RESOLUTION NO. 2014-XXX

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CALISTOGA, COUNTY OF NAPA, STATE OF CALIFORNIA, RESCINDING RESOLUTION NO. 2012-072 REGARDING THE 2012 BICYCLE TRANSPORTATION PLAN AND ADOPTING THE 2014 ACTIVE TRANSPORTATION PLAN

WHEREAS, the City adopted a Bicycle Transportation Plan on October 16, 2012, in conjunction with the Countywide Bicycle Plan efforts. Since then the City Council has directed amendments to the General Plan Circulation Element to incorporate the Complete Streets Policy and has established an Active Transportation Advisory Committee. Statewide policy shifts are also compelling Cities to address alternative means of transportation not just biking through the adoption of Active Transportation Plans; and

WHEREAS, on April 1, 2014 the City Council directed staff to initiate the preparation of the Active Transportation Plan with input from the City's Active Transportation Advisory Committee (ATAC); and

WHEREAS, because public participation is an important component of the Active Transportation Plan, the City and ATAC solicited public input on existing conditions for bicyclists and pedestrians, potential improvement projects and programs, and site-specific issues such as safety concerns, access, connectivity, bicycle parking and other items needed to improve conditions for bicyclists and pedestrians in Calistoga and the Planning Area; and

WHEREAS, the Active Transportation Plan is consistent with the Calistoga General Plan since the General Plan calls for the implementation of an Active Transportation Plan to address bicyclists and pedestrian needs; and

WHEREAS, a Active Transportation Plan has been prepared consistent with the State's Active Transportation Program Guidelines; and

WHEREAS, the Active Transportation Plan is a planning and feasibility study that will guide future actions by the City Council. As such, it does not authorize any projects, nor does it commit funding to any project or activity contained the Plan. Each future project and activity will be subject to its own environmental review. Therefore, this action is not subject to the California Environmental Quality Act (CEQA) under Sections 15183 and 15262 of the CEQA Guidelines; and

WHEREAS, after considering the Active Transportation Plan during a meeting on September 8, 2014 and receiving written and oral reports by staff and public testimony, the Active Transportation Advisory Committee unanimously recommended that the City Council adopt the 2014 Active Transportation Plan;

WHEREAS, the City Council considered the Active Transportation Plan at its regular meeting on October 21, 2014 and prior to taking action on the application, the Council received written and oral reports by staff, and received public testimony.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Calistoga, based on the above findings, rescinds City Council Resolution 2012-072 regarding the 2012 Bicycle Transportation Plan and adopts the 2014 Active Transportation Plan as shown in Exhibit A attached hereto.

ADOPTED by the City Council of the City of Calistoga at a regular meeting held this **21st day of October 2014**, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
CHRIS CANNING, Mayor

ATTEST:

_____
KATHY FLAMSON, Deputy City Clerk

City of Calistoga

Active Transportation Plan

DRAFT

September 8, 2014

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City Council Resolution Adopting Plan

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I. Introduction

Background and Purpose of the Active Transportation Plan

The City of Calistoga's existing Bicycle Transportation Plan was adopted October 16, 2012. The 2012 Bicycle Plan updated the 2007 Bicycle Transportation Plan. At the April 1, 2014, City Council meeting, the Council directed staff to initiate the preparation of an Active Transportation Plan. The Active Transportation Plan is intended to guide and influence transportation improvements for both bicyclists and pedestrians.

The purposes of the Plan are to:

- Assess the needs of bicyclists and pedestrians in Calistoga and throughout Calistoga's Planning Area[1] in order to identify a set of local improvements and implementation strategies that will encourage more people to walk and bicycle.
- Identify local systems of physical and programmatic improvements to support bicycling and walking.
- Provide eligibility for various funding programs, including the State's Active Transportation Program.
- Act as a resource and coordinating document for local actions and regional projects.
- Foster cooperation between entities for planning purposes.
- Create Geographic Information System (GIS) maps and a database of existing and proposed facilities within Calistoga and throughout the Planning Area.

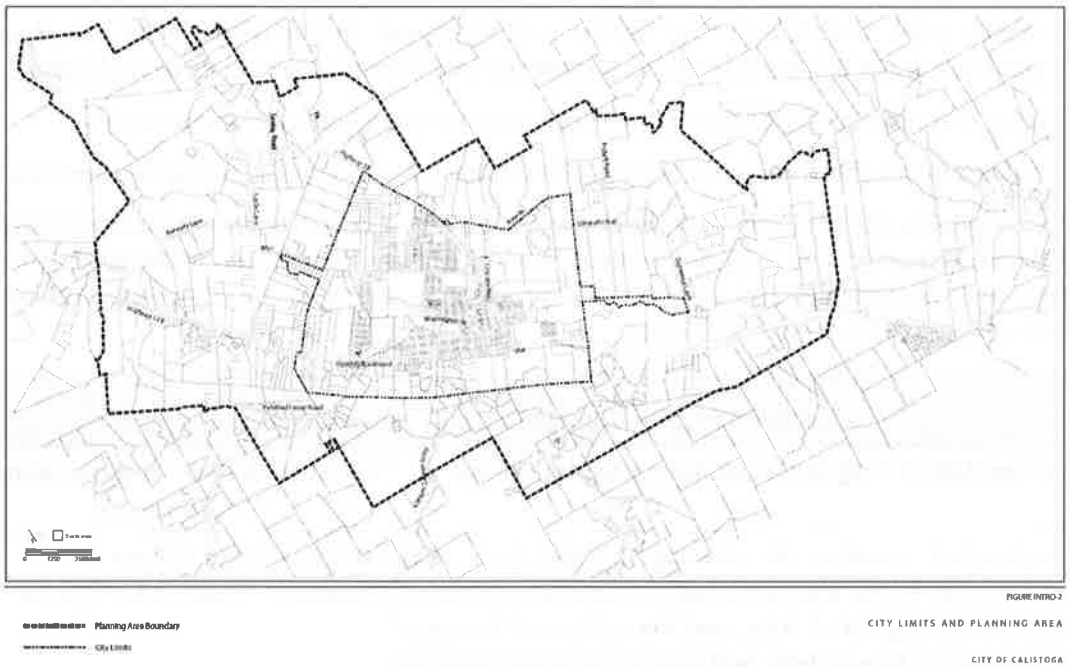

Figure 1 – Calistoga General Plan City Limits and Planning Area Map

[1] The Planning Area is mapped on Figure INTRO-2 of the City's General Plan and is Figure 1 of this Plan. It encompasses a portion of the upper Napa Valley, as well as the hillsides that surround Calistoga on three sides.

Coordination and Consistency with Existing Plans and Policies

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

- City of Calistoga General Plan
- City of Calistoga 2012 Bicycle Transportation Plan

Caltrans Compliance

The State's Active Transportation Program (ATP) was created by State Senate Bill 99 (Chapter 359, Statutes of 2013) and Assembly Bill 101 (Chapter 354, Statutes of 2013) to encourage increased use of active modes of transportation, such as biking and walking. The ATP consolidates various federal and state transportation programs, including the Transportation Alternatives Program, Bicycle Transportation Account, and State Safe Routes to School, into a single program with a focus to make California a national leader in active transportation.

The goals of the ATP are to:

- Increase the proportion of trips accomplished by biking and walking.
- Increase the safety and mobility of non-motorized users.
- Advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals.
- Enhance public health, including reduction of childhood obesity through the use of programs including, but not limited to, projects eligible for Safe Routes to School Program funding.
- Ensure that disadvantaged communities fully share in the benefits of the program.
- Provide a broad spectrum of projects to benefit many types of active transportation users.

To maintain eligibility with Caltrans's adopted guidelines, this plan has been prepared consistent with the 2014 Active Transportation Program Guidelines adopted March 20, 2014. Information on the ATP, preparation and processing, and eligible ATP projects is available on Caltrans' ATP webpage: http://www.catc.ca.gov/programs/ATP.htm

Table 1
Required Active Transportation Plan Elements

Active Transportation Program Guidelines, adopted March 20, 2014	Calistoga Active Transportation Plan Reference
a. The estimated number of existing bicycle trips and pedestrian trips in the plan area, both in absolute numbers and as a percentage of all trips, and the estimated increase in the number of bicycle trips and pedestrian trips resulting from implementation of the plan.	Existing – Table 3, Page 8 Proposed – Policy 1.5, Page 16

Table 1 Required Active Transportation Plan Elements	
b. The number and location of collisions, serious injuries, and fatalities suffered by bicyclists and pedestrians in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.	Bicycle Collisions Map, Figure 10 Pedestrian Collisions Map, Figure 11 Collision Reduction Strategy, Pages 58 through 68
c. A map and description of existing and proposed land use and settlement patterns which must include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other destinations.	Figures 1, 2, 3 & 4
d. A map and description of existing and proposed bicycle transportation facilities.	Map, Figure 6 Description, Table 7 & 8
e. A map and description of existing and proposed end-of-trip bicycle parking facilities.	Map, Figure 7 Description, Pages 27 & 28
f. A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.	Page 17, Policy 3.1
g. A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These must 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.	Map, Figure 7
h. A map and description of existing and proposed pedestrian facilities at major transit hubs. These must include, but are not limited to, rail and transit terminals, and ferry docks and landings.	Figures 3 & 4
i. A description of proposed signage providing wayfinding along bicycle and pedestrian networks to designated destinations.	Pages 18, Policy 5.8 & 42
j. A description of the policies and procedures for maintaining existing and proposed bicycle and pedestrian facilities, including, but not limited to, the maintenance of smooth pavement, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.	Maintenance, Pages 69 – 72

Table 1 Required Active Transportation Plan Elements	
k. A description of bicycle and pedestrian safety, education, and encouragement 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 law impacting bicycle and pedestrian safety, and the resulting effect on accidents involving bicyclists and pedestrians.	Bicycle and Pedestrian Safety and Education, Pages 58 – 68
l. A description of the extent of community involvement in development of the plan, including disadvantaged and underserved communities.	Community Involvement, Pages 4 & 5 Disadvantaged Community, Page 9
m. A description of how the active transportation plan has been coordinated with neighboring jurisdictions, including school districts within the plan area, and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.	Coordination, Pages 2, 31 & 32
n. A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.	Bicycle Programs, Pages 41 & 42 Pedestrian Programs, Page 56
o. A description of past expenditures for bicycle and pedestrian facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicyclists and pedestrians in the plan area. Include anticipated revenue sources and potential grant funding for bicycle and pedestrian uses.	Historic Bicycle Expenditures, Page 43 Historic Pedestrian Expenditures, Page 47 Revenue Sources, Pages 43 – 45 and 56 & 57
p. A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.	Pages 70 & 72
q. A resolution showing adoption of the plan by the City.	Page i

Public Participation

The Active Transportation Plan was developed over a 9-month period in 2013/14. The Plan was prepared by City staff, the City's Active Transportation Advisory Committee (ATAC), stakeholders, the bicycle community, and interested citizens. The Plan builds upon the efforts of the 2012 Plan and integrates new projects, partnerships, concepts, and programs. Public participation was an important component of the Plan. The City and ATAC solicited public input on existing conditions for bicyclists and pedestrians, potential improvement projects and programs, and site-specific issues such as safety concerns, access, connectivity, bicycle parking, parklets and other items needed to improve conditions for bicyclists and pedestrians in Calistoga and the Planning Area. The public participation process utilized an "advocacy" approach, where the general public and citizen representatives serving on an

advisory committee were instrumental in the development of a vision for bicycling and walking in the community. The public participation process is summarized below.

- *Active Transportation Advisory Committee (ATAC) Meetings* – ATAC meetings were conducted to review draft plans and projects and program proposals.
- *Meetings with Individual Stakeholders* - Staff contacted and discussed the draft plan with selected property owners and stakeholders.
- *Public Forum* – A public forum on the Active Transportation Plan was held on Wednesday, July 16, 2014. Approximately 30 people attended the forum, including City staff, Calistoga's Mayor, ATAC members, local bicycle advocates, and members of the public. The purpose of the forum was to collect input on issues, opportunities, and constraints throughout the Planning Area. Staff presented the preliminary bicycle and pedestrian networks and gathered Input from attendees using a mapping exercise.
- *Staff Interviews* – City staff responsible for bikeway and sidewalk implementation and maintenance were interviewed to solicit their input on existing conditions, issues, opportunities, and constraints regarding Calistoga's bike and pedestrian system and programs.
- *City Council Hearing – To be completed following hearing.*

II. Setting and Context

Setting and Land Use

Calistoga is located in the northern-most part of the Napa Valley and is part of the nine-county San Francisco Bay Area. Calistoga is at the junction of State highways 29 and 128, 27 miles north of Napa (the County seat) and 76 miles northeast of San Francisco. Calistoga has a total area of 2.5 square miles.

Calistoga is a rural, small town, made up of a vibrant, eclectic main street set within pedestrian-oriented neighborhoods of modestly-sized homes and surrounded by wineries, vineyards and other agricultural lands. Intensive agriculture and vacant/low intensity agriculture cover the largest amount of land within the city, comprising a quarter of land within the city limits. Residential uses comprise about one-third of land within the city limits. Parks and public space are also major existing uses within the city limits in terms of area. Commercial development is centered on Lincoln Avenue, which comprises "main street" for the community. Most retail and service establishments are small businesses. The Land Use Designation Map presented below provides the planned distribution of land use within the City.

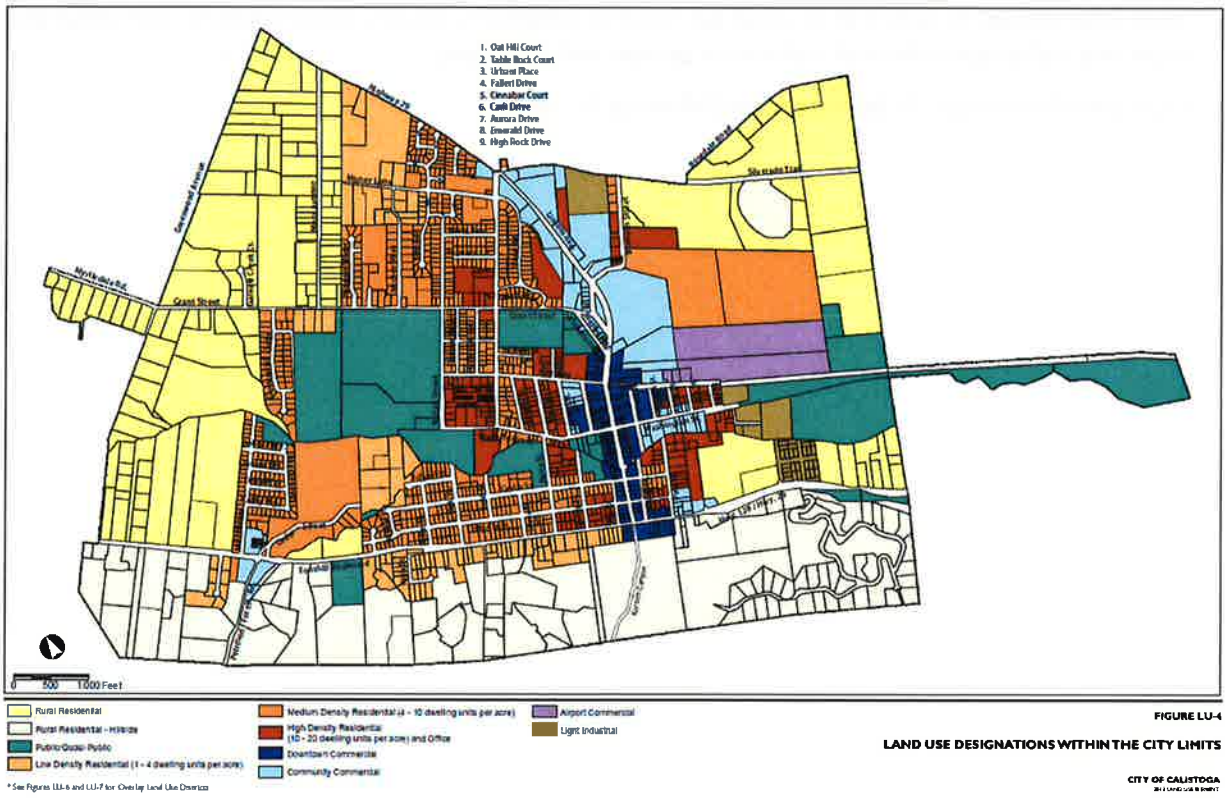

Figure 2 – Calistoga General Plan Land Use Designation Map

This Plan, like the City's General Plan, looks beyond the city's borders to ensure a coordinated planning effort is achieved within the surrounding unincorporated area of the County.

Origins and Destinations

The following sections identify Calistoga's major origins and destinations. It is important to identify these facilities in order to understand access needs, and existing and potential travel patterns when considering alignments for both the bikeway and pedestrian networks. Brief descriptions and/or lists of origins and destinations are provided below. Major facilities are mapped on Figures 3 and 4, which are

excerpts from the current City of Calistoga Bike Map, which is used by residents and visitors. The map shows destinations and their relationship to existing and proposed bikeways and walkways.

Schools and Safe Routes

Primary and Secondary Schools

The Calistoga Joint Unified School District oversees the City's public school system. The District includes one elementary school, one junior/senior high school, and a continuation high school. The District serves a population of around 850 students. There are also a few small private preschools located in Calistoga. Table 2 lists the schools located in Calistoga.

Table 2
Calistoga Schools

School	Grade Levels	Location
Calistoga Elementary School	K-6	1327 Berry Street
Calistoga Junior/Senior High School	7-12	1608 Lake Street
Palisades High School		1507 Grant Street
Highlands Christian	Pre-K	970 Petrified Forest Road
St. Luke's Preschool	Pre-K	1504 Myrtle Street
Calistoga State Preschool	Pre-K	1432 Eddy Street

Safe Routes, Education and Outreach

Safe Routes to Schools programs are an essential component of successful efforts to make walking and bicycling to school safer, increase the number of children walking and bicycling to school, improve children's health and fitness, and educate students and parents about the health, transportation and environmental benefits of walking and bicycling.

Safe Routes to Schools programs typically use the "five Es" to accomplish these goals: Encouragement (e.g., prizes, special events like Walk to School Day), Education (e.g., fliers on the benefits of walking, maps of safe routes, classroom curriculum), Engineering (e.g., improvements to infrastructure such as roadways, intersections, sidewalks and bicycle facilities), Enforcement (making sure motorists, pedestrians and bicyclists understand and obey the rules of the road), and Evaluation (such as before/after surveys to see the effect of programs and physical improvements on mode choice for student commuters).

Safe Routes to School routes have been mapped on the Bicycle and Pedestrian Network Maps. These maps provide direction where infrastructure improvements may be required.

The City of Calistoga enthusiastically supports a number of other education and/or outreach efforts that further Safe Routes to Schools, including:

- Bike rodeos
- Bicycle helmet giveaways (ongoing and funded by the Rotary)
- Enforcement of bicycle helmet laws and other traffic laws impacting bicyclists
- Investigation of collisions, including collisions involving bicyclists
- Annual Bike and Walk to School day participation
- Patrolling the local bicycle and pedestrian trails

Calistoga Demographics and Commute Patterns

Local Bicycle and Pedestrian Travel Characteristics

Demographics and travel information for Calistoga were analyzed to identify mode split and to evaluate residents' travel time to work. The analysis establishes base data on the existing number of bicycle

commuters, and also provides an indication of the number of potential bicycle commuters in the Planning Area. This information can then be used by staff and local officials to develop improvement plans and set priorities, with the objective of increasing the percentage of people who choose to bicycle or walk rather than drive a car or be driven.

Several data sources were reviewed, including California Department of Finance Population Estimates, the Bay Area Travel Survey, and Journey-to-Work (JTW) Data from the US Census Bureau.

Every ten years the US Census Bureau attempts to count every person throughout the nation. As part of this survey process, the agency collects information on the primary mode of transportation used by employed people over the age of 16 to get to work. The collective responses to the Census Bureau's question "How did you usually get to work last week?" form a set of data known as Journey-to-Work. JTW data is considered the most reliable source of transportation mode choice information available. However, while the JTW provides a glimpse of how Calistoga residents travel to and from work, the data source only provides a partial understanding of the travel characteristics of bicyclists and walkers within the community. This is particularly true since it does not reflect multi-modal or non-work trips. For example, survey respondents who typically use more than one method of transportation are instructed to mark the mode used for "most of the distance," thus overlooking bicycling and walking trips to transit. For commuters who do not use the same mode every day, the survey wording leaves the response up to the respondent; and the survey takes place in the month of March, which can be rainy in Napa County and a deterrent to bicycling. Further, the JTW data does not include school, shopping, and recreational trips, which constitute much of the bicycle and pedestrian travel by Calistoga's student and senior populations, and others. Therefore, data from the 2010 US Census (the most current census for which the data is available) does not provide an accurate account of current journey to work statistics but it does represent the most comprehensive data set available to analyze how Calistoga's residents travel to work.

Table 3
2010 – Mode Split

	Calistoga		Napa County		California	
Population (2010 US Census)	5,155		136,484		37,253,956	
Employed persons ≥ 16 years	2,407		63,873		16,632,466	
Means of Transportation	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**
Drove Alone	68.3%	1,606	73.9%	46,242	73.0%	11,870,741
Carpooled	15.8%	371	12.8%	7,979	11.9%	1,939,796
Public Transit	1.4%	32	1.9%	1,207	5.1%	834,363
Biked	3.4%	79	0.8%	508	0.9%	152,260
Walked	5.7%	135	4.1%	2,572	2.8%	450,439
Motorcycle	0%	0	0.1%	79	0.3%	54,856
Other	1.4%	32	0.8%	474	1.0%	156,290
Worked at Home	4.1%	97	5.5%	3,455	5.0%	805,819
TOTAL	**100.00%**	**2,352**	**100.00%**	**62,559**	**100.00%**	**16,271,905**

Source: US Census 2010

The Census indicates that Calistoga had a population of 5,155 persons in 2010. Based on this estimate, the City's population declined by approximately 35 persons since the 2000 Census. According to the 2010 Census, there were 2,407 workers in Calistoga 16 years old or older. Of these, 2,255 worked outside the home. The average travel time to work was 24.5 minutes.

While approximately 15.8 percent of workers in Calistoga (371 persons) carpooled; JTW data indicates that 68 percent of workers in Calistoga, or 1,606 persons, drove to work alone. Approximately 3.4 percent, or 79 workers, commuted by bicycle, a rate that was higher than the countywide and statewide averages of 0.8 and 0.9 percent, respectively. About 5.7 percent (135 persons) of work trips are taken on foot. Given Calistoga's fair climate, flat topography, and percentage of commuters with a travel time to work of 15 minutes or less compared to the number of existing bicycle and pedestrian commuters, a significant opportunity exists to increase non-vehicle commuting. Every motor vehicle trip or vehicle mile that is eliminated results in less air pollution, reduced greenhouse gas emissions, and lessened traffic congestion.

Disadvantaged Community

One of the State's Active Transportation Program goals is to "Ensure that disadvantaged communities fully share in the benefits of the program." A disadvantaged community is defined by any of the following criteria:

- The median household income is less than 80% of the statewide median based on the most current census tract level data from the American Community Survey.
- An area identified as among the most disadvantaged 10% in the state according to the latest version of the California Communities Environmental Health Screening Tool scores.
- At least 75% of public school students in the project area are eligible to receive free or reduced price meals under the National School Lunch Program.

Table 4
Reduced and Free Meals – School Lunch Program
School Year 2012-13 Published in 2013-14

Public School	Free or Reduced Price Meals	Unofficial Enrollment Used for Meals
Calistoga Elementary	367 (83.0%)	442
Calistoga Junior-Senior High	261 (76.1%)	343
Palisades High (Continuation)	7 (77.8%)	9
District Total	635 (80.0%)	794
County Total	9,198 (45.3%)	20,295
State Totals	3,509,407 (58.0%)	6,054,192

Based upon the 2010 Census, Calistoga has a median income of $51,967 and California's median income is $61,400. As such, Calistoga's median income is 84.6% of California's median income. The California Communities Environmental Health Screening Tool indicates that Calistoga is within the 46-50% percentile; Calistoga is not indicated as among the most disadvantaged 10% in the state.

However, the Calistoga Unified School District has approximately 80% of its student population on the free and reduced meal program. This figure is actually more representative of the community. The Calistoga Elementary School 2012-13 School Accountability Report Card published during the 2013-14 school year indicates that 86.1% of the total enrollment is socioeconomically disadvantaged.

Visitors and Tourism

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

For several years, the Napa Valley Vine Trail Coalition has been working on developing a 44-mile continuous, Class 1 trail from Vallejo to Calistoga, including an alignment through Calistoga to the Oat Hill Mine Trail Head. The organization identified the importance of such a trail in providing transportation options and tourism opportunities, and enhancing the quality of life for residents throughout the Napa Valley. The trail will offer transportation, recreation, education and healthy lifestyle benefits to residents and the 4.7 million visitors who come to the Valley each year while potentially replacing the need for 150,000 automobile trips. The Greenway Feasibility Study projected over 3 million users per year of a completed regional Vine Trail with about half being residents; half visitors.

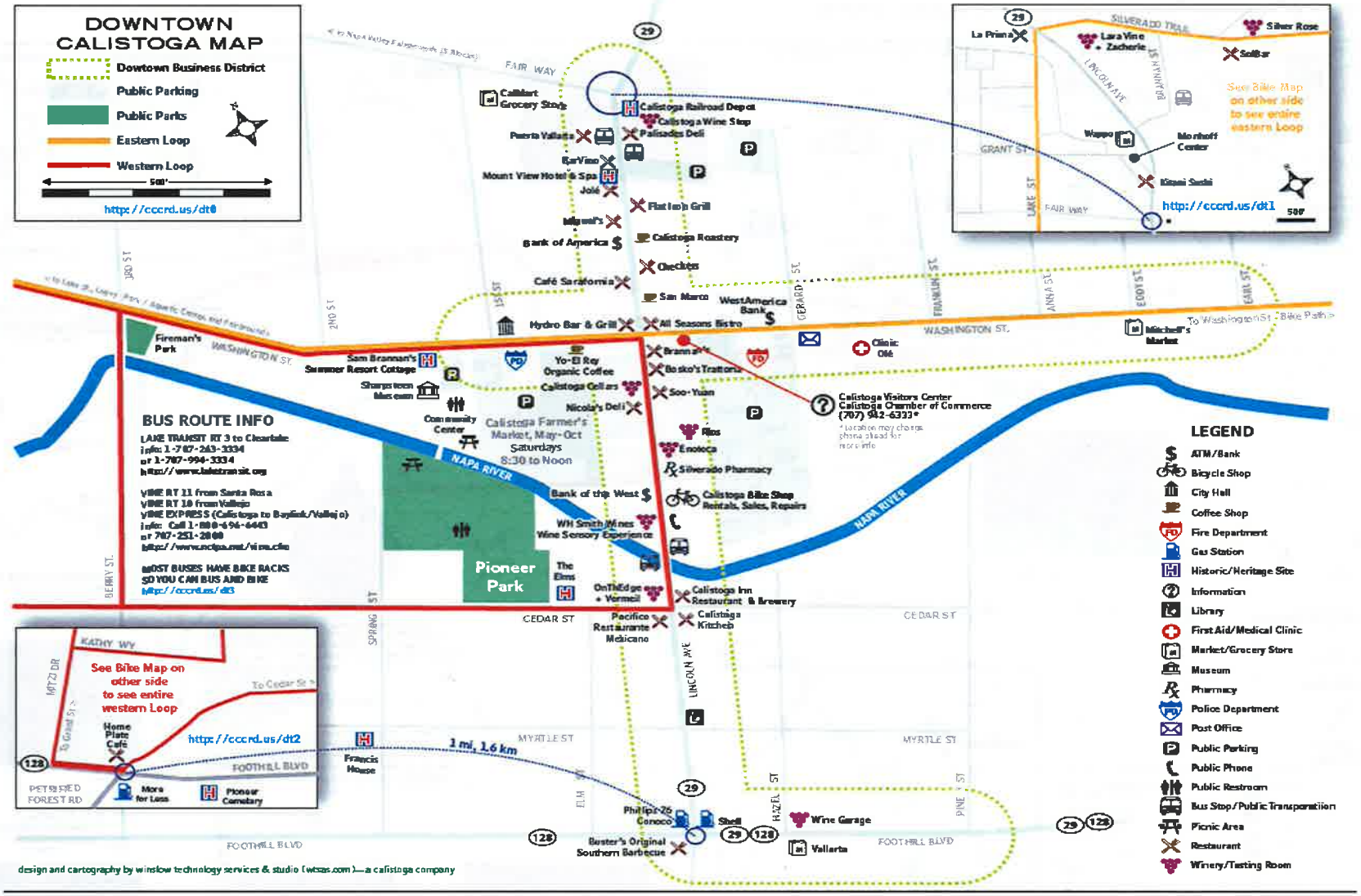

Figure 3 – Excerpt from City of Calistoga Bike Map (Back Panel)

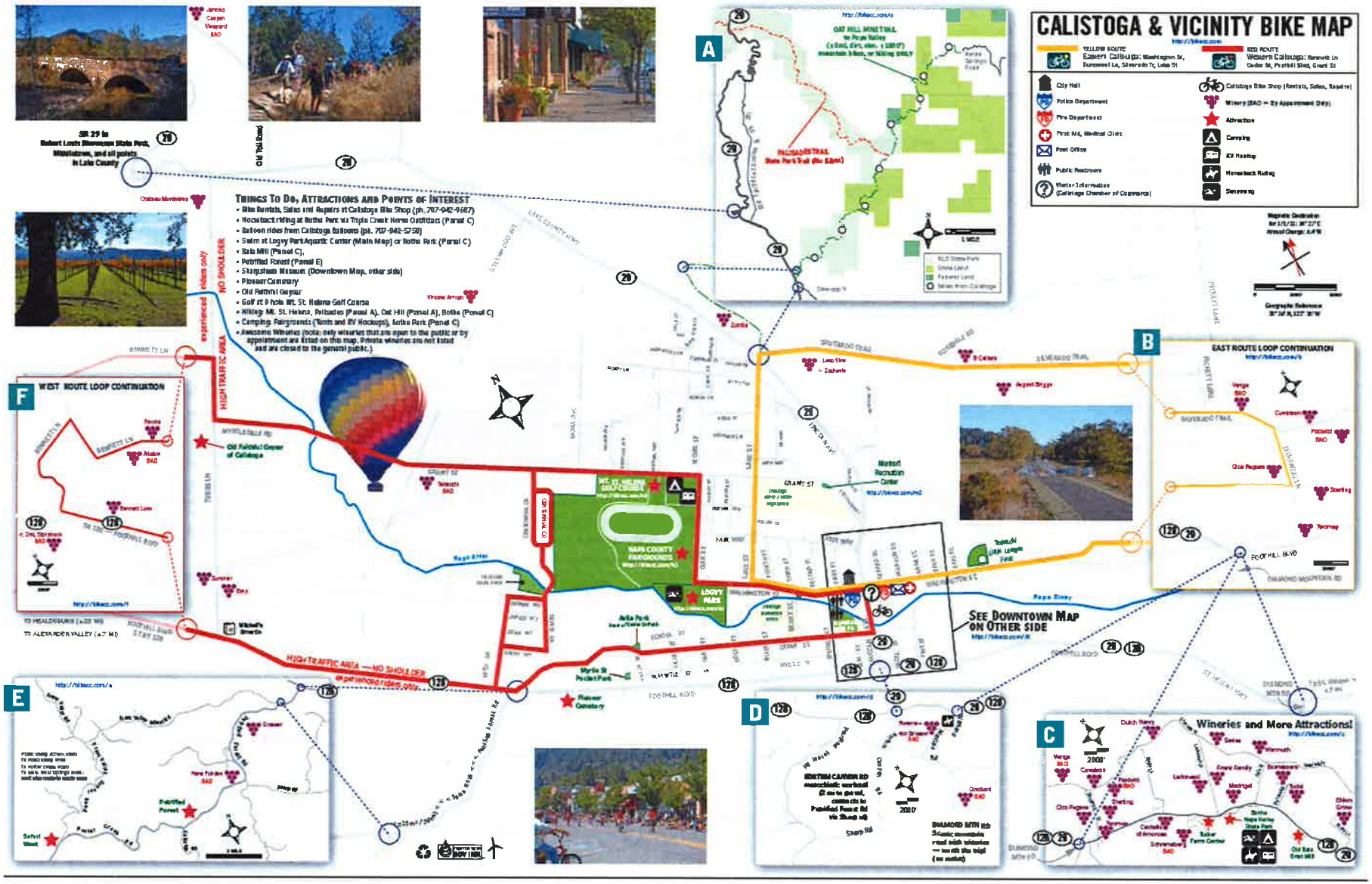

Figure 4 - Excerpt from the City of Calistoga Bike Map (Internal Panel)

Community Facilities and Parks

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

- UpValley Family Center
- Napa County Fairgrounds
- Post Office
- Public Library
- City Hall
- Police Station
- Community Center

Additionally, the City of Calistoga maintains seven public parks with a total of approximately 14.19 acres of parkland.

Table 5
Existing City of Calistoga Parks

Category	Park	Number of Acres	Characteristics
Mini	Fireman's Park	0.13	Passive recreation
	Myrtle Street Pocket Park	0.12	Passive recreation
Neighborhood	Heather Oak Park	1.64	Playground, walking path and small turf area
	Pioneer Park	1.80	Passive recreation, playground
Community	Tedeschi Field	0.72	Baseball diamond
	Monhoff Center	0.25	Tennis and racquetball, teen center
	Logvy Community Park	9.53	Softball/soccer field, aquatic center, community garden
	Total	14.19	

Source: City of Calistoga

Other parks in the vicinity of Calistoga include three state parks:

- Robert Lewis Stevenson State Park, 7 miles north of Calistoga, offers hiking trails.
- Just south of the city, 1,900-acre Bothe-Napa Valley State Park offers camping, picnicking, swimming, and hiking trails.
- Bale Grist Mill State Historic Park, 4 miles south of the city, is the site of a water-powered grist mill built in 1846.

Multi-Modal Connections

Bicycles are often used in combination with other modes of transit (such as bus, carpool, ferry, or train) as part of a multi-modal trip. Convenient multi-modal connections that are well-integrated into the transportation system are a vital component of a balanced transportation network. Transit has the potential to extend trip ranges for bicyclists to nearby communities and destinations outside of Napa County. Multi-modal connections are especially important in Napa County, considering existing barriers to bicycle travel such as distances between communities, existing gaps in the bicycle network between urban areas, heat during summer months, and rain during winter months. While these obstacles likely

serve as deterrents to trips by bike, convenient multi-modal access can help to address these issues and extend trip ranges. Front-loading bicycle racks, which typically accommodate two bicycles, are provided on all fixed-route transit buses that operate in Napa County. Bicycle rack spaces are available on a first-come, first-served basis. When the front loading racks are full, drivers can accommodate bicycles inside the bus at their discretion; however, in the event that it is the last scheduled bus of the day, bicycles are permitted inside the vehicle.

Park and Ride Lots

Currently, there are no formal Park and Ride lots in the City of Calistoga that can be used by transit riders or carpoolers; however, public parking is available at 1307 Washington Street (Calistoga Community Center). Bicycle and winery tour companies often use this parking as a staging area, and Napa County Transportation Planning Agency identifies the free parking on Cedar Street as commuter parking for the Vine 29 Express bus.

Bicycle Shops and Manufacturers

Currently there is one bicycle shop located within the city. Calistoga Bike Shop, located on Lincoln Avenue, provides self-guided bike tours, bike wine tours, bicycle rentals, sales and service.

Existing Circulation Network

Calistoga is served primarily by Highway 29 (Lincoln Avenue) in the north/south direction and Highway 128 (Foothill Boulevard) in the east/west direction. Calistoga is characterized by an interconnected street system with several breaks that discourage cut-through traffic. Several large streets cross Lincoln Avenue to provide access from residential areas to the downtown core area. The downtown core area is served by a dense grid street system with a single traffic signal located at the intersection of Highway 29 and Washington Street.

However, there are noticeable gaps in the vehicular circulation system. There is a lack of connectivity parallel to Lincoln Avenue, forcing most motor vehicle traffic generated in the central city to use Lincoln Avenue through the downtown. There is also a lack of east-west connections perpendicular to Lincoln Avenue in the Gliderport/Lower Washington area. Under the General Plan, the City has identified possible improvements to allow truck traffic to bypass the downtown.

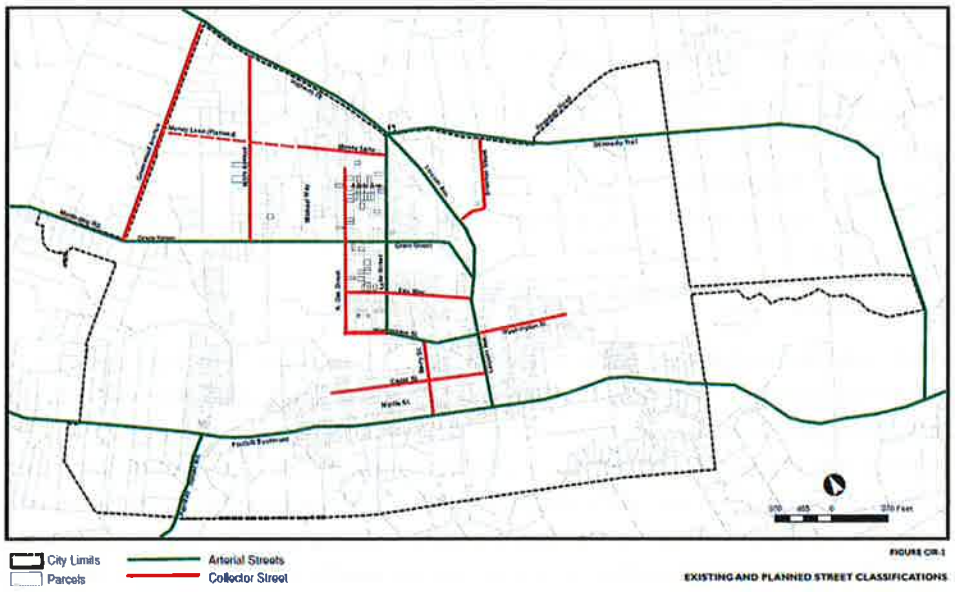

Figure 5 – Calistoga General Plan Circulation Network

North-South Streets

- Lincoln Avenue is Calistoga's main downtown street and is part of the State highway system (SR 29).

East-West Streets

- Foothill Boulevard (State Route 29/128) is a major east-west road that is part of the State highway system. Below Lincoln Avenue, Foothill Boulevard is State Route 29/128. Above Lincoln Avenue, Foothill Boulevard is State Route 128.
- Silverado Trail is a major east-west road that runs parallel to Foothill Boulevard (SR 129/28) below Lincoln Avenue on the east side of Calistoga. Silverado Trail terminates at its intersection with Lincoln Avenue (SR 29).

Other Streets

In addition to the streets listed above, there are a number of local streets with low traffic speeds and volumes that provide direct access to abutting land uses.

Opportunities and Constraints

A variety of issues and opportunities related to bicycling and walking have been identified through the review of existing documents, maps, aerial images, and public input. Following are some physical and operational constraints specific to Calistoga.

- Caltrans ownership of Lincoln Avenue and Foothill Boulevard limits local control over the ability to provide bicycle and pedestrian facilities.
- Many families live within biking/walking distance of Calistoga's schools.
- Calistoga's climate and topography make biking and walking reasonable alternatives to driving.
- Calistoga's proximity to active and passive open spaces in the County makes connectivity achievable.

III. Vision, Goals, Objectives and Policies

The following vision, goal, objectives, and policies are meant to function as a mutually agreed upon framework for a bicycle and pedestrian system throughout Calistoga and the Planning Area. The policies are designed to guide the development and maintenance of bicycle and pedestrian systems, to enhance bicycle mobility and pedestrian connectivity, and to improve safety, access, traffic congestion, air quality, and the quality of life for residents, workers and visitors.

It is important to note that as projects advance and/or are developed, the policies should be referenced to ensure that both private development and municipal projects are consistent with these policies, and that plans and development projects in Calistoga implement the full measures of the Plan elements.

Vision: *A comprehensive, connected bicycle and pedestrian system and related programs provide people with safe, convenient and enjoyable access throughout Calistoga and to destinations beyond. Bicycling and walking are common for everyday trips and recreation, contributing to the quality of life in Calistoga and the health, safety and welfare of its residents, workers and visitors. Calistoga is known as a bicycle-and pedestrian-friendly community.*

Principal Goal: *To develop and maintain a safe and comprehensive bicycle and pedestrian transportation and recreation system that provides access and opportunities for healthy physical activity, and reduces traffic congestion and energy use. Policies, programs and projects work together to provide safe, efficient and enjoyable opportunities for bicyclists and pedestrians of all types, ages, and abilities to access public transportation, school, work, recreation areas, shopping, activity centers and neighborhoods.*

Objectives and Policies

Objective 1. Comprehensive Bicycle and Pedestrian Network

Establish a comprehensive bicycle and pedestrian transportation system that is integrated with the countywide network.

Policies

1.1 Provide a complete bicycle and pedestrian network among residential areas, downtown and major activity centers.

1.2 Require new development to implement the planned bicycle and pedestrian network.

1.3 Determine appropriate locations for bicycle and pedestrian access to and along the Napa River corridor. Access shall avoid properties developed with single-family residences and be respectful of single-family residence private property rights. All future improvements required of private land owners should have demonstrable public benefit and minimize impacts on privacy and security. Properties abutting the Napa River that are developed with a single-family residence shall not be required to participate in the costs of constructing pedestrian access facilities along the Napa River corridor.

1.4 Build on Calistoga's existing partnership with the Napa County Transportation and Planning Agency (NCTPA) to ensure that the City's Active Transportation Plan is consistent with countywide transportation planning efforts.

1.5 Increase the city's walking and bicycling trips, in accordance with NCTPA 2035 goals. As a major part of this effort, the City will continue to develop and maintain a safe and integrated bicycle and pedestrian system throughout Calistoga for people of all ages and abilities.

Objective 2. Best Practices, Design Standards

Utilize accepted Complete Streets design standards and "best practices" for the development of bicycle and pedestrian facilities.

Policies

2.1 Utilize the *California Highway Design Manual,* the *California Manual of Uniform Traffic Control Devices*, the American Association of State Highway Transportation Officials *Guide for the Development of Bicycle Facilities* and *Guide for the Planning, Design, and Operation of Pedestrian Facilities* for the development of bicycle and pedestrian facilities.

2.2 Where compliance with minimum bike lane standards is infeasible, use signs, shared lane markings, or other route enhancements to improve conditions for bicyclists, wherever feasible.

2.3 Install way-finding signage, markers, and stencils on off-street paths, on-street bikeways, local roads, and state routes to improve way-finding for bicyclists, and heighten motorists' awareness.

2.4 Provide safety features at uncontrolled pedestrian crossings, especially within pedestrian districts and at intersections of arterials with Class I trails.

2.5 Sidewalks shall have the appropriate width for their use. Commercial districts require wider sidewalks designed as part of the public space and foreground for the buildings.

Objective 3. Multimodal Integration

Develop and enhance opportunities for bicyclists and pedestrians to easily access public transit.

Policies

3.1 Provide secure bicycle parking at transit stops.

3.2 Provide greater opportunity for bicycles to be brought on buses.

3.3 Pedestrian access between development and transit facilities shall be developed, which will encourage use of public transportation.

Objective 4. Comprehensive Support Facilities

Encourage the development of comprehensive support facilities for walking and bicycling.

Policies

4.1 Ensure the provision of adequate bicycle parking at important public facilities, schools, commercial areas and other locations with high bicycle-parking demands.

4.2 Require the provision of lockers and showers by large employers.

4.3 Install high-visibility crossing treatments, pedestrian-scale lighting, street furniture, drinking fountains, and other pedestrian amenities in pedestrian districts and on Class I trails.

Objective 5. Enhanced Safety and Security

Create pedestrian and bicycle networks that are, and are perceived to be, safe and secure.

Policies

5.1 Reduce automobile collisions with pedestrians and bicyclists by 50 percent by the year 2020, using 2011 collision data as the baseline for analysis.

5.2 Review collision data annually to identify problem areas involving bicyclists and pedestrians and to prioritize projects and program activities.

5.3 Focus on improving safety at intersections using pedestrian signal cycles, pedestrian buttons, high-visibility crosswalk markings and education and cycle-triggered signal changes.

5.4 Give high priority to safety improvements in the vicinity of schools, public transit and other high use pedestrian destinations.

5.5 Improve pedestrian safety and security with pedestrian-level lighting, where appropriate.

5.6 Continue to implement Safe Routes to School program improvements.

5.7 Take care in the construction and maintenance of drainage ditches, manhole covers, sewer and drainage grates, and asphalt/concrete interfaces to minimize hazards to bicyclists and pedestrians.

5.8 Improve bicycle directional and identification signage to enhance safety for all who use the City bicycle transportation network.

Objective 6. Integration

Plan, design and construct bicycle and pedestrian facilities in new development.

Policies

6.1 Incorporate applicable and appropriate provisions of this Plan into all new development projects.

6.2 The integrity of agricultural operations shall not be violated by bikes and pedestrian facilities. Where trails are required, they shall be sited to minimize the impacts to agricultural operations.

Objective 7. Education and Promotion

Promote bicycling and walking.

Policies

7.1 Coordinate the delivery of bicycle safety education programs to schools, utilizing assistance from law enforcement agencies, local bicycle shops, bicycle advocates and other appropriate groups and organizations.

7.2 Develop and maintain a safety campaign for drivers, cyclists and pedestrians.

7.3 Increase the awareness of the benefits of walking and bicycling through an education campaign.

7.4 Distribute bicycle and pedestrian safety, educational, and promotional materials through law enforcement activities, at scholastic orientations, through drivers training and citation diversion programs, and to new political representatives.

7.5 Encourage events that introduce residents to walking and bicycling, such as walk/bike-to-work days, walk/bike-to-school days, senior walks, recreational walks and historic walks.

7.6 Encourage major employment centers and employers to promote commuting by bicycle, including the use of flex-time work schedules to support non-rush hour bicycle commuting.

7.7 Educate the general public on common Vehicle Code infractions involving bicyclists.

Objective 8. Planning

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

Policies

8.1 The Active Transportation Advisory Committee (ATAC) shall be responsible for advising staff and decision makers on the ongoing planning and coordination of the bicycle and pedestrian transportation system.

8.2 Proactively seek new opportunities for acquisition of abandoned rights-of-way, natural waterways, utility rights-of-way, and other lands for the development of new multi-use pathways that integrate with the planned system.

8.3 Recognize the varied needs of bicyclists by striving to maintain on-street bikeways where off street pathways or alternative routes are proposed. Existing bikeways should not be altered or eliminated without consulting with the Active Transportation Advisory Committee.

Objective 9. Maintenance

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

Policies

9.1 Maintain lane geometry, pavement surface condition, debris removal, markings, and signage on Class II and Class III bikeways to the same standards and condition as the adjacent motor vehicle lanes.

9.2 Assign a point of contact in the Public Works Department to compile, track, and respond to routine bicycle and pedestrian maintenance issues in a timely manner.

9.3 Require that road construction projects minimize their impacts on bicyclists and pedestrians to the greatest extent possible through the proper placement of construction signs and equipment, and by providing adequate detours.

9.4 Require that routine maintenance of local roads consider bicycle and pedestrian safety and at a minimum includes the following activities:

- Trim vegetation to provide a minimum horizontal clearance of 4 feet from the edge of pavement and a minimum vertical clearance of 8 feet.
- Clear debris from road shoulder areas to provide space for walking.

9.5 Perform periodic sidewalk inspections to ensure adequate pedestrian clearance and to address maintenance issues that could present a tripping hazard.

Objective 10. Funding

Maximize the amount of funding for bicycle and pedestrian projects and programs, with an emphasis on implementation of this Plan.

Policies

10.1 Work with federal, state, regional and local agencies and any other available public or private funding sources to secure funding for the bicycle and pedestrian system.

10.2 Support multi-jurisdictional funding applications to implement the regional bicycle and pedestrian system.

10.3 Promote the availability of adequate regional, state and federal funding sources for bicycle and pedestrian transportation projects.

IV. Bicycle Network and Support Facilities

Types of Bicyclists

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

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

Advanced Bicyclists are typically comfortable riding anywhere they are legally allowed to operate a bicycle, including space shared with cars and trucks along arterials or rural highways. Less advanced or *Average Bicyclists* are typically more comfortable on roadways that provide space separated from motorists and/ or along separated pathways. *Novice Bicyclists*, including children and new adult riders, may be confident and have some level of bicycle handling skills; however, they often do not have the experience of seasoned riders, nor the training or background in traffic laws necessary to operate safely on the road. Bicyclist types and their preferences and needs are defined further in Table 6.

Table 6
Bicyclist Types, Preferences and Needs

Bicyclist Type	Rider Preferences	Rider Needs
Advanced Bicyclist Experienced riders who can operate under most traffic conditions	• Direct access to destinations • Operate at maximum speed with minimum delays • Sufficient roadway space or shoulder so that bicyclists and motorists can pass without altering their line of travel	• Enforce speed limits • Provide wide outside lanes (urban) • Provide usable shoulders (rural)
Average Bicyclist Casual or new adult and teenage riders who are less confident of their ability to operate in traffic without special provisions for bicycles	• Comfortable access to destinations • Direct route, but on low-speed, low traffic-volume streets designated bicycle facilities • Well-defined separation of bicycle and motor vehicles or separate multi-use paths	• Ensure low speeds on neighborhood streets • Traffic calming measures • Provide network of interconnected designated bicycle facilities (lanes, multi-use paths, well-marked bike routes) • Usable roadway shoulders

Table 6
Bicyclist Types, Preferences and Needs

Novice Bicyclist Young children, students, and pre-teen riders whose roadway use is initially monitored by parents, and/or adult bicyclists just beginning to ride	• Access to schools, recreation facilities, shopping, and other residential areas • Residential streets with low motor vehicle speed limits and volumes • Well-defined separation of bicycles and motor vehicles or separate multi-use paths	• Ensure low speeds on neighborhood streets • Traffic calming measures • Provide network of designated bicycle facilities (lanes, multi-use paths, well marked bike routes) • Usable roadway shoulders

Source: Hawaii DOT, Minnesota DOT

Bikeway Types

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

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

<u>Standard Bikeways</u>

Class I Multi Use Path

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

Class II Bike Lane

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

Class III Bike Route

Class III facilities, known as bike routes, provide signs for shared use with motor vehicles within the same travel lane on a street or highway. Bike routes may be enhanced with warning or guide signs and

shared lane marking pavement stencils. While Class III routes do not provide measures of separation, they have an important function in providing continuity to the bikeway network.

Class III Bike Route Enhancements

Bicycle Boulevard

A bicycle boulevard is a roadway that gives priority to bicycle traffic at intersections along the route. The boulevard may also include traffic calming features that reduce the total number of vehicles that use the roadway to make the roadway more bicycle-friendly. By definition, bicycle boulevards are Class III facilities, but are not typically signed with just the basic "Bike Route" sign.

Shared Lane Marking

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

Non-Standard Bikeways

Cycle Track

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

Bikeways Inventory

Existing bicycle facilities in Calistoga were inventoried by updating the 2012 Bicycle Plan, field reconnaissance, staff questionnaires and interviews, and through outreach to the public as well as the local Active Transportation Advisory Committee. Existing bikeways in Calistoga and the Planning Area are listed on Table 8 and shown on Figure 6: Bicycle Network.

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Bicycle Network - City of Calistoga

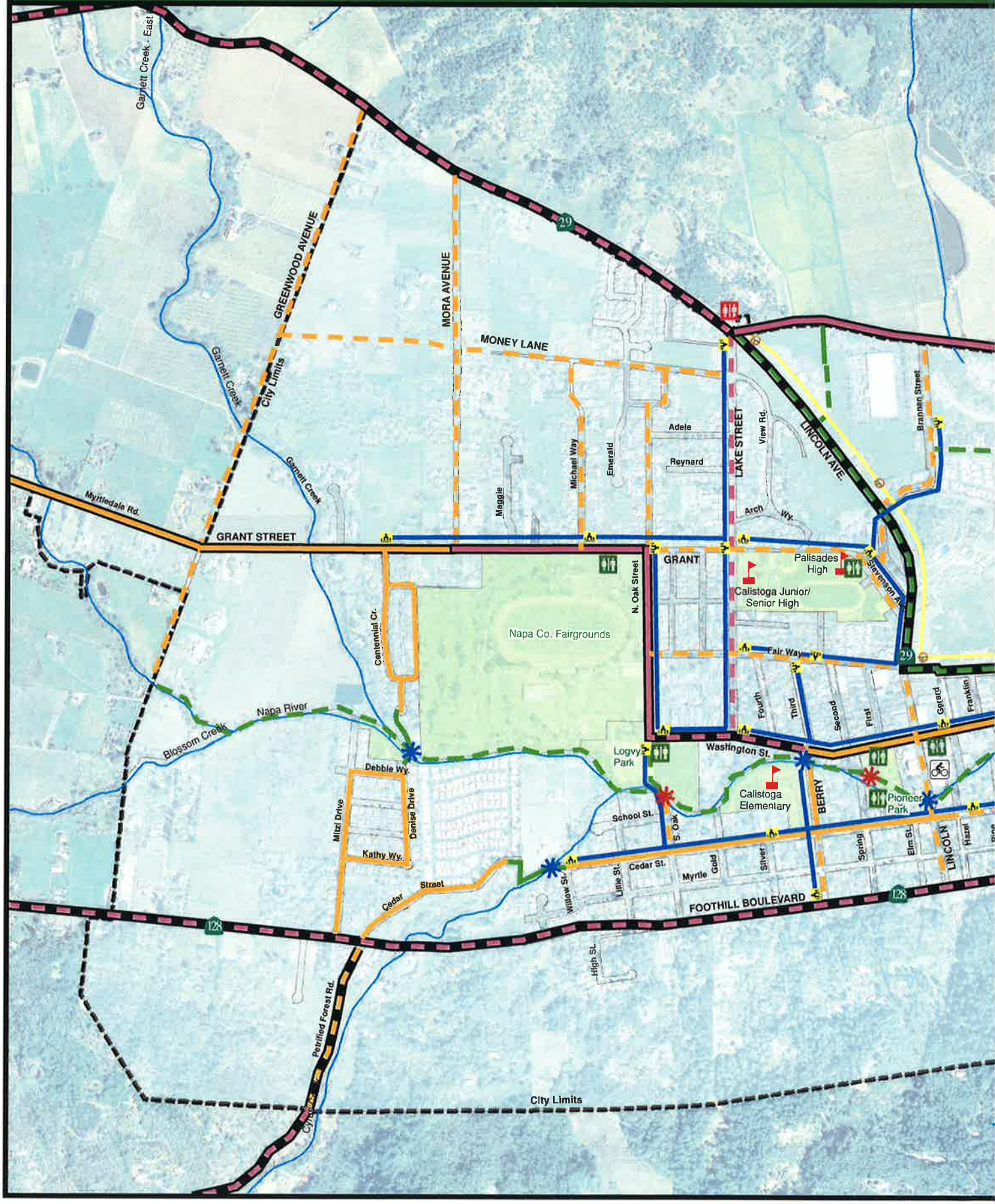


Table 7 Existing Bikeways						
Project Corridor/Street	**Begin Point**	**End Point**	**Class**	**Length (Miles)**	**Primary Route**	**Vine Trail**
Class I						
Washington Street	Dunaweal Lane	Tedeschi Field	I	1.0	Yes	Yes
Cyrus Creek Path	Cedar Street at Willow Street	Cedar Street near Rancho de Calistoga	I	0.1	No	No
Maxfield Path	Fairway Vista Ct.	Denise Drive	I	0.08	No	No
Lava Vine Path	Silverado Trail	Approx. 316 south of Silverado Trail	I	0.01	No	No
Class II						
Silverado Trail	Calistoga Easterly City Limits	Lincoln Avenue	II	0.91	Yes	No
Grant Street	N. Oak Street	Mora Avenue	II	0.31	Yes	No
N. Oak Street	Grant Street	Washington Street	II	0.30	Yes	No
Class III						
Grant Street	Mora Avenue	Calistoga Westerly City Limits	III	0.42	Yes	No
Cedar Street	Lincoln Avenue	Willow Street	III	0.61	No	No
Centennial Circle	Grant Street	Maxfield Path	III	0.43	No	No
Mitzi Drive, Debbie Way, Kathy Way & Denise Drive	Maxfield Path	Foothill Boulevard	III	0.64	No	No
Cedar Street	Foothill Boulevard	Cyrus Creek Path	III	0.26	No	No
Berry Street	Cedar Street	Washington Street	III	0.14	No	No
Washington Street	Berry Street	Tedeschi Field	III	0.46	Yes	No
			Class I	**1.19**	**Miles**	
			Class II	**1.52**	**Miles**	
			Class III	**2.96**	**Miles**	

Bicycle Parking

Bike racks are readily available in Calistoga; see Figure 7. Bicycle racks are located in the downtown, schools, civic destinations and within some resorts. The racks are generally an inverted U design and accommodate two bikes at each location. The rack locations were carefully selected by the Active

Transportation Advisory Committee in close coordination with the Public Works Department to allow barrier-free travel along the sidewalks as well as easy access from parked vehicles.

The City's Municipal Code includes the following bicycle parking requirements:

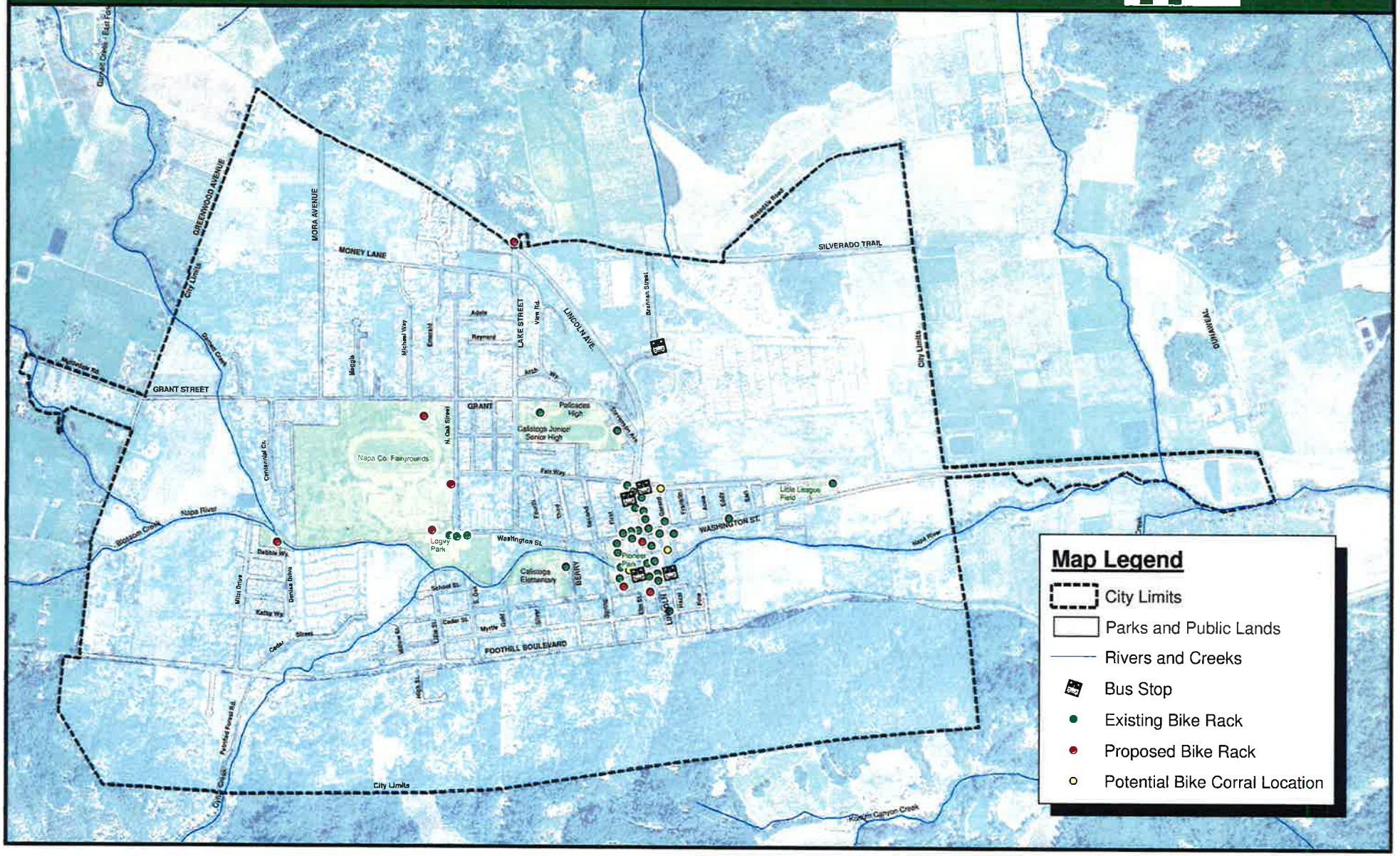
> *17.36.151 – Bicycle parking.*
>
> *A. Nonresidential Standard. One bicycle parking space shall be provided for every 10 vehicle spaces required.*
>
> *B. Multifamily Residential. One bicycle parking space shall be provided for every three dwelling units.*
>
> *C. Required Facilities. Bicycle parking requirements shall be fulfilled through the installation of lockers, racks, or equivalent structures in or upon which a bicycle may be locked by the user. All racks shall be securely anchored to the ground or building surface. Racks shall be designed to accommodate U-shaped locks.*
>
> *D. Location. Bicycle parking shall be located in a clearly designed, safe and convenient location. A "safe parking location" is defined as a location whereby activity around bicycle parking is easily observable, conveniently located to the bicyclist's destination, and adequately separated from motor vehicles and pedestrians. Surfaces around bicycle parking facilities shall be maintained, mud and dust free.*

Shower and Locker Facilities

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

Bicycle Parking & Support Amenities - City of Calistoga DRAFT

FIGURE 7



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Proposed Bikeway System

This section describes the proposed bicycle improvements in Calistoga including both physical and programmatic improvements. The proposed bikeway network consists of an interconnected network of Class I pathways, Class II bike lanes, and Class III bike routes that will close gaps, connect existing facilities, and provide access to areas that are not currently served by bicycle facilities.

Primary Bikeway Network

This Plan incorporates the County's Primary Bikeway Network, a continuous countywide network of on- and off-street bikeways that extend between and through communities, this element was first introduced in the 2012 Countywide Bicycle Plan. The Primary Bikeway Network consists of a combination of existing and proposed Class I, Class II, and Class III bikeways that provide inter-city and inter-county routes along with connections to other transportation modes, major destinations, jobs, neighborhoods, recreation, and local bikeways. The network typically includes one or more north-south and east-west routes through each community. The intention of the Primary Bikeway Network is to focus and collaborate on a set of basic routes that will provide access to major destinations and activity areas. Primary Bikeway Maps have been prepared to show how the network connects between communities, and proposed project lists identify bikeway segments on the Primary Bikeway Network. The Primary Bikeway Network has been further coordinated with "routes of regional significance" that comprise the Bay Area's Regional Bicycle Network identified in the Metropolitan Transportation Commission's Regional Bicycle Plan for the San Francisco Bay Area. Primary Bikeway Network routes are identified on the Bicycle Network map using a colored highlight around their route designation.

Bikeway System

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

Bikeway Network

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

Primary Bikeway Network

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

Local Bicycle Network

Approximately 12.1 miles of bikeways are proposed in Calistoga. The proposed bicycle network shown on Figure 6 Bicycle Network includes approximately 6.2 miles of Class I paths, 3.5 miles of Class II bike lanes, and 2.4 miles of Class III bike routes in order to maximize connectivity throughout the community and to destinations beyond Calistoga. The proposed local network has been planned to provide safe and convenient bicycle access to parks, open spaces, commercial areas, residential neighborhoods and community facilities.

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

Criteria for Route Selection and Evaluation

The methodology for developing a bikeway network began with input from the Active Transportation Advisory Committee, the local bicycling community, local planning and engineering staff familiar with the community and the public. Based on input received, existing conditions, goals, and opportunities and constraints, a network of proposed facilities and programs was prepared. Next, a ranking methodology based on general planning criteria was developed to prioritize the recommended bikeway projects and programs. It is important to note, however, that over time, changes will occur that may impact project implementation opportunities, and thus projects that may not be heavily weighted could be implemented in the short term due to opportunity, funding availability, political will, or other reasons.

Project ranking criteria include:

Land Use: A project that provides or promotes connections or access between multiple land uses (e.g., dense residential neighborhoods with high numbers of bicycle commuters with areas of dense employment) will rank favorably according to the land use criteria. Facilities that provide intra- or inter-neighborhood access to schools, shopping, transit, and/or public open space/parks would also rank favorably according to the land use criterion. Longer corridor projects that "connect" more land uses will tend to rank higher, as they are assigned greater points over shorter projects that do not connect generators with destinations, or vice versa.

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

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

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

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

Overcomes Barrier/Connectivity (Safety): Maximum points should be assigned to projects that address a major safety concern for bicyclists using bridges, interchanges, and/or negotiating other environments

difficult for bicyclists to navigate. Higher points should be assigned to roadways with high speed, high traffic volume, difficult intersections or other obstacles to bicycle travel. Maximum points should be assigned for filling a gap in the existing network.

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

Bicycle Parking and Support Facilities

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

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

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

Project Prioritization and Phasing

Project implementation priorities are identified in Table 8, the proposed project list. Projects are categorized as High, Medium, or Low to both indicate priority and provide flexibility in phasing and implementation. Project prioritization was developed using the qualitative analysis detailed in the "Criteria for Route Selection and Evaluation" section. Project ranking and prioritization scores are presented in Appendix E. It is important to note that the prioritization of projects and phasing of improvements are presented as guidelines, as flexibility is essential in the implementation of planned bikeway projects and programs in order to capitalize on opportunities as they arise.

Table 8
Proposed Bikeways and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Route*	Vine Trail	Use	Cost	Priority
Class I Multi-Use Path										
1	Eastern Connection	316 Feet south of Silverado Trail	Lincoln Avenue	I	0.1	No	No	T/R	55,000	Low
2	Fair Way Extension	Lincoln Avenue	Washington Street	I	0.5	Yes	Yes	T/R	1,024,650	High
3	Logvy Park Connection	N. Oak Street	S. Oak Street	I	0.1	No	No	T/R	300,000	Medium
4	Southern Crossing	Foothill Boulevard	Washington Street	I	0.2	No	No	T/R	500,000	Medium
5	Napa River Trail	Calistoga City Limits	Calistoga City Limits	I	1.8	No	No	T/R	3,000,000	Low
6	Lincoln Avenue	Fair Way	Silverado Trail	I	0.6	Yes	Yes	T/R	330,000	High
7	Mobilehome Park Connection	Washington Street Path	Silverado Trail & Brannan Street	I	1.0	No	No	T/R	850,000	Medium
Class II Bike Lane										
8	Foothill Boulevard	Calistoga Easterly City Limits	Calistoga Westerly City Limits	II	1.8	Yes	No	T/R	1,500,000	Medium
9	Lake Street	Silverado Trail	Washington Street	II	0.7	No	No	T	243,750	Medium
10	Washington Street	N. Oak Street	Berry Street	II	0.3	Yes	No	T/R	175,000	High
Class III Bike Routes										
11	Berry Street	Cedar Street	Foothill Boulevard	III	0.1	No	No	T	500	Medium
12	Brannan Street	Silverado Trail	Lincoln Avenue	III	0.3	No	No	T/R	1,500	Medium
13	Carli Drive	Money Lane	N. Oak Street	III	0.1	No	No	T	500	Low
14	Cedar Street	Lincoln Avenue	Pine Street	III	0.1	No	No	T	500	Low
15	Fair Way	N. Oak Street	Lincoln Avenue	III	0.4	No	No	T	1,000	Medium
16	Grant Street	Wappo	N. Oak Street	III	0.4	No	No	T	1,500	Medium
17	Greenwood Avenue	Grant Street	Napa River	III	0.2	No	No	T/R	1,000	Medium

Table 8
Proposed Bikeways and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Class	Length (Miles)	Primary Route*	Vine Trail	Use	Cost	Priority
18	Lincoln Avenue	Foothill Boulevard	Fair Way	III	0.4	No	No	T	1,500	Low
19	Michael Way	Money Lane	Grant Street	III	0.3	No	No	T	1,500	Low
20	Money Lane	Lake Street	Michael Way	III	0.3	No	No	T	1,000	Low
21	Money Lane Extension	Michael Way	Greenwood	III	0.5	No	No	T/R	1,000	Low
22	Mora Avenue	Lake County Highway	Grant Street	III	0.6	No	No	T/R	1,000	Low
23	N. Oak Street	Carli Drive	Grant Street	III	0.2	No	No	T	1,000	Low
24	S. Oak Street	Napa River	Cedar Street	III	0.1	No	No	T	500	High
25	Pine Street	Foothill Boulevard	Cedar Street	III	0.1	No	No	T	500	Low
26	Stevenson Avenue	Grant Street	Lincoln Avenue	III	0.1	No	No	T	500	Low
27	Wappo Avenue	Lincoln Avenue	Grant Street	III	0.1	No	No	T	500	Low
				Class I	**3.3**			**Total**	**$7,993,900**	
				Class II	**2.8**					
				Class III	**4.3**					

Notes: R = Recreation; T = Transportation

* Primary routes are intended to provide a continuous countywide network of on- and off-street bikeways that extend between and through communities along with connections to other transportation modes, major destinations, jobs, neighborhoods, recreation, and local bikeway networks. Projects located on State or County maintained roadways outside the City limits are not included.

Funding and Implementation

Successful implementation of the bikeway projects and programs will require ongoing cooperation within and among City departments, other public agencies, and bicycling stakeholders. The planning horizon for the projects identified in this Plan is the year 2040. Implementation of the projects in this plan will occur incrementally in a variety of ways. Some projects may be incorporated into the City's Capital Improvement Program (CIP) process and will be implemented as the CIP projects get funded. Others can happen as part of regular maintenance and operations practices and road resurfacing projects. Development and/or redevelopment in the city will present a significant opportunity to implement some of the recommendations. While improvements associated with development and/or redevelopment often occur "piecemeal," this is the way development happens and it is important to include bicycle improvements as a component of project improvements. Finally, outside funding can be obtained to finance the design and construction of other projects, improvements and programs. The most likely funding sources are addressed in the last section of this chapter.

Project Costs

Construction costs for bicycle infrastructure project are presented in Table 8. Cost estimates shown in Table 9 were developed by researching unit costs experienced by local jurisdictions in Napa County and the North Bay, and were cross-referenced by reviewing the *National Cooperative Highway Research Program's Guidelines for Analysis of Investments in Bicycle Facilities*[2]. The costs below are for planning level estimates. They are unit costs for construction and do not include contingencies, design, environmental analysis, administrative costs, right-of-way acquisition, or inflation factors. Furthermore, unit costs may vary considerably depending on the size of the job and the location. For example, the unit cost of striping only 1,000 linear feet can easily be two to three times that of a 15,000-foot project. The same 'economy of scale' can be applied to sign installation and signal modification projects. Pavement widening costs also vary considerably depending on the terrain and other variables, such as presence of utility poles, monuments, and drainage issues.

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

Table 9
Construction Cost Assumptions for Bikeway Improvements

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

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

A variety of bicycle rack and bicycle locker products and styles are available through local and national manufactures and retailers. The City should utilize racks and lockers that are effective and appropriate for the context of the respective installation site.

Data Collection (Bicycle Counts)

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

Proposed count locations in Calistoga and the surrounding unincorporated County include points along and intersections of primary streets in the bikeway network and community gateways. Proposed count locations in Calistoga are identified in Table 10 and Figure 8. Information on standard counting methodologies, recommended count periods, a discussion of ongoing counting efforts at the regional and national levels, and sample standardized count forms from the Metropolitan Transportation Commission and the National Bicycle and Pedestrian Documentation Project are provided in Appendix D.

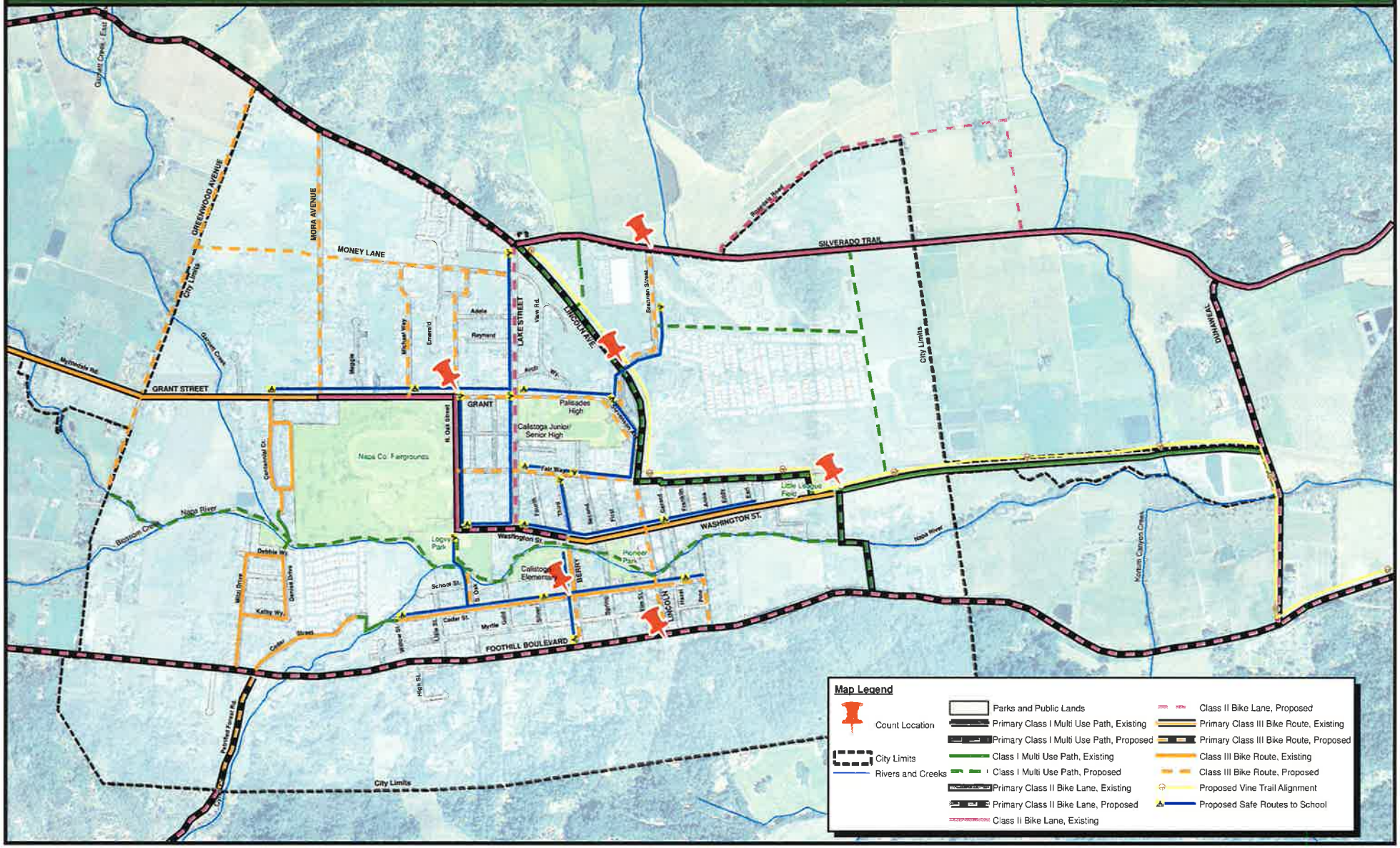
Table 10
Proposed Count Locations

#	Location	Bicycle Facility Classification	Use
1	Silverado Trail/Brannan Street	Class II	Primary Lane/ *Bike Route*
2	*Foothill Boulevard/Lincoln Avenue*	Class II	*Primary Lane / Bike Route*
3	Cedar Street/Berry Street	Class III	Bike Route, SR2S /Bike Route, SR2S
4	Grant Street/N. Oak Street	Class II	Primary Lane, SR2S / Primary Lane, SR2S
5	Washington Street/Tedeschi Field	Class I	Primary Path
6	Lincoln Avenue/Brannan Street	Class II	*Primary Path, SR2S, Vine Trail / Bike Route SR2S*

Notes: *Italics* = Proposed Facility
SR2S = Safe Routes to School

Bicycle Count Locations - City of Calistoga DRAFT

FIGURE 8



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Program Costs

This plan includes a variety of collaborative programs and actions that will help achieve the vision of increased and safe bicycling throughout Napa County and for each community. The programs and actions are important to help realize the Plan's Vision and safety enhancements and should be implemented as soon as time and funding resources are available. Costs for individual programs and actions are highly variable and dependent upon the scope and scale of actions. For example, bicycle counts are often collected using volunteer labor, which results in a significant savings. Other programs and actions can be carried out using existing staff resources and/or by utilizing existing media available free of charge from other transportation agencies such as safety education materials and/or public service announcements. Table 2 identifies the primary programs and includes a range of estimated costs, a potential lead agency, likely partner agencies, and potential funding sources.

Table 11
Cost Assumptions for Programs

Program/Project Name	Lead Agency	Partner Agencies	Estimated Cost	Estimated Annual Operating Cost	Potential Funding Sources
Bicycle Network Maps	City of Calistoga	NCTPA	$5,000 (assumes utilization of existing information)	$5,000 printing and update costs every 3 to 5 years	Regional and state grants
Safety and Education Publications (such as the Safe Bicycling Guidelines)	City of Calistoga	NCTPA	$2,000 (assumes utilization of existing materials)	$2,000 printing and update costs every 3 to 5 years	Federal and state grants
Street Skills Bicycle Safety Courses	NCTPA	City of Calistoga	$5,000 administration and contract instructors	$2,000 to $4,000	Non-profits, Grants
Bicycle Parking Program	City of Calistoga	Local developers	$15,000 start-up Assumes design, administration, site selection for bicycle corral	$2,500 Annual installation expenses	Active Transportation Program, state and regional grants
Focused/Targeted Enforcement	Police Department	City of Calistoga	Included in operational budgets	Included in operational budgets	General Fund, CA Office of Traffic Safety Grants
Encouragement Activities (bike to work day, city streets, fairs, races, student, and community events)	NCTPA, City of Calistoga, Non-profits	NCTPA, non-profits, local businesses	$500 to 5,000 per event	Varies per event	Non-profits, local businesses, tourism and hospitality industries
Bicycle Counts	City of Calistoga	NCTPA, volunteers	$1,000 Program start-up and administration	$500	Regional grants
Wayfinding Signage	City of Calistoga	Local Businesses, Tourism/Hospitality Industry	$75,000 startup	$10,000 maintenance costs	Local businesses, tourism and hospitality industries

Past Expenditures

Since completion of the 2012 Bicycle Plan, the City of Calistoga has spent approximately $60,000 on implementation of the plan.

Table 12
Historical Expenditures on Bicycle Facilities

Project	Description	Cost Estimate	Fiscal Year
Downtown Bike Racks	Installation of 4 bicycle racks in the downtown	$1,500	FY 12/13
Bicycle Safety Guidelines	Created and printed pocket Bicycle Safety Guidelines	$2,000	FY 13/14
Fair Way Extension Path	Design and environmental analysis for a Class I multi-use pathway, which is a segment of the Vine Trail. Grant funding received from Bay Area Ridge Trail Council through the State Coastal Conservancy's Bay Conservancy Program and Napa Valley Vine Trail Coalition	$60,000	FY 13/14 & FY 14/15

Funding Resources

There are a number of funding mechanisms available to implement the bicycle projects and programs contained in this Plan. Due to its dynamic nature, transportation financing is complex. Implementation of bicycle facilities, improvements, and programs is possible through a wide variety of funding sources including:

- Federal, state, regional, and local governmental sources
- Private sector development and investment
- Community, special interest and philanthropic organizations

Federal, State, Regional, and Local Governmental Sources

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

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

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

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

While a portion of these funds are programmed or 'guaranteed' to the City based on various formulas, the majority of the funds are available through a competitive process at the state, regional, or local level. Thus while improvements to major roadways are likely to be financed through programmed transportation funds, the majority of the projects contained in this Plan are likely to be funded through competitive grant programs or some combination of the two sources.

To ensure timely implementation of the projects contained in this Plan, it will be incumbent upon the City to pursue competitive source funds. Competition for these limited funds can be intense, especially at the state and regional levels where often hundreds of applicants compete for monies from impacted programs. Therefore, competitive programs typically require the development of extensive applications with clear documentation of the project need, costs, and benefits, along with maps, schedules, letters of support, and proposed work scopes. A local match of between 10 and 15 percent is typically required; however, some programs require a dollar for dollar match. While the development of applications combined with securing local matching funds can be challenging, competitive source funding programs represent an outstanding opportunity to secure funds for local improvements.

Private Sector Development and Investment

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

Community, Special Interest and Philanthropic Organizations

Other non-governmental sources of funding include the contributions of community-based organizations, such as the Napa Valley Vine Trail Coalition and the Napa County Bicycle Coalition in carrying out programs that support bicycle usage. The Napa Valley Vine Trail Coalition is a grass-roots nonprofit with a vision to build a walking/biking trail system to connect the entire Napa Valley. The Napa Valley Vine Trail is working to design, fund, construct, and maintain 47 miles of Class I trail, stretching from Vallejo's Ferry to Calistoga. The Napa County Bicycle Coalition is a membership-supported advocacy organization working to improve the bicycling environment and quality of life for all residents. Examples include Bike to Work Day efforts, bicycle valet parking at events, education programs, and community bike rides. Special-interest groups have made contributions toward non-motorized improvements and programs if such are in alignment with group objectives. Sometimes the contribution is monetary; at other times in the form of volunteer efforts, such as path or trail upkeep programs.

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

IV. Pedestrian Network and Support Facilities

Existing Conditions

Calistoga's quiet neighborhoods, proximity to local and regional parks, and vibrant downtown offer residents, workers and visitors many walkable destinations. Furthermore, Calistoga is temperate and compact, which keep walk trips comfortable. However, Napa River, which meanders traverses through Calistoga has a significant impact on "walkability." The river limits the number of connections between the northern and southern sides of town, although the Napa River does provide an opportunity as a scenic resource and a benefit to residents and visitors.

Lincoln Avenue (State Route 29) serves as the city's "Main Street," the location of Calistoga's primary commercial activity center where walking should be prioritized as a mode of travel. In addition, the safe walking routes to schools should be prioritized.

Pedestrian Facility Types

Sidewalk

Sidewalks provide a space for pedestrian activity vertically separated from motor vehicle traffic by a curb and, sometimes, a landscape buffer (preferred) typically consisting of street trees.

Pathways

Pathways provide a separation from motor vehicle traffic, although pedestrians may have to share them with bicyclists and other non-motorized users.

Crosswalks

Crosswalks provide a legal extension of a sidewalk across a roadway.

Curb Ramps

Curb ramps provide a sloped transition between a raised sidewalk and a crosswalk.

Pedestrian Network Inventory and Existing Facilities

As part of this Plan, a citywide inventory of sidewalks, pathways, crosswalks, and curb ramps was conducted. The majority of inventory data were collected through a process of "feature extraction" from video imagery taken of the city's entire roadway network from which the presence/absence of sidewalks, crosswalks, and curb ramps could be determined and geographically referenced into a Geographic Information System (GIS) database. The video feature extraction was supplemented with review conducted during the preparation of the 2008 ADA Transition Plan. Finally, field work was conducted to spot-check the feature extraction results for accuracy and to conduct detailed follow-up surveys of areas where sidewalks were lacking. Existing pedestrian facilities are shown on Figure 9.

Disabled Access – ADA

The Americans with Disabilities Act (ADA) was enacted in 1990, providing rights and protections to individuals with disabilities. To comply in the realm of the pedestrian network, local governments such as the City must bring sidewalks, curb ramps and roadway crossings up to a set of specified standards when constructing new facilities or making modifications within existing public rights-of-way. According to ADA, additions and alterations to existing facilities shall comply with Public Rights-of-Way

Accessibility Guidelines[3]. Alterations include, but are not limited to, renovation, rehabilitation, reconstruction, historic restoration, resurfacing of circulation paths or vehicular ways, or changes or rearrangement of structural parts or elements of a facility. Pavement patching and liquid-applied sealing, lane restriping, and short-term maintenance activities are not alterations.

In addition to providing individuals with disabilities with accessible sidewalk, curb ramp and crossing facilities, many ADA requirements help other populations as well. For instance, in addition to serving people who use wheelchairs or other mobility aids, curb ramps facilitate travel by those pushing strollers and inexperienced bicyclists who are not yet ready to ride in the street. Wide sidewalks, and a lack of obstructions, create a nicer environment for all pedestrians. These improvements also provide greater opportunity to people with disabilities to access public transit stops.

Curb Ramp Upgrades

The City has utilized various funding sources for an ongoing program of replacement and retrofit of non-compliant curb ramps beginning in 2008. The project continues as funding permits. All new street and sidewalk construction projects are required to upgrade ramps within the area of work to current ADA compliance. The City also collaborates with Caltrans in their program to create compliant facilities on state highways.

Past Expenditures

Since 2012, the City of Calistoga has spent approximately $85,000 on pedestrian facilities, including sidewalk repairs and installation of ADA curb ramps at various locations throughout the City.

Proposed Improvements

Proposed pedestrian improvements include pedestrian safety improvements at crossing locations and gap closures and pedestrian connections where none presently exist. These proposed pedestrian facilities are identified on Figure 9.

[3] The Architectural and Transportation Barriers Compliance Board is proposing accessibility guidelines for the design, construction, and alteration of pedestrian facilities in the public right-of-way. When the guidelines are adopted, compliance with the accessibility standards will be mandatory.

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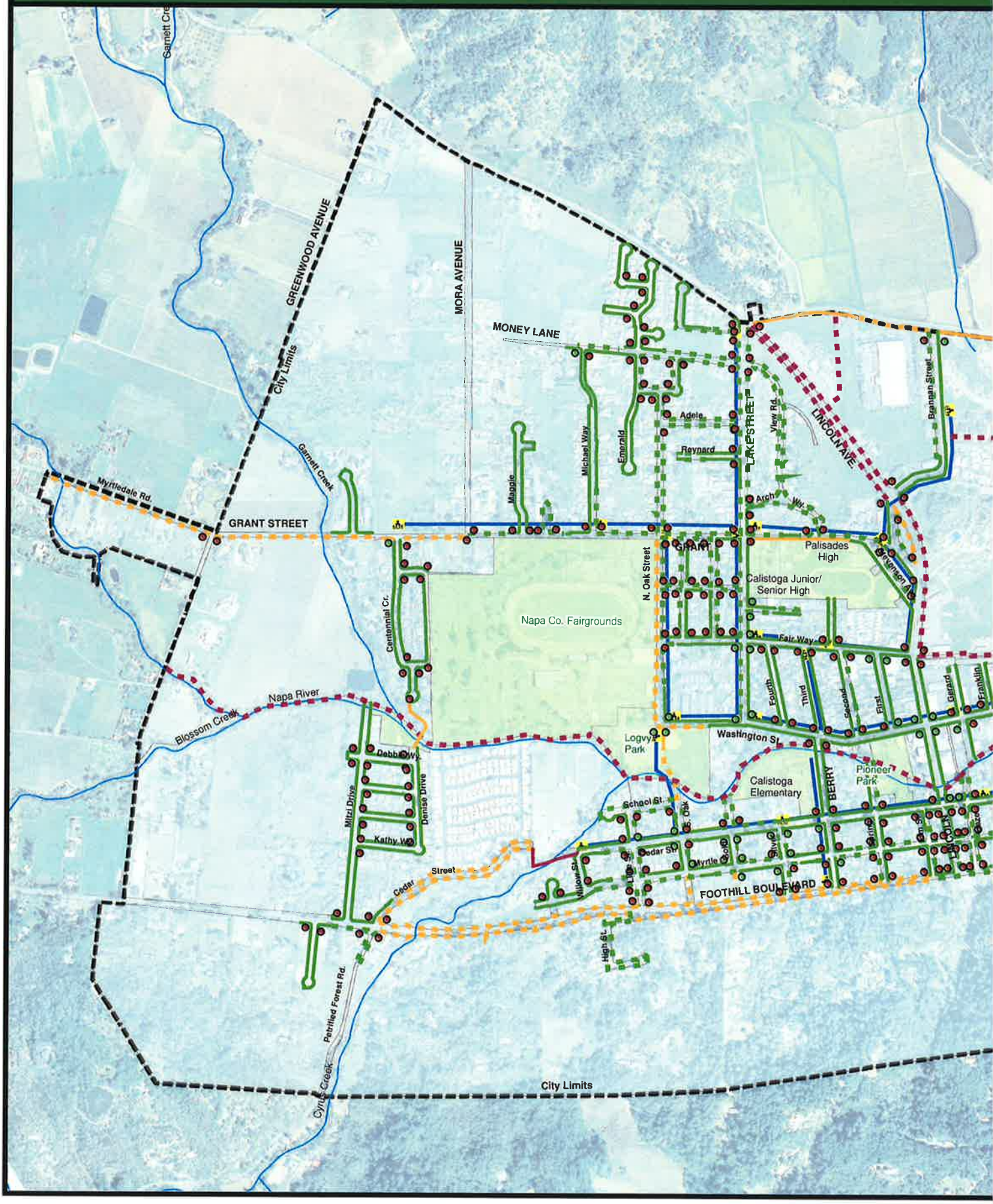
Pedestrian Network - City of Calistoga



Improvement Costs

A summary of projected cost estimates for pedestrian improvements is presented in the following tables. All cost estimates are capital costs at a planning level and the amounts are subject to further refinement once feasibility and engineering work has been completed, or as budget conditions change within the City.

Pedestrian unit costs are presented in Table 13. These costs are the basis for the planning-level cost estimates used in the tables contained in this section.

Table 13
Pedestrian Improvement Basic Unit Costs

Item	Unit	Unit Cost
Add Striping	LF	$2
Bench EA $2,000	EA	$2,000
Bulbout - Additional installments at intersection	EA	$50,000
Bulbout - First installment at intersection	EA	$100,000
Bus Stop (Shelter, Bench, Curb Cut, Bus Pad)	EA	$40,000
Class I Path Construction	LF	$100
Concrete Planter Bollards	EA	$200
Concrete Sidewalk/Island	SF	$9
Countdown Signal Heads	EA	$800
Crosswalk - High Visibility	EA	$1,200
Crosswalk – In-Pavement Flashing Lights	EA	$75,000
Crosswalk - Transverse	EA	$500
Curb & Gutter	LF	$35
Curb Ramp Retrofit (diagonal, per corner)	EA	$2,000
Curb Ramp Retrofit (perpendicular, per corner)	EA	$5,000
Lighting, In-pavement luminaires (includes electric service)	EA	$2,050
Lighting, Pedestrian-scale lighting mounted on existing cobra head (includes electric service)	EA	$1,528
Median Nose Addition	EA	$1,400
Median Nose Reduction	EA	$2,000
Mid-block crossing barrier	LF	$30
Move Traffic Signal	EA	$200,000
Parking Restrictions -- Red Curb	EA	$20
Ped Push Button	EA	$800
Ped Signal, Audible	PER CORNER	$1,000
Pedestrian Scramble	EA	$50,000
Pedestrian-scale Lighting	LF	$250

Table 13 Pedestrian Improvement Basic Unit Costs		
Reduce Curb Radii – Additional installments	EA	$30,000
Reduce Curb Radii – First installment	EA	$80,000
Remove Curb	LF	$4
Remove Striping	LF	$1
Resurface Sidewalk - 5' Wide	LF	$40
Sidewalk - 10' Wide	LF	$90
Sidewalk - 5' Wide	LF	$45
Sidewalk Widening	LF	$46
Signs, In-Pavement Yield to Pedestrian Signs	EA	$200
Signs, Overhead Beacon	EA	$50,000
Signs, Speed Feedback	EA	$10,000
Signs, Warning	EA	$200
Stop Limit Bars/ Yield Teeth (per lane)	EA	$300
Trash Receptacle	EA	$1,200
Trees	EA	$800
Truncated Domes (retrofit plastic)	EA	$800

Costs for the intersection, corridor and standalone pedestrian projects are presented in Table 14. The total cost for these improvements is estimated at $9 million. The actual costs for these projects may vary considerably depending on a variety of conditions. Further feasibility and design work are required to refine these estimates.

Table 14
Proposed Pedestrian Facilities and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Project Type*	Length (Miles)	SR2S**	Cost	Priority
Pathways* **								
1	Cedar Street	Foothill Boulevard	End of Street	Corridor	0.27	N	$157,140	Low
2	Foothill Boulevard	Petrified Forest Road	Elm Street	Corridor	0.91	N	$750,000	Low
3	Foothill Boulevard	Pine Street	414 Foothill Boulevard	Corridor	0.28	N	$480,000	Low
4	Grant Street	Mora Avenue	Greenwood Avenue	Corridor	0.42	Y	$250,000	High
5	Lincoln Avenue	Wappo Avenue	Wappo Avenue	Corridor	0.14	N	$73,920	Medium
6	N. Oak Street	Grant Street	Washington Street	Corridor	0.87	N	$525,000	Medium
7	Silverado Trail	300 Silverado Trail	400 Silverado Trail	Corridor	0.15	N	$125,000	Medium
8	Silverado Trail	700 Silverado Trail	980 Silverado Trail	Corridor	0.13	N	$120,000	Medium
9	Washington Street	N. Oak Street	1700 Washington Street	Corridor	0.07	Y	$60,000	Medium
10	Mobilehome Park Connection	Washington Street Path	Silverado Trail and Brannan Street	Corridor	1.00	N	$850,000	Medium
Sidewalks								
11	Adele Avenue	Lake street	N. Oak Street	Corridor	0.14	N	$63,916	Medium
12	Arch Way	Lake Street	Grant Street	Corridor	0.16	N	$58,016	Medium
13	Aurora Drive	Emerald Drive	Carli Drive	Gap Closure	0.06	N	$34,256	Medium
14	Brannan Street	Silverado Trail	Lincoln Avenue	Gap Closure	0.32	Y	$135,168	High
15	Carli Drive	Aurora Drive	Money Lane	Gap Closure	0.06	N	$23,256	Medium
16	Cedar Street	Willow Street	Pine Street	Gap /Corridor	0.71	Y	$299,904	High
17	Elm Street	Cedar Street	Foothill Boulevard	Gap Closure	0.11	N	$64,464	Medium
18	Emerald Drive	Money Lane	Aurora Drive	Gap Closure	0.07	N	$29,568	Medium

Table 14
Proposed Pedestrian Facilities and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Project Type*	Length (Miles)	SR2S**	Cost	Priority
19	Fair Way	N. Oak Street	Lincoln Avenue	Gap Closure	0.41	Y	$173,184	High
20	Filmore Street	Grant Street	Fair Way	Gap Closure	0.17	N	$71,808	Medium
21	Falleri Drive	Lake Street	Urbani place	Gap Closure	0.10	N	$42,240	Low
22	Fisher Avenue	N. Oak Street	Lake Street	Gap Closure	0.13	N	$54,912	Medium
23	Foothill Boulevard	Elm Street	Pine Street	Corridor	0.14	N	$59,136	High
24	Foothill Boulevard	Petrified Forest Road	Highland Court	Corridor	0.10	N	$42,240	High
25	Gold Street	Myrtle Street	End	Gap Closure	0.10	N	$42,240	Medium
26	Grant Street	Wappo Avenue	Mora Avenue	Corridor	0.69	Y	$400,320	High
27	Hazel Street	Foothill Boulevard	End	Gap Closure	0.15	N	$69,360	Medium
28	High Street	Foothill Boulevard	End	Gap Closure	0.14	N	$59,136	Low
29	Lake Street	Lincoln Avenue	Washington Street	Corridor	0.65	Y	$391,200	High
30	Lillie Street	School Street	Foothill Boulevard	Gap Closure	0.17	N	$71,808	Medium
31	Michael Way	Grant Street	1700 Michael Way	Gap Closure	0.07	N	$29,568	Medium
32	Miriam Avenue	Lake Street	End	Gap Closure	0.09	N	$38,016	Low
33	Money Lane	Lake Street	Michael Way	Corridor	0.26	N	$137,300	Medium
34	Myrtle Street	Willow Street	Pine Street	Gap Closure	0.59	N	$311,520	Medium
35	N. Oak Street	Aurora Drive	Grant Street	Gap Closure	0.23	Y	$127,452	High
36	Petrified Forest Road	Foothill Boulevard	970 Petrified Forest Rd.	Corridor	0.15	N	$104,420	High
37	Pine Street	Foothill Boulevard	End	Gap Closure	0.19	N	$86,256	Medium
38	Redwood Avenue	Grant Street	2100 Redwood Avenue	Gap Closure	0.05	N	$33,120	Low
39	Reynard Lane	Lake Street	End	Gap Closure	0.09	N	$38,016	Low
40	S. Oak Street	School Street	Foothill Boulevard	Gap Closure	0.19	Y	$80,256	High

Table 14
Proposed Pedestrian Facilities and Project Priorities

#	Project Corridor/Street	Begin Point	End Point	Project Type*	Length (Miles)	SR2S**	Cost	Priority
41	School Street	S. Oak Street	End	Gap Closure	0.10	N	$42,240	Medium
42	Second Street	Fair Way	Washington Street	Gap Closure	0.15	N	$75,360	High
43	Silver Street	Cedar Street	Foothill Boulevard	Gap Closure	0.13	N	$66,912	Medium
44	Spring Street	Myrtle Street	Foothill Boulevard	Gap Closure	0.18	N	$112,032	Medium
45	Stevenson	Grant Street	Lincoln Avenue	Gap Closure	0.13	Y	$60,912	High
46	View Road	Lake Street	Arch Way	Gap Closure	0.25	N	$113,600	Low
47	Wappo Avenue	Lincoln Avenue	Lincoln Avenue	Gap Closure	0.16	Y	$91,584	High
				Total	**10.83**	**Total**	**$7,136,756**	

*Project Types: Corridor projects will generally have additional right-of-way to accommodate wider sidewalks and pathways, and may have additional amenities like benches and street trees. Corridor projects should avoid curb ramps and crossings unless necessary. Gap closure projects are a continuation of the prevailing sidewalk in the area and include curb ramps and crossings at intersections.

**SR2S = Safe Routes to Schools

***Multi-use pathways are not included, see Table 8, *Proposed Bikeways and Project Priorities* for these projects and their associated costs

Pedestrian Programs

Recommended ongoing and program costs are shown in Table 16. Since a significant amount of curb ramp and sidewalk improvements are included in the intersection, corridor projects, these program budgets are expected to be reduced somewhat from current levels.

Table 15
Costs of Pedestrian Programs

Program Name	Description	Annual Cost Estimate	Potential Source of Funding
Citywide Walking promotion	Walking promotion campaigns provide information, challenges, contests and other opportunities to motivate people to walk for health, recreation and transportation.	$1,000	Regional and state grants
Individual travel marketing	Individualized travel marketing offers residents targeted information about alternatives to driving alone.	$2,500	Local businesses, tourism and hospitality industries
Citywide safety advertising	Pedestrian safety campaigns use a variety of advertising media to deliver messages that encourage safe and legal walking, bicycling and driving.	$1,000	General fund, CA Office of Traffic Safety Grants

Also, the costs for promotion, enforcement, maintenance, and landscaping may already be covered fully or in part by existing City budgets in various departments. Some City policies shift maintenance responsibility to the public. For example, sidewalk and landscaping maintenance is done by property owners, not by the City. The budgets for recommended programs, while annualized in the table, are likely to vary considerably from year to year and are subject to grant awards and budget conditions. This table does not include the costs of existing programs, such as the 50/50 Sidewalk Replacement and ADA Curb Ramp programs.

Funding for Pedestrian Projects and Programs

This plan sets out an ambitious list of projects to be implemented over the next 25 years. Pedestrian projects and enhancements identified in this Plan should be included in the City's Capital Improvement Program. This may be accomplished by a combination of funding capital and maintenance efforts, providing matching monies for competitive grants, and/or integrating pedestrian features into larger public projects. The City should continue to evaluate pedestrian complaints and make recommendations for improvements.

The City will actively seek competitive grant sources and strive to allocate adequate matching monies to implement pedestrian projects.

Federal Revenue

There are several forms of federal revenue that have emerged and then diminished over the years. The key programs include the Federal Surface Transportation Program (STP) and federal gas tax revenue. Federal funding is generally declining, due, in part to the declining value of the gas tax (due to the fixed tax rate per gallon, increasing construction costs, and increases in fuel efficiency). Examples of federal STP funding include grants received through the Metropolitan Transportation Improvement Program (MTIP), the Transportation Enhancement Program (TE) the Highway Bridge Program (HBP), and the Hazard Elimination Program (HEP). Federal gas tax revenue is distributed to local agencies through the State.

State Revenue

The Active Transportation Program (ATP) is the primary source of State funding that was created by Senate Bill 99 (Chapter 359, Statutes of 2013) and Assembly Bill 101 (Chapter 354, Statutes of 2013) to encourage increased use of active modes of transportation, such as biking and walking. The ATP consolidates various transportation programs, including the federal Transportation Alternatives Program, state Bicycle Transportation Account, and federal and state Safe Routes to School programs into a single program.

Local Governments and Other Agencies

Typically, the City and other agencies (e.g., Vine Trail, Bay Ridge Trail, NCTPA) will share in the costs of specific projects or studies that provide transportation benefits to the City, County and the other agency. These revenue sources vary significantly over time because they are based on specific projects and geographic areas.

VII. Safety, Education, Maintenance and Monitoring

Safety Analysis

The following section addresses safety conditions for bicyclists and walkers in Calistoga and includes a review of the California Office of Traffic Safety's (OTS) collision rankings, the Statewide Integrated Traffic Records System, seasonal trends in Napa County, an understanding of the limitations of bicycle collision reporting, an analysis of bicycle collisions in Calistoga for the more-recent 10-year period for which collision data was available, a summary of collision findings, a location map of bicycle collisions in Calistoga, and a review of urban and rural bicycle crash types.

Collision Rankings

OTS conducts ongoing research of traffic safety statewide and OTS prepares an annual traffic safety ranking of all California cities and counties. Cities are broken into groups based on population, while all 58 counties are grouped together; however, the grouping does not take into account other local demographics or characteristics. With the exception of the City of Napa, all cities within Napa County experience a lower number of annual bicycle collisions than the average for their population group. Because these cities have populations of less than 25,000, any small increase or decrease in annual collisions can result in a dramatic shift in their ranking. Therefore, these rankings were used for a generalized look at collision performance, not as an exact metric.

Statewide Integrated Traffic Records System

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

Seasonal Trends

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

Collision Reporting

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

Bicycle Collision Analysis

The bicycle collision history for Calistoga was reviewed to determine any trends or patterns that could indicate safety issues for bicyclists. Collision data for a ten-year period from January 1, 2002, through December 31, 2011, was obtained from the California Highway Patrol (CHP) as published in their State Wide Integrated Traffic Records System (SWITRS) reports. The collected SWITRS data was verified for

location references, duplicate reporting, and inconsistencies. It is important to note that SWITRS data only includes collisions that were reported, so it does not necessarily reflect all incidents that occurred.

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

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

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

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

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

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

The City of Calistoga experienced a total of 972 reported collisions for the ten-year period of 2002 to 2011, of which 25 involved bicycles, see Figure 10. Annual bicycle collisions ranged from zero to seven collisions per year. The most common primary collision factor reported improper turns when drivers were at fault. Cyclist traveling on the wrong side of the road, at an unsafe speed or violating the right of way violation were the most common collisions where the cyclist was at fault. The party at fault varied for the remaining collisions, with some indeterminate based upon information provided in the SWITRS database.

For the years of 2006 through 2008, the City of Calistoga's OTS rankings for bicycle collisions varied widely, making it difficult to identify a trend. As previously stated, for smaller cities such as Calistoga, which has a population of approximately 5,155 persons, any small change in annual collisions can result in a large shift in collision ranking, as seen in this data.

Pedestrian Collisions

The pedestrian collision history for Calistoga was reviewed to determine any trends or patterns that could indicate safety issues for pedestrians. Collision data for a ten-year period from January 1, 2002, through December 31, 2011, was obtained from the California Highway Patrol (CHP) as published in their State Wide Integrated Traffic Records System (SWITRS) reports. The collected SWITRS data was verified for location references, duplicate reporting, and inconsistencies. It is important to note that SWITRS data only includes collisions that were reported, so does not necessarily reflect all incidents that occurred.

Pedestrian collisions occur at fairly consistent rates, with the vast majority occurring on State Route 29 or Lincoln Avenue, see Figure 11. Drivers are assigned fault in the majority of collisions with pedestrians.

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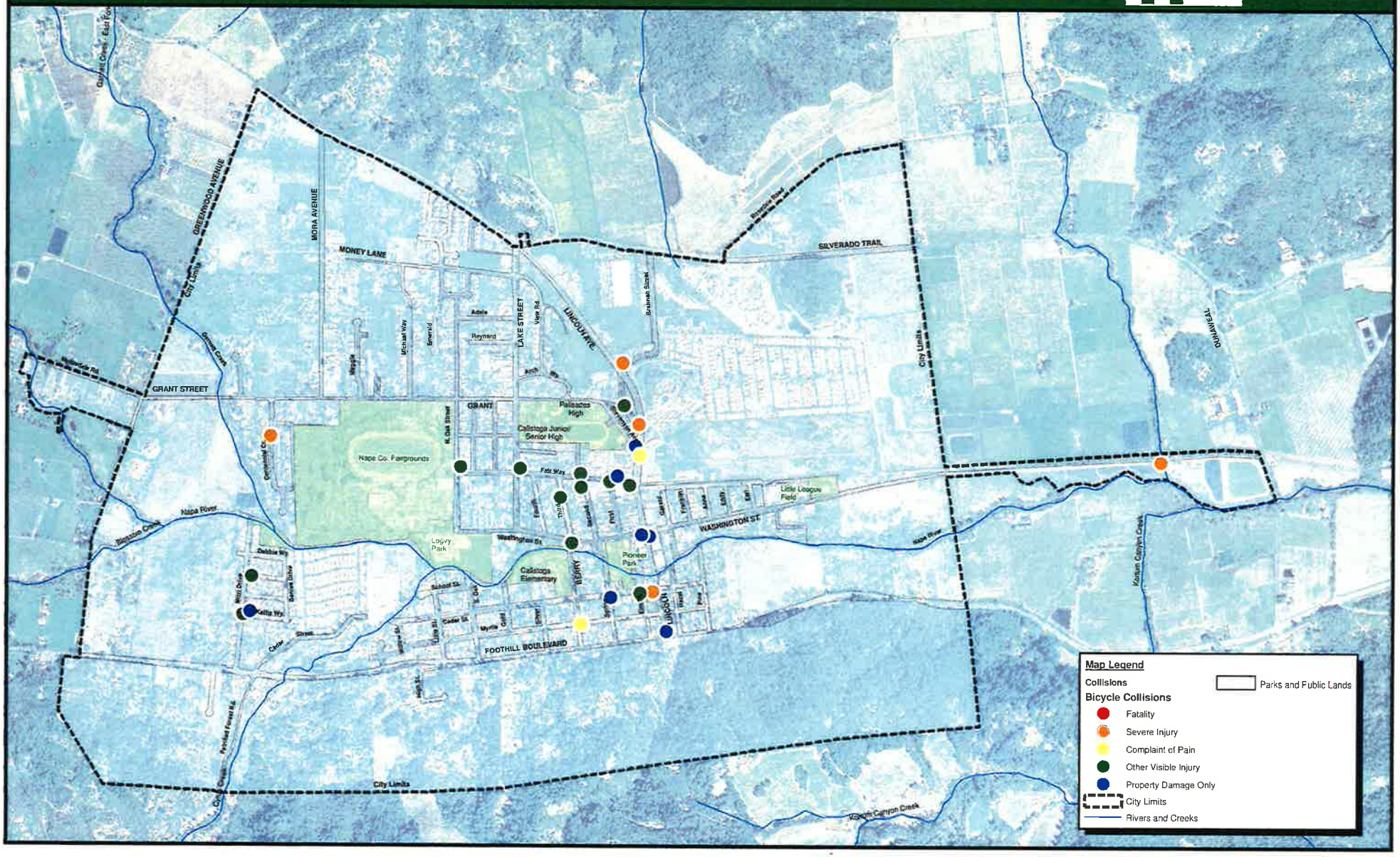
Bicycle Collisions - City of Calistoga DRAFT

FIGURE 10



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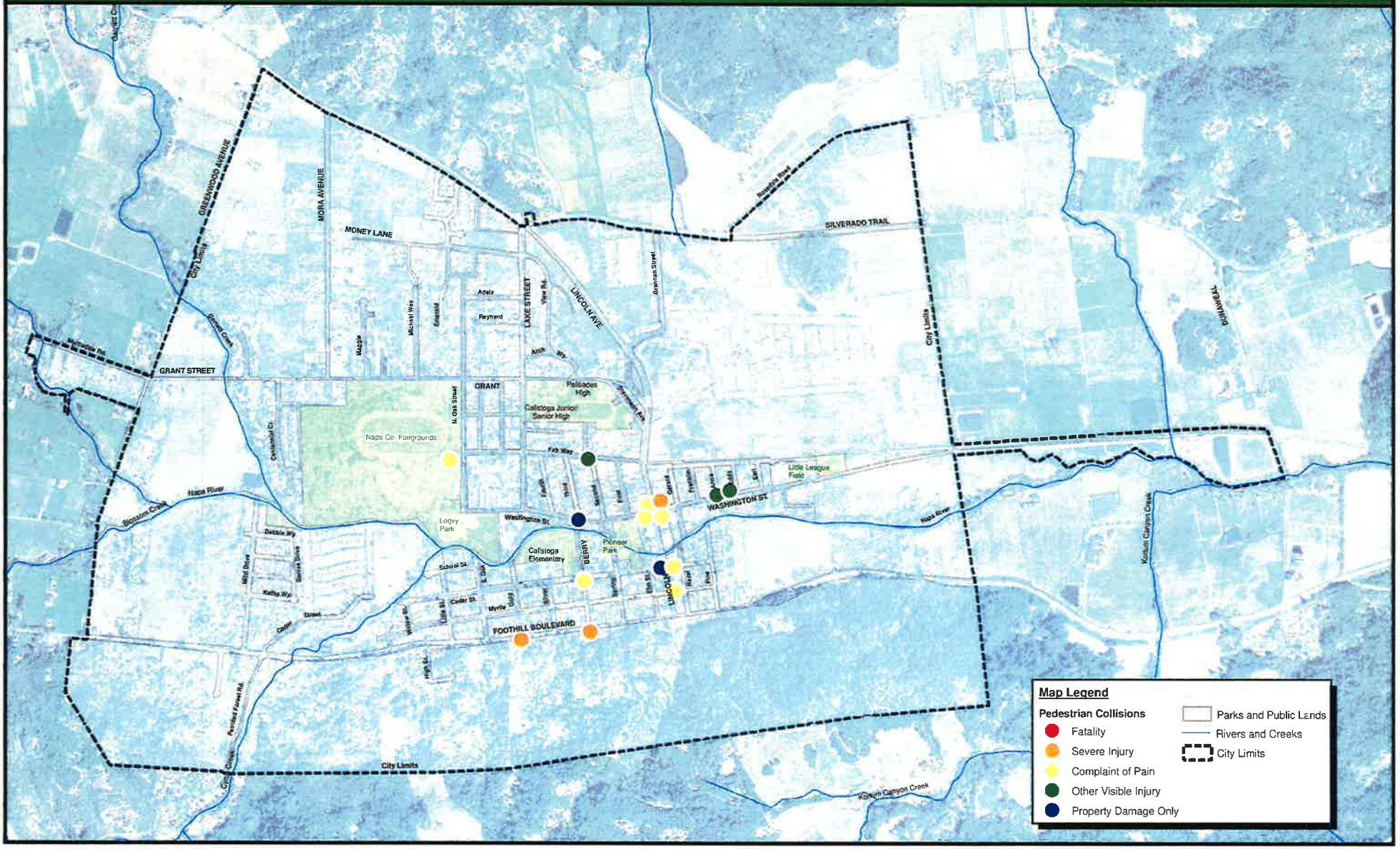
Pedestrian Collisions - City of Calistoga DRAFT

FIGURE 11



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Comparison of Rural and Urban Bicycle Crashes

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

A 2010 report by the FHWA's Highway Safety Information System, *Factors Contributing to Pedestrian and Bicycle Crashes on Rural Highways*, was prepared to examine the difference between pedestrian and bicycle crashes in urban and rural settings in order to identify crash types and crash locations specific to rural highways that could be addressed through the use of existing safety treatments and/or through the development of new treatments. Lincoln Avenue (SR 29/128) and Foothill Boulevard (SR 29/128) meet the characteristics of a rural highway.

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

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

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

Existing Bicycle Safety, Education, and Encouragement Programs

In the past on an as-needed basis, bicycle rodeos have been delivered by the Calistoga Police Department to elementary students, and the Department has offered free helmets to those in need. Additionally, the Active Transportation Advisory Committee has distributed Safe Bicycle Guidelines to the public provide tips on safe bicycling.

Safe Routes to School is a national movement with a variety of programs that are designed to improve safety and encourage students to walk and bicycle to school. Such programs work to reduce traffic congestion and improve the health of both children and the environment. The City of Calistoga may pursue funding for these efforts through the state and federal Safe Routes to School programs and can work with the Napa County Office of Education to implement safety and education programs which are currently offered to elementary and middle schools throughout Napa County when requested.

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

Efforts must be made to encourage a culture of respect and shared usage among motorists and bicyclists alike. The safety, education, encouragement, and enforcement programs recommended in

this section are intended to help increase the number of bicyclists in the Planning Area, while also increasing safe and appropriate behavior by bicyclists and all other roadway users.

Safety Education for Students

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

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

- *Expected Result:* Decrease the number of bicycle crashes among school age children and increase the number of students bicycling/walking to school through increased Safe Routes to School safety education efforts.
- *Measure:* Collision analysis and bicycle and walking counts performed regularly by agency staff.

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

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

- *Expected Result:* More students will bicycle and walk to school on a regular basis.
- *Measure:* The Napa County Office of Education Safe Routes to School Coordinator will track the number of children walking and biking to school and survey participating schools to track the success of walking and bicycling school busses/trains.

Bicycle Safety Education for Adults

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

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

- *Expected Result:* Bicyclists will employ safe bicycling techniques and etiquette on streets and pathways, parents will serve as role models for safe bicycling techniques for their children, bicycle conflicts along streets and pathways will decrease, and annual bicycle collisions will be reduced.
- *Measure:* Traffic citations, bicycle crash data, and bicycle/traffic complaints will be analyzed on an annual basis to determine trends. Surveys may be conducted on trails and/or as a component of regular bicycle counts to determine the effectiveness of the outreach and if bicycle/vehicle/ pedestrian interactions have improved.

Bicycle Safety Education and Encouragement Campaign for Tourists

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

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

- *Expected Result:* The number bicycle trips by made by short-term tourists visiting the Napa Valley will increase substantially. Both bicycle and traffic safety will improve as a greater understanding of the bicycle system is developed and vehicle miles traveled are reduced. Targeted reductions in Greenhouse Gas Emissions will be achieved as fewer "short" tourism trips are made. Touring the Napa Valley's vineyards, wineries, and attractions by bicycle, and experiencing Napa's "healthy lifestyle" will be central to the Valley's tourism industry and an active destination choice for tourists worldwide.
- *Measure:* Traffic citations, bicycle crash data, and bicycle/traffic complaints will be analyzed on an annual basis to determine trends. Visitor serving businesses including bicycle tours and rental establishments, wineries, and lodging will be surveyed to determine trends and the effectiveness of the campaign.

Law Enforcement Activities

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

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

Training of law enforcement personnel, including on-bike enforcement techniques, is critical to keeping officers up to date on current bicycle laws and issues, and will help officers to understand the behaviors, rights, and traffic safety concerns associated with bicycling. A community policing agreement engages members of the community, including agency engineering and planning staff, local elected officials, non-profit community advocates, schools, and others, to ensure the coordination of enforcement goals and strategies, and to develop a balanced approach to address bicycle safety issues that includes education, engineering, and enforcement.

- *Expected Result:* Bicycle specific training for police officers will familiarize enforcement personnel with bicycle issues and the bicyclist's perspective. A community policing agreement will ensure a collaborative approach to bicycle safety that includes enforcement, engineering, and education efforts.
- *Measure:* Trained enforcement officers may be required to complete post training evaluation forms. Community policing agreements would result in regular committee meetings and a reduction in bicycle-related citations and collisions.

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

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

- *Expected Result:* Court administered bicycle diversion program for bicycle traffic offenders which would provide bicycle safety training in lieu of a fine.
- *Measure:* Bicycle safety training delivered to (number) of residents through the program.

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

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

- *Expected Result:* Increased law enforcement patrols at top collision locations.
- *Measure:* Reduction in bicycle collisions at high collision locations.

Maintenance and Monitoring

Bicycle and pedestrian system maintenance needs include cleaning/sweeping, asphalt resurfacing, striping maintenance, sign replacement, pavement repairs, signal maintenance, drainage work, refuse removal, graffiti removal, and landscape maintenance. Maintenance of on-street facilities such as Class II bike lanes and Class III bike routes is generally treated as a component of typical roadway maintenance activities which are funded through gas taxes and programmed annually. While some maintenance needs such as re-striping or re-surfacing can be placed on a periodic schedule, other needs such as sweeping, fixing potholes, addressing signal detection sensitivity, and trimming overgrown vegetation require immediate attention. Table 16 provides a recommended timetable for regular maintenance activities associated with the bicycle and pedestrian networks.

Table 16 Bicycle and Pedestrian System Maintenance	
Maintenance Item	Schedule/Frequency
Pavement/pathway sweeping	Weekly
Signal detection sensitivity	Bi-annually – or as needed on a request basis
Trash disposal	Weekly
Graffiti removal	As needed
Potholes	As needed – on a request basis
Sign replacement/repair	1 to 3 years
Pavement marking replacement	1 to 3 years
Pavement sealing	Every 5 years
Lighting (replacement/repair)	Annually – or as needed on a request basis
Clean drainage system	Annually – or as needed on a request basis
Maintain furniture, bus stops, railings	Annually – or as needed on a request basis
Fountain/restroom cleaning/repair	Weekly – monthly as needed
Bridge/Underpass inspection	Annually
Maintain emergency telephones, Security cameras	Ongoing
Replenish road shoulder material	Annually
Sidewalk repair	As needed
Landscape Maintenance	
Tree, shrub, & grass trimming/fertilization	5 months – 1 year
Maintain irrigation lines/replace sprinklers	Annually
Irrigate/water plants	As needed
Shoulder and grass mowing	As needed
Vegetation maintenance	Annually – or as needed on a request basis
Weed control	Monthly

Maintenance Recommendations

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

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

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

Maintenance Costs

Maintenance costs for the bikeway and pedestrian system are generally divided into two categories. As previously noted, maintenance activities associated with on-street bikeways are typically accommodated as a component of routine street maintenance activities, while maintenance of off-street pathways, sidewalks and support facilities such as bike lockers and racks is generally funded through local revenues. Given the miles of existing and proposed Class I multi-use pathways in Calistoga, their maintenance costs that should not be overlooked. The City's pathways consist of both concrete and asphalt surfaces. While concrete pathways tend to remain stable and usable over time, prompt and regular maintenance including pothole repair and seal coats help to preserve and extend pavement life. To address the long-term need for maintenance of the network, it is recommended that a maintenance budget be established to ensure regular on-going maintenance of the network so that Calistoga's trails and pathways remain usable over time. Cost assumptions for typical maintenance activities are presented in Table 17.

Table 17
Maintenance Cost Assumptions

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

Monitoring

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

- Collect and analyze collision data on an ongoing basis to assist in the identification of problem locations.

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

VII. Next Steps

The Active Transportation Plan identifies a network and series of projects that will help City of Calistoga staff, stakeholders, and citizens advance towards establishing a citywide active transportation network. The City should work with the County, NCTPA, Caltrans and the local stakeholder groups to ensure coordination with their transportation and trails plans. Implementation of projects identified in the Plan will require champions for each potential project from the City as well as from the local community and partner agencies in order to identify funding and to move each project to completion.

VIII. Definitions, Terms, and List of Acronyms

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

ATAC– *Active Transportation Advisory Committee*

ADAAG – *ADA Accessibility Guidelines for Buildings and Facilities*

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

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

ATP – *Active Transportation Program*

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

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

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

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

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

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

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

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

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

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

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

Caltrans – *California Department of Transportation*

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

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

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

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

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

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

FHWA – *Federal Highway Administration*

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

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

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

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

JTW – *Journey to Work*

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

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

MUTCD – *Manual on Uniform Traffic Control Devices*

NCTPA – *Napa County Transportation Planning Agency*

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

Paved Shoulder – *The part of the highway/street that is adjacent to the regularly traveled portion of the highway, is on the same level as the highway, and when paved can serve as a bikeway.*

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

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

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

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

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

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

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

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

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

SHA – *State Highway Account*

SHOPP – *State Highway Operation and Protection Program*

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

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

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

Transportation Routes – *all widely used paths and roadways*

VMT – *Vehicle miles traveled*

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

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Guide for the Development of Bicycle Facilities, American Association of State Highway and Transportation Officials, 1999
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SCTA Countywide Bicycle & Pedestrian Master Plan, Sonoma County Transportation Authority, 2008
South County SR 29 Corridor Study, Korve Engineering, Inc., 2005
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VINE, http://www.nctpa.net/vine.cfm
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APPENDIX A

SUMMARIES OF RELEVANT PLANNING DOCUMENTS AND POLICIES

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Federal

US DOT Accommodating Bicycle and Pedestrian Travel

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

a. policy statement that bicycling and walking facilities will be incorporated into all transportation projects unless exceptional circumstances exist;

b. an approach to achieving this policy that has already worked in State and local agencies; and

c. a series of action items that a public agency, professional association, or advocacy group can take to achieve the overriding goal of improving conditions for bicycling and walking.

Finally, the policy statement notes that:

> *The challenge for transportation planners, highway engineers and bicycle and pedestrian user groups, therefore, is to balance their competing interest in a limited amount of right-of-way, and to develop a transportation infrastructure that provides access for all, a real choice of modes, and safety in equal measure for each mode of travel.*

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

Federal Americans with Disabilities Act (ADA)

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

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

http://www.ada.gov/

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

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

The Board's aim is to ensure that access for persons with disabilities is provided wherever a pedestrian way is newly built or altered, and that the same degree of convenience, connection, and safety afforded

the public generally is available to pedestrians with disabilities. The guidelines do not require alterations to existing public rights-of-way, but apply where a pedestrian route or facility is altered as part of a planned project to improve existing public rights-of-way.

http://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way

Federal Statutes – State

Title 23, CFR Sec §450.214 (a) The State shall develop a longrange statewide transportation plan, with a minimum 20-year forecast period at the time of adoption, that provides for the development and implementation of the multimodal transportation system for the State. The longrange statewide transportation plan shall consider and include, as applicable, elements and connections between public transportation, non-motorized modes, rail, commercial motor vehicle, waterway, and aviation facilities, particularly with respect to intercity travel.

Title 23, CFR Sec §450.200 require each State to carry out a continuing, cooperative, and comprehensive statewide multimodal transportation planning process, including the development of a long-range statewide transportation plan and statewide transportation improvement program (STIP), that facilitates the safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight (including accessible pedestrian walkways and bicycle transportation facilities) and that fosters economic growth and development within and between States and urbanized areas, while minimizing transportation-related fuel consumption and air pollution in all areas of the State, including those areas subject to the metropolitan transportation planning requirements of 23 U.S.C. 134 and 49 U.S.C. 5303.

Title 23, U.S.C. Sec. 135 (a) (2). The statewide transportation plan and the transportation improvement program developed for each State shall provide for the development and integrated management and operation of transportation systems and facilities (including accessible pedestrian walkways and bicycle transportation facilities) that will function as an intermodal transportation system for the State and an integral part of an intermodal transportation system for the United States.

Title 23 U.S.C. 217(g) Planning and Design. Bicyclists and pedestrians shall be given due consideration in the comprehensive transportation plans developed by each metropolitan planning organization and state in accordance with sections 134 and 135, respectively. Bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use are not permitted.

Federal Statues – Metropolitan Planning Organizations

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

Title 23, U.S.C. Sec. 134 (C) (2) The plans and TIPs for each metropolitan area shall provide for the development and integrated management and operation of transportation systems and facilities (including accessible pedestrian walkways and bicycle transportation facilities) that will function as an intermodal transportation system for the metropolitan planning area and as an integral part of an intermodal transportation system for the State and the United States.

State

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

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

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

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

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

California Vehicle Code

The California Vehicle Code is an extensive body of laws which regulate all facets of driving in California. The Vehicle Code is nearly 1000 pages long and covers everything to do with roads and driving, including pedestrians and bicyclists.

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

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

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

Chapter 1000, California Highway Design Manual

Highway Design Manual, Chapter 1000, "Bikeway Planning and Design. The Highway Design Manual, Chapter 1000, "Bikeway Planning and Design," provides design standards and guidelines for on- and off-

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

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

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

As of January 13, 2012 California Department of Transportation has adopted the California Manual on Uniform Traffic Control Devices (California MUTCD) 2012 edition to provide for uniform standards and specifications for all official traffic control devices in California. This action was taken pursuant to the provisions of California Vehicle Code Section 21400 and the recommendation of the California Traffic Control Devices Committee (CTCDC). The Department requested and has received a letter to confirm substantial conformance from the Federal Highway Administration (FHWA) for California MUTCD 2012 edition.

The California MUTCD 2012 edition includes FHWA's MUTCD 2009 edition dated December 19, 2009, as amended for use in California. The California MUTCD 2012 also includes all policies on traffic control devices issued by the Department since January 21, 2010, and other corrections and format changes that were necessary to update the previous documents.

The California MUTCD 2012 edition supersedes and replaces the previously adopted (on January 21, 2010) California MUTCD as well as Chapters 4, 5, 6, 8, 10, 11, 12, and the traffic signals portion of chapter 9 of the 1996 Caltrans Traffic Manual, as amended, and all previous editions thereof.

http://www.dot.ca.gov/hq/traffops/engineering/mutcd/index.htm

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

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

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

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

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

> *The California Department of Transportation (Department) provides for the needs of travelers of all ages and abilities in all planning, programming, design, construction,' operations, and maintenance activities and products on the State highway system. The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.*
>
> *The Department develops integrated multimodal projects in balance with community goals, plans, and values. Addressing the safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding, is implicit in these objectives. Bicycle, pedestrian, and transit travel is*

facilitated by creating "complete streets" beginning early in system planning and continuing through project delivery and maintenance and operations. Developing a network of "complete streets" requires collaboration among all Department functional units and stakeholders to establish effective partnerships.

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

Assembly Concurrent Resolution No. 211 (ACR 211)

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

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

California Department of Motor Vehicles

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

http://www.dmv.ca.gov/pubs/brochures/fast_facts/ffdl37.htm

Caltrans Active Transportation Program (ATP)

On September 26, 2013, Governor Brown signed legislation creating the Active Transportation Program (ATP) in the Department of Transportation (Senate Bill 99, Chapter 359 and Assembly Bill 101, Chapter 354). The ATP consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program with a focus to make California a national leader in active transportation. The ATP administered by the Division of Local Assistance, Office of Active Transportation and Special Programs.

http://www.dot.ca.gov/hq/LocalPrograms/atp/index.html

Assembly Bill 32: Global Warming Solutions Act

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

Assembly Bill 32 Includes a Number of Specific Requirements:

- ARB shall prepare and approve a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions from sources or categories of sources of greenhouse gases by 2020 (Health and Safety Code (HSC) §38561).

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

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

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

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

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

Regional

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

Metropolitan Transportation Commission

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

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

Regional Transportation Plan (RTP)

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

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

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

The Bay Area Ridge Trail

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

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

Built Trail Sections

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

Un-Built Trail Sections

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

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

www.ridgetrail.org

Bay Area Air Quality Management District

Bay Area Air Quality Management District (BAAQMD) is the regional agency with the authority to develop and enforce regulations for the control of air pollution throughout the Bay Area including Napa

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

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

http://www.baaqmd.gov/

Bay Area Ozone Strategy

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

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

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

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

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

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

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

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

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

http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Bay-Area-Ozone-Strategy.aspx

Lake County Regional Bikeway Plan

The *Lake County Regional Transportation Bikeway Plan: A Five Year Capital Improvement Program* was prepared by the Lake County/City Area Planning Council (APC). The 2011 Lake County Regional Transportation Bikeway Plan is a capital improvement program of commuter bikeways and includes all jurisdictions within Lake County. A key purpose of the Plan is to meet the provisions of the California Bicycle Transportation Act included in the Streets and Highways Code, Section 890 through 894.2. Napa County shares a common border with Lake County along the northern Napa County border. The two counties are connected by SR 29 and Butts Canyon Road. The Lake County Regional Bikeway Plan does not include planned bikeways to Napa County.

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

Sonoma County – SCTA Countywide Bicycle and Pedestrian Master Plan

The 2008 SCTA (Updated 2014) Countywide Bicycle and Pedestrian Master Plan was developed under the guidance of the Sonoma County Transportation Authority. The Plan is designed to prioritize bicycle and pedestrian improvements, develop implementation strategies, and foster countywide collaboration and coordination. Consisting of eight stand alone documents specific to local agencies and a countywide overview section, the SCTA Countywide Bicycle and Pedestrian Master Plan is designed to facilitate transportation improvements for bicyclists and pedestrians. The recommendations of the plan include physical improvements, expanding existing facilities, and connecting gaps in the network, addressing constraints, and providing greater local and regional connectivity. Several bicycle facilities are planned that would connect Sonoma County to Napa County.

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

Local

Napa County General Plan

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

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

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

Napa County Regional Parks and Open Space District Master Plan

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

A.1 Oat Hill Mine Trail Improvements

A.2 Milliken Creek Trails and Picnic Area Development

A.4 Rector Ridge/Stag's Leap Trail Development

A.5/A.6 Napa River and Bay Trail Development from American Canyon to Napa

A.7 Lake Hennessey North Shore Trail Expansion

A.9 Newell Preserve Access Improvement

A.10 Lake Berryessa Trail Development

A.11 Berryessa Peak and Blue Ridge Public Access Development

A.12. Berryessa Vista Wilderness Park Development

A.13 Pope and Putah Creeks Trail Development

A.15 Camp Berryessa to Knoxville Wildlife Area Trail Development

A.19 Bay Area Ridge Trail Completion

A.22 Moore Creek Trail, Picnic Area and Camping Facilities Development

A.24 Napa Valley Greenway / Vine Trail Development

A.25 Henry Road/Milliken Peak Area Trail Development

A.26 Countywide Trail Network Development

http://napaoutdoors.org/documents

Napa County Flood Control and Water Conservation District

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

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

Calistoga Climate Action Plan

Through actions outlined in the Plan, the City can help mitigate, to the extent feasible at the local level, the potential impacts of climate change. Many of the strategies in the plan – reducing automobile dependence, promoting renewable energy, increasing energy efficiency, conserving water, and eliminating waste – provide co-benefits to the community. They have the potential not only to reduce

GHG emissions, but also to improve air quality, lower energy and water bills, reduce dependence on imported oil, and enhance Calistoga's quality of life.

Napa County Bicycle Coalition

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

http://www.napabike.org/

Napa Greenway Feasibility Study

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

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

Napa Valley Vine Trail

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

http://vinetrail.org/

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

Existing Plan and Policy Review – City of Calistoga

Calistoga General Plan – Relevant Community Identity Element Policy

P4. New developments should provide accessible public and semi-public areas and efficient and inviting pedestrian and bicycle connections to existing Calistoga streets (Page CI-21).

Calistoga General Plan – Relevant Circulation Element Policy (Page CIR-18).

P1. Walking shall be considered an essential and integral part of the city's circulation network.

P2. Sidewalks shall be designed to enhance the safety, comfort, aesthetic appeal, and interest of the pedestrian environment.

P1. Bicycling shall be considered an essential and integral part of the city's circulation network

Calistoga General Plan – Relevant Open Space and Conservation Element Policy

P5. The following setback standards shall continue to apply to all undeveloped waterway areas:

- For minor tributaries, a minimum of 30-foot setbacks shall be required from the top of the high bank.
- For the Napa River, a minimum setback of 30 feet from the top of the high bank shall be limited to access for maintenance, erosion control, and pedestrian/bicycle pathways.
- Within setback zones, the enforcement of prohibitions on grading, earthmoving, vegetation removal, livestock grazing, disposal of waste, and the construction of structures, including cross fences shall be continued. (Page OSC-46)

P3. The City shall promote decreased reliance on motor vehicle travel through effective land use policies, improved public transit and facilities to accommodate bicycle and pedestrian modes of travel. (OSC-60)

APPENDIX B

BIKEWAY TYPE DESIGN DETAILS

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Introduction

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

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

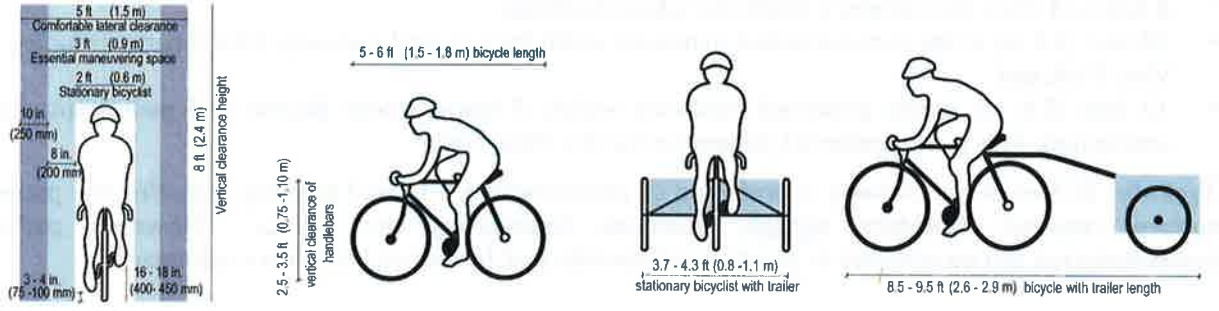
- *NACTO Urban Bikeway Design Guide*, National Association of City Transportation Officials, 2011 http://nacto.org/cities-for-cycling/design-guide/
- *APBP Bicycle Parking Guidelines*, 2nd Edition, Association of Pedestrian and Bicycle Professionals, 2010 http://www.apbp.org/?page=Publications

Bicycle Characteristics

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

Horizontal Clearance

The images below show the dimensions and operating space of a typical bicyclist. The width of a stationary bicyclist is approximately 2.0 feet, and a moving bicyclist generally requires a 3.0-foot operating envelope in order to maintain their balance. To ride comfortably and avoid fixed objects (curbs, potholes, debris, automobiles, etc.) as well as other facility users including bicyclists, pedestrians, strollers, or in-line skaters, a bicyclist requires an operating envelope of five feet. If space is restricted, such as in a tunnel or on a bridge, ten feet of horizontal clearance is recommended to allow two opposing bicyclists enough space to pass each other comfortably. On pathways, more width may be needed to allow bicyclists to react to unexpected maneuvers of another bicyclist or other user types such as in-line skaters, persons with pets, etc. Given the popularity of multi-use pathways, other users and their dimensions and operational characteristics should be considered in addition to typical bicyclists when designing these facilities.

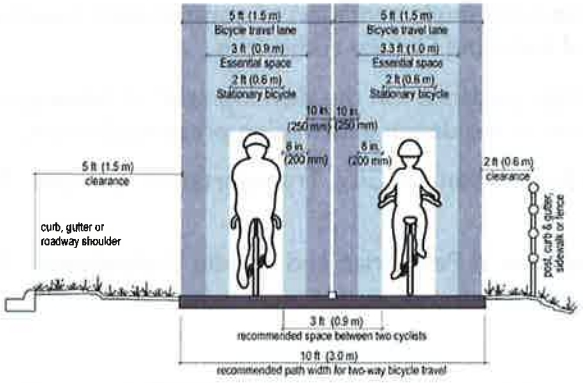


Vertical Clearance

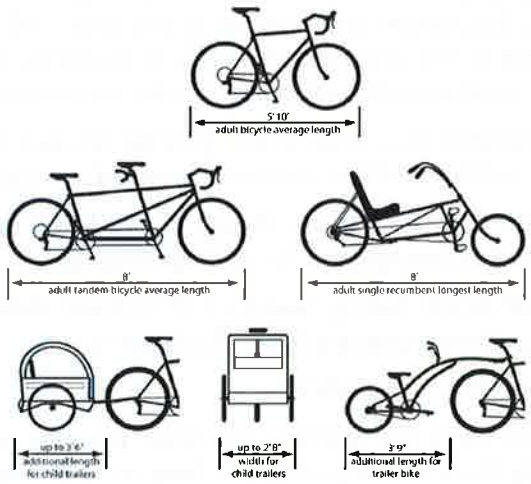
A bicyclist's vertical design height is eight feet. While even the tallest bicyclists would not be expected to reach this height when riding a bicycle; however, vertical clearance is essential to allow sufficient space for bicyclists pedaling upright or passing under an overpass. To accommodate maintenance and/or emergency vehicles in underpasses and tunnels, and to allow for overhead signing vertical clearance should be a minimum of ten feet.

Travel Speeds

An average bicyclist travels at a rate of speed between 12 and 19 mph. Advanced bicyclists and can maintain speeds of 20 mph or better on flat terrain in windless conditions. On descents, bicyclists can reach speeds 30 mph or greater.



Source: Minnesota Department of Transportation



Bicycle Facility Design Standards

According to Caltrans, the term "bikeway" encompasses all facilities that provide primarily for bicycle travel. The three standard classes include:

- Class I Bike Path
- Class II Bike Lanes
- Class III Bike Routes

Class I Bikeway

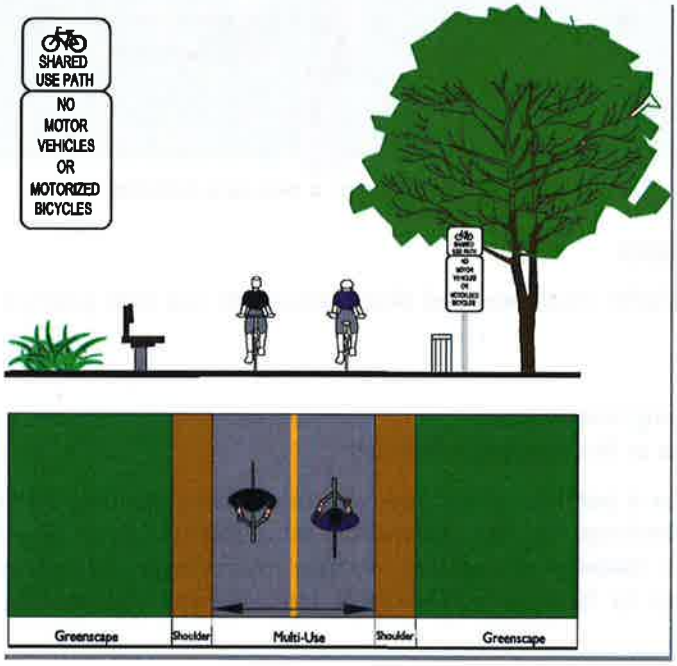
The following section includes recommended design standards and best practice information for Class I bikeways. Typically called a "bike path" or "multi-use path," a Class I bikeway provides for bicycle travel on a paved right-of-way completely separated from any street or highway. The recommended design width of a Class I path is dependent upon anticipated usage:

- 8 feet (2.4 m) is the minimum width for Class I facilities;
- 10 feet (3.0 m) is the recommended minimum width for a typical two-way Class I path, including the Vine Trail; and
- 12 feet (3.6 m) is the preferred minimum width, if heavy mixed bicycle and pedestrian use is anticipated. This is the preferred dimension for the Vine Trail.

Typically, 25 feet of right-of-way is preferred to accommodate a Class I bikeway, including the pathway surface, required shoulders, signage, amenities, landscaping, and offsets. However, pathway implementation can be achieved in constrained corridors of 15 feet or less where necessary.

Guidelines:

1. Paths should be constructed with adequate sub grade compaction to minimize cracking and sinking (stabilization fabric is recommended), and should be designed to accommodate appropriate loadings, including maintenance trucks and emergency vehicles.
2. A minimum 2-foot wide graded area must be provided adjacent to the path to provide clearance from trees, poles, walls, guardrails, etc. Wider shoulders on one or both sides of the path are recommended where feasible to accommodate pedestrians and help reduce pathway conflicts.
3. A 2% cross slope shall be provided to ensure proper drainage.
4. A yellow centerline stripe is recommended to separate travel in opposite directions.
5. Pathway lighting should be provided where higher volumes are be expected during dark or nighttime hours.
6. Pathway/roadway intersections require engineering review to ensure appropriate safety features are incorporated. Pathways that cross roadways with average traffic volumes of 20,000 vehicles per day or greater generally require signalization or grade separation.
7. Landscaping should generally be low water consuming native vegetation. Vegetation that produces minimal debris is recommended to reduce maintenance needs.
8. Barriers at pathway entrances (bollards, gates, etc.) should be clearly marked with reflectors and be ADA accessible (minimum five feet clearance).
9. Bridges and/or other structures should be designed to accommodate appropriate vehicle loadings. The width of structures should be the same as the approaching trail width, plus minimum two-foot wide clear areas.
10. To minimize potential conflicts, pedestrian traffic should be directed to the right side of pathway with signing and/or stenciling.
11. Staging areas and/or trailhead parking including restrooms, drinking fountains, and secure bicycle parking should be provided at appropriate locations.

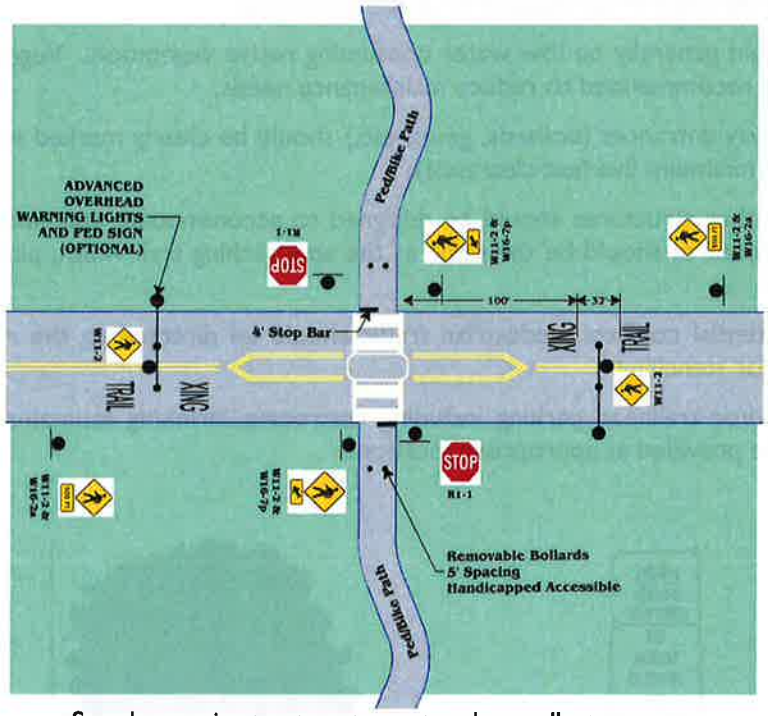


Class I Bike Path Mid-Block Crossing

At-grade path crossings with streets, highways, or driveways should be limited to the maximum extent possible. To ensure safety, the design of at-grade crossings should feature traffic calming and crossing improvements such as: curb extensions, marked crosswalks, pedestrian refuge medians, and traffic control or warning devices. Stop or yield controls should be used for either trail users or street traffic or both, depending on right-of-way, traffic volumes and other safety issues.

Guidelines:

1. Pathways should intersect roadways as close to 90 degrees as possible.
2. Warning and stop or yield signage should be installed along pathway to alert users to impending roadway intersection.
3. Midblock crossings should not be installed close to intersections. If a pathway emerges within 300 feet or less of an intersection, consideration should be given to re-routing the path to the intersection for crossing.



Sample crossing treatment on a two-lane collector street

Class II Bikeway – Bike Lanes

The following section includes recommended design standards and best practice information for Class II bikeways:

- On-Street Parking
- Bike Lanes Approaching Intersections
- Bike Lane Treatments at Bus Stops and Pullouts

A Bike Lane is defined as a portion of the roadway or highway that has been designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes enable bicyclists to ride along a roadway or highway without interference from prevailing traffic conditions. Bike lanes increase safety by facilitating predictable behavior and movements between bicyclists and

motorists. Bike lanes typically run in the same direction of traffic, although they may be configured in a contra-flow direction along one-way streets for system connectivity where necessary.

Guidelines:

Class II bike lanes shall be one-way facilities, running with the direction of traffic. (Contra-flow bike lanes may be installed on one-way streets where necessary.)

Where on-street parking is allowed, Class II bike lanes must be striped between the parking area and the travel lanes.

The width of the bike lanes vary according to parking and street conditions:

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

Bike Lane striping standards:

- Bicycle lanes shall be comprised of a 6 inch solid white stripe on the outside of the lane, and a 4 inch solid white stripe on the inside of the lane.
- The inside 4 inch stripe of the bicycle lane should be dropped 90-180 feet prior to any intersection where right turns are permitted, and the outside 6 inch stripe should be dashed in this location.
- Bicycle lanes shall never be striped to the right of a right-hand turn lane

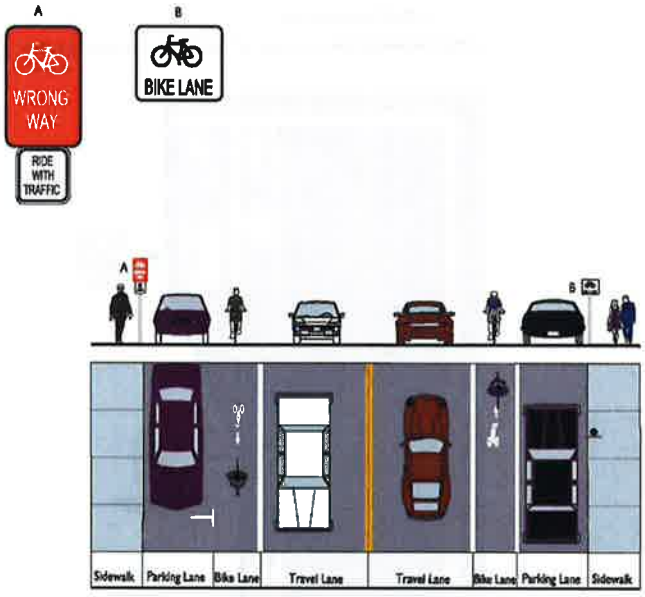
Bicycle lane signage standards:

- The R81 bicycle lane sign shall be placed at the beginning of all bicycle lanes, on the far side of arterial street intersections, at all changes in direction and at a maximum of 0.6 mile intervals, however, reassurance signs may be placed at 200 to 500 foot intervals.
- Standard signage is shown in Chapter 9 of the 2010 edition of the CA MUTCD.

<u>Class II Bike Lanes with On-Street Parking</u>

Parked vehicles can pose a serious hazard to bicyclists. Conflicts can occur during parking maneuvers and bicyclists are especially vulnerable to being hit by an opening door. On streets with parked vehicles, experienced bicyclists will generally ride three or four feet away from parked vehicles even if it means riding in a travel lane. To help maximize separation between bicyclists and parked vehicles, the following techniques may be employed:

- Minimize the parking lane width. This technique may be used in conjunction with widening the bike lane. Research suggests that the narrower the parking lane, the closer vehicles park to the curb.. The traditional eight-feet wide parking lane can be reduced to seven feet or narrower where acceptable to help achieve this result.

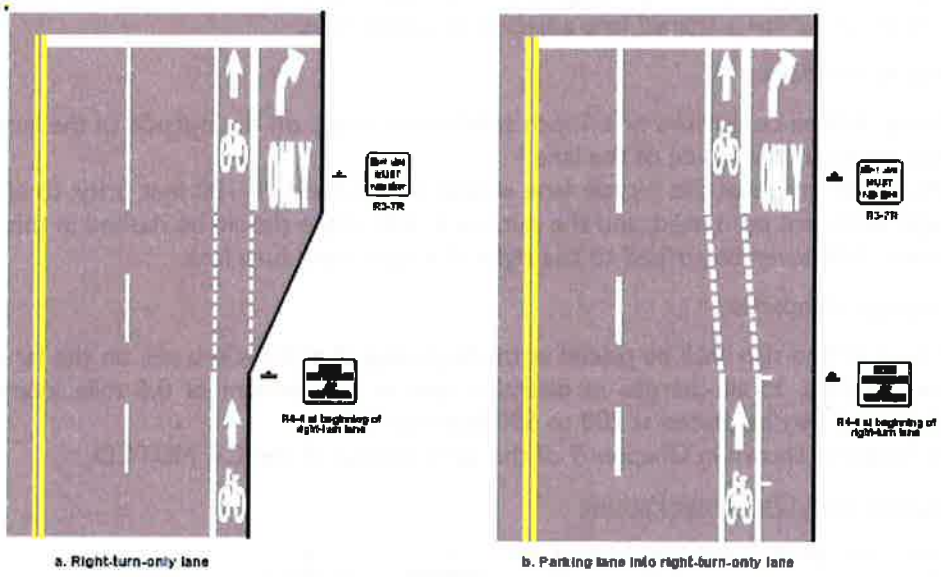


- Parking stall markings. Marked parking spaces with cross hatches indicating the parking lane limits may help guide drivers closer to the curb.
- Angled parking should be avoided in areas of high bike traffic. If angled parking is used a four-foot buffer is recommended to provide maneuvering space for bicyclists, and/or reverse angle parking should be considered so that drivers back into spaces, which provides drivers greater visibility of bicyclists when entering and leaving the space.

Class II Bike Lanes Approaching Intersections

Right Turn Lanes

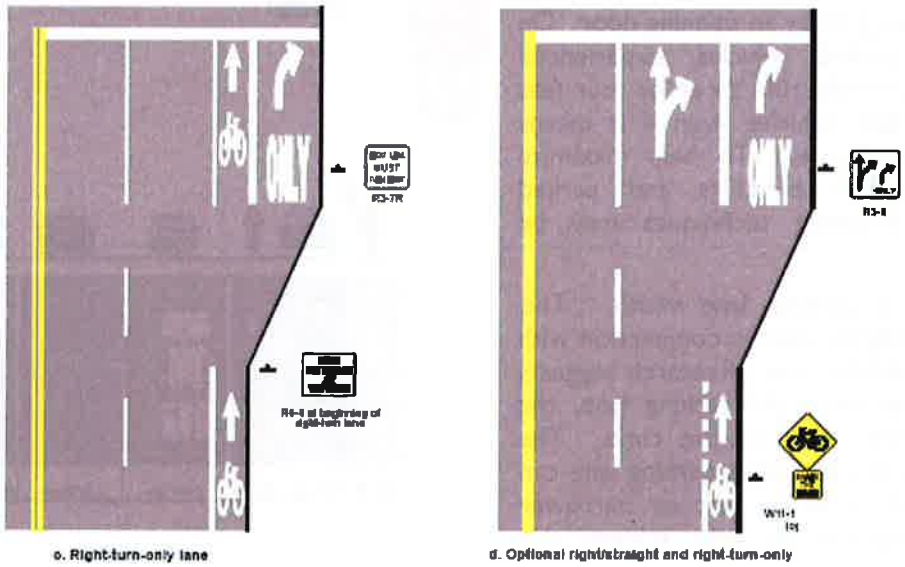
Bike lanes approaching intersections should dash the solid bike lane line for the last 100 to 200 feet in advance of the intersection. Dashing is preferable to dropping the bike lane stripe because it alerts bicyclists and right-turning motorist of the weave. Further, the treatment encourages bicyclists to wait in the proper location to be detected when signal detection is provided.



a. Right-turn-only lane

b. Parking lane into right-turn-only lane

NOTE: The dotted lines in cases "a" and "b" are optional (see case "d").



c. Right-turn-only lane

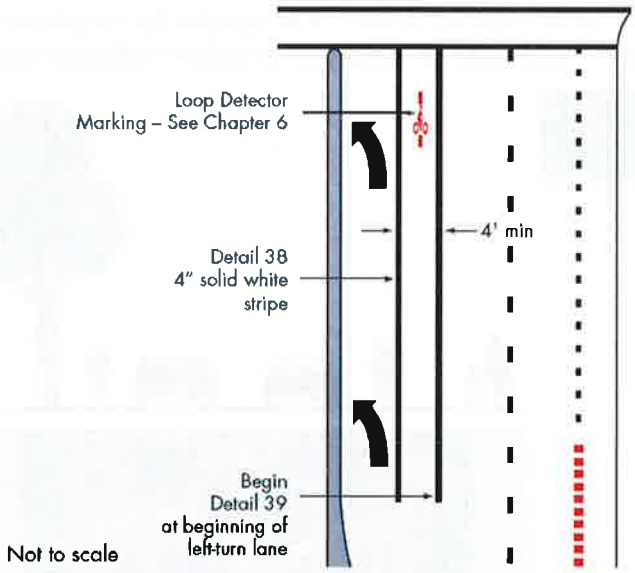
d. Optional right/straight and right-turn-only

Bike Lanes approaching Right-Turn Only Lanes
Source: *Guide for the Development of Bicycle Facilities*, AASHTO

Left Turn Lanes

Left turns at intersections present difficulty to bicyclists in two ways: conflicts with left-turning motorists and the difficulty experienced by a bicyclist in executing a left turn. Improper left turns by motorist are often one of the chief causes of collisions at intersections. Often motorists are concentrating on finding a gap in vehicular traffic that they fail to notice oncoming bicycle traffic. Potential counter measures include:

- Provide left-turn pockets
- Provide protected left-turn signal phasing



Bike Lane Striping at a Left-Turn Only Lane
Source: *VTA Bicycle Technical Guidelines*

Bikeway Crossing Skewed Railroad Tracks

Bike Lane Treatments at Bus Stops and Pullouts

Currently, no formal standard exists for the bike lane treatments at bus stops and pullouts. Therefore, the design is up to the local agency. The most common practice allows buses to cross through the bike lane to reach the curb. Treatments for this type of practice include bike lanes where both the inside and outside lanes are broken, or lanes where only the inside lane exists and it too is broken. Another alternative eliminates the bike lane completely, and then starts it again downstream of the bus stop.

The purpose of each of these alternatives is to let bikes know to expect vehicles crossing their lane, let cars know to expect buses, and let buses know to look out for bikes. Using a dashed or dotted line may be an attempt to tell motorists that cyclists may be leaving the bike lane to pass a bus, or to make it legal for the bus to encroach on the dedicated lane. The dashed lines in the bike lanes also inform the bicyclist that motor vehicles may be crossing the bike lane and to use extra caution.

Class III Bikeway – Bike Route

The following section includes recommended design standards and best practice information for Class III bikeways:

- Wide Curb Lane
- Bicycle pavement markings "Sharrow" Lanes
- Bicycle Boulevard

Referred to as a "bike route," a Class III bikeway provides a route for bicyclists, which is identified by signing. On-street Class III bikeways are shared with motorists, may provide a designated route through areas not served by Class I or II facilities, or connect discontinuous segments of a bikeway. Class III facilities can be shared with pedestrians on a sidewalk; however, this practice is not recommended.

The *Highway Design Manual* does not provide recommended minimum widths for Class III bikeways, however, when encouraging bicyclists to travel along selected routes, traffic speed and volume, parking, traffic control devices, and surface quality should be acceptable for bicycle travel. A wide outside traffic lane (14-15') is preferable to enable cars to safely pass bicyclists without crossing the centerline.

Class III Bike Route: Wide Curb Lane

On all streets, but especially where shoulder bikeways or bike lanes are warranted but cannot be provided due to severe physical constraints, a wide outside lane may be provided to accommodate bicycle travel. A wide lane usually allows an average size motor vehicle to pass a bicyclist without crossing over into the adjacent lane. Wide curb lanes are generally appropriate to accommodate bicyclists, whether or not the street is considered a bikeway.

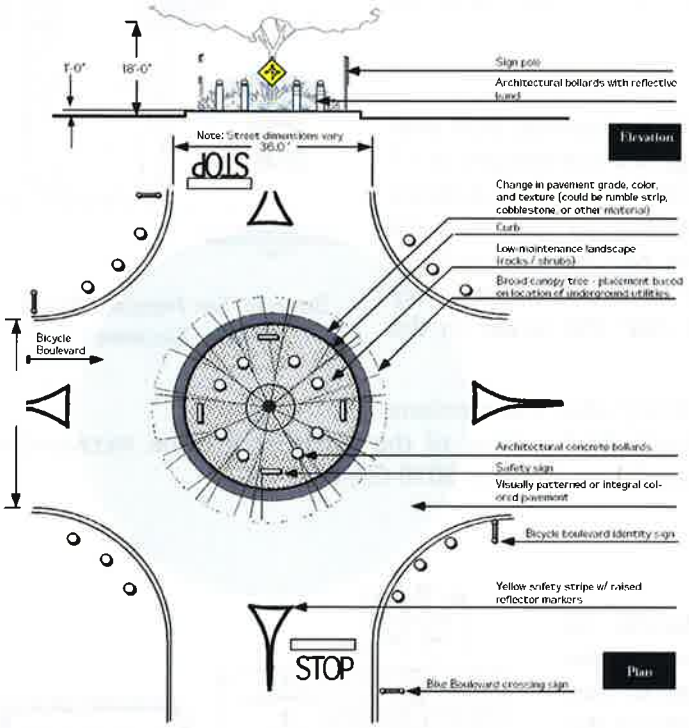
Bike lanes should resume where the restriction ends. It is important that every effort be made to ensure bike lane continuity. Practices such as directing bicyclists onto sidewalks or other streets for short distances should be avoided, as they may introduce unsafe conditions. For curb lanes 16 ft or wider, the edge line should be striped.

12' is the minimum width on State Highways without obtaining a Design Exception.

Class III Bike Route: Bicycle Boulevards

A variation of the Class III bike route known as a 'Bicycle Boulevard' has gained significant interest in California in recent years. Bicycle boulevards are generally comprised of low-volume residential streets that parallel major streets. Bicycle Boulevards are designed to give priority to bicyclists through various design techniques that reduce through traffic volumes and provide crossing enhancements for bicyclists at major intersections. Generally, bicycle boulevards include one or more of the following criteria:

- Low traffic volumes;
- Traffic calming devices to discourage non-local motor vehicle traffic;
- Priority for bicycles by assigning right-of-way to the bicycle boulevard at intersections wherever possible;
- Traffic control to help bicycles cross major streets (i.e. bicycle sensitive detectors at signals);
- Distinct "look" to alert bicyclists and motorists that the route is a priority for bicyclists (special signs, pavement markings, etc.); and
- By emphasizing bicycle use over automobiles, the walking environment for pedestrians along bicycle boulevards is also improved.



Sample Bicycle Boulevard treatments from Berkeley, CA

Class III Bike Route: Shared Lane Markings "Sharrows"

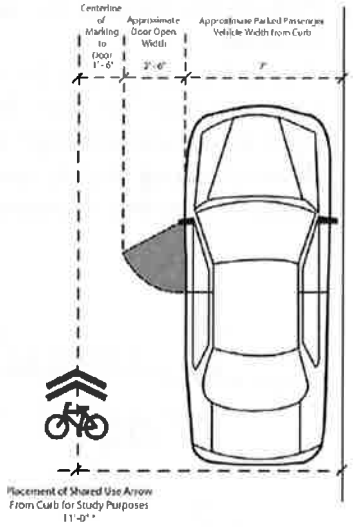
The shared lane marking (SLM), known as "shared roadway bicycle marking" in the MUTCD, and as "sharrows" by the bicycling public, is a pavement legend which may be placed in the travel lane adjacent to on-street parking. The purpose of the marking is to provide positional guidance to bicyclists on roadways that are too narrow to be striped with bike lanes. Unlike bike lanes, a SLM does not designate a particular part of the street for the exclusive use of bicyclists. It is simply an informational marking to guide bicyclists to the best place to ride on the road to avoid the "door swing" of

Shared Lane Marking

The SLM consists of a standard bicycle symbol combined with chevron

parked cars, and to help motorists expect to see and share the lane with bicyclists. The marking gives bicyclists freedom to move further to the left within a travel lane rather than brave the door zone, squeezed between moving and parked cars. The marking is usually repeated every several hundred feet. Without such markings, bicyclists might seek refuge on the sidewalk, ride in a serpentine pattern between parked vehicles, or travel in the wrong direction. Perhaps the most important benefit of SLM is that they send a message to cyclists and drivers alike that bikes belong on the road.

Positional Layout of Shared Lane Markings



Source: *San Francisco Bicycle Design Guidelines*

Shared Lane Markings were approved for use in California in 2007 after device testing was performed by the City of San Francisco. While the version of the 2010 MUTCD adopted by California specifies that the device is to be used only where there is existing on-street parallel parking (Section 9C.103), the national MUTCD provides for use of the device on streets without on-street parking. Further, jurisdictions around the nation are recognizing the benefit of utilizing the device in locations where it may not be obvious where cyclists should be riding, such as at intersections with multiple turn lanes, as a guide marking through intersections (similar to skip lines), and as a guide-marking between bikeways.

Marking Placement

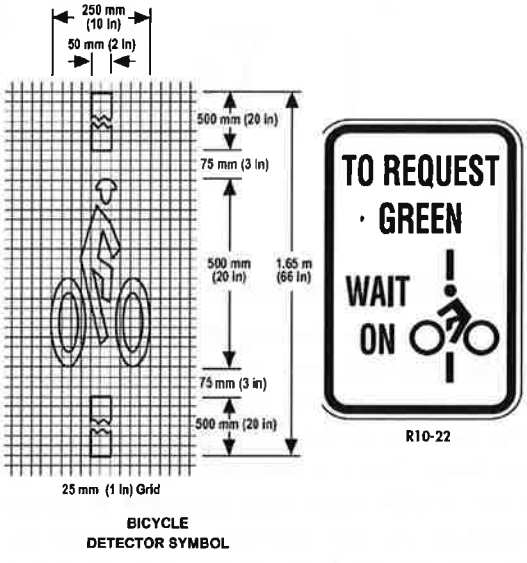
Laterally – According to the California MUTCD guidelines, SLM shall be placed so that the centers of the markings are a minimum of 11 feet from the curb face or edge of paved shoulders, and the distance may be increased beyond 11 feet. According to the National MUTCD, if SLM are used on a street without parking, the markings should be placed far enough from the curb to direct cyclists away from gutters, seams, and other obstacles, or near the center of the lane if the lane is less than 14 feet wide.

Longitudinally – SLM should be placed immediately after intersections and spaced at intervals of 250 feet. The longitudinal spacing of the markings may be increased or decreased as needed for roadway and traffic conditions (Source: 2010 CA MUTCD).

<u>Signalized Intersections</u>

Signal Detection

Actuated traffic signals pose a significant barrier to bicyclists when the detectors do not sense the presence of a bicycle. Bicyclists are then forced to wait for a vehicle to actuate the signal, dismount and use the intersection as a pedestrian, or proceed against the red light. A variety of signal detection technologies are currently available including inductive loop detectors which utilize an electromagnetic field to sense the presence of vehicles, video detection which senses the presence of vehicles optically, and a new technology – magnetometers – which uses magnetic anomaly detection.



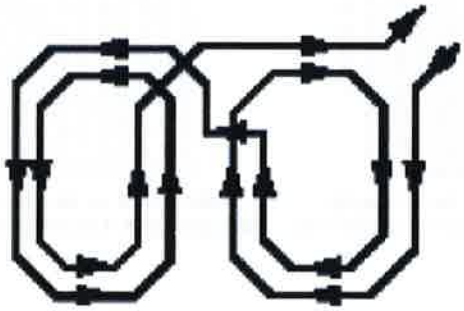
BICYCLE DETECTOR SYMBOL

Each of these technologies is suitable for the detection of bicycles, and bicycle detection should be provided at all traffic signal installations. Efforts need to be made to ensure that signal detection devices are capable of

detecting a bicycle and detectors need to be located in the bicyclist's expected path, including left-turn lanes and shoulders. Marking the road surface to indicate the optimum location for bicycle detection is helpful to the bicyclist so that they may position themselves properly to trigger the traffic signal.

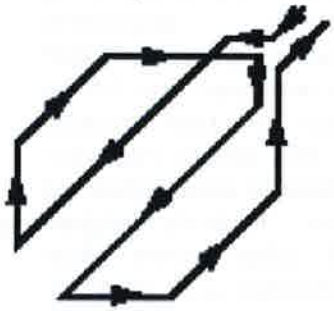
Inductive loops are still the most common technology employed. Two types of inductive loop detectors are typically used; the Diagonal Quadrupole Loop – Type "D" is typically used in vehicle lanes, and the Quadrupole Loop – Type "C" is typically used in bike lanes. The bicycle detection symbol may be used to show a bicyclist where to stop in a bike lane or traffic lane to be detected.

Quadrupole Loop
Type "C"



Used in bike lane. Detects strongly in center.
Sharp cut-off sensitivity

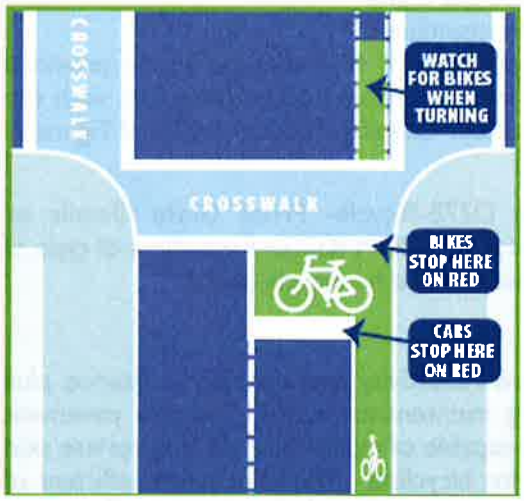
Quadrupole Loop
Type "D"



Used in vehicle & "shared lanes"
Sensitive over whole area
Sharp cut-off sensitivity

Bike Boxes

Bike boxes provide a reservoir for bicyclists in front of vehicle traffic at intersections. Cars wait behind the box, allowing bikes to come to the front of vehicular traffic and position themselves for turning and through movements. Bike boxes give bicyclists greater visibility, a head start through intersections, and help to reduce conflicts between turning bicycles and vehicles by clearly delineating the location for movements to occur. Bike boxes or "advanced stop lines" also provide a buffer between vehicles and pedestrians or bicycles crossing the street. Using colored surfacing for bike boxes should make them more prominent and thus making encroachment by motor vehicles less likely.



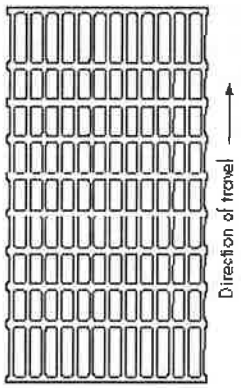
Source: Portland Office of Transportation

Photo: New York City, NY

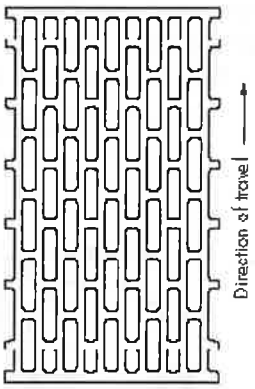
Design Elements

Drainage Grates

The function of drainage grates is to drain storm water quickly from the roadway and to provide access to the storm water system. Gutters are sloped to direct water flow into the inlet. This keeps water from ponding at the longitudinal joint and undermining the pavement. Improperly designed drainage grates can catch bicycle tires and cause bicyclists to lose control of their bicycle. Because of this, cyclists may veer into traffic lanes to avoid grates and utility covers. Properly designed grates and utility covers allow cyclists to maintain their direction of travel without catching tires or being forced into travel lanes.



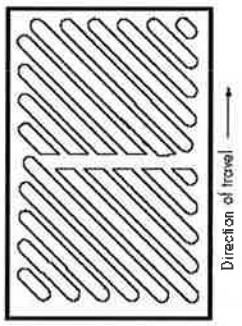
TYPE 18-10 or 24-13 GRATE
(METRIC: TYPE 450-10 or 600-13)



TYPE 18-8C or 24-106 GRATE
(METRIC: TYPE 450-8C or 600-10C)

Optimally the roadway should be designed so that the bicyclist does not have to traverse the grate per HDM Section 837.2. On roadways with curb and gutter, the grate should not be wider than the gutter pan. If the gutter pan needs to be widened to accommodate a large drainage grate, the taper should be on the outside edge.

On roads with bike lanes, the roadway shall be designed such that the minimum asphalt concrete pavement width of 48 inches is maintained between the bike lane stripe and the edge of the gutter lip. If 48 inches of asphalt cannot be maintained, then a curb face inlet design for the drainage grate should be considered (see Section 3.2.1).



OTHER BICYCLE PROOF GRATE

On roadways with shoulders, the grate should be placed outside the travel path of the bicyclist, i.e. 48 inches of clear pavement should be maintained between the shoulder stripe and the left edge of the drainage grate. If 48 inches cannot be provided within the existing shoulder width, the shoulder can be widened to accommodate the grate, with the taper on the outside edge, or a narrower grate should be selected. See also Section 7.4.2 and Figure 7-13.

Only drainage grates depicted in Caltrans Standard Plans D77B-Bicycle- Proof Grate Details or otherwise known to be bicycle-safe may be used on all roadways per HDM 837.2. Regardless of type of roadway or placement on the roadway, all grates on the roadway should be bicycle-proof.

Pavement Marking Materials

Paint is the least recommended marking material due to its low reflectivity and low skid resistance, plus it needs to be reapplied every 12 to 24 months, increasing maintenance costs. Durable pavement markings are preferred. They should be reflectorized and be capable of maintaining an appropriate skid resistance under rainy or wet conditions to maximize safety for bicyclists. The minimum coefficient of friction should be 0.30 as measured with California Test 342 to test surface skid resistance. Pavement marking tape or thermoplastic is recommended.

Pavement Marking Tape

Type I Tape such as 3M Stamark TM tape Series 380I and Series 420 is the least slippery (and most long-lasting) pavement marking. Type I tape is cost-effective when placed after resurfacing, since it lasts as long as (or longer than) the pavement itself. The skid resistance of 3M Stamark TM Series 420 tape is 55 BPN with a retained value of 45 BPN; the equivalent coefficient of friction is not available.

Thermoplastic

Thermoplastic is optimized when the composition has been modified with crushed glass to increase the coefficient of friction and the maximum thickness is 100 mils (2.5 mm).

Pavement Markers

Pavement markers, whether raised reflective markers (Type C, D, G or H) or non-reflective ceramic pavement markers (Type A or AY, otherwise known as Bott's dots) present a vertical obstruction to bicyclists, and shall not be used as bike lane stripes. When necessary as a fog line or adjacent to the edge line, the Type C or G reflective markers should be placed to the left of the line outside the shoulder area, and ideally the shoulder should be at least 4 feet wide. Where raised markers cross a bike lane or extensions thereof through intersections a gap of 4 feet should be provided as a clear zone for bicyclists. At gore areas (e.g. Standard Plan A20C) and other locations with channelizing lines, (e.g. Standard Plan A20D) if raised reflective markers are used to supplement the striping, extra lane width shall be provided in the areas where bicycles travel to provide bicyclists with more latitude to avoid the markers. (See also Section 7.2).

Roadway Surface Obstacles

Manhole covers and utility plates present obstacles to bicyclists due to their slipperiness and change in surface elevation with the surrounding pavement. While covers and plates can be replaced with less slippery designs, as discussed below, to minimize their adverse impacts on bicyclists, it is best to design the roadway so that they are not located within the typical path of bicyclists riding on the roadway. Therefore, new construction should not place manhole and other utility plates and covers where bicyclists typically ride i.e. within the six feet adjacent to the curb (or between 8 and 13 feet from curb if parking is permitted).

Wet utility covers and construction plate materials can be very slippery. Plain steel plates have a coefficient of friction of 0.012, which is unacceptably slippery and should never be used on the roadway. The coefficient of friction on all utility covers and steel plates placed on a roadway or highway or shoulder should be a minimum of 0.35. An example of an effective method for covers and plates (both steel or concrete) to have acceptable skid resistance is for the manufacturer to imprint waffle shaped patterns or right-angle undulations on the surface. The maximum vertical deviation within the pattern should be 0.25 inch (6 mm).

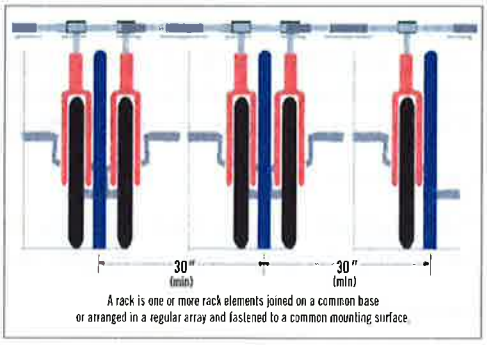
Bike Parking

As bicycle use becomes more prevalent in throughout the Plan Area, there will be more demand for adequate bicycle parking. Bicycle parking can be typified as either short- or long-term. Short-term parking generally consists of bicycle racks located conveniently to destinations such as at shopping centers, civic destinations, and schools. Long-term parking is designed to accommodate those who are expected to park for more that two hours. Long-term parking provides security and weather protection. It typically includes covered parking areas, bike lockers and/or bike lids, storage rooms, or secure areas such as "cages" or "corrals" that can only be accessed by bicyclists.

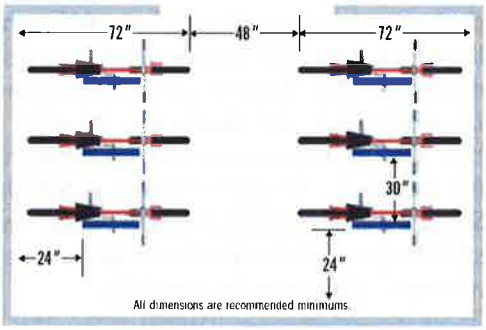
Bicycle parking should be provided at all public destinations, including transit centers and bus stops, community centers, parks, schools, downtown areas, and civic buildings. All bicycle parking should be in a safe, secure, covered area (if possible), conveniently located to the main building entrance.

Bicycle Parking Placement – Type and Location

- *Visibility* – bicycle racks and lockers should be located in a highly visible location near building entrances so cyclists can spot them immediately. Bicyclists and motorists alike appreciate the convenience of a parking space located right in front of a destination. A visible location also discourages the theft and vandalism of bicycles. Preferably, racks will be located as close as or closer than the nearest automobile parking spaces to the building entrance.



- *Security* – properly designed bicycle racks and lockers that are well anchored to the ground are the first measure to help avoid vandalism and theft. In some cases, added measures, which may include lighting and/or surveillance, are essential for the security of bicycles and their users. The rack element (part of the rack that supports the bike) must keep the bike upright by supporting the frame in two places allowing one or both wheels to be secured. Inverted "U," "A," and post and loop racks are recommended designs. Wave type racks that are found in many locations throughout the County are not recommended because they require excessive space and are so often used improperly.



Source: APBP Bike Parking Guidelines

- *Weather Protection* – is especially important. A portion of all bicycle parking should be protected from the rain and the sun. Various methods can be employed including the use of building awnings and overhangs, newly constructed covers, weatherproof bicycle lockers or lids, or indoor storage areas. Long-term parking should always be protected.
- *Clearance* – adequate clearance is an essential component of rack placement. Clearance is required between racks to allow for the parking of multiple bicycles and around racks to give bicyclists room to maneuver and too prevent conflicts with others. If it becomes too difficult for a bicyclist to easily lock their bicycle, they may park it elsewhere and the bicycle capacity is lowered. Racks should be placed in a position where they do not block access to and from building entrances, stairways, or fire hydrants. Empty racks must not pose a tripping hazard for visually impaired pedestrians. Position racks out of the walkway's clear zone (space reserved for walking). Likewise, bicycle racks placed along a sidewalk should be oriented parallel with the street, so parked bicycles do not intrude into the walkway's clear zone. A row of inverted "U" racks should be situated on 30" minimum centers. Ideally, racks should be located immediately adjacent to the entrance to the building it serves, but not in a spot that may impede upon pedestrian flow in and out of the building.

APPENDIX C

OTS COLLISION RANKINGS, CHARTS AND GRAPHS

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READING AND UNDERSTANDING THE OTS RANKINGS

What are the OTS Rankings?

The OTS Rankings were developed so that individual cities could compare their city's traffic safety statistics to those of other cities with similar-sized populations. Cities could use these comparisons to see what areas they may have problems in and which they were doing well in. The results helped both cities and OTS identify emerging or on-going traffic safety problem areas in order to help plan how to combat the problems and help with the possibility of facilitating grants. In recent years, media, researchers and the public have taken an interest in the OTS Rankings. It should be noted that OTS rankings are only indicators of potential problems; there are many factors that may either understate or overstate a city/county ranking that must be evaluated based on local circumstances.

NOTE: City rankings are for incorporated cities only. County Rankings include all roads – state, county and local – and all jurisdictions – CHP, Sheriff, Police and special.

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How are the OTS Rankings determined?

- Victim and collision data for the rankings is taken from the latest available California Highway Patrol (CHP) Statewide Integrated Traffic Records System (SWITRS) data.
- Victim and collision rankings are based on rates of victims killed and injured or fatal and injury collisions per "1,000 daily-vehicle-miles-of-travel" (Caltrans data) and per "1,000 average population" (Department of Finance data) figures. This more accurately ensures proper weighting and comparisons when populations and daily vehicle miles traveled vary.
- DUI arrest totals and rankings are calculated for cities only and are based on rates of non-CHP DUI arrests (Department of Justice data). This is so that local jurisdictions can see how their own efforts are working.
- Counties are assigned statewide rankings, while cities are assigned population group rankings.

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How to Read and Understand the OTS Rankings

Top Horizontal Bar:

- Agency – local jurisdiction that the data applies to.
- Year – the year the data represents. The rankings are updated once per year when all component statistics and data have been reported.
- County – county in which the city is located.
- Group – Cities are grouped by population:
  - Group A – 13 cities, populations over 250,000
  - Group B – 55 cities, population 100,001-250,000
  - Group C – 103 cities, population 50,001-100,000
  - Group D – 97 cities, population 25,001-50,000
  - Rankings for smaller cities are not included on-line, but are available through the OTS Public Affairs Office.
- Population – estimates matched to "Year"
- DVMT – Daily Vehicle Miles Traveled. Caltrans estimate of the total number of miles all vehicles traveled on that city's streets on an average day during that year.

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Center Table:

IMPORTANT NOTE #1: The figures in the two ranking columns show as two numbers divided by a slash. The first number is that city's ranking in that category. The second number is the total number of cities/counties within that "Group". For instance, if you see "22/55", that means that city ranks 22nd out of 55 cities of similar size.

IMPORTANT NOTE #2: OTS Rankings are calculated so that the higher the number of victims or collisions per 1000 residents in a population group, the higher the ranking. Number 1 in the rankings is the highest, or "worst." So, for Group B, a ranking of 1/55 is the highest or worst, 27/55 is average, and 55/55 is the lowest or best.

- Type of Collision – This column delineates the different types of collisions OTS has chosen to show in the rankings. These represent the types with larger percentages of total killed and injured and areas of focus for the OTS grant program. Motorcycles were added in 2008.
- Victims Killed and Injured – This column shows the number of fatalities and injuries aggregated. Damage-only or fender-bender collisions are not included.
- Ranking by daily vehicle miles traveled – This column weighs this city against all others in the Group when looking at DVMT. Cities of like size may have widely varying rates of traffic, a factor which can be meaningful on a local basis. Significant differences between this and the population column must be evaluated based on local circumstances.
- Ranking by population – This column weighs this city against all others in the Group based on population. Population can be a meaningful basis for comparison. Significant differences between this and the Daily Vehicle Miles Traveled column must be evaluated based on local circumstances.
- Total Fatal and Injury – The total number of victims involved in all collisions where there were fatalities and/or injuries in that city/county.
- Alcohol Involved – Collisions in which there were victims killed or injured where a party (driver, pedestrian, bicyclist) was classified as "Had Been Drinking."
- HBD Driver <21 – Collisions in which there were victims killed or injured where a driver who was under the age of 21 had been drinking.
- HBD Driver 21-34 – Collisions in which there were victims killed or injured where a driver who was between the ages of 21 and 34 had been drinking.
- Motorcycles - Collisions in which there were victims killed or injured and a motorcycle was involved.
- Pedestrians - Collisions in which there were victims killed or injured and a pedestrian was involved.
- Pedestrians <15 - Collisions in which there were victims killed or injured and a pedestrian under the age of 15 was involved.
- Pedestrians 65+ - Collisions in which there were victims killed or injured and a pedestrian age 65 and older was involved.
- Bicycles - Collisions in which there were victims killed or injured and a bicyclist was involved.
- Bicycles <15 - Collisions in which there were victims killed or injured and a bicyclist under age 15 was involved.
- Composite – Figures which show rankings only, an aggregate of several of the other rankings (HBD 21-34, HBD Under21, Alcohol Involved victims plus Hit & Run, Nighttime and Speed collisions). These figures are a means to give an indication of over-all traffic safety.

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Bottom Table:

- Speed Related – Collisions in which there were victims killed or injured where speed was the primary factor.
- Nighttime (9:00pm - 2:59am) – Collisions in which there were victims killed or injured that occurred between those hours, which are prime hours for DUI, speeding and drowsy driving crashes.
- Hit and Run – Collisions in which there were victims killed or injured and a driver left the scene.
- DUI Arrests – DUI arrest figures are shown for cities only, not counties.

  The first figure gives the total number of DUI arrests for the year on city streets. The second number shows the percentage of the city's estimated licensed drivers that was arrested for DUI during that year. The current statewide average is .90%. Local percentages shown give an indication of how cities compare against the average. Lower than .90% means lower than the state average and higher than .90% means higher that the state average. However, differences can be from many factors and must be evaluated based on local circumstances.

  Cities often use this measure to determine how to adjust their DUI enforcement activity. When increased DUI enforcement is combined with education and public information campaigns, it can lead to a reduction of the incidence of DUI.

"0" Note: Cities reporting 0 victims and/or collisions for a category or 0 DUI arrests are ranked using the variable upon which the ranking is based. For example, if 10 of 97 cities in population group D reported 0 hit-and-run fatal and injury collisions when ranking by per "1,000 average population," the city with the highest population of these 10 cities would be ranked 97/97, and the city with the lowest population of these 10 cities would be ranked 88/97. The same methodology has been applied when ranking per "1,000 daily-vehicle-miles-of-travel" and per "estimated average number of licensed drivers."

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OFFICE OF TRAFFIC SAFETY - 2011 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
Calistoga	2801	NAPA COUNTY	F	5,185	12,150

TYPE OF COLLISION	VICTIMS KILLED AND INJURED		RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury	14		5/64	29/64
Alcohol Involved	5		1/64	5/64
HBD Driver <21	0		14/64	27/64
HBD Driver 21-34	0		27/64	40/64
Motorcyclists	0		31/64	39/64
Pedestrians	2		7/64	20/64
Pedestrians <15	1		2/64	10/64
Pedestrians 65+	0		17/64	29/64
Bicyclists	4		1/64	13/64
Bicyclists <15	0		23/64	35/64
Composite			1/64	10/64
	COLLISIONS			
Speed Related	1		22/64	44/64
Nighttime	4		1/64	3/64
Hit and Run	4		1/64	3/64
DUI ARRESTS	59	1.90 %		57/66

OFFICE OF TRAFFIC SAFETY - 2010 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
Calistoga	2801	NAPA COUNTY	F	5,170	15,855

TYPE OF COLLISION	VICTIMS KILLED AND INJURED		RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury	8		24/70	51/70
Alcohol Involved	4		5/70	7/70
HBD Driver <21	0		19/70	27/70
HBD Driver 21-34	1		3/70	9/70
Motorcyclists	1		10/70	23/70
Pedestrians	2		9/70	19/70
Pedestrians <15	0		25/70	35/70
Pedestrians 65+	0		26/70	35/70
Bicyclists	2		8/70	27/70
Bicyclists <15	1		4/70	10/70
Composite			12/70	25/70
	COLLISIONS			
Speed Related	0		61/70	61/70
Nighttime	1		13/70	22/70
Hit and Run	1		10/70	17/70
DUI ARRESTS	66	2.13 %		57/69

OFFICE OF TRAFFIC SAFETY - 2009 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
Calistoga	2801	NAPA COUNTY	F	5,353	17,183

TYPE OF COLLISION	VICTIMS KILLED AND INJURED		RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury	5		41/70	61/70
Alcohol Involved	0		57/70	60/70
HBD Driver <21	0		24/70	32/70
HBD Driver 21-34	0		39/70	41/70
Motorcyclists	2		3/70	8/70
Pedestrians	2		10/70	19/70
Pedestrians <15	2		4/70	2/70
Pedestrians 65+	0		34/70	36/70
Bicyclists	1		17/70	32/70
Bicyclists <15	0		30/70	36/70
Composite			59/70	64/70
	COLLISIONS			
Speed Related	1		34/70	50/70
Nighttime	0		57/70	58/70
Hit and Run	0		52/70	56/70
DUI ARRESTS	60	1.87%		54/67

OFFICE OF TRAFFIC SAFETY - 2008 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
Calistoga	2601	NAPA COUNTY	F	5,304	17,225

TYPE OF COLLISION	VICTIMS KILLED AND INJURED		RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury	7		34/73	58/73
Alcohol Involved	0		55/73	57/73
HBD Driver <21	0		28/73	32/73
HBD Driver 21-34	0		32/73	37/73
Motorcyclists	0		42/73	46/73
Pedestrians	0		57/73	61/73
Pedestrians <15	0		31/73	39/73
Pedestrians 65+	0		34/73	37/73
Bicyclists	0		56/73	60/73
Bicyclists <15	0		34/73	44/73
Composite			33/73	25/73
	COLLISIONS			
Speed Related	3		12/73	27/73
Nighttime	0		61/73	63/73
Hit and Run	0		50/73	56/73
DUI ARRESTS	63	1.98%		56/70

OFFICE OF TRAFFIC SAFETY - 2007 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
CALISTOGA	2801	NAPA COUNTY	F	5,280	17,462

TYPE OF COLLISION	VICTIMS KILLED AND INJURED		RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury	17		18/73	35/73
Alcohol Involved	6		3/73	6/73
HBD Driver <21	0		28/73	30/73
HBD Driver 21-34	0		44/73	48/73
Pedestrians	0		58/73	61/73
Pedestrians <15	0		37/73	39/73
Pedestrians 65+	0		29/73	30/73
Bicyclists	3		5/73	14/73
Bicyclists <15	0		35/73	39/73
Composite			7/73	19/73
	COLLISIONS			
Speed Related	3		20/73	38/73
Nighttime	1		20/73	38/73
Hit and Run	3		2/73	4/73
DUI ARRESTS	58	1.83%		50/70

OFFICE OF TRAFFIC SAFETY - 2006 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
CALISTOGA	2801	NAPA COUNTY	F	5,277	16,147

TYPE OF COLLISION	VICTIMS KILLED AND INJURED		RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury	18		16/74	38/74
Alcohol Involved	1		32/74	48/74
HBD Driver <21	0		32/74	38/74
HBD Driver 21-34	0		45/74	48/74
Pedestrians	1		26/74	44/74
Pedestrians <15	0		34/74	42/74
Pedestrians 65+	0		31/74	39/74
Bicyclists	3		4/74	10/74
Bicyclists <15	1		7/74	9/74
Composite			13/74	32/74
	COLLISIONS			
Speed Related	6		8/74	19/74
Nighttime	2		7/74	17/74
Hit and Run	0		53/74	57/74
DUI ARRESTS	40	1.26 %		38/69

OFFICE OF TRAFFIC SAFETY - 2005 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
CALISTOGA	2801	NAPA COUNTY	F	5,235	16,088

TYPE OF COLLISION	VICTIMS KILLED AND INJURED		RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury	15		22/77	44/77
Alcohol Involved	6		1/77	6/77
HBD Driver <21	0		28/77	34/77
HBD Driver 21-34	1		7/77	18/77
Pedestrians	1		24/77	36/77
Pedestrians <15	0		33/77	41/77
Pedestrians 65+	1		5/77	6/77
Bicyclists	2		10/77	16/77
Bicyclists <15	0		40/77	51/77
Composite			7/77	15/77
	COLLISIONS			
Speed Related	5		16/77	33/77
Nighttime	1		21/77	38/77
Hit and Run	2		6/77	8/77
DUI ARRESTS	50	1.59 %		56/72

OFFICE OF TRAFFIC SAFETY - 2004 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
CALISTOGA	2801	NAPA COUNTY	F	5,212	13,555

TYPE OF COLLISION	VICTIMS KILLED AND INJURED		RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury	13		24/80	54/80
Alcohol Involved	3		9/80	16/80
HBD Driver <21	0		28/80	35/80
HBD Driver 21-34	0		40/80	47/80
Pedestrians	1		25/80	37/80
Pedestrians <15	0		34/80	44/80
Pedestrians 65+	1		4/80	8/80
Bicyclists	3		2/80	16/80
Bicyclists <15	0		39/80	47/80
Composite			15/80	36/80
	COLLISIONS			
Speed Related	4		14/80	33/80
Nighttime	0		61/80	65/80
Hit and Run	1		13/80	23/80
DUI ARRESTS	57	1.82%		55/71

OFFICE OF TRAFFIC SAFETY - 2003 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
CALISTOGA	2801	NAPA COUNTY	F	5,225	13,759

TYPE OF COLLISION	VICTIMS KILLED AND INJURED		RANKING BY DAILY VEHICLE MILES TRAVELED	RANKING BY AVERAGE POPULATION
Total Fatal and Injury	8		40/83	61/83
Alcohol Involved	1		25/83	47/83
HBD Driver <21	0		26/83	36/83
HBD Driver 21-34	0		45/83	52/83
Pedestrians	1		24/83	43/83
Pedestrians <15	0		41/83	50/83
Pedestrians 65+	0		35/83	41/83
Bicyclists	0		62/83	67/83
Bicyclists <15	0		40/83	51/83
Composite			40/83	63/83
	COLLISIONS			
Speed Related	2		29/83	50/83
Nighttime	0		66/83	71/83
Hit and Run	0		56/83	65/83
DUI ARRESTS	63	2.01 %		64/75

OFFICE OF TRAFFIC SAFETY - 2002 RANKINGS

AGENCY	NCIC	COUNTY	GROUP	POPULATION (AVG)	DVMT
CALISTOGA	2801	NAPA COUNTY	F	5,225	12,781

FATAL AND INJURY COLLISION TYPE	TOTALS		RANKING BY DAILY VEHICLE MILES	RANKING BY AVERAGE
Total Fatal and Injury	14		20/82	43/82
Alcohol Involved	2		16/82	35/82
HBD Driver <21	0		40/82	52/82
HBD Driver 21-34	0		52/82	60/82
Hit and Run	2		9/82	16/82
Nighttime	3		5/82	11/82
Speed Related	6		7/82	24/82
Composite			7/82	24/82
KILLED AND INJURED VICTIM TYPE				
Pedestrians	4		5/82	9/82
Pedestrians <15	2		5/82	7/82
Pedestrians 65+	0		28/82	39/82
Bicyclists	2		14/82	27/82
Bicyclists <15	1		14/82	19/82
DUI ARRESTS	66	0.02 %		63/75

APPENDIX D

BICYCLE & PEDESTRIAN COUNT METHODS AND RECOMMENDATIONS

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Bicycle & Pedestrian Count Methods and Recommendations

Count Methodologies

Metropolitan Transportation Commission

In 2003, the Metropolitan Transportation Commission (MTC) funded the Bicyclist and Pedestrian Data Collection and Analysis Project. The project resulted in the *Handbook for Bicyclists and Pedestrian Counts*, for use by local agencies throughout the Bay Area. The Handbook presents guidelines and standard methodologies for conducting counts of bicyclist and pedestrian activity. MTC's bicycle count methodology was developed to attain a consistent regional bicycle count and analysis procedures so that trends in usage can be documented throughout the Bay Area. The counting strategy outlined in the Handbook provides an easy and inexpensive method of conducting bicycle and pedestrian counts on a regular basis. The level of detail to be extracted during routine counts is kept to a minimum to reduce ambiguity while still providing useful data. The methodology is not unlike a typical traffic count which reveals little more than the time of day, and direction of travel. Collection of data regarding the motorist's age, trip purpose, length of trip, etc. is relatively rare. Using the procedures outlined in MTC's Handbook and any subsequent updates will ensure consistent results among local agencies for the development of a count database, as well as with larger efforts conducted by MTC throughout the region. Count procedures and instructions provided by MTC can be found on MTC's website via the following web link: http://www.mtc.ca.gov/planning/bicyclespedestrians/counts.htm

National Bicycle and Pedestrian Documentation Project

The National Bicycle and Pedestrian Documentation Project (NBPDP) is an annual bicycle and pedestrian count and survey effort sponsored by the Institute of Transportation Engineers Pedestrian and Bicycle Council. The goals of the NBPD are to: (1) Establish a consistent national bicycle and pedestrian count and survey methodology; (2) Establish a national database of bicycle and pedestrian count information generated by these consistent methods and practices; and (3) Use the count and survey information to begin analysis on the correlations between local demographic, climate and land-use factors and bicycle and pedestrian activity. More information about the project can be found at: http://bikepeddocumentation.org/

Recommendations

In order to supplement US Census Journey to Work (JTW) data, to attain a better understanding of existing usage and travel patterns, and to be able to project demand, regular bicycle counts (on an annual or bi-annual basis as needed), are recommended as a programmatic improvement. Periodic counts should be coordinated through a central clearing house such as the NCTPA or the Napa County Bicycle Coalition and conducted in each jurisdiction within the plan area. Counts may be conducted by volunteers, interns, and others as appropriate.

Recommended Count Locations

Count locations were selected using the following criteria:

1. To ensure a balanced geographical representation of the count locations.
2. To capture inter-jurisdiction activity at community gateways.
3. The intersection of primary bicycle routes.

4. Proximity to major destinations such as downtowns, civic destinations, employment centers, transit facilities, schools, etc.

5. Location on the regional or local bicycle network (existing or proposed)

Recommended count locations are catalogued in a database by jurisdiction in Attachment A, and shown graphically on maps in Attachment B. Count locations generally consist of street intersections and/or pathway/street intersections. Each count location is identified by its primary street and cross street, and includes notations about the existing and/or proposed bikeway facilities at the site. Additional details are provided about the general type of bicycle use or activity expected in the area along with notes specific to the site or future uses in the vicinity of the count location where appropriate. Over time, additional data fields may be built into the database such as Average Daily Traffic Volumes, traffic speeds, street widths, pavement conditions, etc.

Count Periods

Bicyclist and pedestrian counts can be conducted during each season of the year: fall, spring, summer and winter. However, counts during the winter months are often avoided due to poor weather conditions and extended holiday-related vacations. The second week in September is the official annual National Bicycle and Pedestrian Count and survey week. Counts are also conducted optionally for the National Bicycle and Pedestrian Count program during the second week of January, the second week of May, and the first week of July.

Prior to conducting counts, school districts and/or institutions within each jurisdiction should be contacted to verify when schools will be in session to avoid spring and winter breaks and special school events. Counts at locations that are not near schools can be accurately conducted during the summer months. In Napa, summertime conditions typically represent peak travel volumes. It should be noted that counting periods should be as condensed as much as possible to ensure the most consistent conditions.

Counts should be conducted during non-holiday weeks on Tuesdays, Wednesdays or Thursdays and the Saturdays preceding or following the count week. If counts must be conducted during holiday weeks, the actual holiday day should be avoided, and the Tuesday after Monday holidays and the Thursday before Friday holidays should also be avoided.

Counts should be conducted during standard peak commute hours. Typically, the weekday morning peak occurs between 7:00 and 9:00 AM, the weekday evening peak occurs between 4:00 and 6:00 PM, and the weekend midday peak occurs on Saturdays between 12:00 noon and 2:00 PM. Time periods may be adjusted to account for local considerations, and supplementary counts may be conducted to capture specific activities, such as school commutes.

Recommendation: It is recommended that bicycle counts conducted throughout the Plan area be consistent with MTC's guidelines and conducted in accordance with the National Bicycle and Pedestrian Documentation Project so that they may be coordinated with regional and national databases.

MTC Count Forms

BICYCLE-PEDESTRIAN COUNT INTERSECTION PROFILE

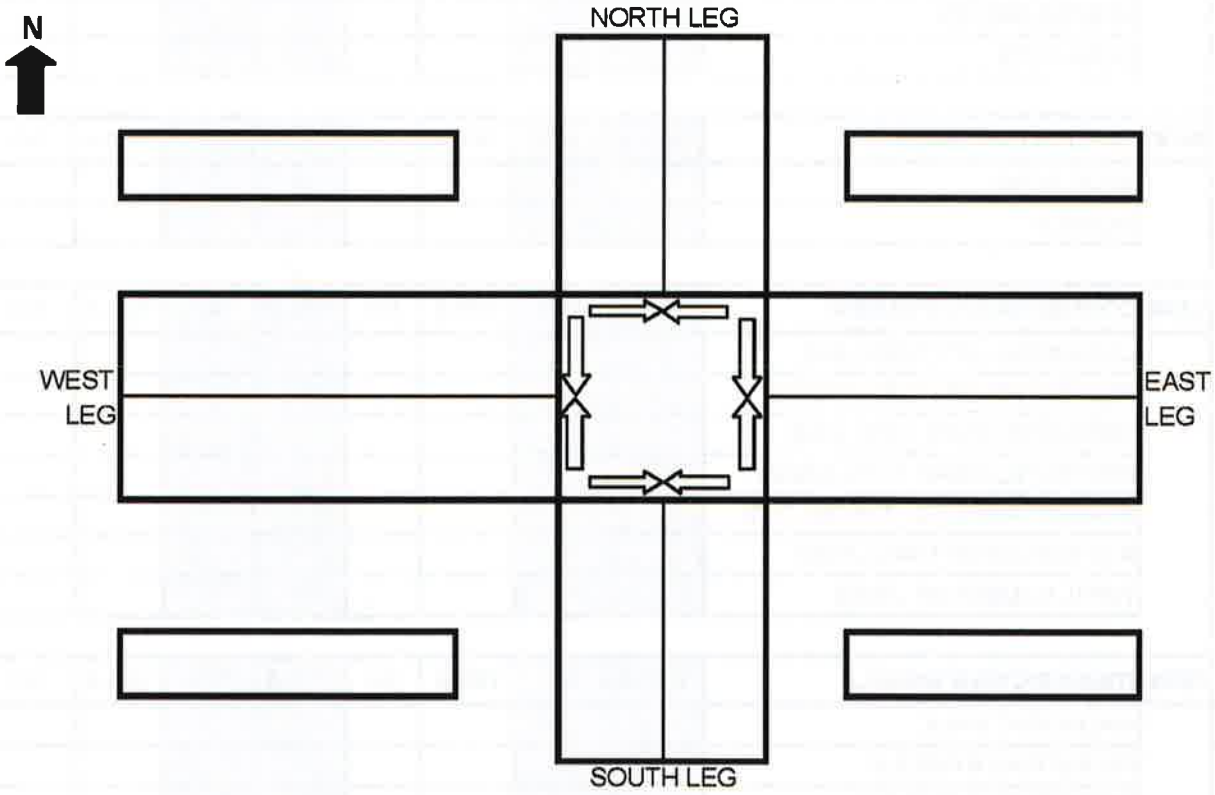
DATE: _____ **NAME:** _____

INT #: _____

N/S STREET: _____

E/W STREET: _____

CITY: _____ **COUNTY:** _____



NOTE: Include names of residential or commercial buildings or land uses in boxes

MTC Count Forms

PAGE TWO - INTERSECTION PROFILE

INT #: _____

	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
PHYSICAL FEATURES	YES-#	NO	YES-#	NO	YES #	NO	YES-#	NO
SIDEWALKS								
CROSSWALKS								
BIKE LANES								
RAISED MEDIAN								
RAISED MEDIAN-WHEELCHAIR RAMP								
PAINTED MEDIAN								
CURB CUTS								
INTERSECTION CONTROLS	YES-#	NO	YES-#	NO	YES #	NO	YES-#	NO
STOP SIGNS								
SIGNALS								
LANE CONFIGURATION-PHASING	YES-#	NO	YES-#	NO	YES #	NO	YES-#	NO
DEDICATED LEFT TURN LANE								
PROTECTED LEFT TURN SIGNAL								
DEDICATED RIGHT TURN LANE								
PROTECTED RIGHT TURN SIGNAL								
SHARED LANES (T-L, T-R OR L-T-R)								
# OF EXCLUSIVE THRU LANES								
TOTAL NUMBER OF LANES								
PEDESTRIAN/BICYCLE SIGNALS	YES-#	NO	YES-#	NO	YES #	NO	YES-#	NO
WALK/DON'T WALK								
PEDESTRIAN SYMBOLS								
PEDESTRIAN SCRAMBLE								
PEDESTRIAN COUNTDOWN								
AUDIBLE SIGNAL (NON COUNTDOWN								
ADA PUSH BUTTON (LARGER)								
NON ADA PUSH BUTTON								
BICYCLE PUSH BUTTON								

TRAFFIC RESEARCH & ANALYSIS, INC.

BICYCLE-PEDESTRIAN COUNT SUMMARY

DATE: **NAME:** **INT #:** **N/S STREET:**

COUNTY: **CITY:** **E/W STREET:**

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	PED.	BICYCLE	PED.	BICYCLE	PED.	BICYCLE	PED.	BICYCLE
7:00								
7:15								
7:30								
7:45								
8:00								
8:15								
8:30								
8:45								
A/M TOTAL								
4:00								
4:15								
4:30								
4:45								
5:00								
5:15								
5:30								
5:45								
P/M TOTAL								
2:00								
2:15								
2:30								
2:45								
3:00								
3:15								
3:30								
3:45								
MID TOTAL								

MTC Count Forms

STANDARD SCREENLINE COUNT FORM

Name: _____ Location: _____

Date: _____ Start Time: _____ End Time: _____

Weather: _____

Please fill in your name, count location, date, time period, and weather conditions (fair, rainy, very cold). Count all bicyclists and pedestrians crossing your screen line under the appropriate categories.

- Count for two hours in 15 minute increments.
- Count bicyclists who ride on the sidewalk.
- Count the number of people on the bicycle, not the number of bicycles.
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- People using equipment such as skateboards or rollerblades should be included in the "Other" category.

	Bicycles		Pedestrians		Others
	Female	Male	Female	Male	
00-:15					
15-:30					
30-:45					
45-1:00					
1:00-1:15					
1:15-1:30					
1:30-1:45					
1:45-2:00					
Total					

STANDARD BICYCLE INTERSECTION COUNT FORM

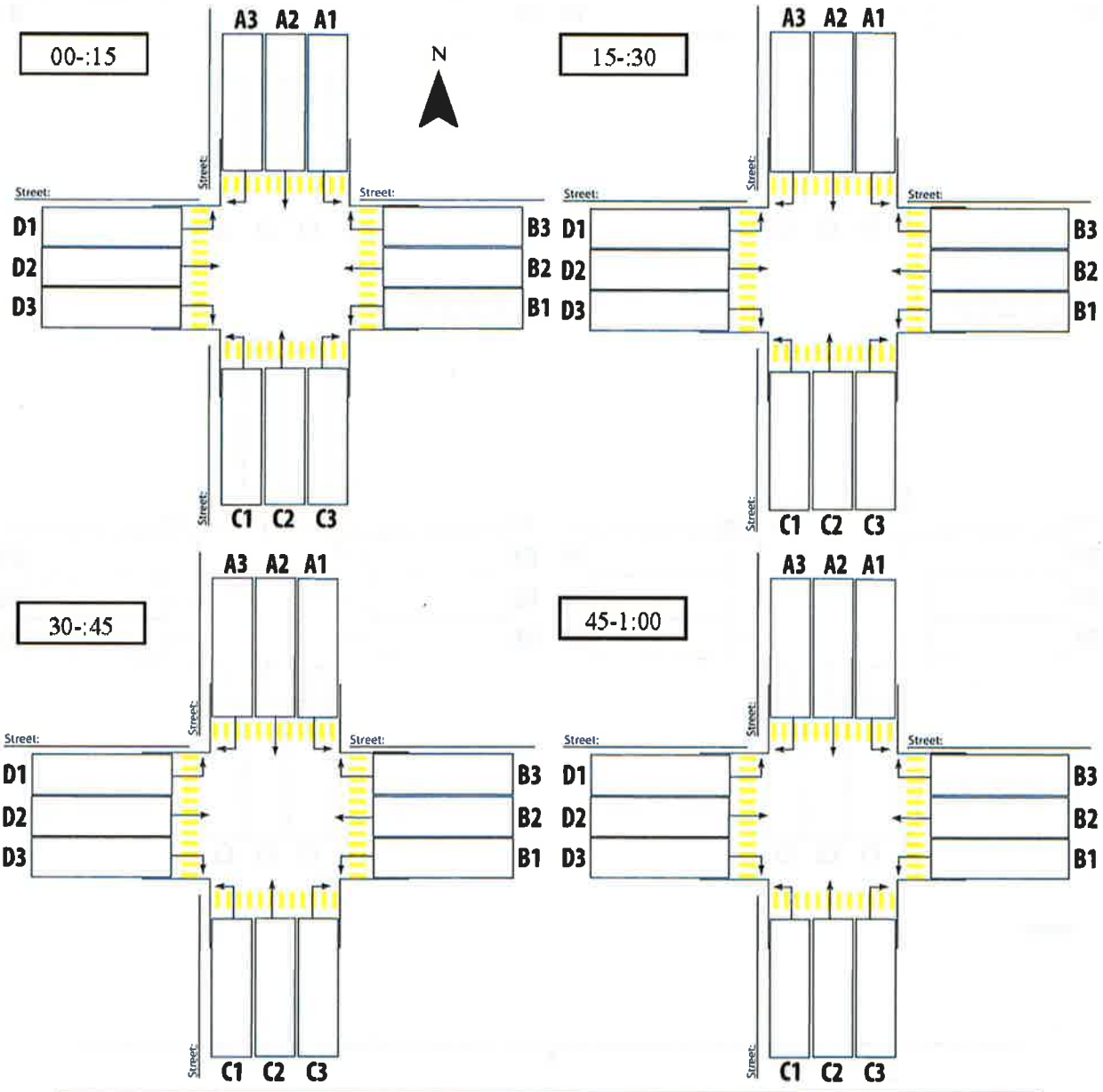
Name: _____ Location: _____

Date: _____ Start Time: _____ End Time: _____

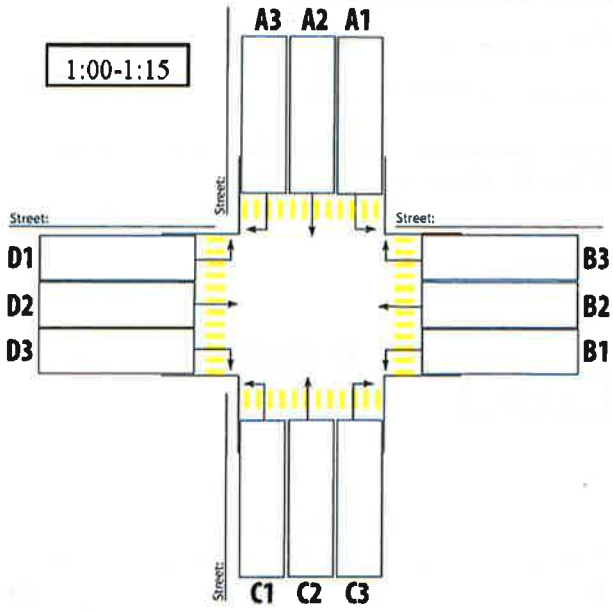
Weather: _____

Please fill in your name, count location, date, time period, and weather conditions (fair, rainy, very cold). Count all bicyclists crossing through the intersection under the appropriate categories.

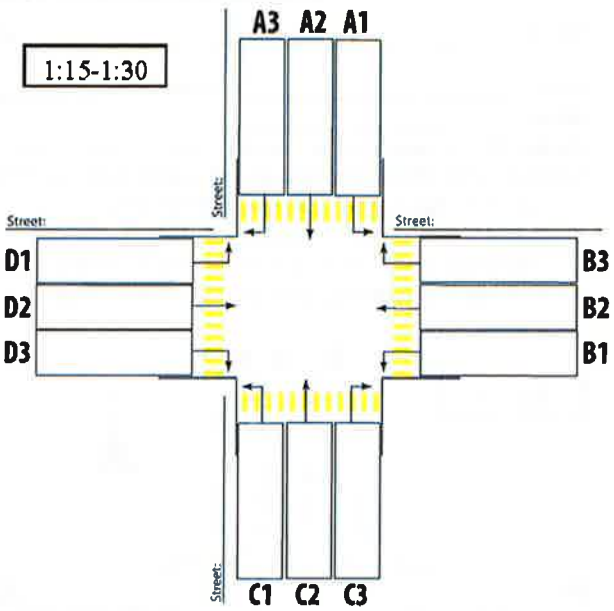
- Count for two hours in 15-minute increments.
- Count bicyclists who ride on the sidewalk.
- Count the number of people on the bicycle, not the number of bicycles.
- Use one intersection graphic per 15-minute interval.



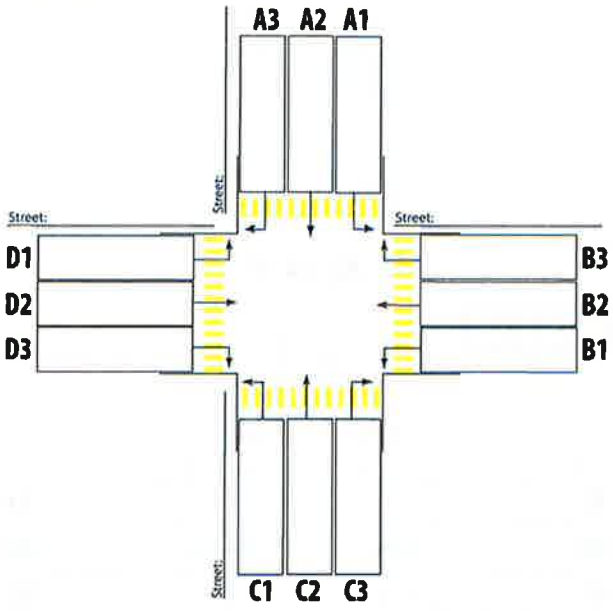
1:00-1:15



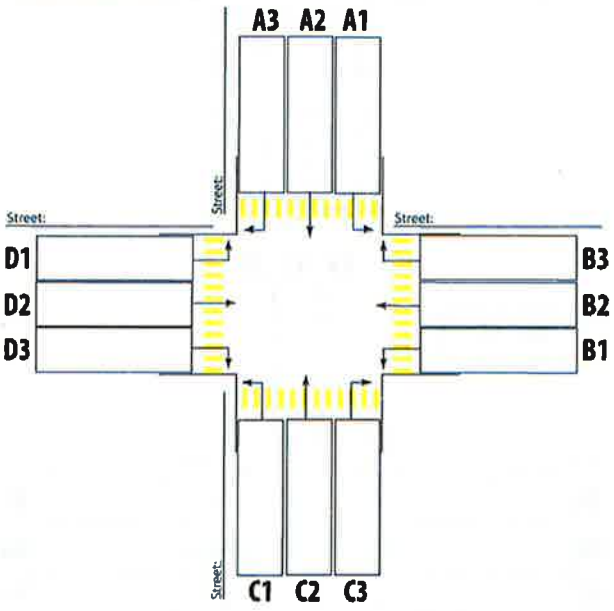
1:15-1:30



1:30-1:45



1:45-2:00



Notes:

STANDARD BICYCLE INTERSECTION COUNT TALLY SHEET

	Bicycle Counts											
Time	Leaving Leg A			Leaving Leg B			Leaving Leg C			Leaving Leg D		
Period	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
00-:15												
15-:30												
30-:45												
45-1:00												
1:00-1:15												
1:15-1:30												
1:30-1:45												
1:45-2:00												
Total												
Total Leg:												
Street Name A to C:										Location 1 (Total Leg A + Total Leg C) =		
Street Name B to D:										Location 2 (Total Leg B + Total Leg D) =		

APPENDIX E

FUNDING PROGRAM SUMMAIRIES

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FUNDING PROGRAM SUMMARIES

Federal Funding Programs	
Moving Ahead for Progress in the 21st Century (MAP-21)	*http://www.fhwa.dot.gov/map21/*
Highway Safety Improvement Program	*http://www.dot.ca.gov/hq/LocalPrograms/hsip.htm*
Congestion Mitigation and Air Quality Improvement Program / Surface Transportation Program (CMAQ / STP)	*http://www.mtc.ca.gov/funding/STPCMAQ/*
Transportation Alternatives Program (TAP) - includes Safe Routes to School	*http://www.fhwa.dot.gov/map21/tap.cfm*
State Funding Programs	
State Highway Operations Protection Program (SHOPP)	*http://www.dot.ca.gov/hq/transprog/shopp.htm*
State Transportation Improvement Program (STIP)	*http://www.mtc.ca.gov/funding/STIP/*
Active Transportation Program (ATP) - includes Safe Routes to School (SR2S)	*http://www.dot.ca.gov/hq/LocalPrograms/atp/index.html*
Office of Traffic Safety (OTS)	*http://www.ots.ca.gov/Grants/Program_Information/default.asp*
Environmental Enhancement and Mitigation Program (EEMP)	*http://resources.ca.gov/eem/*
California State Coastal Conservancy	*http://www.scc.ca.gov/Programs/guide.htm*
Habitat Conservation Fund	*http://www.parks.ca.gov/?page_id=21361*
Caltrans Transportation Planning Grants	*http://www.dot.ca.gov/hq/tpp/grants.html*
Regional Funding Programs	
Regional Transportation Improvement Program	*http://www.mtc.ca.gov/funding/STIP/*
Transportation for Livable Communities (TLC)	*http://www.mtc.ca.gov/planning/smart_growth/tlc_grants.htm*
Regional Bicycle and Pedestrian Program (RBPP)	*http://www.mtc.ca.gov/planning/bicyclespedestians/regional htm#bikepedprog*
Transportation Development Act Article 3 (TDA3)	*http://www.mtc.ca.gov/funding/STA-TDA/*
Regional Funding Programs *Transportation Fund for Clean Air (TFCA)*	*http://www.baaqmd.gov/Divisions/Strategic-Incentives/Funding-Sources/TFCA.aspx*
Lifeline Transportation Program	*http://www.mtc.ca.gov/planning/lifeline/*
Safe Routes to Transit (SR2T)	*http://www.transformca.org/campaign/sr2t*
Bay Trail	*http://baytrail.abag.ca.gov/grants.html*
Local Funding Programs	
Measure T	*http://www.nctpa.net/measure-t*
Direct Local Jurisdiction Funding see individual city web pages for any local funding programs *Impact fees* *Other: special taxes, fees, permits, parking revenues*	