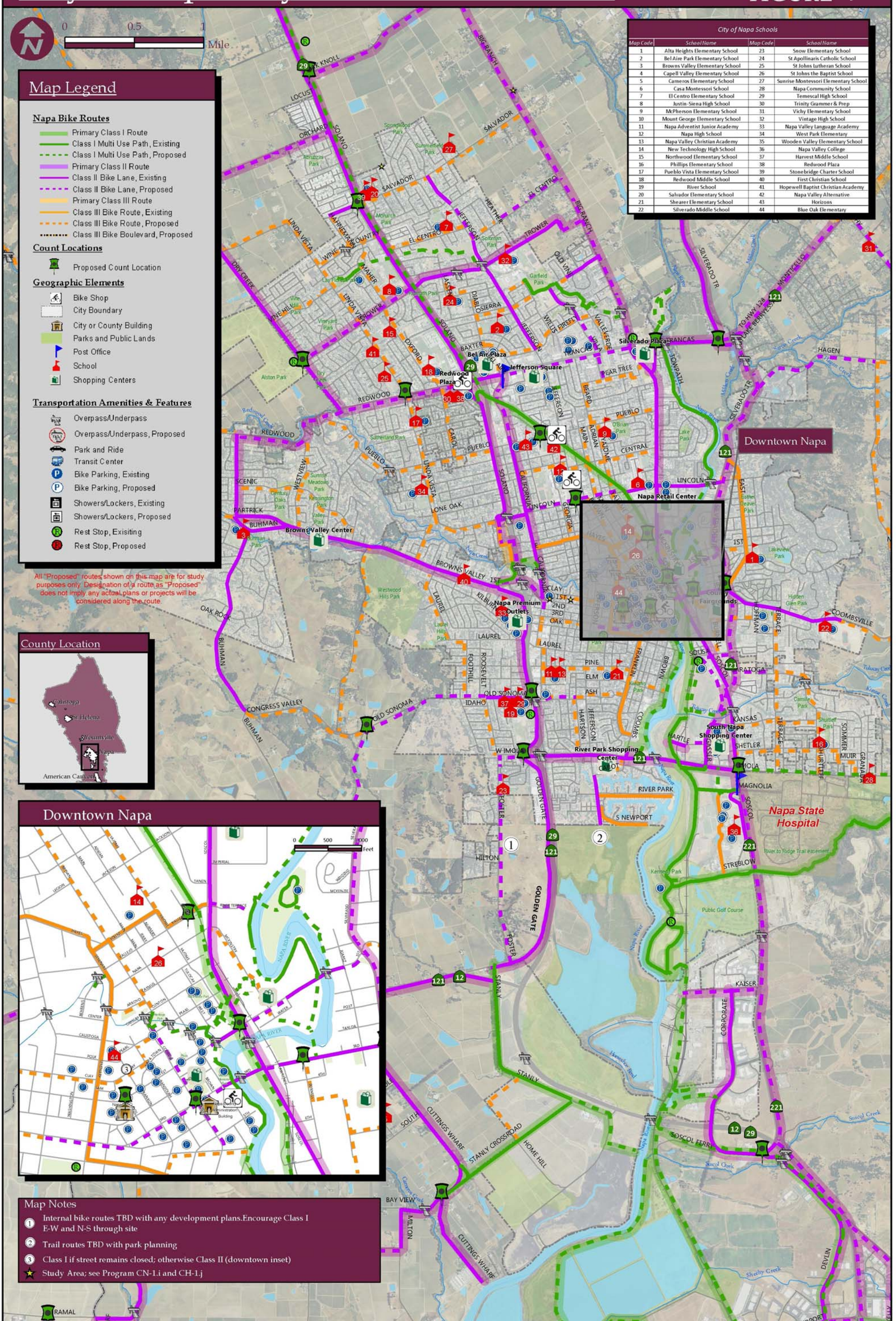
One of the challenges agency staff and local decision makers currently face in the area of bicycle and pedestrian planning is the lack of documentation on usage and demand for bicycle and pedestrian facilities. Without accurate and consistent data, it is difficult to measure the positive benefits of bicycle and pedestrian investments, especially when compared to other types of transportation. Regular bicycle counts are recommended to address the need for data. The first set of bicycle counts conducted in the Plan Area will be used to establish a baseline for bicycling in and around Napa. This baseline can then be compared to bicycle counts conducted on a periodic basis so that usage trends can be identified and measured. Note that counts are not meant to establish the number of bicyclists throughout the Plan area, which may be better achieved through a survey of a representative sample of residents, or through Census results. Instead, they are intended to help identify trends in bicycle use over time. In addition to tracking trends and identifying usage, counts can be used to substantiate the need for additional facilities and support requests for funding, enforcement, maintenance, facility enhancements, and other safety improvements.

Proposed count locations in Napa and the surrounding unincorporated County were identified through this planning process. The basic criteria used to select count locations included points along and intersections of primary streets in the bikeway network, area coverage, population centers, attractors and generators, and community gateways. Proposed count locations are mapped in Figure 9 and identified in Table 8. Information on standard counting methodologies, recommended count periods, a discussion of ongoing counting efforts at the regional and national levels, and sample standardized count forms from the Metropolitan Transportation Commission and the National Bicycle and Pedestrian Documentation Project are provided in Appendix F.

City of Napa Bicycle Count Locations

Napa Countywide Bicycle Plan

FIGURE 9



City of Napa Schools			
Map Code	School Name	Map Code	School Name
1	Alta Heights Elementary School	23	Snow Elementary School
2	Bel Aire Park Elementary School	24	St Apollinaris Catholic School
3	Browns Valley Elementary School	25	St Johns Lutheran School
4	Capell Valley Elementary School	26	St Johns the Baptist School
5	Carneros Elementary School	27	Sunrise Montessori Elementary School
6	Casa Montessori School	28	Napa Community School
7	El Centro Elementary School	29	Temescal High School
8	Justin-Siena High School	30	Trinity Grammer & Prep
9	McPherson Elementary School	31	Vichy Elementary School
10	Mount George Elementary School	32	Vintage High School
11	Napa Adventist Junior Academy	33	Napa Valley Language Academy
12	Napa High School	34	West Park Elementary
13	Napa Valley Christian Academy	35	Wooden Valley Elementary School
14	New Technology High School	36	Napa Valley College
15	Northwood Elementary School	37	Harvest Middle School
16	Phillips Elementary School	38	Redwood Plaza
17	Pueblo Vista Elementary School	39	Stonebridge Charter School
18	Redwood Middle School	40	First Christian School
19	River School	41	Hopewell Baptist Christian Academy
20	Salvador Elementary School	42	Napa Valley Alternative
21	Shearer Elementary School	43	Horizons
22	Silverado Middle School	44	Blue Oak Elementary

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Table 8
Napa Proposed Bike Count Locations

#	Primary Street	Facility Classification	Cross Street	Facility Classification	Use/ Activity	Notes
1	Commuter Bike Path/ Vine Trail	Class I	Main/ Central	(none)	School Commute	Intersection of major cross-town routes, near Napa High School
2	Coombs St	Class II	Division	Class III	Downtown/Library	Downtown location
3	Solano Ave	Class II	Trower Ave	Class II	Community Gateway/School Commute Route	Captures north-south activity near northern city limits, school commute routes
4	Redwood Rd	Class II	Dry Creek Rd	Class II	Primary Routes/Recreational Access/School Commute	
5	Trancas St	Class II	Old Soscol Ave/River Trail	Class II/ Class I		Captures east-west activity at the eastern city limits, shopping, recreational activity on the Napa River Trail
6	Golden Gate Dr	*Class II*	Imola Ave	*Class II*	Primary Routes/ Community Gateway/ Schools/Shopping	Captures north-south activity near southern city limits, adjacent to schools and shopping
7	Freeway Dr	Class II	1st St	Class II	Primary Routes/School Commute	School commute activity
8	3rd St	Class II	Soscol Ave	Class II	Downtown/River Crossing/County Administration Center/ New Transit Center/ River Trail	Downtown location, intersection of north-south and east-west bike lanes, adjacent to bridge over Napa River
9	Napa Commuter Bike Path	Class I	California Blvd	*Class II*	Primary Route/Shopping	Central location, captures north-south commute & recreation activity on the Commuter Bike Path
10	Imola Ave	Class II	Soscol Ave	Class II	Primary Routes/Shopping/ Schools/Community Gateway	Intersection of primary north-south & east-west bike lanes
11	Coombsville Rd	Class II	Silverado Trail	*Class II*	Primary Routes/School Commute/River Crossing/Downtown Access	5-way intersection incl. 3rd St & East St Class II bike lanes are provided on 3rd St & East St
12	Napa Commuter Bike Path	Class I	Vallejo St	Class III	Primary Routes/Downtown Access	North-south commute & recreation activity near the entry to downtown
13	Napa River Trail	Class I	River to Ridge Trail (Kennedy Park)	Class I	Recreational Facilities	Recreation activity along the Napa River Trail

Note: *Italics* = Proposed Facility

Origins and Destinations

The following sections identify the City of Napa's major origins and destinations for bicycle trips. It is important to identify these facilities in order to understand access needs and existing and potential travel patterns when considering alignments for both the local and primary bikeway networks. Brief descriptions and/or lists of origins and destinations are provided below. Major facilities are mapped on Figure 1, the City of Napa Bikeways Map, to show their relationship to existing and proposed bikeways.

Schools

Primary and Secondary Schools

The Napa Valley Unified School District oversees the City's public school system. The District includes a total of 43 schools including elementary, middle, and high schools, and Napa Valley College. The District serves a population of around 17,800 students. A number of private schools are also located in Napa. Table 9 lists the schools located within the City of Napa.

Table 9
Napa Schools

School	Location	School	Location
Alta Heights Elem	15 Montecito Blvd	New Technology High	920 Yount St
Bel Aire Park Elem	3580 Beckworth Dr	Northwood Elem	2214 Berke St
Blue Oak Elem	1436 Polk St	Phillips Elem	1210 Shetler Ave
Browns Valley Elem	1001 Buhman Ave	Pueblo Vista Elem	1600 Barbara Rd
Capell Valley Elem	1192 Capell Valley Rd	Redwood Middle	3600 Oxford St
Carneros Elem	1680 Carneros Ave	River School	2447 Old Sonoma Rd
Casa Montessori Preschool	780 Lincoln Ave	Salvador Elem	1850 Salvador Ave
El Centro Elem	1480 El Centro Ave	Shearer Elem	1590 Elm St
First Christian	2659 First Napa St	Silverado	1133 Coombsville Rd
Harvest Middle	2449 Old Sonoma Rd	Snow Elem	1130 Foster Rd
Hopewell Baptist Christian Academy	3755 Linda Vista Ave	St. Apolinaris Catholic	3700 Lassen St
Horizons	1600 Myrtle Ave	St. John's Baptist	938 Napa St
Justin-Siena High	4026 Maher St	St. John's Lutheran	3521 Linda Vista Ave
Kolbe Academy	2055 Redwood Rd	Stonebridge Charter	1870 Salvador Ave
McPherson Elem	2670 Yajome St	Sunrise Montessori Elem	1226 Salvador Ave
Mount George Elem	1019 Second Ave	Sunrise Montessori of Napa	1226 Salvador Ave
Napa Adventist Junior Academy	2201 Pine St	Temescal High	2447 Old Sonoma Rd
Napa High	2475 Jefferson St	Trinity Grammar & Prep	1370 Trancas St PMB 174
Napa Valley Alternative	1400 Menlo Ave	Vichy Elem	3261 Vichy Ave
Napa Valley Christian Academy	3675 Solano Ave	Vintage High	1375 Trower Ave
Napa Valley College	2277 Napa-Vallejo Hwy	West Park Elem	2315 West Park Ave
Napa Valley Language Academy	2700 Kilburn Ave	Wooden Valley Elem	NA-CLOSED

Note: Elem = Elementary

Community Facilities

There are a variety of civic destinations and community facilities located in the City of Napa that can be reached by bicycle or on foot. Major community facilities in Napa include:

- Napa Post Office – 1351 2nd Street, 1625 Trancas Street
- Napa Public Library – 580 Coombs Street
- Napa City Hall – 955 School Street
- Napa County Fairgrounds – 575 3rd Street
- Napa County Administration Complex – 1195 3rd Street
- Queen of the Valley Hospital – 1000 Trancas Street
- Kaiser Clinic – Permanente Way

Commercial / Shopping Centers

- Farmer's Markets
- Oxbow Market
- Redwood Plaza
- South Napa Marketplace
- Silverado Plaza
- River Park Plaza
- Bel Aire Plaza
- Napa Premium Factory Outlets
- Downtown/Riverfront

Major Employment Centers

- Napa Corporate Park
- Napa State Hospital
- Napa County Administration Complex
- Kaiser
- Queen of the Valley Hospital
- City of Napa
- Napa Valley Wine Train

Parks

The City of Napa maintains more than 48 public parks with a total of over 800 acres of parkland. These parks include a variety of recreation attractions. A list of existing parks in the City of Napa is provided in Table 10.

Table 10
City of Napa Parks

Category Park	Characteristics
Tot Lot/Mini Parks	
Sequoia Park	Children's play area
North Jefferson Park	Picnic tables
Sequoia Park	Children's play area
Beckworth Park	Children's play area
Tallac Park	Children's play area
Norfolk Park	Children's play area and picnic area
Harkness Park	Picnic area
Montclair Park	Children's play area
Neighborhood	
Abruzzini Park	Baseball fields, children's play area, picnic tables
Springwood Park	Basketball courts, children's play area, picnic tables
Summerfield Park	Basketball courts, children's play area, picnic tables
Monarch Park	Basketball courts, children's play area, picnic tables
Soloman Park	Children's play area
Vine Hill Park	Basketball courts, children's play area, mini skate park, picnic tables
Klamath Park	Basketball courts, children's play area, walking trails, picnic tables
Dry Creek Park	Basketball courts, children's play area, volleyball area, restrooms, picnic area
Vineyard Park	Children's play area, picnic area
Sutherland Park	Children's play area, picnic area
Sunrise Meadows Park	Basketball courts, mini skate park, picnic area
Buhman Park	Picnic area, children's play area
Laurels Hills Park	Basketball courts, children's play area, picnic area
Playground Fantastico	Playground adjacent to Harvest Middle School
Riverside Park	Children's play area
Esther Deaver Park	Children's play area, picnic area
Lake Park	Basketball courts, children's play area, par course, walking trails, picnic area
O'Brien Park	Children's play area, restrooms, walking trails, picnic area
Lakeview Park	Walking trails with great City views
Hidden Glen Park	New facility
Fairview Park	Basketball courts, children's play area, mini skate park, picnic tables
Heritage Park	
Napa Skate Park	Devoted to bike and skateboard users
Shurtleff Park	Dog park, picnic tables
Camille Park	Children's play area, walking trails, picnic area
Kensington Park	Picnic tables
Valley Park	Children's play area, picnic area

Table 10
City of Napa Parks

Category Park	Characteristics
Community	
Las Flores Park/ Community Center	Facility that is used for City recreation programs
Garfield Park	Used by Napa Little League for youth baseball facilities; restrooms and drinking fountains
Century Oaks Park	Basketball courts, children's play area, picnic area
Kiwanis Park	Home to Napa Junior Girls Softball League
Veterans Memorial Park	Most popular gathering place; holds major City events
Fuller Park	Picnic sites, playground
Citywide Park	
Alston Park	Picnic areas, dog park, open space, trails for walkers, joggers, bikers and horse riders
Timberhill Park	Open space, trail
Westwood Hills Park	Hiking trails, picnic tables
Kennedy Park	Sports fields, hiking trails, picnic area, playground
Trancas Park	Trails, interpretive signs, restrooms, parking lot, access for hand boat launching into Napa River

Bicycle Shops

Within Napa, a series of bike shops provide various services, including rentals, repair and sales for the biking community. A general internet search for local shops included the names of several Napa bike shops. Table 11 describes these businesses.

Table 11
Napa Bicycle Shops

Shop	Location	Services
Bicycle Works	3335 Solano Ave	Complete bicycle center, including some basic bicycle classes
Napa River Velo	796 Soscol Ave	Bike shop
Napa Valley Bike Shop	680 Main St	Bike shop
Bicycle Madness	2500 Jefferson St	Bike shop
Bicycle Madness-HUB	2500 Jefferson St	Bike shop
Fix-a-Bike	2965 Jefferson St	Bike shop
KC Bicycles	Webber St	Bikes, Bike Rentals
Change of Greenery	3425 Solano Ave	Bike rentals and tours

Source: Google Earth 2011

Hotels

Many of Napa's lodging options provide complimentary bicycle use for hotel patrons to travel around town, and a number of these are located along Napa's primary transportation network routes.

Bikeways Inventory

Existing bicycle facilities in Napa were inventoried through a GIS survey, field reconnaissance, staff questionnaires and interviews, consultation with the Napa Bicycle and Trails Advisory Committee, and through outreach to the public. Primary bikeways in Napa include the Napa Commuter Bike path, north-south Class II bike lanes on Soscol Avenue, California Boulevard, Solano Avenue, and Dry Creek Road. Primary east-west routes include Imola Avenue, Browns Valley Road, short segments of 1st and 3rd Streets and Lincoln Avenue across the Napa River, Trower Avenue, and segments of Lincoln Avenue and Redwood Road across SR 29. A network of Class I multi-use pathways provides recreational access along the Napa River and within various City parks. A comprehensive inventory of existing and proposed bikeways is listed in mapping and associated tables. Existing bikeways in the City of Napa are listed in Table 12.

Table 12
Existing Napa Bikeway Segments

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Network	SF Bay Area Regional Route
Class I							
1	Coffield Ave Path	1st St	Coffield Ave	I	0.27	Yes	No
2	Coombs Plaza Path	Pearl St	Clinton St	I	0.05	No	No
3	Emily Ave Path	Jefferson St	Main St	I	0.07	No	No
4	Imola Ave West	Vine Trail/Bay Trail	Napa River/Bay/Vine Trail	I	0.20	Yes	Yes
5	Las Flores Park Path	Culpepper St	Maher St	I	0.20	No	No
6	Napa River Promenade	West St	Main St	I	0.35	No	No
7	Napa River Trail/Vine Trail (W Loop Kennedy Park)	Existing class I facility at JFK Park	Steblow Drive Parking Area/River to Ridge Trail	I	0.28	Yes	Yes
8	Napa River Trail – City Park Loop	Proposed class I facility connecting to Napa River	Proposed Napa River Trail-North to Lincoln	I	0.24	No	No
9	Napa River Trail (Copia)	1st St	Water St (proposed Napa River Trail extension)	I	0.28	No	No
10	Napa River Trail (W Side)	Existing class I facility at Oxbow	River Terrace Way (behind River Terrace and Westin Hotels)	I	0.15	No	No
11	Napa River Trail (W Side)	Lincoln Ave	Trancas St	I	1.23	No	No
12	Napa River Trail Connector	JFK Park Bay Trail, Vine Trail	SR 221 (Napa-Vallejo Hwy)/ College Way	I	0.33	No	No
13	Napa River Trail/Bay Trail/Vine Trail	Existing class I facility near intersection with Streblow Dr	Imola Ave	I	1.06	Yes	Yes
14	Napa River Trail/Vine Trail	Proposed class I facility	Imola Ave	I	0.41	Yes	Yes
15	Napa River/Vine Trail (E loop Kennedy Park)	Proposed class I facility at Kennedy Park	Napa River Trail West Loop at Ball Fields	I	0.51	Yes	Yes
16	Napa River/Vine Trail (W Loop S end of Kennedy Park)	Proposed class I facility at Kennedy Park	South end of ball fields, connects to east loop	I	0.58	Yes	Yes
17	Napa Valley College Path (Bay Trail Connector from Roy Patrick Dr to College Way 2)	Existing class I facility	Roy Patrick Dr	I	0.04	No	No

Table 12
Existing Napa Bikeway Segments

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Network	SF Bay Area Regional Route
18	Napa Valley College Path (Bay Trail Connector from Roy Patrick Dr to College Way 1)	class I facility south of JFK Park parking lot	College Wy/Bay Trail Connector (along College Way/Magnolia Dr)	I	0.04	No	No
19	Opera House Bridge over Napa Creek	Main St	West St	I	0.06	No	No
20	River to Ridge Trail/Bay Trail Connector (along Streblow Dr)	Skyline Park	SR 221 (Napa-Vallejo Hwy)	I	0.62	Yes	Yes
21	Salvador Creek Trail	Garfield Ln	Ranch Ln	I	0.45	No	No
22	Salvador Creek Trail	End of Garfield Ln	Willis Dr	I	0.31	No	No
23	Stanly Crossroad Pathway	Cuttings Wharf Rd	Stanly Ln	I	1.17	Yes	Yes
24	Stanly Ln Pathway	Stanly Crossroad	SR 12	I	1.32	Yes	Yes
25	Vine Trail/Commuter Bike Path	Vallejo St	Central Ave/Main St	I	0.71	Yes	Yes
26	Vine Trail/Commuter Bike Path	Central Ave	California Blvd	I	0.80	Yes	Yes
27	Vine Trail/Commuter Bike Path Bridge over SR 29	California Blvd	Solano Ave	I	0.20	Yes	Yes
Class II							
28	1st St	Vernon St	Juarez St	II	0.19	No	No
29	1st St Bridge	NE of Main St intersection	Soscol Ave	II	0.09	No	No
30	3rd St	Main St	Soscol Ave	II	0.13	No	No
31	3rd St	RR tracks, Lawrence St	Silverado Trail	II	0.31	No	No
32	Big Ranch Rd	La Homa Dr	Trancas St	II	0.33	Yes	No
33	Browns Valley Rd	Patrick Rd	Buhman Rd	II	0.14	No	No
34	Browns Valley Rd	Buhman Rd	Patrick Rd	II	0.30	No	No
35	Browns Valley Rd	Patrick Rd	Redwood Rd	II	0.59	Yes	No
36	Buhman Ave	Congress Valley Rd	Browns Valley Rd	II	1.43	No	No
37	California Blvd	1st St	Pueblo Ave	II	1.20	Yes	No
38	Coombs St (Intersection improvements N Coombs leg)	Imola Ave	Proposed Napa River Trail	II	0.06	Yes	No

Table 12
Existing Napa Bikeway Segments

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Network	SF Bay Area Regional Route
39	Coombsville Rd	Silverado Trail	Silverado Middle School	II	0.90	No	No
40	Dry Creek Rd	Redwood Rd	NW city limit	II	1.04	Yes	No
41	Freeway Dr	Imola Ave	1st St	II	1.40	Yes	No
42	Garfield Ln	Old Vine Wy	Big Ranch Rd	II	0.27	No	No
43	Gasser Dr	Imola Ave	Kansas Ave	II	0.31	Yes	No
44	Golden Gate Dr	Napa city limit	Imola Ave	II	0.56	Yes	Yes
45	Hartle Ct	Vine Trail	Gasser Dr	II	0.14	Yes	Yes
46	Imola Ave W	SR 29	SR 221	II	1.55	Yes	Yes
47	James Diemer Dr	Napa Valley College	Roy Patrick Dr	II	0.46	No	No
48	Jefferson St	Rubicon St	El Centro	II	0.92	No	No
49	Jefferson St	Darling St	Salvador St	II	0.27	No	No
50	Kansas Ave	Gasser Dr	Soscol Ave	II	0.17	No	No
51	Lincoln Ave	Solano Ave	California Blvd	II	0.22	Yes	No
52	Lincoln Ave	Vine Trail, RR tracks	Silverado Trail	II	0.72	No	No
53	Napa Valley Corporate Dr, Vista Point Dr	South Napa city limit	Kaiser Rd	II	0.92	Yes	Yes
54	Old Sonoma Rd	Foster Rd	Old Sonoma Rd turn off	II	0.26	No	No
55	Old Soscol Way	Big Ranch Rd	Trancas St	II	0.23	Yes	No
56	Patrick Rd-Browns Valley Rd	Browns Valley Rd	Freeway Dr/SR 29 Ramps	II	1.98	Yes	No
57	Salvador Ave (W)	Hahnemann Ln	Solano Ave	II	0.24	No	No
58	Solano Ave	Lincoln Ave	Locust St	II	3.43	Yes	No
59	Soscol Ave	Imola Ave	6th St	II	1.17	Yes	No
60	Soscol Ave	6th St	La Homa Dr	II	1.76	Yes	No
61	South Jefferson St	Napa city limit	Cabot Wy	II	0.36	No	No
62	SR 221 (Napa Vallejo Hwy)	Magnolia Dr	Imola Ave	II	0.15	Yes	Yes
63	Trancas St	Soscol Ave	Napa River	II	0.07	Yes	No

Table 12
Existing Napa Bikeway Segments

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Network	SF Bay Area Regional Route
64	Trancas St	Solano Ave	California Blvd	II	0.24	Yes	No
65	Trower Ave	Solano Ave	E end of Trower at Vintage High	II	1.25	Yes	No
66	Villa Ln	Firefly Ln	Salvador Creek Path	II	0.34	No	No
Class III							
67	E St, Hayes St, Seminary St, Franklin St	Combs St	California Blvd	III	2.23	No	No
68	East Ave	3rd St	Silverado Trail	III	0.98	No	No
69	River Park Blvd	Jefferson St	North Newport Drive/River Park Overlook	III	0.55	No	No
70	Roy Patrick Dr	Streblow Dr	College Wy	III	0.62	No	No
71	S Newport Dr	Jefferson St	Lighthouse Ct/River Park Overlook	III	0.44	No	No
72	West F St, Coffield Ave	Proposed class I facility, Coffield Ave	Solano Ave	III	0.42	Yes	No
73	Yount St-Vallejo St (Bike Blvd)	Seminary St	Soscol Ave	III	0.41	No	No
				Class I	**11.93**		
				Class II	**26.08**		
				Class III	**5.64**		

Bicycle Parking

The City's Zoning Ordinance includes the following bicycle parking requirements:

> 17.54.060 Bicycle parking.
>
> All nonresidential uses required to provide 10 or more vehicular parking spaces shall also provide bicycle-parking facilities according to the following standards:
>
> A. Spaces. One bicycle space for each 10 vehicular spaces is required.
>
> B. Modifications. The parking requirement for any specific use listed may be modified with a use permit in order to provide adequate parking, which is fair, equitable, logical and consistent with the intent of this chapter. Such modification shall be subject to review and approval by the Planning Commission.
>
> C. Lockers. Bicycle lockers may be installed but are not required.
>
> D. Waiver. The decision-making body may waive or reduce this requirement only if it can be demonstrated that the bicycle parking facilities are provided nearby to satisfy the proposed requirements or there is pre-existing development such that there is no feasible location for such facilities. (O2003 12; O2004 9 18).

Bicycle parking (racks, lockers, and corrals) is provided at destinations throughout the City including within downtown, at schools, civic destinations, parks, employment sites, and retail and commercial locations. An inventory of existing bicycle parking facilities was conducted by City staff in June 2010. The results of the inventory are provided in Appendix G.

Every public school has bicycle racks. To date, a few parks have bicycle racks. Many public buildings and all major shopping centers have bicycle racks and staff surveyed more than 135 bicycle racks in the Downtown Area in 2010. While there are many bicycle racks located throughout the city, they may not be located in convenient or highly visible places.

In 2011, City staff reviewed Downtown bicycle parking locations and has mapped potential added locations. The City recently installed 10 new single hoop racks and will install a new bike locker. Further, some existing larger bike racks will be moved to higher use locations.

For further information on bicycle parking programs and placement guidelines, see page 56-58 of the countywide plan.

Multi-Modal Connections

Bicycles are often used in combination with other modes of transit (such as bus, carpool, ferry, or train) as part of a multimodal trip. Convenient multi-modal connections that are well-integrated into the transportation system are a vital component of a balanced transportation network. Transit has the potential to extend trip ranges for bicyclists to both nearby communities, and destinations outside of Napa County. Multi-modal connections are especially important in Napa County, considering existing barriers to bicycle travel such as distances between communities, existing gaps in the bicycle network between urban areas, heat during summer months, and rain during winter months. While these obstacles likely serve as deterrents to existing and potential trips by bike, convenient multi-modal access can help to address these issues and extend trip ranges. Front loading bicycle racks, which typically accommodate two bicycles, are provided on all fixed route transit buses that operate in Napa County. Bicycle rack spaces are available on a first come, first served basis. When the front loading racks are

full, drivers can accommodate bicycles inside the bus at their discretion, however, in the event that it is the last scheduled bus of the day, bicycles are permitted inside the vehicle.

Park and Ride Lots

Two formal park and ride lots are provided in the City of Napa. These existing facilities are summarized in Table 13.

Table 13
City of Napa Park and Ride Lots

Location	Spaces	Bikes	Lighting	Transit Services
Golden Gate Dr & Imola Ave W @ SR 29	76	No Short-Term/2 Long-Term Bike Lockers	Yes	Vine
Redwood Rd @ Trancas & SR 29	90	Yes	Yes	Vine

Proposed Improvements

Proposed bikeway improvements consist of a network of Class I multi-use paths, Class II bike lanes, and Class III bike route projects to complete both the local and primary countywide bikeway networks in the City of Napa, along with various safety enhancements and bicycle support facilities and programs designed to improve safety and encourage bicycling.

The local and primary bikeway networks have been planned to link residents, visitors, and bicyclists of all ages and types between residential areas and community destinations including schools, parks, shopping, civic buildings, employment centers, and regional trails and bikeways. Recommended bicycle support facilities and programs include increasing short- and long-term bicycle parking supplies, improving multi-modal integration, maintenance and monitoring programs, strategies to develop a bicycle counting program, safe routes to school programs, public education, signing and marking enhancements, and a communitywide traffic safety education campaign.

Criteria for Route Selection and Evaluation

The methodology for developing a bikeway network for any community begins with input from the local bicycling community, local planning and engineering staff familiar with the community and the public. Based on prior detailed planning efforts, input received, existing conditions, project goals, and opportunities and constraints, a network of proposed facilities and programs was prepared. Next, a ranking methodology based on general planning criteria was developed with the Project Steering Committee to prioritize the recommended bikeway projects and programs. A Decision Matrix was used to attach weights to each criterion and determine which recommendations meet the highest number of criteria listed. It is important to note however, that over time changes will occur that may impact project implementation opportunities, and thus projects that may not be heavily weighted could be implemented in the short term due to opportunity, funding availability, political will, or other reasons.

Project ranking criteria include:

- *Land Use:* A project that provides or promotes connections or access to multiple land uses (e.g. primary generators such as dense residential neighborhoods with high numbers of bicycle commuters with areas of dense employment) will rank favorably according to the land use criteria. Facilities that provide intra- or inter-neighborhood access to schools, for shopping trips, access to transit, access to public open space/parks would also rank favorably according to the land use criterion. Longer corridor projects that "connect" more land uses will tend to rank higher as they

are assigned greater points over shorter projects that do not connect generators with destinations, or vice versa.

- *Current and Latent Bicyclist Demand:* Higher points are awarded to those projects that currently have significant usage or latent demand, that is they are likely to generate significant usage based on land uses, population, corridor aesthetics, etc. Justification for this criterion is that corridors or spot locations currently receiving high demand may or may not be optimally designed for safety and functionality and additional improvement would benefit a large number of existing bicyclists. Under latent demand, existing corridors or spot locations may be viewed by a high percentage of potential users as undesirable from a safety or operational perspective, and if safety or functionality is improved, even high use facilities may experience an increase in use levels.

- *Technical Ease of Implementation:* Technical ease of implementation focuses on the actual engineering challenges of a project, emphasizing the point that typical physical requirements of bicycle projects such as parking removal, traffic lane removal, or lane re-striping are not technically challenging from an engineering perspective. Physical solutions are often readily apparent but may require development of political support, addressed under "Non-Technical Ease of Implementation," or that specific operational issues be addressed to demonstrate that no negative impacts will occur to other modes. These criteria specifically address the technical and physical aspects of an engineering solution.

- *Non-Technical Ease of Implementation:* Maximum points are assigned for an easy, popular project. If significant neighborhood opposition is a known factor, if support of elected officials is not anticipated, or if other political opposition to a particular aspect of the assumed engineering solution (such as parking removal or agricultural issues) is anticipated, then the project would receive fewer points under this criterion.

  Note: Projects that are supported by current or adopted planning efforts by regional or local agencies receive points under this criterion, for example, projects that are identified in Bay, Ridge, or Vine Trail Studies that have the potential to serve both pedestrians and bicyclists. In addition, projects that are supported by existing or anticipated funding would receive points under this criterion.

- *Overcomes Barrier/Connectivity (Safety):* Maximum points should be assigned to projects that address a major safety concern for bicyclists using bridges, interchanges, and/or negotiating other environments difficult for bicyclists to navigate. Higher points should be assigned to roadways with high speed, high traffic volume, wide road width, difficult intersections or other obstacles to bicycle travel. Maximum points should be assigned for filling a gap in the existing network.

- *Public Input:* This criterion is based directly on public input received during workshops, results from the surveys, indirect public input through agency staff, and an informal survey of local elected officials. Points are assigned in correlation to the number of comments and perceived interest of workshop attendees.

The ranking matrix is located in Appendix H.

Proposed Bikeway System

This section describes proposed bicycle improvements in the City of Napa including both physical and programmatic improvements. A range of users must be considered in building a bicycle system. Whereas an experienced rider or bicycle commuter might prefer the shortest and fastest on-road route, a young or inexperienced rider will likely prefer a Class 1, separated bicycle facility. Bicycle riders of all ages and abilities, and those who are riding for both recreation and transportation to destinations like work and school, must be considered in system improvement and implementation. The proposed

bikeway network consists of an interconnected network of Class I pathways, Class II bike lanes, and Class III bike routes that will close gaps, connect existing facilities, and provide access to areas that are not currently served by bicycle facilities.

Bikeway System

The whole of all of the components including both physical and programmatic.

Bikeway Network

The physical improvements that establish bikeways (Classes I, II, III).

Primary Bikeway Network

A continuous countywide network of on- and off-street bikeways that extend between and through communities along with connections to other transportation modes, major destinations, jobs, neighborhoods, recreation, and local bikeway networks.

Primary Bikeway Network

A new element of this planning effort has been the designation of a Primary Bikeway Network – a continuous countywide network of on- and off-street bikeways that extend between and through communities. The Primary Bikeway Network consists of a combination of existing and proposed Class I, Class II, and Class III bikeways that provide inter-city and inter-county routes along with connections to other transportation modes, major destinations, jobs, neighborhoods, recreation, and local bikeways. The network typically includes one or more north-south and east-west routes through each community. The intention of the Primary Bikeway Network is to focus and collaborate on a set of basic routes that will provide access to major destinations and activity areas. Primary Bikeway Network routes are identified on the bikeway map using a colored highlight around their route designation, Primary Bikeway Maps have been prepared to show how the network connects between communities, and proposed project lists identify bikeway segments on the Primary Bikeway Network. The Primary Bikeway Network has been further coordinated with "routes of regional significance" that comprise the Bay Area's Regional Bicycle Network identified in the Metropolitan Transportation Commission's Regional Bicycle Plan for the San Francisco Bay Area.

Proposed Bikeways

The proposed bicycle network includes Class I paths, Class II bike lanes, and Class III bike routes in order to maximize connectivity throughout the community and to destinations beyond the City of Napa. The proposed network has been planned to provide safe and convenient bicycle access to parks, open spaces, commercial areas, residential neighborhoods and community facilities. Approximately 60 miles of bikeways are proposed in the City of Napa. Once completed, the network will play a key role in bolstering the City's efforts to increase the use of bicycles as non-auto modes of transit, and to reduce overall vehicle miles traveled in the City.

Approximately 14 miles of Class I pathways are proposed throughout the community, connecting parks and open spaces via multi-use paths that are completely separate from auto traffic. These proposed facilities provide important cross-town connections and include the Bay Trail, the River Trail, and the Napa Vine Trail (north-south). While the Vine Trail generally follows a north-south alignment, it transitions from west to east through the central part of the City along the Commuter Bike Path.

Approximately 14 miles of Class II bike lanes are proposed. Class II bike lanes provide a designated lane for bicycle travel along a street or highway, and are proposed along various streets. Key east-west routes include: Redwood Road, West Imola Avenue, Old Sonoma Road, Trower Avenue, and 1st Street/ Browns Valley Road west of SR 29. Key north-south routes include: Soscol Avenue, Solano Avenue, California Boulevard, Big Ranch Road, and Golden Gate Drive.

Approximately 31 miles of Class III bike routes are proposed. Class III bike routes provide for shared use of travel lanes with vehicle traffic. Key existing Class III bikeways include a north-south "bike boulevard" route that utilizes Franklin Street, Oak Street, and Seminary Street as well as an east-west route made up of E Street, Hayes Street, and Yount Street. The Class III routes are important in

providing an interconnected system of preferred routes. As indicated in Policy CN-2.c, it is recommended that Class III bike routes receive a full package of signing improvements combined with the use of pavement stencils to create "prominent" bike routes that help guide bicyclists and increase motorists awareness of the need to watch for bicyclists and share the road.

Following is a description of select proposed projects, including route alignments, the ultimate vision or concept for the route, improvement needs and destinations served. A detailed segment-by-segment breakdown of the proposed bikeway facilities, including facility type, length, estimated cost of improvements, project priority, and other criteria, is provided in Table 14. The proposed bikeway network is shown in Figure 1. The proposed bikeways network has been developed to provide bicycle access to destinations throughout the City of Napa, and to provide access to neighboring jurisdictions. Primary bikeways that extend beyond the City Limits are shown in Figures 2-5. A list of short-term actions follows. While the projects in this Plan have received a preliminary program level feasibility evaluation, engineering and environmental studies will be required prior to project implementation to determine project specific issues such as right-of-way impacts, traffic operations, parking impacts, and/or specific environmental issues.

Short-Term Actions

There are a variety of recommended projects, improvements, and actions distributed throughout this plan. The following list consolidates a series of low-cost actions, programmatic, and infrastructure improvements that can be achieved in the short-term, a period of one to five years, to improve conditions for bicyclists in the City of Napa. Recommendations are not listed any particular order.

- *Update Journey to Work Commute Statistics* – Analyze and update Journey to work commute statistics with 2010 US Census Data upon its release, which is anticipated in 2012-13.

- *Conduct Bicycle Counts* – Work with NCTPA to implement bicycle counts at locations identified in this Plan to create baseline data.

- *Bicycle Advisory Committee (BAC)* – Establish a Bicycle Advisory Committee to review bicycle issues and help oversee implementation of this plan. Invite law enforcement personnel, school district representatives, and elected officials to participate. Continue to participate in the Countywide BAC.

- *Maintenance Monitoring and Reporting System* – Continue to use the City's on-line maintenance monitoring and reporting system to respond to bicycle facility and street maintenance issues. Advise the Countywide BAC on the City's reporting system to assist in the development of a countywide program, and work to integrate efforts.

- *Bicycle Guide Map* – Work with/support the NCTPA's effort to update a public bikeway map and user guide that provides bike route, education, safety, and promotional information for locals and visitors.

- *Install Bicycle Signs and Shared Lane Marking Stencils* – Install wayfinding, warning, guide, and regulatory signs, and Shared Lane Marking stencils on existing bicycle facilities to improve way finding for bicyclists, assist emergency personnel, and heighten motorists' awareness of bicycle activity.

- *Napa Bike Program* – Support the development and implementation of a countywide multimedia bicycle and pedestrian safety and education campaign to increase knowledge of riding rules, improve etiquette between motorized and non-motorized modes, to promote bicycle tourism, and increase the awareness of the benefits of bicycling and walking as transportation modes.

Table 14
Proposed Bikeways and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Network	SF Bay Area Regional Route	Use	Cost	Priority
Class I										
1	Bay Trail Connector – Stanly Ln to Napa River	Stanly Crossroad	Napa River	I	0.72	Yes	Yes	R	$398,711	Medium
2	Behrens St Pathway Connector	Beginning of Behrens St	Seminary St at Vallejo St	I	0.05	No	No	C	$28,229	Low
3	Downtown Path along Napa Creek/Heritage Park	Coombs St	Main St	I	0.12	No	No	C	$66,655	Medium
4	Fairview Dr Pathway Connector	Aguire Wy	Terrace Dr	I	0.15	No	No	R	$84,244	Low
5	Napa Creek Path/SR 29 Underpass	Coffield Ave/1st Street	California Blvd	I	0.20	Yes	No	C	$112,605	High
6	Napa Creek, Pearl St	SR 221 (Soscol Ave), Oxbow Commons	Existing Class I Facility 250' NW of 1st St	I	0.07	No	No	C	$36,458	Medium
7	Napa River Promenade (1st St Connector)	Veterans Park	Opera House	I	0.05	No	No	R/C	$27,658	Medium
8	Napa River Trail	SR 29	Napa Valley Corporate Dr	I	0.51	Yes	No	R/C	$278,926	Medium
9	Napa River Trail	Existing class I facility at River Terrace	Existing class I facility at Oxbow	I	0.10	No	No	C	$53,471	Medium
10	Napa River Trail	Existing class I facility at Clinton Road Extension	Existing class I facility at Oxbow	I	0.13	No	No	R/C	$72,461	Medium
11	Napa River Trail	Napa city limit (Adjacent to Kaiser Road)	Existing Bay Trail at south end of Kennedy Park	I	0.16	Yes	Yes	R/C	$86,837	Medium
12	Napa River Trail (crossing)	3rd St adjacent to Burnell St	Proposed class I bridge over Napa River	I	0.08	No	No	C	$41,469	High
13	Napa River Trail (E side of UP Tracks)	Proposed Tulucay Creek Trail	Oil Company Rd	I	0.41	No	No	C/R	$225,073	Medium
14	Napa River Trail (Loop around Trancas Crossing Park)	Trancas St	Trancas St	I	0.85	No	No	R	$467,781	Medium

Table 14
Proposed Bikeways and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Network	SF Bay Area Regional Route	Use	Cost	Priority
15	Napa River Trail (W Side of River)	Water St (Around bend connecting to Copia)	1st St	I	0.28	No	No	C/R	$151,734	Medium
16	Napa River Trail (W Side of River)	Coombs St at Imola Ave	Coombs St at Imola Ave	I	1.10	Yes	No	C	$603,080	High
17	Napa River Trail (W Side of River)	Just north of River Terrace Wy at proposed class I facility	Lincoln Ave	I	0.42	No	No	C	$229,465	High
18	Napa River Trail/Bay Trail/Anselmo Ct Loop	Napa River Bay Trail	Napa River Bay Trail	I	0.34	Yes	Yes	C	$185,694	Medium
19	Napa River Trial (E Side of River)	Existing class I facility at Park Loop	1st St	I	0.23	No	No	C	$124,821	Medium
20	Napa Valley College Path along Roy Patrick Dr	College Wy, Magnolia Dr	Imola Ave	I	0.16	No	No	C	$87,369	Medium
21	Oxbow Commons Bypass Channel	Napa River	Soscol Ave	I	0.17	No	No	C	$94,818	Medium
22	Oxbow Commons Bypass Channel	Bay Trail, Near Napa River	Oxbow Commons	I	0.02	No	No	R/C	$9,359	Medium
23	Oxbow Commons Bypass Trail	West St	Soscol Ave	I	0.09	No	No	R/C	$49,457	Medium
24	Oxbow Commons Bypass Trail	Division St	Main St	I	0.04	No	No	R/C	$23,437	Medium
25	Oxbow Commons Path	West St	Proposed Vine Trail along Soscol Ave	I	0.09	No	No	R/C	$50,159	Medium
26	Oxbow Commons, Napa Creek	Proposed Vine Trail	Existing Class I Facility 250' NW of 1st St	I	0.15	No	No	R/C	$82,852	Medium
27	Salvador Creek Trail	SR 29	Jefferson St	I	0.68	No	No	C/R	$372,599	High
28	Salvador Creek Trail	Maher St	Solano Ave	I	0.23	No	No	C/R	$129,178	High
29	Salvador Creek Trail	Ranch Ln/ Valle Verde Dr	Big Ranch Rd	I	0.23	No	No	C	$127,296	Medium
30	SR 29	Vine Trail/Commuter Bike Path/SR 29 Overpass	Redwood Rd	I	0.11	Yes	Yes	C	$61,019	

Table 14
Proposed Bikeways and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Network	SF Bay Area Regional Route	Use	Cost	Priority
31	Tulucay Creek Trail	Vine Trail	Soscol Ave	I	0.36	No	No	C/R	$198,872	Medium
32	Vine Trail (adjacent to Soscol Ave)	Proposed Downtown/Napa Creek Trail	Vallejo St	I	0.26	Yes	Yes	C	$144,102	High
33	Vine Trail adjacent to Solano Ave/SR 29	Northern Terminus of Commuter Bike Path adjacent to Redwood Rd	Hacienda Dr / Northern City Limit	I	1.75	Yes	Yes	C/R	$962,772	High
34	Vine Trail along Kaiser Rd	SR 29	RR track north-westward deviation	I	0.28	Yes	Yes	C/R	$154,962	Medium
35	Vine Trail/Napa River Trail (E side of River adjacent to River St)	Tulucay Creek Path /Napa River Trail/Vine Trail	Proposed Oxbow Commons Path (approx 100' SE of Pearl St)	I	1.11	Yes	Yes	C	$608,968	High
Class II										
36	1st St	Soscol Ave	Vernon St	II	0.15	No	No	C	$13,655	High
37	1st St	Juarez St	Silverado Trail	II	0.07	No	No	C	$5,910	High
38	1st St (SR 29 Overpass)	Freeway Dr	California Blvd	II	0.36	Yes	No	C	$31,955	High
39	3rd St	Jefferson St	Main St	II	0.56	No	No	C	$50,248	High
40	3rd St	Soscol Ave	RR tracks, Lawrence St	II	0.05	No	No	C	$4,050	High
41	California Blvd	California Blvd near Pueblo Ave	Trancas St	II	0.49	Yes	No	C	$44,218	Medium
42	California Blvd, Laurel St, Walnut St	1st St	3rd St	II	0.12	No	No	C	$10,970	High
43	Coffield, F St, Solano Ave (SR 29 frontage on W side between Lincoln & 1st)	Proposed class I facility, Coffield Ave	Lincoln Ave	II	0.41	Yes	No	C	$36,894	High
44	Coombs St	Division St	Combs St near Grigsby Ct	II	0.41	No	No	C	$36,663	Medium
45	Foster Rd	Hilton Ave	Imola Ave	II	0.78	No	No	C	$69,716	Medium

Table 14
Proposed Bikeways and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Network	SF Bay Area Regional Route	Use	Cost	Priority
46	Gasser Dr	Kansas Ave	Oil Company Rd	II	0.48	No	No	C	$42,890	Medium
47	Gasser Dr	Driveway at Hartle Ct & RR tracks	Gasser Dr	II	0.13	No	No	C	$11,612	Medium
48	Jefferson St	El Centro Ave	Darling St	II	0.30	No	No		$27,247	Medium
49	Kaiser Rd	SR 221	Syar Industrial Wy	II	0.19	Yes	Yes	C	$28,972	Medium
50	Lincoln Ave	California Blvd	Commuter Bike Path – Vine Trail	II	0.72	No	No	C	$64,952	High
51	Old Sonoma Rd	SR 29	Harton St	II	0.29	No	No	C	$26,525	High
52	Old Sonoma Rd	Old Sonoma Rd turn off	Intersection of Old Sonoma Rd & S Freeway Dr	II	0.08	No	No	C	$6,845	High
53	Old Sonoma Rd	West Napa city limit	Foster Rd	II	0.28	No	No	R	$25,377	Medium
54	Redwood Rd	Solano Ave	Dry Creek Rd	II	0.94	Yes	No	C	$85,246	High
55	Redwood Rd	Pueblo Ave	Dry Creek Rd	II	0.08	No	No	C	$7,539	Medium
56	Redwood Rd	Browns Valley Rd	Pueblo Ave	II	0.83	Yes	No	C	$74,990	Medium
57	River Terrace Wy	Soscol Ave	Napa River Trail	II	0.12	No	No	C	$10,943	Medium
58	Saratoga Dr	Silverado Trail	Terrace Dr	II	0.30	No	No	C	$27,218	Medium
59	Silverado Trail	Soscol Ave	Napa city limit	II	2.41	Yes	No	C	$217,312	High
60	Silverado Trail	Kansas Ave	Soscol Ave	II	0.28	Yes	No	C	$25,435	Medium
61	Sousa Ln, OII Company Rd	Proposed Vine Trail	Silverado Trail	II	0.28	No	No	C	$24,808	Low
62	SR 221	Kaiser Rd	Magnolia Dr	II	1.43	Yes	Yes	C	$128,947	Medium
63	Trancas St	California Blvd	Soscol Ave	II	1.15	No	No	C	$103,236	High
64	Trower Ave	Dry Creek	Oxford St	II	0.67	Yes	No	C	$60,193	High
65	Trower Ave	Oxford St	Solano Ave	II	0.26	Yes	No	C	$23,011	High
66	Villa Ln	Pear Tree Ln	Firefly Ln	II	0.46	No	No	C	$41,460	Medium
67	W Imola Ave	Foster Rd	Freeway/Golden Gate Dr	II	0.19	No	No	C	$16,820	Medium

Table 14
Proposed Bikeways and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Network	SF Bay Area Regional Route	Use	Cost	Priority
Class III										
68	1st St	Silverado Trail	East Ave	III	0.22	No	No	C	$545	High
69	3rd St	California Blvd	Jefferson St	III	0.37	No	No	C	$924	High
70	Arroyo Dr	Seminary St	Brown St	III	0.11	No	No	C	$275	Medium
71	Ash St	Hartson St	Franklin St	III	0.36	No	No	C	$888	Medium
72	Beard Rd	Pueblo Ave	Pear Tree Ln	III	0.32	No	No	C	$790	Medium
73	Belaire Plz, Diablo St, Yellowstone St, Lassen St	Trancas St	Trower Ave	III	0.97	No	No	C	$2,414	Medium
74	Brown St	Clinton St	Lincoln Ave	III	0.64	No	No	C	$1,596	Medium
75	Burnell St	Sousa Ln	3rd St	III	0.55	No	No	C	$1,379	High
76	Cabot Wy	Jefferson St	Imola Ave	III	0.31	No	No	C	$774	Medium
77	Carol Dr-Oxford St	Pueblo Ave	Trower Ave	III	1.22	No	No	C	$3,049	High
78	Central Ave, Jefferson St, Park Ave	California Blvd	Soscol Ave	III	1.07	No	No	C	$2,663	Medium
79	Clark St	Silverado Trail	East Ave	III	0.12	No	No	C	$297	Medium
80	Clay St	California Blvd	Coombs St	III	0.78	No	No	C	$1,953	High
81	Division St, Franklin St	Oak St	Brown St	III	0.28	No	No	C	$712	Medium
82	El Centro Ave	SR 29	Heather Ln	III	0.76	No	No	C	$1,916	Medium
83	Elm St	Franklin St	Riverside Dr	III	0.28	No	No	C	$702	Medium
84	Fairview Dr	Burnell St	Hoffman Ave	III	0.30	No	No	C	$751	High
85	Foster Rd	Imola Ave	Old Sonoma Rd	III	0.41	No	No	C	$1,034	Medium
86	Garfield Ln	Existing class I near Culbertson Ct	Old Vine Wy	III	0.10	No	No	C	$240	Medium
87	Georgia St	E St	Lincoln Ave	III	0.27	No	No	C	$663	Medium

Table 14
Proposed Bikeways and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Network	SF Bay Area Regional Route	Use	Cost	Priority
88	Granada St, Muir St, Sommer St, Shelter Ave	SR 221	Imola Ave	III	1.08	No	No	C	$2,689	High
89	Hahnemann Ln	Wine Country Ave	Salvador Ave	III	0.27	No	No	C	$684	Medium
90	Hartson St	Imola Ave	Old Sonoma Rd	III	0.42	No	No	C	$1,058	Medium
91	Kansas Ave	Soscol Ave	Shurtleff Ave	III	0.60	No	No	C	$1,502	Medium
92	Larkin Wy, Scenic Dr	Browns Valley Rd	Browns Valley Rd	III	1.08	No	No	C	$2,700	Medium
93	Laurel St, Foothill Blvd	Old Sonoma Rd	Browns Valley Rd	III	1.11	No	No	C	$2,765	Medium
94	Lincoln Ave	Linda Vista Ave	Solano Ave	III	0.52	No	No	C	$1,292	Medium
95	Linda Vista Ave	Browns Valley Rd	Redwood Rd	III	1.23	No	No	C	$3,082	High
96	Linda Vista Ave	Redwood Rd	Dry Creek Rd	III	2.03	No	No	C	$5,072	Medium
97	Maher St	Trower Ave	Wine Country Ave	III	0.54	No	No	C	$1,339	Medium
98	Main St	Lincoln Ave	Central Ave	III	0.25	No	No	C	$631	Medium
99	Main St, Pueblo Ave	Central Ave	Beard Rd	III	0.34	No	No	C	$848	Medium
100	McKinstry St	Soscol Ave	Water St	III	0.33	No	No	C	$830	Medium
101	Old Sonoma Rd, Walnut St, Laurel St, California Blvd	Old Sonoma Rd	3rd St	III	0.73	No	No	C	$1,814	Medium
102	Patrick Rd	Borrette Ln	Browns Valley Rd	III	0.78	No	No	C	$1,954	Medium
103	Pear Tree Ln	Beard Rd	Big Ranch Rd	III	0.54	No	No	C	$1,346	Medium
104	Pine St	Walnut St	Franklin St	III	0.64	No	No	C	$1,606	High
105	Pueblo Ave	Beard Rd	Soscol Ave	III	0.49	No	No	C	$1,214	Medium
106	Salvador Ave	SR 29	East city limit	III	0.81	No	No	C	$2,022	Medium
107	Shurtleff Ave	Imola Ave	Terrace Dr	III	0.94	No	No	C	$2,356	High
108	Sierra Ave	Diablo St	Willis Dr	III	0.46	No	No	C	$1,154	Medium
109	St. Regis	Stanly Crossroad	Stanly Ln	III	0.65	No	No	R	$1,625	Medium

Table 14
Proposed Bikeways and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Network	SF Bay Area Regional Route	Use	Cost	Priority
110	Terrace Dr	Imola Ave	Saratoga Dr	III	0.71	No	No	C	$1,769	High
111	Terrace Dr, Shurtleff Ave	Saratoga Dr	Coombsville Rd	III	0.48	No	No	C	$1,206	Medium
112	Thompson Ave	Napa city limit	Browns Valley Rd	III	0.65	No	No	C	$1,621	Medium
113	Valverde Dr, Firefly Ln, Wild Rye Wy, Rubicon St, Baxter Ave	Diablo St	Trancas St	III	1.19	No	No	C	$2,985	Medium
114	Vine Hill Dr	Dry Creek Rd	Linda Vista Ave	III	0.51	No	No	C	$1,278	Medium
115	Vintage High Drive Aisle	Willis Dr	Jefferson St	III	0.18	No	No	C	$460	Medium
116	W Pueblo Ave	Redwood Rd	Solano Ave	III	1.41	No	No	C	$3,515	Medium
117	Westview Dr	Browns Valley Rd	Redwood Rd	III	0.66	No	No	C	$1,654	Medium
118	Wine Country Ave	Linda Vista Ave	SR 29	III	0.54	No	No	C	$1,346	Medium
119	Yajome St-Lincoln	Yount St	Pueblo Ave	III	0.87	No	No	C	$2,187	Medium
				Class I	**11.70**			**Total**	**$7,899,615**	
				Class II	**15.27**					
				Class III	**32.47**					

Notes: R = Recreation; C = Commute

Key Class I Bicycle Facilities

This section provides a description of the key Class I bicycle paths that make up the primary network. Class I bicycle facilities that are not part of the primary network are not described.

San Francisco Bay Trail: Vine Trail and River Trail

Existing Conditions

- Class I path on east side of the Napa River. Extends through Kennedy Park up to Tulucay Creek.
- Class II bike lanes on Imola/Maxwell Bridge
- Class II bike lanes on Golden Gate Drive

Vision for Route

- Extend the trail south to connect the City of Napa with the remainder of the 500-mile San Francisco Bay Trail.

Major Destinations Along the Route

- Kennedy Park
- Napa Valley Community College

Vine Trail

Existing Conditions

- Class I path extending northwest from McKinstry Street to the intersection of Redwood Road and Solano Avenue.

Vision for Route

- Extend the Vine Trail south to Tulucay Creek to connect with the Bay Trail.
- Extend the Vine Trail north along SR 29 to form continuous Vine Trail, providing cyclists with a trail following the train tracks to reach communities and destinations outside of the City of Napa.

Major Destinations Along the Route

- Napa Hilton Garden Inn
- Grace Academy of Napa Valley
- Justin-Siena High School

Key Class II Bicycle Facilities

This section provides a description of the key Class II bicycle paths that make up the primary network. Class II bicycle facilities that are not part of the primary network are not described.

Old Sonoma Road

Existing Conditions

- Class II bicycle lanes extend east-west from Almond Avenue to Old Sonoma Road.

Vision for Route

- Extend Class II bicycle lanes west to the City Limits and beyond, connecting the City of Napa with the unincorporated county, and west to connect with the Bay Trail via SR 12 and Ramal Road.

Major Destinations Along the Route

- Harvest Middle School
- Temescal High School
- River School

Silverado Trail

Existing Conditions

- Class II bicycle lanes extend north from Trancas Street to the City Limits and beyond.

Vision for Route

- Extend Class II bicycle lanes south on SR 129 from Trancas Street to Soscol Avenue, connecting with the bicycle lanes on Soscol Avenue.

Major Destinations Along the Route

- Milliken Creek Inn
- Oxbow School
- Napa County Fairgrounds
- Hotel Napa Discovery Inn

1st Street

Existing Conditions

- Class II bicycle facilities exist between Soscol Avenue and Main Street.
- Class II bicycle facilities exist between McKinstry Street and Juarez Street.

Vision for Route

- Extend Class II bicycle lanes to connect existing facilities between Soscol Avenue and McKinstry Street.
- Extend Class II bicycle lanes west of Juarez Street to connect with the Silverado Trail.

Major Destinations Along the Route

- None from main list (a few wine tasting places)

California Boulevard

Existing Conditions

- Class II bicycle lanes extend from Pueblo Avenue to 1st Street.

Vision for Route

- Extend Class II bicycle lanes north to connect with Class II bicycle lanes on Trancas Street.

Major Destinations Along the Route

- Winton School
- Davis School
- Embassy Suites Hotel Napa Valley

Big Ranch Road

Existing Conditions

- No existing bicycle facilities.

Vision for Route

- Construct Class II bicycle facilities between Trancas Street and Salvador Avenue, forming a section of the Vine Trail.

Major Destinations Along the Route

- None from main list (a vineyard and banks)

Orchard Avenue

Existing Conditions

- No bicycle facilities.

Vision for Route

- Construct Class II bicycle lanes between Solano Avenue and Dry Creek Road, connecting the northern residential areas of the City and the unincorporated areas with a major north-south bicycle facility.

Major Destinations Along the Route

- O'Brien Estate Winery
- Muir-Hannah Vineyards

SR 221

Existing Conditions

- Class II bicycle lanes exist between Imola Avenue and Magnolia Drive.

Vision for Route

- Extend Class II bicycle lanes south to Kaiser Road, forming another section of the Bay Trail and connecting to the Napa Valley Corporate Loop.

Major Destinations Along the Route

- Napa Valley Community College

West Imola Avenue

Existing Conditions

- Class II bicycle lanes currently exist between Highway 221 and Hunt Street.

Vision for Route

- Extend Class II bicycle lanes west to Foster Road, connecting with the Bay Trail at Golden Gate Drive.

Major Destinations Along the Route

- None from main list (a few hotels off side-streets but none on route)

Golden Gate Drive

Existing Conditions

- No bicycle facilities currently exist on Golden Gate Drive.

Vision for Route

- Construct Class II bicycle lanes from West Imola Avenue south to the City Limits, forming another section of the Bay Trail and connecting the west side of the City of Napa with the rest of the 500-mile Bay Trail.
- Bike lanes are planned for construction on the entirety of Golden Gate Drive in 2011-2012.

Major Destinations Along the Route

- None

Redwood Road

Existing Conditions

- No bicycle facilities currently exist on Redwood Road.

Vision for Route

- Construct Class II bicycle lanes west from Trancas Street to Browns Valley Road.

Major Destinations Along the Route

- Kolbe Academy and Trinity Prep

Bicycle Parking and Support Facilities

Every bicycle trip has two main components: the route selected by the bicyclist and the "end-of-trip" facilities at the destinations. The availability of safe bicycle routes and secure and convenient facilities is critical to promoting greater bike usage in the City of Napa. Bicycle facilities can include short- and long-term bicycle parking, showers, lockers and lighting of bicycle parking areas.

Providing short- and long-term bicycle parking at key destinations, such as parks, schools, community facilities, transit stops, and shopping areas, is essential to the development of a complete bicycle system. Parking should be highly visible, accessible and easy to use. In addition, facilities should be located in well-lit areas and covered where possible.

Support facilities for bicyclists should also be provided. Showers are an important amenity for those bicycle commuters with a rigorous commute and/or formal office attire. Lockers provide a secure place for bicyclists to store their helmets and other gear.

Shower and Locker Facilities

Currently, the City does not require employers to install shower and locker facilities for employees. Large employers and/or business parks often provide these facilities. Public input indicated that additional shower and locker facilities are desired by commuter bicyclists, however, none are proposed at this time.

Safety, Education, and Support Programs

The bikeway network has been planned to provide safe, convenient access for all types of bicyclists to destinations throughout the Plan Area. Like all other modes of transportation, the system and its network of facilities must be used appropriately to maximize the safety of all users, bicyclists, pedestrians, and motorists alike. To help minimize safety risks, it is imperative that bicyclists and motorists follow basic traffic laws. For bicyclists, this includes activities such as riding in the correct direction, stopping at stop signs and traffic signals when the light is red, riding predictably, and taking proper measures to be visible day and night; and for motorists yielding to turning bicyclists, passing with care, and not driving or parking in designated bicycle lanes, to name a few behaviors for both.

Efforts must be made to encourage a culture of respect and shared usage, among motorists and bicyclists alike. The safety, education, encouragement, and enforcement programs recommended in this section are intended to help grow the number of bicyclists in the Plan Area, while also increasing safe and appropriate behavior by bicyclists and all other roadway users.

Bicycle Safety Education for Students

Action: Provide bicycling/walking safety education to all students in the City of Napa from second grade through high school on an annual basis.

The Napa County Office of Education Safe Routes to School Program currently provides bicycling/walking safety education to approximately eight (8) schools throughout the County annually. The City and Napa Valley Unified School District should work together to ensure Safe Routes to Schools programs are delivered to the City of Napa's schools.

- *Expected Result:* Decrease the number of bicycle crashes among school age children and increase the number of students bicycling/walking to school through increased Safe Routes to School safety education delivery efforts.

- *Measure:* Collision analysis and bicycle and walking counts performed regularly by agency staff.

Action: Develop a sustainable Walking School Bus/Bicycle Train Program for interested schools.

Safety is a primary concern when parents decide whether to allow their children to bicycle/walk to school. Walking school busses and bicycle trains are organized groups of students who walk or bicycle to school under the supervision of one or more adults. The Program's formal organization and adult supervision can provide peace of mind for parents wanting to let their child walk or bicycle to school. The City, Napa Valley Unified School District, and individual schools should work with the Napa County Office of Education to develop a formal program identifying school commute routes and establishing a roster of volunteer parent or staff "bus drivers" from each participating school.

- *Expected Result:* More students will bicycle and walk to school on a regular basis.

- *Measure:* The Napa County Office of Education Safe Routes to School Coordinator will track the number of children walking and biking to school and survey participating schools to track the success of walking and bicycling school busses.

<u>Bicycle Safety Education for Adults</u>

Action: Develop and deliver bicycle safety education to adult bicyclists throughout the community using a variety of media (print, radio, web, and hands-on instruction) targeted toward specific user groups: migrant workers, college students, commuter bicyclists, recreational bicyclists, families, senior citizens, and large employers.

Adult bicyclists account for the majority of bicyclists in the Plan Area. A variety of rider types comprise the "adult bicyclist" category, as such appropriate safety education information should be developed to target focused issues for each user group. Safety information is widely available from FHWA, AAA, the League of American Bicyclists, and a variety of local and regional transportation agencies. Existing resources should be used and adapted to meet the needs of the local community. Safety education should stress the importance of following the rules of the road and how doing so plays a role in the prevention of collisions. Educational messages should be targeted at addressing common violations, issues, and/or collision types such as: wrong-way riding, no lights or other required night-riding equipment, running stop signs or red lights, bicyclists that are careless or disobey traffic laws, proper helmet use, riding with children, sharing trails and roads, riding two abreast or in groups, yielding to pedestrians, etc. Specific destinations that generate frequent bicycle travel should also be targeted. For example, the Napa State Hospital is a destination for many patients on day release and should therefore provide a bicycle safety education program to its patients.

- *Expected Result:* Bicyclists will employ safe bicycling techniques and etiquette on streets and pathways, parents will serve as role models for safe bicycling techniques for their children,

bicycle conflicts along streets and pathways will decrease, and annual bicycle collisions will be reduced.

- *Measure:* Traffic citations, bicycle crash data, and bicycle/traffic complaints will be analyzed on an annual basis to determine trends. Surveys may be conducted on trails and/or as a component of regular bicycle counts to determine the effectiveness of the outreach and if bicycle/vehicle/ pedestrian interactions have improved.

Bicycle Safety Education and Encouragement Campaign for Tourists

Action: Develop and deliver bicycle safety education information to tourists throughout the Plan Area to make bicycling more attractive and available to short-term tourists.

Findings from the 2005 Napa Valley Visitor Profile Study document the profound significance that tourism has on the Napa Valley's economy and transportation system. In order to help alleviate traffic congestion, improve traffic safety, reduce vehicle miles traveled, and make bicycling more attractive and available to tourists, a focused tourist information, safety, and education campaign should be developed. The campaign would require collaboration from multiple entities including NCTPA and local agencies, and tourism, winery hospitality, agricultural, and visitor serving interests. Marketing will be critical to inspire tourists of all levels, abilities, and desires to tour the Valley's many attractions by bicycle. Materials should be developed in multiple languages, and focus on issues such as bicycling safety and etiquette, tips to improve comfort and convenience, route planning and wayfinding, bike rental services, and information on both guided tours and unguided routes.

- *Expected Result:* The number bicycle trips by made by short-term tourists visiting the Napa Valley will increase substantially. Both bicycle and traffic safety will improve as a greater understanding of the bicycle system is developed and vehicle miles traveled are reduced. Targeted reductions in Greenhouse Gas Emissions will be achieved as fewer "short" tourism trips are made. Touring the Napa Valley's vineyards, wineries, and attractions by bicycle, and experiencing Napa's "healthy lifestyle" will be central to the Valley's tourism industry and an active destination choice for tourists worldwide.

- *Measure:* Traffic citations, bicycle crash data, and bicycle/traffic complaints will be analyzed on an annual basis to determine trends. Visitor serving businesses including bicycle tours and rental establishments, wineries, and lodging will be surveyed to determine trends and the effectiveness of the campaign.

Law Enforcement Activities

Police officers are responsible for enforcing traffic laws and improving safety for bicyclists and motorists on Napa's highways, streets and pathways. Traffic officers interact with bicyclists and motorists on a daily basis, which puts them in a unique position to add credibility to efforts to encourage bicycling and to improve bicycle safety. Coordination with law enforcement agencies and an improved understanding of bicycling issues by officers can lead to better enforcement, heightened awareness of safety issues, and recognition of "teachable moments" for both bicyclists and motorists.

Action: Provide bicycle specific training for law enforcement personnel and establish a community policing agreement.

Training of law enforcement personnel, including on-bike enforcement techniques, is critical to keeping officers up to date on current bicycle laws and issues, and will help officers to understand the behaviors, rights, and traffic safety concerns associated with bicycling. A

community policing agreement engages members of the community, including agency engineering and planning staff, local elected officials, non-profit community advocates, schools, and others, to ensure the coordination of enforcement goals and strategies, and to develop a balanced approach to address traffic safety issues that includes education, engineering, and enforcement. A community policing agreement amongst local law enforcement agencies in the Plan Area will help to ensure specific and consistent consideration of enforcement efforts as well as consistent investigation techniques of collisions for on-going monitoring purposes.

- *Expected Result:* Bicycle specific training for police officers will familiarize enforcement personnel with bicycle issues and the bicyclist's perspective. A community policing agreement will ensure a collaborative approach to traffic safety that includes enforcement, engineering, and education efforts to improve traffic safety.

- *Measure:* Trained enforcement officers may be required to complete post training evaluation forms. Community policing agreements would result in regular committee meetings and a reduction in bicycle-related citations and collisions.

Action: Establish a bicycle diversion program for bicycle traffic offenders.

Bicycle diversion programs are provided in a variety of jurisdictions throughout the nation. Diversion programs allow persons cited for eligible bicycle-related traffic violations to attend a bicycle safety course sponsored by law enforcement and the Court in lieu of paying a fine. Courses are typically free of charge, and successful completion results in the dismissal of the fine and all charges. Eligibility is determined by the Court. Diversion courses range from one to four hours in duration and include the delivery of instructional videos, bicycle safety materials, a review of state and local laws, and hands on safety skill training.

- *Expected Result:* Court administered bicycle diversion program for bicycle traffic offenders which would provide bicycle safety training in lieu of a fine.

- *Measure:* Bicycle safety training delivered to (number) of residents through the program.

Action: Provide focused law enforcement operations at high collision locations.

The Bicycle Plan Update has identified the top collision locations for bicyclists throughout the community. Increased law enforcement efforts at these specific locations may help to decrease collisions between motorists and bicyclists. The City's planning and engineering staff should work with law enforcement (community policing) to develop a strategy to address safety concerns at these locations. Strategies may include increased patrols during peak periods, crosswalk(s), signal compliance, etc.

- *Expected Result:* Increased law enforcement patrols at top collision locations throughout the County.

- *Measure:* Reduction in bicycle collisions at high collision locations.

Implementation

Introduction

This section identifies the activities and actions that are necessary to implement the physical improvements, facilities, and programs contained in this Plan, along with the estimated costs for the proposed improvements, maintenance requirements, and funding and financing strategies.

Implementation

Successful implementation of the projects and programs contained in the Bicycle Plan will require ongoing cooperation within and among City departments, other public agencies, and bicycle stakeholders. The planning horizon for the projects identified in this plan is the year 2035. Implementation of the projects in this plan will occur incrementally in a variety of ways. Many projects will be incorporated into the City's Capital Improvement Program (CIP) process and will be implemented as the CIP projects get funded. Others can happen as part of regular maintenance and operations practices and road resurfacing projects. Development and/or redevelopment in some areas of the City will present a significant opportunity to implement some of the recommendations of this Plan. While improvements associated with development and/or redevelopment often occur "piecemeal', this is the way development happens and it is important to include bicycle improvements as a component of project improvements. Finally, outside funding can be obtained to finance the design and construction of other projects, improvements and programs. The most likely funding sources are addressed in the last section of this chapter.

Project Implementation Process

The actions necessary to complete infrastructure projects identified in this Plan will vary from project to project, but generally include:

1. Adoption of the Plan by resolution.
    a. Approval of the Plan by the Metropolitan Transportation Commission.
    b. Certification of the Plan by the Caltrans Bicycle Facilities Unit.
    c. Programmatic level review and environmental clearance of the Plan.
2. Feasibility analysis, environmental analysis, and cost estimates for individual projects as needed.
3. Public review as necessary.
4. Project approvals; Advisory Committee, Planning Commission, City Council.
5. Secure local and outside funding commitments.
6. Completion of final plans, specifications and estimates, advertising for bids, receipt of bids and award of contract(s).
7. Project construction.

Maintenance and Monitoring

Bicycle system maintenance needs include cleaning/sweeping, asphalt resurfacing, striping maintenance, sign replacement, pavement repairs, signal maintenance, drainage work, refuse removal, graffiti removal, and landscape maintenance. Maintenance of on-street facilities such as Class II bike lanes, Class III bike

routes, and bicycle boulevards, is generally treated as a component of typical roadway maintenance activities which are funded through gas taxes and programmed annually. While some maintenance needs such as re-striping or re-surfacing can be placed on a periodic schedule, other needs such as fixing potholes, addressing signal detection sensitivity, and trimming overgrown vegetation require immediate attention. Table 15 provides a recommended timetable for regular maintenance activities associated with the City of Napa bicycle network.

Table 15
Bicycle System Maintenance

Maintenance Item	Schedule/Frequency
Pavement/pathway sweeping	Monthly – annually as needed
Signal detection sensitivity	Bi-annually – or as needed on a request basis
Trash disposal	Weekly – as needed
Graffiti removal	Weekly – monthly as needed
Potholes	As needed – on a request basis
Sign replacement/repair	1 to 3 years – as needed
Pavement marking replacement	1 to 3 years – as needed
Pavement sealing	Every 5 years – as needed
Lighting (replacement/repair)	Annually – or as needed on a request basis
Clean drainage system	Annually – or as needed on a request basis
Maintain furniture, bus stops, railings	Annually – or as needed on a request basis
Fountain/restroom cleaning/repair	Weekly - monthly as needed
Bridge/Underpass inspection	Annually
Maintain emergency telephones, Closed circuit TV	1 year
Replenish shoulder material	Annually
Landscape Maintenance	
Tree, Shrub, & grass trimming/fertilization	5 months – 1 year
Maintain irrigation lines/replace sprinklers	1 year
Irrigate/water plants	Weekly – monthly as needed
Shoulder and grass mowing	Seasonally as needed
Vegetation maintenance	Annually – or as needed on a request basis
Weed control	Monthly – as needed

Maintenance Recommendations

Recommendation: Ensure that all bikeways and roadway shoulders are included in the City's street sweeping program and swept as part of routine street sweeping operations. Street sweeper operators should be properly trained to understand the needs of bicyclists and the importance of clearing debris from bikeways.

Recommendation: Ensure that all construction projects (roadway and/or road adjacent projects) maintain both a clean swept shoulder and a through right-of-way for bicycles.

Recommendation

Implement a Maintenance Reporting System

Policy 9.2: Develop or retain a maintenance reporting system with a central point of contact to report, track, and respond to routine bicycle maintenance issues in a timely manner. [NCTPA, NCBC, cities, towns, County]

Recommendation: Continue to maintain the City's maintenance reporting system as a means to report, track, and respond to routine bicycle maintenance issues in a timely manner. Ensure that the City's maintenance reporting system is integrated with any countywide efforts to develop a similar program.

Maintenance Costs

Maintenance costs for the bikeway system are generally lumped into two categories. As previously noted, maintenance activities associated with on-street bikeways are typically accommodated as a component of routine street maintenance activities that are programmed annually, while maintenance of off-street bikeways (Class I multi-use paths) and support facilities such as bike lockers and racks is generally funded through local revenues. Given the limited number of existing and proposed Class I bikeway miles, maintenance costs for the City of Napa bikeway network should be relatively low. Cost assumptions for typical bikeway maintenance activities are presented in Table 16.

Table 16
Maintenance Cost Assumptions

Facility Classification	Estimated Annual Cost Per Mile	Notes
Class I	$8,500	Assumes maintenance associated with Class I trails, trail amenities, and landscaping
Class II	$2,000	Assumes regular/periodic lane sweeping, sign and stripe/stencil maintenance, signal detection, and minor surface repairs
Class III	$1,000	Assumes sweeping and minor surface repairs
Sidewalks	$2,500	Assumes landscape/vegetation maintenance and surface repairs

Monitoring

The projects and programs recommended in this Plan are dynamic and subject to change as bicycling conditions and demands throughout the plan area evolve. Periodically monitoring certain indicators and conditions along the bikeway network will allow the City to assess needs and issues that require attention and/or to adjust plans and project recommendations accordingly. The primary components to monitor include: bicycle collisions, bicycle usage, and safety/security and enforcement. The following monitoring actions are recommended to evaluate the success the City's efforts and to ensure implementation of the Bicycle Plan goals over time.

- Collect and analyze collision data on an ongoing basis to assist in the identification of problem locations.
- Conduct and log bicycle counts on an annual or semi-annual basis so that usage trends can be identified and measured.
- Conduct regular meetings with bicycle stakeholders (annually or bi-annually) to solicit feedback on bicycle facilities, network maintenance, promotional and educational activities, and safety/security and enforcement issues.
- Consider the use of periodic public surveys to receive input on bicycle issues from the larger community.

Project Costs

Construction costs for bicycle infrastructure are presented in Table 17. Costs estimates were developed by researching the latest unit costs experienced by the local jurisdictions in Napa County and the North Bay, and were cross-referenced by reviewing the National Cooperative Highway Research Program's *Guidelines for Analysis of Investments in Bicycle Facilities*[3]. In recent years, actual costs have fluctuated significantly, with sharp rises in the costs of construction materials in the late 1990's and early 2000's, followed by steep declines in labor costs and a leveling of construction material costs in last few years. Overall, these changes have been dramatic and have resulted in instabilities that are difficult to predict, especially over a long-term. The costs below are for planning level estimates. They are unit costs for construction and do not include contingencies, design, environmental analysis, administrative costs, right-of-way acquisition, or inflation factors. Furthermore, unit costs may vary considerably depending on the size of the job and the location. For example, the unit cost of striping only 1,000 linear feet can easily be two to three times that of a 15,000-foot project. The same 'economy of scale' can be applied to sign installation and signal modification projects. Pavement widening costs also vary considerably depending on the terrain and other variables, such as presence of utility poles, monuments, and drainage issues.

[3] Transportation Research Board, National Cooperative Highway Research Program's *Guidelines for Analysis of Investments in Bicycle Facilities,* 2006

Table 17
Construction Cost Assumptions for Bikeway Improvements

Capital Project	Unit	Cost
Class I: Multi Use Trail		
Construct Multi-Use Pathway	Mile	$550,000
Rehabilitation	Mile	$125,000
Trail Entry Improvements (may include bollards, signs, minor paving, & concrete driveway apron)	Each	$2,000-$6,000
At Grade Roadway Crossing (varies by improvement type)	Each	$10,000-$90,000
Grade Separated Crossing (under/over crossing)	Each	**
Trail Bridge (Prefabricated steel bridge 10-12 ft wide by 100 ft long)	Each	$200,000
Class II: Bike Lanes		
Road widening to accommodate bike lanes	Mile	$300,000
Install Signs, Striping, & Stencils	Mile	$30,000
Reconfigure Roadway Striping, add Bike Lanes	Mile	$75,000-$90,000
Install Loop Detectors	Each Intersection	$2,500-$5,000
Intersection Striping (bike lane pockets, combined turn lanes, advanced stop bar/pocket)	Each Intersection	$2,000-$6,000
Class III: Bike Route		
Install Signing (Up to 10 signs per mile)	Mile	$2,500
Bicycle Boulevard		
(Signing and Stencils Only)	Mile	$4,500
(Traffic Calming Treatments)	Each	$2,000-$60,000
Shoulder/Roadway Widening (One side, 6 foot)	Mile	$325,000
Shared Lane Markings / Pavement Legends	Each	$175-$300
Bicycle Parking		
Inverted "U" Rack (1 rack parks 2 bikes)	Each	$250
Post and Ring Rack (1 rack parks 2 bikes)	Each	$200
Bicycle Locker (1 to 2 bikes per unit depending upon locker type)	Each	$1,500
Bus Bicycle Racks – Front Loading	Each	$600-$800

Notes: The above unit costs are for construction. These planning level estimates do not include contingencies, design, administrative, right-of-way acquisition costs, or inflation factors.
** Costs are highly variable depending upon conditions

A variety of bicycle rack and bicycle locker products and styles are available through local and national manufactures and retailers. The sample "styles" identified in Table 17 are intended for reference. Local agencies and developers are encouraged to utilize racks and lockers that are effective and appropriate for the context of the respective installation site.

Program Costs

This plan includes a variety of collaborative programmatic improvements and actions that will help achieve the vision of increased bicycling throughout Napa County and bicycle safety improvements for each community. The programs and actions are important to help realize Plan vision and safety enhancements and should be implemented as soon as time and funding resources are available. Costs for individual programs and actions are highly variable and dependent upon the scope and scale of actions. For example, bicycle counts are often collected using volunteer labor which results in a significant savings. Other programs and actions can be carried out using existing staff resources and/or by utilizing existing media available free of charge from other transportation agencies such as safety education materials and/or public service announcements. Table 18 identifies the primary programmatic improvements, which are defined in greater detail in earlier sections, includes a range of estimated costs, a potential lead agency, likely partner agencies, and potential funding sources.

Table 18
Cost Assumptions for Programmatic Improvements

Program/Project Name	Lead Agency	Partner Agencies	Estimated Cost	Estimated Annual Maintenance Cost	Potential Funding Source
Napa Bike Program – Education and Encouragement Activities					
Centralized Bicycle Program Webpage	NCTPA	Cities, County, Town	$20,000 start up	0.25 time staff position	Federal, State, Regional Funds
Maintenance, Monitoring, and Reporting System	NCTPA	Cities, County, Town	$0 Component of Bicycle Program Webpage	$0 Part of regular staff duties	
Countywide Traffic Safety Campaign	NCTPA	Cities, County, Town	$250,000 start up and operation for two year period	$10,000+ printing, maintenance, and outreach costs	CA Office of Traffic Safety, Federal, State
Bicycle Guide Map	NCTPA	Cities, County, Town	$40,000	$10,000 printing and update costs every 3 to 5 years	Regional and State Grants
Safety and Education Publications (Includes print media, billboards, transit billboards)	NCTPA	Cities, County, Town	$15,000 assumes utilization of existing materials. Includes initial print runs.	$5,000 to $7,000	Federal and state grants
Street Skills Bicycle Safety Courses	NCTPA	Cities, County, Town	$5,000 administration and contract instructors	$2,000 to $4,000	Non-profit, Grants
Encouragement Activities (bike to work day, city streets, fairs, races, student, and community events)	NCTPA, Cities, County, Town, Non-profits	Cities, County, Town, non-profits, local businesses	$5,000 to $20,000 per event	Varies per event	Non-profits, local businesses, Tourism and Hospitality Industries
Radio, TV, Public Service Announcements	NCTPA, Cities, County, Town	Non-profits, local law enforcement agencies, private business	$15,000 start up assumes administration and materials acquisition	$3,000 to $5,000	Donations, non-profit grants, local businesses, Federal, state, regional grants, CA Office of Traffic Safety
Tourism/Tourist Safety and Wayfinding Materials	Local Businesses, Tourism/Hospitality Industry	NCTPA, Cities, County, Town	$75,000 startup	$10,000 printing and maintenance costs	Non-profits, local businesses, Tourism and Hospitality Industries

Table 18
Cost Assumptions for Programmatic Improvements

Program/Project Name	Lead Agency	Partner Agencies	Estimated Cost	Estimated Annual Maintenance Cost	Potential Funding Source
Bicycle Parking Program	NCTPA, Cities, County, Town, local businesses	Non-profits	$20,000 start-up Assumes design, administration, site selection	$5,000 Annual installation expenses	Bicycle Transportation Account, state and regional grants
Wayfinding Signing Campaign	NCTPA	Cities, County, Town	$75,000 Accounts for design and administration along with installation of approximately 250 signs Countywide	$5,000	Bicycle Transportation Account, state and regional grants
Share the Road Campaign	NCTPA	Cities, County, Town	$35,000 Accounts for design and administration along with installation of approximately 75 signs Countywide	$2,500	Bicycle Transportation Account, state and regional grants, general fund
Bicycle Ambassador Program 2 to 4 part-time persons Potential internship or volunteer opportunities	NCTPA	Cities, County, Town	$5,000 Administration costs	$2,000 to $5,000	Private funding, non-profits, local businesses
Bicycle Share Program	NCTPA	Cities, County, Town, local businesses	$5,000 per installation site. Does not include land costs.	Annual operating costs can range from $1,000 to $2,000 per bike	Private Funding, local businesses, Tourism and Hospitality Industries
Local Agency Bicycle Fleets	Local Agencies and NCTPA	Cities, County, Town	$3,000 to $6,000 per agency	$250 to $500	
Bicycle Diversion Program	Napa County Courts	Local Police Agencies	$5,000 Program start-up	$0	Part of annual operating costs
Focused/Targeted Enforcement	Local Law Enforcement Agencies	Cities, County, Town	$0		General Fund, CA Office of Traffic Safety Grants
Bicycle Counts	Cities, County, Town	NCTPA, Non-profits, volunteers	$6,000 Program start-up and administration	$3,500	

Project Prioritization and Phasing

Project implementation priorities are identified in Table 14, the proposed project list. Projects are categorized as High, Medium, or Low to both indicate priority and provide flexibility in phasing and implementation. Project prioritization was developed using the qualitative analysis detailed in the "Criteria for Route Selection and Evaluation" section. Project ranking and prioritization scores are presented in Appendix H. It is important to note that the prioritization of projects and phasing of improvements are presented as guidelines, as flexibility is essential in the implementation of planned bikeway projects and programs in order to capitalize on opportunities as they arise.

Past Expenditures

Since completion of the *2003 Napa Countywide Bicycle Plan*, the City of Napa and the Napa County Flood Control District have spent millions on the construction of bicycle facilities. Additional funds have been spent on design, administration, environmental clearance, and maintenance activities. Project improvements are listed in Table 19.

Table 19
Napa Historical Expenditures on Bicycle Facilities Fiscal Year 2004/05 to 2009/10

Road/Corridor	From	To	Description	Cost Estimate
Napa River Trail	South end of Kennedy Park	Tulocay Creek	Class I multi-use pathway	-
Napa River Trail Promenade	Riverside Dr	1st St	Downtown Promenade Class I multi-use pathway	-
Napa River Trail	Lincoln Ave	Trancas St	Class I multi-use pathway	$676,000
Napa Crossing Park			Class I multi-use pathways within the park	-
East Ave	3rd St	Silverado Trail	Class III bike route improvements	$2,500
Trancas St	Old Soscol Way	Silverado Trail	Class II bike lanes	$6,000
Salvador Creek Trail	Ranch Lane	Summerbrooke	Class I multi-use pathway	$248,000
Soscol Ave	La Homa	Trancas St	Class II bike lanes	$10,000
Imola Ave	Coombs St	Gasser Dr	Class II bike lanes on Napa River Bridge	-
First St	Main St	Soscol Ave	Class II bike lanes on Napa River Bridge	-
Third St	Main St	Soscol Ave	Class II bike lanes on Napa River Bridge	-
Napa Valley College Connector Trail	Kennedy Park Napa River Trail	Roy Patrick Dr	Class I multi-use pathway	-
Napa Commuter Bike Path/Vine Trail	Vallejo St	Solano Ave	Class I multi-use pathway	$550,000
Bike Blvd Enhancements			Signs and stencils on Franklin, Hayes, Seminary, and Yount	$15,000
Hidden Hills Path	Partrick	Meadowbrooke	Class I multi-use path	-

Funding Resources

There are a number of funding mechanisms available to implement the bicycle projects and programs contained in this plan. Due to its dynamic nature, transportation financing is complex. Implementation

of bicycle facilities, improvements, and programs is made possible by a wide variety of funding sources including:

- Federal, State, Regional, and Local Governmental Sources
- Private Sector Development and Investment
- Community, Special Interest and Philanthropic Organizations

Federal, State, Regional, and Local Governmental Sources

The dollars used to fund transportation projects originate from a wide variety of government sources including federal and state fuel taxes, sales taxes, property taxes, transit fares, truck weight fees, vehicle registration fees, tolls, development fees, bonds, traffic fines, local general funds, and assessment districts, among others. Many transportation fund sources are closely tied to larger local, state, and national economic trends, and as a result, the availability of these funds can fluctuate with economic upturns and downturns.

In the San Francisco Bay Area, the flow of revenues for bicycle and pedestrian projects from source to implementing entity most often involves the California Department of Transportation (Caltrans), the regional Metropolitan Transportation Commission (MTC), to a limited extent, the Bay Area Air Quality Management District (BAAQMD), the Bay Trail, and at the local level, the Napa County Transportation Planning Agency (NCTPA). Funding for bicycle projects is possible from various sources that NCTPA facilitates. While the NCTPA does not own or operate bicycle facilities or services, the agency supports the implementation of projects and programs identified by its member agencies.

At the federal, state, regional and local levels, transportation funds are divided into myriad funding programs. Each program is handled differently, depending on its size, eligible uses, and the agency responsible for making spending decisions. While some programs remain relatively consistent, the majority are dynamic, changing regularly with passage of legislation or as a result of administrative or programmatic adjustments. Moreover, many programs, especially at the regional level, are not funded from a single source; rather they are derived from a combination of federal and/or state funds. Government funds can be used for both non-infrastructure and infrastructure projects. Examples of the non-infrastructure or "programmatic" improvements include safe routes to school education and community traffic safety campaigns; examples of infrastructure projects include roadway rehabilitation, roadway construction, construction of Class I multi-use pathways and Class II bike lanes, and traffic signal infrastructure.

In general, federal funds are used for capital projects, such as new roadway, highway, and rail construction, as well as for specific projects earmarked by Congress. State funds are used for new capital projects too, but also cover maintenance costs, like street and highway resurfacing. Certain State funds may also be used as matching funds for larger federal projects, and/or to cover operational costs. Regional and local funds are often the most flexible, and may be used for capital project, maintenance, and operational costs, and programmatic improvements.

The primary implementers of infrastructure projects are city and county public works departments. Project selection is typically based on planning processes involving public participation. Additionally, schools and school districts can be the implementers of on-site bicycle and pedestrian infrastructure and amenities, such as sidewalks and bicycle racks; and/or for bicycle and pedestrian education programs and incentives. Other governmental partners are law enforcement agencies and parks and recreation departments. Such entities can sponsor enforcement and/or safety programs that are aimed at improving motorist, bicyclist and pedestrian behaviors to bring about greater community safety and security.

Redevelopment agencies are another source of governmental funding. Many redeveloped districts have incorporated bicycle and pedestrian facilities in their planning. Likewise, fees exacted from developers for project mitigation can potentially be used to accommodate pedestrians and bicyclists.

Private Sector Development and Investment

Private sector development and investment play an important role in funding non-motorized infrastructure. Many newer housing and retail developments throughout Napa County have been planned, or required, to include sidewalks, pathways, and bicycle facilities. Private development is expanding its focus on "smart growth" and balanced transportation options. This inherently builds in orientation to the bicycle and pedestrian modes. Sometimes developers also fund such amenities as bicycle racks, bicycle storage, benches, lockers and shower facilities. Additionally, in many locations improvements such as closure of gaps in sidewalks or road widenings are made only after a private land use change is approved. Improvements or right-of-way dedication can be made conditions of approval, allowing upgrades for bicyclists and pedestrians. Finally, both the government and the private sector can play important roles in providing employee programs that encourage walking and bicycling, as well as use of transit.

Community, Special Interest and Philanthropic Organizations

Other non-governmental sources of funding include the contributions of community-based organizations, such as the Napa County Bicycle Coalition, in carrying out programs that support bicycle usage. Examples include Bike to Work Day efforts, bicycle valet parking at events, education programs, and community bike rides. Special-interest groups have made contributions toward non-motorized improvements and programs if such are in alignment with group objectives. Sometimes the contribution is monetary, at other times in the form of volunteer efforts, such as path or trail upkeep programs.

Philanthropic entities including non-profit, foundation, and corporate organizations and individuals can fund programs, and at times facilities. Donations and grants have paid for community amenities such as pathways and trails; landscaping, fountains and other aesthetic improvements; and street furniture such as bicycle racks, lighting and seating benches. The latter "beautification" efforts create bicycle and pedestrian friendly environments.

Construction Projects

Because this Plan's planning process has generated a ranked list of construction projects for each entity, additional information about the sources of infrastructure financing will be useful. Bicycle projects are eligible for funding through a variety of program sources. However, while a portion of the funds available for such improvements are programmed or 'guaranteed' to the local agencies based on various formulas, the majority of the funds are available through a competitive process at the state, regional, or local level. Thus while improvements to major roadways are likely to be financed through programmed transportation funds, the majority of the projects contained in this Plan are likely to be funded through competitive grant programs or some combination of the two sources.

To ensure timely implementation of the projects contained in this plan, it will be incumbent upon the local agencies to pursue competitive source funds, which are expected to account for the majority of funds available to implement the projects in this Plan. Competition for these limited funds can be intense, especially at the state and regional levels where often hundreds of applicants compete for monies from impacted programs. Therefore, competitive programs typically require the development of extensive applications with clear documentation of the project need, costs, and benefits, along with maps, schedules, letters of support, and proposed work scopes. A local match of between 10 and 15 percent is typically required; however, some programs require a dollar for dollar match. While the

development of applications combined with securing local matching funds can be challenging, competitive source funding programs represent an outstanding opportunity to secure funds for local improvements.

Costs and Implementation

This section provides an overview of the costs, implementation strategies, and actions that are necessary to implement the projects and programs that have been identified in this Plan.

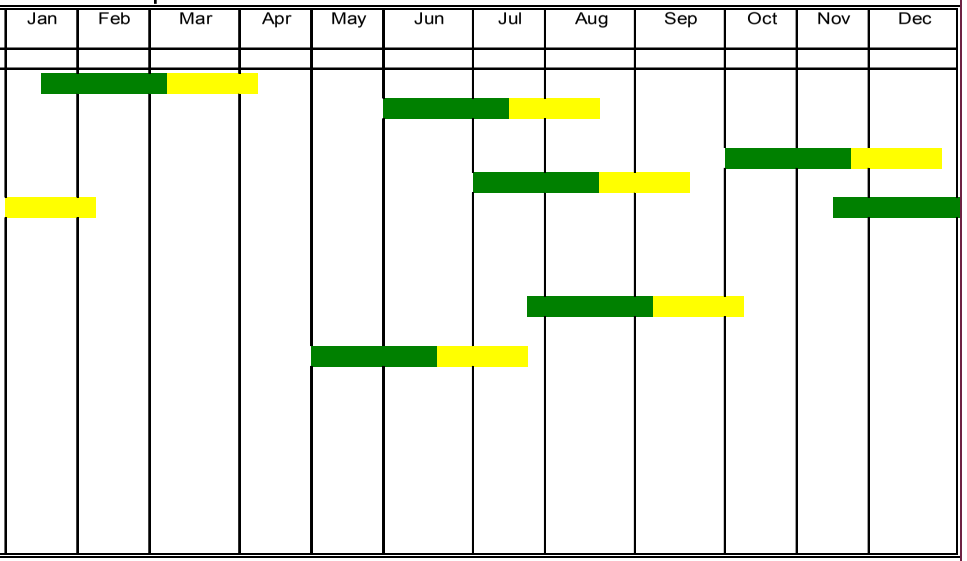
Project Costs

Planning level cost estimates were developed for this effort. Bicycle project cost estimates were developed by utilizing available information on each proposed project including segment length, corridor condition, and other available information. Each segment was evaluated according to an estimated cost-per-mile based on the recommended facility type. Unit costs were developed by researching the latest unit costs experienced by local agencies in Napa County and the North Bay; and were reviewed by agency staff for verification.

Proposed projects and programs in this Plan have been analyzed to determine financing requirements, and to allow the entities to budget their resources and target available funding sources. It is important to note that the majority of funding for the projects contained in this Plan is expected to be derived from competitive funding sources that require a combination of sound applications, local support, and lobbying on the regional and state level. Figure 10 displays a calendar overview of primary competitive source programs to provide an understanding of funding program timelines. Since the programs are dynamic, often changing annually, the calendar is formatted on a quarterly basis. It provides a twelve-week time to provide guidance on when calls for projects are typically released and application deadlines occur. Summaries of funding programs including weblinks are provided in Appendix I.

Grant Application Development Calendar

Agency	Program	Estimated Due Date
Caltrans	Highway Safety Improvement Program	4th Quarter
Caltrans	Transportation Enhancements (Statewide)	4th Quarter
State Parks	Recreational Trails Program	4th Quarter
Caltrans	Bicycle Transportation Account	1st Quarter
Caltrans	Safe Route to School	3rd Quarter
OTS	OTS Grants	1st Quarter
Caltrans	Environmental Enhancement & Mitigation Program	4th Quarter
CA Coastal C	On-going Coastal Conservancy Grants	On-going
State Parks	Habitat Conservation Fund Program	4th Quarter
State Parks	Land and Water Conservation Fund Program	4th Quarter
Caltrans	Caltrans Transportation Planning Grants	1st Quarter
MTC	Transportation for Livable Communities	*
BAAQMD	BAAQMD - Bicycle Facility Program	3rd Quarter
BAAQMD	Transportation for Clean Air Program	2nd Quarter
MTC	Regional Bicycle and Pedestrian Program	*
ABAG	Bay Trail Funds	On-going
CMA	TDA-Article 3	1st Quarter



* Varies based on federal funding

Project Selection and Development

Project Application Preparation

Figure 10 – Grant Application Development Calendar

Definitions, Terms, and List of Acronyms

AASHTO – *American Association of State Highway and Transportation Officials*

Accessible – *Characteristic of a location allowing approach and use; absence of barriers*

Accessible Pathway – *Unobstructed path connecting all accessible elements and spaces of a building or a facility that meets the requirements of ADAAG*

Accessible Pedestrian Signal (APS) – *A device that communicates information about pedestrian signal timing in non-visual format, through the use of audible tones (or verbal messages) and vibrating surfaces*

ADAAG – *ADA Accessibility Guidelines for Buildings and Facilities*

Americans with Disabilities Act (ADA) – *A Federal law prohibiting discrimination against people with disabilities. Requires public entities and public accommodations to provide accessible accommodations for people with disabilities*

AQMD – *Air Quality Management District*

Arterial – *Through route/street carrying traffic to and from major points of interest, often inter-city*

BAC – *Bicycle Advisory Committee*

Bicycle Boulevard – *A low volume or residential street that has been modified for bicyclist safety and access.*

Bicycle Connection – *Paths or roadways created to link bicycle users with major streets/corridors*

Bicycle Facilities – *A general term denoting improvements and provisions to accommodate or encourage bicycling, including parking facilities, all bikeways and shared roadways, bicycle activated signal infrastructure, bicycle storage and changing facilities, etc.*

Bicycle Lane (Class II Bike Lane or Class II Bikeway) – *A portion of a roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes are ideal for minor thoroughfares or collectors. Under certain conditions, bike lanes may be beneficial on streets with significant traffic volumes and/or speeds. The Highway Design Manual (HDM) specifies the minimum width for bike lanes under various curb and on-street parking conditions. The HDM also states that "for greater safety," widths wider than the minimums should be provided "wherever possible."*

Bicycle Path (Class I Multi-Use Path or Class I Bike Path) – *A bikeway physically separated from motorized vehicular traffic and either within the highway right-of-way or within an independent right-of-way. Bike paths have a minimum paved width of 8 feet, with an additional graded area maintained on each side of the path. Typically, these facilities are usually shared with other non-motorized modes of travel.*

Bicycle "Network" – *the physical improvements that establish bikeways (Class I, II, or III routes)*

Bicycle Route (Class III Bike Route or Class III Bikeway) – *a designated route that provides for shared use of paved surfaces with pedestrian or motor vehicle traffic, also termed "shared roadway" designated by appropriate directional and/or informational signs. In this plan, a Class 3 signed bike route may be a local or residential street, bicycle boulevard, an arterial with wide outside lanes, or a roadway with a paved shoulder.*

Bicycle "System" – *the whole of all of the components, including both physical bikeways and programmatic improvements*

Bicyclist Demand – *Number determined by count of recreational and non-recreational bike trips during a specific duration of time (i.e. peak commute, weekly, monthly, etc.) on a given street/corridor*

Bikeway – *Any path or roadway with a provision for transportation or recreational use by bicyclists*

Bikeway Network – *The combined system of all bikeway types and amenities; connects destinations and attractions via bicycle accessible routes*

Bollards – *A rigid post placed in a through fare so as to limit access or traffic of certain widths or types*

BPAC – *Bicycle & Pedestrian Advisory Committee*

BTA – *Bicycle Transportation Account*

Caltrans – *California Department of Transportation*

CARB – *California Air Resources Board*

CEQA – *California Environmental Quality Act*

Circulation Enhancements – *Elements placed to modify and improve circulation for one or more modes of transportation*

CMAQ – *Congestion Mitigation and Air Quality Program*

Connectivity – *The relative relationship of transportation routes and access corridors to necessary resources and points of interest*

Controlled Intersection – *Area with a traffic light or other traffic control device where traffic flow from two or more paths or roadways meet*

Corridor – *An area that follows the shape and path of a major environmental feature; also a term used for transportation routes with designated district activities such as a mixed use-retail corridor*

Crosswalk – *Portion of a roadway where pedestrians are permitted to cross the street; can be marked or unmarked*

CTC – *California Transportation Commission*

Curb Ramp – *A combined ramp and landing that accomplishes a change in level at a curb. This element provides street and sidewalk access to pedestrians using wheelchairs*

Design Guidelines – *Specifications set to govern the physical or visual elements of development*

Detectable Warning – *A standardized surface feature built in or applied to walking surfaces or other elements to warn people who are blind or visually impaired of specified hazards*

Existing Conditions – *Current context of a site, including physical, demographic and political data*

FAS – *Federal Aid System*

FHWA – *Federal Highway Administration*

FTA – *Federal Transit Administration*

FTIP – *Federal Transportation Improvement Program*

Gateway – *A designated or marked entrance to a pathway or area*

Goal – *a "goal" describes the destination, or where we want to be at the end of the planning journey. Goals are usually broad, optimistic and expressive of a long-term vision.*

Greenway – *A pathway for various modes of transportation, including bicycles, that contains elements of a linear park*

Infill Development – *Development of new building adjacent to or on the same lots as existing buildings, utilizes pockets of un- or underdeveloped real estate contiguous with existing development*

Infrastructure – *Physical structures that support basic uses and services*

Intersection – *Where traffic flow from two or more paths or roadways meet*

ISTEA – *Intermodal Surface Transportation Efficiency Act of 1991 (reauth'd 1998 as TEA-21, and 2006 at SAFTEA-LU)*

JARC – *Job Access and Reverse Commute Program*

Landscaping – *Alteration of the ground through grading, planting and contouring*

LTF – *Local Transportation Fund*

Median – *A barrier (paved, landscaped, or planted) separating two traffic through fares*

Median Refuge – *An area within an island or median that is intended for pedestrians to wait safely away from travel lanes for an opportunity to continue crossing the roadway*

Midblock Crosswalk – *A legally established crosswalk that is not at an intersection*

Mode Split – *the number of people using a particular mode of transportation (bicycle, public transit, vehicle, walking, etc.)*

MPO – *Metropolitan Planning Organization*

MTC – *Metropolitan Transportation Commission – The Metropolitan Transportation Commission is the transportation planning, coordinating and financing agency for the nine-county San Francisco Bay Area*

MUTCD – *Manual on Uniform Traffic Control Devices*

NCTPA – *Napa County Transportation Planning Agency*

NEPA – *National Environmental Quality Act*

Objective – *objectives describe mileposts along the way to achieving the goals. They are specific, measurable steps to be achieved if the overall goals are to be met.*

Paved Shoulder – *The part of the highway/street that is adjacent to the regularly traveled portion of the highway, is on the same level as the highway, and when paved can serve as a bikeway. Paved shoulders should be at least four feet wide and additional width is desirable in areas where speeds are high and/or a large percentage of trucks use the roadway.*

Paving Treatments – *a variety of materials, utilitarian and /or decorative used to level and condition pathway and roadway surfaces*

Pedestrian Accessibility – *the relative ease with which a location can be approached and utilized by pedestrian traffic*

Policy – *a principle or rule to guide decisions by the local agency with regard to a particular issue or set of issues.*

Primary Bikeway Network – *a continuous countywide network of on- and off-street bikeways that extend between and through communities developed specifically through this planning effort. The Primary Bikeway Network consists of a selection of existing and proposed Class I, Class II, and Class III bikeways that provide inter-city and inter-county routes along with connections to other transportation modes, major destinations, jobs, neighborhoods, recreation, and local bicycle networks.*

Program – *a specific action to accomplish the policy or objective*

PSR – *Project Study Report*

Public Improvements – *additions to public space intended to increase value and functionality*

Public Transit – *a system of multi-user transportation incorporating light rail, busses, ferries, streetcars, aerial trams, commuter trains*

PUC – *Public Utilities Commission / Public Utilities Code*

Regional Trail System – *a trail system that cross jurisdictional lines*

Right of Way – *the right of a vehicle or pedestrian to proceed in a lawful manner in preference to another vehicle or pedestrian. (2) A general term denoting land, property, or interest therein, usually in a strip. (3) Land designated for transportation purposes, usually in the public sphere*

RPA – *Rural Planning Assistance*

RSTP – *Regional Surface Transportation Program*

RTIP – *Regional Transportation Improvement Program*

RTP – *Regional Transportation Plan*

RTPA – *Regional Transportation Planning Agency*

Safe Routes to Schools – *a nationwide program focusing efforts on improving the paths and routes used by children to commute to and from school*

SHA – *State Highway Account*

SHOPP – *State Highway Operation and Protection Program*

Shared Lane Markings (Sharrows) – *pavement legends which may be placed in the travel lane to provide positional guidance to bicyclists on roadways that are too narrow to be striped with bike lanes*

Shoulder – *Any portion of a roadway to the right of the right-most travel lane, but not including curbs, planting buffers and sidewalks. Shoulders can have a variety of surface treatments including pavement, gravel or grass. Depending on their width and surface, they serve a variety of purposes, including providing space for vehicles to slow and turn right, accommodation of stopped or broken-down vehicles, to allow emergency vehicles to pass, for structural support of the roadbed, or for bicycle and pedestrian travel.*

Sidepath – *An informal term referring to a portion of a street or highway right-of-way, separated from motor vehicle traffic, and designed for non-motorized modes of travel, including bicycles*

STA – *State Transit Assistance*

STIP – *State Transportation Improvement Program*

STP – *Surface Transportation Program*

Streetscape – *the overall appearance and functionality of the roadway, incorporating the rights-of-way, landscaping, built features and adjacent land uses*

Subdivision – *an area that has been divided into smaller lots for individual development*

TAC – *Technical Advisory Committee, a committee made up of citizens and technical professionals, convened to create recommendations for the development of a plan*

TDA – *Transportation Development Act of 1971*

TE – *Transportation Enhancement Program (formerly TEA)*

TEA-21 – *Transportation Equity Act for the 21st Century (1998 – formerly ISTEA)*

Title 24 Standards – *administrative, building, mechanical, and safety codes set forth in the California Code of Regulations*

Traffic Congestion – *roadway condition characterized by reduced travel speeds or even complete stoppage of flow of vehicles*

Transportation Routes – *all widely used paths and roadways*

USDOT – *United States Department of Transportation*

Utilitarian Trips – *all trips made to secure basic needs and services; e.g. grocery, pharmacy, local commerce*

VMT – *vehicle miles traveled*

Wide Outside Lane – *an outside (curb) lane on a roadway that does not have a striped bike lane, but may be of sufficient width for a bicyclist and motorist to share the lane with a degree of separation*

Wrong-Way Riding – *riding against the flow of traffic*

Zoning – *regulation by a governing agency to specify permitted land uses for a given area*

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Appendix A

Summaries of Relevant Planning Documents and Policies

Appendix A – Existing Plan and Policy Review

Federal

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

Federal Transportation Legislation sets policy, addresses challenges, and provides funding for federal and a variety of state and regional transportation programs throughout the nation. In August 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law. SAFETEA-LU, which will run through December 31, 2010, replaces TEA-21, the Transportation Equity Act for the 21st Century.

The new bill provides $286.5 billion nationwide for surface transportation projects, including highways, mass transit, road safety programs, and bicycle and pedestrian improvements. SAFETEA-LU builds on the initiatives established in TEA-21 and its predecessor, ISTEA. It combines the continuation and improvement of current programs with new initiatives to meet the challenges of improving safety, increasing multi-modal transportation options, reducing traffic congestion, and protecting and enhancing communities and the natural environment through efficient and flexible transportation improvements.

SAFETEA-LU promotes more efficient and effective Federal surface transportation programs by focusing on transportation issues of national significance, while giving State and local transportation decision makers more flexibility for solving transportation problems in their communities.

Policy:

> *Federal transportation policy is to increase non-motorized transportation to at least 15 percent of all trips and to simultaneously reduce the number of non-motorized travelers killed or injured in traffic collisions by at least 10 percent (TEA-21, 1998). This policy, which was adopted in 1994 as part of the National Bicycling and Walking Study, remains a high priority for the U.S. Department of Transportation (USDOT). Federal Transportation Legislation provides the funding opportunities, planning processes, and policy language by which states and metropolitan areas can achieve these ambitious national goals.*

http://www.fhwa.dot.gov/safetealu/index.htm

US DOT Accommodating Bicycle and Pedestrian Travel

"Accommodating Bicycle and Pedestrian Travel: A Recommended Approach" is a policy statement that was adopted by the U.S. Department of Transportation (USDOT) in response to TEA-21. USDOT encourages public agencies, professional organizations, advocacy groups, and any other groups involved in transportation issues to adopt this policy to further promote bicycling and walking as viable components of the transportation system. The policy statement address measures to improve bicycle and pedestrian access, convenience, and safety in transportation projects. It incorporates three key principles:

a. policy statement that bicycling and walking facilities will be incorporated into all transportation projects unless exceptional circumstances exist;
b. an approach to achieving this policy that has already worked in State and local agencies; and
c. a series of action items that a public agency, professional association, or advocacy group can take to achieve the overriding goal of improving conditions for bicycling and walking.

Finally, the policy statement notes that:

> *The challenge for transportation planners, highway engineers and bicycle and pedestrian user groups, therefore, is to balance their competing interest in a limited amount of right-of-way, and to develop a*

transportation infrastructure that provides access for all, a real choice of modes, and safety in equal measure for each mode of travel.

http://www.fhwa.dot.gov/environment/bikeped/design.htm

Federal Americans with Disabilities Act (ADA)

In 1990, Congress passed the Americans with Disabilities Act (ADA), which provides comprehensive rights and protections to people with disabilities in the areas of employment, public accommodations, state and local government services, and telecommunications. Title II of the ADA requires that new and altered facilities constructed by, on behalf of, or for the use of state and local government entities be designed to be readily accessible to and usable by people with disabilities (28 CFR 35.151).

Title II also requires that public entities prepare and submit "transition plans," which identify alterations that are needed to make their facilities (including transportation networks) and programs accessible; and specify how those alterations will be accomplished. ADA transition plans must include a schedule for providing curb ramps where pedestrian walkways cross curbs, giving priority to walkways serving government offices, public transportation and other public places.

http://www.usdoj.gov/crt/ada/adahom1.htm

Revised Draft Guidelines for Accessible Public Rights-of-Way, US Access Board

The goal of the ADA is to assure equality of opportunity, full participation, independent living, and economic self-sufficiency. Under the ADA, the US Access Board has developed and continues to maintain design guidelines for accessible buildings and facilities known as the ADA Accessibility Guidelines (ADAAG). ADAAG covers a wide variety of facilities including roadway design practices, slope and terrain issues, and pedestrian access to streets, sidewalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public rights-of-way. The ADAAG establishes minimum requirements for new construction and alterations.

The Board's aim is to ensure that access for persons with disabilities is provided wherever a pedestrian way is newly built or altered, and that the same degree of convenience, connection, and safety afforded the public generally is available to pedestrians with disabilities. The guidelines do not require alterations to existing public rights-of-way, but apply where a pedestrian route or facility is altered as part of a planned project to improve existing public rights-of-way.

http://www.access-board.gov/prowac/draft.htm

Federal Statutes – State

Title 23, CFR Sec §450.214 (b) (3) The State shall develop a statewide transportation plan for all areas of the State and contain, as an element, a plan for bicycle transportation, pedestrian walkways and trails which is appropriately interconnected with other modes.

Title 23, CFR Sec §450.214 (b) (4) The State shall develop a statewide transportation plan that is coordinated with the metropolitan transportation plans required under 23 U.S.C. 134.

Title 23, U.S.C. Sec. 135 (a) (3). The plans and programs for each State shall provide for the development and integrated management and operation of transportation systems and facilities (including pedestrian walkways and bicycle transportation facilities) that will function as an intermodal transportation system for the State and an integral part of an intermodal transportation system for the United States.

Title 23 U.S.C. 217(g) Planning and Design. Bicyclists and pedestrians shall be given due consideration in the comprehensive transportation plans developed by each metropolitan planning organization and state in accordance with sections 134 and 135, respectively. Bicycle transportation facilities and pedestrian

walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use are not permitted.

Federal Statues – Metropolitan Planning Organizations

Title 23, CFR §450.322 The Metropolitan Transportation Plan shall contain adopted congestion management strategies including, as appropriate, traffic operations, ridesharing, pedestrian and bicycle facilities, alternative work schedules, freight movement options, high occupancy vehicle treatments, telecommuting, and public transportation improvements (including regulatory, pricing, management, and operational options), that demonstrate a systematic approach in addressing current and future transportation demand and identify pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g).

Title 23, U.S.C. Sec. 134 (a) (3) The plans and programs for each metropolitan area shall provide for the development and integrated management and operation of transportation systems and facilities (including pedestrian walkways and bicycle transportation facilities) that will function as an intermodal transportation system for the metropolitan area and as an integral part of an intermodal transportation system for the State and the United States.

State

State bicycle and pedestrian related policies and laws are found in a variety of documents, legislative actions, and codes. State policies are generally more focused than Federal policies and statutes, and are applicable to Federal and state transportation facilities, as well as local bicycle and pedestrian projects.

California Streets and Highways Code, Division 1: State Highways, Chapter 8 Non-Motorized Transportation – California Bicycle Transportation Act, 890-894 (1994)

The California Bicycle Transportation Act, Streets and Highways Code 890-894 is legislation that seeks "to establish a bicycle transportation system designed and developed to achieve the functional commuting needs of the employee, student, business person, and shopper as the foremost consideration in route selection, to have the physical safety of the bicyclist and bicyclist's property as a major planning component, and to have the capacity to accommodate bicyclists of all ages and skills."

A city or county may complete a bicycle transportation plan pursuant to Section 891.2 in order for their project to be considered by the Department for funding. Section 890.6 states the Department, in cooperation with county and city governments, shall establish minimum safety design criteria for the planning and construction of bikeways and roadways where bicycle travel is permitted. Section 890.8 states the Department shall establish uniform specifications and symbols for signs, markers, and traffic control devices to designate bikeways, regulate traffic, improve safety and convenience for bicyclists, and alert pedestrians and motorists of the presence of bicyclists on bikeways and on roadways where bicycle travel is permitted. As Section 891 states, "All city, county, regional, and other local agencies responsible for the development or operation of bikeways or roadways where bicycle travel is permitted shall utilize all minimum safety design criteria and uniform specifications and symbols for signs, markers, and traffic control devices established pursuant to Sections 890.6 and 890.8."

http://www.leginfo.ca.gov/.html/shc_table_of_contents.html

California Vehicle Code

The California Vehicle Code is an extensive body of laws which regulate all facets of driving in California. The Vehicle Code is nearly 700 pages long and covers everything to do with roads and driving, including pedestrians and bicyclists.

Sections 2149-21971 describe the responsibilities of pedestrians when crossing the street or walking along a street on a sidewalk, and the roles and responsibilities of motorists in relationship to pedestrians and wheelchair users. According to the Vehicle Code, "it is the policy of the State of California that safe and convenient pedestrian travel and access, whether by foot, wheelchair, walker, or stroller, be provided to the residents of the state." The code also states that it is the intent of the Legislature that all government levels, especially Caltrans and other DOTs, will work to provide safe, convenient passage for pedestrians on or across all streets and highways, increase levels of walking, and reduce pedestrian fatalities and injuries.

Sections 21200-21212 pertain to the operation of bicycles including laws applicable to bicycle use, operating bicycles on a roadway, bicycle parking, and bicycle regulations. Sections 39000-39011 pertain to the licensing and registration of bicycles. Section 21200 states that "every person riding a bicycle upon a street or highway has all the rights and is subject to all the duties applicable to the driver of a vehicle," and the CVC permits the use of bicycles on all streets and highways, except where restricted on Freeways by discretion of the State DOT or local authorities as identified in Section 21960.

http://www.dmv.ca.gov/pubs/vctop/vc/vc.htm

Chapter 1000, California Highway Design Manual

Highway Design Manual, Chapter 1000, "Bikeway Planning and Design. The Highway Design Manual, Chapter 1000, "Bikeway Planning and Design," provides design standards and guidelines for on- and off-street bikeways. State and local transportation agencies are required to comply with Chapter 1000 mandatory standards as a minimum when implementing new bikeways. Chapter 1000 differs from the rest of the Highway Design Manual in that it also applies to facilities off the State Highway System (California Streets and Highways Code, Sections 890.8 and 891).

www.dot.ca.gov/hq/oppd/hdm/hdmtoc.htm

California Manual on Uniform Traffic Control Devices (CA MUTCD), 2006

The MUTCD provides general standards and guidance for traffic control devices, nationally. The California MUTCD clarifies which policies, practices or standards are different in California, by identifying and including them. It also enhances the federal standards by providing additional details.

The California Manual on Uniform Traffic Control Devices (California MUTCD) is published by the State of California, Department of Transportation and is issued to adopt uniform standards and specifications for all official traffic control devices, in accordance with Section 21400 of the California Vehicle Code.

http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/ca_mutcd.htm

California Blueprint for Bicycling and Walking

The Supplemental Report of the 2001 Budget Act required the California Department of Transportation (Caltrans) to submit a report addressing "measurable goals for increasing bicycling and walking within the state, funding of facilities, and a reduction in pedestrian and bicycling injuries and fatalities." The *California Blueprint for Bicycling and Walkin*g responds to the Budget Act requirements with three main statewide goals:

- A 50 percent increase in bicycling and walking trips by 2010.
- A 50 percent decrease in bicycle and pedestrian fatality rates by 2010.
- Increased funding for bicycle and pedestrian programs.

Achieving the first two goals lies largely on local agencies. Policies and programs in this Plan will allow Napa County and its cities to actively work towards fulfilling these goals.

http://www.dot.ca.gov/hq/tpp/offices/bike/CABlueprintRpt.pdf

Caltrans Project Development Procedures Manual, CHAPTER 31 – Non-motorized Transportation Facilities

The Office of State Project Development Procedures and Quality Improvement in the Division of Design is responsible for the development and consistent application of Caltrans' policies for the project development process. The office maintains the Project Development Procedures Manual (PDPM), to provide guidance for project development on State Highway System projects. While the emphasis of the PDPM is directed toward State highway projects, projects on local transportation systems and other modes are also discussed. Chapter 31: Non-motorized Transportation Facilities outlines pertinent statutory requirements, planning policies, and implementing procedures regarding non-motorized transportation facilities.

http://www.dot.ca.gov/hq/oppd/pdpm/chap_htm/chapt31/chapt31.htm

Caltrans Deputy Directive-64-R1 (DD-64-R1), Deputy Directive on "Complete Streets-Integrating the Transportation System"

Deputy Directive 64-R1, a policy directive related to "Complete Streets" non-motorized travel throughout the state, was adopted by Caltrans in October of 2008. DD 64-R1 supersedes DD 64, which was developed to consider the needs of non-motorized travelers. DD 64-R1 reads:

> *The California Department of Transportation (Department) provides for the needs of travelers of all ages and abilities in all planning, programming, design, construction,' operations, and maintenance activities and products on the State highway system. The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.*
>
> *The Department develops integrated multimodal projects in balance with community goals, plans, and values. Addressing the safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding, is implicit in these objectives. Bicycle, pedestrian, and transit travel is facilitated by creating "complete streets" beginning early in system planning and continuing through project delivery and maintenance and operations. Developing a network of "complete streets" requires collaboration among all Department functional units and stakeholders to establish effective partnerships.*

http://www.dot.ca.gov/hq/tpp/offices/bike/guidelines_files/DD64.pdf

Director's Policy 22 (DP-22), "Director's Policy on Context Sensitive Solutions"

Directors Policy 22, a policy regarding the use of "Context Sensitive Solutions" on all state highways, was adopted by Caltrans in November of 2001. The policy reads:

> *The Department uses "Context Sensitive Solutions" as an approach to plan, design, construct, maintain, and operate its transportation system. These solutions use innovative and inclusive approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. Context sensitive solutions are reached through a collaborative, interdisciplinary approach involving all stakeholders.*
>
> *The context of all projects and activities is a key factor in reaching decisions. It is considered for all State transportation and support facilities when defining, developing, and evaluating options. When considering the context, issues such as funding feasibility, maintenance feasibility, traffic demand, impact on alternate routes, impact on safety, and relevant laws, rules, and regulations must be addressed.*

The policy recognizes that "in towns and cities across California, the State highway may be the only through street or may function as a local street," that "these communities desire that their main street be an economic, social, and cultural asset as well as provide for the safe and efficient movement of people and goods", and that "communities want transportation projects to provide opportunities for

enhanced non-motorized travel and visual quality." The policy acknowledges that addressing these needs will assure that transportation solutions meet more than just traffic and operational objectives.

http://www.dot.ca.gov/hq/transprog/stip/2004%20ITIP/references/DP-22.pdf

Assembly Concurrent Resolution No. 211 (ACR 211)

California's cities and counties have even more reason to pay attention to the aforementioned policies. ACR 211 (Nation) "Integrating walking and biking into transportation infrastructure" became effective in August 2002. ACR 211 encourages all cities and counties to implement the policies of DD-64 and the USDOT design guidance document when building local transportation infrastructure. Specifically, ACR 211 asks local governments to "fully consider the needs of non-motorized travelers (including pedestrians, bicyclists and person with disabilities) in all programming, planning, maintenance, construction, operations, and project development activities and projects." The resolution also states that bicycling and walking contribute to cleaner air, encourage physical activity, provide for alternative transportation, help to safeguard California's coast from offshore oil drilling, and enhance California's energy independence and national security by reducing our reliance upon imported oil.

http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0201-0250/acr_211_bill_20020820_chaptered.html

California Department of Motor Vehicles

The California Department of Motor Vehicles maintains a webpage dedicated to bicycle rules and safety. The page contains information for drivers and bicyclists and includes links to the Bicycle Section of the *DMV Driver's Handbook,* bicycle safety information on the California Department of Transportation's website, information on the National Highway Transportation Safety Agency and the California Vehicle Code as well as other links.

http://www.dmv.ca.gov/about/bicycle.htm

Caltrans Bicycle Transportation Account

The California Bicycle Transportation Account (BTA) provides state funds for city and county projects that improve safety and convenience for bicycle commuters, which are included in an adopted local Bicycle Transportation Plan that complies with Section 891.2 of the Streets and Highways Code, and are designed and constructed in accordance with the Chapter 1000 of the *Highway Design Manual.* The program is consistent with the Legislature's intent when it adopted the California Bicycle Transportation Act:

> *"...to establish a bicycle transportation system...designed and developed to achieve the functional commuting needs of the employee, student, business person, and shopper as the foremost consideration in route selection, to have the physical safety of the bicyclist and bicyclist's property as a major planning component, and to have the capacity to accommodate bicyclists of all ages and skills".*

http://www.dot.ca.gov/hq/LocalPrograms/bta/btaweb%20page.htm

Assembly Bill 32: Global Warming Solutions Act

In 2006, the California Legislature passed the Global Warming Solutions Act, which set the 2020 greenhouse gas emissions reduction goal into law. It directed the California Air Resources Board to begin developing actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit. The reduction measures to meet the 2020 target are to be adopted by the start of 2011.

Assembly Bill 32 Includes a Number of Specific Requirements:

- ARB shall prepare and approve a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions from sources or categories of sources

of greenhouse gases by 2020 (Health and Safety Code (HSC) §38561).
- Identify the statewide level of greenhouse gas emissions in 1990 to serve as the emissions limit to be achieved by 2020 (HSC §38550).
- Adopt a regulation requiring the mandatory reporting of greenhouse gas emissions (HSC §38530).
- Identify and adopt regulations for discrete early actions that could be enforceable on or before January 1, 2010 (HSC §38560.5).
- Ensure early voluntary reductions receive appropriate credit in the implementation of AB 32 (HSC §38562(b) (3)).
- Convene an Environmental Justice Advisory Committee (EJAC) to advise the Board in developing the Scoping Plan and any other pertinent matter in implementing AB 32 (HSC §38591).
- Appoint an Economic and Technology Advancement Advisory Committee (ETAAC) to provide recommendations for technologies, research and greenhouse gas emission reduction measures (HSC §38591).

http://www.arb.ca.gov/cc/ab32/ab32.htm

Senate Bill 375: Linking Regional Transportation Plans to State Greenhouse Gas Reduction Goals

Senate Bill 375 enhances California's ability to reach its AB 32 goals by promoting good planning with the goal of more sustainable communities. SB 375 establishes a process for the California Air Resources Board (ARB) to implement the state's global warming legislation (AB 32) for the transportation sector. It requires ARB to adopt regional greenhouse gas (GHG) targets for emissions associated with the automobile and light truck sector. ARB will also work with California's 18 metropolitan planning organizations to align their regional transportation, housing and land-use plans and prepare a "sustainable communities strategy" to reduce the amount of vehicle miles traveled in their respective regions and demonstrate the region's ability to attain its greenhouse gas reduction targets. The Bill acknowledges that spending less time on the road is the single-most powerful way for California to reduce its carbon footprint. Additionally, SB 375 provides incentives for creating attractive, walkable and sustainable communities and revitalizing existing communities.

http://www.arb.ca.gov/cc/sb375/sb375.htm

Regional

Federal and state policy are often used to inform regional policy, which is then crafted to be more focused with specific requirements, actions and design implications.

Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the transportation planning authority for the nine county San Francisco Bay Area. The MTC serves as the state designated Regional Transportation Planning Agency (RTPA) and the federally designated Metropolitan Planning Organization (MPO). MTC provides oversight on all transportation projects in the region and is responsible for preparing the Regional Transportation Plan (RTP). MTC is largely responsible for transportation financing in the Bay Area, and helps to set priorities for the hundreds of millions of dollars flowing each year to the Bay Area from flexible federal funding programs. Using flexible federal dollars, MTC has established several funding programs that were developed to enhance Bay Area communities including the Transportation for Livable Communities (TLC) Program, Housing Incentive Program (HIP), Low Income Flexible Transportation (LIFT) Program, and the Regional Bicycle and Pedestrian Program (RBPP).

http://www.mtc.ca.gov/

Regional Transportation Plan (RTP)

The current RTP, Transportation 2035, was finalized in February 2009 and updates the previous 2005 RTP. The 2035 Plan sets forth regional transportation policy and provides capital program planning for all regional, state and federally funded projects. In addition, the 2035 Plan provides strategic investment recommendations to improve regional transportation system performance over the next 25 years. Investments in regional highway, transit, local roadway, bicycle, and pedestrian projects are set forth in the 2035 Plan. These projects have been identified through regional and local transportation planning processes. Project recommendations are premised upon factors related to existing infrastructure maintenance, increased transportation system efficiencies, improved traffic and transit operations, and strategic expansions of the regional transportation system.

The 2035 Plan includes programs and projects which provide or contribute to a safe and well maintained transportation system, a reliable commute, access to mobility, livable communities, clean air, and efficient freight travel. A key element of the Transportation 2035 Plan is the coordination of land use and transportation planning, both at a regional and local level. Further, this plan element calls for an emphasis on "the Three E's of sustainability-Economy, environment, and equity." The Plan also recommends that existing transportation infrastructure be utilized efficiently while new investment is coordinated regionally. This includes new public transit service supporting existing transit centers and densification of development around existing transit infrastructure.

http://www.mtc.ca.gov/planning/2035_plan/FINAL/T2035_Plan-Final.pdf

Regional Bicycle Plan for the San Francisco Bay Area

The 2001 Regional Bicycle Plan for the San Francisco Bay Area was developed by the MTC and has been incorporated into the Regional Transportation Plan (RTP), which establishes a 25-year investment plan for regional transportation projects in the nine-county Bay Area. The overall goal of the plan is to ensure that bicycling is a convenient, safe, and practical means of transportation throughout the Bay Area. To achieve this goal, the plan established a regional bicycle network, programs to enhance bicycling, and a financial strategy to implement the improvements. To ensure implementation of the Plan, MTC developed the Regional Bicycle and Pedestrian Program Fund, which uses regional discretionary funds allocated through the federal Surface Transportation Program/Congestion Mitigation and Air Quality improvement program (STP-CMAQ) for bicycle and pedestrian projects that support the Regional Network.

Programs identified to enhance bicycling include safe routes to transit, a comprehensive network leading to major transit hubs; annual bicycle counts; more detailed collision data collection; and increased outreach and marketing efforts such as training programs, emphasis on Bike to Work Week, and a web-based trip planner, www.511.org.

http://www.mtc.ca.gov/planning/bicyclespedestrians/

Metropolitan Transportation Commission Complete Streets (Routine Accommodations)

The San Francisco Bay Area's Regional Transportation Plan – Transportation 2030 – calls for "full consideration of the needs of pedestrians and bicyclists during transportation project development design, construction, and rehabilitation." To help accomplish this "Call for Action," in 2006 the MTC adopted Resolution No. 3765, which sets forth "MTC's regional policies for accommodating bicycle and pedestrian facilities during transportation project planning, design, funding and construction." The policy was written in recognition that developing such facilities in conjunction with the development of parallel facilities for motor vehicles offers cost savings and can create safer and more convenient bicycle and pedestrian travel.

To implement the Resolution's requirements, MTC maintains a "Complete Streets" checklist, which sponsors of projects seeking regional transportation funds are now required to submit with their

funding applications. The checklist requires project sponsors to document how the needs of bicyclists and pedestrians were considered in the process of planning and designing the project for which funds are being requested. It is meant to prompt consideration of bicyclists and pedestrians during project planning and design and alert bicycle and pedestrian advisory committees of upcoming projects that may deserve their attention.

MTC Resolution 3765, "Routine Accommodations" Policy requires that:

> *Projects funded all or in part with regional funds (e.g. federal, STIP, bridge tolls) shall consider the accommodation of bicycle and pedestrian facilities, 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, which include wheelchair users, and bicyclist needs into all projects where bicycle and pedestrian 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.*

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

The Bay Trail

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 bicycling and hiking path around San Francisco and San Pablo Bays. The Bay Trail Plan was prepared by ABAG pursuant to Senate Bill 100, which was passed into law in 1987. In 1990, the San Francisco Bay Trail Project was created as a nonprofit organization dedicated to planning, promoting and advocating implementation of the Bay Trail. To carry out its mission, the Bay Trail Project makes available grant funds for trail construction and maintenance; participates in planning efforts and encourages consistency with the adopted Bay Trail Plan; educates the public and decision-makers about the merits and benefits of the Bay Trail; produces maps and other materials to publicize the existence of the Bay Trail; and disseminates information about progress on its development. The Bay Trail Project does not own land, construct trail segments, or maintain them; segments are built, owned, managed and maintained by cities, counties, park districts and other agencies with land-management responsibilities.

In Napa, the original alignment in the 1989 Bay Trail Plan was along Highway 29 – not a particularly pleasant experience, and also not along the shoreline. For many years, the North Bay counties of Sonoma, Napa and Solano saw little or no progress on their sections of Bay Trail. However, in the last 6-8 years, significant strides have been made. The City of American Canyon has constructed and opened 3 miles of Bay Trail with another 3 miles in the planning phase. Local jurisdictions in coordination with the Bay Trail Steering Committee have reassessed and realigned 6 miles of trail from busy roadways to the edges of the Napa River and bay wetlands. The Bay Trail is collaborating with the Napa Vine Trail to capture synergies, and continues its long partnership with the Ridge Trail to connect the two systems.

Pending environmental review and Bay Trail Steering Committee approval, segments of trail through the Napa Pipe property, across Napa Sanitation District levees, and along the edge of the Napa airport will connect existing trail at Kennedy Park to existing trail at the California Department of Fish and Game's Napa Plant Site restoration project off of Green Island Road, and south into American Canyon.

Ultimately, the Bay Trail will be a 500-mile bicycle and hiking trail encircling the San Francisco and San Pablo Bays. Currently over 300 miles of the trail are in operation, including several segments located within Napa County. The segments in Napa County are comprised of various on- and off-street routes including:

Built Trail Sections

- Las Amigas from Milton to Cuttings Wharf (Class II)
- Cuttings Wharf from Las Amigas to Cuttings Wharf Boat Ramp (Class II)

- Stanly Lane from Stanly Crossroad to Hwy 12/121 (Class I)
- Maxwell Bridge on Imola (Class II)
- Napa River Trail from Hartle Ct to Southern end of Kennedy Park (Class I)
- CA Department of Fish and Game Napa Plant Site Trail – end of Green Island Rd to existing Bay/River trail near Eucalyptus/treatment ponds (levee-top gravel trail)
- American Canyon--Eucalyptus to River Trail (gravel/levee top)
- American Canyon Wetlands Edge Trail--Eucalyptus to American Canyon Road (Class I)
- Golden Gate Drive (Class II)

Un-Built Trail Sections

The following sections of the un-built trail have been identified by the Bay Trail Project. As of November 2010, additional route planning is underway by the Bay Trail in conjunction with local agency staff. Route updates will be documented when official plans are in place.

- Duhig from Ramal onto Las Amigas to Milton (proposed Class II)
- Stanly Crossroad (proposed Class I)
- Imola from Golden Gate to Maxwell Bridge (proposed Class II)
- Napa Pipe (proposed Class I)
- Napa Sanitation District Levees (Proposed levee top trail)
- CDFG Lands: Fagan Marsh (proposed boardwalk)
- Kimberly Park to Vallejo/Solano border (Class I and natural surface trails)

http://baytrail.abag.ca.gov/

<u>The Bay Area Ridge Trail</u>

The Bay Area Ridge Trail Council formed in 1987 with the vision of a trail that would ring the San Francisco Bay Area high on the ridges of the hills and mountains that encircle San Francisco and San Pablo Bays. Current plans call for over 550 miles of trail along these ridge tops, open to hikers, equestrians, mountain bicyclists, and outdoor enthusiasts of all types. To date, the Council has worked with state, regional, local, and non-profit agencies to dedicate over 325 miles of trail.

Many of the existing Ridge Trails in Napa County run through regional and state parks along existing trails. Most of these trail sections are isolated, with either on-street connections or large gaps between them. The built and un-built sections of the Bay Area Ridge Trail within Napa County include the following:

Built Trail Sections

- Sugarloaf Ridge State Park: From Visitor Center to Bald Mountain Summit (2.7 mi)
- Yountville Cross Road: From Locust Ave. and Highway 29 to Yountville Cross Road and Silverado Trail (7.5 mi)
- Skyline Wilderness Park and Napa Solano Ridge Trail: From Skyline Wilderness Park Entrance to south boundary (5.7 mi)

Un-Built Trail Sections

- Bald Mountain Summit to Locust Ave and Highway 29
- Yountville Cross Road and Silverado Trail to Skyline Wilderness Park Entrance

The Ridge Trail Council is working to close existing facility gaps in order to connect the routes for hikers, equestrians, and bicyclists. More details about the ridge trail are located at the Bay Area Ridge Trail website.

www.ridgetrail.org

Bay Area Air Quality Management District

Bay Area Air Quality Management District (BAAQMD) is the regional agency with the authority to develop and enforce regulations for the control of air pollution throughout the Bay Area including Napa County. The clean Air Plan is the BAAQMD's plan for reducing the emission of air pollutants that lead to ozone. BAAQMD has also published CEQA Guidelines for the purpose of evaluating the air quality impact of projects and plans. One of the criteria that the Guidelines describe is that plans must demonstrate reasonable efforts to implement transportation control measures included in the Clean Air Plan, and identify local governments as the implementing agencies. The BAAQMD cites on-road motor vehicles as the largest source of air pollution in the Bay Area. To address the impact of vehicles, the California Clean Air Act requires air districts to adopt, implement, and enforce transportation control measures.

The BAAQMD has implemented the Bicycle Facility Program, an annual grant program developed from the Transportation Fund for Clean Air that provides funding to reduce motor vehicle emissions through the implementation of new bikeways and bicycle parking facilities in the San Francisco Bay Area.

http://www.baaqmd.gov/

Bay Area Ozone Strategy

The 2005 Bay Area Ozone Strategy was prepared by the BAAQMD in cooperation with the Metropolitan Transportation Committee and the Association of Bay Area Governments (ABAG). The Plan was developed to show how the Bay Area will achieve compliance with State air quality standards. According to the report, "the Bay Area has made considerable progress towards improving ozone conditions over the years; however, the region fails to meet the State one-hour ozone standard."

The 2005 Ozone Strategy is a comprehensive document that describes the Bay Area's strategy for compliance with State one-hour ozone standard planning requirements, and represents the region's commitment to achieving clean air to protect the public's health and the environment. The control strategy includes: stationary source control measures to be implemented through Air District regulations; mobile source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the MTC, local governments, transit agencies and others. Transportation control measures (TCM) were developed to mitigate the impact of mobile pollution sources. The TCMs proposed in the 2005 Strategy that relate to bicycling and walking include:

TCM #1: Support Voluntary Employer-Based Trip Reduction Programs – provide incentives and assistance to help employers develop programs to reduce single-occupancy vehicle use to work.

TCM #5: Improve Access to Rail & Ferries – Safe Routes to Transit program sponsored by the MTC; develop a master plan for innovative secure bicycle storage strategies at key transit hubs.

TCM #9: Improve Bicycle Access and Facilities – fund the Regional Bicycle Plan and Safe Routes to Transit improvements; continue Transportation Development Act (TDA) Article 3, Tobacco Litigation Settlement (TLS), and Transportation fund for Clean Air (TFCA) funding for bike improvements; develop an on-line bicycle mapping tool as part of the regional 511 traveler information number; promote Bike-to-Work Week/Day; encourage local jurisdictions to develop safe and convenient bicycle lane and route networks, provide secure bike racks and storage, and require bicycle access and amenities as conditions of approval of development projects; explore innovative bicycle programs, such as "station bike" or bike sharing programs at transit stations, downtowns, and activity centers; encourage public education about bicycle safety for both bicyclists and motorists.

TCM #10: Youth Transportation – encourage Safe Routes to School program.

TCM #15: Local Land Use Planning and Development Strategies – MTC to continue Transportation for Livable Communities (TLC) planning, capital grant, and HIP programs; MTC will examine opportunities for transit oriented development along major transit corridors; BAAQMD will continue the TFCA program; ABAG will provide incentives for smart growth.

TCM #19: Improve Pedestrian Access and Facilities – review and comment on general/specific plan policies to promote development patterns that encourage walking; encourage amending zoning ordinances to include pedestrian-friendly design standards; MTC will continue to fund TLC, support SR2S, and support the Regional Pedestrian Committee and associated pedestrian safety programs; identify and fund projects that enhance pedestrian movement in neighborhoods, downtowns, and near transit stops.

TCM #20: Promote Traffic Calming Measures – implement projects such as pedestrian-only streets, residential and neighborhood traffic calming measures, and arterial and major route traffic calming measures.

http://www.baaqmd.gov/pln/plans/ozone/2005_strategy/index.htm

Lake County Regional Bikeway Plan

The 2006 Lake County Regional Bikeway Plan was prepared by the Lake County/City Area Planning Council through the transportation planning agency's planning work program. This document is an update to the 2002 Regional Bikeway Plan. The Plan is consistent with projects, goals, policies and objects identified in the 2005 Regional Transportation Plan. This Regional Bikeway Plan is a capital improvement program of commuter bikeways. It incorporates proposals for bikeway improvements for all jurisdictions within Lake County into one document. It is directed toward meeting the provisions of the California Bicycle Transportation Act. Napa County shares a common border with Lake County along the northern Napa County border. The two counties are connected by SR 29 and Butts Canyon Road. The Lake County Regional Bikeway Plan does not include planned bikeways to Napa County.

http://lakeapc.org/acc.asp?Webpage=Documents

Solano Countywide Bicycle Plan

The 2004 Solano Countywide Bicycle Plan was prepared by the Solano Transportation Authority. The Plan aims to encourage the development of a bicycle network that will provide connections within Solano County as well as connections to surrounding counties. The Plan covers the entire County and contains policies designed to encourage and support biking, implementation standards, and promotional strategies. The Plan includes proposed bikeway connections to Napa County along the SR 12, SR 29, Suisun Valley Road, and McGary Road corridors.

http://www.sta.dst.ca.us/plans2.html#bikeplan

County of Yolo Bicycle Implementation Plan

The County of Yolo Bicycle Implementation Plan was prepared by the Yolo County Transportation Advisory Committee and published in 2006. This plan is an update of the 2002 County of Yolo Bicycle Implementation Plan and formulates a long-range, comprehensive, and consistent policy guide for achieving a countywide bikeway network. The plan includes goals and policies for bicycle facilities in the unincorporated County to encourage bicycle ridership. The Plan includes a proposed bikeway connection to Napa County along the SR 128 corridor between northeastern Napa County and southwestern Yolo County.

http://www.yolocounty.org/Index.aspx?page=834

Sonoma County – SCTA Countywide Bicycle and Pedestrian Master Plan

The 2008 SCTA Countywide Bicycle and Pedestrian Master Plan was developed under the guidance of the Sonoma County Transportation Authority. The Plan is designed to prioritize bicycle and pedestrian improvements, develop implementation strategies, and foster countywide collaboration and coordination. Consisting of eight stand alone documents specific to local agencies and a countywide overview section, the SCTA Countywide Bicycle and Pedestrian Master Plan is designed to facilitate transportation improvements for bicyclists and pedestrians. The recommendations of the plan include physical improvements, expanding existing facilities, and connecting gaps in the network, addressing constraints, and providing greater local and regional connectivity. Several bicycle facilities are planned that would connect Sonoma County to Napa County including Class II bike lanes on SR 128, Petrified Forest Road, and SR 12/121. A Class I pathway connection is proposed via the Bay Trail, and Class III bike route connections are proposed on St. Helena Road, Trinity Road, and Duhig/Ramal Road.

http://www.sctainfo.org/Bike_Main_files/index.htm

Local

Napa Wine Train

The Napa Valley Wine Train (NVWT) runs between the Cities of Napa and St. Helena. The Napa Valley Railroad (NVRR) owns the right-of-way used by the NVWT. The NVRR has indicated its willingness to consider hosting passenger rail along the existing NVWT route as detailed in the Napa/Solano Passenger/Freight Rail Study provided that sufficient infrastructure improvements are made to prevent any conflict with existing NVWT and freight rail service.

Napa/Solano Passenger/Freight Rail Study

The Napa/Solano Passenger/Freight Rail Study is a comprehensive new-start public rail transportation plan completed in 2003. The main objectives of the study were to determine economic feasibility of possible passenger rail service and enhanced rail freight activity, compare of potential rail versus existing and potential bus service, and examine the long run potential of connecting passenger rail services. The plan addresses both new passenger rail and increased freight service between Vallejo, Fairfield/Suisun, Napa, Calistoga and intervening areas. The Fairfield/Suisun Amtrak station, Vallejo Ferry Terminal and Downtown Napa were identified as locations for major intermodal stations.

http://www.nctpa.net/docs/Napa%20Solano%20Freight%20Rail%20Study.pdf

Napa's Transportation Future

The 2009 Napa's Transportation Future document was developed by the Napa County Transportation and Planning Agency (NCTPA). The NCTPA is a "Joint Powers Agency" (JPA) made up of the City of Calistoga, the City of St. Helena, the Town of Yountville, the City of Napa, the City of American Canyon and Napa County and acts as the transportation program and funding administrator for all member jurisdictions. The vision of Napa's Transportation Future is to create an attractive, flexible, fully integrated transportation system with a diverse set of transportation mode options which will enable people and good to flow throughout the County in a more efficient manner. This plan coordinates the transportation planning efforts throughout the County in order to prioritize transportation needs for the horizon of the year 2035. The Plan establishes a series of visionary goals to address traffic congestion and air quality issues including:

- Goal: Reduce/restrain growth of automobile vehicle miles traveled (VMT)
  Objective: 0 percent net growth in aggregate VMT
- Goal: Shift travel from Single-Occupancy Vehicles to other modes
  Objective: Increase the percent of county trips made by transit to 5 percent

Objective: Increase the percent of county trips made by bicycle to 10 percent
Objective: increase the percent of county trips made by walking to 10 percent

http://sites.google.com/site/napastransportationfuture/

Napa County General Plan

In 2008 the Napa County Department of Conservation, Development & Planning updated the 1983 Napa County General Plan. The General Plan acts as the blueprint for growth and development on County unincorporated land through the year 2025. The General Plan will determine how much growth will occur and where it will occur. Development of the document included extensive public outreach, input and oversight from a General Plan Update Steering Committee, and community meetings. Currently adopted key General Plan policies regarding transportation and circulation that are applicable to bicycle and pedestrian planning include:

- Circulation CIR-2 – CIR-4; CIR-31 – CIR-37
- Conservation CON-65 d, CON-69
- Recreation and Open Space ROS-10 – ROS-12.5, ROS-15

http://www.countyofnapa.org/GeneralPlan/

Napa County Regional Parks and Open Space District Master Plan

The Napa County Regional Park and Open Space District Master Plan was completed in 2009 and covers the time period of 2008-2013. This plan provides a comprehensive framework for guiding the future work of the District through the identification of long-term goals and guiding principles, as well as identifying a 2008 through 2013 work program. The Master Plan is consistent with the Napa County General Plan and strives to meet the goal of providing opportunities for outdoor recreation through the development of a system of parks, trails, water resource activities, open space and related facilities. The Master Plan identifies 61 separate projects in its work program of which 17 are trail projects. These trail projects consist of the following:

A.1 Oat Hill Mine Trail Improvements
A.2 Milliken Creek Trails and Picnic Area Development
A.4 Rector Ridge/Stag's Leap Trail Development
A.5/A.6 Napa River and Bay Trail Development from American Canyon to Napa
A.7 Lake Hennessey North Shore Trail Expansion
A.9 Newell Preserve Access Improvement
A.10 Lake Berryessa Trail Development
A.11 Berryessa Peak and Blue Ridge Public Access Development
A.12. Berryessa Vista Wilderness Park Development
A.13 Pope and Putah Creeks Trail Development
A.15 Camp Berryessa to Knoxville Wildlife Area Trail Development
A.19 Bay Area Ridge Trail Completion
A.22 Moore Creek Trail, Picnic Area and Camping Facilities Development
A.24 Napa Valley Greenway / Vine Trail Development
A.25 Henry Road/Milliken Peak Area Trail Development
A.26 Countywide Trail Network Development

http://napaoutdoors.org/documents

Napa County Flood Control and Water Conservation District

The Napa County Flood Control and Water Conservation District administers water supply contracts, watershed management and stormwater management programs throughout Napa County. The District's

mission is the conservation and management of flood and storm waters to protect life and property; the maintenance of the County watershed using the highest level of environmentally sound practices; and to provide coordinated planning for water supply needs for the community. The Napa County Flood Control and Water Conservation District maintains the 13 miles of channels within its jurisdiction.

http://www.countyofnapa.org/FloodDistrict/

Napa Countywide Community Climate Action Plan

The 2009 a preliminary draft of the Napa Countywide Community Climate Action Plan was completed by the private consultant MIG. The Action Plan includes viable measures to help the County reduce Green House Gas emissions resulting from County operations. The report establishes a baseline during the year of 2005, and emissions contributors are categorized by three distinct categories: jurisdiction, sector, and source. The report notes that 55% of the County's green house gas emissions result from transportation and mobility related activities. The Plan contains reduction targets of 30 percent below the baseline year, and provides a series of actions that can be utilized to reduce Napa County's green house gas emissions including shifting the current commute habits of County employees to alternative modes such as public transit, ridesharing, bicycling, and walking as much as possible.

Napa County Bicycle Coalition

The Napa County Bicycle Coalition is a non-profit member based organization that was created to encourage bicycling in Napa County. The NCBC works with local government from an advocacy stand point to ensure that bicycles are an integral part of the part of the County's transportation system. The Coalition serves the four main functions of bicycle education, bicycle advocacy, promotion of events and programs, and fundraising to support the coalition.

http://www.napabike.org/

Napa Greenway Feasibility Study

The Napa Greenway Feasibility Study was completed in 2009 by Alta Planning for the Napa County Transportation and Planning Agency. The proposed 48 mile Greenway is planned to provide a continuous pedestrian and bicycle path from the BayLink Ferry terminal in Vallejo north through the Napa Valley and ending in the City of Calistoga. The Greenway study consisted of background data gathering, development of route options and alternatives, alternative alignment analysis, and design and implementation strategies. The Greenway is designed in a manner which allows for each individual segment can function as a stand-along facility until connections are built. Key implementation steps for the future include funding, identifying an agency responsible for the Greenway as a whole, and finding implementation sponsorship for the project.

http://sites.google.com/site/napastransportationfuture/napagreenwayfeasibilitystudy

Napa Valley Vine Trail

The nonprofit Napa Valley Vine Trail Coalition was created in 2008 after the completion of the Greenway Feasibility Study to design, fund and implement its conclusions. The trail is planned to follow Highway 29 and the existing Wine Train tracks north of Napa. South of Napa it will follow the Wine Train Tracks and the Napa River. The design will ultimately link the existing unconnected segments including the Napa Valley Vine Trail, the San Francisco Bay Trail, the Bay Area Ridge Trail and the wider Bay Area and when completed make-up a combined 149 miles of trails. When completed, the Napa Valley Vine Trail is anticipated to be one of the premier active transportation systems in the country.

http://www.railstotrails.org/resources/documents/ourWork/Napa%20Valley%20Vine%20Trail%20Case%20Statement.pdf

2007 Calistoga Bicycle Transportation Plan

The *2007 Calistoga Bicycle Transportation Plan* was prepared by Calistoga staff and the Calistoga Bicycle Advisory Committee. The Plan was developed to meet the requirements of the California Bicycle Transportation Act, and the needs of the community. The Plan was developed over the course of approximately two years and included a number of opportunities for public involvement. The Plan includes goals, objectives, policies, and actions to improve conditions for bicyclists within the community of Calistoga, and to provide bikeway connections to the outlying County and neighboring communities. It identifies an extensive network of Class I pathways, Class II bike lanes, and Class III bike routes within Calistoga, and recommends Class II bike lanes on SR 128, Tubbs Lane, Bennett Lane, and Dunaweal Lane.

http://www.ci.calistoga.ca.us/Index.aspx?page=101

Existing Plan and Policy Review – City of Napa

Policies

City of Napa General Plan

LU-6.6 – The City shall enhance public access to the downtown, including a stronger link to downtown residential neighborhoods, through improvements to directional signs, roads, transit and pedestrian and bike trails along streets and the river. *(Page 1-19)*
LU-6.10 – The City shall continue to support development of public amenities along the Napa Riverfront such as parking, plazas, trails, docks and landscaping. *(Page 1-19)*

T1.1d – ***Bikeways*** For streets which are designated bikeways, minimum street widths shall be increased accordingly to accommodate bicycle facilities. The Public Works Director shall determine which local street cross section is appropriate in each case, and may approve minor modifications to local street standards, provided safe and adequate public access and circulation are preserved. The City will also review and revise and necessary, existing policies which regulate which street designs are public and which are private. Criteria will be established to restrict the use of public streets in specific situations. *(Page 3-9)*

Goal T-6 – To develop and maintain a safe, integrated bicycle route network for residents and visitors, connecting key destinations to neighborhoods, neighborhoods to each other, and the city of Napa to the County. (Page 3-25)

T-6.1 – The City shall promote the development of a comprehensive and safe system of recreational and commuter bicycle routes. To this end, the City shall continue to implement the bicycle network shown in Figure 3-5. *(Page 3-25)*

T-6.2 – The City shall apply for funding to undertake bicycle network route improvements that include the following components: (a) Completion of through north/south and east/west routes, (b) Completion of elements of the existing network, (c) Connections to employment centers and shopping areas: downtown, corporate park, Trancas, State Hospital, (d) Connections to larger schools (high schools, middle schools, Napa Valley College), (e) Connections to Napa to destinations outside Napa (e.g. "Up-valley," Vallejo, Sonoma Valley). (f) Easily and affordably implemented, building on the existing network, (g) Off-road routes such as the River Trail; Wine-Train trail ("Rail Trail"). *(Page 3-25)*

T6.3 – The city shall evaluate the feasibility of establishing two "bicycle boulevards" to provide priority travel for bicycles, establishing a north/south and east/west route through the city. *(Page 3-25)*

T6.4 – The City shall provide for safe bicycle lanes or new or reconstructed freeway crossings and bridges. The City shall also consider modifications to existing bridges and freeway crossings to improve bicycle safety. *(Page 3-25)*

T6.5 – The City shall consider the feasibility of constructing a bicycle/pedestrian bridge of Highway 29 at Pueblo Avenue. *(Page 3-25)*

T6.6 – The City shall consider innovative ways of encouraging bicycle use on a few key through streets that are normally too narrow (in part or in whole) to safely accommodate bicycles. *(Page 3-25)*

T-6.7 – The City shall incorporate designs to support bicycle operating characteristics in intersections and traffic controls systems. *(Page 3-25)*

T-6.8 – The City shall provide for bicycle storage and access in future development. *(Page 3-25)*

T-6.9 – The City shall promote bicycle access in the site planning and design of all residential subdivisions over 20 units, and of all commercial or industrial projects over 20,000 square feet. *(Page 3-25)*

T-6.10 – The City shall encourage bicycling by providing information to the public and participating in regional bicycle planning efforts. To this end, the City shall support efforts by the County to prepare a regional bicycle plan and a regional bicycle route map. *(Page 3-25)*

T-6.11 – The City shall maintain existing bicycle facilities and regularly review the status of the City's progress in improving bicycle facilities. *(Page 3-25)*

T-6.12 – The City shall incorporate regional bicycle routes (such as the Bay Trail) into the City bicycle route system. *(Page 3-25)*

T-6.A – The city shall investigate the feasibility and location of two "bicycle boulevards" in the City of Napa, to include a north/south and an east/west route. *(Page 3-25)*

T-6.B – The City shall investigate innovate ways of encouraging bicycle use on a few key through streets which are normally too narrow (in part or in whole) to safely accommodate bicycles. Such innovations may include prohibiting parking during peak travel times and/or prohibiting parking on one side of a particularly important street and restriping the street for bicycle lanes. Candidate streets for this type of treatment include Lincoln Avenue and narrower portions of Jefferson Street and others deemed appropriate by the Public Works Director. (*Page 3-26)*

T-6.C – The City shall investigate the feasibility of constructing a bicycle/pedestrian bridge over Highway 29 at Pueblo Avenue. *(Page 3-25)*

T-6.D – The City shall, as funding permits, implement a demonstration project for intersection controls. Based on the results of the demonstration project, the City may prepare a recommendation for new intersection design and control standards which are "bicycle friendly." *(Page 3-26)*

T-6.E – The City shall seek funding from USTEA and other funding programs to retrofit intersections along designated bicycle routes to make them bicycle friendly. *(Page 3-26)*

T-6.F – The City shall, as funding is available, prepare a bicycle route map to be made available to the public. *(Page 3-26)*

T-6.G – The City shall continue to seek funding for development of a recreation trail system along the Napa River, Salvador Channel and other trail segments included in the *Napa River* and *Citywide Trails Plans*. *(Page 3-26)*

Goal T-7 – To develop and maintain bicycle support facilities in appropriate locations to encourage the use of bicycle travel in Napa. (*Page 3-28)*

T-7.1 – The City shall continue to require that commercial and industrial projects requiring more than 10 parking spaces provide bicycle parking at the rate of 1 space per 10 parking spaces. *(Page 3-28)*

T-7.2 – The City shall provide for bicycle support facilities, as appropriate, in existing and new development. *(Page 3-28)*

T-7.A – The City shall review and update its standards for bicycle racks so that bicycle racks and/or lockers are provided for all new retail commercial, industrial uses and existing commercial and industrial uses and theaters. *(Page 3-28)*

T-7.B – The City shall investigate requiring the provision of bicycle racks or lockers in all older commercial and industrial buildings, theaters, shopping centers or other similar uses over 5,000 square feet upon an application for any use permit where automobile parking is provided on-site. *(Page 3-28)*

T-7.C – The city shall consider the feasibility of establishing the position of Bicycle Coordinator with primary responsibility for implementing the bicycle policies of this General Plan. *(Page 3-28)*

Goal T-8 – To improve bicycle safety in promoting the use of bicycle travel in the City. *(Page 3-28)*

T-8.1 – The City shall encourage and assist bicycle educations programs for youth and adults. *(Page 3-28)*

T-8.2 – The City shall, as funding and staff resources permit, work with the school district to encourage students to identify safe routes to school, such as a "Safe Way to School" program. *(Page 3-28)*

T-8.3 – The City shall consider seeking changes in bicycle law enforcement procedures to allow bicycle enforcement to focus on improving bicycle safety. For example, bicycle violators could be required to take bicycle safety classes, and income from bicycle enforcement could be used to support bicycle safety programs. *(Page 3-28)*

T-8.A – The City shall work with bicycle clubs and schools to establish regular bicycle safety classes and programs such as bike rodeos. (*Page 3-29)*

T-8.B – The City shall review existing bicycle accident records and develop a focused enforcement program with a goal of reducing accidents by 10 percent. *(Page 3-29)*

T-9.3 – The City shall develop a major public multi-use trial and amenities along the Napa River from Stanly Ranch to Trancas Street, and along Salvador Channel, while protecting the natural resources along the trail corridor. If feasible, establish a multi-use trail along the Wine Train Railroad right-of-way. *(Page 3-29)*

T-9.4 – The City shall connect the City's major planned trails to the proposed regional Ridge and Bay Trails, connecting all of these major pedestrian and bicycle routes to downtown. *(Page 3-29)*

T-9.8 – The City shall, where deficiencies in school route are identified, coordinate with NVUSD and property owners to develop cost-effective pedestrian and bicycle access to school sites. *(Page 3-30)*

T-10.4 – The City shall consider possible future transportation uses of existing rail rights-of-way when reviewing or developing short-term recreational use plans that include portions of such rights-of-way. *(Page 3-32)*

Goal PR-5 – To develop a comprehensive system of trails for bicycle and pedestrian traffic both within the existing urbanized area and connecting to surrounding County areas. *(Page 5-14)*

PR-5.1 – The City shall provide for a trial system that provides connections with open space areas in and outside the City. In the City, trials should connect Kennedy Park, Westwood Hills Park, Timberhill Park and Alston Park with the Napa River Trail. Outside the City, trail destinations should include the Napa Marshes, Skyline Park, watershed areas, and views of vineyards and other agricultural lands. *(Page 5-14)*

PR-5.2 – Trails shall be located off road, following creeks wherever possible. As trial opportunities are limited, on-road connections should also be included to link the off-road sections of the system. These connections should be included in the *Bicycle Facilities System*. The trail system should consist of the following components. Alignment possibilities are included in Appendix D. (a) Napa River Trail South: east bank, (b) River Trail South: west bank, (c) River Trail north of Salvador Channel to Alston Park with connection to Las Flores Community Center, (d) Napa River Trail east to Skyline Park, (e) Napa River Trail to Westwood Hills and Timberhill city parks, (f) Other creek connections to the Napa River Trail, (g) Connections to surrounding county areas. *(Page 5-14)*

PR-5.3 – The City shall connect City trails with regional trails: the Bay Area Ridge Trail and the Bay Trail. *(Page 5-14)*

PR-5.4 – The City shall provide trails to serve the needs of residents, tourists and workers and visitors to the commercial and industrial areas of the City. *(Page 5-14)*

PR-5.5 – The City shall develop trails that are safe for people of all age groups, especially children and those persons with special needs. *(Page 5-14)*

PR-5.6 – The City shall provide trails accessible to people of all abilities and conform to the requirements of the American with Disabilities Act wherever feasible. *(Page 5-15)*

PR-5.7 – In creekside areas, the City shall develop trails outside any riparian setback requirements wherever possible. *(Page 5-15)*

PR-5.8 – The City shall design trails to be consistent with the City's *Trail Design Standards* to accessibility, width, surfaces, signage, safety elements and access appropriate to the proposed use. *(Page 5-15)*

PR-5.9 – The city shall seek community support for public trails. *(Page 5-15)*

PR-5.10 – The City shall establish a liaison with trails organizations and groups. *(Page 5-15)*

PR-5.11 – The City shall support development of a regional trail network for bicycle and pedestrian use. *(Page 5-15)*

PR-5.12 – The City shall identify potential linkages along easements and rights-of-way to publicly accessible open space lands in the Napa vicinity, such as the Napa Marsh. *(Page 5-15)*

PR-5.13 – The City shall assist, when appropriate, in the identification and acquisition of elements of the regional trail network within the City of Napa. *(Page 5-15)*

PR-5.14 – The City shall coordinate trails planning in Napa to ensure integration with the plans of other public and nonprofit agencies. *(Page 5-15)*

PR-5.15 – The City shall identify and utilize equitable and realistic methods of financing and/or implementing acquisition, improvement and maintenance of trails. (*Page 5-15)*

PR-5.16 – The City shall require new development to dedicate trail alignments and associated improvements as a condition of development approval. (*Page 5-15)*

PR-5.17 – The City shall seek federal, state and private funding for development of trails as part of mitigation efforts associated with roadway improvements. (*Page 5-15)*

PR-5.18 – Where trails are joint-use, such as for utility access and along flood control channels, the City may share capital improvement and maintenance costs. (*Page 5-15)*

PR-5.19 – The City shall continue to support a Citizen Trail Advisory Subcommittee to the Parks and Recreation Commission. *(Page 5-15)*

PR-5.A – The City shall prepare and adopt trail design guidelines. *(Page 5-15)*

Goal PR-6 – To develop a major public multi-use trail and amenities along the Napa River, while protecting and enhancing the natural resources along the trail corridor. *(Page 5-15)*

PR-6.1 – The City shall develop a major public multi-use trail and amenities along the Napa River from Stanly Ranch to Trancas Street and along the Salvador Channel, while protecting and enhancing the natural resources along the trail corridor. *(Page 5-15)*

PR-6.2 – The Napa River Trail shall be developed according to design guidelines adopted by the City. *(Page 5-16)*

PR-6.3 – Trail development shall be consistent with protection and enhancement of wildlife habitats along the River. The City shall identify potential areas for habitat preservation and enhancement along the river during the preparation of trail design and development plans. The City shall design and locate the multi-use trail to minimize impacts to sensitive habitats and resources wherever possible. *(Page 5-16)*

PR-6.4 – The City shall link that Napa River Trail to other trails, parklands and community resources including downtown and river-oriented businesses. *(Page 5-16)*

PR-6.5 – The City shall provide trail access points, staging and rest areas, and other amenities, such as boat launches and enhanced fishing areas. Facilities should be designed to meet accessibility standards whenever possible. Facilities should accommodate boat traffic, including some oriented toward commercial/tourist river boating, as well as recreational boating. *(Page 5-16)*

PR-6.6 – The city shall establish a continuous trail corridor and sites for trail-related amenities. The city shall pursue various methods for acquiring a trail corridor, including coordination with other public agencies and utility companies and negotiation with property owners for an easement or fee title for a trail corridor. *(Page 5-16)*

PR-6.7 – The city shall work with the Army Corps of Engineers to ensure that the Napa River Trail is incorporated into any flood control project. *(Page 5-16)*

PR-6.8 – The city shall conduct appropriate site investigations to identify any contaminated soils and/or groundwater which could affect public health along the proposed trail and staging areas near the River and shall identify mitigation to ensure adequate remediation. *(Page 5-16)*

PR-6.10 – The City shall establish financial strategies for acquiring and developing the Napa River Trail and facilities. These financial strategies may include the following: (a) Allocate funds for Napa River Trail when appropriate and necessary to use as leverage for additional funding, (b) Pursue various grand and funding programs from public and private sources, (c) Establish donation program through the Foundation for Napa Recreation, (d) Organize special fund raising events. *(Page 5-16)*

PR-6.11 – The City shall prioritize and phase trail development, taking into account funding and acquisition opportunities. *(Page 5-16)*

PR-6.13 – The City shall provide for long-term maintenance, safety and security of the trail. *(Page 5-16)*

PR-6.14 – The City shall prepare and adopt a trail sign program to address tail safety and etiquette. *(Page 5-16)*

PR-6.15 – The City shall provide adequate access for emergency and maintenance vehicles along the trail. *(Page 5-16)*

PR-6.17 – The City shall solicit participation of the business community in trail planning and development. (*Page 5-16)*

PR-6.18 – The City shall involve neighborhoods in the process of designing trail segments and amenities. (*Page 5-16)*

PR-6.A – The City shall establish an ongoing trail inspection and maintenance program. (*Page 5-17)*

From the City of Napa's Bicycle Boulevard Implementation Policies (Pages 3 through 5)

"BICYCLE BOULEVARD" IMPLEMENTATION

A. Definition of and Selection of Streets for Bicycle Boulevards

The "Bicycle Boulevard" concept is an innovative approach to developing efficient bikeways for all types of cyclists in an urban environment with limited street space. The City of Napa "Bicycle Boulevard" guidelines include the following criteria, which should be used to select roadways where "Bicycle Boulevards" could be implemented:

1. The City of Napa "Bicycle Boulevard" is an **enhanced Class 3 bike route** with more pavement legends and road signs (see attached Figure 2 for locally developed standards). The definition of a "Bicycle Boulevard" as a Class 3 bike facility is consistent with the definitions by other cities such as Berkeley, Davis, and Palo Alto. These cities also have an existing and extensive traffic calming program integrated into their "Bicycle Boulevards."

2. There shall be no striped bike lanes on the "Bicycle Boulevard."

3. There should be no loss of existing on-street parking in the implementation of a "Bicycle Boulevard" unless safety enhancements are required.

4. Potential candidate streets include local streets or low-volume collector streets with less than 5,000-average daily traffic (ADT).

5. Potential candidate streets should have low-accident history and should not include any "high accident locations" with an average of five or more accidents/year over the last three years.

6. The proposed route should provide direct connection to at least one school.

7. Typical 12-foot travel lanes are preferred on the proposed route; but narrower lanes are possible for lower-volume streets (approximately 2,500 ADT or less) that are not on the Fire Department's Primary Emergency Response Routes.

8. The proposed route must be consistent with Goal T-6 and the associated policies of the General Plan, which provide the conceptual framework for citywide bike planning.

9. The proposed route could be an interim bikeway facility implementation for a designated Class 2 future bike lane in Figure 3-5 of the General Plan.

10. The proposed route should provide access to major destinations and could provide basic directional signs to the Downtown, schools, and parks—assuming funding for installation and maintenance of these directional signs is available.

11. The proposed route should provide connections to other bicycle facilities and fill in gaps in missing links between bicycle facilities.

12. City staff will consider the need for appropriate traffic control devices that would allow bicyclists on "Bicycle Boulevards" to safely cross major streets and arterials. The traffic control devices on a

"Bicycle Boulevard" shall meet current professional engineering standards and practices as required by the California Vehicle Code.

In addition to the above guidelines and criteria, the Napa County Transportation Planning Agency (NCTPA) *2005 Countywide Bicycle Plan Amendment* has the following guidelines for bicycle boulevards in urban areas that shall aid in the planning of the City of Napa's "Bicycle Boulevards":

13. *"In developed areas, there exists the potential to designate a street or streets that have design features that help make it a more attractive route to bicyclists, particularly the casual and child cyclists. These features provide significantly more benefit to bicyclists than simply signing existing streets as bike routes (as is done for Class III routes)."* Based on available funding, these design features could be integrated in a major capital improvement project (CIP) for the redesign of a street as long as right-of-way needs are minimized and on-street parking is not lost, unless safety enhancements are required.

14. *"Where possible, priority is given to the street at intersections by, for example, giving right-of-way to traffic on the Bicycle Priority Street."* Priority for streets must be assigned to achieve the citywide transportation goals from the General Plan—where the mobility and access needs of motorists, pedestrians, bicyclists, transit providers, truck services, emergency service providers, and other road users are balanced to preserve the quality of life of neighborhoods and to promote the economic development of the City. Removal or alteration of existing traffic control devices (e.g. stop signs) or the addition of new traffic control devices shall be subject to the requirements of the California Vehicle Code as documented in the Caltrans' standards for traffic control devices and supplemented by the Public Works Department policy guidelines for traffic control devices.

15. *"Other measures are to include design features used for traffic calming such motor vehicle traffic is discouraged and/or motor vehicle speeds are reduced. Such streets are sometimes referred to as Bicycle Boulevards… They are appropriate within cities or other areas where the street network is laid out in a grid pattern or otherwise have low volume streets and many alternatives for auto traffic."* 'Bicycle Boulevards' are appropriate candidates for traffic calming to transform an ordinary local residential street into a "bikeway expressway" that accommodates local motor traffic while deterring through motor traffic. The planning, design, implementation, and maintenance of traffic calming features on the City of Napa "Bicycle Boulevards" shall be guided by the Public Works Department's new *"Citywide Guidelines for Traffic Calming and Neighborhood Traffic Management."* The pursuit of traffic calming on "Bicycle Boulevards" shall be subject to the availability of dedicated funding sources and the commitment of staff resources by the City Administration.

Appendix B

City of Napa's Policy Guidelines: *Share the Road Signs*

Public Works Department
Transportation Engineering Division

Policy Guidelines for
"Share the Road" Signs Placement

Adopted by the Traffic Advisory Committee
Last Update on June 12, 2003

INTRODUCTION:

The City of Napa Public Works Department (PWD) receives numerous requests from local citizens and residents who wish to have roadway signs for traffic control installed or changed on their neighborhood streets.

PWD's policies and procedures on roadway signing for traffic control are based on the exact language from California Vehicle Code (CVC) [1], the Manual of Uniform Traffic Control Devices (MUTCD) [2], and the California Department of Transportation (Caltrans) Traffic Manual [3]. PWD follows standard professional engineering practices as prescribed in the Caltrans Traffic Manual and the MUTCD.

I. GENERAL POLICY ON TRAFFIC CONTROL SIGNING

The California Vehicle Code (CVC) provides that "only those official traffic control devices that conform to the uniform standards and specifications promulgated by the Department of Transportation shall be placed upon a street or highway…" Hence, PWD follows standard professional engineering practices as prescribed in the Caltrans Traffic Manual and the MUTCD, as it becomes the new Caltrans standard reference manual for traffic control devices.

In situations where the Traffic Manual and/or the MUTCD do not provide detailed guidance on a roadway signing relevant to a citizen request or defer the engineering decision to the professional judgment of a traffic engineer, PWD will follow these policy guidelines. PWD prepared these policy guidelines to help the Traffic Advisory Committee in making its recommendation on the appropriate modifications to existing roadway signing used for traffic control in response to citizen requests while considering larger and citywide interests.

PWD reserves complete and total discretion on the appropriate traffic signage on all public streets maintained by the City of Napa. These policy guidelines do not, in any shape, manner or form, pre-empt the professional engineering judgment of the Public Works Department as they relate to locally-maintained public streets.

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[1] State of California 2001 Vehicle Code Through the 2000 Legislative Session
[2] *Manual on Uniform Traffic Control Devices*, Millennium Edition, Part 2 - Signs, U.S. Department of Transportation Federal Highway Administration, 2001.
[3] California Department of Transportation *Traffic Manual*, Chapter 4 - Signs, January, 1996

II. SPECIFIC GUIDELINES FOR "SHARE THE ROAD" SIGNS

These guidelines are intended to help inform the Traffic Advisory Committee in forming its recommendation regarding "Share the Road" signs.

The Bicycle Warning sign (W79 or W11-1) with the supplemental Share the Road sign (W79A or W16-1) are warning signs intended to increase awareness for both vehicle operators and bicyclists. All sign layout, construction and placement should be in accordance with the latest edition of the California Traffic Manual or the Federal Highway Administration's Manual on Uniform Traffic Control Devices with the California Supplement; whichever is the state adopted manual.

"Share the Road" signs are not expected to be installed on Class I or II facilities except under unusual circumstances; however, Class III facilities may be signed. Excessive use of these signs should be avoided as over proliferation of signs tends to diminish their effectiveness. Consideration should be given to the visual impacts of each installation particularly in rural areas and on designated scenic roadways.

For these signs to be installed, the following criterion must be met prior to installation:

A. Safety Concerns

1. Locations with high bicycle/auto accident history (> 5/year for 3 years) as recorded in official Police Department records (i.e. Crossroads data)

In addition to the above necessary condition, a minimum of two (2) criteria from any of the following categories should be met prior to installation:

B. Safety Concerns

1. Areas with high bicycle (> 100 riders/day) and auto traffic (> 10,000 ADT) volume
2. Locations that have a high number of reported bike/vehicle conflicts

C. Facility Constraints

1. Roads with inadequate shoulders (greater than 2,000 ADT, < 4' shoulders, and > 50 riders/day)
2. Locations where there are significant changes in roadway character such as shoulder narrowing, non-continuous bike lanes and obstructions that necessitate the co-use of the traveled way
3. Locations where bike paths enter roadways

Appendix C

City of Napa's Policy Guidelines: *Bicycle Boulevard*

Public Works Department
Transportation Engineering Division

Policy Guidelines:
City of Napa "Bicycle Boulevard"

Adopted by the Traffic Advisory Committee on May 12, 2005
Approved by the Bicycles & Trails Subcommittee

INTRODUCTION

Implementation of bicycle facilities is included as part of the City of Napa General Plan. The goal is to develop and maintain a safe integrated bicycle route network for residents and visitors, connecting key destinations to neighborhoods, neighborhoods to each other, and the City of Napa to the county.

Because Napa's road system is within a largely built-out urban environment, new bicycle lanes or paths within the City require retrofitting existing streets and intersections. Retrofitting streets comes with the challenge of requiring new right-of way and/or elimination of on-street parking. In addition, the number of through east-west and north-south routes within the City is limited. As a result, the through routes that would be most convenient for bicycles are usually City arterials, which have the highest volumes of motor vehicle traffic in the City.

When looking to implement bike lanes or similar facilities on Napa's streets, the standard design manuals offer limited solutions for Napa's built-out conditions. The "Bike Boulevard" concept offers a creative and innovative solution that has been used in other California communities, such as Berkeley and Palo Alto, and can be tailored to fit Napa's local needs and constraints.

These policy guidelines supplement the Caltrans Highway Design Manual, AASHTO guidebooks, and the Manual for Uniform Traffic Control Devices (MUTCD)/California Traffic Manual Supplement engineering design standards that guide roadway and street design.

I. GENERAL PLAN – STREET AND ROADWAY SYSTEM [1]

The City of Napa General Plan, *Envision Napa 2020*, identifies the following major transportation objectives in the Plan's Transportation/Circulation Element that relate to bicycle facilities:

- Create a citywide transportation system that allows users to choose from a variety of safe transportation options including an adequate system of streets, transit, pedestrian and bicycle facilities
- Minimize the negative effects of additional automobile traffic and other transportation

[1] *Envision Napa 2020*, City of Napa General Plan Policy Document, Adopted Dec. 1, 1998, Reprinted with Amendments to Jan. 1, 2002

The General plan defines the City's bikeway system into three types of facilities, in accordance with the California Department of Transportation (Caltrans) classification system:

> **Class 1**: dedicated **bike path** separated from motorists by a space or physical barrier or on a separate right-of-way
>
> **Class 2**: **bike lane** on a roadway with restricted right-of-way designated by signs and pavement marking for the use of bicycles
>
> **Class 3: bike route** with shared right-of-way designated by signs on roadways

The future bicycle network in Central Napa is depicted in the attached Figure 1. In addition, Chapter 5 of the General Plan describes a trail system to integrate the various destinations into a bicycle commuter, pedestrian and recreation system.

II. GENERAL PLAN – GOAL AND POLICIES

The General Plan provides the following transportation goal and policies related to bicycle facilities, which the "Bicycle Boulevard" concept fulfills: [2]

> *Goal T-6* To develop and maintain a safe, integrated bicycle route network for residents and visitors, connecting key destinations to neighborhoods, neighborhoods to each other, and the City of Napa to the County.
>
> *Policy T-6.1* The City shall promote the development of a comprehensive and safe system of recreational and commuter bicycle routes. To this end, the City shall continue to implement the bicycle network shown in Figure 3-5 (of the General Plan).
>
> *Policy T-6.2* The City shall apply for funding to undertake bicycle network route improvements that include the following components:
>
> a. Completion of through north/south and east/west routes
>
> b. Completion of elements of the existing network
>
> c. Connections to employment centers and shopping areas: downtown, corporate park, Trancas, State Hospital
>
> d. Connections to larger schools (high schools, middle schools; Napa Valley College)
>
> e. Connections to Napa to destinations outside Napa (e.g., "Up-valley", Vallejo, Sonoma Valley)

[2] *Envision Napa 2020*, City of Napa General Plan Policy Document, Adopted Dec. 1, 1998, Reprinted with Amendments to Jan. 1, 2002

f. Easily and affordably implemented, building on the existing network

g. Off-road routes such as the River Trail; Wine-Train trail ("Rail Trail")

Policy T-6.3 The City shall evaluate the feasibility of establishing two "bicycle boulevards" to provide priority travel for bicycles, establishing a north/south and east/west route through the city.

Policy T-6.6 The City shall consider innovative ways of encouraging bicycle use on a few key through streets that are normally too narrow (in part or in whole) to safely accommodate bicycles.

Policy T-6.7 The City shall incorporate designs to support bicycle operating characteristics in intersections and traffic control systems.

Implementation Program T-6.A The City shall investigate the feasibility and location of two "bicycle boulevards" in the City of Napa, to include a north/south and an east/west route.

Implementation Program T-6.B: The City shall investigate innovative ways of encouraging bicycle use on a few key through streets which are normally too narrow (in part or in whole) to safely accommodate bicycles. Such innovations may include prohibiting parking during peak travel times and/or prohibiting parking on one side of a particularly important street and restriping the street for bicycle lanes. Candidate streets for this type of treatment include Lincoln Avenue and narrower portions of Jefferson Street and others deemed appropriate by the Public Works Director.

III. "BICYCLE BOULEVARD" IMPLEMENTATION

A. Definition of and Selection of Streets for Bicycle Boulevards

The "Bicycle Boulevard" concept is an innovative approach to developing efficient bikeways for all types of cyclists in an urban environment with limited street space. The City of Napa "Bicycle Boulevard" guidelines include the following criteria, which should be used to select roadways where "Bicycle Boulevards" could be implemented:

1. The City of Napa "Bicycle Boulevard" is an **enhanced Class 3 bike route** with more pavement legends and road signs (see attached Figure 2 for locally developed standards). The definition of a "Bicycle Boulevard" as a Class 3 bike facility is consistent with the definitions by other cities such as Berkeley, Davis, and Palo Alto. These cities also have an existing and extensive traffic calming program integrated into their "Bicycle Boulevards."

2. There shall be no striped bike lanes on the "Bicycle Boulevard."

3. There should be no loss of existing on-street parking in the implementation of a "Bicycle Boulevard" unless safety enhancements are required.

4. Potential candidate streets include local streets or low-volume collector streets with less than 5,000-average daily traffic (ADT).

5. Potential candidate streets should have low-accident history and should not include any "high accident locations" with an average of five or more accidents/year over the last three years.

6. The proposed route should provide direct connection to at least one school.

7. Typical 12-foot travel lanes are preferred on the proposed route; but narrower lanes are possible for lower-volume streets (approximately 2,500 ADT or less) that are not on the Fire Department's Primary Emergency Response Routes.

8. The proposed route must be consistent with Goal T-6 and the associated policies of the General Plan, which provide the conceptual framework for citywide bike planning.

9. The proposed route could be an interim bikeway facility implementation for a designated Class 2 future bike lane in Figure 3-5 of the General Plan.

10. The proposed route should provide access to major destinations and could provide basic directional signs to the Downtown, schools, and parks—assuming funding for installation and maintenance of these directional signs is available.

11. The proposed route should provide connections to other bicycle facilities and fill in gaps in missing links between bicycle facilities.

12. City staff will consider the need for appropriate traffic control devices that would allow bicyclists on "Bicycle Boulevards" to safely cross major streets and arterials. The traffic control devices on a "Bicycle Boulevard" shall meet current professional engineering standards and practices as required by the California Vehicle Code.

In addition to the above guidelines and criteria, the Napa County Transportation Planning Agency (NCTPA) 2005 Countywide Bicycle Plan Amendment has the following guidelines for bicycle boulevards in urban areas that shall aid in the planning of the City of Napa's "Bicycle Boulevards":

13. *"In developed areas, there exists the potential to designate a street or streets that have design features that help make it a more attractive route to bicyclists, particularly the casual and child cyclists. These features provide significantly more benefit to bicyclists than simply signing existing streets as bike routes (as is done for Class III routes)."*

    Based on available funding, these design features could be integrated in a major capital improvement project (CIP) for the redesign of a street as long as right-of-way needs are minimized and on-street parking is not lost, unless safety enhancements are required.

14. *"Where possible, priority is given to the street at intersections by, for example, giving right-of-way to traffic on the Bicycle Priority Street."*

    Priority for streets must be assigned to achieve the citywide transportation goals from the General Plan—where the mobility and access needs of motorists, pedestrians, bicyclists, transit providers, truck services, emergency service providers, and other road users are balanced to preserve the quality of life of neighborhoods and to promote the economic development of the City. Removal or alteration of existing traffic control devices (e.g. stop signs) or the addition of new traffic control devices shall be subject to the requirements of the California Vehicle Code as documented in the Caltrans' standards for traffic control devices and supplemented by the Public Works Department policy guidelines for traffic control devices.

15. *"Other measures are to include design features used for traffic calming such motor vehicle traffic is discouraged and/or motor vehicle speeds are reduced. Such streets are sometimes referred to as Bicycle Boulevards… They are appropriate within cities or other areas where the street network is laid out in a grid pattern or otherwise have low volume streets and many alternatives for auto traffic."*

    "Bicycle Boulevards" are appropriate candidates for traffic calming to transform an ordinary local residential street into a "bikeway expressway" that accommodates local motor traffic while deterring through motor traffic. The planning, design, implementation, and maintenance of traffic calming features on the City of Napa "Bicycle Boulevards" shall be guided by the Public Works Department's new *"Citywide Guidelines for Traffic Calming and Neighborhood Traffic Management."* The pursuit of traffic calming on "Bicycle Boulevards" shall be subject to the availability of dedicated funding sources and the commitment of staff resources by the City Administration.

B. Completed Implementation

The City Council authorized the implementation of an enhanced bike route or "Bicycle Boulevard" on an east-west route (Vallejo Street – Yajome Street – Yount Street – Hayes Street – E Street) using these policy guidelines. This Council action follows the policies in the General Plan Implementation Program T-6.A for the east-west route. See Figure 3 for the implemented east-west "Bicycle Boulevard." The pursuit of additional "Bicycle Boulevards" shall be subject to the availability of dedicated funding sources and the commitment of staff resources by the City Administration.

C. "Bicycle Boulevard" Planning Process

1. The Community Resources Department (CRD) will work with the Bicycle & Trails Subcommittee (BTS) to identify and prioritize potential routes for "Bicycle Boulevards" in the City of Napa.

2. CRD/BTS will identify and secure funding for the implementation of the proposed "Bicycle Boulevard."

3. CRD and the Public Works Department (PWD) will recommend a potentially feasible route for the BTS-desired “Bicycle Boulevard” based on field conditions, both existing and proposed.

4. CRD will present the recommended potentially feasible route to the BTS for approval or concurrence.

5. PWD will present preferred alternative for the BTS-desired “Bicycle Boulevard” to the Traffic Advisory Committee for approval or concurrence.

6. PWD will send courtesy letters to property owners along proposed “Bicycle Boulevard” route that is approved by the TAC prior to implementation.

7. PWD will implement the “Bicycle Boulevard” concept on the TAC-approved route using the funding secured by CRD/BTS.

FIGURE 1: FUTURE BIKEWAY SYSTEM

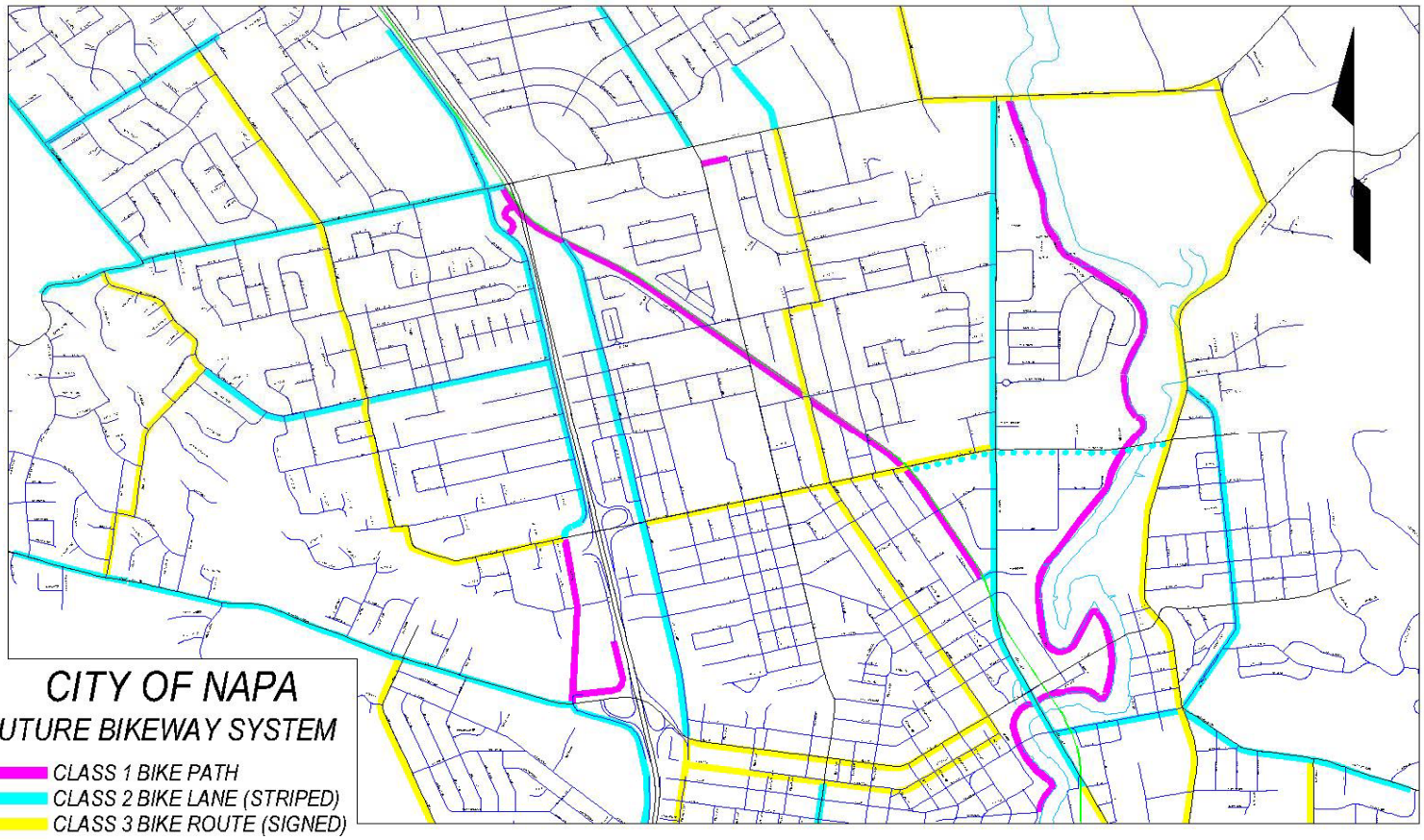
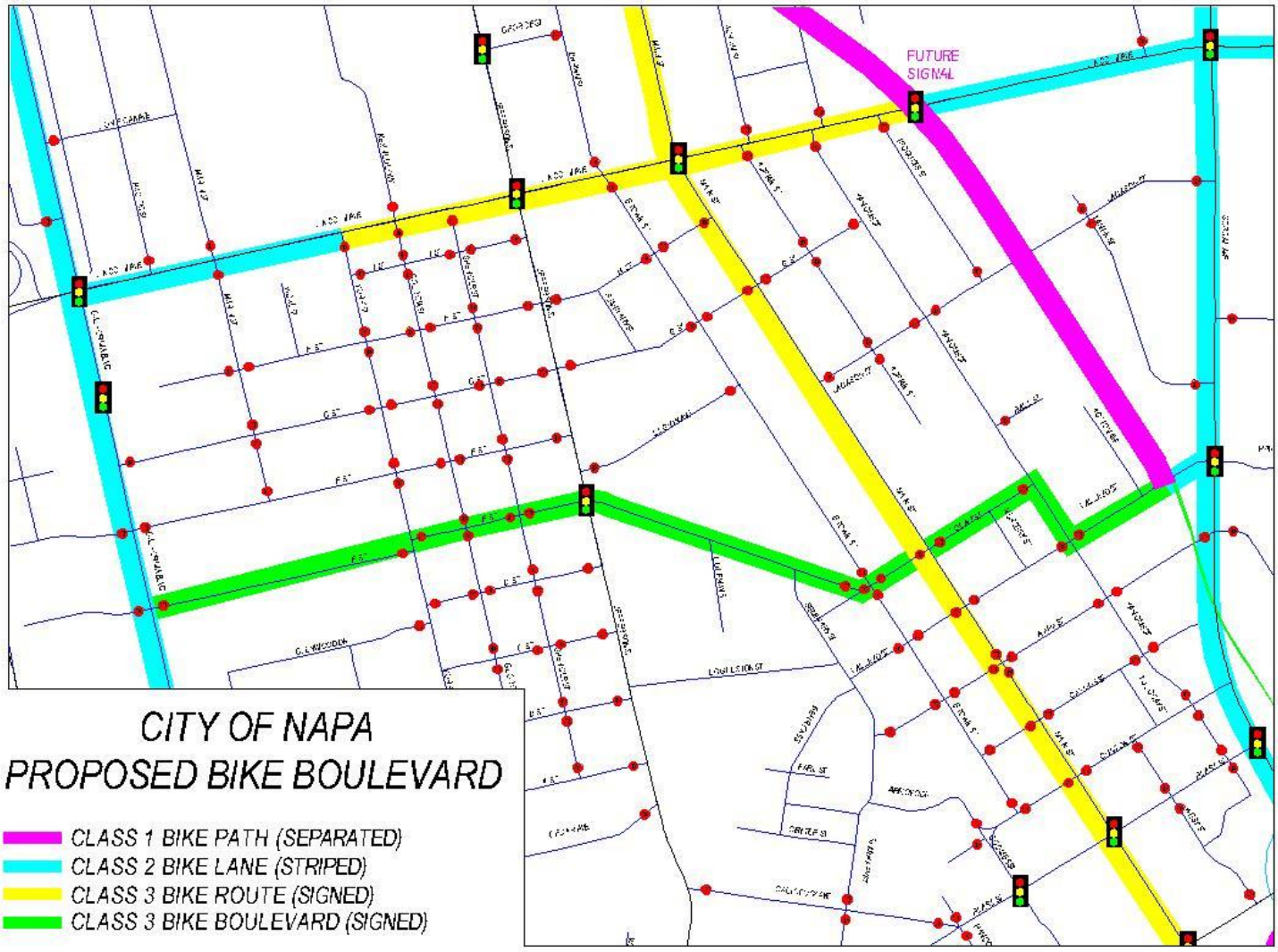


FIGURE 2: LOCAL STANDARDS

FIGURE 3: EAST-WEST "BICYCLE BOULEVARD"



Appendix D

Bikeway Type Design Details

Appendix D – Design Standards for Class I, II, and III Bikeways

Introduction

The bicycle design guidelines presented in this section are intended to provide guidance to staff, policy makers, developers, and the public for the development, retrofit, and maintenance of bicycle facilities in Napa County. The guidelines are a combination of the minimum bicycle facility standards defined in Chapter 1000 of the Caltrans *Highway Design Manual* (HDM) and the *California Manual on Uniform Traffic Control Devices* (CA MUTCD), along with recommended standards contained in the American Association of State Highway and Transportation Officials' (AASHTO) *Guide for the Development of Bicycle Facilities*. Standards and guidelines from these resources have been assembled to improve the quality of consistency of Napa's countywide bikeway system. In addition to the standardized treatments, there are several creative solutions drawn from 'best practices' used in other locations throughout the state and nation that provide promising results, but remain experimental at this time. While 'best practice' or non-standard features have been identified at the request of the BAC, it should be noted that implementation of non-standard treatments should be done under the guidance and permission of State and Federal authorities.

The following resources, which provide detailed design guidance for the development of bikeways and bicycle parking facilities, are recommended to supplement the design information presented below.

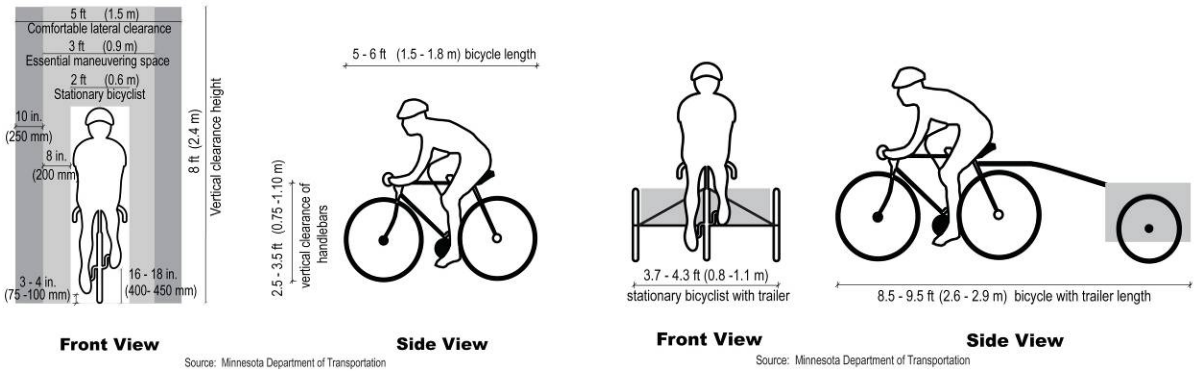
- *NACTO Urban Bikeway Design Guide*, National Association of City Transportation Officials, 2011 http://nacto.org/cities-for-cycling/design-guide/
- *APBP Bicycle Parking Guidelines*, 2nd Edition, Association of Pedestrian and Bicycle Professionals, 2010 http://www.apbp.org/?page=Publications

Bicycle Characteristics

To understand the needs of bicyclists, and help encourage and accommodate safe bicycling within the plan area, it is important to have an understanding of the dimensions of typical bicycles as well as the operational characteristics of bicyclists. These design factors are critical in planning and designing both on-road and off-road bicycle facilities.

Horizontal Clearance

The images below show the dimensions and operating space of a typical bicyclist. The width of a stationary bicyclist is approximately 2.0 feet, and a moving bicyclist generally requires a 3.0-foot operating envelope in order to maintain their balance. To ride comfortably and avoid fixed objects (curbs, potholes, debris, automobiles, etc.) as well as other facility users including bicyclists, pedestrians, strollers, or in-line skaters, a bicyclist requires an operating envelope of five feet. If space is restricted, such as in a tunnel or on a bridge,



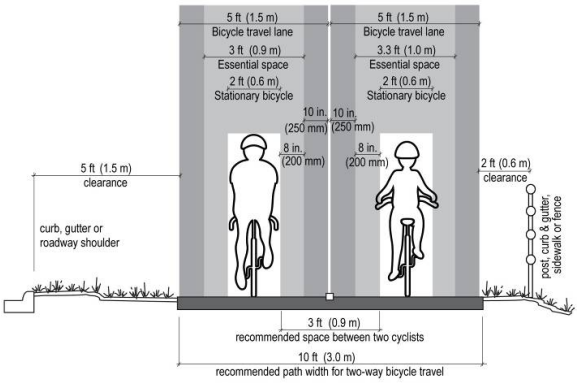
ten feet of horizontal clearance is recommended to allow two opposing bicyclists enough space to pass each other comfortably. On pathways, more width may be needed to allow bicyclists to react to unexpected maneuvers of another bicyclist or other user types such as in-line skaters, persons with pets, etc. Given the popularity of multi-use pathways, other users and their dimensions and operational characteristics should be considered in addition to typical bicyclists when designing these facilities.

Vertical Clearance

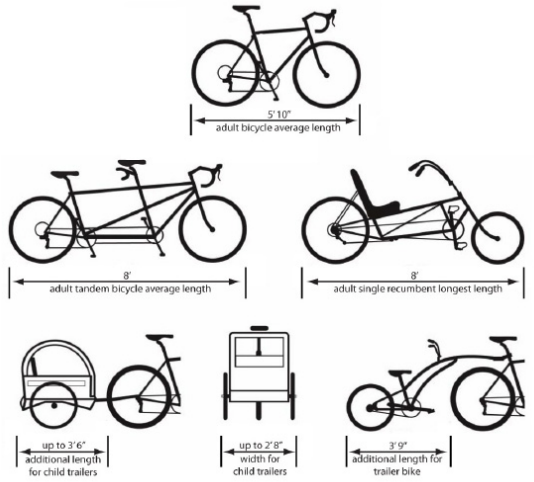
A bicyclist's vertical design height is eight feet. While even the tallest bicyclists would not be expected to reach this height when riding a bicycle; however, vertical clearance is essential to allow sufficient space for bicyclists pedaling upright or passing under an overpass. To accommodate maintenance and/or emergency vehicles in underpasses and tunnels, and to allow for overhead signing vertical clearance should be a minimum of ten feet.

Travel Speeds

An average bicyclist travels at a rate of speed between 12 and 19 mph. Advanced bicyclists and can maintain speeds of 20 mph or better on flat terrain in windless conditions. On descents, bicyclists can reach speeds 30 mph or greater.



Source: Minnesota Department of Transportation



Bicycle Facility Design Standards

According to Caltrans, the term "bikeway" encompasses all facilities that provide primarily for bicycle travel. The three standard classes include:

- Class I Bike Path
- Class II Bike Lanes
- Class III Bike Routes

Class I Bikeway

The following section includes recommended design standards and best practice information for Class I bikeways:

- Rails with Trails
- Rails-to-trails
- Under-crossings

- Rivers with Trails
- Mid-block Crossing

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

- 8 feet (2.4 m) is the minimum width for Class I facilities;
- 10 feet (3.0 m) is the recommended minimum width for a typical two-way Class I path; and
- 12 feet (3.6 m) is the preferred minimum width, if heavy mixed bicycle and pedestrian use is anticipated

Typically, 25 feet of right-of-way is preferred to accommodate a Class I bikeway, including the pathway surface, required shoulders, signage, amenities, landscaping, and offsets. However, pathway implementation can be achieved in constrained corridors of 15 feet or less where necessary.

Guidelines:

1. Paths should be constructed with adequate sub grade compaction to minimize cracking and sinking (stabilization fabric is recommended), and should be designed to accommodate appropriate loadings, including maintenance trucks and emergency vehicles.

2. A minimum 2-foot wide graded area must be provided adjacent to the path to provide clearance from trees, poles, walls, guardrails, etc. Wider shoulders on one or both sides of the path are recommended where feasible to accommodate pedestrians and help reduce pathway conflicts.

3. A 2% cross slope shall be provided to ensure proper drainage.

4. A yellow centerline stripe is recommended to separate travel in opposite directions.

5. Pathway lighting should be provided where commuters will be expected during dark or nighttime hours.

6. Pathway/roadway intersections require engineering review to ensure appropriate safety features are incorporated. Pathways that cross roadways with average traffic volumes of 20,000 vehicles per day or greater generally require signalization or grade separation.

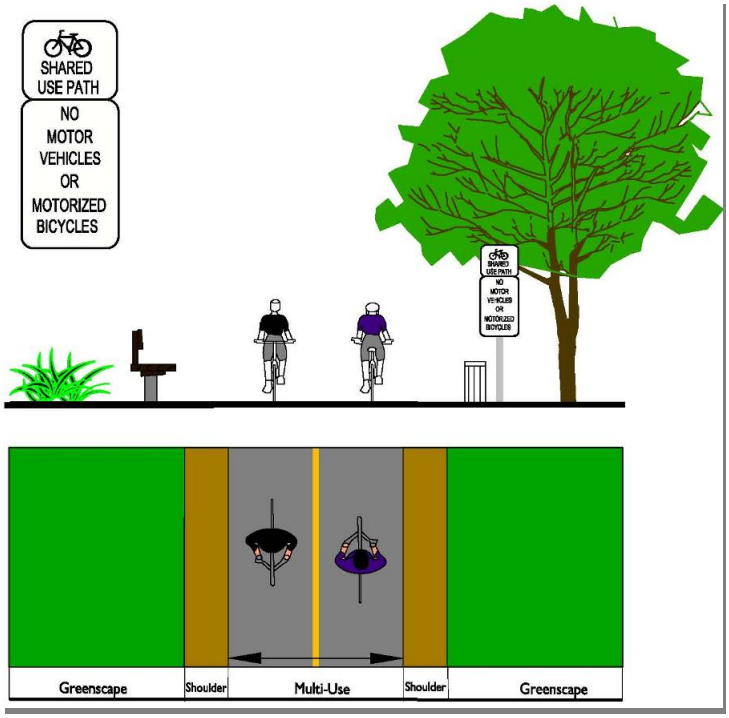
7. Landscaping should generally be low water consuming native vegetation. Vegetation that produces minimal debris is recommended to reduce maintenance needs.

8. Barriers at pathway entrances (bollards, gates, etc.) should be clearly marked with reflectors and be ADA accessible (minimum five feet clearance).

9. Bridges and/or other structures should be designed to accommodate appropriate vehicle loadings. The width of structures should be the same as the approaching trail width, plus minimum two-foot wide clear areas.

10. To minimize potential conflicts, pedestrian traffic should be directed to the right side of pathway with signing and/or stenciling.

11. Staging areas and/or trailhead parking including restrooms, drinking fountains, and secure bicycle parking should be provided at appropriate locations.



Class I Bike Path: Rail-with-Trail

Rail with trail (RWT) describes any shared use path or trail located on or directly adjacent to an active railroad corridor. No national standards or guidelines dictate RWT facility design. Therefore design guidance is pieced together from existing standards for Class I bikeways, railroad requirements, and pedestrian, road and highway design resources. In order to achieve safe and attractive designs, it is important for trail designers to work closely with railroad planning, operations, and maintenance staff.

General Design Guidelines:

1. RWT designers should maximize the setback between any RWT and active railroad track. The setback distance between a track centerline and the closest edge of the RWT should correlate to the type, speed, and frequency of train operations, as well as the topographic conditions and separation techniques.

2. Subject to railroad and State and Federal guidelines and the advice of engineering and safety experts, exceptions to the recommended setbacks may include:

   a. Constrained areas (bridges, cut and fill areas)
   b. Low speed and low frequency train operations

   In these cases and in areas with a history of extensive trespassing, fencing or other separation technique is recommended.

3. When on railroad property, RWT planners should adhere to the request or requirements for fencing by the railroad company. Fencing and/or other separation techniques should be a part of all RWT projects.

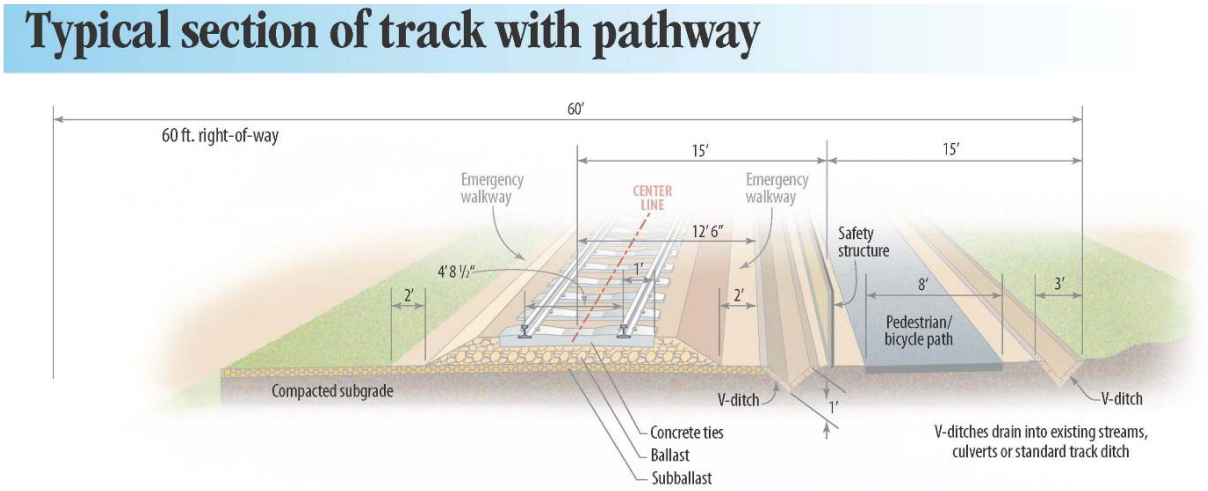
4. Trail planners should minimize the number of at-grade crossings, examine all reasonable alternatives to new at-grade track crossings, and seek to close existing at grade crossings as part of the project.

5. RWT proposals should include a full review and incorporation of relevant utility requirements for existing and potential utilities in the railroad corridor.

6. Trails should divert around railroad tunnels; if they need to go through a single-track railroad tunnel, they likely are not feasible due to extremely high cost.

For a comprehensive understanding of Rail-with-Trail issues, design guidelines, and recommendations, refer to FHWA's "Rails-with-Trails: Lessons Learned."

Source: *Rails-with-Trails: Lessons Learned*, Federal Highway Administration; *Pedestrian and Bicycle Facilities in California – Technical Reference and Technology Transfer Synthesis*, California Department of Transportation



Source: Sonoma Marin Area Rail Transit

Class I Bike Path Mid-Block Crossing

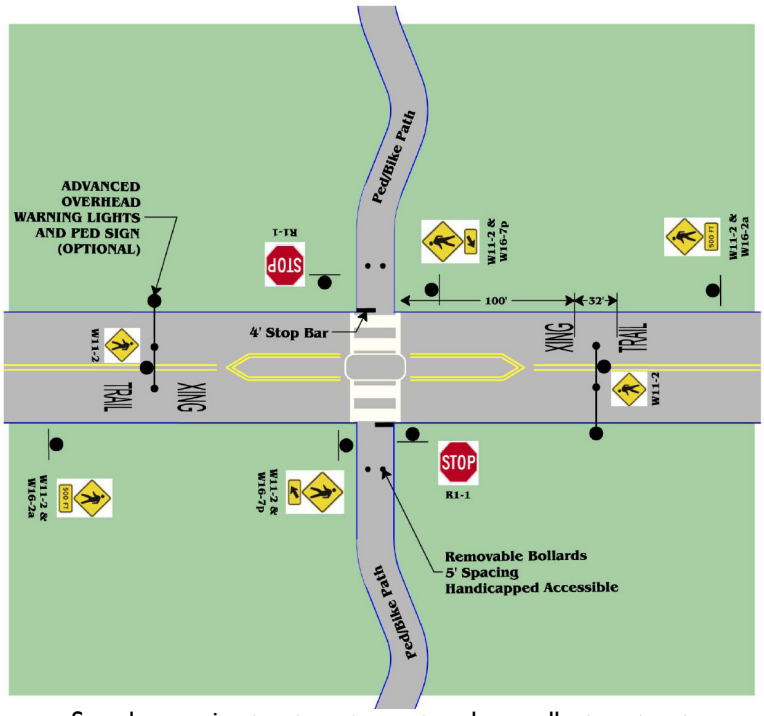
At-grade path crossings with streets, highways, or driveways should be limited to the maximum extent possible. To ensure safety, the design of at-grade crossings should feature traffic calming and crossing improvements such as: curb extensions, marked crosswalks, pedestrian refuge medians, and traffic control or warning devices. Stop or yield controls should be used for either trail users or street traffic or both, depending on right-of-way, traffic volumes and other safety issues.

Guidelines:

1. Pathways should intersect roadways as close to 90 degrees as possible.

2. Warning and stop or yield signage should be installed along pathway to alert users to impending roadway intersection.

3. Midblock crossings should not be installed close to intersections. If a pathway emerges within 300 feet or less of an intersection, consideration should be given to re-routing the path to the intersection for crossing.



Sample crossing treatment on a two-lane collector street

Class II Bikeway – Bike Lanes

The following section includes recommended design standards and best practice information for Class II bikeways:

- On-Street Parking
- Right turn lanes
- Left turn lanes
- Railroad tracks

A Bike Lane is defined as a portion of the roadway or highway that has been designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes enable bicyclists to ride along a roadway or highway without interference from prevailing traffic conditions. Bike lanes increase safety by facilitating predictable behavior and movements between bicyclists and motorists. Bike lanes typically run in the same direction of traffic, although they may be configured in a contra-flow direction along one-way streets for system connectivity where necessary.

Guidelines:

Class II bike lanes shall be one-way facilities, running with the direction of traffic. (Contra-flow bike lanes may be installed on one-way streets where necessary.)

Where on-street parking is allowed, Class II bike lanes must be striped between the parking area and the travel lanes.

The width of the bike lanes vary according to parking and street conditions:

- 4’ minimum if no gutter exists, measured from edge of pavement;
- 5’minimum with normal gutter, measured from curb face; or 3' measured from the gutter pan seam;
- 5’ minimum when parking stalls are marked; and

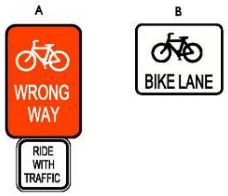
- 11' minimum for a shared bike/parking lane where parking is permitted but not marked on streets without curbs or 12' for a shared lane adjacent to a curb face.

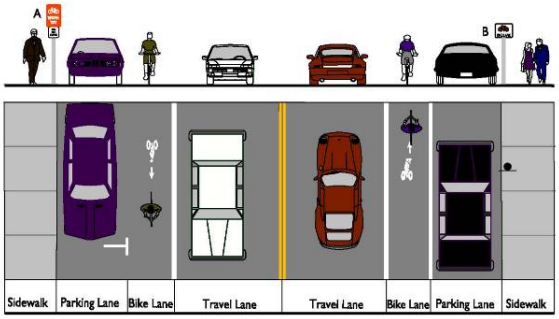
Bike Lane striping standards:

- Bicycle lanes shall be comprised of a 6 inch solid white stripe on the outside of the lane, and a 4 inch solid white stripe on the inside of the lane.
- The inside 4 inch stripe of the bicycle lane should be dropped 90-180 feet prior to any intersection where right turns are permitted, and the outside 6 inch stripe should be dashed in this location.
- Bicycle lanes shall never be striped to the right of a right-hand turn lane

Bicycle lane signage standards:

- The R81 bicycle lane sign shall be placed at the beginning of all bicycle lanes, on the far side of arterial street intersections, at all changes in direction and at a maximum of 0.6 mile intervals, however, reassurance signs may be placed at 200 to 500 foot intervals.
- Standard signage is shown in Chapter 9 of the 2010 edition of the CA MUTCD.





Class II Bike Lanes with On-Street Parking

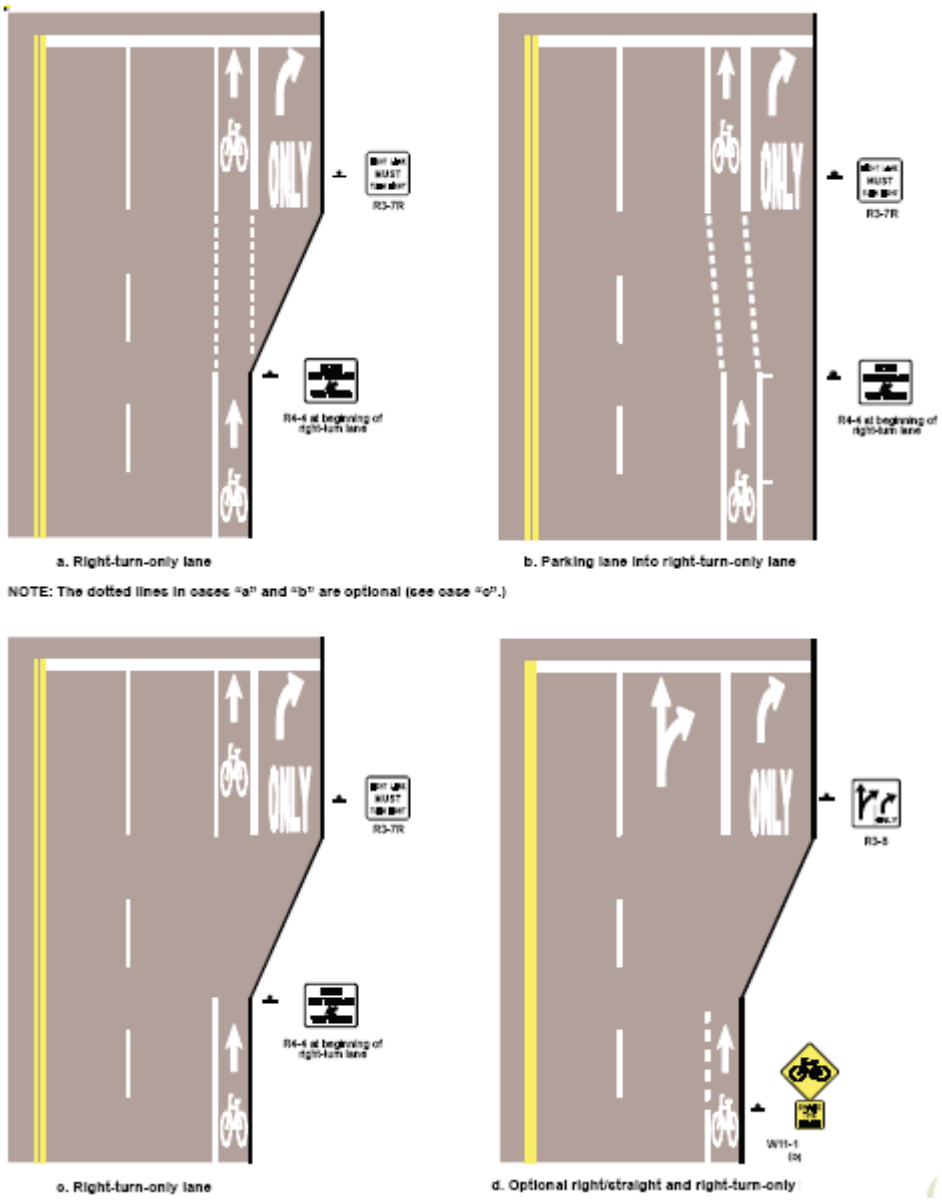
Parked vehicles can pose a serious hazard to bicyclists. Conflicts can occur during parking maneuvers and bicyclists are especially vulnerable to being hit by an opening door. On streets with parked vehicles, experienced bicyclists will generally ride three or four feet away from parked vehicles even if it means riding in a travel lane. To help maximize separation between bicyclists and parked vehicles, the following techniques may be employed:

- Minimize the parking lane width. This technique may be used in conjunction with widening the bike lane. Research suggests that the narrower the parking lane, the closer vehicles park to the curb. The traditional eight-feet wide parking lane can be reduced to seven feet or narrower where acceptable to help achieve this result.
- Parking stall markings. Marked parking spaces with cross hatches indicating the parking lane limits may help guide drivers closer to the curb.
- Angled parking should be avoided in areas of high bike traffic. If angled parking is used a four-foot buffer is recommended to provide maneuvering space for bicyclists, and/or reverse angle parking should be considered so that drivers back into spaces, which provides drivers greater visibility of bicyclists when entering and leaving the space.

Class II Bike Lanes Approaching Intersections

Right Turn Lanes

Bike lanes approaching intersections should dash the solid bike lane line for the last 100 to 200 feet in advance of the intersection. Dashing is preferable to dropping the bike lane stripe because it alerts bicyclists and right-turning motorist of the weave. Further, the treatment encourages bicyclists to wait in the proper location to be detected when signal detection is provided.

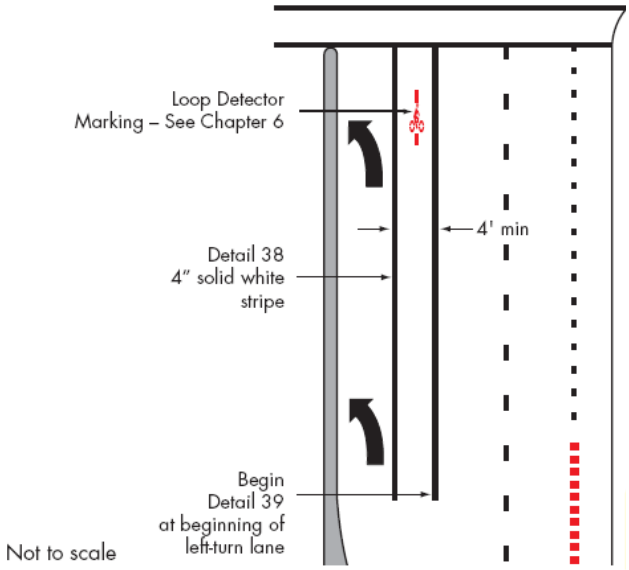


Bike Lanes approaching Right-Turn Only Lanes
Source: *Guide for the Development of Bicycle Facilities*, AASHTO

Left Turn Lanes

Left turns at intersections present difficulty to bicyclists in two ways: conflicts with left-turning motorists and the difficulty experienced by a bicyclist in executing a left turn. Improper left turns by motorist are often one of the chief causes of collisions at intersections. Often motorists are concentrating on finding a gap in vehicular traffic that they fail to notice oncoming bicycle traffic. Potential counter measures include:

- Provide left-turn pockets
- Provide protected left-turn signal phasing



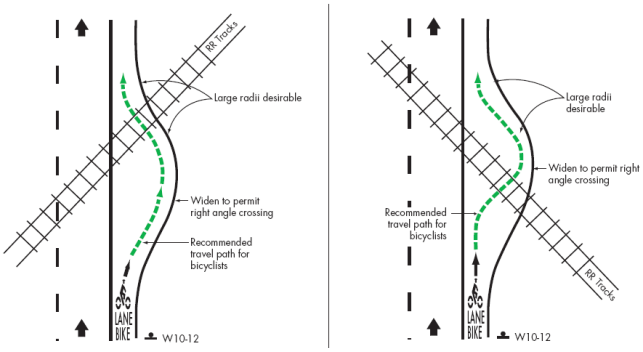
Bike Lane Striping at a Left-Turn Only Lane
Source: *VTA Bicycle Technical Guidelines*

Class II Bike Lanes: Railroad Tracks

All railroad crossings should be made as bicycle-safe as possible. Optimizing bicycle safety at railroad crossings involves three issues:

1. *The Angle of the Crossing*

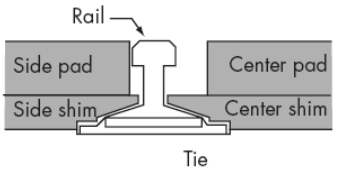
   Where the angle of the tracks is not 90 degrees, additional pavement shall be provided so that bicyclists can approach the crossing at 90 degrees as depicted in Figure 1003.6A of the Highway Design Manual. Warning signs should be installed at skewed railroad crossings.



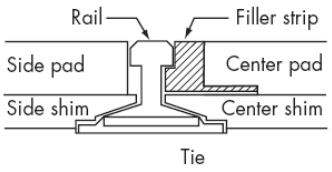
Bikeway Crossing Skewed Railroad Tracks

2. *The Smoothness of the Crossing*

   The surface of the crossing should be designed such that the rails are as flush as possible with the surrounding pavement with minimal gaps between the roadway and the flangeway. Rubber or concrete crossing materials last longer than wood or asphalt and accordingly require less maintenance.



Cross section of rubberized railroad crossing for rough perpendicular crossings



Cross section of rubberized railroad crossing with flangeway filler strip for low-speed skewed crossings

3. *The Gap Between the Flangeway and Roadway*

   On low-speed lightly traveled railroad tracks, commercially available flangeway fillers can eliminate the gap next to the rail.

Bike Lane Treatments at Bus Stops and Pullouts

Currently, no formal standard exists for the bike lane treatments at bus stops and pullouts. Therefore, the design is up to the local agency. The most common practice allows buses to cross through the bike lane to reach the curb. Treatments for this type of practice include bike lanes where both the inside and outside lanes are broken, or lanes where only the inside lane exists and it too is broken. Another alternative eliminates the bike lane completely, and then starts it again downstream of the bus stop.

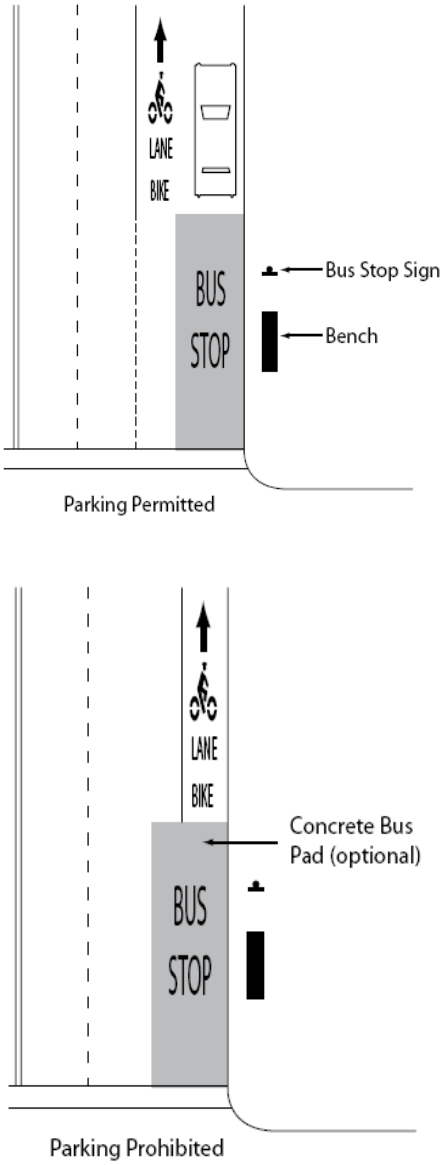
The purpose of each of these alternatives is to let bikes know to expect vehicles crossing their lane, let cars know to expect buses, and let buses know to look out for bikes. Using a dashed or dotted line may be an attempt to tell motorists that cyclists may be leaving the bike lane to pass a bus, or to make it legal for the bus to encroach on the dedicated lane. The dashed lines in the bike lanes also inform the bicyclist that motor vehicles may be crossing the bike lane and to use extra caution.

Class III Bikeway – Bike Route

The following section includes recommended design standards and best practice information for Class III bikeways:

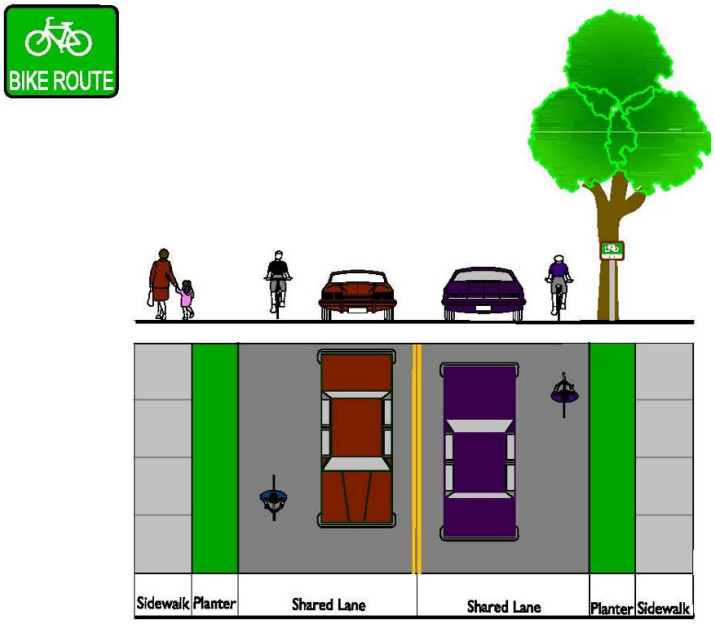
- Wide Curb Lane
- Bicycle pavement markings "Sharrow" Lanes
- Bicycle Boulevard

Referred to as a "bike route," a Class III bikeway provides a route for bicyclists, which is identified by signing. On-street Class III bikeways are shared with motorists, may provide a designated route through areas not served by Class I or II facilities, or connect discontinuous segments of a bikeway. Class III facilities can be shared with pedestrians on a sidewalk; however, this practice is not recommended.



Bike Lane Treatments at Bus Stops
(Far Side Stop)

The *Highway Design Manual* does not provide recommended minimum widths for Class III bikeways, however, when encouraging bicyclists to travel along selected routes, traffic speed and volume, parking, traffic control devices, and surface quality should be acceptable for bicycle travel. A wide outside traffic lane (14-15') is preferable to enable cars to safely pass bicyclists without crossing the centerline.



Class III Bike Route: Wide Curb Lane

On all streets, but especially where shoulder bikeways or bike lanes are warranted but cannot be provided due to severe physical constraints, a wide outside lane may be provided to accommodate bicycle travel. A wide lane usually allows an average size motor vehicle to pass a bicyclist without crossing over into the adjacent lane. Wide curb lanes are generally appropriate to accommodate bicyclists, whether or not the street is considered a bikeway.

Bike lanes should resume where the restriction ends. It is important that every effort be made to ensure bike lane continuity. Practices such as directing bicyclists onto sidewalks or other streets for short distances should be avoided, as they may introduce unsafe conditions. For curb lanes 16 ft or wider, the edge line should be striped.

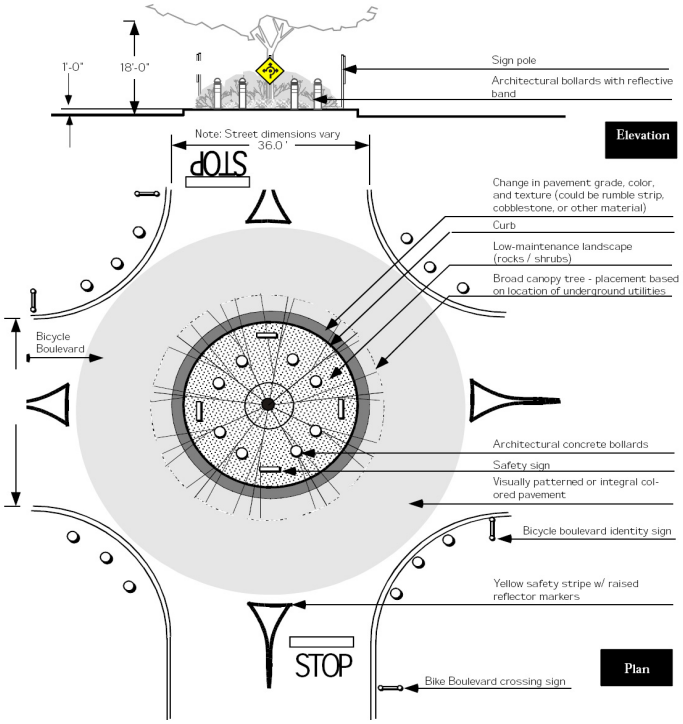
12' is the minimum width on State Highways without obtaining a Design Exception.

Class III Bike Route: Bicycle Boulevards

A variation of the Class III bike route known as a 'Bicycle Boulevard' has gained significant interest in California in recent years. Bicycle boulevards are generally comprised of low-volume residential streets that parallel major streets. Bicycle Boulevards are designed to give priority to bicyclists through various design techniques that reduce through traffic volumes and provide crossing enhancements for bicyclists at major intersections. Generally, bicycle boulevards include one or more of the following criteria:

- Low traffic volumes;
- Traffic calming devices to discourage non-local motor vehicle traffic;
- Priority for bicycles by assigning right-of-way to the bicycle boulevard at intersections wherever possible;

- Traffic control to help bicycles cross major streets (i.e. bicycle sensitive detectors at signals);
- Distinct "look" to alert bicyclists and motorists that the route is a priority for bicyclists (special signs, pavement markings, etc.); and
- By emphasizing bicycle use over automobiles, the walking environment for pedestrians along bicycle boulevards is also improved.



Sample Bicycle Boulevard treatments from Berkeley, CA

Class III Bike Route: Shared Lane Markings "Sharrows"

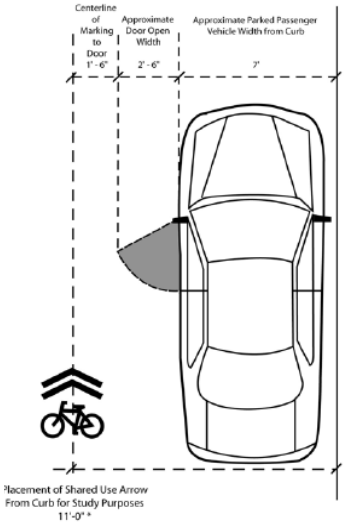
The shared lane marking (SLM), known as "shared roadway bicycle marking" in the MUTCD, and as "sharrows" by the bicycling public, is a pavement legend which may be placed in the travel lane adjacent to on-street parking. The purpose of the marking is to provide positional guidance to bicyclists on roadways that are too narrow to be striped with bike lanes. Unlike bike lanes, a SLM does not designate a particular part of the street for the exclusive use of bicyclists. It is simply an informational marking to guide bicyclists to the best place to ride on the road to avoid the "door swing" of parked cars, and to help motorists expect to see and share the lane with bicyclists. The marking gives bicyclists freedom to move further to the left within a travel lane rather than brave the door zone, squeezed between moving and parked cars. The marking is usually repeated every several hundred feet. Without such markings, bicyclists might seek refuge on the sidewalk, ride in a serpentine pattern between parked vehicles, or travel in the wrong direction. Perhaps the most important benefit of SLM is that they send a message to cyclists and drivers alike that bikes belong on the road.

Shared Lane Marking

The SLM consists of a standard bicycle symbol combined with chevron arrows.

Shared Lane Markings were approved for use in California in 2007 after device testing was performed by the City of San Francisco. While the version of the 2010 MUTCD adopted by California specifies that the device is to be used only where there is existing on-street parallel parking (Section 9C.103), the national MUTCD provides for use of the device on streets without on-street parking. Further, jurisdictions around the nation are recognizing the benefit of utilizing the device in locations where it may not be obvious where cyclists should be riding, such as at intersections with multiple turn lanes, as a guide marking through intersections (similar to skip lines), and as a guide-marking between bikeways.

Positional Layout of Shared Lane Markings



Source: *San Francisco Bicycle Design Guidelines*

Marking Placement

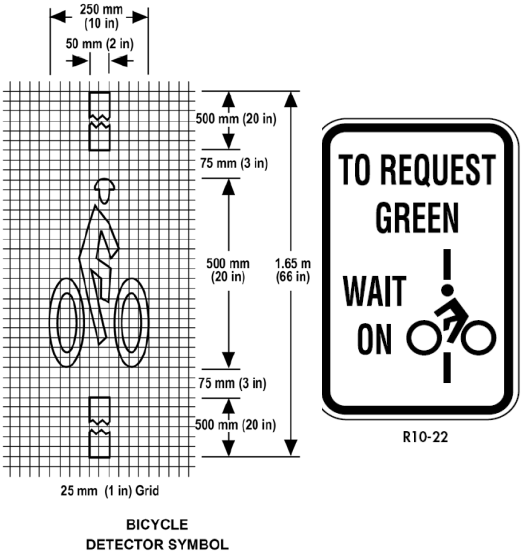
Laterally – According to the California MUTCD guidelines, SLM shall be placed so that the centers of the markings are a minimum of 11 feet from the curb face or edge of paved shoulders, and the distance may be increased beyond 11 feet. According to the National MUTCD, if SLM are used on a street without parking, the markings should be placed far enough from the curb to direct cyclists away from gutters, seams, and other obstacles, or near the center of the lane if the lane is less than 14 feet wide.

Longitudinally – SLM should be placed immediately after intersections and spaced at intervals of 250 feet. The longitudinal spacing of the markings may be increased or decreased as needed for roadway and traffic conditions (Source: 2010 CA MUTCD).

<u>Signalized Intersections</u>

Signal Detection

Actuated traffic signals pose a significant barrier to bicyclists when the detectors do not sense the presence of a bicycle. Bicyclists are then forced to wait for a vehicle to actuate the signal, dismount and use the intersection as a pedestrian, or proceed against the red light. A variety of signal detection technologies are currently available including inductive loop detectors which utilize an electromagnetic field to sense the presence of vehicles, video detection which senses the presence of vehicles optically, and a new technology – magnetometers – which uses magnetic anomaly detection.

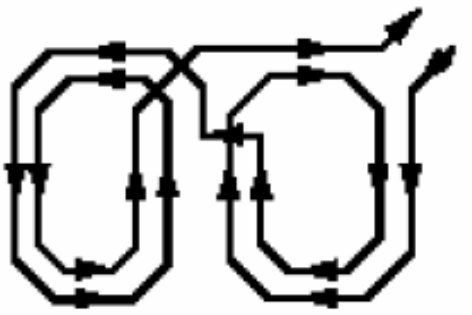


BICYCLE DETECTOR SYMBOL

Each of these technologies is suitable for the detection of bicycles, and bicycle detection should be provided at all traffic signal installations. Efforts need to be made to ensure that signal detection devices are capable of detecting a bicycle and detectors need to be located in the bicyclist's expected path, including left-turn lanes and shoulders. Marking the road surface to indicate the optimum location for bicycle detection is helpful to the bicyclist so that they may position themselves properly to trigger the traffic signal.

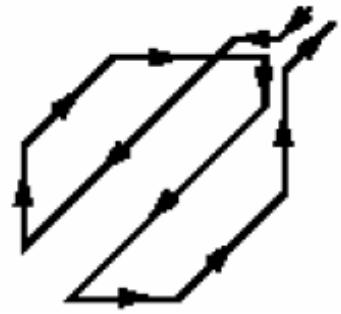
Inductive loops are still the most common technology employed. Two types of inductive loop detectors are typically used; the Diagonal Quadrupole Loop – Type "D" is typically used in vehicle lanes, and the Quadrupole Loop – Type "C" is typically used in bike lanes. The bicycle detection symbol may be used to show a bicyclist where to stop in a bike lane or traffic lane to be detected.

Quadrupole Loop
Type "C"



Used in bike lane. Detects strongly in center.
Sharp cut-off sensitivity

Quadrupole Loop
Type "D"



Used in vehicle & "shared lanes"
Sensitive over whole area
Sharp cut-off sensitivity

Bike Boxes

Bike boxes provide a reservoir for bicyclists in front of vehicle traffic at intersections. Cars wait behind the box, allowing bikes to come to the front of vehicular traffic and position themselves for turning and through movements. Bike boxes give bicyclists greater visibility, a head start through intersections, and help to reduce conflicts between turning bicycles and vehicles by clearly delineating the location for movements to occur. Bike boxes or "advanced stop lines" also provide a buffer between vehicles and pedestrians or bicycles crossing the street. Using colored surfacing for bike boxes should make them more prominent and thus making encroachment by motor vehicles less likely.

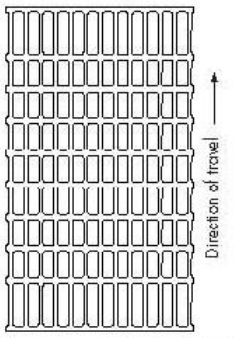
Source: Portland Office of Transportation

Photo: New York City, NY

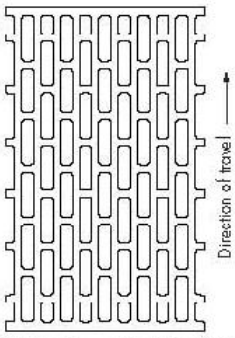
Design Elements

Drainage Grates

The function of drainage grates is to drain storm water quickly from the roadway and to provide access to the storm water system. Gutters are sloped to direct water flow into the inlet. This keeps water from ponding at the longitudinal joint and undermining the pavement. Improperly designed drainage grates can catch bicycle tires and cause bicyclists to lose control of their bicycle. Because of this, cyclists may veer into traffic lanes to avoid grates and utility covers. Properly designed grates and utility covers allow cyclists to maintain their direction of travel without catching tires or being forced into travel lanes.



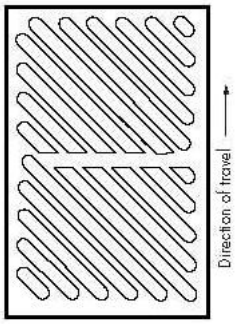
TYPE 18-10 or 24-13 GRATE
(METRIC: TYPE 450-10 or 600-13)



TYPE 18-8C or 24-106 GRATE
(METRIC: TYPE 450-8C or 600-10C)

Optimally the roadway should be designed so that the bicyclist does not have to traverse the grate per HDM Section 837.2. On roadways with curb and gutter, the grate should not be wider than the gutter pan. If the gutter pan needs to be widened to accommodate a large drainage grate, the taper should be on the outside edge.

On roads with bike lanes, the roadway shall be designed such that the minimum asphalt concrete pavement width of 48 inches is maintained between the bike lane stripe and the edge of the gutter lip. If 48 inches of asphalt cannot be maintained, then a curb face inlet design for the drainage grate should be considered (see Section 3.2.1).



OTHER BICYCLE PROOF GRATE

On roadways with shoulders, the grate should be placed outside the travel path of the bicyclist, i.e. 48 inches of clear pavement should be maintained between the shoulder stripe and the left edge of the drainage grate. If 48 inches cannot be provided within the existing shoulder width, the shoulder can be widened to accommodate the grate, with the taper on the outside edge, or a narrower grate should be selected. See also Section 7.4.2 and Figure 7-13.

Only drainage grates depicted in Caltrans Standard Plans D77B-Bicycle- Proof Grate Details or otherwise known to be bicycle-safe may be used on all roadways per HDM 837.2. Regardless of type of roadway or placement on the roadway, all grates on the roadway should be bicycle-proof.

Pavement Marking Materials

Paint is the least recommended marking material due to its low reflectivity and low skid resistance, plus it needs to be reapplied every 12 to 24 months, increasing maintenance costs. Durable pavement markings are preferred. They should be reflectorized and be capable of maintaining an appropriate skid resistance under rainy or wet conditions to maximize safety for bicyclists. The minimum coefficient of friction should be 0.30 as measured with California Test 342 to test surface skid resistance. Pavement marking tape or thermoplastic is recommended.

Pavement Marking Tape

Type I Tape such as 3M Stamark TM tape Series 380I and Series 420 is the least slippery (and most long-lasting) pavement marking. Type I tape is cost-effective when placed after resurfacing, since it lasts as long as (or longer than) the pavement itself. The skid resistance of 3M Stamark TM Series 420 tape is 55 BPN with a retained value of 45 BPN; the equivalent coefficient of friction is not available.

Thermoplastic

Thermoplastic is optimized when the composition has been modified with crushed glass to increase the coefficient of friction and the maximum thickness is 100 mils (2.5 mm).

Pavement Markers

Pavement markers, whether raised reflective markers (Type C, D, G or H) or non-reflective ceramic pavement markers (Type A or AY, otherwise known as Bott's dots) present a vertical obstruction to bicyclists, and shall not be used as bike lane stripes. When necessary as a fog line or adjacent to the edge line, the Type C or G reflective markers should be placed to the left of the line outside the shoulder area, and ideally the shoulder should be at least 4 feet wide. Where raised markers cross a bike lane or extensions thereof through intersections a gap of 4 feet should be provided as a clear zone for bicyclists. At gore areas (e.g. Standard Plan A20C) and other locations with channelizing lines, (e.g. Standard Plan A20D) if raised reflective markers are used to supplement the striping, extra lane width shall be provided in the areas where bicycles travel to provide bicyclists with more latitude to avoid the markers. (See also Section 7.2).

Roadway Surface Obstacles

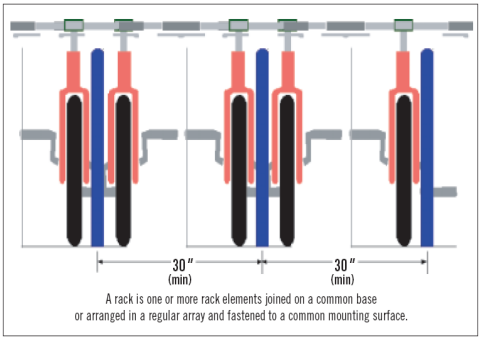
Manhole covers and utility plates present obstacles to bicyclists due to their slipperiness and change in surface elevation with the surrounding pavement. While covers and plates can be replaced with less slippery designs, as discussed below, to minimize their adverse impacts on bicyclists, it is best to design the roadway so that they are not located within the typical path of bicyclists riding on the roadway. Therefore, new construction should not place manhole and other utility plates and covers where bicyclists typically ride i.e. within the six feet adjacent to the curb (or between 8 and 13 feet from curb if parking is permitted).

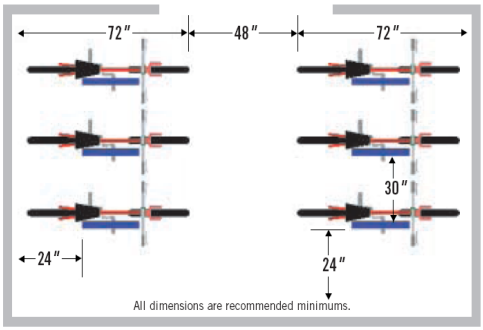
Wet utility covers and construction plate materials can be very slippery. Plain steel plates have a coefficient of friction of 0.012, which is unacceptably slippery and should never be used on the roadway. The coefficient of friction on all utility covers and steel plates placed on a roadway or highway or shoulder should be a minimum of 0.35. An example of an effective method for covers and plates (both steel or concrete) to have acceptable skid resistance is for the manufacturer to imprint waffle shaped patterns or right-angle undulations on the surface. The maximum vertical deviation within the pattern should be 0.25 inch (6 mm).

Bike Parking

As bicycle use becomes more prevalent in throughout the Plan Area, there will be more demand for adequate bicycle parking. Bicycle parking can be typified as either short- or long-term. Short-term parking generally consists of bicycle racks located conveniently to destinations such as at shopping centers, civic destinations, and schools. Long-term parking is designed to accommodate those who are expected to park for more that two hours. Long-term parking provides security and weather protection. It typically includes covered parking areas, bike lockers and/or bike lids, storage rooms, or secure areas such as "cages" or "corrals" that can only be accessed by bicyclists.

Bicycle parking should be provided at all public destinations, including transit centers and bus stops, community centers, parks, schools, downtown areas, and civic buildings. All bicycle parking should be in a safe, secure, covered area (if possible), conveniently located to the main building entrance.





Source: APBP Bike Parking Guidelines

Bicycle Parking Placement – Type and Location

- *Visibility* – bicycle racks and lockers should be located in a highly visible location near building entrances so cyclists can spot them immediately. Bicyclists and motorists alike appreciate the convenience of a parking space located right in front of a destination. A visible location also discourages the theft and vandalism of bicycles. Preferably, racks will be located as close as or closer than the nearest automobile parking spaces to the building entrance.

- *Security* – properly designed bicycle racks and lockers that are well anchored to the ground are the first measure to help avoid vandalism and theft. In some cases, added measures, which may include lighting and/or surveillance, are essential for the security of bicycles and their users. The rack element (part of the rack that supports the bike) must keep the bike upright by supporting the frame in two places allowing one or both wheels to be secured. Inverted "U," "A," and post and loop racks are recommended designs. Wave type racks that are found in many locations throughout the County are not recommended because they require excessive space and are so often used improperly.

- *Weather Protection* – is especially important. A portion of all bicycle parking should be protected from the rain and the sun. Various methods can be employed including the use of building awnings and overhangs, newly constructed covers, weatherproof bicycle lockers or lids, or indoor storage areas. Long-term parking should always be protected.

- *Clearance* – adequate clearance is an essential component of rack placement. Clearance is required between racks to allow for the parking of multiple bicycles and around racks to give bicyclists room to maneuver and too prevent conflicts with others. If it becomes too difficult for a bicyclist to easily lock their bicycle, they may park it elsewhere and the bicycle capacity is lowered. Racks should be placed in a position where they do not block access to and from building entrances, stairways, or fire hydrants. Empty racks must not pose a tripping hazard for visually impaired pedestrians. Position racks out of the walkway's clear zone (space reserved for walking). Likewise, bicycle racks placed along a sidewalk should be oriented parallel with the street, so parked bicycles do not intrude into the walkway's clear zone. A row of inverted "U" racks should be situated on 30" minimum centers. Ideally, racks should be located immediately adjacent to the entrance to the building it serves, but not in a spot that may impede upon pedestrian flow in and out of the building.

Appendix E

OTS Collision Rankings, Charts and Graphs

READING AND UNDERSTANDING THE OTS RANKINGS

What are the OTS Rankings?

The OTS Rankings were developed so that individual cities could compare their city's traffic safety statistics to those of other cities with similar-sized populations. Cities could use these comparisons to see what areas they may have problems in and which they were doing well in. The results helped both cities and OTS identify emerging or on-going traffic safety problem areas in order to help plan how to combat the problems and help with the possibility of facilitating grants. In recent years, media, researchers and the public have taken an interest in the OTS Rankings. It should be noted that OTS rankings are only indicators of potential problems; there are many factors that may either understate or overstate a city/county ranking that must be evaluated based on local circumstances.

NOTE: City rankings are for incorporated cities only. County Rankings include all roads – state, county and local – and all jurisdictions – CHP, Sheriff, Police and special.

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How are the OTS Rankings determined?

- Victim and collision data for the rankings is taken from the latest available California Highway Patrol (CHP) Statewide Integrated Traffic Records System (SWITRS) data.
- Victim and collision rankings are based on rates of victims killed and injured or fatal and injury collisions per "1,000 daily-vehicle-miles-of-travel" (Caltrans data) and per "1,000 average population" (Department of Finance data) figures. This more accurately ensures proper weighting and comparisons when populations and daily vehicle miles traveled vary.
- DUI arrest totals and rankings are calculated for cities only and are based on rates of non-CHP DUI arrests (Department of Justice data). This is so that local jurisdictions can see how their own efforts are working.
- Counties are assigned statewide rankings, while cities are assigned population group rankings.

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How to Read and Understand the OTS Rankings

Top Horizontal Bar:

- Agency – local jurisdiction that the data applies to.
- Year – the year the data represents. The rankings are updated once per year when all component statistics and data have been reported.
- County – county in which the city is located.
- Group – Cities are grouped by population:
  - Group A – 13 cities, populations over 250,000
  - Group B – 55 cities, population 100,001-250,000
  - Group C – 103 cities, population 50,001-100,000
  - Group D – 97 cities, population 25,001-50,000
  - Rankings for smaller cities are not included on-line, but are available through the OTS Public Affairs Office.
- Population – estimates matched to "Year"
- DVMT – Daily Vehicle Miles Traveled. Caltrans estimate of the total number of miles all vehicles traveled on that city's streets on an average day during that year.

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Center Table:

IMPORTANT NOTE #1: The figures in the two ranking columns show as two numbers divided by a slash. The first number is that city's ranking in that category. The second number is the total number of cities/counties within that "Group". For instance, if you see "22/55", that means that city ranks 22nd out of 55 cities of similar size.

IMPORTANT NOTE #2: OTS Rankings are calculated so that the higher the number of victims or collisions per 1000 residents in a population group, the higher the ranking. Number 1 in the rankings is the highest, or "worst." So, for Group B, a ranking of 1/55 is the highest or worst, 27/55 is average, and 55/55 is the lowest or best.

- Type of Collision – This column delineates the different types of collisions OTS has chosen to show in the rankings. These represent the types with larger percentages of total killed and injured and areas of focus for the OTS grant program. Motorcycles were added in 2008.
- Victims Killed and Injured – This column shows the number of fatalities and injuries aggregated. Damage-only or fender-bender collisions are not included.
- Ranking by daily vehicle miles traveled – This column weighs this city against all others in the Group when looking at DVMT. Cities of like size may have widely varying rates of traffic, a factor which can be meaningful on a local basis. Significant differences between this and the population column must be evaluated based on local circumstances.
- Ranking by population – This column weighs this city against all others in the Group based on population. Population can be a meaningful basis for comparison. Significant differences between this and the Daily Vehicle Miles Traveled column must be evaluated based on local circumstances.
- Total Fatal and Injury – The total number of victims involved in all collisions where there were fatalities and/or injuries in that city/county.
- Alcohol Involved – Collisions in which there were victims killed or injured where a party (driver, pedestrian, bicyclist) was classified as "Had Been Drinking."
- HBD Driver <21 – Collisions in which there were victims killed or injured where a driver who was under the age of 21 had been drinking.
- HBD Driver 21-34 – Collisions in which there were victims killed or injured where a driver who was between the ages of 21 and 34 had been drinking.
- Motorcycles - Collisions in which there were victims killed or injured and a motorcycle was involved.
- Pedestrians - Collisions in which there were victims killed or injured and a pedestrian was involved.
- Pedestrians <15 - Collisions in which there were victims killed or injured and a pedestrian under the age of 15 was involved.
- Pedestrians 65+ - Collisions in which there were victims killed or injured and a pedestrian age 65 and older was involved.
- Bicycles - Collisions in which there were victims killed or injured and a bicyclist was involved.
- Bicycles <15 - Collisions in which there were victims killed or injured and a bicyclist under age 15 was involved.
- Composite – Figures which show rankings only, an aggregate of several of the other rankings (HBD 21-34, HBD Under21, Alcohol Involved victims plus Hit & Run, Nighttime and Speed collisions). These figures are a means to give an indication of over-all traffic safety.

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Bottom Table:

- Speed Related – Collisions in which there were victims killed or injured where speed was the primary factor.
- Nighttime (9:00pm - 2:59am) – Collisions in which there were victims killed or injured that occurred between those hours, which are prime hours for DUI, speeding and drowsy driving crashes.
- Hit and Run – Collisions in which there were victims killed or injured and a driver left the scene.
- DUI Arrests – DUI arrest figures are shown for cities only, not counties.

  The first figure gives the total number of DUI arrests for the year on city streets. The second number shows the percentage of the city's estimated licensed drivers that was arrested for DUI during that year. The current statewide average is .90%. Local percentages shown give an indication of how cities compare against the average. Lower than .90% means lower than the state average and higher than .90% means higher that the state average. However, differences can be from many factors and must be evaluated based on local circumstances.

  Cities often use this measure to determine how to adjust their DUI enforcement activity. When increased DUI enforcement is combined with education and public information campaigns, it can lead to a reduction of the incidence of DUI.

"0" Note: Cities reporting 0 victims and/or collisions for a category or 0 DUI arrests are ranked using the variable upon which the ranking is based. For example, if 10 of 97 cities in population group D reported 0 hit-and-run fatal and injury collisions when ranking by per "1,000 average population," the city with the highest population of these 10 cities would be ranked 97/97, and the city with the lowest population of these 10 cities would be ranked 88/97. The same methodology has been applied when ranking per "1,000 daily-vehicle-miles-of-travel" and per "estimated average number of licensed drivers."

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OFFICE OF TRAFFIC SAFETY - 2006 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
NAPA	2802	NAPA COUNTY	C	76,818	561,016

TYPE OF COLLISION	VICTIMS KILLED AND INJURED		RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury.....	562		5/103	13/103
Alcohol Involved.....	40		22/103	37/103
HBD Driver <21.....	7		10/103	22/103
HBD Driver 21-34.....	14		11/103	25/103
Pedestrians.....	22		36/103	57/103
Pedestrians <15.....	6		33/103	41/103
Pedestrians 65+.....	0		94/103	102/103
Bicyclists.....	35		8/103	12/103
Bicyclists <15.....	7		11/103	21/103
Composite			3/103	7/103
COLLISIONS				
Speed Related.....	136		1/103	5/103
Nighttime.....	40		8/103	16/103
Hit and Run.....	35		12/103	18/103
DUI ARRESTS	268	0.58 %		64/101

OFFICE OF TRAFFIC SAFETY - 2007 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
NAPA	2802	NAPA COUNTY	C	76,711	658,154

TYPE OF COLLISION	VICTIMS KILLED AND INJURED		RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury.....	507		8/106	13/106
Alcohol Involved.....	62		10/106	10/106
HBD Driver <21.....	5		28/106	32/106
HBD Driver 21-34.....	17		18/106	23/106
Pedestrians.....	21		45/106	56/106
Pedestrians <15.....	6		35/106	35/106
Pedestrians 65+.....	2		50/106	53/106
Bicyclists.....	32		14/106	13/106
Bicyclists <15.....	5		39/106	41/106
Composite			6/106	9/106
	COLLISIONS			
Speed Related.....	108		6/106	9/106
Nighttime.....	37		20/106	23/106
Hit and Run.....	39		11/106	7/106
DUI ARRESTS	300	0.65 %		70/105

CALIFORNIA OFFICE OF TRAFFIC SAFETY

OTS RANKINGS

City: -- SELECT ONE -- SHOW CITY

County: -- SELECT ONE -- SHOW COUNTY

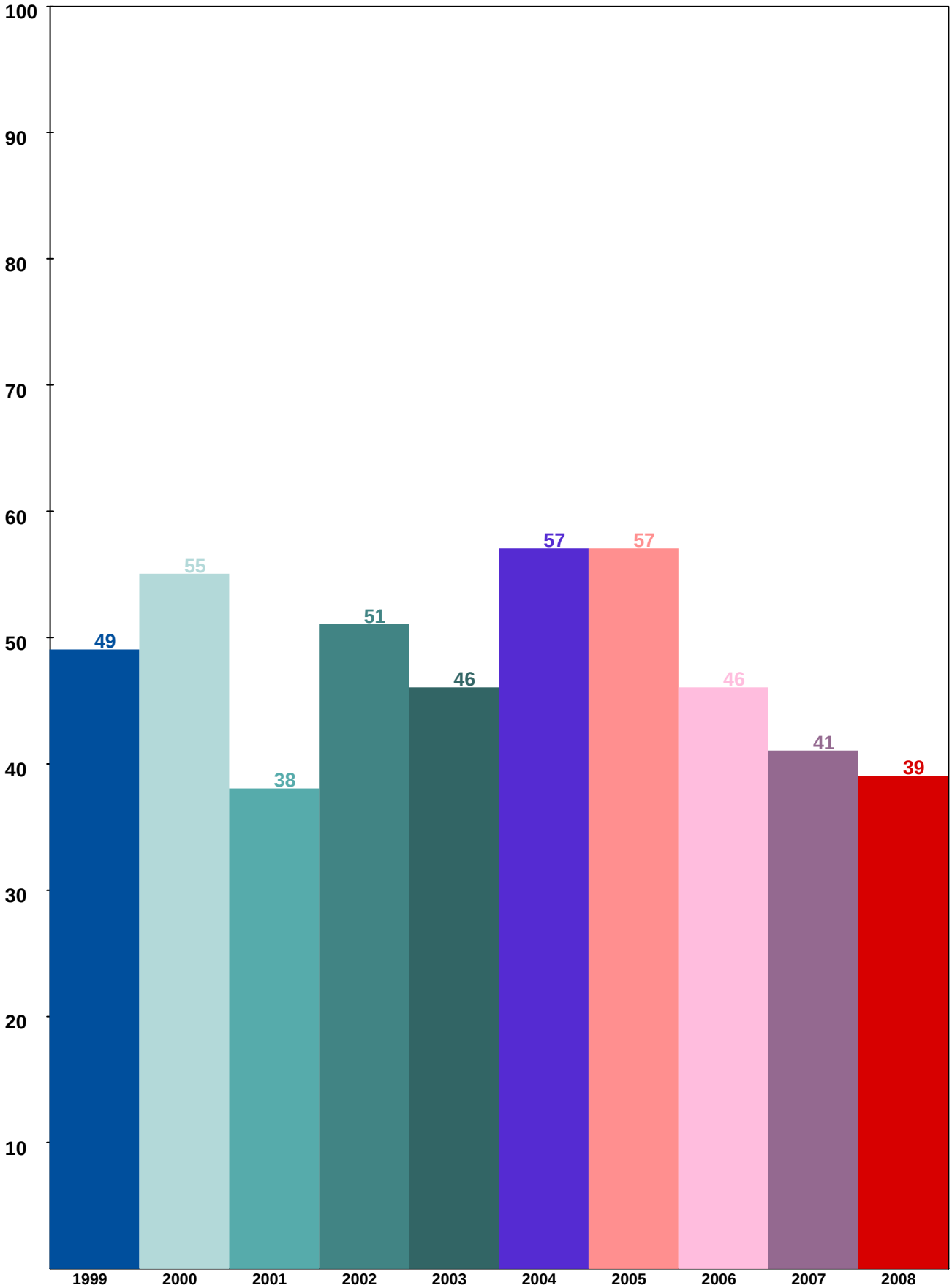
Select a City or County from one of the dropdown lists and click on the Show City or Show County button.

Agency	Year	County	Group	Population (Avg)	DVMT
Napa	2008	NAPA COUNTY	C	77,285	640,657

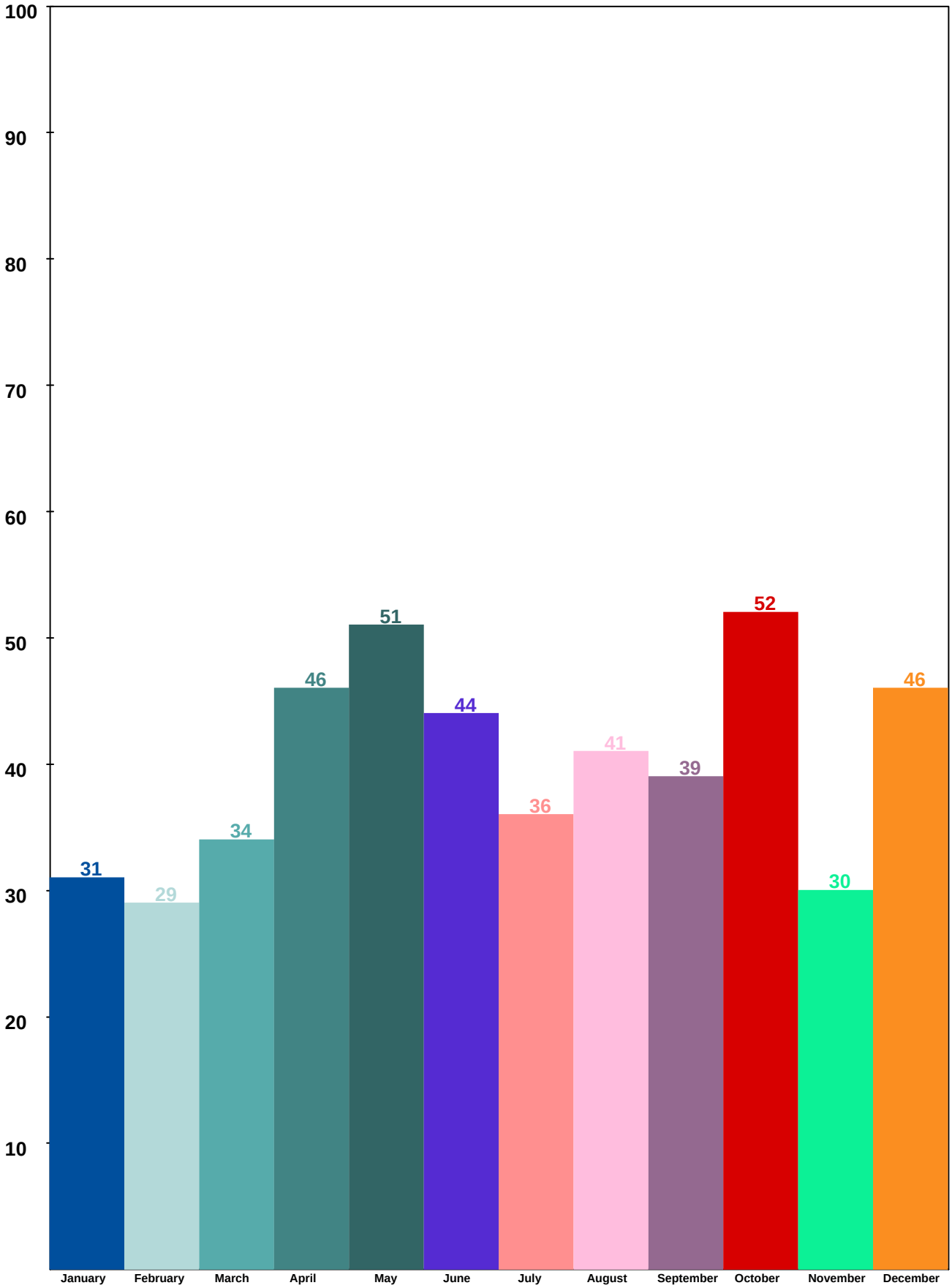
TYPE OF COLLISION	VICTIMS KILLED & INJURED	RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury	497	2/103	12/103
Alcohol Involved	51	8/103	16/103
HBD Driver < 21	2	54/103	62/103
HBD Driver 21 - 34	20	3/103	5/103
Motorcycles	16	14/103	27/103
Pedestrians	25	30/103	39/103
Pedestrians < 15	2	82/103	88/103
Pedestrians 65+	2	50/103	55/103
Bicyclists	37	13/103	13/103
Bicyclists < 15	4	50/103	62/103
Composite		4/103	9/103

TYPE OF COLLISION	FATAL & INJURY COLLISIONS	RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Speed Related	95	7/103	12/103
Nighttime (9:00pm - 2:59am)	39	8/103	16/103
Hit and Run	36	14/103	10/103
DUI ARRESTS	305 0.65%		64/102

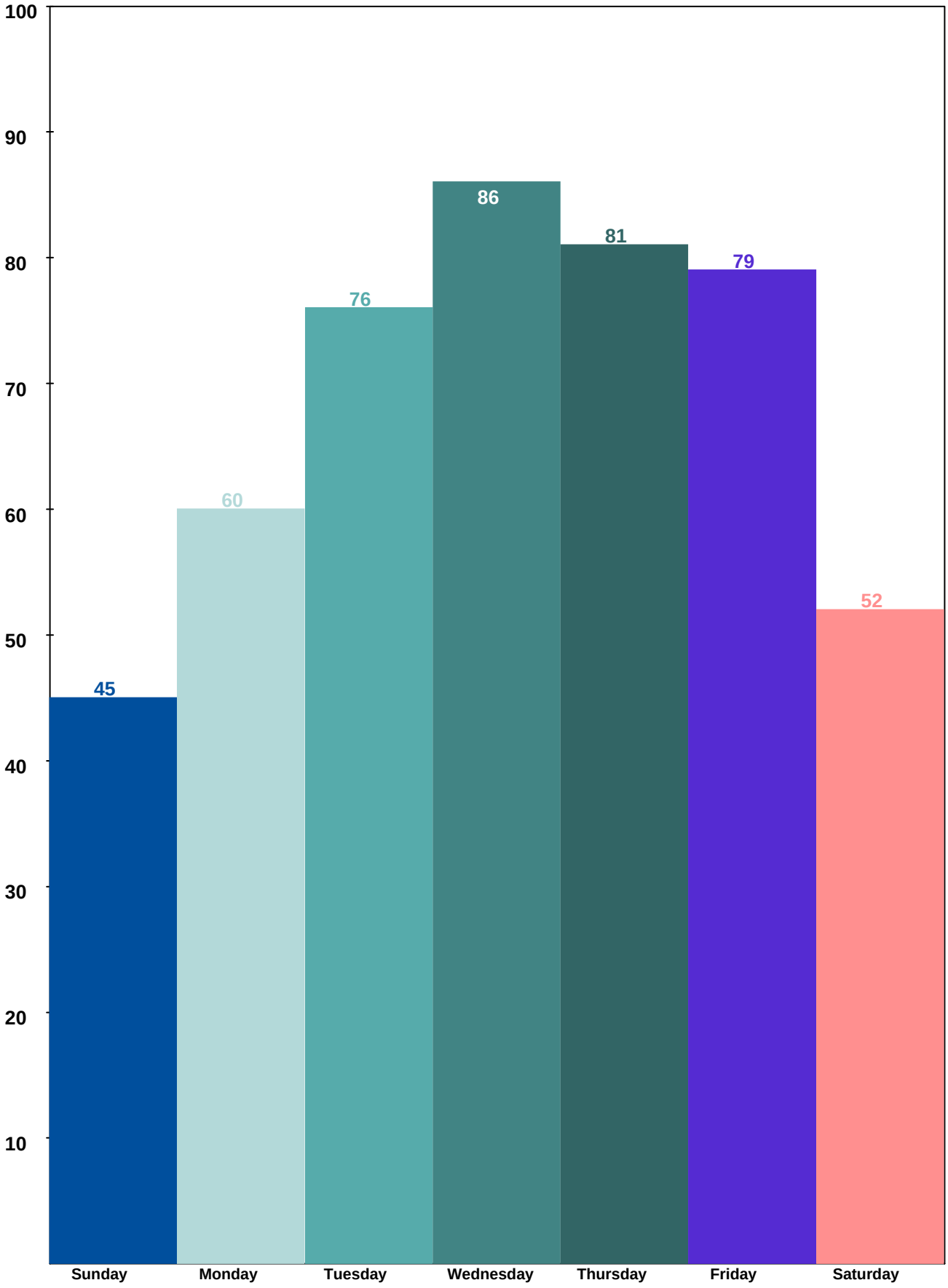
NAPA COUNTY BICYCLE STUDY
CITY OF NAPA
Collisions by Year 1/1/1999 to 12/31/2008 Total Collisions: 479



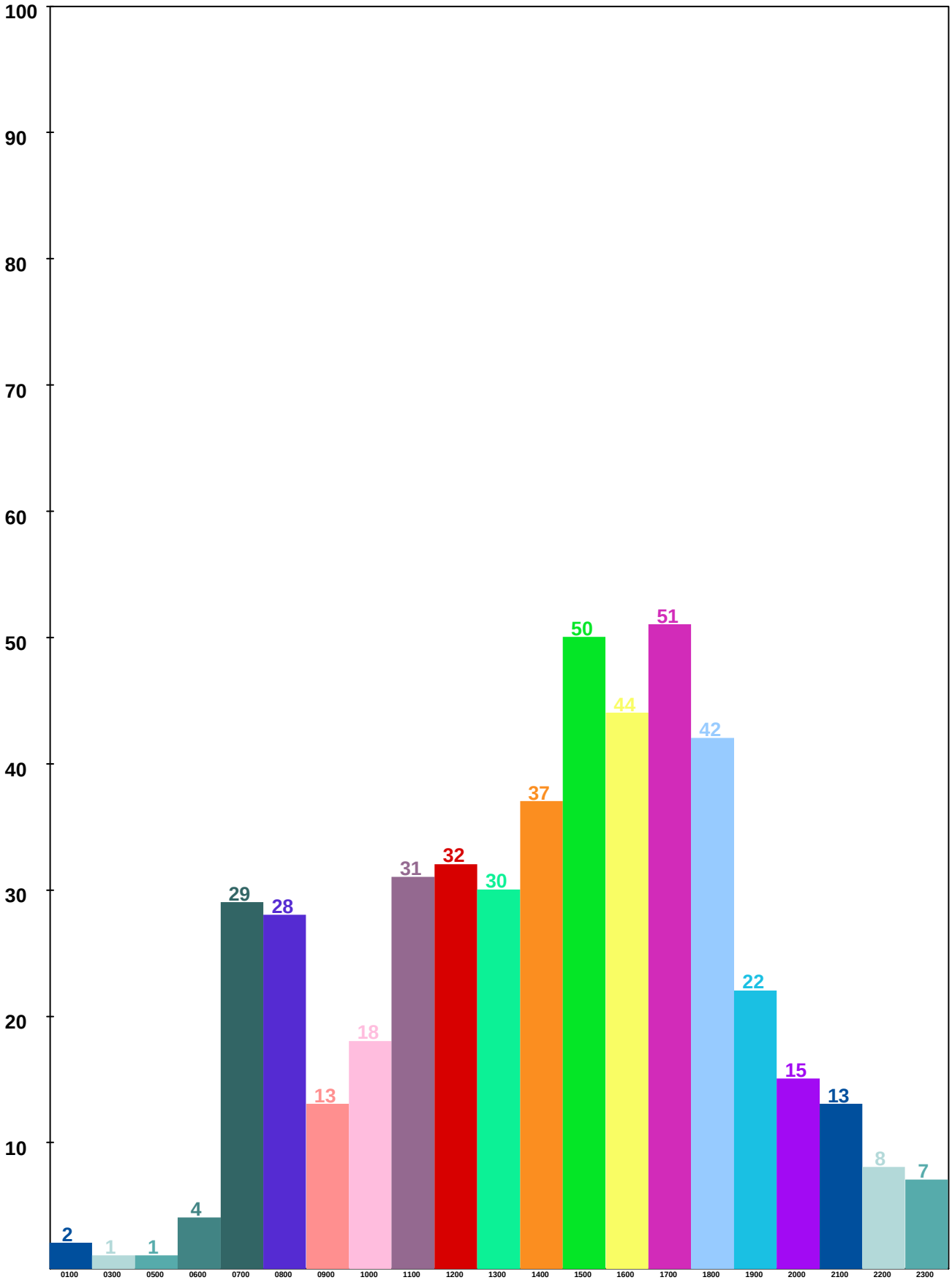
NAPA COUNTY BICYCLE STUDY
CITY OF NAPA
Collisions by Month 1/1/1999 to 12/31/2008 Total Collisions: 479



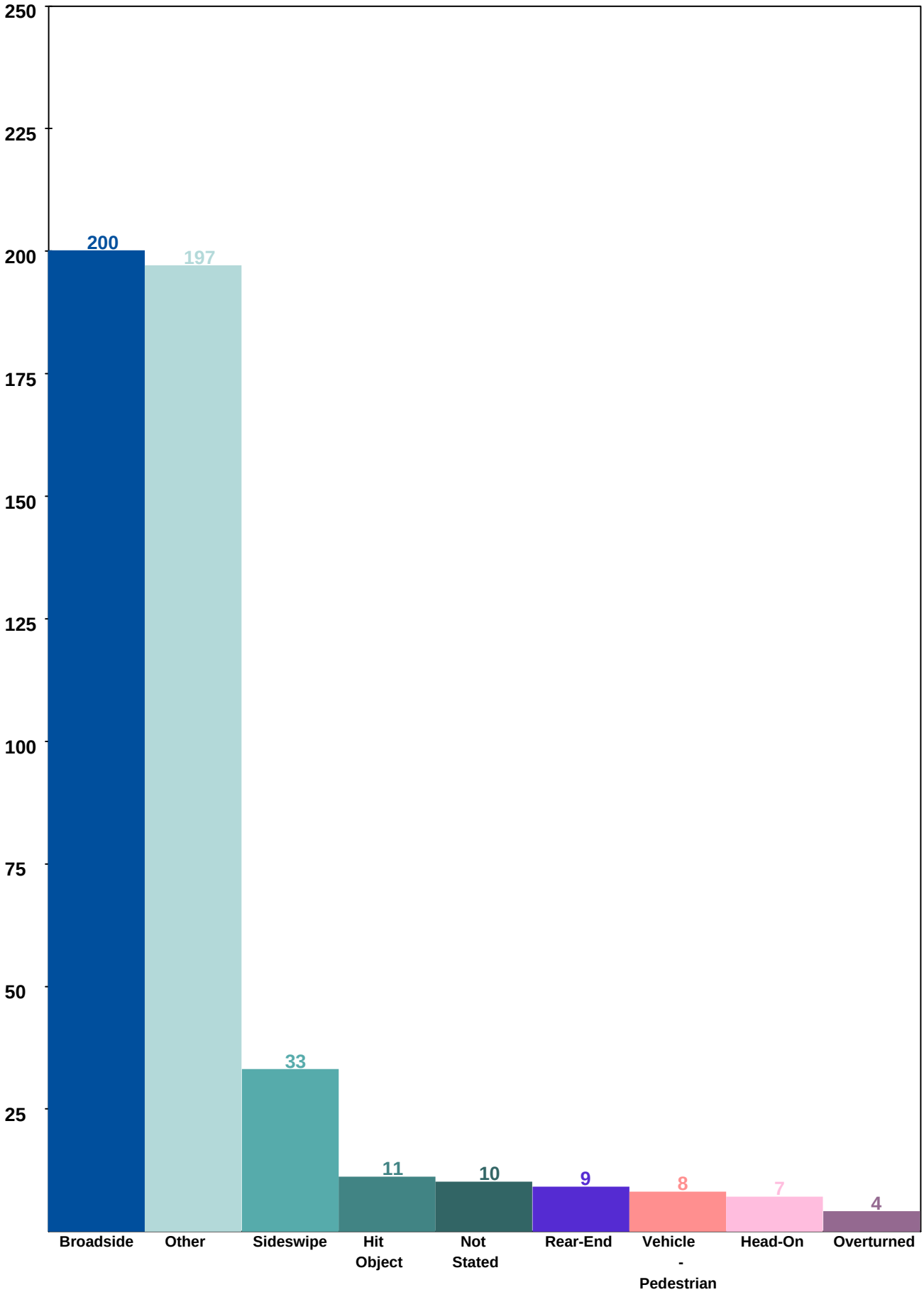
NAPA COUNTY BICYCLE STUDY
CITY OF NAPA
Collisions by Day of Week 1/1/1999 to 12/31/2008 Total Collisions: 479



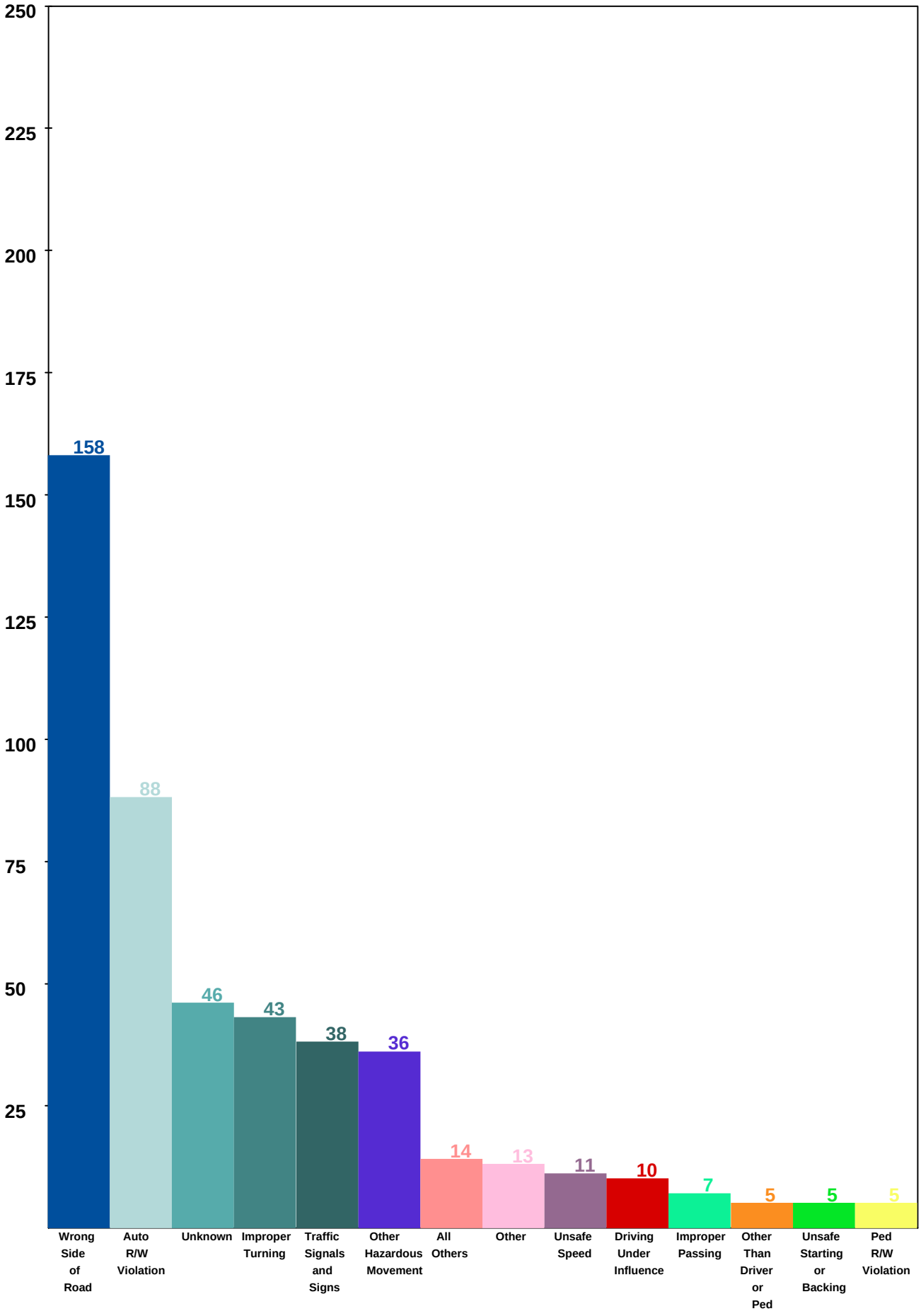
NAPA COUNTY BICYCLE STUDY
CITY OF NAPA
Collisions by Hour 1/1/1999 to 12/31/2008 Total Collisions: 479 (Unkown Time: 1)



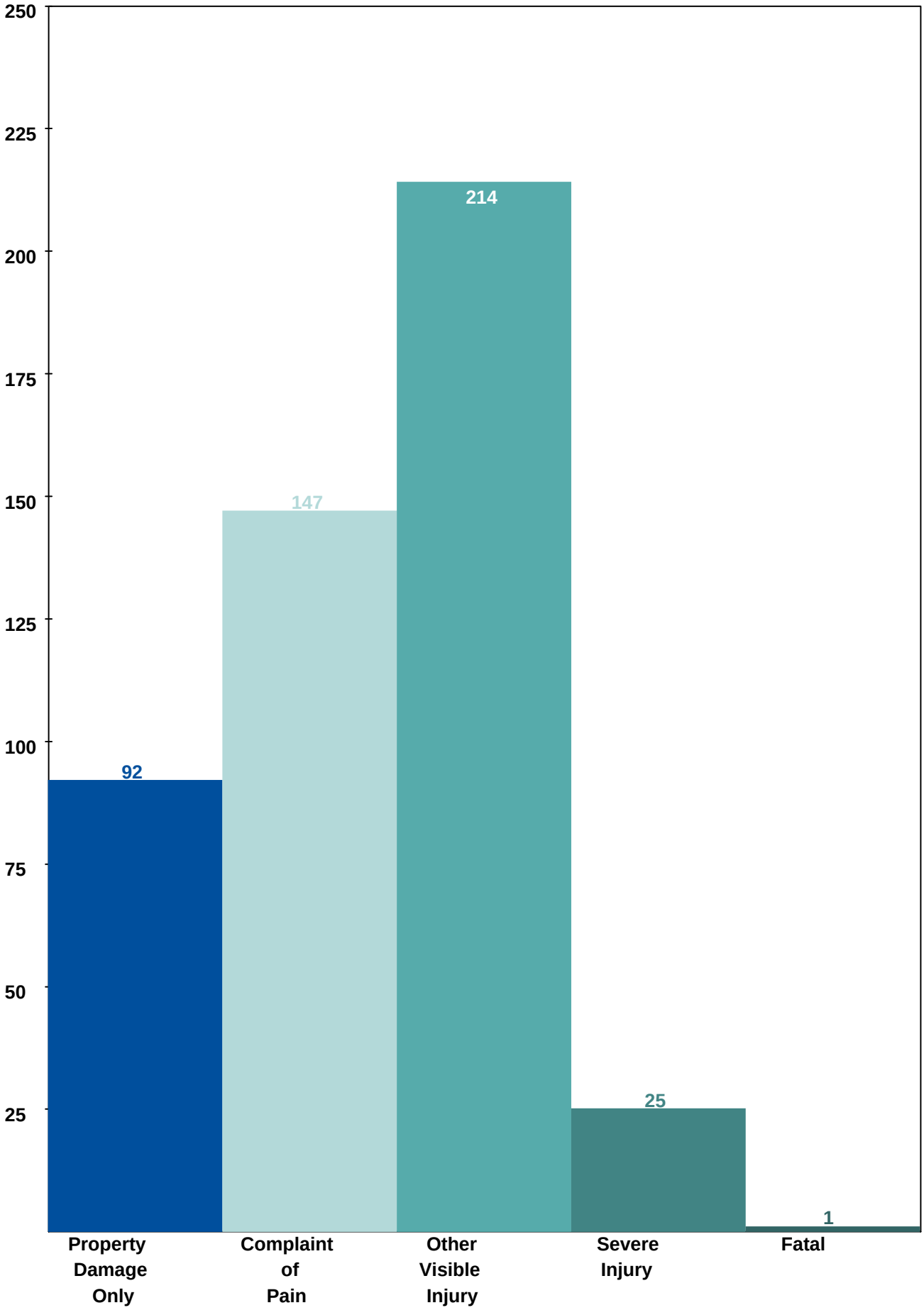
NAPA COUNTY BICYCLE STUDY
CITY OF NAPA
Collision Type 1/1/1999 to 12/31/2008 Total Collisions: 479



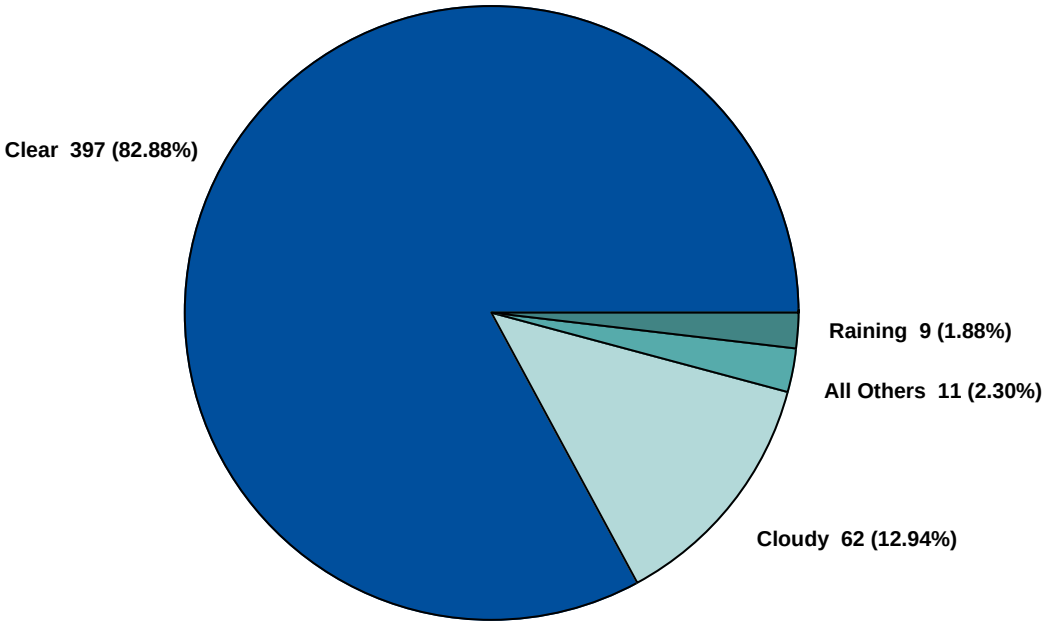
NAPA COUNTY BICYCLE STUDY
CITY OF NAPA
Primary Collision Factors 1/1/1999 to 12/31/2008 Total Collisions: 479



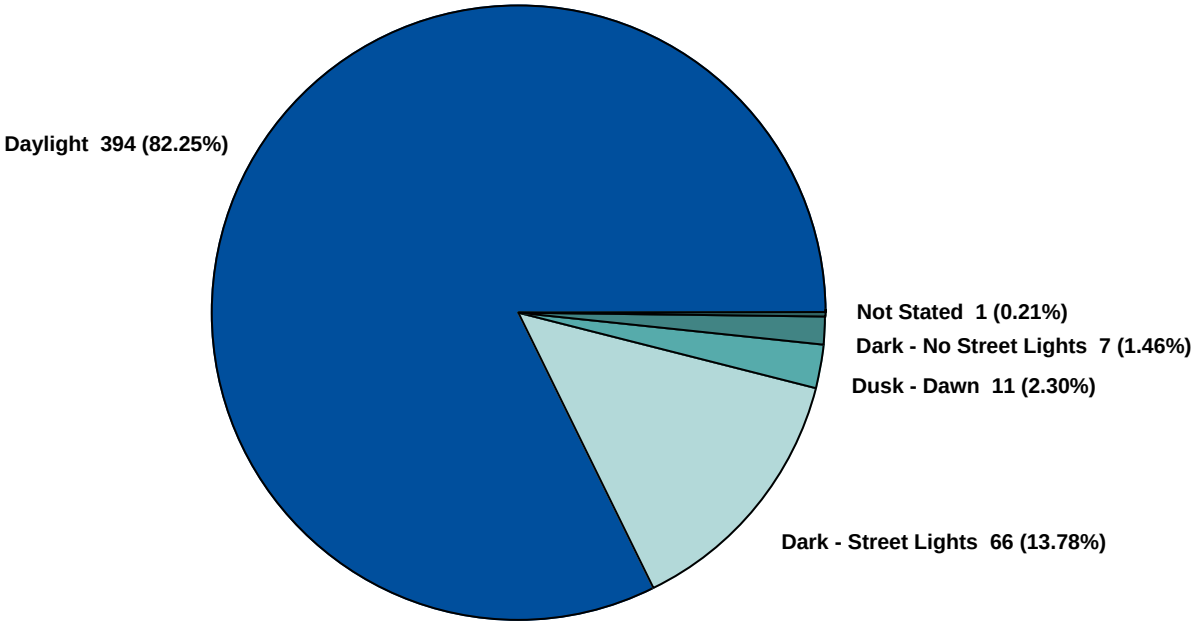
NAPA COUNTY BICYCLE STUDY
CITY OF NAPA
Extent of Injury 1/1/1999 to 12/31/2008 Total Collisions: 479



NAPA COUNTY BICYCLE STUDY
CITY OF NAPA



Weather



Lighting Conditions

1/1/1999 to 12/31/2008 Total Collisions: 479

Appendix F

MTC and National Bicycle and Pedestrian Documentation Project Information

Appendix F – Bicycle Count Guidelines

Count Methodologies

Metropolitan Transportation Commission

In 2003, the Metropolitan Transportation Commission (MTC) funded the Bicyclist and Pedestrian Data Collection and Analysis Project. The project resulted in the *Handbook for Bicyclists and Pedestrian Counts*, for use by local agencies throughout the Bay Area. The Handbook presents guidelines and standard methodologies for conducting counts of bicyclist and pedestrian activity. MTC's bicycle count methodology was developed to attain a consistent regional bicycle count and analysis procedures so that trends in usage can be documented throughout the Bay Area. The counting strategy outlined in the Handbook provides an easy and inexpensive method of conducting bicycle and pedestrian counts on a regular basis. The level of detail to be extracted during routine counts is kept to a minimum to reduce ambiguity while still providing useful data. The methodology is not unlike a typical traffic count which reveals little more than the time of day, and direction of travel. Collection of data regarding the motorist's age, trip purpose, length of trip, etc. is relatively rare. Using the procedures outlined in MTC's Handbook and any subsequent updates will ensure consistent results among local agencies for the development of a count database, as well as with larger efforts conducted by MTC throughout the region. Count procedures and instructions provided by MTC can be found on MTC's website via the following web link: http://www.mtc.ca.gov/planning/bicyclespedestrians/counts.htm

National Bicycle and Pedestrian Documentation Project

The National Bicycle and Pedestrian Documentation Project (NBPDP) is an annual bicycle and pedestrian count and survey effort sponsored by the Institute of Transportation Engineers Pedestrian and Bicycle Council. The goals of the NBPD are to: (1) Establish a consistent national bicycle and pedestrian count and survey methodology; (2) Establish a national database of bicycle and pedestrian count information generated by these consistent methods and practices; and (3) Use the count and survey information to begin analysis on the correlations between local demographic, climate and land-use factors and bicycle and pedestrian activity. More information about the project can be found at: http://bikepeddocumentation.org/

Recommendations

In order to supplement US Census Journey to Work (JTW) data, to attain a better understanding of existing usage and travel patterns, and to be able to project demand, regular bicycle counts (on an annual or bi-annual basis as needed), are recommended as a programmatic improvement. Periodic counts should be coordinated through a central clearing house such as the NCTPA or the Napa County Bicycle Coalition and conducted in each jurisdiction within the plan area. Counts may be conducted by volunteers, interns, and others as appropriate.

Recommended Count Locations

Count locations were selected using the following criteria:

1. To ensure a balanced geographical representation of the count locations.
2. To capture inter-jurisdiction activity at community gateways.
3. The intersection of primary bicycle routes.

4. Proximity to major destinations such as downtowns, civic destinations, employment centers, transit facilities, schools, etc.

5. Location on the regional or local bicycle network (existing or proposed)

Recommended count locations are catalogued in a database by jurisdiction in Attachment A, and shown graphically on maps in Attachment B. Count locations generally consist of street intersections and/or pathway/street intersections. Each count location is identified by its primary street and cross street, and includes notations about the existing and/or proposed bikeway facilities at the site. Additional details are provided about the general type of bicycle use or activity expected in the area along with notes specific to the site or future uses in the vicinity of the count location where appropriate. Over time, additional data fields may be built into the database such as Average Daily Traffic Volumes, traffic speeds, street widths, pavement conditions, etc.

Count Periods

Bicyclist and pedestrian counts can be conducted during each season of the year: fall, spring, summer and winter. However, counts during the winter months are often avoided due to poor weather conditions and extended holiday-related vacations. The second week in September is the official annual National Bicycle and Pedestrian Count and survey week. Counts are also conducted optionally for the National Bicycle and Pedestrian Count program during the second week of January, the second week of May, and the first week of July.

Prior to conducting counts, school districts and/or institutions within each jurisdiction should be contacted to verify when schools will be in session to avoid spring and winter breaks and special school events. Counts at locations that are not near schools can be accurately conducted during the summer months. In Napa, summertime conditions typically represent peak travel volumes. It should be noted that counting periods should be as condensed as much as possible to ensure the most consistent conditions.

Counts should be conducted during non-holiday weeks on Tuesdays, Wednesdays or Thursdays and the Saturdays preceding or following the count week. If counts must be conducted during holiday weeks, the actual holiday day should be avoided, and the Tuesday after Monday holidays and the Thursday before Friday holidays should also be avoided.

Counts should be conducted during standard peak commute hours. Typically, the weekday morning peak occurs between 7:00 and 9:00 AM, the weekday evening peak occurs between 4:00 and 6:00 PM, and the weekend midday peak occurs on Saturdays between 12:00 noon and 2:00 PM. Time periods may be adjusted to account for local considerations, and supplementary counts may be conducted to capture specific activities, such as school commutes.

Recommendation: It is recommended that bicycle counts conducted throughout the Plan area be consistent with MTC's guidelines and conducted in accordance with the National Bicycle and Pedestrian Documentation Project so that they may be coordinated with regional and national databases.

MTC Count Forms

BICYCLE-PEDESTRIAN COUNT INTERSECTION PROFILE

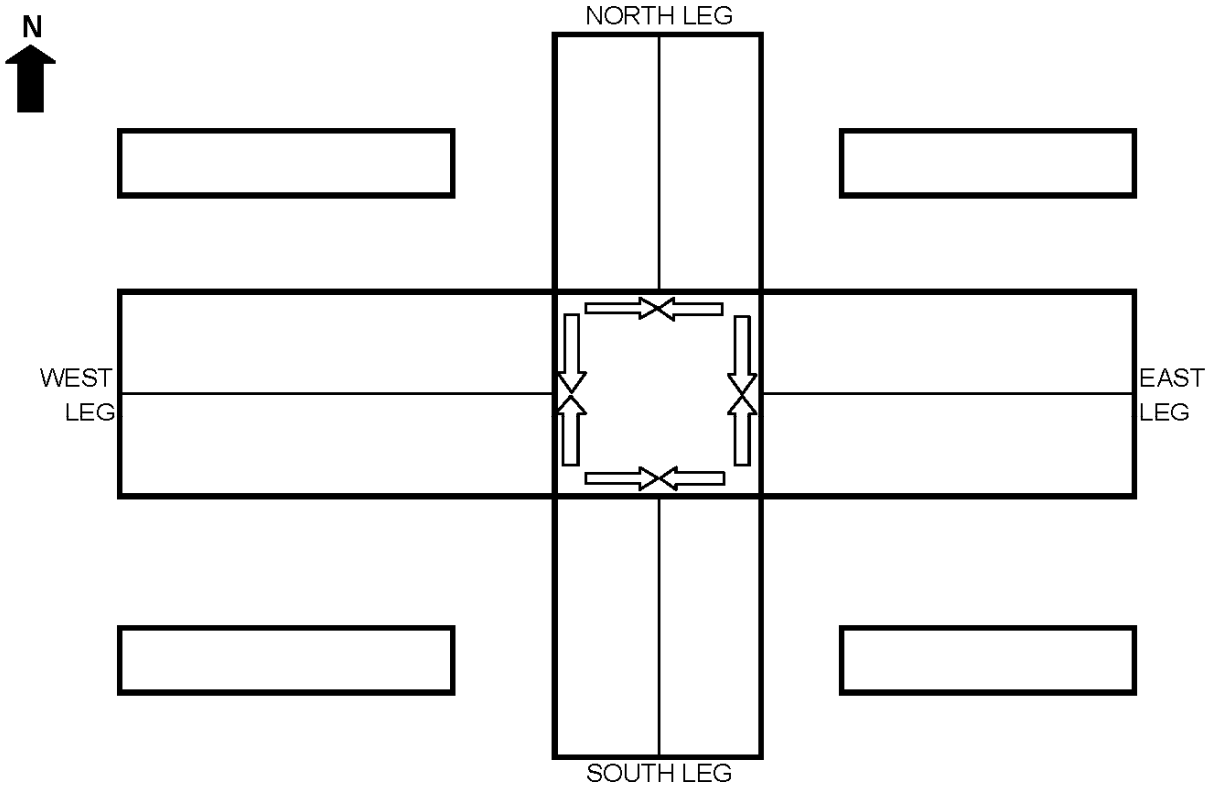
DATE: _____ **NAME:** _____

INT #: _____

N/S STREET: _____

E/W STREET: _____

CITY: _____ **COUNTY:** _____



NOTE: Include names of residential or commercial buildings or land uses in boxes

MTC Count Forms

PAGE TWO - INTERSECTION PROFILE

INT #: _____

	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
PHYSICAL FEATURES	YES-#	NO	YES-#	NO	YES #	NO	YES-#	NO
SIDEWALKS								
CROSSWALKS								
BIKE LANES								
RAISED MEDIAN								
RAISED MEDIAN-WHEELCHAIR RAMP								
PAINTED MEDIAN								
CURB CUTS								
INTERSECTION CONTROLS	YES-#	NO	YES-#	NO	YES #	NO	YES-#	NO
STOP SIGNS								
SIGNALS								
LANE CONFIGURATION-PHASING	YES-#	NO	YES-#	NO	YES #	NO	YES-#	NO
DEDICATED LEFT TURN LANE								
PROTECTED LEFT TURN SIGNAL								
DEDICATED RIGHT TURN LANE								
PROTECTED RIGHT TURN SIGNAL								
SHARED LANES (T-L, T-R OR L-T-R)								
# OF EXCLUSIVE THRU LANES								
TOTAL NUMBER OF LANES								
PEDESTRIAN/BICYCLE SIGNALS	YES-#	NO	YES-#	NO	YES #	NO	YES-#	NO
WALK/DON'T WALK								
PEDESTRIAN SYMBOLS								
PEDESTRIAN SCRAMBLE								
PEDESTRIAN COUNTDOWN								
AUDIBLE SIGNAL (NON COUNTDOWN								
ADA PUSH BUTTON (LARGER)								
NON ADA PUSH BUTTON								
BICYCLE PUSH BUTTON								

TRAFFIC RESEARCH & ANALYSIS, INC.

BICYCLE-PEDESTRIAN COUNT SUMMARY

DATE: **NAME:** **INT #:** **N/S STREET:**

COUNTY: **CITY:** **E/W STREET:**

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	PED.	BICYCLE	PED.	BICYCLE	PED.	BICYCLE	PED.	BICYCLE
7:00								
7:15								
7:30								
7:45								
8:00								
8:15								
8:30								
8:45								
A/M TOTAL								
4:00								
4:15								
4:30								
4:45								
5:00								
5:15								
5:30								
5:45								
P/M TOTAL								
2:00								
2:15								
2:30								
2:45								
3:00								
3:15								
3:30								
3:45								
MID TOTAL								

MTC Count Forms

STANDARD SCREENLINE COUNT FORM

Name: _____ Location: _____

Date: _____ Start Time: _____ End Time: _____

Weather: _____

Please fill in your name, count location, date, time period, and weather conditions (fair, rainy, very cold). Count all bicyclists and pedestrians crossing your screen line under the appropriate categories.

- Count for two hours in 15 minute increments.
- Count bicyclists who ride on the sidewalk.
- Count the number of people on the bicycle, not the number of bicycles.
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- People using equipment such as skateboards or rollerblades should be included in the "Other" category.

	Bicycles		Pedestrians		Others
	Female	Male	Female	Male	
00-:15					
15-:30					
30-:45					
45-1:00					
1:00-1:15					
1:15-1:30					
1:30-1:45					
1:45-2:00					
Total					

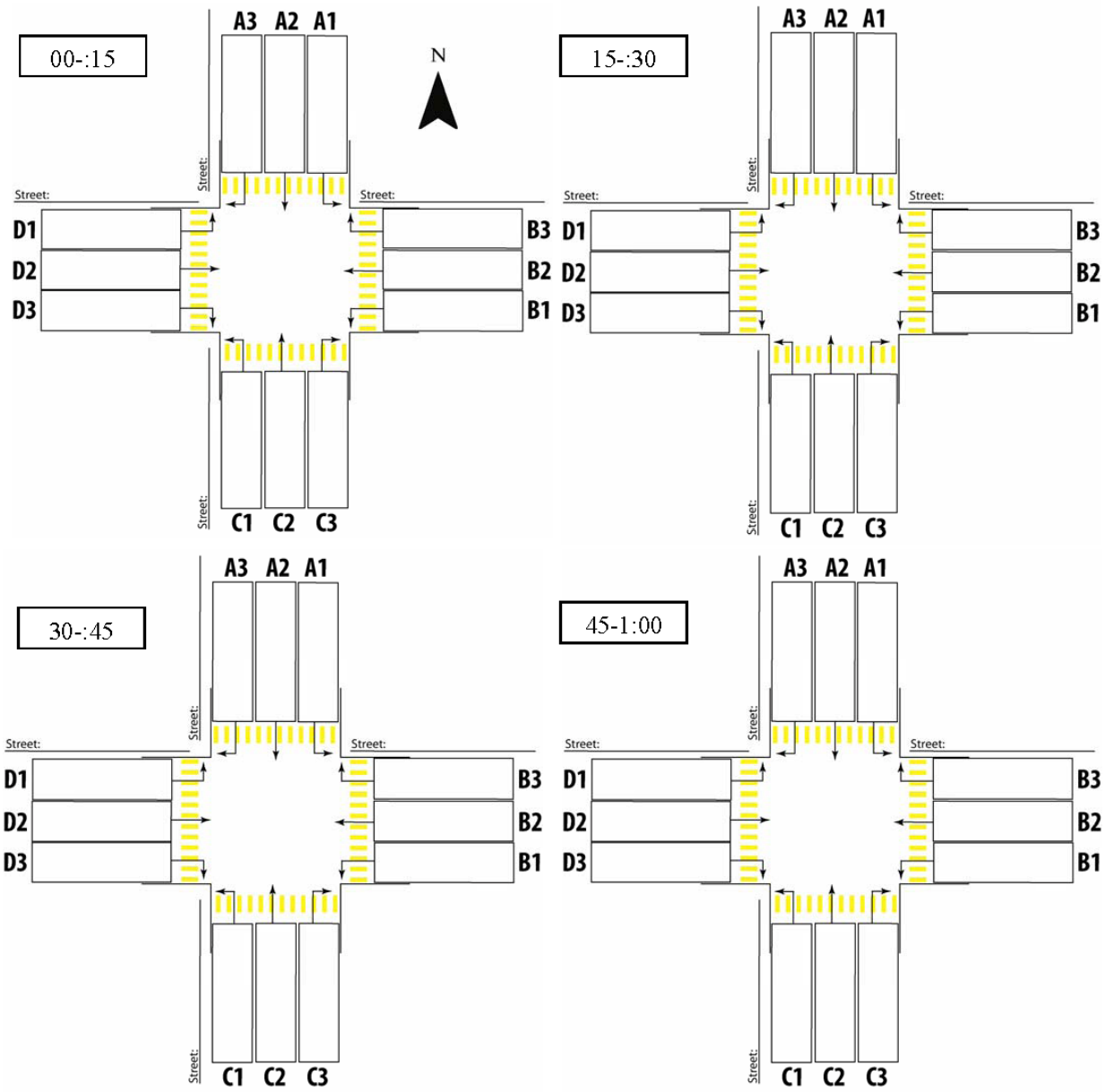
STANDARD BICYCLE INTERSECTION COUNT FORM

Name: _____ Location: _____

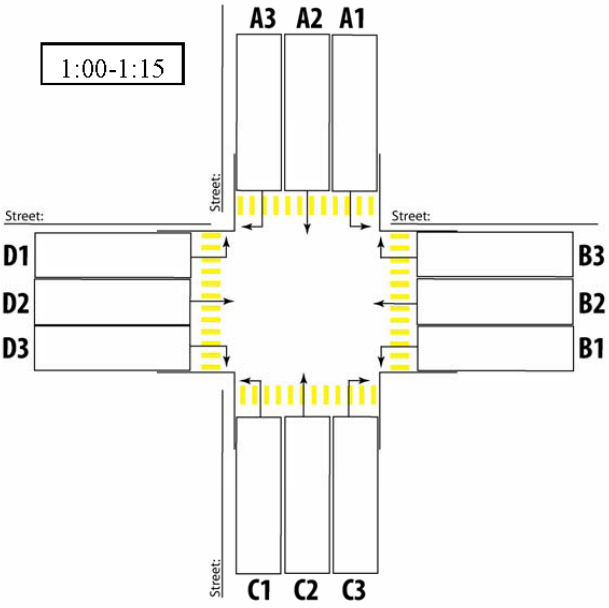
Date: _____ Start Time: _____ End Time: _____
Weather: _____

Please fill in your name, count location, date, time period, and weather conditions (fair, rainy, very cold). Count all bicyclists crossing through the intersection under the appropriate categories.

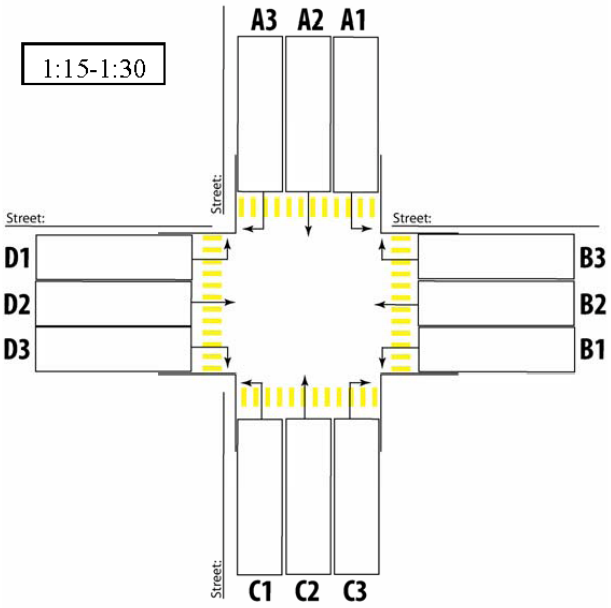
- Count for two hours in 15-minute increments.
- Count bicyclists who ride on the sidewalk.
- Count the number of people on the bicycle, not the number of bicycles.
- Use one intersection graphic per 15-minute interval.



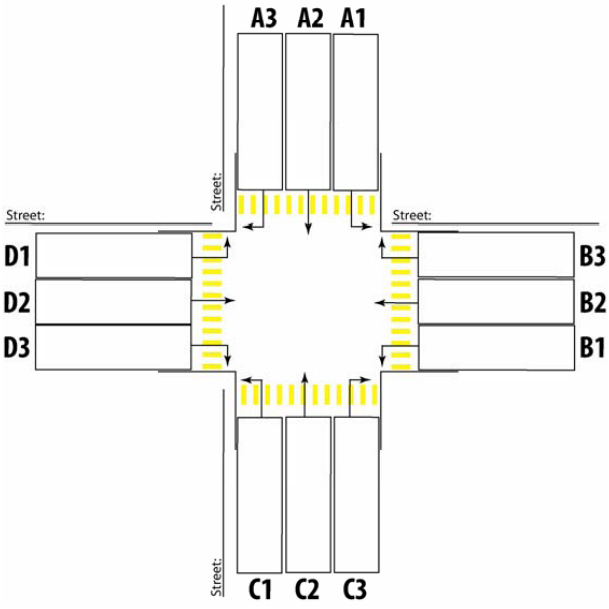
1:00-1:15



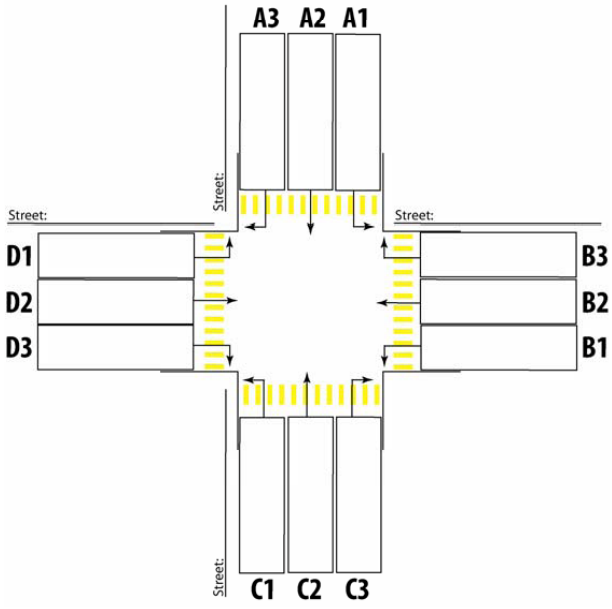
1:15-1:30



1:30-1:45



1:45-2:00



Notes:

STANDARD BICYCLE INTERSECTION COUNT TALLY SHEET

	Bicycle Counts											
Time Period	Leaving Leg A			Leaving Leg B			Leaving Leg C			Leaving Leg D		
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
00-:15												
15-:30												
30-:45												
45-1:00												
1:00-1:15												
1:15-1:30												
1:30-1:45												
1:45-2:00												
Total												
Total Leg:												
Street Name A to C:										Location 1 (Total Leg A + Total Leg C) =		
Street Name B to D:										Location 2 (Total Leg B + Total Leg D) =		

Appendix G

Napa Bicycle Parking Facilities – Existing Bike Racks Inventory (Field Survey June 2010)

Napa Bicycle Parking Facilities – Existing Bike Racks Inventory (Field Survey June 2010)

Land Use Type	Name	Address	Location of Bike Racks	Type of Rack	Size	Notes
Schools						
Public Elementary School	Alta Heights Elementary	15 Montecito Blvd at East Ave			17	
Public Elementary School	Bel Aire Elementary	3580 Beckworth near El Capitan	behind library and in main entrance/picnic courtyard	Traditional	20	
Public Elementary School	Browns Valley Elementary	1001 Buhman Rd at Browns Valley	E/front of school facing street & parking lot, screened	Traditional	27+	
Public Elementary School	El Centro Elementary	1480 El Centro at Moss Court	in paved area southeast corner of school facing st.	traditional	33	
Public Elementary School	McPherson Elementary	2670 Yajome at Pueblo	interior court by picnic tables & room 3	loops and trad	5 (X2) + 18	
Public Elementary School	Napa Valley Language Academy	2700 Kilburn St at Cornwall	behind main entry to left and right	trad and low	27 + 6	
Public Elementary School	Northwood Elementary	2214 Berks ay Oxford	NONE apparent		18	
Public Elementary School	Phillips Charter Elementary	1210 Shetler at Shurtleff	not surveyed; info from school		25	
Public Elementary School	Pueblo Vista Elementary	1600 Barbara Rd at Linda Vista	south corner next to parking low & playground	traditional	30	
Public Elementary School	Salvador Elementary	1850 Salvador at SR 29	not surveyed; info from school		18	
Public Elementary School	Shearer Charter Elementary	1590 Elm at Franklin	by room 20, NE corner playground; not visible from street	traditional	24	
Public Elementary School	Snow Elementary	1130 Foster Rd	NONE apparent			
Public Elementary School	West Park Elementary	2315 West Park at Linda Vista	behind Linda Vista portables	low racks	18	
Private Elementary School	Blue Oak Elementary	1436 Polk at Seminary	east side of building facing Pearl St; rear entrance	loops	3 (6 bikes)	
Private Elementary School	St. Johns Catholic Elementary	960 Caymus	NONE apparent			
Private Elementary School	St. Johns Lutheran	3521 Linda Vista	NONE apparent			
Private Elementary School	St. Appolinarias Catholic	3700 Lassen	north side of office in central entrance plaza	Traditional	18	
Private Elementary School	St. Appolinarias Catholic	3700 Lassen	southern end of campus by basketball courts	traditional	18	
Middle School	Redwood Middle School	3600 Oxford at Redwood	enclosure at front entrance, new	5-4 loops X 4	80	both sides avail
Middle School	Silverado Middle School	1133 Coombsville Rd at Jacks Ln	not surveyed; info from school		35	
Private K-12 school	Napa Christian	south side Pine at Seymour	front facing to west of entrance	trad	6	
High School	Napa High	2475 Jefferson at Lincoln	adult school entrance & inside main entrance courtyard	trad + trad	9 + 78	None by admin
High School	New Technology High	920 Yount at Yajome	under construction summer 2010			
High School	Vintage High	1375 Trower at Jefferson	new main entrance plaza	loops	16 (32 bikes)	
Private High School	Justin Siena	4026 Maher at Trower	north side of main entrance inside fence	low racks	8	
Private High School	Valley Oak Cont. High	Marin at Myrtle	at entrance facing street	traditional	18	
Adult School, Middle, & High	Napa Adult, River & Temescal	2447 Old Sonoma Rd at Freeway Dr	in chain link enclosure at SW end of lrg campus	trad, low and other	74	4 "Bike rack/
Community College	Napa Valley College	west side 2277 Napa Valley Hwy so/of Imola	east side of building by new library entrance	freestanding loops	10	Bike locker"
Community College	Napa Valley College	west side 2277 Napa Valley Hwy so/of Imola	south side by entrance of old library	loops	3 (6 bikes)	locations
Community College	Napa Valley College	west side 2277 Napa Valley Hwy so/of Imola	east side building 1400	loops	2 (4 bikes)	planned &
Community College	Napa Valley College	west side 2277 Napa Valley Hwy so/of Imola	north side of building 900	traditional	4	on campus map
Community College	Napa Valley College	west side 2277 Napa Valley Hwy so/of Imola	south and south east corner of tennis courts	loops	1 + 6 (14 bikes)	
Community College	Napa Valley College	west side 2277 Napa Valley Hwy so/of Imola	west side new gym (#400)	loops	5 (10 bikes)	
Community College	Napa Valley College	west side 2277 Napa Valley Hwy so/of Imola	west side performing arts building	loops	5 (10 bikes)	

Napa Bicycle Parking Facilities – Existing Bike Racks Inventory (Field Survey June 2010)

Land Use Type	Name	Address	Location of Bike Racks	Type of Rack	Size	Notes
Parks						
Neighborhood Park	Aburzzini	Haven Way east of Autumn Run	NONE			
Citywide Park	Alston	Dry Creek Rd – Trower to Wine County Rd	NONE			
Neighborhood Park	Buhman	East side Buhman at Browns Valley	NONE		0	
Neighborhood Park	Camille	Cayetano & Shurtleff	NONE			
Community Park	Century Oaks	North side Partrick w/o BV Rd "Y"	NONE			rack proposed
Neighborhood Park	Dry Creek	Dry Creek Rd north of Patricia	NONE			rack proposed
Neighborhood Park	Esther Deaver	East at Ora Drive	NONE		2	
Neighborhood Park	Fairview	east end of Fairview Drive			1	
Park	Fantastico	south side of Old Sonoma Rd w/o 29	by rest rooms at entrance	loops	4 (8 bikes)	
Community Park	Fuller	Jefferson between Oak @ Laurel	NONE			rack proposed
Community Park	Garfield	west end of Garfield Lane	NONE			rack proposed
Mini park (Downtown)	Heritage	Pearl @ Napa Creek	NONE			Flood impr will
Citywide Park	Jefferson	south end of Jefferson	NONE CURRENTLY BUT PARK NOT DEV.			
Citywide Park	Kennedy	Along Streblow Drive	east of rest rooms by main playground	loops	3 (6 bikes)	add rack proposed
Neighborhood Park	Kiwanis	Coombs @ Elm	NONE			rack proposed
Neighborhood Park	Klamath	Klamath Way @ Trower	NONE			
Neighborhood Park	Lake	Lakepark Drive	NONE			
Park	Lakeview	?	NONE			
Community Park	Las Flores Comm. Center & Park	Linda Vista between Culpepper & Las Flores	just south of main entrance	low racks	8	
Neighborhood Park	Laurel Hills	Laurel north of Griggs Way	NONE			
Neighborhood Park	Monarch	Paulson Way	NONE			
Neighborhood Park	O'Brien	Pueblo @ Azalea	NONE			rack proposed
Civic Place	Opera House Plaza Downtown	north of 1st near Main (Downtown)	east of garbage enclosure, screened near 1st St	loops	3 (6 bikes)	
Open Space Citywide Park	Oxbow	Silverado Trail west of MacKenzie	?			
Neighborhood Park	Riverside	Riverside @ Pine and Cross St	NONE			
Neighborhood Park	Shurtleff	Shetler west of Russell	NONE			
citywide place	Skate Park (Downtown)	Yajome tw Clinton & Pearl (Downtown)	mid block facing West St	loops	3 (6 bikes)	
Neighborhood Park	Solomon	Solomon Ave @ Martin	NONE			
Neighborhood Park	Springwood	Mosswood @ Moffit	NONE			
Neighborhood Park	Summerfield	Summerfield Dr @ Sparrow	NONE			
hillside open space	Sunrise	Scenic @ Westwiew	NONE			
Neighborhood Park	Sutherland	Baywood @ Sutherland	NONE			
Mini park	Tallac		NONE			
Citywide Park (Undeveloped)	Timberhill	end of Timberhill Lane	NONE but park undeveloped			

Napa Bicycle Parking Facilities – Existing Bike Racks Inventory (Field Survey June 2010)

Land Use Type	Name	Address	Location of Bike Racks	Type of Rack	Size	Notes
"Citywide Civic area"	Veterans Park (Downtown)	Main St at 3rd St	Near 3rd St & Main St by stairs up from River Trail	Loops	2 (4 bikes)	
"Citywide Civic area"	Veterans Park (Downtown)	Main St at 2nd St	On Main near 2nd St	loops	2 (4 bikes)	
Neighborhood Park	Vinehill	Vine Hill Drive at Chablis	NONE			
Neighborhood Park	Vineyard	end of Young St	NONE			
Citywide Park	Westwood Hills	Browns Valley Rd west of Robinson	NONE		0	
Other Land Uses						
Club	Boys & Girls Club	1501 Pueblo	in back parking lot	Traditional	23	not a used area
Shopping Center	Browns Valley Market	3623 Browns Valley Rd	4 front of market and 1 in sidewalk to restaurant	concrete bases only	0	
Shopping Center	Downtown Safeway	1620 Clay at Jefferson	front of building facing Jefferson, S of entry	Loops	3 (6 bikes)	
Shopping Center	Factory Outlet	Freeway Drive south of 1st St	front of building facing parking, NW area (T Hilf)	Traditional	3	
Shopping Center	Factory Outlet	(Factory Stores Drive)	front of building facing parking, central W area (Cole Hahn)	Traditional	4	
Shopping Center	Factory Outlet	(Factory Stores Drive)	front of building facing parking, central E area (Liz C)	Traditional	4	
Shopping Center	Factory Outlet	(Factory Stores Drive)	front of building, north east area (C Klein)	Traditional	4	
Shopping Center	Redwood Plaza	3385 Solano at Redwood	facing Solano, side of Round Table, S end of center	loops	4 (8 bikes)	
Shopping Center	Redwood Plaza	3385 Solano at Redwood	so/of Vallergas in plaza facing parking lot	loops	4 (8 bikes)	
Shopping Center	Bel Aire Plaza	north side Trancas at 29 (east of 29)	south side of Target west of entrance	circle on pole	1 (2 bikes)	
Shopping Center	Bel Aire Plaza	(Bel Aire Plaza addresses)	east side of Target, north and south of entrance	circle on pole	2 (4 bikes)	
Shopping Center	Bel Aire Plaza	(Bel Aire Plaza addresses)	south side Cost Plus west of door (hidden)	circle on pole	1 (2 bikes)	
Shopping Center	Bel Aire Plaza	(Bel Aire Plaza addresses)	east of Petsmart by main drive	circle on pole	1 (2 bikes)	
Shopping Center	Bel Aire Plaza	(Bel Aire Plaza addresses)	in front of barber shop between W.Food & TJ's	circle on pole	2 (4 bikes)	
Shopping Center	Bel Aire Plaza	(Bel Aire Plaza addresses)	in north (Closed) entrance to Whole Foods	loops	3 (6 bikes)	all in use eve
Shopping Center	CVS Lucky's	1312 Trancas at Jefferson	NONE			
Shopping Center	Trancas Safeway (Ross, Staples)	3375 Jefferson at Trancas south side	W side of Safeway so/of pillar, part hidden facing st.	loops	4 (8 bikes)	
Shopping Center-small	Pueblo Plaza	southwest corner, Pueblo at Lincoln	NONE			
Shopping Center-small	Jefferson? -McDonalds, Curves	3220 Jefferson	in front of Curves	concrete bases only	4	
Medical Facility	Kaiser	3285 Claremont at Permanente Way	at east entrance of older building	circle on pole	1 (2 bikes)	0 bikes using
Medical Facility	Kaiser	3285 Claremont at Permanente Way	by west entrance to older building	low rack	6	0 by new bldg
Public building	Post Office	South side Trancas at end of Baxter Way	NONE			
Hospital	Queen of the Valley	1000 Trancas	west of main hospital entrance	trad + low racks	5 trad+ 4	signed!
Hospital	Queen of the Valley	1000 Trancas	rear of new outpatient surgery	loops	5 (10 bikes)	0 @ other entr
Hospital	Queen of the Valley	1000 Trancas	in interior shaded courtyard near cafeteria	Traditional	9	3 bikes using
Fitness Center	QVH Fitness Center	Trancas at Villa, northwest	northeast corner of building near entrance	loops	3 (6 bikes)	
Shopping Center (small)	Photo Pro, Thai Rest…	1258 Trancas near Jefferson, north side	NONE			
Large Office Center	Five Financial Plaza	Trancas at Soscol, southwest corner	NONE			
Shopping Center	Silverado Plaza	611 Trancas at Soscol, southeast covern	interior corner by food/plaza	low racks	8	

Napa Bicycle Parking Facilities – Existing Bike Racks Inventory (Field Survey June 2010)

Land Use Type	Name	Address	Location of Bike Racks	Type of Rack	Size	Notes
Shopping Center	Silverado Plaza	611 Trancas at Soscol, southeast covern	west end of Nob Hill away from entrances	Traditional	3	
Shopping Center	Hollywood Video	705 Lincoln at Soscol (southwest)	front of round table pizza, southeast end of center	Traditional	3	
Shopping Center	Wal Mart	681 Lincoln at Soscol (southeast)	far W & E of entrance behind cart enclosures	Traditional	28	
Shopping Center	Oxbow Public Market	644 1st St & McKinstry (no/east side)	facing McKinstry near Model Bakery	Traditional	9	
Shopping Center	Oxbow Public Market	644 1st St & McKinstry (no/east side)	east side of Oxbow Market	Traditional	5	
Shopping Center	Oxbow Public Market	644 1st St & McKinstry (no/east side)	northeast corner by eating patio	loops	4 (8 bikes)	
Shopping Center	Lucky's, etc	2355 California at Lincoln	south side building around corner fr entrance	loops	6 (12 bikes)	1 bike near entr
Shopping Center	Lucky's, etc	2355 California at Lincoln	north side building around corner fr entrance	loops	8 (16 bikes	no bikes using;
Shopping Center	River Park	1433 Imola at Jefferson	NONE			
Shopping Center	South Napa Marketplace	225 Soscol at Imola	north side of Togo's by entrance	loops	1 (2 bikes)	
Shopping Center	South Napa Marketplace	225 Soscol at Imola	east side of KFC entrance	loops	3 (6 bikes)	
Shopping Center	South Napa Marketplace	225 Soscol at Imola	near Home Depot entrance	loops	5 (10 bikes)	
Shopping Center	South Napa Marketplace	225 Soscol at Imola	Near Raley's entrance	loops	5 (10 bikes)	3 used
Shopping Center	South Napa Marketplace	225 Soscol at Imola	Near Office Depot entrance	loops	6 (12 bikes)	
Shopping Center	South Napa Marketplace	225 Soscol at Imola	Near Target entrance	loops	5 (10 bikes)	
Fast food	Taco Bell	3177 Jefferson south of Claremont	north side of building by entrance	loops	3 (6 bikes)	
County buildings	County Health Complex	2261 Elm (Old Sonoma Rd west of Gesford)	behind and between buildings A & B	loops	3 (6 bikes)	
County buildings	County Health Complex	2261 Elm (Old Sonoma Rd west of Gesford)	north west and east sides of building F	Loops	4 (8 bikes)	
County buildings	County Health Complex	2261 Elm (Old Sonoma Rd west of Gesford)	between buildings C and E facing O.S. Rd	loops	6 (12 bikes)	
County building	New Juvenile Hall	212 Walnut north of Old Sonoma Rd	3 separate racks facing O.S. Rd by front entrances	loops	9 (18 bikes)	
Church & school	First Christian Church	1st St e/o Bancroft Ct.	NONE (randomly surveyed)			
Retail	7 - 11 convenience store	1st St at Matt	NONE (randomly surveyed)			
Downtown Area Except Parks						
Teen Center	Wolfe Center	2310 1st St at Monroe	Mid block facing Monroe	loops	6 (for 12 bikes)	
City building	Community Services Building	1600 1st St Downtown	Lockers in rear; loops at front entrance	Lockers and Loops	8 and 3 (for 6)	
Health Club	Exertec	1500 1st St Downtown	front of Exertec facing Clay St	Traditional	6	all in use
Hotel	Avia Hotel	1450 1st St at Franklin Downtown	facing Franklin near 1st	loops	2 (4 bikes)	
City Hall	City Hall	955 School St Downtown	corner 1st St & School St	Loops	2 (4 bikes)	
City Building	Personnel Department	1541 2nd near Church St. Downtown	west of front entrance	Circles on pole	2 (4 bikes)	
Church	First Presbyterian Church	1333 3rd at Randolph Downtown	side of building, mid block between Randolph/Franklin	Traditional	8	
Commercial building	CP Thrift Shop	715 Franklin at 4th St Downtown	mid block facing Franklin	Loops	4 (8 bikes)	
Public Building	NCTPA	707 Randolph at 4th St Downtown	facing 4th St	Loop	1 (2 bikes)	
Church	Methodist Church	625 Randolph at 4th St	facing 4th St	loops	3 (6 bikes)	
Public Building	City County Library	580 Coombs south of 5th St Downtown	facing Coombs north of entrance stairs	loops	4 (8 bikes)	
Commercial complex	Napa Mill	500 Main south of 5th St Downtown	east end of Main (by restaurant and in river plaza	loops	5 + 2 (10 bikes)	

Napa Bicycle Parking Facilities – Existing Bike Racks Inventory (Field Survey June 2010)

Land Use Type	Name	Address	Location of Bike Racks	Type of Rack	Size	Notes
Commercial complex	Riverfront	400 Main Downtown	south east corner facing river & front of bike shop	loops & trad.	2 (4 bikes) + 10	
County building	Administration superblock	1195 3rd at Coombs Downtown	6 loops facing Main St (northeast corner new garage;	loops	6 (12 bikes)	
County building	Administration superblock	1195 3rd at Coombs Downtown	16 lockers & 4 lockers & 2 Loops in courtyard	Lockers and Loops	20 + 2 (4 bikes)	
County building	Administration superblock	1195 3rd at Coombs Downtown	traditional rack by west side jail entrance	traditional	8	
County building	Courthouse block	825 Brown north of 3rd Downtown	Brown St mid block behind landscaping	2 low racks	2 (4 bikes)	
Parking Lot	Entrance to River Trail	Main tw 1st & 2nd Downtown	Facing parking lot, Main St at River Trail entrance	loops	2 (4 bikes)	
Sidewalk	First and Main	1st and Main Downtown	southeast corner 1st/Main facing 1st	loops	1 (2 bikes)	
Creekside	end of West St, north side creek	Main tw 1st & Pearl Downtown	just south & east of Cole's Rest. Patio by creek	loops	2 (4 bikes)	
City building	Parks Department	1100 West St south of Pearl Downtown	by entrance to building	loops	2 (4 bikes)	
near Cinema	Cine Dome	825 Pearl tw West & Yajome Downtown	end of Yajome St, west side Downtown	loops	2 (4 bikes)	
retail/office building	Main St West	Clinton St tw Main & West Downtown	sidewalk mid block-West tw Clinton & Pearl	loops	2 (4 bikes)	
temporary transit center	transit center -temporary	Pearl west of Napa Creek Downtown	east of temp. transit center building	broken, low profile	3 (useless, broken)	
Sidewalk	near Miyamo's store	1128 1st St betweem Coombs & Randolph	north side mid block			
Sidewalk		2nd St between Coombs & Randolph	north side mid block			
Sidewalk		Coombs St	North of city parking garage	loop	1 (2 bikes)	
Sidewalk		1st St @ Randolph, southwest corner	by entrance to Fine Art shop	loop	1 (2 bikes)	
Sidewalk		1st St @ Franklin	near & east of Town Center entrance	loop	1 (2 bikes)	
sidewalk		Clay St at Randolph	south side (back of Gilwoods)	Bicycle style	1 (2 bikes)	
Shopping Center	Napa Town Center Downtown	No side 1st St between Franklin & Main	Brown St. ROW east of Zins Valley Rest	loops	2 (4 bikes)	
Shopping Center	Napa Town Center Downtown	No side 1st St between Franklin & Main	Coombs St. ROW no. of Kohl's Store	loops	3 (6 bikes)	
Shopping Center	Napa Town Center Downtown	No side 1st St between Franklin & Main	Coombs St. ROW no. of 1st St	loops	3 (6 bikes)	
Shopping Center	Downtown Safeway	1620 Clay at Jefferson	front of building facing Jefferson, so. of entry	triangle shapes	4	

Notes: "loop" = upside down "U" or horizontal "S" (assumed 2 bikes could use each loop, as noted); traditional = rectangle with vertical slots; bicycle style = bike appearance

Appendix H

Project Ranking Matrix

Route_No	EW NS	Corridor/Street	Beginning Point	Ending Point	Class	Length (Miles)	Local Route	Primary Route	SF Bay Area Route	Recreational/ Commute	Cost Estimate	Land Use	Demand	Technical Difficulty	Non-Technical Difficulty	Overcomes Barriers/ Connectivity Issues	Public Input	Priority Score	Priority Rank
12-NC	EW	Bay Trail Connector - Stanly Ln to Napa River	Stanly Crossroad	Napa River	Class I Multi Use Path	0.72	No	Yes	Yes	R	$398,711	1	2	2	2	2	3	12	Medium
27-NC-SPUR	NS	Behrens St Pathway Connector	Beginning of Behrens St	Seminary St at Vallejo St	Class I Multi Use Path	0.05	Yes	No	No	C	$28,229	1	1	2	2	1	3	10	Low
16-NC-ALT	EW	Downtown Path along Napa Creek/Herritage Park	Coombs St	Main St	Class I Multi Use Path	0.12	Yes	No	No	C	$66,655	2	2	1	2	2	4	13	Medium
29-NC-SPUR	EW	Fairview Dr Pathway Connector	Aguire Wy	Terrace Dr	Class I Multi Use Path	0.15	Yes	No	No	R	$84,244	0	0	2	1	1	2	6	Low
25-NC-31-NC-CONN	EW	Napa Creek Path / SR 29 Underpass	Coffield Ave/1st Street	California Blvd	Class I Multi Use Path	0.20	Yes	Yes	No	C	$112,605	3	3	0	3	3	5	17	High
7-NC-SPUR	NS	Napa Creek, Pearl St	SR 221 (Soscol Ave), Oxbow Commons	Existing Class I Facility 250' NW of 1st St	Class I Multi Use Path	0.07	Yes	No	No	C	$36,458	2	2	2	2	2	4	14	Medium
27-NC-ALT	NS	Napa River Promenade (1st Street Connector)	Veterans Park	Opera House	Class I Multi Use Path	0.05	Yes	No	No	R / C	$27,658	1	2	2	2	2	4	13	Medium
1-NC-5-NC-CONN	EW	Napa River Trail	SR 29	Napa Valley Corporate Dr	Class I Multi Use Path	0.51	Yes	Yes	No	R / C	$278,926	1	2	2	2	2	3	12	Medium
7-NC-17-NC-NPA-ALT	EW	Napa River Trail	Existing class I facility at River Terrace	Existing class I facility at Oxbow	Class I Multi Use Path	0.10	Yes	No	No	C	$53,471	2	2	2	2	2	4	14	Medium
7-NC-17-NC-NPA-ALT	NS	Napa River Trail	Existing class I facility at Clinton Road Extension	Existing class I facility at Oxbow	Class I Multi Use Path	0.13	Yes	No	No	R / C	$72,461	2	2	2	2	2	4	14	Medium
1-NC	EW	Napa River Trail	Napa city limit (Adjacent to Kaiser Road)	Existing Bay Trail at south end of Kennedy Park	Class I Multi Use Path	0.16	No	Yes	Yes	R / C	$86,837	1	2	2	2	2	4	13	Medium
7-NC-17-NC-NPA-ALT	NS	Napa River Trail (crossing)	3rd St adjacent to Burnell St	Proposed class I bridge over Napa River	Class I Multi Use Path	0.08	Yes	No	No	C	$41,469	2	2	1	3	3	5	16	High
1-NC-ALT	NS	Napa River Trail (East side of UP Tracks)	Proposed Tulucay Creek Trail	Oil Company Rd	Class I Multi Use Path	0.41	Yes	No	No	C / R	$225,073	1	2	2	2	2	3	12	Medium
18-NC-SPUR	NS	Napa River Trail (Loop around Trancas Crossing Park)	Trancas St	Trancas St	Class I Multi Use Path	0.85	Yes	No	No	R	$467,781	1	2	3	2	2	4	14	Medium
7-NC-17-NC-NPA-ALT	EW	Napa River Trail (West Side of River)	Water St (Around bend connecting to Copia)	1st St	Class I Multi Use Path	0.28	Yes	No	No	C / R	$151,734	2	2	2	3	2	4	15	Medium
27-NC-ALT	NS	Napa River Trail (West Side of River)	Coombs St at Imola Ave	Coombs St at Imola Ave	Class I Multi Use Path	1.10	Yes	Yes	No	C	$603,080	2	3	2	3	3	5	18	High
7-NC-17-NC-NPA-ALT	NS	Napa River Trail (West Side of River)	Just north of River Terrace Wy at proposed class I facility	Lincoln Ave	Class I Multi Use Path	0.42	Yes	No	No	C	$229,465	2	3	1	3	2	5	16	High
1-NC-SPUR	NS	Napa River Trail / Bay Trail /Anselmo Ct Loop	Napa River Bay Trail	Napa River Bay Trail	Class I Multi Use Path	0.34	No	Yes	Yes	C	$185,694	1	2	2	2	2	4	13	Medium
7-NC-17-NC-NPA-ALT	NS	Napa River Trial (East Side of River)	Existing class I facility at Park Loop	1st St	Class I Multi Use Path	0.23	Yes	No	No	C	$124,821	2	2	2	2	2	4	14	Medium
17-NC	NS	Napa Valley College Path along Roy Patrick Dr	College Wy, Magnolia Dr	Imola Ave	Class I Multi Use Path	0.16	Yes	No	No	C	$87,369	2	2	2	2	2	3	13	Medium
7-NC-17-NC-NPA-ALT	NS	Oxbow Commons Bypass Channel	Napa River	Soscol Ave	Class I Multi Use Path	0.17	Yes	No	No	C	$94,818	2	2	2	2	2	4	14	Medium
7-NC-17-NC-ALT-CONN	EW	Oxbow Commons Bypass Channel	Bay Trail, Near Napa River	Oxbow Commons	Class I Multi Use Path	0.02	Yes	No	No	R / C	$9,359	2	2	2	2	2	4	14	Medium
27-NC-ALT	NS	Oxbow Commons Bypass Trail	West St	Soscol Ave	Class I Multi Use Path	0.09	Yes	No	No	R / C	$49,457	2	2	2	2	2	4	14	Medium
27-NC-ALT	NS	Oxbow Commons Bypass Trail	Division St	Main St	Class I Multi Use Path	0.04	Yes	No	No	R / C	$23,437	2	2	2	2	2	4	14	Medium
16-NC-ALT	EW	Oxbow Commons Path	West St	Proposed Vine Trail along Soscol Ave	Class I Multi Use Path	0.09	Yes	No	No	R / C	$50,159	2	2	2	2	2	4	14	Medium
7-NC-SPUR	NS	Oxbow Commons, Napa Creek	Oxbow Commons	Proposed Vine Trail	Class I Multi Use Path	0.05	Yes	No	No	R / C	$28,783	2	2	2	2	2	4	14	Medium
7-NC-SPUR	NS	Oxbow Commons, Napa Creek	Oxbow Commons	Existing Class I Facility 250' NW of 1st St	Class I Multi Use Path	0.10	Yes	No	No	R / C	$54,069	2	2	2	2	2	4	14	Medium
1-NC-31-NC-CONN	EW	Salvador Creek Trail	SR 29	Jefferson St	Class I Multi Use Path	0.68	Yes	No	No	C / R	$372,599	3	3	1	2	3	4	16	High
1-NC-15-NC-CONN	EW	Salvador Creek Trail	Maher St	Solano Ave	Class I Multi Use Path	0.23	Yes	No	No	C / R	$129,178	3	3	1	2	3	4	16	High
7-NC-33-NC-CONN	EW	Salvador Creek Trail	Ranch Ln/ Valle Verde Dr	Big Ranch Rd	Class I Multi Use Path	0.23	Yes	No	No	C	$127,296	2	2	3	2	2	3	14	Medium
1-NC	NS	SR 29	Vine Trail/Commuter Bike Path/SR 29 Overpass	Redwood Rd	Class I Multi Use Path	0.11	No	Yes	Yes	C	$61,019	3	3	0	2	3	5	16	Medium
1-NC-7-NC	EW	Tulucay Creek Trail	Vine Trail	Soscol Ave	Class I Multi Use Path	0.36	Yes	No	No	C / R	$198,872	2	2	2	3	2	3	14	Medium
1-NC	NS	Vine Trail (adjacent to Soscol Ave)	Proposed Downtown/Napa Creek Trail	Vallejo St	Class I Multi Use Path	0.26	No	Yes	Yes	C	$144,102	3	3	2	3	3	5	19	High
1-NC	NS	Vine Trail adjacent to Solano Ave/SR 29	Northern Terminus of Commuter Bike Path adjacent to Redwood Rd	Hacienda Dr / Northern City Limit	Class I Multi Use Path	1.75	No	Yes	Yes	C / R	$962,772	3	3	2	3	3	5	19	High
1-NC	NS	Vine Trail along Kaiser Rd	SR 29	RR track north-westward deviation	Class I Multi Use Path	0.28	No	Yes	Yes	C / R	$154,962	1	2	2	3	2	5	15	Medium
1-NC	NS	Vine Trail/Napa River Trail (East side of River adjacent to River St)	Tulucay Creek Path /Napa River Trail/Vine Trai	Proposed Oxbow Commons Path (approx 100' SE of Pearl St)	Class I Multi Use Path	1.11	No	Yes	Yes	C	$608,968	3	3	1	3	3	5	18	High
16-NC-ALT	EW	1st St	Soscol Ave	Vernon St	Class II Bike Lane	0.15	Yes	No	No	C	$13,655	3	3	2	2	2	4	16	High
16-NC-ALT	EW	1st St	Juarez St	Silverado Trail	Class II Bike Lane	0.07	Yes	No	No	C	$5,910	3	3	2	2	2	4	16	High
16-NC	EW	1st St (SR 29 Overpass)	Freeway Dr	California Blvd	Class II Bike Lane	0.36	Yes	Yes	No	C	$31,955	3	3	1	2	3	4	16	High
16-NC	EW	3rd St	Jefferson St	Main St	Class II Bike Lane	0.56	Yes	No	No	C	$50,248	3	3	2	2	3	4	17	High
16-NC	EW	3rd St	Soscol Ave	RR tracks, Lawrence St	Class II Bike Lane	0.05	Yes	No	No	C	$4,050	3	3	1	3	3	5	18	High
31-NC	NS	California Blvd	California Blvd near Pueblo Ave	Trancas St	Class II Bike Lane	0.49	Yes	Yes	No	C	$44,218	2	2	2	2	2	3	13	Medium
16-NC-25-NC	NS	California Blvd, Laurel St, Walnut St	1st St	3rd St	Class II Bike Lane	0.12	Yes	No	No	C	$10,970	2	3	2	3	3	4	17	High
25-NC	NS	Coffield, F St, Solano Ave (SR 29 frontage on west side between Lincoln & 1st)	Proposed class I facility, Coffield Ave	Lincoln Ave	Class II Bike Lane	0.41	Yes	Yes	No	C	$36,894	2	3	2	3	3	4	17	High
27-NC-ALT	NS	Coombs St	Division St	Combs St near Grigsby Ct	Class II Bike Lane	0.41	Yes	No	No	C	$36,663	3	2	2	2	2	3	14	Medium
15-NC	NS	Foster Rd	Hilton Ave	Imola Ave	Class II Bike Lane	0.78	Yes	No	No	C	$69,716	2	1	2	2	2	3	12	Medium
7-NC-17-NC-NPA-ALT	NS	Gasser Dr	Kansas Ave	Oil Company Rd	Class II Bike Lane	0.48	Yes	No	No	C	$42,890	2	1	2	2	1	3	11	Medium
1-NC-17-NC	EW	Gasser Dr	Driveway at Hartle Ct & RR tracks	Gasser Dr	Class II Bike Lane	0.13	Yes	No	No	C	$11,612	2	2	2	2	2	3	13	Medium
31-NC	NS	Jefferson St	El Centro Ave	Darling St	Class II Bike Lane	0.30	Yes	No	No		$27,247	2	2	2	2	2	3	13	Medium
1-SV-5-NC-1-SV-CONN	EW	Kaiser Rd	SR 221	Syar Industrial Wy	Class II Bike Lane	0.19	No	Yes	Yes	C	$28,972	2	2	2	2	2	3	13	Medium

20-NC	EW	Lincoln Ave	California Blvd	Commuter Bike Path - Vine Trail	Class II Bike Lane	0.72	Yes	No	No	C	$64,952	3	3	2	3	3	5	19	High
13-NPA-25-NC-27-NC-CONN	EW	Old Sonoma Rd	SR 29	Harton St	Class II Bike Lane	0.29	Yes	No	No	C	$26,525	3	3	2	2	3	4	17	High
13-NPA-25-NC-27-NC-CONN	EW	Old Sonoma Rd	Old Sonoma Rd turn off	Intersection of Old Sonoma Rd & S Freeway Dr	Class II Bike Lane	0.08	Yes	No	No	C	$6,845	3	3	2	2	3	4	17	High
13-NPA-25-NC-27-NC-CONN	EW	Old Sonoma Rd	West Napa city limit	Foster Rd	Class II Bike Lane	0.28	Yes	No	No	R	$25,377	2	2	2	2	2	4	14	Medium
15-NC-18-NC-JNCT	EW	Redwood Rd	Linda Vista Ave	Dry Creek Rd	Class II Bike Lane	0.49	Yes	Yes	No	C	$44,400	2	3	2	2	3	4	16	High
18-NC	EW	Redwood Rd	Linda Vista Ave	Solano Ave	Class II Bike Lane	0.45	Yes	Yes	No	C	$40,846	3	3	2	3	3	5	19	High
18-NC	EW	Redwood Rd	Pueblo Ave	Dry Creek Rd	Class II Bike Lane	0.08	Yes	No	No	C	$7,539	2	2	2	2	2	3	13	Medium
18-NC	EW	Redwood Rd	Browns Valley Rd	Pueblo Ave	Class II Bike Lane	0.83	Yes	Yes	No	C	$74,990	2	2	3	2	2	3	14	Medium
7-NC-SPUR	EW	River Terrace Wy	Soscol Ave	Napa River Trail	Class II Bike Lane	0.12	Yes	No	No	C	$10,943	1	1	3	2	1	3	11	Medium
17-NC-29-NC-CONN	EW	Saratoga Dr	Silverado Trail	Terrace Dr	Class II Bike Lane	0.30	Yes	No	No	C	$27,218	2	2	2	1	1	3	11	Medium
17-NC	NS	Silverado Trail	Soscol Ave	3rd St	Class II Bike Lane	0.75	Yes	Yes	No	C	$67,931	2	3	2	2	3	4	16	High
17-NC	NS	Silverado Trail	3rd St	Napa city limit	Class II Bike Lane	1.66	Yes	Yes	No	C	$149,381	2	3	2	2	3	4	16	High
17-NC	NS	Silverado Trail	Kansas Ave	Soscol Ave	Class II Bike Lane	0.28	Yes	Yes	No	C	$25,435	2	2	2	2	2	4	14	Medium
7-NC-17-NC-CONN	EW	Sousa Ln, Oll Company Rd	Proposed Vine Trail	Silverado Trail	Class II Bike Lane	0.28	Yes	No	No	C	$24,808	2	1	2	1	1	3	10	Low
7-NC	NS	SR 221	Kaiser Rd	Magnolia Dr	Class II Bike Lane	1.43	No	Yes	Yes	C	$128,947	2	2	3	2	2	4	15	Medium
18-NC	EW	Trancas St	California Blvd	Soscol Ave	Class II Bike Lane	1.15	Yes	No	No	C	$103,236	3	3	1	3	3	5	18	High
24-NC	EW	Trower Ave	Dry Creek	Oxford St	Class II Bike Lane	0.67	Yes	Yes	No	C	$60,193	3	3	2	2	3	4	17	High
24-NC	EW	Trower Ave	Oxford St	Solano Ave	Class II Bike Lane	0.26	Yes	Yes	No	C	$23,011	3	3	2	3	3	5	19	High
33-NC	NS	Villa Ln	Pear Tree Ln	Firefly Ln	Class II Bike Lane	0.46	Yes	No	No	C	$41,460	2	2	2	1	1	3	11	Medium
14-NC-15-NC-CONN	EW	W Imola Ave	Foster Rd	Freeway/Golden Gate DR	Class II Bike Lane	0.19	Yes	No	No	C	$16,820	2	2	3	2	2	3	14	Medium
16-NC-ALT	EW	1st St	Silverado Trail	East Ave	Class III Bike Route	0.22	Yes	No	No	C	$545	3	2	3	3	2	4	17	High
16-NC	EW	3rd St	California Blvd	Jefferson St	Class III Bike Route	0.37	Yes	No	No	C	$924	2	2	3	3	2	4	16	High
27-NC-SPUR	EW	Arroyo Dr	Seminary St	Brown St	Class III Bike Route	0.11	Yes	No	No	C	$275	2	2	3	3	1	3	14	Medium
13-NPA-25-NC-27-NC-CONN	EW	Ash St	Hartson St	Franklin St	Class III Bike Route	0.36	Yes	No	No	C	$888	1	1	3	3	1	3	12	Medium
33-NC	NS	Beard Rd	Pueblo Ave	Pear Tree Ln	Class III Bike Route	0.32	Yes	No	No	C	$790	1	1	3	3	1	3	12	Medium
31-NC	NS	Belaire Plz, Diablo St, Yellowstone St, Lassen St	Trancas St	Trower Ave	Class III Bike Route	0.97	Yes	No	No	C	$2,414	2	2	3	3	2	3	15	Medium
27-NC-ALT	NS	Brown St	Clinton St	Lincoln Ave	Class III Bike Route	0.64	Yes	No	No	C	$1,596	2	2	3	3	1	3	14	Medium
7-NC-17-NC-NPA-ALT	NS	Burnell St	Sousa Ln	3rd St	Class III Bike Route	0.55	Yes	No	No	C	$1,379	2	2	3	3	2	4	16	High
27-NC	EW	Cabot Wy	Jefferson St	Imola Ave	Class III Bike Route	0.31	Yes	No	No	C	$774	2	2	3	3	1	3	14	Medium
15-NC-ALT	NS	Carol Dr-Oxford St	Pueblo Ave	Trower Ave	Class III Bike Route	1.22	Yes	No	No	C	$3,049	3	2	3	3	2	3	16	High
7-NC-31-NC-CONN	EW	Central Ave, Jefferson St, Park Ave	California Blvd	Soscol Ave	Class III Bike Route	1.07	Yes	No	No	C	$2,663	2	2	3	3	2	3	15	Medium
20-NC	EW	Clark St	Silverado Trail	East Ave	Class III Bike Route	0.12	Yes	No	No	C	$297	1	2	3	3	2	3	14	Medium
16-NC-ALT	EW	Clay St	California Blvd	Coombs St	Class III Bike Route	0.78	Yes	No	No	C	$1,953	2	2	3	3	2	4	16	High
27-NC-CONN-ALT	EW	Division St, Franklin St	Oak St	Brown St	Class III Bike Route	0.28	Yes	No	No	C	$712	2	2	3	3	2	3	15	Medium
7-NC-31-NC-CONN	EW	El Centro Ave	Jefferson St	Heather Ln	Class III Bike Route	0.21	Yes	No	No	C	$529	1	2	3	3	1	2	12	Medium
1-NC-31-NC-CONN	EW	El Centro Ave	SR 29	Jefferson St	Class III Bike Route	0.55	Yes	No	No	C	$1,387	2	2	3	3	1	2	13	Medium
27-NC-CONN-ALT	EW	Elm St	Franklin St	Riversdie Dr	Class III Bike Route	0.28	Yes	No	No	C	$702	1	1	3	3	2	3	13	Medium
17-NC-SPUR	EW	Fairview Dr	Burnell St	Hoffman Ave	Class III Bike Route	0.30	Yes	No	No	C	$751	2	2	3	3	2	4	16	High
15-NC	NS	Foster Rd	Imola Ave	Old Sonoma Rd	Class III Bike Route	0.41	Yes	No	No	C	$1,034	2	2	3	3	1	2	13	Medium
7-NC-33-NC-CONN	EW	Garfield Ln	Existing class I near Culbertson Ct	Old Vine Wy	Class III Bike Route	0.10	Yes	No	No	C	$240	2	2	3	3	1	3	14	Medium
20-NC-27-NC-CONN	NS	Georgia St	E St	Lincoln Ave	Class III Bike Route	0.27	Yes	No	No	C	$663	2	1	3	3	2	3	14	Medium
14-NC-ALT	EW	Granada St, Muir St, Sommer St, Shelter Ave	SR 221	Imola Ave	Class III Bike Route	1.08	Yes	No	No	C	$2,689	3	2	3	3	2	4	17	High
15-NC-ALT	NS	Hahnemann Ln	Wine Country Ave	Salvador Ave	Class III Bike Route	0.27	Yes	No	No	C	$684	1	0	3	3	1	3	11	Medium
31-NC	NS	Hartson St	Imola Ave	Old Sonoma Rd	Class III Bike Route	0.42	Yes	No	No	C	$1,058	1	1	3	3	1	2	11	Medium
7-NC-14-NC-CONN	EW	Kansas Ave	Soscol Ave	Shurtleff Ave	Class III Bike Route	0.60	Yes	No	No	C	$1,502	3	2	3	3	1	3	15	Medium
13-NC-16-NC-CONN	EW	Larkin Wy, Scenic Dr	Browns Valley Rd	Browns Valley Rd	Class III Bike Route	1.08	Yes	No	No	C	$2,700	1	1	3	3	1	2	11	Medium
15-NC	NS	Laurel St, Foothill Blvd	Old Sonoma Rd	Browns Valley Rd	Class III Bike Route	1.11	Yes	No	No	C	$2,765	1	2	3	3	1	2	12	Medium
20-NC	EW	Lincoln Ave	Linda Vista Ave	Solano Ave	Class III Bike Route	0.52	Yes	No	No	C	$1,292	1	2	3	3	1	3	13	Medium
15-NC	NS	Linda Vista	Browns Valley Rd	Redwood Rd	Class III Bike Route	1.23	Yes	No	No	C	$3,082	3	2	3	3	2	3	16	High
15-NC-NPA-ALT	EW	Linda Vista Ave	Redwood Rd	Dry Creek Rd	Class III Bike Route	2.03	Yes	No	No	C	$5,072	2	2	3	3	1	3	14	Medium
15-NC-ALT	NS	Maher St	Trower Ave	Wine Country Ave	Class III Bike Route	0.54	Yes	No	No	C	$1,339	2	2	3	3	2	3	15	Medium
20-NC-33-NC-CONN	NS	Main St	Lincoln Ave	Central Ave	Class III Bike Route	0.25	Yes	No	No	C	$631	2	1	3	3	2	3	14	Medium
20-NC-33-NC-CONN	NS	Main St, Pueblo Ave	Central Ave	Beard Rd	Class III Bike Route	0.34	Yes	No	No	C	$848	2	2	3	3	2	3	15	Medium
7-NC-17-NC-NPA-ALT	NS	McKinstry St	Soscol Ave	Water St	Class III Bike Route	0.33	Yes	No	No	C	$830	3	2	3	3	1	3	15	Medium
31-NC	NS	Old Sonoma Rd, Walnut St, Laurel St, California Blvd	Old Sonoma Rd	3rd St	Class III Bike Route	0.73	Yes	No	No	C	$1,814	2	2	3	3	2	3	15	Medium
16-NC	EW	Patrick Rd	Borrette Ln	Browns Valley Rd	Class III Bike Route	0.78	Yes	No	No	C	$1,954	1	1	3	3	1	2	11	Medium
33-NC	EW	Pear Tree Ln	Beard Rd	Villa Ln	Class III Bike Route	0.15	Yes	No	No	C	$382	1	1	3	3	1	3	12	Medium

7-NC-33-NC-CONN	EW	Pear Tree Ln	Villa Ln	Big Ranch Rd	Class III Bike Route	0.39	Yes	No	No	C	$964	1	1	3	3	2	3	13	Medium
27-NC-31-NC-CONN	EW	Pine St	Walnut St	Franklin St	Class III Bike Route	0.64	Yes	No	No	C	$1,606	3	2	3	3	2	3	16	High
7-NC-SPUR	EW	Pueblo Ave	Beard Rd	Soscol Ave	Class III Bike Route	0.49	Yes	No	No	C	$1,214	2	2	3	3	2	3	15	Medium
1-NC-7-NC-CONN	EW	Salvador Ave	SR 29	East city limit	Class III Bike Route	0.81	Yes	No	No	C	$2,022	2	2	3	3	2	3	15	Medium
29-EC-ALT	NS	Shurtleff Ave	Imola AVe	Terrace Dr	Class III Bike Route	0.94	Yes	No	No	C	$2,356	3	2	3	3	2	4	17	High
31-NC-33-NC-CONN	EW	Sierra Ave	Diablo St	Willis Dr	Class III Bike Route	0.46	Yes	No	No	C	$1,154	2	2	3	2	1	2	12	Medium
12-NC-15-NC-CONN	NS	St. Regis	Stanly Crossroad	Stanly Ln	Class III Bike Route	0.65	Yes	No	No	R	$1,625	1	1	3	3	1	3	12	Medium
29-NC	NS	Terrace Dr	Imola Ave	Saratoga Dr	Class III Bike Route	0.71	Yes	No	No	C	$1,769	2	2	3	3	2	4	16	High
29-NC	NS	Terrace Dr, Shurtleff Ave	Saratoga Dr	Coombsville Rd	Class III Bike Route	0.48	Yes	No	No	C	$1,206	2	2	3	3	1	2	13	Medium
13-NPA-16-NC-CONN	NS	Thompson Ave	Napa city limit	Browns Valley Rd	Class III Bike Route	0.65	Yes	No	No	C	$1,621	2	1	3	3	1	3	13	Medium
18-NC-31-NC-CONN	EW	Valverde Dr, Firefly Ln, Wild Rye Wy, Rubicon St, Baxter Ave	Diablo St	Trancas St	Class III Bike Route	1.19	Yes	No	No	C	$2,985	2	2	3	3	2	3	15	Medium
15-NC-SPUR	EW	Vine Hill Dr	Dry Creek Rd	Linda Vista Ave	Class III Bike Route	0.51	Yes	No	No	C	$1,278	2	2	3	3	1	2	13	Medium
33-NC	EW	Vintage High Drive Aisle	Willis Dr	Jefferson St	Class III Bike Route	0.18	Yes	No	No	C	$460	2	1	2	2	2	2	11	Medium
18-NC-SPUR	EW	W Pueblo Ave	Redwood Rd	Solano Ave	Class III Bike Route	1.41	Yes	No	No	C	$3,515	1	2	3	3	1	3	13	Medium
16-NC-18-NC-CONN	NS	Westview Dr	Browns Valley Rd	Redwood Rd	Class III Bike Route	0.66	Yes	No	No	C	$1,654	2	1	3	3	1	2	12	Medium
1-NC-15-NC-CONN	EW	Wine Country Ave	Linda Vista Ave	SR 29	Class III Bike Route	0.54	Yes	No	No	C	$1,346	1	1	3	3	1	2	11	Medium
33-NC	NS	Yajome St, Lincoln	Yount St	Pueblo Ave	Class III Bike Route	0.87	Yes	No	No	C	$2,187	2	2	3	3	2	3	15	Medium

Appendix I

Funding Program Summaries

Appendix I – Summary of Funding Programs

The following section presents a general description of funding programs that can be used to implement the projects contained in this plan.

Federal Funding Programs

Approximately every six years, the U.S. Congress adopts a surface transportation act — Congress's authorization to spend tax dollars on highways, streets, roads, transit and other transportation related projects. The most recent surface transportation act is titled the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU ended on September 30, 2009. To date the U.S. Congress has yet to enact a new authorization act. Instead, it has passed several extensions to SAFETEA which run through September 30, 2011 to continue the flow of funding to transportation programs. It is now anticipated that the passage of the new act will be completed by this date.

Federal funding through SAFETEA-LU and its future successors will provide much of the funding available for transportation projects in this Plan. SAFETEA-LU contains several major programs, which are highlighted below, that may be used to fund transportation and/or recreation improvements in this Plan. SAFETEA-LU funding is administered through the state (Caltrans or Resources Agency) and regional governments such as the Metropolitan Transportation Commission (MTC). Most, but not all, of the funding programs are transportation versus recreation oriented, with an emphasis on (a) reducing auto trips and (b) providing an intermodal connection. Funding criteria often includes project listing in a Regional Transportation Improvement Plan, completion and adoption of a bicycle master plan, quantification of the costs and benefits of the system (such as saved vehicle trips and reduced air pollution), proof of public involvement and support, National Environmental Policy Act (NEPA) compliance, and commitment of some local resources. In most cases, SAFETEA-LU provides matching grants of 80 to 90 percent, but prefers to leverage other moneys at a lower rate.

Web Link: http://www.fhwa.dot.gov/safetealu/index.htm

Congestion Mitigation and Air Quality Improvement Program / Surface Transportation Program

The majority of federal transportation funds flow to the states in the form of Congestion Mitigation & Air Quality Improvement Program (CMAQ) Funds and Surface Transportation Program (STP) Funds. In California these funds are administered by Caltrans, however, Caltrans assigns a significant portion of two of the programs to MTC and other regional planning agencies to be used at their own discretion subject to federal regulations. Using these sources, MTC develops and administers its own funding programs, including the Transportation for Livable Communities Program and the Regional Bicycle and Pedestrian Program to target Bay Area transportation needs.

Web Link: http://www.mtc.ca.gov/funding/STPCMAQ/

Highway Safety Improvement Program

Section 1401 of the Safe, Accountable, Flexible Efficient Transportation Equity Act - Legacy for Users (SAFETEA-LU) amended Section 148 of Title 23 to create a new, core Highway Safety Improvement Program. This new Highway Safety Improvement Program (HSIP) replaces the Hazard Elimination Safety Program, (23 U.S.C §152). This new stand-alone program reflects increased importance and emphasis on highway safety initiatives in SAFETEA-LU. It replaces the current statutory requirement that States set aside 10 percent of their Surface Transportation Program (STP) funds for carrying out the rail-highway crossings and hazard elimination programs. Funds can be used for safety improvement projects

on any public road or publicly owned bicycle or pedestrian pathway or trail. A safety improvement project corrects or improves a hazardous roadway condition, or proactively addresses highway safety problems that may include: intersection improvements; installation of rumble strips and other warning devices; elimination of roadside obstacles; railway-highway grade crossing safety; pedestrian or bicycle safety; traffic calming; improving highway signage and pavement marking; installing traffic control devices at high crash locations or priority control systems for emergency vehicles at signalized intersections, safety conscious planning and improving crash data collection and analysis, etc. The States that adopt and implement a strategic highway safety plan are provided additional flexibility to use Highway Safety Improvement Program (HSIP) funds for public awareness, education, and enforcement activities otherwise not eligible if they are consistent with a strategic State highway safety plan and comprehensive safety planning process.

Web Link: http://www.dot.ca.gov/hq/LocalPrograms/hsip.htm

Transportation Enhancements

Transportation Enhancements (TE) are transportation-related activities that strengthen the cultural, aesthetic, and environmental aspects of the Nation's transportation system. Similar to CMAQ and STP funds, MTC develops and administers its own funding programs using TE funds to target Bay Area transportation needs. TE funds help to make up regional funding programs such as the Transportation for Livable Communities Program and the Regional Bicycle and Pedestrian Program.

Web Link: http://www2.dot.ca.gov/hq/TransEnhAct/TransEnact.htm

National Recreational Trails Program

The Recreational Trails Program (RTP) 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.

Recreational Trails Program funds may be used for:

- Maintenance and restoration of existing trails;
- Development and rehabilitation of trailside and trailhead facilities and trail linkages;
- Purchase and lease of trail construction and maintenance equipment;
- Construction of new trails (with restrictions for new trails on federal lands);
- 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).

Web Links: http://www.parks.ca.gov/?Page_id=24324

http://www.fhwa.dot.gov/environment/rectrails/index.htm

State Funding Programs

State Highway Operations Protection Program

The State Highway Operations Protection Program (SHOPP) is a multi-year program of capital projects whose purpose is to preserve and protect the State Highway System. Funding is comprised of state and federal gas taxes. SHOPP funds capital improvements relative to maintenance, safety, and rehabilitation of state highways and bridges that do not add a new traffic lane to the system. Just over $1 billion is allocated to SHOPP annually. Funding is based on need, so there are no set distributions by county or Caltrans district. There are no matching requirements for this program. Projects include rehabilitation, landscaping, traffic management systems, rest areas, auxiliary lanes, and safety. Caltrans Projects are "applied" for by each Caltrans District. Each project must have a completed Project Study Report (PSR) to be considered for funding. Projects are developed in fall every odd numbered year.

Web Link: http://www.dot.ca.gov/hq/transprog/shopp.htm

State Transportation Improvement Program

The State Transportation Improvement Program (STIP) is a multi-year capital improvement program of transportation projects on and off the State Highway System. The STIP is funded with revenues from the state Transportation Investment Fund and other federal funding sources. STIP programming generally occurs every two years. The programming cycle begins with the release of a proposed fund estimate in July of odd-numbered years, followed by California Transportation Commission (CTC) adoption of the fund estimate in August (odd years). The STIP program represents the lion's share of California's state and federal transportation dollars. The amount of funds available for the STIP is dependent on the state budget, and therefore, funding levels fluctuate from year to year. The majority of the program's funds are earmarked for improvements determined by locally adopted priorities contained in Regional Transportation Improvement Programs (RTIP). RTIPS are submitted by regional transportation planning agencies from around the state. STIP funds can be used for a wide variety of projects, including road rehabilitation, road capacity, intersections, bicycle and pedestrian facilities, public transit, passenger rail and other projects that enhance the region's transportation infrastructure.

Regional Transportation Planning Agencies (RTPAs), such as MTC, are allocated 75 percent of STIP funding for regional transportation projects in their Regional Improvement Program (RIP). Caltrans is allocated 25 percent of STIP funding for interregional transportation projects in the Interregional Improvement Program (IIP).

Web Link: http://www.mtc.ca.gov/funding/STIP/

Bicycle Transportation Account

The state Bicycle Transportation Account (BTA) is an annual statewide discretionary program that is available through the Caltrans Bicycle Facilities Unit for funding bicycle projects. The BTA provides state funds for city and county projects that improve safety and convenience for bicycle commuters including: New bikeways serving major transportation corridors; New bikeways removing travel barriers to potential bicycle commuters; Secure bicycle parking at employment centers, park-and-ride lots, rail and transit terminals, and ferry docks and landings; Bicycle-carrying facilities on public transit vehicles; Installation of traffic control devices to improve the safety and efficiency of bicycle travel; Elimination of

hazardous conditions on existing bikeways; Planning; Improvement and maintenance of bikeways; Project planning; Preliminary engineering; Final design; Right of way acquisition; Construction engineering; and Construction and/or rehabilitation among other items. To be eligible for Bicycle Transportation Account (BTA) funds, a city or county must prepare and adopt a Bicycle Transportation Plan (BTP) that addresses items a – k in *Streets and Highways Code* Section 891.2. BTP adoption establishes eligibility for five consecutive BTA funding cycles. Funding is available on a statewide basis. $7.2 million was available for FY 2010/11.

Web Link: http://www.dot.ca.gov/hq/LocalPrograms/bta/btawebPage.htm

Safe Routes to School

There are currently two Safe Routes to School funding programs in California. In 1999 the State legislature enacted a State Safe Routes to School (SR2S) program through a set-aside of federal transportation funds. The program has since been re-authorized three times and will run through 2013. In the meantime, the federal government created a Safe Routes to School (SRTS) with the passage of SAFETEA-LU. Both programs are meant to improve school commute routes through construction of bicycle and pedestrian safety and traffic calming projects. The State program provides funding for projects that address school commutes for students in grades K-12, the federal program provides funding for projects that address school commutes for students in grades K-8. Both programs require a local match. While both programs fund construction improvements, the federal program also includes a programmatic element that will fund activities related to education, enforcement, or encouragement.

Web Link: http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm

Office of Traffic Safety

The California Office of Traffic Safety (OTS) has the mission to obtain and effectively administer traffic safety grant funds to reduce deaths, injuries and economic losses resulting from traffic related collisions in California. OTS distributes federal funding apportioned to California under the National Highway Safety Act and SAFETEA-LU. Grants are used to mitigate traffic safety program deficiencies, expand ongoing activity, or develop a new program. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation, or construction.

OTS grants address several traffic safety priority areas including Pedestrian and Bicycle Safety. Eligible activities include programs to increase safety awareness and skills among pedestrians and bicyclists. Concepts may encompass activities such as safety programs, education, enforcement, traffic safety and bicycle rodeos, safety helmet distribution, and court diversion programs for safety helmet violators.

Web Link: http://www.ots.ca.gov/

Environmental Enhancement and Mitigation Program

Environmental Enhancement and Mitigation Program (EEMP) funds are allocated to projects that offset environmental impacts of modified or new public transportation facilities including streets, mass transit guideways, park-n-ride facilities, transit stations, tree planting to equalize the effects of vehicular emissions, and the acquisition or development of roadside recreational facilities, such as trails. State gasoline tax monies

fund the EEMP. The EEMP program represents an opportunity to fund improvements as mitigation to highway work in the SR 12, 29, and 128 corridors, as well as other highway facilities in Napa County.

Web Links: http://resources.ca.gov/grant_programs.html

http://www2.dot.ca.gov/hq/LocalPrograms/EEM/homepage.htm

California State Coastal Conservancy

The California State Coastal Conservancy manages several programs that provide grant funds for coastal trails, access, and habitat restoration projects. The funding cycle for these programs is open and on-going throughout the year. Funds are available to local government as well as non-profits. The Conservancy may be a funding source for bicycle facilities that improve access to Napa's rivers and creeks.

Web Link: http://www.scc.ca.gov/Programs/guide.htm

Habitat Conservation Fund

The Habitat Conservation Fund (HCF) provides $2 million dollars annually in grants for the conservation of habitat including wildlife corridors and urban trails statewide. Eligible activities include property acquisition, design, and construction. The HCF is 50% dollar for dollar matching program. California Environmental Quality Act (CEQA) compliance is required. Urban projects should demonstrate how the project would increase the public's awareness and use of park, recreation, or wildlife areas.

Web Link: http://www.parks.ca.gov/?page_id=21361

Land and Water Conservation Fund

Administered by CA State Parks, the Land and Water Conservation Fund is offered annually to cities, counties and districts. Funds can be used to acquire or develop outdoor recreation areas and facilities. Communities can use these funds to build trails, picnic areas, and preserve natural and cultural areas.

Web Link: http://www.parks.ca.gov/?page_id=21360

Caltrans Transportation Planning Grants

Caltrans Transportation Planning Grants are intended to promote strong and healthy communities, economic growth, and protection of our environment. These planning grants (Environmental Justice: Context-Sensitive Planning, Community-Based Transportation Planning, Partnership Planning, and Transit Planning) support closer placement of jobs and housing, efficient movement of goods, community involvement in planning, safe and convenient pedestrian and bicycle mobility and access, smart or strategic land use, and commute alternatives.

Web Link: http://www.dot.ca.gov/hq/tpp/grants.html

Regional Funding Programs

Regional Transportation Improvement Program

The Regional Transportation Improvement Program (RTIP) funds are a portion of the State Transportation Improvement Program. The Metropolitan Transportation Commission, acting as the Regional Transportation Planning Agency in the nine-county Bay Area, is responsible for allocating Napa County's share of the funding.

Web Link: http://www.mtc.ca.gov/funding/STIP/

Transportation for Livable Communities

MTC's Transportation for Livable Communities (TLC) Program was created to support community-based transportation projects that revitalize downtown areas, commercial cores, neighborhoods and transit corridors by enhancing their amenities and ambiance and making them places where people want to live, work and visit. The TLC Program supports the region's FOCUS Program by investing in Priority Development Areas, designated areas in which there is local commitment to developing housing, along with amenities and services, to meet the day-to-day needs of residents in a pedestrian-friendly environment served by transit. TLC provides funding for planning and capital improvement projects that provide for a range of transportation choices, support connectivity between transportation investments and land uses, and are developed through an inclusive community planning effort.

Web Link: http://www.mtc.ca.gov/planning/smart_growth/tlc_grants.htm

Regional Bicycle and Pedestrian Program

The Regional Bicycle and Pedestrian Program (RBPP) was created by the MTC in 2003 through a set-aside of federal funds to fund construction of the Regional Bicycle Network, regionally-significant pedestrian projects, and bicycle and pedestrian projects that serve schools and transit. MTC has committed $200 million in the Transportation 2030 Plan to support the regional program over a 25-year period ($8 million each year). The program is administered through County Congestion Management Agencies (CMAs; NCTPA in Napa County).

Web Link: http://www.mtc.ca.gov/planning/bicyclespedestrians/regional.htm#bikepedprog

TDA Article 3

Transportation Development Act (TDA) Article 3 funds are generated from State gasoline sales taxes and are returned to the source counties from which they originate to fund transportation projects. Article 3 funds provide a 2 percent set aside of the County TDA funds for bicycle and pedestrian projects. Eligible projects include right-of-way acquisition; planning, design and engineering; support programs; and construction of bicycle and pedestrian infrastructure, including retrofitting to meet ADA requirements, and related facilities. Each year NCTPA approves a Program of Projects for Napa County, which is submitted to MTC for approval.

Web Link: http://www.mtc.ca.gov/funding/STA-TDA/

Lifeline Transportation Program

The Lifeline Transportation Program (LTP) was established to fund projects that result in improved mobility for low-income residents of the nine San Francisco Bay Area counties. Lifeline funds may be used for either capital or operating purposes. Eligible capital projects include (but are not necessarily

limited to) purchase of vehicles, provision of bus shelters, benches, lighting, sidewalk improvements or other enhancements to improve transportation access for residents of low-income communities. A local match of a minimum of 20% of the total program cost is required.

Web Link: http://www.mtc.ca.gov/planning/lifeline/

Safe Routes to Transit

Funded through Regional Measure 2, this competitive program is designed to promote bicycling and walking to transit stations by funding projects and plans that make important feeder trips easier, faster, and safer. The program is administered by the Transportation and Land Use Coalition (TALC). TALC is a Bay Area partnership of over 90 groups that develops and forwards a range of projects, programs, and campaigns supporting sustainability and equity in the land use, housing, and transportation arenas.

Web Link: http://www.transcoalition.org/c/bikeped/bikeped_saferoutes.html#application

Bay Trail

The Association of Bay Area Governments (ABAG) sponsors the San Francisco Bay Trail project. As funds become available, the Bay Trail Project administers grant programs to fund planning and construction of the Bay Trail. Grant monies are available for planning studies, trail design work, feasibility studies, and construction of new Bay Trail segments and associated amenities including bike lane striping, sidewalk construction and improvements to roadway bicycle routes. The deadline for the program is on-going until program funds are programmed. While a local match is not required, it is encouraged. Grant awards generally range from $150,000-$500,000.

Web Link: http://baytrail.abag.ca.gov/grants.html

Transportation Fund for Clean Air

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

The Transportation Fund for Clean Air (TFCA) is a grant program funded by a $4 surcharge on motor vehicles registered in the Bay Area. The program generates approximately $22 million per year in revenue and consists of two parts: Program Manager Funds (60 percent of revenues), which guarantees a calculated percentage to each county, and Regional Funds (40 percent of revenues), which are allocated on the basis of regional competition. The program's goal is to implement cost-effective projects that will decrease motor vehicle emissions. The fund covers a wide range of project types, including purchase or lease of clean fuel buses, purchase of clean air vehicles, ridesharing programs to encourage carpool and transit use, bicycle facility improvements such as bike lanes, bicycle racks, and projects to enhance the availability of transit information. Applications for the Regional Funds are made directly to BAAQMD. The Program Manager Funds are administered by NCTPA.

Web Link: http://www.baaqmd.gov/Work.aspx

BAAQMD Bicycle Facility Program

The Bay Area Air Quality Management District's (Air District's) Bicycle Facility Program (BFP) provides grant funding to reduce motor vehicle emissions through the implementation of new bikeways and bicycle parking facilities in the Bay Area. The BFP is funded through the Transportation Fund for Clean Air (TFCA) program. Proposed projects must comply with Board-adopted policies and be located within the Air District's boundaries. Eligible project types include: Class I – Bicycle Paths; Class II –

Bicycle Lanes; Class III – Bicycle Routes; Bicycle Lockers and Racks; Secure Bicycle Parking; and Bicycle Racks on Public Transportation Vehicles.

Web Link: http://www.baaqmd.gov/Divisions/Strategic-Incentives/Bicycle-Facility-Program.aspx

Local Funding Programs

Direct Local Jurisdiction Funding

Local jurisdictions can fund bicycle and pedestrian projects using a variety of sources. A city's general funds are often earmarked for non-motorized transportation projects, especially sidewalk and ADA improvements.

Future road widening and construction projects are one means of providing bike lanes and sidewalks. To ensure that roadway construction projects provide these facilities where needed, appropriate, and feasible, it is important that an effective review process is in place so that new roads meet the standards and guidelines presented in this Plan.

Impact fees

Another 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 reduce the number of trips (and hence impacts and cost) by paying for on- and off-site pedestrian and bikeway improvements, which will encourage residents to walk and bicycle rather than drive. In-lieu parking fees may be used to help construct new or improved bicycle parking. A clear connection between the impact fee and the mitigation project must be established.

Special Taxing Districts

Special taxing districts, such as redevelopment districts, can be good instruments to finance new infrastructure – including shared use trails and sidewalks – within specified areas. New facilities are funded by assessments placed on those that are directly benefited by the improvements rather than the general public. In a "tax increment financing (TIF) district, taxes are collected on property value increases above the base year assessed property value. This money can then be utilized for capital improvements within the district. TIFs are especially beneficial in downtown redevelopment districts. These districts are established by a petition from landowners to a local government. The districts can operate independently from the local government and some are established for single purposes, such as roadway construction.

Other

Local sales taxes, fees, and permits may be implemented, requiring a local election. Parking meter revenues may be used according to local ordinance. Volunteer programs may substantially reduce the cost of implementing some of the proposed pathways. Use of groups such as the California Conservation Corp which offer 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.