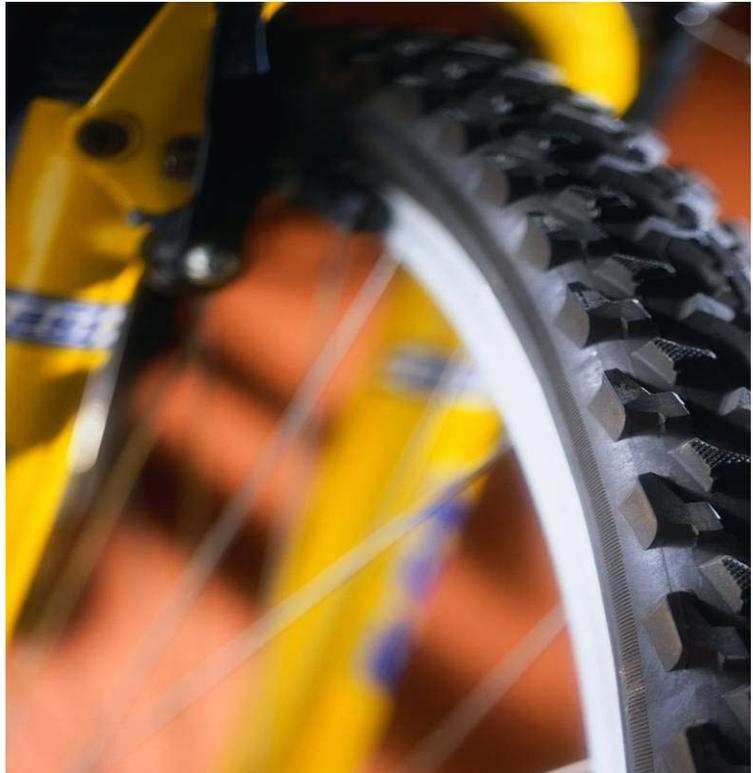


# Shasta County 2010 Bicycle Transportation Plan



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# Chapter 1. Introduction

## Purpose

The Shasta County Bicycle Transportation Plan (BTP) provides the long term framework to improve and encourage bicycle transportation throughout the county. This document is a major update to the 2003 Shasta County Bikeway Plan. This BTP is prepared in compliance with the



California Bicycle Transportation Act (California Streets and Highway Code, Chapter 8, Article 2, Section 891.2). This plan is required for Shasta County to be eligible for Bicycle Transportation Account (BTA) funding.

## Background

Bicycles have become an important mode of transportation in urban areas as an alternative mode of travel to automobiles, and as a vehicle for recreational use. The increase in bicycle travel can be attributed to the awareness by residents that bicycling is a viable alternative mode of transportation, that it can create energy savings, and has health and environmental benefits. Those who are unable to drive due to their age, low income, or do not own an automobile may see bicycling as a primary form of transportation.

The overall goal of the BTP is to provide a safe, effective, efficient, balanced, and coordinated bicycling system that serves the needs of the people within the unincorporated region of Shasta County. The BTP supports the bicycle transportation goals within the general plans of Shasta County, and the cities of Anderson, Redding and Shasta Lake. Additionally, the BTP will provide to citizens a transportation environment that encourages and promotes non-motorized means of travel. The goals, policies, and actions outlined in this plan are intended to:

“Provide a safe, efficient, balanced and coordinated bicycling system”

- Decrease automobile dependency.
- Reduce traffic congestion.

- Reduce air and noise pollution.
- Reduce the effect of green house gasses (GHG) on the environment.
- Promote the development and use of bikeways, both on and off the road.

## Location

Shasta County is the geographical center and transportation crossroads of California, north of Sacramento. It lies at the north end of the Sacramento Valley, 150 miles north of Sacramento, its largest urbanized neighbor, and 422 miles south of Portland, Oregon. The county is bordered by Siskiyou County to the north, Lassen County to the east, Trinity County to the west, and Tehama County to the south.



Shasta County covers approximately 3,788 square miles, which range in elevation from 425 feet in the Sacramento Valley, to 3,300 feet in the Fall River Valley, to more than 10,000 feet in Lassen Volcanic National Park. The population of Shasta County, based upon the 2000 U.S. Census (2000 Census), was 163,256. The estimated population for the County in 2008 was 181,622. Projected population estimates for 2030 are 241,446 residents (Center for Economic Development, 2).

## Climate

The climate of the valley region of Shasta County is Mediterranean in nature and characterized by warm-to-hot dry summers, and cool, wet winters. The remainder of the county is primarily mountainous and experiences low winter temperatures and significant amounts of snow. Summers in the mountainous regions are generally cooler than in the valley.

## Application of the Bicycle Transportation Plan (BTP)

Throughout this document Shasta County (County) refers to the unincorporated area of the county, unless otherwise stated. The BTP is created to comply with the BTA and fulfills certain aspects of AB 1358, The Complete Streets Act. A city or county may prepare a BTP, per the street and highway code 891.2, which includes:

- A. The estimated number of existing bicycle commuters in the plan area and the estimated increase in the number of bicycle commuters resulting from implementation of the plan.
- B. A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, and major employment centers.
- C. A map and description of existing and proposed bikeways.
- D. A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.
- E. A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.
- F. A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.
- G. A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicyclists.
- H. A description of the extent of citizen and community involvement in development of the plan, including, but not limited to, letters of support.
- I. A description of how the BTP has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, programs that provide incentives for bicycle commuting.
- J. A description of the projects proposed in the plan and a listing of their priorities for implementation.
- K. A description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area.

## Chapter 2. Policies and Goals

Specific goals of the BTP are divided into the following five categories: Safety and Education, Commuting, Continuity, Recreation, and Funding. Below each goal are the associated objectives and policies that need to be in place in order to make the goals a reality.

### 2.1 – Safety and Education Goal (S)

Make conditions safer for bicycle use.		
Objective	Policy	
<b>S 1</b> Develop a county-wide bikeway system that will minimize conflicts between bicyclists and motorists.	<b>S 1.1</b>	Assign high priority to projects that are designed to minimize identified bicyclist/motorist conflicts.
	<b>S 1.2</b>	Identify and eliminate, or find alternatives to, barriers along existing routes used by bicyclists, with special attention to bridges, freeways, shoulders, intersections and railroad crossings.
<b>S 2</b> Enhance the safety of bicycling for school children.	<b>S 2.1</b>	Assign high priority to residential projects that include bicycle routes to local schools.
	<b>S 2.2</b>	Provide bicycle facilities in areas, such as in the vicinity of schools, where a high conflict potential has been identified.
	<b>S.2.3</b>	Provide educational opportunities such as safety presentations, bicycle riding educational classes, and educate on health benefits of riding a bike.

### 2.2 – Commuting Goal (C)

Strive for a 5% increase in bicycle commuters in Shasta County by 2020 by encouraging bicycling for reasons of reducing traffic congestion, energy conservation, air quality, reducing of greenhouse gas emissions, health, economy and employment.		
Objective	Policy	
<b>C 1</b> Provide access to major employment centers (51+ employees) within the County.	<b>C 1.1</b>	Promote bike routes that lead to major employment centers within the county.
<b>C 2</b> Encourage major employers to promote commuting by bicycle and to provide adequate bicycle facilities.	<b>C 2.1</b>	Encourage new employment centers in unincorporated areas to include plans for bicycle parking, showers and lockers.
	<b>C 2.2</b>	Emphasize bicycle usage to promote cleaner air and ease traffic congestion.
<b>C 3</b> Provide bicycling facilities that are convenient, efficient and easy to use.	<b>C 3.1</b>	Support the placement of bicycle lockers at Park-and-Ride lots.
	<b>C 3.2</b>	Support the placement of bicycle lockers and racks at commercial developments.
	<b>C 3.3</b>	Support the placement of bicycle lockers at/or near major public transit stops

### 2.3 – Continuity Goal (CG)

<b>Develop a continuous county bicycle system that is part of a Complete Streets (automobile, bicycle, bus, and pedestrian) transportation system.</b>		
<b>Objective</b>	<b>Policy</b>	
<b>CG 1</b> Provide a continuous and easily accessible bikeway system within the county	<b>CT 1.1</b>	Support the development of an interconnected County bikeway system by first identifying and then fixing or constructing missing facilities along roads.
	<b>CT 1.2</b>	Construct Class II facilities in conjunction with all roads, street and state highway improvement projects which coincide with the County BTP corridors, when feasible.
<b>CG 2</b> Develop bike lanes or routes linking major residential areas with schools, shopping areas, employment centers and other high demand destinations.	<b>CT 2.1</b>	Give priority to routes that serve the highest concentration of cyclists and destination areas of highest demand.
	<b>CT 2.2</b>	In new development areas, require construction of bicycling paths as links from cul-de-sacs out to major arterials.
	<b>CT 2.3</b>	New development and major transportation projects should avoid creating barriers for bicycles.
	<b>CT 2.4</b>	Due to their low construction and maintenance costs and high commuter usage, priority will be given to constructing Class II bicycle lanes, except when safety or construction costs indicate a need for separated facilities.
	<b>CT 2.5</b>	Coordinate and connect to bikeways systems within the cities of Anderson, Redding and Shasta Lake.

### 2.4 – Recreation Goal (R)

<b>Encourage recreational bicycling.</b>		
<b>Objective</b>	<b>Policy</b>	
<b>R 1</b> Provide access to parks and recreational points of interest within the county.	<b>R 1.1</b>	Promote bike routes that link urban areas with recreational facilities.
	<b>R 1.2</b>	Encourage completion of the Sacramento River Rail Trail.

### 2.5 – Funding Goal (F)

<b>Implement funding for bicycle facilities.</b>		
<b>Objective</b>	<b>Policy</b>	
<b>F 1</b> Implement and encourage use of all available funding sources for bicycle facilities.	<b>F 1.1</b>	Pursue all available grants for the planning and funding of bicycle facilities in Shasta County.

## Chapter 3 - Bicycle Transportation Plan

This BTP is prepared in compliance with the California Bicycle Transportation Act (*California Streets and Highway Code, Chapter 8, Article 3, Section 891.2*). As stated in the California Streets and Highway Code, Chapter 8, Article 3, Section 891.2, a city or county may prepare a BTP, which shall include, but not be limited to, the following elements:

### Estimated Number of Bicycle Commuters

**Section 891.2 (a): The estimated number of existing bicycle commuters in the plan area and the estimated increase in the number of bicycle commuters resulting from the implementation of the plan.**

The automobile is the primary mode of transportation for residents in Shasta County. According to the 2000 Census, approximately 92%, or 59,056 people, used the automobile to travel to work. This is partly due to the following factors:

- Suburban nature of development in the unincorporated area of the county.
- Variations in terrain separated by hills and mountains.
- Bisecting of the urban core communities by the Sacramento River.
- Disconnect between the cities and county bikeways.
- The junction of three major highways – Interstate-5 (I-5), State Route (SR) 44, and SR 299.

In California, the 2000 Census approximated that 0.83% of employees bicycled to work. This is an unusually high average due to California's climate, and the presence of bicycle-friendly cities such as Davis where 17% of bicycle commuters (*City of Davis Bicycle Plan, 2006*). Compare that to the United States which experiences an overall 0.38% of employees who commute to work. Shasta County experiences a similar ridership compared to the national average with only 0.36% daily bicycle commuters. The County's nearest urban neighbor is, Chico. Chico is characterized with relatively flat terrain and has a university. Chico has a bicycle commute to work average of five-percent and a large student population that utilizes non-motorized transit extensively (*Chico Urban Area Bicycle Plan, 2008*).

### Bicycling to Work

Bicycle use as a transportation mode is notoriously difficult to model and tabulate. Methods of counting vehicles, such as traffic tube counters, usually do not work for bicycles. Placing a human counter at strategic locations to count

bicyclists is limited by available funding. The City of Redding utilized volunteers from local bike groups in their last update for counts to support their latest bikeway update.

For use in this BTP, Shasta County has chosen to use the number of bicyclists compiled by the State of California during the 2000 Census (see Table 3.1). According to the 2000 Census, in Shasta County 233 employees bicycled to work out of 64,487 total employees. That is approximately 0.36% of all workers in the county, and half of the state average.

<b>Table 3.1 - Means of Transportation to Work for Ages 16 and Older</b>				
	<b>1990</b>	<b>%</b>	<b>2000</b>	<b>%</b>
<b>Total:</b>	57,161		64,487	
<b>Car, truck, or van:</b>	52,024	91.01%	59,096	91.64%
Drove alone	46,520	81.38%	51,378	79.67%
Carpooled	5,504	9.63%	7,718	11.97%
<b>Public transportation:</b>	390	0.68%	568	0.88%
Bus or trolley bus	353	0.62%	528	0.82%
Streetcar or trolley car	10	0.02%	27	0.04%
Subway or elevated	0	0.00%	3	0.00%
Railroad	13	0.02%	0	0.00%
Ferryboat	7	0.01%	6	0.01%
Taxicab	7	0.01%	4	0.01%
<b>Motorcycle</b>	264	0.46%	143	0.22%
<b>Bicycle</b>	343	0.60%	233	0.36%
<b>Walked</b>	1,515	2.65%	1,443	2.24%
<b>Other means</b>	544	0.95%	376	0.58%
<b>Worked at home</b>	2,081	3.64%	2,628	4.08%
<i>Source: U.S. Census Bureau, 1990 Census &amp; 2000 Census, Summary File 3 (SF3)</i>				

In California, a total of 120,567 employees, or 0.83% of the entire workforce, ride their bicycle to work.

According to the California State Department of Finance (DOF) Demographic Research Unit, Shasta County's population increased 11.5% between the years 2000 and 2008. Assuming that the number of commuting bicyclists increases in a similar manner, the number of commuting bicyclists in 2008 would be 260. The number of bicyclists commuting to work outside the cities would be much smaller. Table 3.2 demonstrates how the population numbers are calculated for estimating the number of bicyclists commuting to work.

	Redding	Shasta Lake	Anderson	Unincorporated	County Total
2000	80,714	8,967	8,996	64,212	162,889
2008	90,192	10,243	10,540	70,647	181,622
Difference	9,478	1,276	1,544	6,435	18,733
% In.	11.7%	14.2%	17.2%	10.0%	11.5%

Using the percent population increase (see Table 3.2 above), the number of commuting bicyclists in 2008 can be estimated as follows:

Location	# Bicycle Commuters		
	2000	2008	After Improvements (2030)
Redding	170	190	248
Shasta Lake	n/a	39	54
Anderson	27	30	43
Unincorporated			
Burney	14	16	20
Cottonwood*	0	0	0
Palo Cedro*	0	0	0
Remaining Unincorporated	22	25	31
County Total	233	260	396

*\*No bicycle data exists for these communities in 2000 US Census*

The numbers projected for bicycle commuters in each region, after improvements, is based upon the average annual population growth for each region from 2000 to 2008 and assumes that bicycle commuter ridership would increase similarly for each region. The assumption of when proposed improvements would be finished is 2030.

While the Shasta County bicycle commuter percentage is only half of California's average for bicycle commuting to work, it is encouraging that Shasta County is at least even with the national average for such a suburban county. In order to improve upon this trend, the County should encourage major employers to contribute to a reduction in vehicle miles traveled (VMT) by promoting bicycle commuting and providing on-site bicycle facilities. Construction projects should include bicycling routes to major employers.

### **Bicycling to School**

Bicycles can provide convenience and efficiency for students, both children and adults, especially when the school they attend is near their home.

In Shasta County, there are several factors that limit the use of bicycling to school. These include:

- Long distances for rural students.
- The proximity of schools to where students live.
- Steep, winding mountain roads.
- Traffic congestion in front of school/surrounding the school.
- Snow or ice in the winter.
- Safety of the routes to schools.

Safety of routes is the factor that is most often considered by parents when deciding whether to let their children bicycle to school. A detailed discussion on bicycling to school can be found in the education section of this chapter beginning on page 26.

### Future Ridership

Using the combined data on current work and school bicycle commuters, it can be projected that from the years 2008 to 2030, 136 bicycle commuters will be added, increasing ridership by 65%.

### Land Use

Section 891.2 (b): A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, and major employment centers (Appendix A-Map 1: Bikeways and Land Use).

The relationship between land use and transportation is crucial to understanding where development may occur and where people and goods travel. The topography and historical development of the region, the availability of transportation facilities, and the junction of three major highways, has shaped Shasta County into the community it is today. With its multitude of streams, rivers, forests, lakes and abundant wildlife, Shasta County is a regional center for recreation and tourism, as well as



a popular retirement area. All of these things have had an impact on the availability and location of current bikeways.

The following sections discuss current and proposed land use/settlement patterns and facilities.

**Existing Land Use**

Shasta County contains a mix of land uses including: residential, industrial, commercial, agricultural, and institutional. The majority of the activity in the County is centered in the urban area which is known as the South-Central Urban Region (SCR), which is made up of the cities of Anderson, Redding, and Shasta Lake, the unincorporated communities of Palo Cedro and Cottonwood, and a few smaller community centers. The remainder of the county is rural with low population density, with the exception of Burney, a small unincorporated community in northeastern Shasta County.

Since 2000, Shasta County has experienced unprecedented growth for the region. From 2005-2009, the County averaged over a one-percent growth rate per year, and grew approximately 11% to a total of 183,023 persons. By 2030, it is expected that the County’s population could reach 240,000 (DOF, 2008).

**Residential Neighborhoods**

According to the 2004 Shasta County General Plan, the population of the County will be 216,500 by 2025. These projections were based on California DOF estimates. For the unincorporated region of the County, the 2002 estimates indicated approximately 65,900 persons. A majority of the land in the unincorporated area is designated for medium and low density development due to the nature of the landscape, terrain, resources, wetlands, and location of state and federal lands.

The County has a series of town centers and rural community centers located around the region. These four town centers include: Burney/Johnson Park, Cottonwood, Fall River Mills/McArthur and Palo Cedro. There are a total of 25 rural community centers where residents live. These communities include:

Lakeshore	Hat Creek	Jones Valley
Lakehead	Old Station	Bella Vista
Castella/Sweetbriar	Shingletown	Happy Valley
South Dunsmuir	Viola	Centerville
Round Mountain	Millville	Old Shasta/Keswick
Montgomery Creek	Oak Run	Igo

Big Bend	Whitmore	Ono
Cassel	Mountain Gate	Platina
		French Gulch

### Schools

There are a significant number of schools that are difficult for students to bike to. Schools located in the smaller communities, like Burney or Shingletown, are much more accessible by students. However, during winter there are extreme temperatures, snow fall, and storms that make bicycling difficult for students.

The largest school in the unincorporated area of Shasta County is Shasta College, located on Old Oregon Trail, outside of the urban area. This community college serves the educational needs of students from Shasta, Tehama, and Trinity counties. Due to the location many students drive to campus rather than bicycle. The East Redding Bike Lane project, currently under construction, will add a 1.8 mile Class II bikeway along College View Drive.

### Shopping Centers

Shopping centers provide a typical destination for bicyclists. A majority of shopping centers are located in the SCR region, including:

- Mt. Shasta Mall in Redding
- Market Street Promenade in the downtown area of Redding
- Prime Outlets in Anderson

### Public Buildings

A majority of County buildings are located within the city limits of Redding. These buildings are included in the City of Redding Bike Plan. The overall goal is to provide safe routes for commuters that connect rural and urban bikeways.

### Major Employment Centers

According to the Shasta County 2009-2010 Economic and Demographic Profile, the top 15 major employers in Shasta County are located within the cities of Anderson and Redding. These employers have a minimum of 300 employees. The largest employer located in the unincorporated area of the County is Mayers Memorial Hospital District in Fall River Mills with approximately 200 employees.

## Proposed Land Use

As the region grows and adapts to changes in the economy, mobility preferences, demographics, and funding programs/priorities, it is important that the findings and recommendations of the BTP be revisited and updated accordingly. During the current planning cycle, the following developments may substantially affect many of the assumptions found in this report:

In March of 2010, the Shasta County Regional Transportation Planning Agency completed the regions three-year Blueprint project, known as ShastaFORWARD>>. The purpose of ShastaFORWARD>> was to look into the future and see what Shasta County might look like in 2050 if it continued to grow with current trends or with alternative scenarios.

ShastaFORWARD>> sets the stage for Senate Bill 375 (SB 375), the Sustainable Communities Strategy (SCS). The SCS is a four-part plan that correlates land use and transportation for a region over a period of 20 or more years. The SCS plan is required to be consistent with the County's Regional Transportation Plan (RTP) and has the following elements:

- 1) Map of land use;
- 2) Identification of housing;
- 3) Identification of natural resources and farmland, and;
- 4) Forecast a GHG reduction development pattern.

It is recommended that a review of this BTP be done once the SCS has been completed. An SCS element will be added to the 2015 Regional Transportation Plan (RTP)

## Residential Neighborhoods

There are two residential projects that may provide a significant impact on future bicycle facilities within Shasta County. These projects are: the Panorama Planned Development, and the North Fork Ranch Project. Both projects are currently in the planning stage.

**Panorama Planned Development** – This proposed project would exist on approximately 307 acres of land approximately one mile south of the City of Anderson, bounded by Locust Road on the west, Treefoil Lane and Balls Ferry Road to the south. A total of 440 residential lots would be located on the project site.

**North Fork Ranch Project** – This is a mixed-use planned development project on 3,642.4 acres. This project will have 1,403 residential units,

agricultural ranches, open space, three public parks, an equestrian center, and two commercial retail centers. The project site is west of I-5 and SR 273 and bordered by Happy Valley Road to the north and the west, Olinda Road to the south, and SR 273 to the east.

### **Schools**

There are no major schools proposed within the unincorporated area of the county that would affect bicycle facilities.

### **Shopping Centers**

There are no shopping centers being proposed within the unincorporated area of the county that would affect bicycle facilities.

### **Public Buildings**

Currently there is a plan to build a new Shasta County Courthouse in Redding. While no exact location has been specified, the building will be located somewhere between Court, Tehama, Yuba, and Oregon Street. Providing bicycle facilities for employees and commuters is encouraged. The impact of the new building should be reviewed by a future update of the City of Redding Bikeway Action Plan.

### **Major Employment Centers**

To serve the future needs of residents, there is an aspiration by the Shasta County Board of Supervisors and Redding's City Council to find a future location for a second mall similar to the Mt. Shasta Mall, located between Hilltop and Dana Drive in Redding. The City of Redding is proposing a location on the north side of Oasis Boulevard, just east of I-5.

Shasta County is considering a location for a commercial area north of Knighton Road and east of I-5. The proposed Churn Creek Commons Retail Center is approximately 92 acres and would create a significant impact on automobile and bicycle travel in the area. Currently the Shasta County General Plan shows a commercial center of only six acres without bus or bicycle facilities. It is recommended that the County evaluate this future project as it moves forward to ensure that it meets the goals of the BTP. The impact of either commercial/retail location will directly impact the availability and use of bicycle facilities for residents in Shasta County.

The City of Redding and Viva Downtown are working together to encourage development and revitalization in the downtown area. As part of this endeavor, in 2009 a section of the downtown area was renamed the Market Street Promenade. As the area grows in the future, it has become necessary for the County to evaluate connections between County and City of Redding bikeways to ensure that county residents have the ability to get downtown using their bicycle.

## Existing and Proposed Bikeways

Section 891.2 (c): A map and description of existing and proposed bikeways (Appendix A-Map 2: Shasta County Bikeways – Proposed and Existing)

The Streets and Highway Code, Section 890.4 defines a “bikeway” as a facility that is provided primarily for bicycle travel. These bikeways are divided into three categories, based upon the degree to which they separate bicycles from other travel modes. The three types of bikeways are:

### Bikeway Categories



#### **Class I Bikeway (Bike Path)**

Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross flow by motorists minimized



#### **Class II Bikeway (Bike Lane)**

Provides a striped lane for one-way bike travel on a street or highway



### **Class III Bikeway (Bike Route)**

Provides for shared use with pedestrian or motor vehicle traffic.

Design standards and criteria have been established by Caltrans for each category above. These standards are currently used by Shasta County when designing new bikeway projects (see Appendix B, Exhibits A – K for graphics of the bikeway classes).

### **Barriers to Bicycle Traffic**

There is an array of natural and man-made barriers to bicycle traffic in Shasta County. The Sacramento River is the longest river entirely within California. Starting near Mount Shasta in the Cascade Range, the Sacramento River flows south for 447 miles, through Shasta County and the northern Central Valley of California, between the Pacific Coast Range and the Sierra Nevada's. The Sacramento River joins the San Joaquin River in the Sacramento River Delta, which empties into Suisun Bay, the northern arm of San Francisco Bay.

There are many other rivers, creeks, and streams in Shasta County, such as; the Pit River, McCloud River, Cow Creek, Churn Creek, Clear Creek, and Olney Creek. Of the 231 rivers and stream crossings in Shasta County, only a minor percentage of them are specifically designed to accommodate bicycles.

*"Narrow shoulders on roadways act as barriers to bicyclists"*

The mountains in the county with their high elevations, potentially harsh winter weather, and winding roads may serve as barriers to bicycle traffic at various times of the year. Narrow or discontinuous shoulders on roadways may also act as barriers to bicyclists as they create a conflict and safety concern for bicyclists and those driving vehicles. Other major man-made barriers include I-5 and the Union Pacific Railroad.

Of the seven existing river crossings for autos in Shasta County, six have design provisions to accommodate bicycle traffic. In Redding, these include: South Bonnyview, Cypress Avenue, North Market Street, SR 44, and the Diestelhorst

Bridge. On Deschutes Road Bridge, bicyclists must share the road with vehicles. Airport Road Bridge in Anderson provides wide shoulders and a bike railing.

#### **Airport Road Bridge – Shasta County**



Pedestrian Only Walkway

Additionally, options for bicyclists wanting to cross the Sacramento River in the Redding urbanized area are increasing. The construction of the Sundial and Ribbon bicycle/pedestrian bridges connect both sides of the Sacramento River Trail, crossing over the Sacramento River. Originally a bridge for vehicles, the Diestelhorst Bridge is now exclusively a non-motorized facility.

#### **Existing Bikeways**

Existing bikeways include interstate corridors, intercounty and intracounty corridors, local county roads, and local city roads.

#### **Interstate Corridor**

I-5 is the only north/south route that runs the entire length of the eastern portion of Shasta County. Although it is considered a barrier to bicycles attempting to cross it, portions of I-5 are open to bicyclists traveling north or south. Exceptions include metropolitan areas with heavy traffic and numerous on-ramps and off-ramps. I-5 is open to bicyclists from north of Cottonwood to Anderson, and from the City of Shasta Lake (north of Redding) to Dunsmuir (at the County line) for a total of 45 miles (see Appendix A-Map 3: Shasta County Bikeways Connections to Other Bike Plans).

Caltrans is active in bikeways planning and development. Caltrans promotes bicycling by installing bike racks and bike lockers, and coordinating bicycling events.

## Intercounty and Intracounty Corridors

Portions of the California State Highway system are open to bicyclists (see Table 3.4). This includes SR 273 between Redding and Anderson, SR 299 from Trinity County to Lassen County (except for the portion in Redding, from East Street to I-5 and from I-5 to Old Oregon Trail), SR 44 from Victor Avenue in Redding to Lassen County, SR 89 from Siskiyou County to Old Station, and SR 36 from Platina to Trinity County. Although these highways provide major links between the counties surrounding Shasta County, high speeds and heavy truck use make them advisable for only the most experienced bicyclists.

Table 3.4: State and Federal Highways Open to Bicyclists		
Highways	Location	Miles Open to Bicycles
I-5	North Cottonwood to Anderson	5
I-5	SR 273 to Oasis Road	1
I-5	North Redding to Dunsmuir	40
SR 36	Platina to Trinity Co.	12
SR 44	Redding to Lassen Co.	75
SR 89	Siskiyou to Viola	50
SR 151	City of Shasta Lake	3
SR 273	Redding to Anderson	15
SR 299	Trinity Co. to Lassen Co.	100

Source: Caltrans District 2 Cycling Guide for State Highways of Northern California

## Local: County Bikeways

Table 3.5: Shasta County Existing Class II Bikeways				
Status	Road Segment	From	To	Miles
Existing	Lake Boulevard	Redding Limit	Ashby Road	2.05
Existing	Happy Valley Road	Olinda Road	Palm Avenue	0.50
Existing	Ashby Road	Lake Boulevard	Shasta Lake Limit	0.15

A Bicycle Lane Account (BLA)-funded bikeway project was completed in 1990 on Deschutes Road in Palo Cedro. This is a 1.3 mile combination Class I and Class II bikeway linking major destinations in the community, including two schools, a shopping center, and a major subdivision. The Class I portion of this combination is .6 miles, from Berkeley Drive to the crosswalk that leads across Deschutes Road to Junction School.



The remainder is a Class II bikeway that extends to the entrance of the Palo Cedro Village Shopping Center. An extension of this bikeway to the north is planned when funding is available. Another county bicycle facility is the .125 mile Class I under-crossing at Boyle Drive and Deschutes Road.

**Local: City Bikeways**

**Table 3.6: Local Cities - Existing Bikeways**

	Class I	Class II	Class III
City	Existing Miles		
Redding	22	24	76
Shasta Lake	0.3	5.2/1.6*	0
Anderson	2.5	3.2	1
*With non-standard signing and pavement delineation			

**City of Redding**

The City of Redding has extended the Sacramento River Trail on both sides of the Sacramento River. The Ribbon Bridge was completed in 1990 linking these trail segments together below Keswick Dam. In July 2004, the Sundial Bridge was complete; connecting the Redding Arboretum and Turtle Bay Exploration Park. In 1998, Redding completed a Class I bike path that parallels and crosses over a portion of Buenaventura Boulevard. The City of Redding plans to eventually connect this and various other bikeway segments with the Sacramento River Trail.

The Dana to Downtown Bikeway will provide a critical connection for bicyclists and pedestrians in the Redding area.



The Dana to Downtown Bikeway is a one mile Class I facility that spans the Sacramento River from the intersection of Dana and Hilltop Drives to Arboretum Drive. The bikeway runs parallel along SR 44 on the north side of the river and provides connectivity to the Sacramento River Trail system as well as Turtle Bay Exploration Park, Redding’s Convention Center and the Downtown area in general.

The Dana to Downtown Bikeway will provide a critical connection for bicyclists and pedestrians in the Redding area.

The Olney Creek Bridge on SR 273 has a Class II bicycle facility which turns into a Class I for 300 yards. There is a divider on the bridge and a five-foot shoulder. South of the bridge the bikeway connects to Jewel

Lane. The Blue Gravel Mine Trail and Canyon Creek Trail total 2.2 miles of bikeways. There are other bike paths, routes, and trails located throughout the city. Bicyclists interested in details on these facilities may obtain a copy of the *2010-2015 City of Redding Bikeway Action Plan* or the *2004 City Parks, Trails, and Open Space Master Plan* from the City of Redding.

### **City of Shasta Lake**

In December 1998, the City of Shasta Lake completed 1.5 miles of bike lanes on Lake Boulevard. This route begins at the south city limit and connects with the bike lane at Shasta Dam Boulevard. It allows a person to ride a loop of approximately six-miles using Lake Boulevard, Shasta Dam Boulevard, and Ashby Road. There is a small segment of Ashby Road between the railroad tracks and Lake Boulevard that is outside the City of Shasta Lake limits that does not have a bike lane.

### **City of Anderson**

According to the *2007 City of Anderson BTP*, Anderson has 2.5 miles of Class I bike paths in the Anderson River Park. In addition, there are several miles of trails for off-road cyclists in and adjacent to the park near the Sacramento River. Numerous unimproved trails and roads within the city lead to quiet, secluded, spots for recreational enjoyment.

## **Recreational Bicycling**

### **On-road Bicycling**

Recreational bicyclists have numerous options for enjoyable and picturesque bike rides in the county. All of the bike routes, corridors, and paths mentioned above are available to bicycle commuters and recreational bicyclists alike. Many of the County's remote country roads offer beautiful rides through oak or pine forests, often with views of distant snow-covered mountains. However, bicyclists must take care on these roads, most of which are narrow and winding, even though the traffic volume is low.

More courageous and hardy bicyclists can treat themselves to close-up views of snow-covered mountains by bicycling through Lassen Volcanic National Park which is located in the eastern portion of the county, approximately 47 miles from Redding. Lassen Volcanic National Park permits bicycling on all paved roads. Bike racks are



located at the Loomis Museum in the northwest portion of the park, and behind park headquarters in Mineral.

Few bicyclists attempt to bicycle through the park because of the high elevation, steep roads, and heavy recreational vehicle use on roads that have no shoulders. An added danger for bicyclists in crowded parks with narrow roads is the possibility of being struck by the extended mirrors on vehicles pulling trailers.

Bicyclists do occasionally come in groups, sometimes as part of a local club or a national bike touring service such as Backroads Bicycle Touring. Other than the major park road, bicyclists can bike around the campground at Manzanita Lake. After October 1, and before the first snows, is a favorite time for bicyclists to use the park since tourist volume drops and there is less traffic on the roads.

The two State parks in the County, McArthur-Burney Memorial Park and Castle Crags State Park, have a policy that bicycles are not allowed on any trails not specifically designated for bicycles.

### **Off-road Bicycling**

There are many opportunities in the county for off-road bicycling. Lassen Volcanic National Forest allows bicycling throughout the forest except on the Pacific Crest Trail and in open wilderness.

The Whiskeytown-Shasta-Trinity National Recreation Area is heavily used by off-road bicyclists and mountain bikers. This recreation area offers hundreds of trails for hikers, horseback riders, and bicyclists. Only two steep, narrow trails on the lake shore are closed to bicyclists.

Bicyclists are permitted to ride to the crest of Shasta Bally (elev. 6,209). As many as 40 bicyclists can be seen riding up each day to ride the trails throughout the recreation area. A dozen or more bicyclists often brave the hottest days to ride through the park. There are few reported conflicts between bicyclists and other users.

There are extensive opportunities for off-road riding on land owned by the Bureau of Land Management (BLM). At the Gene Chappie Shasta Off-Highway

Cycling up Shasta Bally - Photos courtesy of Redding Mountain Biking Club



Vehicle Area near Shasta Lake, the bicyclists share the non-paved trails compatibly with motorized vehicles. There are also many dirt paths utilized by off-road bicyclists on BLM land near Swasey and Lower Springs Road.

### **Sacramento River Rail Trail**

Bicyclists can be found riding on a twelve-mile stretch of the former railroad bed that goes from the end of the Sacramento River Trail to Shasta Dam (Appendix A-Map 4: Non-Motorized Trails). This trail connects with the City of Redding’s network of trails. In cooperation with Shasta County, the McConnell Foundation, and other interested participants, the BLM upgraded the railroad grade in the 2010. The land is owned by the U.S. Bureau of Reclamation and managed by BLM.



### **Proposed Bikeways**

Shasta County proposes 86.22 miles of bikeways located at various locations throughout the unincorporated area of the county. Below is a discussion on where currently proposed bikeways will be located. Table 3.12 contains a list and description of all proposed bikeways.

### **Recreational Bicycling**

In the Burney area a group called “Save Burney Falls” plans to acquire approximately 8.25 miles of abandoned track from the McCloud Railway Company for a multi-use trail. Since 2005, Save Burney Falls has worked on acquiring the land. This rail/trail project will connect Burney and Johnson Park to the McArthur-Burney Falls Memorial State Park, as well as the Pacific Crest Trail. When complete, the trail will provide a paved access to users.

### **End-of-Trip Bicycle Parking Facilities**

Section 891.2 (d): A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers (Appendix A-Map 1: Bikeways and Land Use).

Bikeways are only part of the story. Once the destination is reached, there must be facilities for storing and securing bicycles. Facilities include bike racks and lockers, or “corrals” for storing bicycles, as well as showers and changing facilities.



### **Existing End-of-Trip Bicycle Facilities**

Out of the three major employers (see Appendix A-Map 1: Bikeways and Land Use) in Shasta County outside of the cities only Sierra Pacific Industries near Anderson, and Shasta College northeast of Redding, provide bicycle facilities including bike racks, showers and lockers.

Shasta College provides seven bicycle racks on campus. There are few bicycle commuters due to the campus’ remote location and lack of shoulders on the road at the College’s south entrance intersection and on Old Oregon Trail. The current East Redding Bike Lane Project will upgrade the connection from downtown and northwest Redding for commuters. Shasta College prohibits bicycling on campus paths.

Racks to lock their bicycles and places to shower and change clothes may be the only incentive some bicyclists need to regularly commute to work by bicycle. Shasta County should encourage public and private businesses to provide on-site bicycle facilities.

### **Proposed End-of-Trip Bicycle Facilities**

All County schools and major employers should have at least a sturdy rack that supports a bicycle on two parts where bicycles can be locked. The following communities should have at least one bicycle rack located at their community centers: Cottonwood, Bella Vista, Palo Cedro, Burney, Fall River Mills, McArthur, Whitmore, Oak Run, and Shingletown (see Appendix A-Map 1: Bikeways and Land Use).

## Bicycle Transport and Parking Facilities for Connection with Other Transportation Modes

Section 891.2 (e): A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels (Appendix A-Map 5: Other Transportation Modes).

Shasta County has five Park-and-Ride lots. Park-and-Ride lots are parking spaces designated for those wishing to have a meeting place for carpooling. Space is available on a “first come, first serve” basis, and anyone can use them. Clear Creek, Cottonwood, and Deschutes Park-and-Ride lots are located in the SCR. Black Butte, Burney, and Shingletown, are in the mountainous portion of the county to the east of the SCR. Table 3.7 gives the location and information on each of the six lots (Appendix A-Map 1: Bikeways and Land Use).

Facility	Location	Owner	Spaces	Transit Connection	Bike Racks
Cottonwood	I-5 at Bowman Road	State/County	19	No	No
Clear Creek Road	Hwy 273/Clear Creek Road	County	13	Nearby	No
Deschutes	Deschutes/Hwy 44	State	20	No	No
Burney	Hwy 89/Hwy 299	USFS	10	No	No
Shingletown	Hwy 44/Wilson Road	State	14	No	No
Black Butte	Hwy 44/Black Butte Road	State	12	No	No

*Source: Caltrans District 2 Cycling Guide for State Highways of Northern California*

### Connections with Public Transit

Allowing bicycles on public transit reduces the need for bicycle racks and lockers, and is an excellent method of connecting bicycling with other modes of transportation. It gives bicyclists the option of riding to distant transit stops. Once on the bus, the bicyclist has the freedom of using his bicycle to travel throughout the day. In addition, it alleviates the concerns associated with locking a valuable bicycle at a distant bicycle rack, or riding on a bike route that may not have bike lanes.

The areas public transportation provider, the Redding Area Bus Authority (RABA), has bike racks on all fixed-route buses. There is a limit of three bikes on a rack. There is no extra charge for using bike racks. Daily usage is not known, but driver input points to the bike-rack program being a success as there are several bicycles per route per day. Bicycle racks holding up to three bicycles are currently available on all RABA busses; these racks are well used. According to

a survey conducted by RABA, drivers in September 2008, over 1,100 bikes were carried throughout all routes over a two week period. Due to the high demand for bus bike racks, in 2008, RABA upgraded all of its busses with racks to handle three bikes instead of two, which is now the current standard.

### **Facilities for Changing/Storing Clothes and Equipment**

**Section 891.2 (f):** A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.

Both Sierra Pacific Industries and Shasta College have end-of-trip bicycling facilities. Major employers are encouraged to include bicycle lockers and shower facilities for employees for bicycle commuters.

### **Bicycle Safety and Education**

**Section 891.2 (g):** A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicyclists.

California law states that bicycles have the same rights and responsibilities as automobile drivers. Bicyclists are subject to the same rules and regulations as any other vehicle on the road (California Vehicle Code, Division 11, Chapter 1, article 4). This is important for automobile drivers and bicyclists alike to understand as this makes commuting safer for all. This has led to the idea that bicycle commuters need to “drive” their bicycle instead of “ride” their bicycle.

While commuting or riding for leisure on roads, bicyclists need to remember to act like they are in a vehicle and follow the “rules of the road.” This means that they should turn, merge, stop, and go appropriately, and signal to make sure that all other commuters on the road are aware of what they are doing. Additionally, bicycle commuters are not to jeopardize their safety. If it becomes necessary to ride in the middle of a lane to ensure safe commuting, they should. There seems to still be a large misconception of this method by automobile drivers and bicyclists alike. Local agencies, in partnerships with community groups, should educate the public on the proper practices and responsibilities of everyone on the road. This should include public service announcements on local TV and radio.

## Bicycling Accident Statistics

The California Statewide Integrated Traffic Records System (SWITRS) keeps a record of all bicycling accidents that are reported each year in Shasta County. These include accidents involving a solitary bicycle, two bicycles, a bicycle and a stationary object, and a bicycle and a vehicle. Because accidents involving vehicles are most likely to be reported to law enforcement agencies, they make up the majority of accidents listed in the report.

According to SWITRS, there have been 165 bicycling accidents in the unincorporated portions of Shasta County from 2005 through 2008 (Table 3.8). Yearly rates vary from a low of 32 bicycling accidents in 2006 to a high of 47 bicycling accidents in 2005. Two accidents, which took place in the City of Redding in 2007, resulted in death. These accident figures reflect all accidents in Shasta County, including those on state highways.

<b>Year</b>	<b>Accidents</b>	<b>Deaths</b>
2008	43	0
2007	43	2
2006	32	0
2005	47	0

The number of bicycling accidents has increased since the 1995 Shasta County Bikeway Plan, when statistics from SWITRS disclosed an average of 15 bicycling accidents per year between 1987 and 1993. Between 1995 and 1998 there was only an average of six per year.

To reduce injuries and fatalities, there is a need for Shasta County to support projects that will minimize the conflict between cyclists and motorists. One way to do this is by requiring new road projects and improvements on existing roads to provide adequate clearance for bicyclists to ride on both sides of the two-way streets. Giving priority to bicyclists, or bicyclist-only signals at lights to give bicyclists a head start and, designated turn lanes for cyclists could provide safer infrastructure for the commuter (see Exhibits B-D for signage).

## Complete Streets

### AB 1358 – Complete Streets Act

In September 2008, Assembly Bill 1358 Complete Streets Act was passed and signed into California law. This bill states that starting on January 1, 2011, the legislative body of any city or county that does an update to the circulation element of their general plan will be required to identify how the jurisdiction will provide for the routine accommodation of all users of



the roadway including motorists, pedestrians, bicyclists, individuals with disabilities, seniors, and users of public transportation (AB 1358). Full enforcement of the plan will not happen until January 1, 2014. No direct impact to bicycle facilities will be felt until 2014 or later.

This bill is unique in that it proposes that cities and counties consider how to best accommodate all users and being that bicycle transportation is a viable alternative to the automobile, it may direct more planning and design of streets to better accommodate bicycle commuters. Possible funding sources may arise to help communities implement their general plans.

By having "complete streets" Shasta County can reduce the number of vehicles on roads, encourage use of mass transit, reduce air pollution and greenhouse gases, and encourage community members to live a healthier lifestyle. "Complete streets" should be created whenever feasible.

### **School-age Bicyclists**

School-age bicyclists are of significant concern in vehicle/bicycle related accidents. Children can be most unpredictable for motorists and great care is needed when driving near areas where there are high concentrations of children such as; schools, libraries, and parks. One of the biggest problems is getting children to school in a safe manner on routes that are safe for them to use. The Safe Routes to School Program (SRTS) is set to do just that, as its concept is to provide facilities for safe walking and bicycling to schools for children and to help promote a healthy lifestyle. By removing barriers on routes that children use to get

to and from school we can lower the chances of collisions between automobiles and school-age bicyclists.

## Education

### Safe Routes to Schools

In 2009, Shasta County received grant money to implement a SRTS educational program. This program focuses on educating students and families on getting children to walk or bike to school. Current activities include:

- Walk to School days.
- Frequent Walker programs at schools, in which students win awards the more days they walk to school.
- Helping parents create walking school buses.
- Walking/biking audits of students going to school to determine their preferred routes.

The SRTS program is being initiated through Healthy Shasta and is working with teachers, parents, and politicians to promote walking and biking in Shasta County communities.

Bicycle-accident statistics highlight the necessity for education for all bicyclists, especially at the school-age level. Teaching children how to bicycle safely may serve to reduce the incidence of young bicyclists conflicting with motorized vehicles.

Currently very little bicycle education is being conducted due to the fact that funding for such programs is at a minimum, or nonexistent, at both the federal and state levels. Prior bicycle education events held in Shasta County were by the Injury Prevention Coalition of Shasta County in which they had bicycle helmet safety workshops and helmet banks from 2001 to 2004, the bank is still in operation. The Department of Public Health provided multiple bike rodeos in the City of Shasta Lake in the past two years. They also held a bicycle assembly with the public and Redding Police Department at Turtle Bay, and joined with the Redding Mayor on a ride to Turtle Bay School via the River Trail to promote biking. Any available funding is being used mainly toward projects that improve facilities.

The California Highway Patrol (CHP) currently offers bicycling education lectures when requested. The CHP also distributes brochures that offer bicycling safety tips and reminders to wear helmets. Many of these are aimed at children with simple pictures and rhyming instructions.

The Shasta County Sheriff's Department-Shasta Lake Station previously has offered combination bicycle/seatbelt safety lectures to students in the Gateway Unified School District. The sub-station also loans out a "Safe Move City"; a miniature city complete with stop signs that teaches bicycling safety.

Schools in unincorporated areas embrace no formal bicycling education program. Individual teachers may request presentations by CHP, but there is no schedule for the frequency of lectures. According to the CHP, other than the schools in the French Gulch area, there are few requests from County schools.

Shasta County should encourage a coordinated bicycling education program for all County schools that emphasizes wearing bicycle helmets. The education program should include teaching new drivers at the high school level to safely share the roads with bicyclists

Caltrans educates the public about available bicycle facilities by distributing up-to-date bicycle route maps and by promoting local bicycling events.

## Law Enforcement

The traffic law enforcement agencies having primary traffic law enforcement in the area of the BTP are the Shasta County Sheriff's Department and the CHP. The Sheriff's Department currently has a policy that citing bicyclists for violating portions of the vehicle code is at the discretion of the individual officer. The Sheriff's Department prefers to take a proactive approach through educating young bicyclists rather than giving citations to children. Consideration to cite adults for moving violations on their bikes would help educate both the cycling and the non-cycling users.



The CHP cites un-helmeted bicyclists when they encounter them. Since CHP usually patrols I-5, they rarely encounter bicyclists except in Cottonwood and Happy Valley. The CHP's policy is to take un-helmeted bicyclists that are less than ten years of age home and give a citation to the parents.

## Assembly Bill 1581 Traffic Actuated Signals

In 2007, AB 1581 was signed into law. This bill requires that when any new traffic-actuated signal or signal being replaced is installed, it is mandatory for the signal to be able to detect bicycle or motorcycle traffic on the roadway. This will help to ensure better detection of bicyclists on the road and to ensure safer passage, and the ability to maneuver through intersections for bicyclists. This law is in effect until January 1, 2018.

## Citizen and Community Involvement

**Section 891.2 (h):** A description of the extent of citizen and community involvement in the development of the plan, including, but not limited to, letters of support.

A Bicycle Transportation Plan workshop was held on May 7, 2010, to gain input on this document. Held in conjunction with Bike to Work Week, the attendees provided their perspective on the update and clarification on key points and concerns from a rider perspective.

The Shasta Wheelmen shared their efforts on signage related to “share the road” and offered to work with the county to provide the signs at key known areas where this message should be reinforced.

A helpful general discussion about how to report bike lane hazards and how the plan should help make the county more “bike friendly” was provided by the attendees and county staff.

A presentation of the current top priority to build the East Redding Bike Lane Project was also made at this meeting. Construction photos, engineering and environmental documentation were shared. The group indicated this detail was helpful to understand how the county must plan, undertake, and fund a project of this magnitude.

Caltrans representatives provided perspective about their efforts to promote biking in the region as well as how they supported the BTA process.

A number of E-mails and phone calls from this group and others helped tune the final edition of this plan. All written comments were incorporated into the plan.

## Consistency and Coordination with Other Plans

Section 891.2 (i): Description of how the BTP has been coordinated and is consistent with other local and regional transportation, air quality, or energy conservation plans, including, but not limited to, programs that provide incentives for bicycle commuting.

The Shasta County BTP is consistent with the following plans:

### Shasta County General Plan

The Shasta County BTP is consistent with all aspects of the 2004 Shasta County General Plan that deal with the following objectives:

- Reducing vehicle trips;
- Reducing vehicle miles traveled;
- Improving air quality;
- Conserving energy;
- Recognizing the bicycle as a functional alternative to the automobile;
- Reducing noise levels generated by transportation

Specific objectives and policies that deal with these issues can be found in the chapters on Circulation, Air Quality, Energy, and Noise in the Shasta County General Plan.

### Shasta County Regional Transportation Plan (RTP)

The 2009 Shasta County RTP deals with bicycles in its non-motorized section. The Transportation Plan and the BTP are consistent in their goals to encourage bicycling in the County by meeting the following objectives:

- Reducing bicycle-auto conflicts;
- Eliminating barriers to bicycle traffic;
- Encouraging bicycling education, and;
- Promoting planning for bicycle facilities during road construction and improvement projects.

### City of Redding 2010 Bikeway Action Plan

The Shasta County BTP is consistent with all aspects of the 2010 City of Redding Bikeway Plan that deal with the following goals and objectives:

- Making conditions safer for bicycle use;
- Encouraging bicycling for environmental reasons;
- Encouraging bicycling for economic reasons;
- Encouraging recreational bicycling, and;
- Developing a continuous, interconnected bicycling system.

### **City of Redding 2004 Parks, Trails and Open Space Master Plan**

The Shasta County BTP is consistent with all aspects of the 2004 City of Redding Parks Trails and Open Space Master Plan that deals with Class I, II and III bikeways.

### **City of Shasta Lake 2009 BTP**

The Shasta County BTP is consistent with all aspects of the 2009 City of Shasta Lake BTP that deal with the following goals and objectives (all come from their general plan):

Circulation: A balanced transportation system must not only serve the needs of vehicular traffic, but must also serve the needs of bicyclists and pedestrians, and in particular, school children.

- Objective C-1: Promote alternative travel modes, including transit, and pedestrian, bicycle circulation systems and Transportation Demand Management (TDM) programs.
- Policy C-f: Encourage bicycle and pedestrian transportation, both on and off streets.
- Policy C-i: Coordinate transportation planning and implementation with regional and local plans.
- Implementation Measure: C-(21): Either individually, or in coordination with, pursue TE and other funding sources for new bikeways, road constructions and improvements, to the extent possible under federal and state law.
- Air Quality: The City of Shasta Lake Air Quality Element of the General Plan was adopted on October 17, 1995 and was not revised in the most current General Plan. The Air Quality section establishes a few policies related to bicycle transportation.
- Open Space, Parks & Recreation: This section addresses the needs of off-road bicycle recreation opportunities. There is one established policy related to bicycles.
- Policy OSR-f: Provide off-road pedestrian and non-motorized bike facilities, where feasible and practicable.

### **City of Anderson 2007 BTP**

The Shasta County BTP is consistent with all aspects of the 2007 City of Anderson BTP that deal with the following goals and objectives:

- Encouraging bicycling for reasons of traffic congestion reduction, energy conservation, air quality, health, economy and enjoyment.
- Provide access to major employment centers in and near the city.
- Encourage major employers to promote commuting by bicycle and to provide adequate bicycle facilities.
- Provide bicycling facilities that are convenient, efficient and easy to use.
- Encourage recreational bicycling.
- Provide access to parks and recreational points of interest within the city and outlying areas.
- Introduce city residents to the fun and benefits of bicycling by promoting bicycling events within the city.
- Make conditions safer for bicycle use
- Develop a city-wide bikeway system that will minimize cyclist/motorist conflicts.
- Enhance the safety of bicycling for school children.
- Increase motorist awareness of the bicyclist rights.
- Increase bicyclist's awareness of their rights and responsibilities on the highway.

## Description of Proposed Bikeway Projects and Priorities

Section 891.2 (j): Description of the projects proposed in the plan and a listing of their priorities for implementation.

The BTP proposes 86.22 miles of bikeways located at various locations throughout the county. Below is a discussion on where currently proposed bikeways will be located. Table 3.12 contains a list and description of all proposed bikeways.

In Shasta County, priority had been given to separated bike paths in the past. These were favored because of a perceived safety of having a facility separated from auto traffic. Construction of these facilities has been slow and costly. Once completed, they need to be kept free from weeds and dirt. These maintenance costs are high because road maintenance equipment does not fit on the narrow paths.

In addition, the lack of motorized vehicles may give users of separated bike paths a false sense of security. Many Class I bike paths cross busy roads and driveways. Few are lit at night or patrolled by law enforcement officers.

According to the Federal Highway Administration, separated bike paths may actually be a disincentive to bicycle commuting. In the study, miles of bike paths versus percent bicycle commuters were plotted for 20 cities. Davis, California had the most bicycle commuters, with 25% in 2006. Dallas, Texas had the most bike paths and the least amount of commuters. This trend was clear for most of the cities. The study conjectured that a high ratio of bike paths may indicate that bicycling has not been incorporated into the transportation network and is limited to recreational use.

Therefore, due to their low construction and maintenance costs and higher commuter usage, Shasta County has been focusing on attaining Class II facilities on the bicycle corridors. The 1987 Shasta County Regional Bikeway Plan proposed a system of bikeway corridors. The location of the bikeway corridors is based on traffic volumes and speeds, bicycle clearance requirements, and pavement surface widths. The bikeway corridors are also chosen according to their alignment with existing and planned city bikeways and major county roads in order to form a compatible interface with the overall multimodal regional transportation system.

The Shasta County Bikeway Corridors (see Appendix A-Map 2: Bikeway Corridors) are to be integrated into the existing transportation system by use of the following city, county, or state existing or proposed bikeways. The tables

under each corridor description (Tables 3.9a through 3.9e) show the sections that have not been striped or signed.

<b>Table 3.9a: Happy Valley Road Corridor</b>	
Happy Valley Road Corridor will serve the Happy Valley area and the Anderson Union High School by connecting South Redding to Cottonwood by way of Gas Point Road and Happy Valley Road. This corridor will also provide a connection between I-5 corridor route and SR 273 corridor route.	
Gas Point Road	I-5, Cottonwood, to Happy Valley Road
Happy Valley Road	Gas Point Road to Hawthorne Avenue
Canyon Road	Hawthorne Avenue to SR 273

<b>Table 3.9b: Deschutes Road Corridor</b>	
Deschutes Road Corridor will proceed from the local bikeways of the City of Anderson northerly on Deschutes to Palo Cedro and to the terminal point at Bella Vista and the SR 299 corridor route.	
Balls Ferry Road	City of Anderson to Deschutes Road
Deschutes Road	Balls Ferry Road to SR 299

<b>Table 3.9c: Placer Road Corridor</b>	
Placer Road Corridor will connect two local City of Redding bikeways at Placer Road and Branstetter Lane.	
Placer Road	City of Redding to Texas Springs Road
Texas Springs Road	Placer Road to Branstetter Road

<b>Table 3.9d: Old Oregon Trail Corridor</b>	
Old Oregon Trail Corridor will connect SR 44 bike corridor to SR 299 East bike corridor and via Shasta College northerly to Oasis Road and to the I-5 corridor route. This corridor will serve as a connecting link between the local bikeways in the City of Redding to Shasta College and City of Shasta Lake.	
Oasis Road	I-5, City of Redding, to Old Oregon Trail
Union School Road	I-5, City of Shasta Lake, to Old Oregon Trail
Old Oregon Trail	I-5, Mountain Gate, to SR 299 East
Old Oregon Trail	SR 299 East to SR 44

<b>Table 3.9e: Lake Boulevard Corridor</b>	
Lake Boulevard Corridor will connect the City of Redding bikeway on Lake Boulevard to the City of Shasta Lake and I-5 corridor route. This corridor also makes connection with the Old Oregon Trail corridor and provides a complete county bikeway.	
Lake Boulevard	City of Redding city limits to Ashby Road
Ashby Road	Lake Boulevard to City of Shasta Lake city limits

I-5 Corridor Route – (Caltrans) is open (shoulders) to bicyclists in areas where there are no reasonable alternatives. Rest stops, intermittent service stations, and restaurants may be utilized by cyclists along this route.

California State Corridor Routes – (Caltrans) will follow:

- SR 273 in the north-south direction through Redding to Anderson
- SR 299 from Trinity County through Redding to Lassen County, and
- SR 44 from Redding to Lassen County.

These corridors provide a major link between Shasta, Lassen and Trinity Counties for cyclists.

**Priorities and Implementation Strategies for Countywide Bikeway Projects**

The specific implementation of any given bikeway, with all other things considered equal should be based on the following criteria:

1. Where an opportunity, such as a road widening or repaving, makes implementation favorable;
2. Where resolution of a major obstacle, such as bridge construction (i.e. Airport Road Bridge), make implementation necessary and cost effective;
3. Where the segment is not disconnected or other wise poorly accessible from the rest of the system;
4. Consistency with other plans. Projects will rank higher are those which are consistent with other existing planning documents. These include the Regional Transportation Plan, the Circulation element of the County General Plan, and a specific area plan;
5. Land uses served. High priority is given to projects which connect, or pass through existing schools, parks and commercial areas. Lower priority is given to those bikeways intended to serve potential future demand;
6. Ease of implementation. Higher priority is given to those projects which can be more easily implemented. This involves considerations such as

environmental clearances needed, right-of-way required, bridge construction, etc.;

7. Need for improvement along the route due to safety concerns. This criteria includes an evaluation of the corridor for such factors as traffic volume and speed, and width of existing lanes, for proposed Class II facilities (such as East Redding Bike Lane project); and distance and hazards involved in the necessary detour around a proposed Class I facility;
8. Cost. Lower-cost improvements are ranked higher as such projects will provide the greatest amount of improvement in the shortest time during the implementation of the Bikeways Plan; and
9. Aesthetics/Recreation/Tourism Value. While sometimes difficult to quantify, candidate projects that are recommended on the basis of its scenic qualities (Rail Trail for example), recreational opportunities and potential to attract bicycle tourism need to be considered in developing bikeway projects.

In many situations, the most needed bikeway improvement may not be implemented first. The reasoning in these cases include external factors such as new road construction that create opportunities to provide new bikeway facilities without consideration for need. For instance, design standards moving forward for “complete streets” will provide the infrastructure but actual connectivity to the bikeway network may not occur at time of first construction. Additionally, projects that come forward from the SRTS non-infrastructure project may generate demand for facilities that will address safety issues in getting to and from school. Projects of this type are eligible for special funding from both state and federal sources, and can become the top priority of the Shasta County Department of Public Works when the project is awarded.

The first priority in this plan is to progress on the construction of the 2.1 mile East Redding Bike Lane project. Transportation Enhancement funding as well as one time American Recovery and Reinvestment Act funding has been obtained for the first phase of this project. At time of this plan (Spring 2010) the environmental, right of way and preliminary engineering hurdles have been cleared and construction has begun.

The second phase is currently programmed in the Federal Transportation Improvement Program (FTIP). It is expected to gain funding in the 2011-12 fiscal year. Preliminary engineering and right-of-way activities will begin shortly after obligation of the funding. Construction should begin in 2012.

**County of Shasta**  
**East Redding Bike Lane Project – College View portion**



Start Date: April, 2010

Length: 2.1 miles

Adds: 6-foot bike lanes on either side of  
College View Drive from Davis Gulch  
Road to Old Oregon Trail

Bid Award: \$486,292

Funding Source: Transportation  
Enhancement (TE) and American  
Recovery and Reinvestment Act of 2009  
(ARRA)

A number of proposed Class II Bikeways and their related expected costs listed in Table 3.12 (in no priority order), score well based on the above criteria. Consideration is needed before construction of all new bikeways to obtaining a stable funding source for maintenance of the new segment. The projects listed have been carried over from prior editions of the Shasta County Bikeway plans, and the 2010 update of the Regional Transportation Plan. Proposed and existing Bikeways have been mapped and displayed in this document to better understand the relationship of County bikeways to other jurisdictions.

The County intends to work with all bicycle groups to develop a network of bikeway facilities throughout the unincorporated areas of the County in the long run. The 2010 BTP is designed to be comprehensive but tempered by funding realities that currently preclude the advancement of bikeway projects regardless of their purpose and need. The plan will be updated every five years.

Mapping, to provide a visual reference of key corridors and how they conceptually inter-connect, is included in this plan (see list of Maps). The ability to visualize the proposed bikeways is meant to aid the public and decision-makers on how best to move forward to plan improvements with the scarce resources available. The Shasta County Department of Public Works prioritizes

needed bikeway additions based on the above criteria. All major bikeway plans will be approved by the Shasta County Board of Supervisors before construction activities can occur.

## Past Expenditures and Future Financial Needs

Section 891.2 (k): A description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area.

## Funding Sources

Finding and securing funding for any project is a challenge, especially in difficult economic times as much of the money is received through a competitive process against all other planning and transportation related agencies within California. Shasta County will attempt to acquire funding for bicycle transportation projects from the list of sources below as they become available.

### Federal

#### Congestion Mitigation and Air Quality Improvement Programs (CMAQ)

These funds are available for local agencies in areas where air quality does not meet federal standards for emissions of ozone, carbon monoxide, and certain PM-10 pollutants. Approximately \$360 million is available each year for California agencies. Currently Shasta County meets all federal standards and is not eligible for these funds. If Shasta County air quality is declared to be in federal non-attainment then the County will evaluate possible projects that may become available for such funding.

#### High Risk Rural Roads Program (HR3)

This program is designed to correct safety hazards or problems on rural roads; including reducing the frequency of accidents on rural roads. If it is deemed that a significant number of hazards or accidents between automobiles and bicycles could be avoided by improvements to bicycle facilities then the County may submit projects for consideration of funds.

#### Highway Safety Improvement Program (HSIP)

This program was implemented in order to reduce fatalities and serious injuries on public roadways. Eligible projects must be on public roads, publicly owned bicycle pathways/lanes, pedestrian pathways, or trails.

### Regional Surface Transportation Program (RSTP)

This program is designed to provide funding for a variety of surface transportation projects. Bicycle and pedestrian facilities are eligible for funding.

### Safe Routes to Schools Program (SRTS)

This program is designed to encourage children in grades K-8 to walk or bicycle to school by removing barriers that inhibit safe routes to schools. Local, state, and regional agencies can apply for funding and typically will partner with other organizations such as schools, non-profit agencies, and public health departments.



### Transportation Enhancements (TE)

This program is designed to fund community-based projects that expand travel choices and enhance the transportation experience. Bicycling is easily seen as an alternative travel choice to the automobile and such projects can receive funds.

## **State**

### AB 2766 Motor Vehicle Surcharge Funding Program

This program allows for up to \$4 to be charged per vehicle in motor vehicle registration fees annually for projects that help to improve the air quality in Shasta County by reducing vehicle emissions. Bicycle transportation projects help to reduce congestion, remove vehicles off the road, and promote a healthier lifestyle.

### Bicycle Transportation Account Program (BTA)

These are state funds provided to cities and counties for projects that improve safety and convenience for bicycle commuters. Approximately \$7.2 million is available annually for projects.

### Safe Routes to Schools Program (SR2S)

This is the state version of the SRTS program. Approximately \$20 million is available annually, however in 2007 AB 57 was signed into law and it eliminated dedicated funding for bicycle projects. Currently bicycle projects compete against other safety programs for funding.

### State Transportation Improvement Program (STIP)

These funds are to help state and local agencies plan and implement transportation improvements. Bicycle facilities are eligible projects for STIP funding.

### Transportation Development Act (TDA)

These funds are allocated for transit and non-transit purposes that comply with regional transportation plans. Bicycle facilities are eligible for funding.

### **Local**

Funding sources are also possible from local organizations in the form of donations. Recent contributions in the past few years have come from the McConnell Foundation and local Native American Tribal Governments.

### **Past Expenditures**

Since 2000 there have been a series of bikeways completed. Table 3.10 lists the projects within the unincorporated county that have been completed since 2000.

<b>Table 3.10: Existing Facilities Completed or in Preliminary Engineering Phase since 2000</b>	
Deschutes Road (Lassen View Dr. to Boyle) Bike Lanes	\$ 103,201
Ponderosa Way Path – Black Butte Elementary	\$ 38,127
Old Oregon Trail – Old Alturas Road Bike Lane Addition	\$ 387,976
Happy Valley Road, Olinda, Palm Bike Path	\$ 688,867
Lake Blvd Bike Lanes (HES)	\$ 381,962
Canyon Road Bike Lanes	\$ 115,834
<b>TOTAL</b>	<b>\$1,715,967</b>

### **Future Needs**

Shasta County has leveraged grants from the State Transportation Improvement Program's (STIP) Transportation Enhancement funds, and fees from land development construction to plan and construct the following bicycle facilities (Table 3.11):

**Table 3.11: Shasta County Existing Facilities**

Location	From	To	Approximate Year 2009 Cost* (In thousands)
Canyon Road	Hawthorne Avenue	Highway 273	\$545
Old Oregon Trail	Highway 299 East	Highway 44	\$2,185
Old Alturas Road	Redding Limit	Old Oregon Trail	\$225

*\*The Canyon Road cost reflects only half the project funded currently*

As funding sources become available the County will attempt to leverage those funds with local matches to fund and construct the following projects (Table 3.12, 3.13):

**Table 3.12: Shasta County Proposed Class II Bikeway Costs**

Status	Road Segment	From	To	Miles	Cost <sup>1</sup>
					In thous.
Proposed	College View Drive	Davis Ridge Road	Old Oregon Trail	2.2	\$ 680
Proposed	Old Alturas Road	Redding Limit	Old Oregon Trail	0.45	\$ 225
Proposed	Old Oregon Trail	Highway 299 East	Highway 44	4.37	\$2,185
Proposed	Canyon Road	Hawthorne Avenue	Highway 273	2.18	\$1,090
Proposed	Gas Point Road	I-5/Cottonwood	Happy Valley Road	6.44	\$3,220
Proposed	Happy Valley Road	Gas Point Road	Hawthorne Avenue	6.58	\$3,290
Proposed	Balls Ferry Road	Anderson Limit	Deschutes Road	1.03	\$ 515
Proposed	Deschutes Road	Balls Ferry Road	Highway 299 East	13.80	\$6,900
Proposed	Placer Road	Redding Limit	Cloverdale Road	7.64	\$3,820
Proposed	Texas Springs Road	Placer Road	Branstetter Road	4.60	\$2,300
Proposed	Oasis Road	I-5/Redding	Old Oregon Trail	1.72	\$ 860
Proposed	Union School Road	I-5/Shasta Lake	Old Oregon Trail	1.73	\$ 865
Proposed	Old Oregon Trail	I-5/Mountain Gate	Highway 299 East	7.34	\$3,670
Proposed	Airport Road	Highway 44	Anderson Limit	6.40	\$3,200
Proposed	Cloverdale Road	Placer Road	Oak Street	5.78	\$2,890
Proposed	Oak Street	Cloverdale Road	Palm Avenue	1.57	\$ 785
Proposed	Palm Avenue	Oak Street	Happy Valley Road	2.54	\$1,270
Proposed	Olinda Road	Happy Valley Road	Anderson Limit	5.20	\$2,600
Proposed	Dersch Road	Airport Road	Deschutes Road	2.79	\$1,395
Proposed	Swasey Drive	Highway 299 West	Placer Road	4.06	\$2,030

<sup>1</sup> Costs of bikeways is based on an approximate assumption of \$500,000 per mile for a paved bikeway and shoulder. This includes environmental, design, right of way, utilities, and contract administration costs.

<b>Table 3.13: Local Cities Proposed Bikeways</b>			
	Class I	Class II	Class III
<b>City</b>	<b>Proposed Miles</b>		
Redding	60	79	17
Shasta Lake	6.2	13.5	8.8
Anderson	1	9.8	1.7

Draft

## List of Acronyms

BLA	Bicycle Lane Account
BTA	Bicycle Transportation Account
BTP	Bicycle Transportation Plan
Caltrans	California Department of Transportation
CMAQ	Congestion Mitigation and Air Quality Improvement
DOF	DOF
GHG	Greenhouse gas
HR3	High Risk Rural Roads Program
HSIP	Highway Safety Improvement Program
RABA	Redding Area Bus Authority
RSTP	Regional Surface Transportation Program
SCR	South-Central Urban Region
SCRTPA	Shasta County Regional Transportation Planning Agency
SR	State Route
SR2S	Safe Routes to Schools Program - State program
SRTS	Safe Routes to Schools Program - Federal program
STIP	State Transportation Improvement Program
TDA	Transportation Development Act
TE	Transportation Enhancements
VMT	Vehicle Miles Traveled

## Appendix A

### List of Maps

Map 1: Bikeways and Land Use

Map 2: Proposed and Existing

Map 3: Connections to Other Bike Plans

Map 4: Non-motorized Trails

Map 5: Connections to Other Transportation Modes

Draft

**Legend**

- Proposed Large Residential Projects
- Schools
- Federal Lands
- Cities
- Commercial
- Residential
- Rural Residential
- Resources And Protected
- Unclassified
- Park and Ride Lots

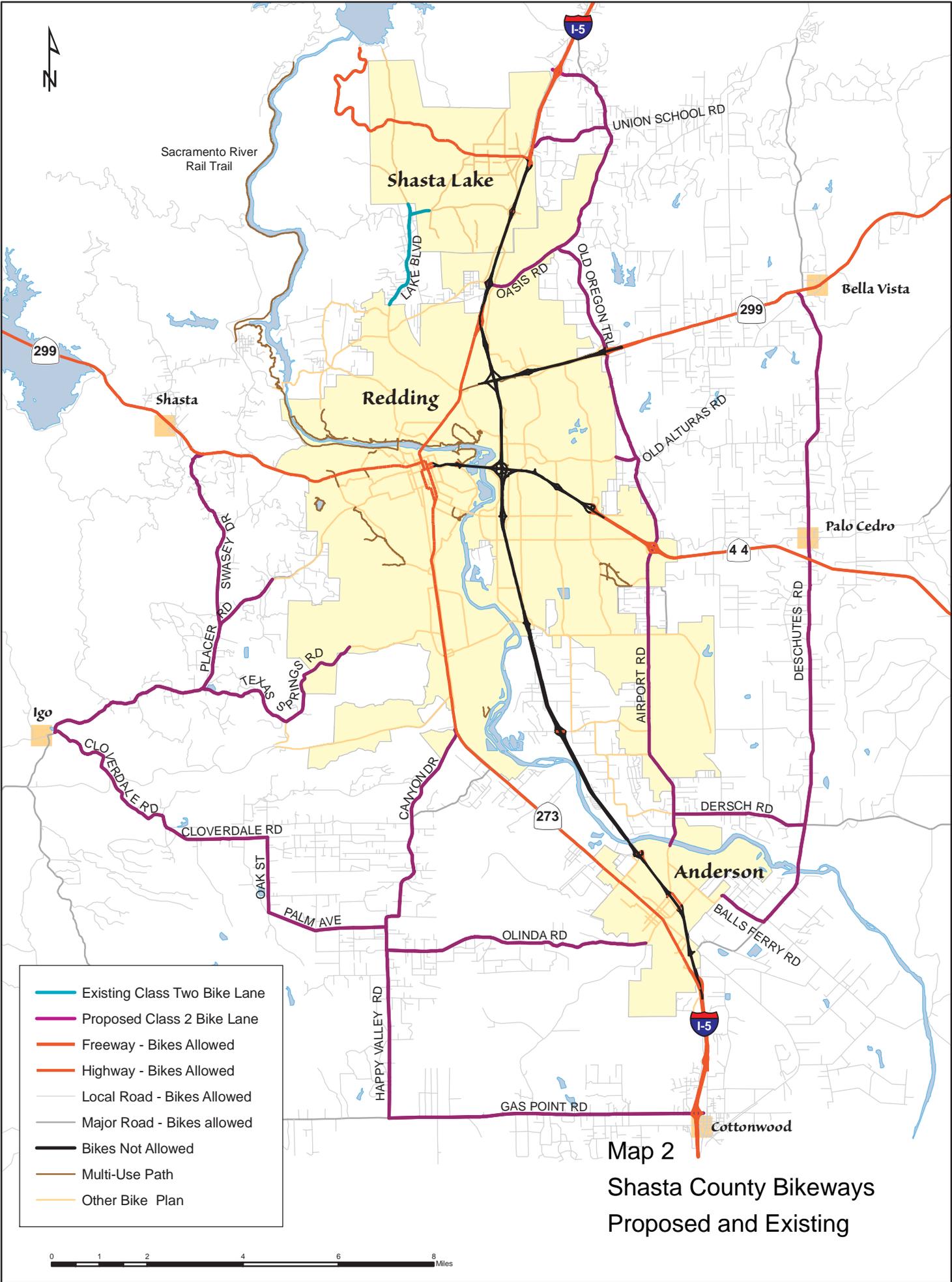
**County Roads**

- Existing Class 2 Bike Lane
- Proposed Class 2 Bike Lane
- Freeway - Bikes Allowed
- Highway - Bikes Allowed
- Major Road - Bikes Allowed
- Freeway - Bikes Not Allowed

Bikes are also allowed on all public local roads



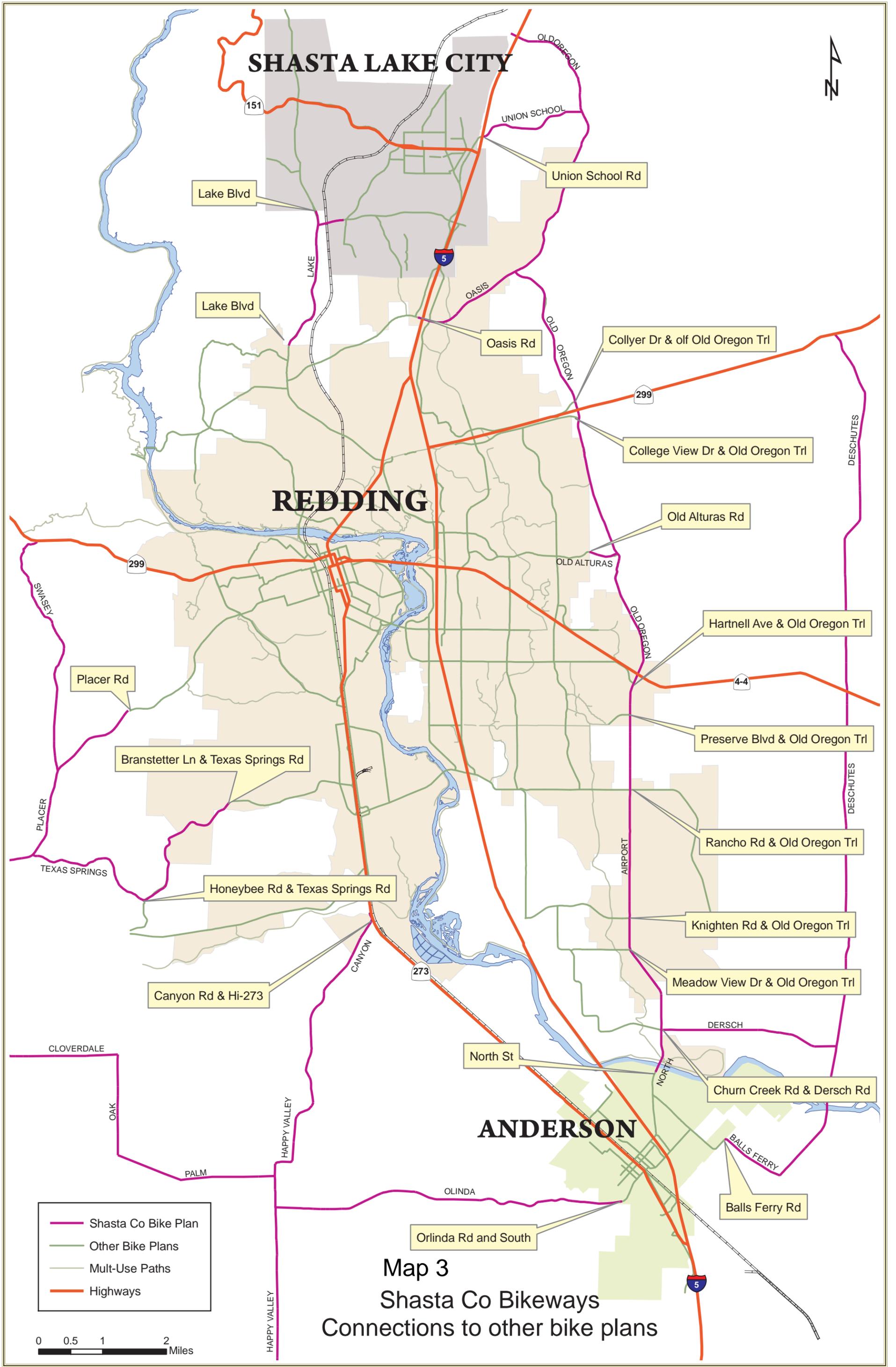
Map 1  
**Shasta Co Bikeways**  
 Bikeways and Land Use



- Existing Class Two Bike Lane
- Proposed Class 2 Bike Lane
- Freeway - Bikes Allowed
- Highway - Bikes Allowed
- Local Road - Bikes Allowed
- Major Road - Bikes allowed
- Bikes Not Allowed
- Multi-Use Path
- Other Bike Plan

**Map 2**  
**Shasta County Bikeways**  
**Proposed and Existing**





**SHASTA LAKE CITY**

**REDDING**

**ANDERSON**

- Shasta Co Bike Plan
- Other Bike Plans
- Mult-Use Paths
- Highways

0 0.5 1 2 Miles

**Map 3**  
**Shasta Co Bikeways**  
**Connections to other bike plans**



### Shasta Chappie OHV Area

Lake Shasta



Dam Hours  
6:00 PM - 10:00 PM

**The Sacramento River Rail Trail** runs along the west side of Keswick Reservoir following the historic rail alignment. It has a gravel surface and connects the Sacramento River Trails in Redding to the Shasta Dam area. **11.1 miles one way** (to be paved in 2010)

**F.B. Trail** starts at the ribbon bridge on the Sacramento River Trail and connects to the Hornbeck Trail. Dirt single-track that winds through steep terrain with great views. Side trail to water fall. **9.3 miles one way**

**The Hornbeck Trail** follows the alignment of the Historic Quartz Railroad where possible. It is a dirt single-track surface. **4 Miles one way**

**The Lower Sacramento Ditch Trail** follows the alignment of The Sacramento Ditch south of Walker Mine Road and connects to the Hornbeck Trail. It is a dirt single-track surface. **2.8 miles one way**

**The Upper Sacramento Ditch** follows the Historic Sacramento Ditch where possible from the Shasta Dam area to Walker Mine Road. It is fairly level and is a dirt single-track surface. **9.2 miles one way**

**Flanagan Trail** starts at the Flanagan Road parking lot and climbs up and over the ridge to the Upper Sacramento Ditch Trail. It is a dirt single-track surface. **2.5 miles one way**

**Chamise Peak Trail** starts up the Flanagan Trail before turning right at the pass and continuing up to the top of the peak.(1628') It is a dirt single-track surface with great views from the top. **2.4 miles from parking to top**

**The Fisherman Trail** starts at Keswick Dam and connects to the Rail Trail. Its is very close to the water's edge and is a dirt single-track surface. **1 mile one way**

Sacramento Rail Trail

Upper Sac. Ditch Trail

Chamise Peak Trail

Flanagan Trail

Upper Sac. Ditch Trail

Matheson (Historic Site)

Freitas Point

Water Access

Lower Sac. Ditch

Hornbeck Trail

Water Fall

FB Trail

Lower Sac. Rail Trail

Fisherman Trail

FB Trail

### Keswick Area - Non Motorized Trails



# Map 4

# Non-Motorized

Rock Creek Rd

Iron Mtn. Road

Eastshore Rd

Quartz Hill Rd

Keswick Dam Rd

Oasis Rd

Lake Blvd

Shasta Dam Blvd

Flanagan Rd

Lake Blvd

Pine Grove

Walker Mine Rd

Water Access

Water Fall

Freitas Point

Matheson (Historic Site)

Motion Cr

Cornish Cr

Moccasin Cr

Shasta Dam Blvd

Lake Blvd

Flanagan Rd

Walker Mine Rd

Oasis Rd

Lake Blvd

Quartz Hill Rd

Keswick Dam Rd

Eastshore Rd

Iron Mtn. Road

Rock Creek Rd

Shasta Dam Blvd

Lake Blvd

Flanagan Rd

Walker Mine Rd

Oasis Rd

Lake Blvd

Quartz Hill Rd

Keswick Dam Rd

Eastshore Rd

Iron Mtn. Road

Rock Creek Rd

Shasta Dam Blvd

Lake Blvd

Flanagan Rd

Walker Mine Rd

Oasis Rd

Lake Blvd

Quartz Hill Rd

Keswick Dam Rd

Eastshore Rd

Iron Mtn. Road

Rock Creek Rd

Shasta Dam Blvd

Lake Blvd

Flanagan Rd

Walker Mine Rd

Oasis Rd

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Quartz Hill Rd

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Eastshore Rd

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Flanagan Rd

Walker Mine Rd

Oasis Rd

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Eastshore Rd

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Flanagan Rd

Walker Mine Rd

Oasis Rd

Lake Blvd

Quartz Hill Rd

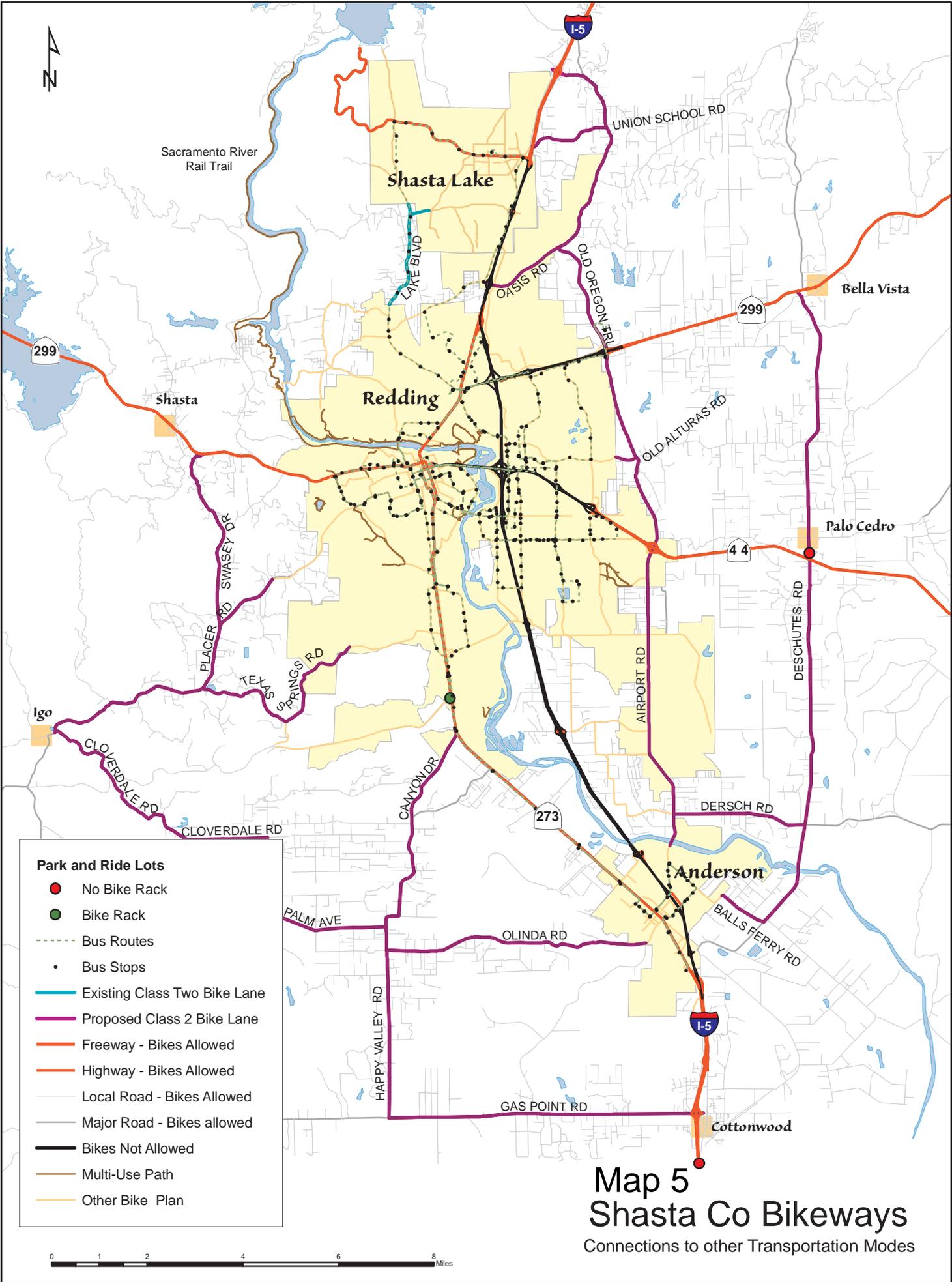
Keswick Dam Rd

Eastshore Rd

Iron Mtn. Road

Rock Creek Rd

Shasta Dam Blvd



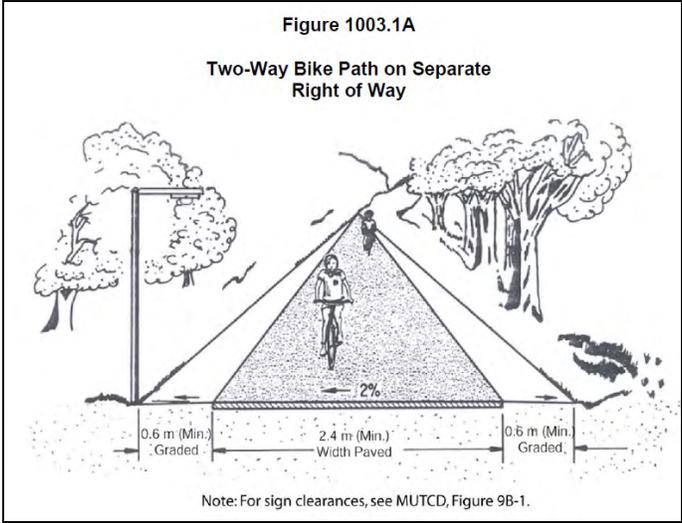
- Park and Ride Lots**
- No Bike Rack
  - Bike Rack
  - - - Bus Routes
  - Bus Stops
  - Existing Class Two Bike Lane
  - Proposed Class 2 Bike Lane
  - Freeway - Bikes Allowed
  - Highway - Bikes Allowed
  - Local Road - Bikes Allowed
  - Major Road - Bikes allowed
  - Bikes Not Allowed
  - Multi-Use Path
  - Other Bike Plan

**Map 5**  
**Shasta Co Bikeways**  
 Connections to other Transportation Modes

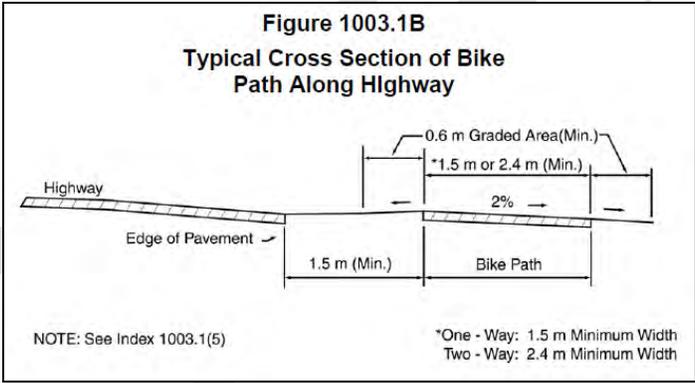


# Appendix B

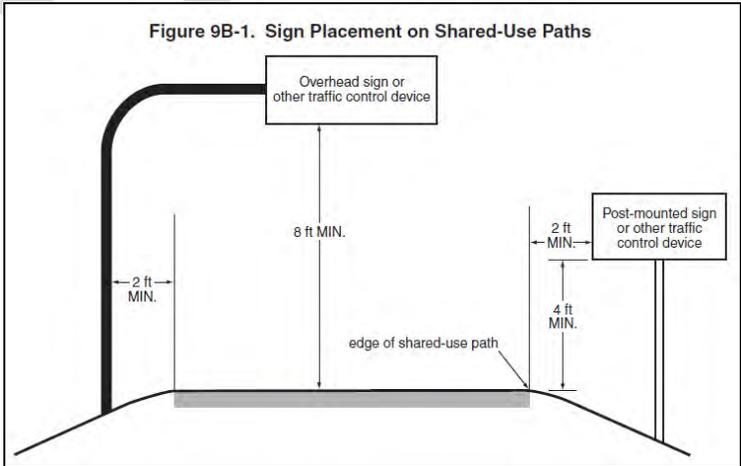
## Exhibit A: Class I Bikeway



Source: Caltrans Highway Design Manual



Source: Caltrans Highway Design Manual



Source: California MUTCD 2009

# Exhibit B: Bikeway Signage

Figure 9B-2. Regulatory Signs and Plaques for Bicycle Facilities

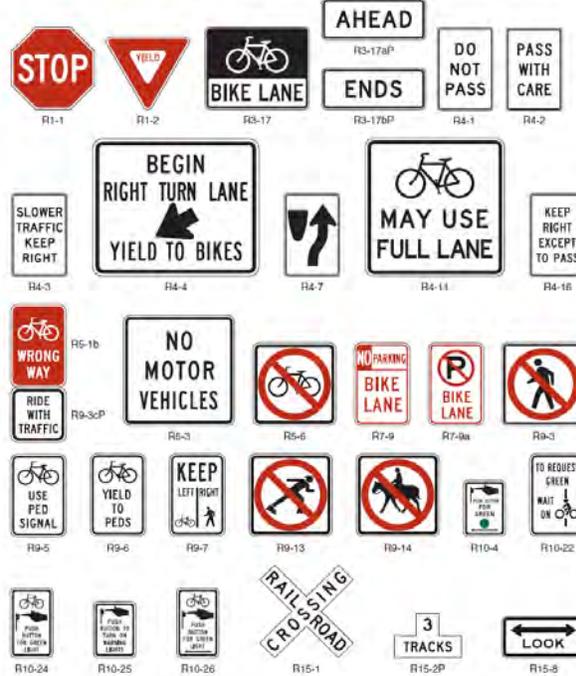


Figure 9B-3. Warning Signs and Plaques and Object Markers for Bicycle Facilities

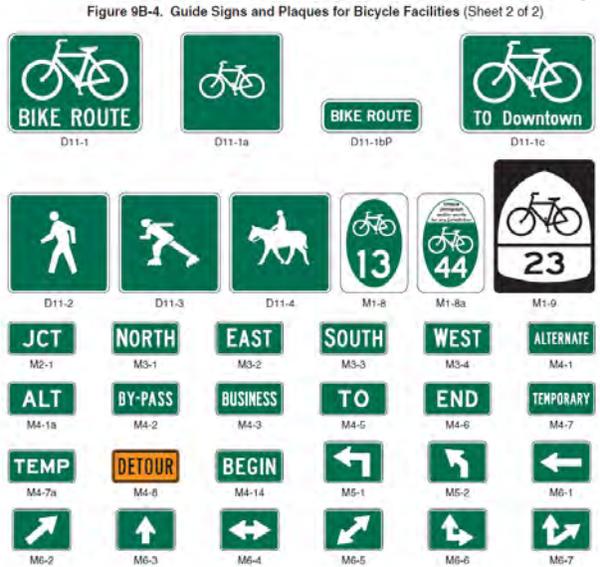
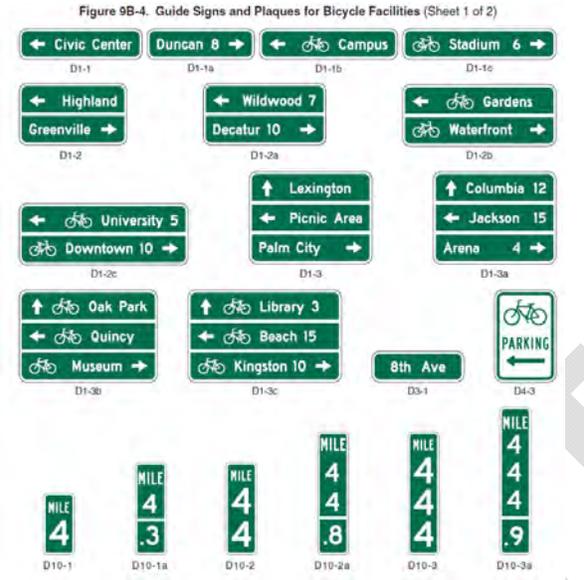


\* A fluorescent yellow-green background color may be used for this sign or plaque. The background color of the plaque should match the color of the warning sign that it supplements.

Source: California MUTCD 2009

Source: California MUTCD 2009

# Exhibit C: Bikeway Signage

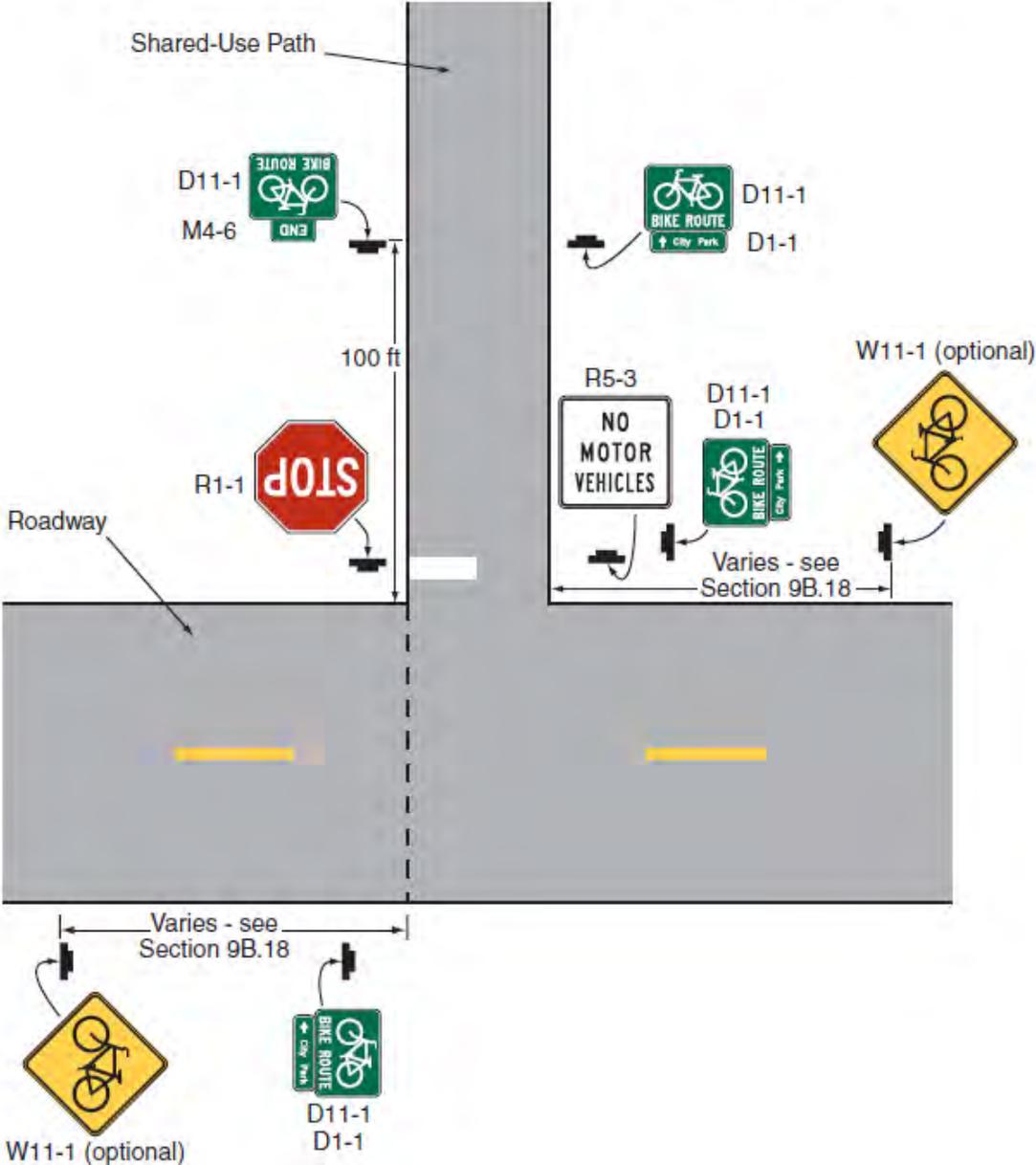


Source: California MUTCD 2009

Source: California MUTCD 2009

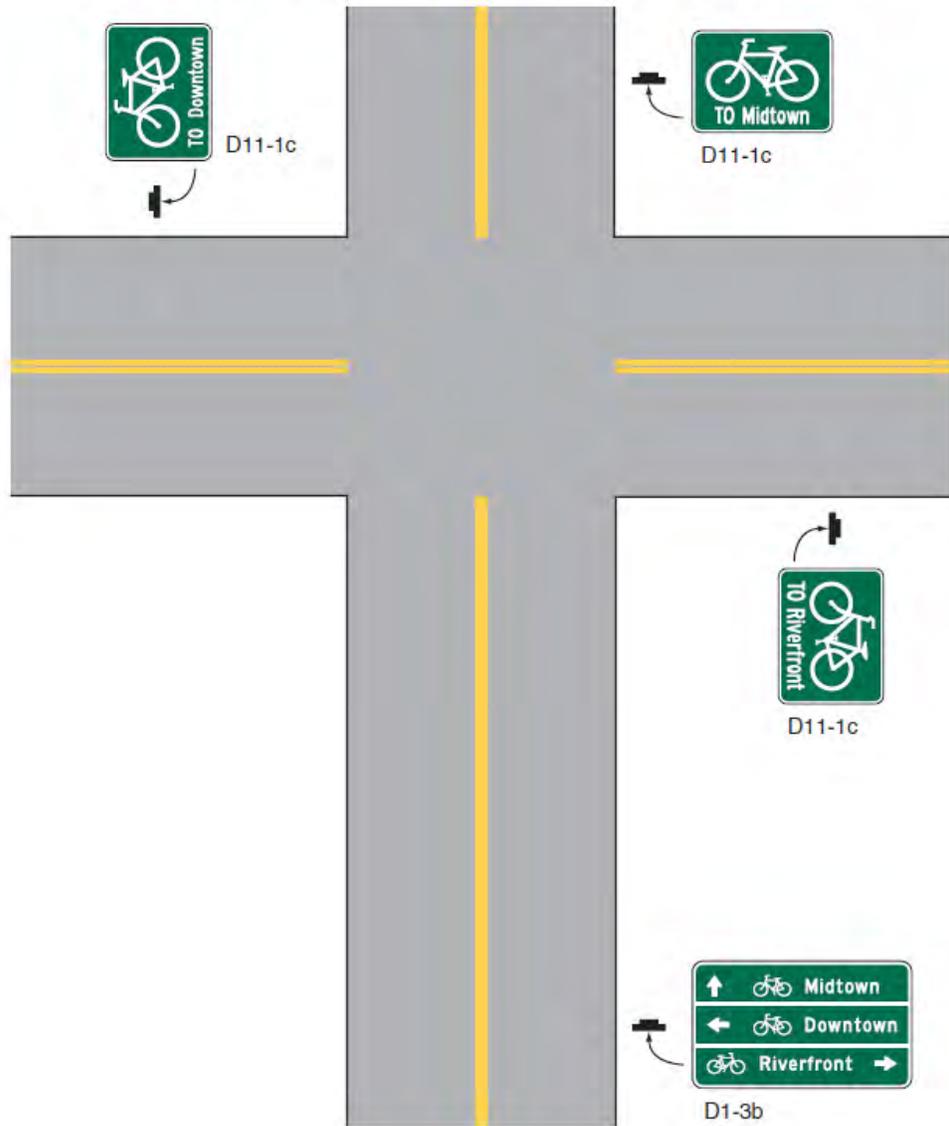
# Exhibit D: Bikeway Signage

Figure 9B-5. Example of Signing for the Beginning and End of a Designated Bicycle Route on a Shared-Use Path



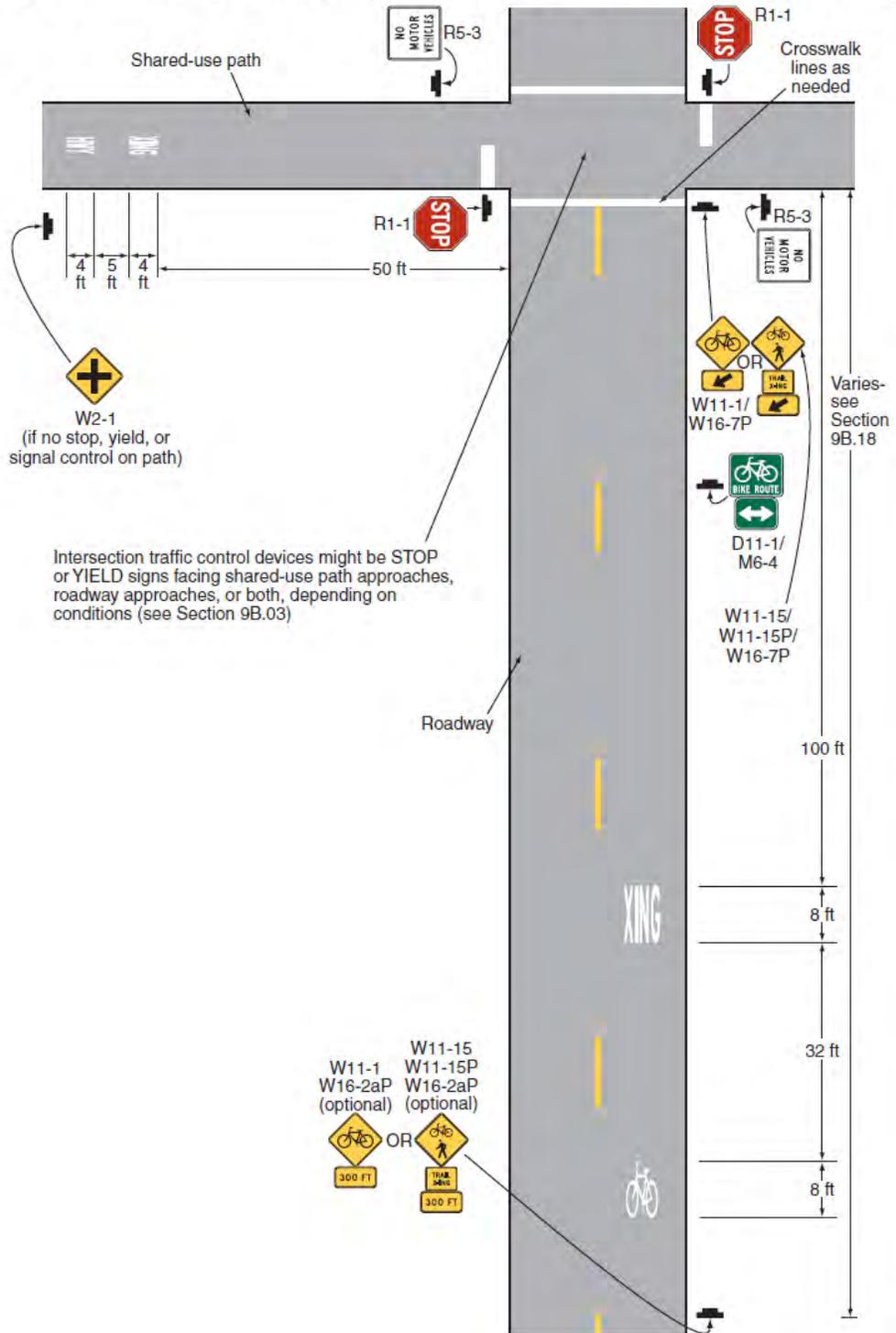
# Exhibit E: Class I Bikeway

Figure 9B-6. Example of Bicycle Guide Signing



Source: California MUTCD 2009

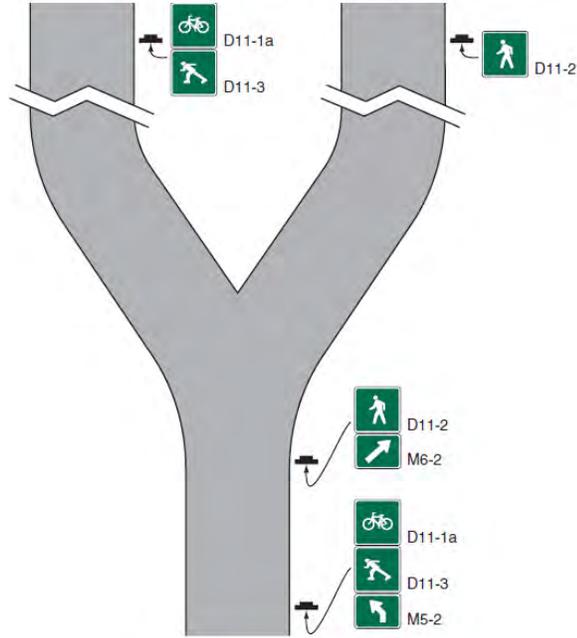
Figure 9B-7. Examples of Signing and Markings for a Shared-Use Path Crossing



Source: California MUTCD 2009

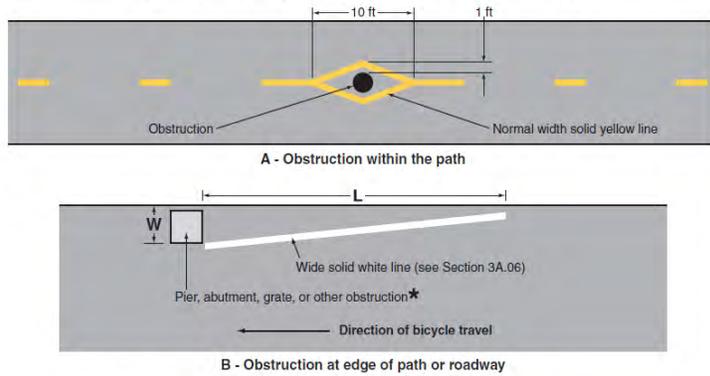
# Exhibit F: Miscellaneous Markings/Signage

Figure 9B-8. Example of Mode-Specific Guide Signing on a Shared-Use Path



Source: California MUTCD 2009

Figure 9C-8. Examples of Obstruction Pavement Markings



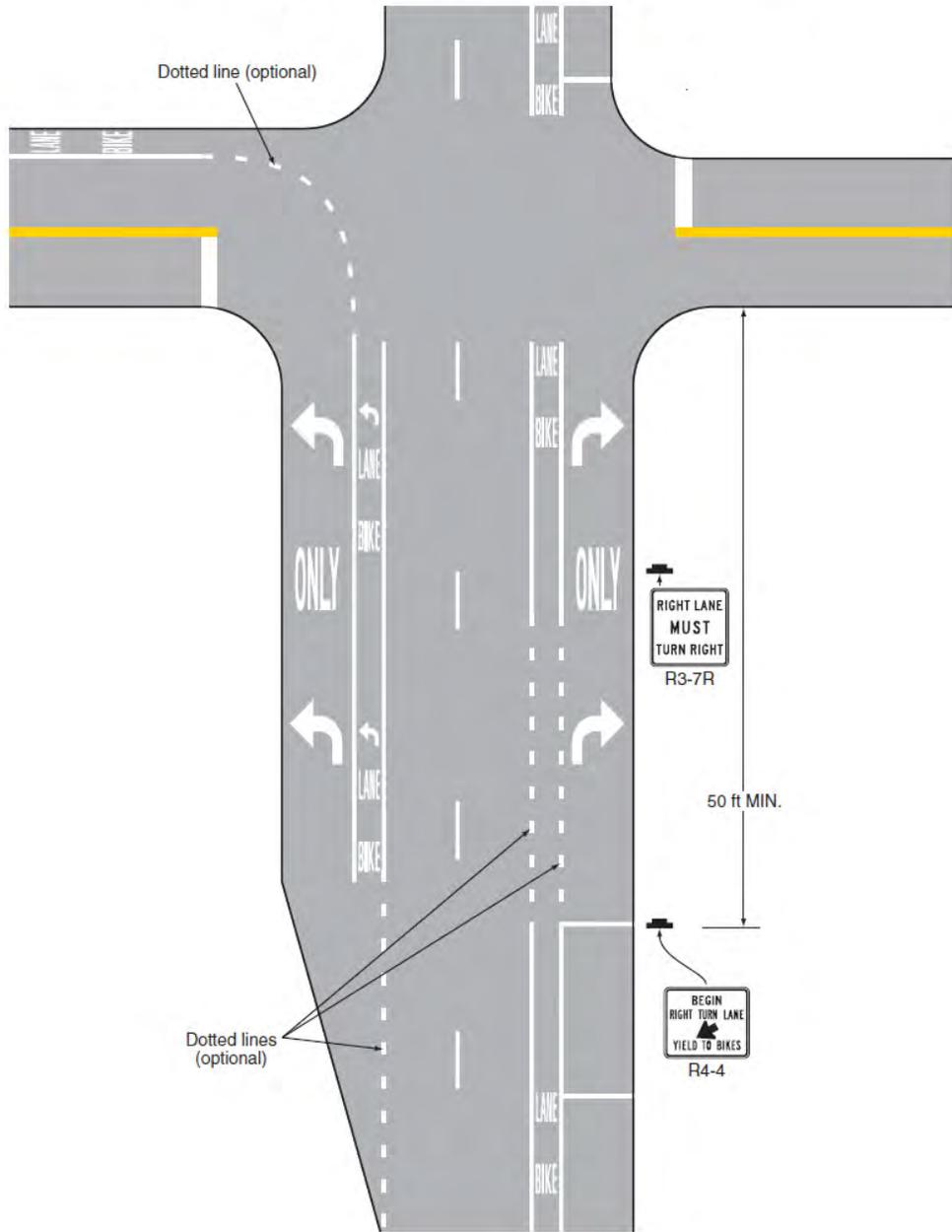
$L = WS$ , where W is the offset in feet and S is bicycle approach speed in mph

★ Provide an additional foot of offset for a raised obstruction and use the formula  $L = (W+1) S$  for the taper length

Source: California MUTCD 2009

# Exhibit G: Class II Bikeway

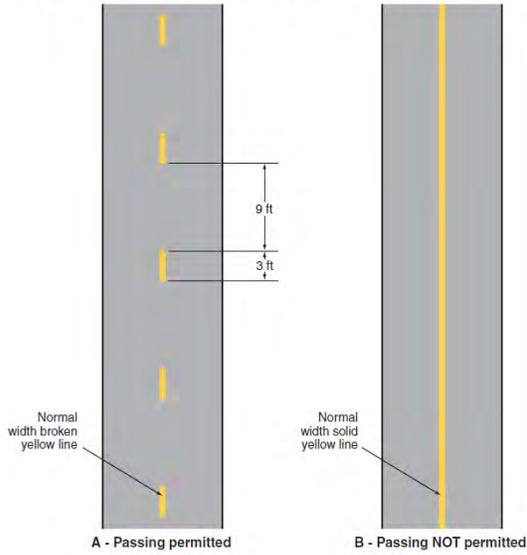
Figure 9C-1. Example of Intersection Pavement Markings—Designated Bicycle Lane with Left-Turn Area, Heavy Turn Volumes, Parking, One-Way Traffic, or Divided Highway



Source: California MUTCD 2009

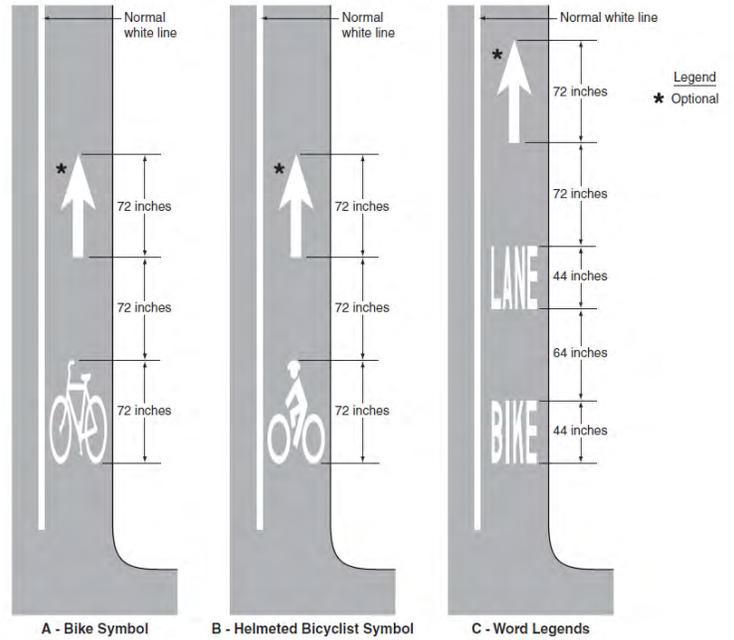
# Exhibit H: Bikeway Pavement Markings

Figure 9C-2. Examples of Center Line Markings for Shared-Use Paths



Source: California MUTCD 2009

Figure 9C-3. Word, Symbol, and Arrow Pavement Markings for Bicycle Lanes



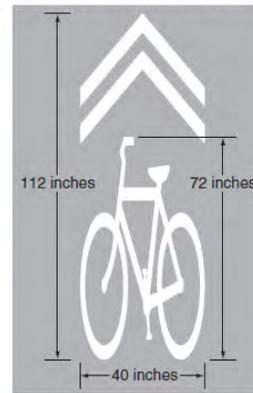
Source: California MUTCD 2009

Figure 9C-7. Bicycle Detector Pavement Marking



Source: California MUTCD 2009

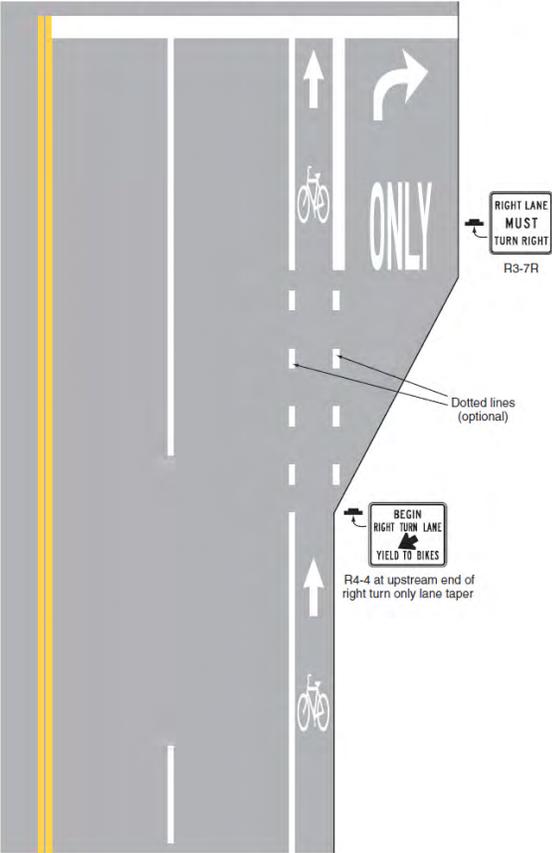
Figure 9C-9. Shared Lane Marking



Source: California MUTCD 2009

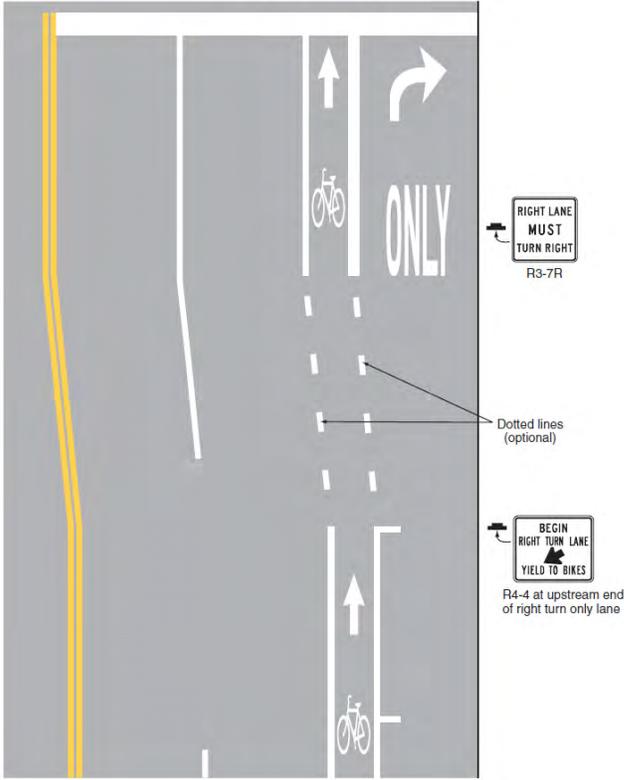
# Exhibit I: Class II Bikeway

Figure 9C-4. Example of Bicycle Lane Treatment at a Right Turn Only Lane



Source: California MUTCD 2009

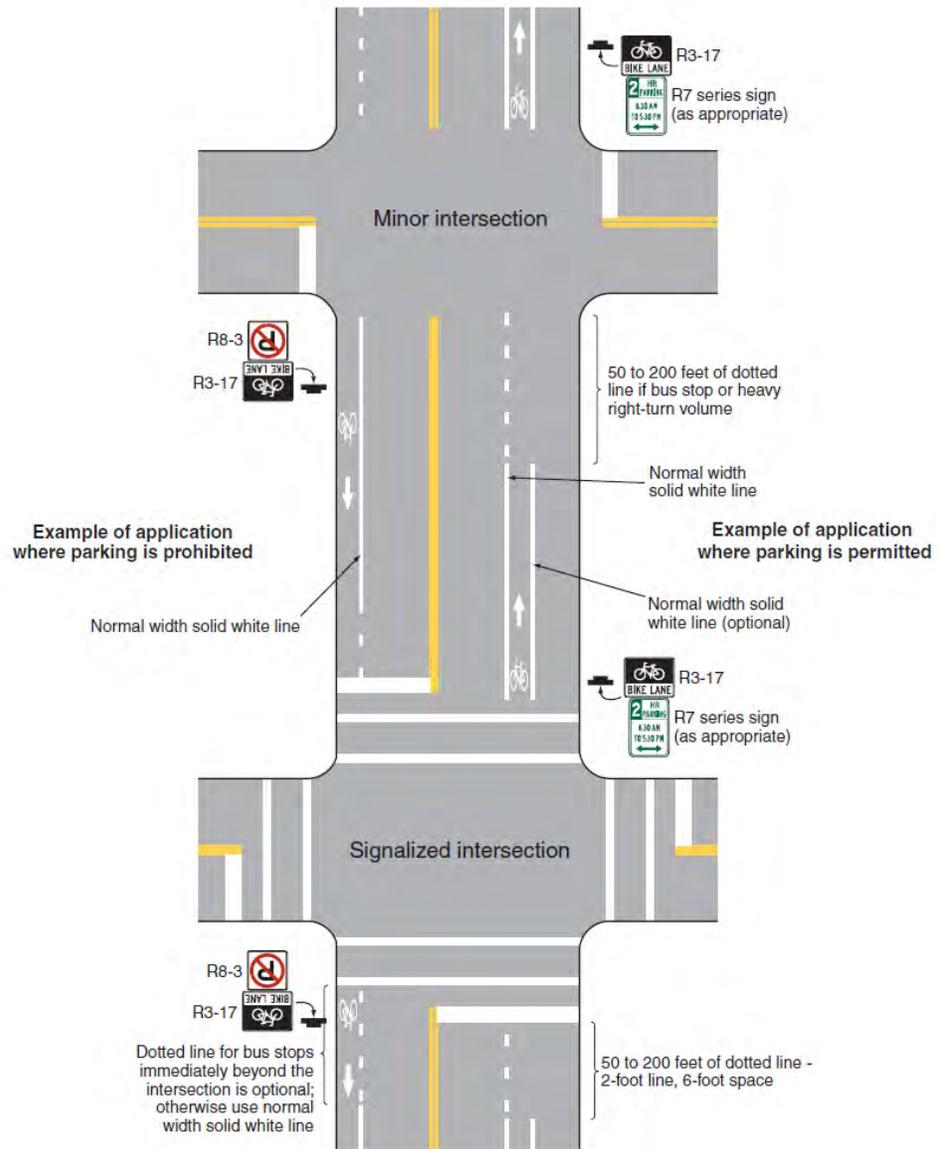
Figure 9C-5. Example of Bicycle Lane Treatment at Parking Lane into a Right Turn Only Lane



Source: California MUTCD 2009

# Exhibit J: Class II Bikeway

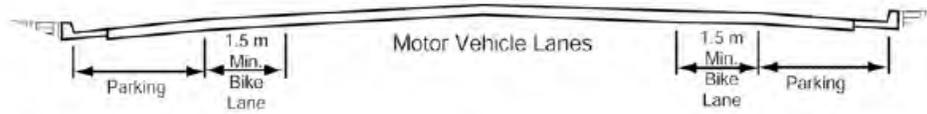
Figure 9C-6. Example of Pavement Markings for Bicycle Lanes on a Two-Way Street



Source: California MUTCD 2009

# Exhibit K: Class II Bikeway

**Figure 1003.2A  
Typical Bike Lane Cross Sections  
(On 2-lane or Multilane Highways)**

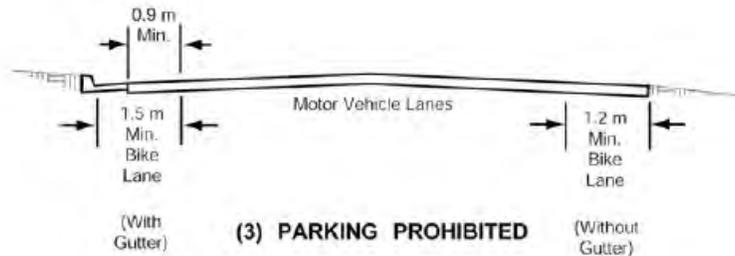


**(1) MARKED PARKING**

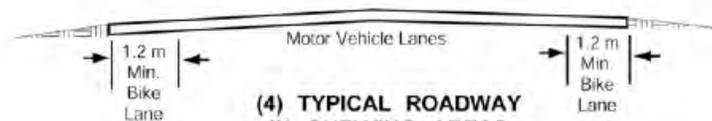


\* 3.9 is recommended where there is substantial parking or turnover of parked cars is high (e.g. commercial areas).

**(2) PARKING PERMITTED WITHOUT MARKED PARKING OR STALL**



**(3) PARKING PROHIBITED**



**(4) TYPICAL ROADWAY IN OUTLYING AREAS  
PARKING RESTRICTED**

Source: Caltrans Highway Design Manual

## Appendix C: Streets and Highways Code Section 890-894.2

890. It is the intent of the Legislature, in enacting this article, to establish a bicycle transportation system. It is the further intent of the Legislature that this transportation system shall be 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.

890.2. As used in this chapter, "bicycle" means a device upon which any person may ride, propelled exclusively by human power through a belt, chain, or gears, and having either two or three wheels in a tandem or tricycle arrangement.

890.3. As used in this article, "bicycle commuter" means a person making a trip by bicycle primarily for transportation purposes, including, but not limited to, travel to work, school, shopping, or other destination that is a center of activity, and does not include a trip by bicycle primarily for physical exercise or recreation without such a destination.

890.4. As used in this article, "bikeway" means all facilities that provide primarily for bicycle travel. For purposes of this article, bikeways shall be categorized as follows:

(a) Class I bikeways, such as a "bike path," which provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized.

(b) Class II bikeways, such as a "bike lane," which provide a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted.

(c) Class III bikeways, such as an on-street or off-street "bike route," which provide a right-of-way designated by signs or permanent markings and shared with pedestrians or motorists.

890.6. 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. The criteria shall include, but not be limited to, the design speed of the facility, minimum widths and clearances, grade, radius of curvature, pavement surface, and actuation of automatic traffic control devices, drainage, and general safety. The criteria shall be updated biennially, or more often, as needed.

890.8. The department shall establish uniform specifications and symbols for signs, markers, and traffic control devices to designate bikeways, regulate traffic, and 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.

891. 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.

891.2. A city or county may prepare a bicycle transportation plan, which shall include, but not be limited to, the following elements:

(a) The estimated number of existing bicycle commuters in the plan area and the estimated increase in the number of bicycle commuters resulting from implementation of the plan.

(b) A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, and major employment centers.

(c) A map and description of existing and proposed bikeways.

(d) A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.

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

(f) A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.

(g) A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicyclists.

(h) A description of the extent of citizen and community involvement in development of the plan, including, but not limited to, letters of support.

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

(j) A description of the projects proposed in the plan and a listing of their priorities for implementation.

(k) A description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area.

891.4. (a) A city or county that has prepared a bicycle transportation plan pursuant to Section 891.2 may submit the plan to the county transportation commission or transportation planning agency for approval. The city or county may submit an approved plan to the department in connection with an application for funds for bikeways and related facilities which will implement the plan. If the bicycle transportation plan is prepared, and the facilities are proposed to be constructed, by a local agency other than a city or county, the city or county may submit the plan for approval and apply for funds on behalf of that local agency.

(b) The department may grant funds applied for pursuant to subdivision (a) on a matching basis which provides for the applicant's furnishing of funding for 10 percent of the total cost of constructing the proposed bikeways and related facilities. The funds may be used, where feasible, to apply for and match federal grants or loans.

891.5. The Sacramento Area Council of Governments, pursuant to subdivision (d) of Section 2551, may purchase, operate, and maintain call boxes on class 1 bikeways.

891.8. The governing body of a city, county, or local agency may do all of the following:

(a) Establish bikeways.

(b) Acquire, by gift, purchase, or condemnation, land, real property, easements, or rights-of-way to establish bikeways.

(c) Establish bikeways pursuant to Section 21207 of the Vehicle Code.

892. (a) Rights-of-way established for other purposes by cities, counties, or local agencies shall not be abandoned unless the governing body determines that the rights-of-way or parts thereof are not useful as a non-motorized transportation facility.

(b) No state highway right-of-way shall be abandoned until the department first consults with the local agencies having jurisdiction over the areas concerned to determine whether the right-of-way or part thereof could be developed as a non-motorized transportation facility. If an affirmative determination is made, before abandoning the right-of-way, the department shall first make the property available to local agencies for development as non-motorized transportation facilities in accordance with Sections 104.15 and 887.6 of this code and Section 14012 of the Government Code.

892.2. (a) The Bicycle Transportation Account is continued in existence in the State Transportation Fund, and, notwithstanding Section 13340 of the Government Code, the money in the account is continuously appropriated to the department for expenditure for the purposes specified in Section 892.4. Unexpended moneys shall be retained in the account for use in subsequent fiscal years.

(b) Any reference in law or regulation to the Bicycle Lane Account is a reference to the Bicycle Transportation Account.

892.4. The department shall allocate and disburse moneys from the Bicycle Transportation Account according to the following priorities:

(a) To the department, the amounts necessary to administer this article, not to exceed 1 percent of the funds expended per year.

(b) To counties and cities, for bikeways and related facilities, planning, safety and education, in accordance with Section 891.4.

892.5. The Bikeway Account, created in the State Transportation Fund by Chapter 1235 of the Statutes of 1975, is continued in effect, and, notwithstanding Section 13340 of the Government Code, money in the account is hereby continuously appropriated to the department for expenditure for the purposes specified in this chapter. Unexpended money shall be retained in the account for use in subsequent fiscal years.

892.6. The Legislature finds and declares that the construction of bikeways pursuant to this article constitutes a highway purpose under Article XIX of the California Constitution and justifies the expenditure of highway funds therefore.

893. The department shall disburse the money from the Bicycle Transportation Account pursuant to Section 891.4 for projects that improve the safety and convenience of bicycle commuters, including, but not limited to, any of the following:

- (a) New bikeways serving major transportation corridors.
- (b) New bikeways removing travel barriers to potential bicycle commuters.
- (c) Secure bicycle parking at employment centers, park-and-ride lots, rail and transit terminals, and ferry docks and landings.
- (d) Bicycle-carrying facilities on public transit vehicles.
- (e) Installation of traffic control devices to improve the safety and efficiency of bicycle travel.
- (f) Elimination of hazardous conditions on existing bikeways.
- (g) Planning.
- (h) Improvement and maintenance of bikeways.

In recommending projects to be funded, due consideration shall be given to the relative cost effectiveness of proposed projects.

893.2. The department shall not finance projects with the money in accounts continued in existence pursuant to this article which could be financed appropriately pursuant to Article 2 (commencing with Section 887), or fully financed with federal financial assistance.

893.4. If available funds are insufficient to finance completely any project whose eligibility is established pursuant to Section 893, the project shall retain its priority for allocations in subsequent fiscal years.

893.6. The department shall make a reasonable effort to disburse funds in general proportion to population. However, no applicant shall receive more than 25 percent of the total amounts transferred to the Bicycle Transportation Account in a single fiscal year.

894. The department may enter into an agreement with any city or county concerning the handling and accounting of the money disbursed pursuant to this article, including, but not limited to, procedures to permit prompt payment for the work accomplished.

894.2. The department, in cooperation with county and city governments, shall adopt the necessary guidelines for implementing this article.

## Appendix D: AB 1358, Complete Streets Act

### LEGISLATIVE COUNSEL'S DIGEST

AB 1358, Leno. Planning: circulation element: transportation.

(1) Existing law requires the legislative body of each county and city to adopt a comprehensive, long-term general plan for the physical development of the county or city with specified elements, including a circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan.

This bill would require, commencing January 1, 2011, that the legislative body of a city or county, upon any substantive revision of the circulation element of the general plan, modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan. By requiring new duties of local officials, this bill would impose a state-mandated local program.

(2) Existing law establishes in the Office of the Governor the Office of Planning and Research with duties that include developing and adopting guidelines for the preparation of and content of mandatory elements required in city and county general plans.

This bill would require the office, commencing January 1, 2009, and no later than January 1, 2014, upon the next revision of these guidelines, to prepare or amend guidelines for a legislative body to accommodate the safe and convenient travel of users of streets, roads, and highways in a manner that is suitable to the rural, suburban, or urban context of the general plan, and in doing so to consider how appropriate accommodation varies depending on its transportation and land use context. It would authorize the office, in developing these guidelines, to consult with leading transportation experts, including, but not limited to, bicycle transportation planners, pedestrian planners, public transportation planners, local air quality management districts, and disability and senior mobility planners.

(3) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. This act shall be known and may be cited as the California Complete Streets Act of 2008.

SEC. 2. The Legislature finds and declares all of the following:

(a) The California Global Warming Solutions Act of 2006, enacted as Chapter 488 of the Statutes of 2006, sets targets for the reduction of greenhouse gas emissions in California to slow the onset of human-induced climate change.

(b) The State Energy Resources Conservation and Development Commission has determined that transportation represents 41 percent of total greenhouse gas emissions in California.

(c) According to the United States Department of Transportation's 2001 National Household Travel Survey, 41 percent of trips in urban areas nationwide are two miles or less in length, and 66 percent of urban trips that are one mile or less are made by automobile.

(d) Shifting the transportation mode share from single passenger cars to public transit, bicycling, and walking must be a significant part of short- and long-term planning goals if the state is to achieve the reduction in the number of vehicle miles traveled and in greenhouse gas emissions required by current law.

(e) Walking and bicycling provide the additional benefits of improving public health and reducing treatment costs for conditions associated with reduced physical activity including obesity, heart disease, lung disease, and diabetes. Medical costs associated with physical inactivity were estimated by the State Department of Health Care Services to be \$28 billion in 2005.

(f) The California Blueprint for Bicycling and Walking, prepared pursuant to the Supplemental Report of the Budget Act of 2001, sets the goal of a 50 percent increase in bicycling and walking trips in California by 2010, and states that to achieve this goal, bicycling and walking must be considered in land use and community planning, and in all phases of transportation planning and project design.

(g) In order to fulfill the commitment to reduce greenhouse gas emissions, make the most efficient use of urban land and transportation infrastructure, and improve public health by encouraging physical activity, transportation planners must find innovative ways to reduce vehicle miles traveled and to shift from short trips in the automobile to biking, walking, and use of public transit.

(h) It is the intent of the Legislature to require in the development of the circulation element of a local government's general plan that the circulation of users of streets, roads, and highways be accommodated in a manner suitable for the respective setting in rural, suburban, and urban contexts, and that users of streets, roads, and highways include bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, public transportation, and seniors.

SEC. 3. Section 65040.2 of the Government Code is amended to read:

65040.2. (a) In connection with its responsibilities under subdivision (l) of Section 65040, the office shall develop and adopt guidelines for the preparation of and the content of the mandatory elements required in city and county general plans by Article 5 (commencing with Section 65300) of Chapter 3. For purposes of this section, the guidelines prepared pursuant to Section 50459 of the Health and Safety Code shall be the guidelines for the housing element required by Section 65302. In the event that additional elements are hereafter required in city and county general plans by Article 5 (commencing with Section 65300) of Chapter 3, the office shall adopt guidelines for those elements within six months of the effective date of the legislation requiring those additional elements.

(b) The office may request from each state department and agency, as it deems appropriate, and the department or agency shall provide, technical assistance in readopting, amending, or repealing the guidelines.

(c) The guidelines shall be advisory to each city and county in order to provide assistance in preparing and maintaining their respective general plans.

(d) The guidelines shall contain the guidelines for addressing environmental justice matters developed pursuant to Section 65040.12.

(e) The guidelines shall contain advice including recommendations for best practices to allow for collaborative land use planning of adjacent civilian and military lands and facilities. The guidelines shall encourage enhanced land use compatibility between civilian lands and any adjacent or nearby military facilities through the examination of potential impacts upon one another.

(f) The guidelines shall contain advice for addressing the effects of civilian development on military readiness activities carried out on all of the following:

- (1) Military installations.
- (2) Military operating areas.
- (3) Military training areas.
- (4) Military training routes.
- (5) Military airspace.
- (6) Other territory adjacent to those installations and areas.

(g) By March 1, 2005, the guidelines shall contain advice, developed in consultation with the Native American Heritage Commission, for consulting with California Native American tribes for all of the following:

(1) The preservation of, or the mitigation of impacts to, places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code.

(2) Procedures for identifying through the Native American Heritage Commission the appropriate California Native American tribes.

(3) Procedures for continuing to protect the confidentiality of information concerning the specific identity, location, character, and use of those places, features, and objects.

(4) Procedures to facilitate voluntary landowner participation to preserve and protect the specific identity, location, character, and use of those places, features, and objects.

(h) Commencing January 1, 2009, but no later than January 1, 2014, upon the next revision of the guidelines pursuant to subdivision (i), the office shall prepare or amend guidelines for a legislative body to accommodate the safe and convenient travel of users of streets, roads, and highways in a manner that is suitable to the rural, suburban, or urban context of the general plan, pursuant to subdivision (b) of Section 65302.

(1) In developing guidelines, the office shall consider how appropriate accommodation varies depending on its transportation and land use context, including urban, suburban, or rural environments.

(2) The office may consult with leading transportation experts including, but not limited to, bicycle transportation planners, pedestrian planners, public transportation planners, local air quality management districts, and disability and senior mobility planners.

(i) The office shall provide for regular review and revision of the guidelines established pursuant to this section.

SEC. 4. Section 65302 of the Government Code is amended to read:

65302. The general plan shall consist of a statement of development policies and shall include a diagram or diagrams and text setting forth objectives, principles, standards, and plan proposals.

The plan shall include the following elements:

(a) A land use element that designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty,

education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. The location and designation of the extent of the uses of the land for public and private uses shall consider the identification of land and natural resources pursuant to paragraph

(3) of subdivision (d). The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan. The land use element shall identify and annually review those areas covered by the plan that are subject to flooding identified by flood plain mapping prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources. The land use element shall also do both of the following:

(1) Designate in a land use category that provides for timber production those parcels of real property zoned for timberland production pursuant to the California Timberland Productivity Act of 1982 (Chapter 6.7 (commencing with Section 51100) of Part 1 of Division 1 of Title 5).

(2) Consider the impact of new growth on military readiness activities carried out on military bases, installations, and operating and training areas, when proposing zoning ordinances or designating land uses covered by the general plan for land, or other territory adjacent to military facilities, or underlying designated military aviation routes and airspace.

(A) In determining the impact of new growth on military readiness activities, information provided by military facilities shall be considered. Cities and counties shall address military impacts based on information from the military and other sources.

(B) The following definitions govern this paragraph:

(i) "Military readiness activities" mean all of the following:

(I) Training, support, and operations that prepare the men and women of the military for combat.

(II) Operation, maintenance, and security of any military installation.

(III) Testing of military equipment, vehicles, weapons, and sensors for proper operation or suitability for combat use.

(ii) "Military installation" means a base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the United States Department of Defense as defined in paragraph (1) of subsection (e) of Section 2687 of Title 10 of the United States Code.

(b) (1) A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan.

(2) (A) Commencing January 1, 2011, upon any substantive revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.

(B) For purposes of this paragraph, "users of streets, roads, and highways" means bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.

(c) A housing element as provided in Article 10.6 (commencing with Section 65580).

(d) (1) A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element shall consider the effect of development within the jurisdiction, as

described in the land use element, on natural resources located on public lands, including military installations.

That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies, including flood management, water conservation, or groundwater agencies that have developed, served, controlled, managed, or conserved water of any type for any purpose in the county or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or county.

(2) The conservation element may also cover all of the following:

- (A) The reclamation of land and waters.
- (B) Prevention and control of the pollution of streams and other waters.
- (C) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.
- (D) Prevention, control, and correction of the erosion of soils, beaches, and shores.
- (E) Protection of watersheds.
- (F) The location, quantity and quality of the rock, sand and gravel resources.

(3) Upon the next revision of the housing element on or after January 1, 2009, the conservation element shall identify rivers, creeks, streams, flood corridors, riparian habitats, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management.

(e) An open-space element as provided in Article 10.5 (commencing with Section 65560).

(f) (1) A noise element that shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

- (A) Highways and freeways.
- (B) Primary arterials and major local streets.
- (C) Passenger and freight on-line railroad operations and ground rapid transit systems.
- (D) Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.
- (E) Local industrial plants, including, but not limited to, railroad classification yards.
- (F) Other ground stationary noise sources, including, but not limited to, military installations, identified by local agencies as contributing to the community noise environment.

(2) Noise contours shall be shown for all of these sources and stated in terms of community noise equivalent level (CNEL) or day-night average level (Ldn). The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified in paragraphs (1) to (6), inclusive.

(3) The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise.

(4) The noise element shall include implementation measures and possible solutions that address existing and foreseeable noise problems, if any. The adopted noise element shall serve as a guideline for compliance with the state's noise insulation standards.

(g) (1) A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body; flooding; and wildland and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, military installations, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.

(2) The safety element, upon the next revision of the housing element on or after January 1, 2009, shall also do the following:

(A) Identify information regarding flood hazards, including, but not limited to, the following:

(i) Flood hazard zones. As used in this subdivision, "flood hazard zone" means an area subject to flooding that is delineated as either a special hazard area or an area of moderate or minimal hazard on an official flood insurance rate map issued by the Federal Emergency Management Agency. The identification of a flood hazard zone does not imply that areas outside the flood hazard zones or uses permitted within flood hazard zones will be free from flooding or flood damage.

(ii) National Flood Insurance Program maps published by FEMA.

(iii) Information about flood hazards that is available from the United States Army Corps of Engineers.

(iv) Designated floodway maps that are available from the Central Valley Flood Protection Board.

(v) Dam failure inundation maps prepared pursuant to Section 8589.5 that are available from the Office of Emergency Services.

(vi) Awareness Floodplain Mapping Program maps and 200-year flood plain maps that are or may be available from, or accepted by, the Department of Water Resources.

(vii) Maps of levee protection zones.

(viii) Areas subject to inundation in the event of the failure of project or nonproject levees or floodwalls.

(ix) Historical data on flooding, including locally prepared maps of areas that are subject to flooding, areas that are vulnerable to flooding after wildfires, and sites that have been repeatedly damaged by flooding.

(x) Existing and planned development in flood hazard zones, including structures, roads, utilities, and essential public facilities.

(xi) Local, state, and federal agencies with responsibility for flood protection, including special districts and local offices of emergency services.

(B) Establish a set of comprehensive goals, policies, and objectives based on the information identified pursuant to subparagraph (A), for the protection of the community from the unreasonable risks of flooding, including, but not limited to:

(i) Avoiding or minimizing the risks of flooding to new development.

(ii) Evaluating whether new development should be located in flood hazard zones, and identifying construction methods or other methods to minimize damage if new development is located in flood hazard zones.

(iii) Maintaining the structural and operational integrity of essential public facilities during flooding.

(iv) Locating, when feasible, new essential public facilities outside of flood hazard zones, including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities or identifying construction methods or other methods to minimize damage if these facilities are located in flood hazard zones.

(v) Establishing cooperative working relationships among public agencies with responsibility for flood protection.

(C) Establish a set of feasible implementation measures designed to carry out the goals, policies, and objectives established pursuant to subparagraph (B).

(3) After the initial revision of the safety element pursuant to paragraph (2), upon each revision of the housing element, the planning agency shall review and, if necessary, revise the safety element to identify new information that was not available during the previous revision of the safety element.

(4) Cities and counties that have flood plain management ordinances that have been approved by FEMA that substantially comply with this section, or have substantially equivalent provisions to this subdivision in their general plans, may use that information in the safety element to comply with this subdivision, and shall summarize and incorporate by reference into the safety element the other general plan provisions or the flood plain ordinance, specifically showing how each requirement of this subdivision has been met.

(5) Prior to the periodic review of its general plan and prior to preparing or revising its safety element, each city and county shall consult the California Geological Survey of the Department of Conservation, the Central Valley Flood Protection Board, if the city or county is located within the boundaries of the Sacramento and San Joaquin Drainage District, as set forth in Section 8501 of the Water Code, and the Office of Emergency Services for the purpose of including information known by and available to the department, the office, and the board required by this subdivision.

(6) To the extent that a county's safety element is sufficiently detailed and contains appropriate policies and programs for adoption by a city, a city may adopt that portion of the county's safety element that pertains to the city's planning area in satisfaction of the requirement imposed by this subdivision.

SEC. 5. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because a local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act, within the meaning of Section 17556 of the Government Code.

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