

City of Winters  
BIKEWAY SYSTEM MASTER PLAN

January 2013



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### EXECUTIVE SUMMARY

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The purpose of this plan is to formulate a long-range, comprehensive, and consistent policy guide for creating a city-wide connected bikeway network that tends to the needs of its various users in a convenient, safe and inviting way. This update seeks to incorporate the work that has already been done through studies, plans and other city documents to enhance the bicycle system, as well as lists current priorities for bicycle facility development. This is not a binding document; however, by updating the information and projects in this plan to comply with Section 891.2 of the California Streets and Highways Code, the City would be eligible to apply for State Bicycle Transportation Account funds. Also, by coordinating the plan with relevant city plans, the Yolo County Bicycle Transportation Plan and the Sacramento Area Council of Governments Regional Bicycle, Pedestrians and Trails Master Plan, the City will be applicable for Bicycle and Pedestrian funding through SACOG in the years to come.

This plan provides a list of potential projects that create a network of bicycle routes that will encourage and promote bicycling. It references prior planning and environmental work for the list of “Priority Projects” (see Section 1.2). Because no funding has been programmed for these proposed projects, this plan does not include funding sources or construction schedules for individual projects. Master plans such as this one do not require environmental review through CEQA; such review will happen at the individual project level. Required documents that apply to the list of prioritized projects can be found in the appendix.

Finally, this plan includes public review information and community concerns and suggestions that will be used as supporting documentation for this plan. The overall goal is to identify conceptual projects that will increase bicycle ridership by enhancing the safety of routes, comfort of users, and convenience of bicycle facilities.

### SECTION 1: INTRODUCTION

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The City of Winters is an ideal candidate to stand out as a bicycle-friendly community. The city is flat and relatively small, surrounded by scenic agricultural fields of the western Sacramento Valley and crossed by Putah Creek flowing from nearby Lake Berryessa. The setting allows for many bicycling opportunities for residents and visitors alike— from students bicycling to and from local Waggoner Elementary School to regional visitors passing through town on long bicycle rides.

Enhancing the City’s bicycle network will increase the safety and convenience for bicyclists in Winters. The small size of the city is conducive to utilitarian bicycle trips, which can be a convenient and healthy (not to mention fun) alternative to automobile use. Winters’ location near Sacramento and Davis and at the gateway of the Coast Range makes it a regional destination for recreational bicyclists. With a wide range of potential bicycle users, safe, convenient and well-designed bicycle facilities will make a significant and multifaceted impact on community vitality.

The City of Winters recognizes its ability to serve its community and the surrounding areas of Yolo County by creating a well-planned bikeway system. Adoption of this Master Plan for a citywide bikeway network is an opportunity to enhance the livability of the community by developing attractive and people-scale streetscapes, by encouraging health and activity (both physical and economic) by planning for walking and bicycling, and by safely integrating all modes of transportation.

#### **1.1 Why should Winters have a Bikeway System Master Plan?**

The purpose of this Bikeway System Master Plan update is to present a comprehensive compilation of the City’s work in community outreach and feasibility studies. Furthermore, it provides an inventory and analysis of the current and future needs for bicycle infrastructure.

The Bikeway System Master Plan highlights the missing links to a complete bicycle network. It identifies and prioritizes the projects that would fill these gaps, ultimately creating a safe and low-stress bicycle network. A robust bicycle network for Winters residents and visitors provides multifaceted benefits by relieving traffic congestion, improving air quality and increasing physical activity and health while supporting local economic growth.

To better understand the interests of its residents, City staff has assessed the needs and visions of Winters community members. One such example is the Grant Avenue/ State Road (SR 128/ Russell Blvd. - Complete Streets Concept Plan completed in December of 2010. The purpose of this project is to “improve safety, character, access and mobility along the corridor for all modes of travel” and represents an opportunity to implement one of Caltrans’ newest policies, DD-64-R1, the Complete Streets Policy Act of 2008. The goal of the Complete Streets concept is to provide safe and comfortable access for all travel modes. The Bikeway System Master Plans complements the Grant Ave/ SR 128/ Russell Blvd. – Complete Streets Concept Plan by supporting the identified projects. The Complete Streets Concept Plan encourages enhanced

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bicycle and pedestrian safety through contiguous sidewalks and Class I and Class II bicycle facilities to provide for safe and convenient travel for all modes. The Complete Streets Concept Plan suggested the city conduct a traffic analysis to evaluate the potential transportation impacts of modifying the corridor to reflect the plan’s findings.

In March 2012, the Winters I-505/Grant Avenue Planning Area Traffic Analysis was completed, by Fehr and Peers Transportation Consultants, which covered a project area totaling 140.1 acres in the eastern area of the City of Winters, the north and south sides of SR 128/ Grant Avenue and the west side of and adjoining I-505. This was a long range study of 10 to 20 years that assessed environmental clearance of potential development projects. Much of the land alongside SR 128/Grant Avenue has yet to be developed. This presents an opportunity for the City of Winters to assess future needs and account for anticipated traffic flows.

It is the responsibility of the Bikeway System Master Plan to incorporate long-term planning that reflects future needs of the Winters community. By incorporating the findings of the 2012 Traffic Analysis and the Complete Streets Concept Plan, this plan continues to support the development of a bikeway system that provides for connectivity and fluidity for all modes of traffic and creates a safe and inviting bikeway system to support long term use and a logical alternative to taking a drive to downtown or other activity centers.

### 1.2 Priority Projects

**Table 1:  
Snapshot of Priority Projects**

<b>Project Type</b>	<b>Segment</b>	<b>Existing Plan</b>	<b>Estimated Cost</b>
Bike/ Pedestrian Upgrade	SR 128/Grant Ave. from Railroad Ave. to East Main Street	City of Winters Complete Streets- Grant Ave. Corridor Plan	\$60,000
Bike/ Pedestrian Upgrade	SR 128 from East Main Street and the I-505 interchange- Class I/II bike lanes and pedestrian facilities	City of Winters Complete Streets- Grant Ave. Corridor Plan	\$50,000
Bike/ Pedestrian Upgrade	SR 128 from the I-505 Interchange to El Rio Villa – Yolo Housing- Bike and Pedestrian Facilities	City of Winters Complete Streets- Grant Ave. Corridor Plan	\$560,000
Class I Trail	Putah Creek Pedestrian and Bike Bridge	Putah Creek Park Master Plan	\$850,000
Class I Trail	West Section of Main Street	City of Winters Grant Ave Corridor Plan	\$550,000

### 1.3 State of California Requirements

The city of Winters has adhered to the requirements of the California Transportation Department (Caltrans) contained in the Streets and Highways Code Section 891.2. To enhance the user-

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friendliness of this document the checklist and their corresponding page numbers are provided below:

**Table 2:  
SACOG Checklist for Bicycle Master Plan Compliance with  
California Streets and Highways Code 891.2.**

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

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

## SECTION 2: EXISTING CONDITIONS AND NEEDS ANALYSIS

This section presents a comprehensive picture of the existing bicycle network and bicycle facilities. By analyzing the current bicycle network via number of bicycle accidents and through a Needs Analysis, this section helps guide policymaking and prioritization of future bicycle improvements. Data was gathered through the U.S. Census Data 2010 (unless otherwise noted), window surveys, in addition to speaking with local bicyclists and bicycle interest groups. Many of the assumptions about the community were derived from previous studies such as Grant Avenue Access Study, and are not explicitly noted. Best efforts were made to take into consideration work already done that embodied the community’s vision of the future of the city of Winters.

### 2.1 Existing Bicycle Network

#### Local

Figure 1: Map of Existing Bike Lanes



There is a Class I bike path along Railroad Avenue. There are Class II bike lanes on Main Street, East Main Street and Valley Oak Drive. Currently, there are no Class III bike routes.

### **Regional and Multi-modal Connections**

The trails that lead into and out of Winters are heavily used by recreational bicyclists. Nearly every weekend a group of cyclists will pass through the town as they make their way to other destinations (e.g. Lake Berryessa) or make a stop in Winters for lunch or a quick break.

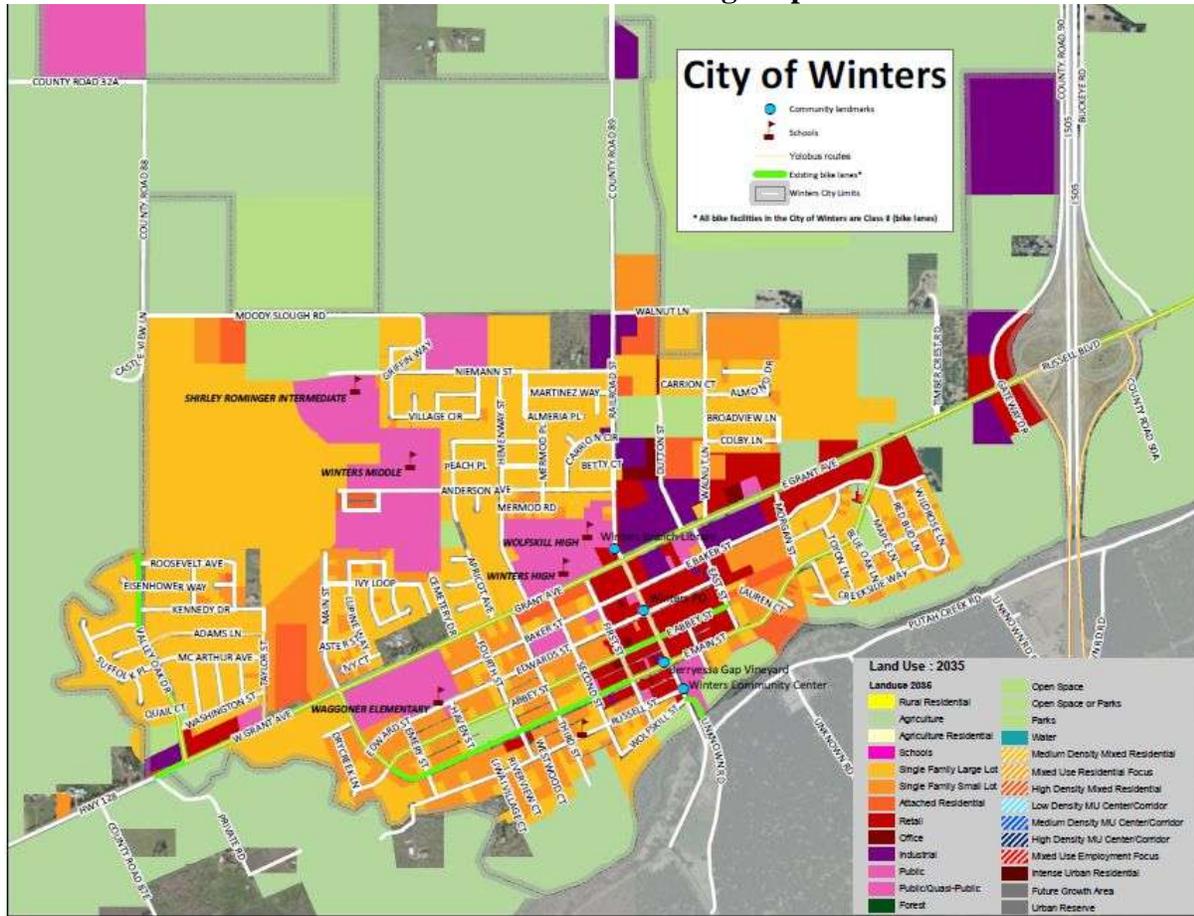
- Bike lanes (shoulders) on County Roads 31 and 93A leading from Davis to within about one mile east of Winters.
- Class I trail along Russell Boulevard to within five (5) miles of Winters.
- Bus routes
  - Yolobus Route 220 provides one morning, one mid-day, and one afternoon round trips, Monday- Saturday, between Davis, Winters, and Vacaville
  - Yolobus Route 220C provides one morning (Eastbound) and one afternoon (Westbound) trip, Monday-Friday between Winters and UC Davis.

There are no additional bus routes (including new transit stops or lines) planned in the city of Winters at this time. According to the Yolo County Transportation District- Yolobus, there were 581 bikes counted on the Route 220 for the 2012 year (January 1 through December 31), or approximately 48 bikes per month.

### **2.2 Land Use**

The primary land use types in the city of Winters are residential and commercial. The single largest land use is residential which encompasses approximately 934 acres (57%) of the total acreage of the city.

**Figure 2:  
New Land Use Zoning Map**



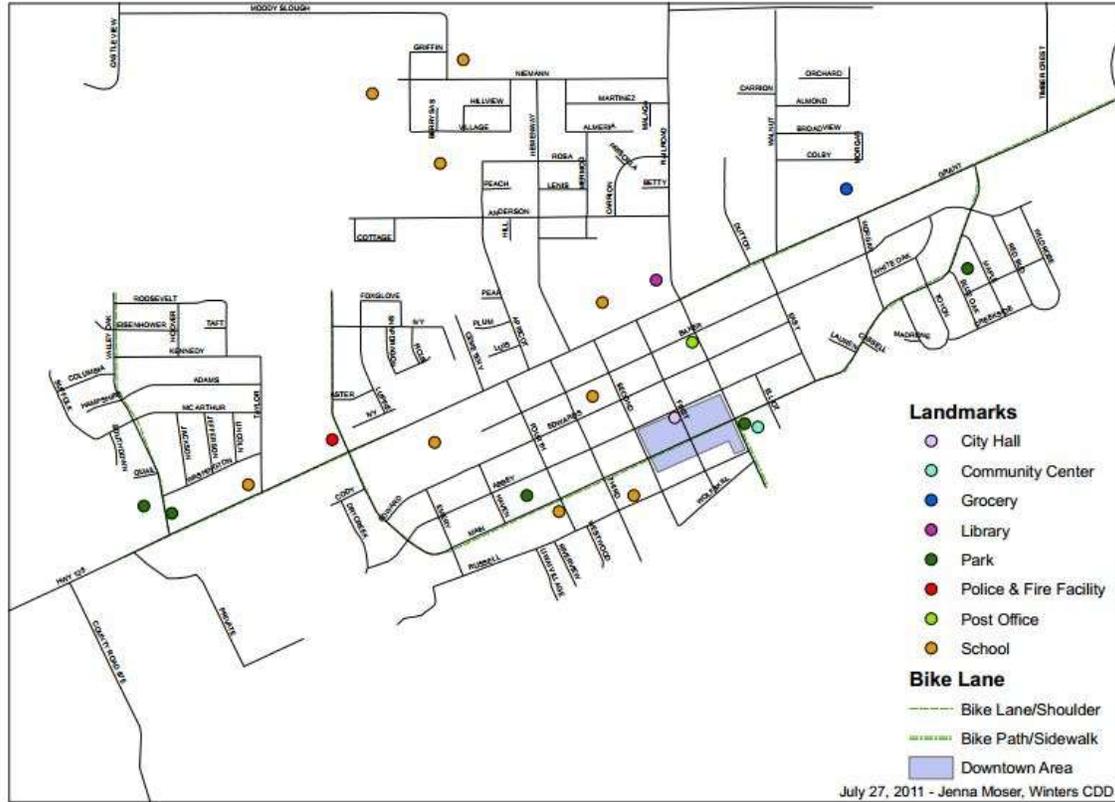
The majority of non-residential uses and employment centers are located along Railroad Avenue and East Grant Avenue. Residential density varies from mostly low to high near the downtown area. Non-residential uses are low in intensity. On the average, population density is low with an average household size of 2.44.

In the Winters General Plan there is a circulation map that highlights the Arterial Streets, Primary and Secondary Collector streets and identifies the number of lanes and traffic signals. This Bike Plan complements the community’s vision for a circulation element by identifying projects that would increase connectivity throughout the city and update bikeway facilities to enhance the bicyclists experience when biking around Winters.

Figure 3 supports those assumptions by highlighting existing activity centers and other support facilities. Providing the essential signage, lane markings and bikeway facilities at these key locations will encourage bicycling by making it a viable and convenient option for residents. Currently there are no public shower facilities in the city of Winters. If some were to be installed,

the city may consider locating them near employment centers such as on Grant Avenue and in the downtown area.

**Figure 3:**  
Existing Activity Centers & Other Support Facilities



### Bicycle Parking

Bicycle parking includes bike racks and corrals.

- *Racks* are low cost devices that typically hold about eight bicycles, allow bicyclists to securely lock their frames and wheels, are secured to the ground, and are located in highly visible areas. Bike racks are most often found in commercial areas where regular commuters can take advantage of the multi-modal connections and feel safe in leaving their bicycle.
- *Bike corrals* can be found at schools, special events, and other locations, and typically involve a movable fencing system that can safely store numerous bicycles. Security is provided by either locking the enclosure or locating it near other activities so that it can be supervised.

A field review of Winters revealed bike racks for bicyclists at schools and in the major activity centers. Most of the racks at schools are in fenced corral areas, and appear to be used by students. Bike racks are also provided throughout the Downtown along Railroad Avenue and East Main Street. Winters is often receiving requests from downtown businesses to replace a few car parking spots with bike parking facilities. This is noted in front of Steady Eddy's, Putah Creek Café, and around Rotary Park. Recently, there has also been installed a bicycle "fix-it" station where bicyclists can have access to tools appropriate to fix common bicycle problems.

**Figure 4:  
Map of Bicycle Parking**



### 2.3 Existing Bicycle Ridership

In a small town like Winters, it is extremely difficult to assess the number of bicyclists. However, Census data has been used to make reasonable estimates of current bicycle commuting patterns. According to the 2009 National Household Travel Survey (by the U.S. Department of Transportation), walking trips accounted for 10.9 percent and bicycle trips were at one percent of all trips. Winters population is 6,624 (2010 Census data) so at one percent that is about 66 bicycle commute trips per day. The U.S. Department of Transportation, in their publication entitled “National Walking and Bicycling Study” (2010) set a national goal to double the amount of reported trips taken by bike. Therefore, that puts Winters at a **goal of 132 bicycle trips per day by 2025.**

To identify ridership potential this report looks at modes of transportation and distance to work for residents in Winters. 2010 U.S. Census Data reports that there are a 1,453 people employed in Winters. 550 people are both employed in the city and live within city boundaries. The American Community Survey data, 2006-2010 5-Year Estimates on the “Means of Transportation to Work by Travel Time to Work for Workplace” (Appendix x) estimates that

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about 94 percent of residents in Winters are using a car, van or truck to get to their workplace and of those 94 percent, 42 percent of them took less than ten (10) minutes to get to their place of work.

94% of 550= 517      42% of 517= 217 people that took less than 10 minutes to get to work using a car, van or truck.

This information does not include the hundreds of students bicycling to and from school every day, nor does this include bicycling for other reasons such as recreational or personal errands. More adequate data collection is needed but even without exact numbers there is extensive ridership potential in the city of Winters, if the right infrastructure and encouragement was provided. Refer to Survey Results for insight into community perspectives on the Winters bicycle system.

**Figure 5:**  
**On The Map Tool**  
**U.S. Census Bureau, Center for Economic Studies**  
**<http://onthemap.ces.census.gov/>**

## Inflow/Outflow Report

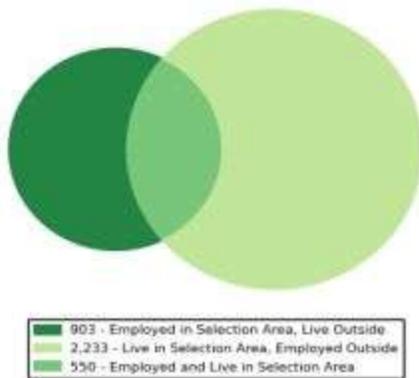


Inflow/Outflow Job Counts in 2010

### Analysis Selection

Note: Overlay arrows do not indicate directionality of worker flow between home and employment locations.

- Employed and Live in Selection Area
- Employed in Selection Area, Live Outside
- Live in Selection Area, Employed Outside



### Inflow/Outflow Job Counts (All Jobs)

	2010	
	Count	Share
Employed in the Selection Area	1,453	100.0%
Employed in the Selection Area but Living Outside	903	62.1%
Employed and Living in the Selection Area	550	37.9%
Living in the Selection Area	2,783	100.0%
Living in the Selection Area but Employed Outside	2,233	80.2%
Living and Employed in the Selection Area	550	19.8%

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2010).

2.4 Bike Safety

Current Bicycle Collision Data

Bicycle versus vehicle accidents were studied from 1998 thru 2010, and analyzed by location. The most notable pattern was that 80% (9) of the accidents occurred on either Railroad Avenue or Grant Avenue. This pattern may be attributed to the high traffic volumes on these streets and the increased speeds in some instances. Winters had 21 accidents between 1998 and 2010, which is an average of just over 1.6 accidents per year. The following figure details the accident locations:

Figure 6:

Reported Bicycle Accidents 1998-2010



2.5 Needs Analysis

A Needs Analysis helps identify the types of improvements needed, justifies expenditures on improvements, and quantifies information needed for several funding sources. The latent ‘need’ for bicycle and pedestrian facilities – versus actual bicyclists and pedestrians – is difficult to quantify. Winters has a small population and area size (6,624 residents and 2.91 square miles of land according to the U.S. Census Bureau 2010). The city is small enough to be easily assessed, subjectively, however, it is more unlikely that a city as small as Winters will end up on state or

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nationwide data bases—an example is the Census Transportation Planning Products database that restricts analysis to cities with a population over 20,000.

### Background

In early 1998, an advisory committee was formed to oversee the completion of the city's first Bikeway System Master Plan. The Plan received full public noticing, was placed on the Planning Commission and City Council agendas, and received review including open comment periods at four public meetings before being adopted on November 3, 1998.

In 2002, city staff updated the Bikeway System Master Plan to reflect bikeway projects that have been completed since 1998. A public hearing on the Bikeway System Master Plan was conducted at the November 19, 2002 City Council meeting. At the same meeting, the City Council approved the update to the Plan and re-affirmed the previously certified and approved Negative Declaration, which was adopted for the Bikeway System Master Plan in 1993. This update builds on the initial Bikeway System Master Plan.

In 2012, city staff once again updated the Bikeway System Master Plan to reflect bikeway projects that have been completed since 2002. Projects were added that coincide with Master Plans such as Putah Creek Master Plan, City of Winters' Complete Streets- Grant Ave. Corridor Plan, and the Morgan Street Area Circulation Study. Projects were prioritized based on connectivity, anticipated use, facility type, and potential safety improvements—in addition to community comments.

A survey was distributed to the community via online and at popular locations in town to assess ridership barriers and opportunities. The update of the plan was presented twice to the Planning Commission (November 27, 2012 & January 22, 2013), twice to City Council (January 15 and February 19) and once to the Chamber of Commerce and Winters Visitor Center.

### Understanding Riders

There are two types of cyclists: those that commute to a particular destination, be it work or play, and those that do it recreationally, and bike for miles upon miles for the scenery. If we want to increase ridership, we must understand the riders.

Bicyclists are typically separated between experienced and casual riders. The U.S. Department of Transportation identifies thresholds of traffic volumes, speeds, and curb lanes where less experienced bicyclists begin to feel uncomfortable. For example, on an arterial with traffic moving between 30 and 40 miles per hour, less experienced (Class B) bicyclists require bike lanes while more experienced bicyclists (Class A) require a 14 or 15 foot wide curb lane.

Casual riders include those who feel less comfortable negotiating traffic. Others such as children and the elderly may have difficulty gauging traffic, responding to changing conditions, or moving rapidly enough to clear intersections. Other bicyclists, experienced or not, may be willing to sacrifice time by avoiding heavily traveled arterials and using quieter side streets. In some cases, casual riders may perceive side streets (or sidewalks) as being safer alternatives than

major through routes, when in fact they may be less safe. Other attributes of the casual bicyclist include shorter distances than the experienced rider and unfamiliarity with many of the rules of the road.

The casual bicyclist will benefit from route markers, bike lanes, wider curb lanes, and educational programs. Casual bicyclists may also benefit from marked routes, which lead to parks, museums, historic districts, and other visitor destinations.

Experienced bicyclists include those who prefer the most direct, through route between origin and destination, and a preference for riding within travel lanes. Experienced bicyclists negotiate streets in much the same manner as motor vehicles, merging across traffic to make left turns, and avoiding bike lanes and shoulders due to gravel and glass. The experienced bicyclist will benefit from wider curb lanes and loop detectors at signals. The experienced bicyclist who is primarily interested in exercise will benefit from loop routes which lead back to the point of origin.

### **2.6 The Recreational and Commuting Biker**

The purpose of reviewing the needs of a recreational or commuter bicyclist is twofold: (a) it is instrumental when planning a system which must serve both user groups and (b) it is useful when attempting to quantify future usage and benefits to justify expenditures of resources.

#### **Recreational**

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

- Recreational bicycling typically falls in to one of three categories: (1) exercise, (2) non-work destination such as a park or shopping, or (3) touring.
- Recreational users range from healthy adults to children to senior citizens. Each group has their own abilities, interests, and needs.
- Directness of route is typically less important than routes with less traffic conflicts, visual interest, shade, protection from wind, moderate gradients, or other features.
- People exercising or touring often (though not always) prefer a loop route rather than having to back-track

#### **Commuter**

Commuter bicyclists range from employees who ride occasionally to work to a child who walks to school. Millions of dollars have been spent attempting to increase the number of people who ride to work or school, with moderate success. Bicycling require shorter commutes, which runs counter to our land use and transportation policies which encourage people to live further and further from where they work. Access to transit helps extend the commute range of cyclists, but transit systems also face an increasingly dispersed live-work pattern which is difficult to serve.

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Despite these facts, Winters has a great potential to increase the number of people who ride to work or school because of (a) the small size of the city, (b) moderate density residential neighborhoods near employment centers, (c) a favorable topography and climate, and (d) a high percentage of work trips that are less than 15 minutes.

Key commuter needs are summarized below.

- Commuter walking or bicycling typically fall in to one of two categories: (1) adult employees, and (2) younger students.
- Commuter trips range from several blocks to 1 or more miles.
- Commuters typically seek the most direct and fastest route available, with regular adult commuters often preferring to ride on arterials rather than side streets.
- Commute periods typically coincide with peak traffic volumes and congestion, increasing the exposure to potential conflicts with vehicles.
- Having a place to safely store bicycles is of paramount importance to all bicycle commuters.
- Major commuter concerns include changes in weather (rain), riding in darkness, personal safety and security.
- Rather than be directed to side streets, most commuting cyclists would prefer to be given bike lanes or wider curb lanes on direct routes.
- Unprotected crosswalks and intersections in general are the primary concerns of all bicycle commuters.
- Many younger students use sidewalks for riding to schools or parks, which is acceptable in areas where pedestrian volumes are low and driveway visibility is high. Where on-street parking and/or landscaping obscures visibility, sidewalk riders may be exposed to a higher incidence of accidents. Older students who consistently ride at speeds over 10 mph should be directed to riding on-street wherever possible.
- Students riding the wrong-way on-street are common and account for many recorded accidents, pointing to the need for education.

A common term used in analyzing the demand or need for bicycle or pedestrian facilities is “mode split”. Mode split refers to the choice of transportation a person selects to move from home to work to shopping to other destinations. One major objective of any bicycle improvement is to increase the “split” or percentage of people who choose to ride rather than drive or be driven. Every saved vehicle trip or vehicle mile represents quantifiable reductions in air pollution.

### **2.7 Key Observations on Existing Bicycling Conditions**

- Winters is an ideal bicycling environment. The small size, climate, and topography mean that virtually all residents are within a few minutes bicycle ride of all destinations, whether they are for work or play.

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- Grant Avenue (S.R. 128) running east-west through the heart of the City is part of a major route used by the bicycling community, especially cyclists from nearby Davis. Many of these cyclists stop in Winters for rest and food. Major routes for bicyclists include a loop with Russell Boulevard and Putah Creek Road in Solano County, westward towards Lake Berryessa, or northward along Railroad Avenue.
- Local bicyclists include experienced adult riders and younger school children. Virtually all destinations within Winters can be reached by bicycle within a ten minute ride, making it the ideal cycling community in many respects.
- The elementary school, intermediate, middle, and the high schools are located such that many students who walk or ride a bicycle must cross either Grant Avenue (S.R. 128) and/or Railroad Avenue. Observations of students also revealed a substantial number of bicyclists riding on the wrong side of the street and crossing major streets at unprotected locations.
- Local streets in Winters such as Baker Street, Edwards Street, Third Street, Fourth Street, and Apricot Avenue generally provide good bicycling alternatives to more heavily traveled roadways.
- Main Street in downtown Winters is already a relatively pedestrian – and bicycle – friendly area, with slower moving and lower traffic volumes. This could be supplemented by other improvements such as providing bike racks and lockers near destinations such as shops, the library, and City Hall.
- The Winters Joint Unified School District and the Winters Police Department have had a history of conducting bicycle education workshops for school children. The last event held was a bicycle rodeo in 2008. Since that time, no other formal bicycle safety or education programs have been held in Winters.
- Bus routes are an insufficient mode of transportation due to the limited availability and time constraints.

### 2.8 **Opportunities and Constraints**

Information on opportunities and constraints for bicyclists has come from a variety of sources, including field observations. Many general and site specific comments have been collected, which help to form an idea of the type of system and specific improvements that will be required. Comments can generally be summarized into the following statements:

#### **Opportunities**

- Quieter local streets offer an alternative to using Grant Avenue (S.R. 128) for most bicyclists.
- As a smaller city at the cross roads of several transportation corridors—including the major route to Lake Berryessa—the city has the opportunity to attract visitors to stop and visit the city en route to other destinations.
- The agricultural surroundings are close to most neighborhoods, and offer the excitement of off-road bicycling and hiking and views of Winters and its surroundings.

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- The parks and Community Center serves as major attractors to residents, especially children who have the opportunity to ride their bicycles to events from most neighborhoods.
- Proximity to all commercial, residential, and recreational venues make cycling an ideal mode of transportation.

### Constraints

- There is a lack of adequate short and long-term secure bicycle parking
- The S.R. 128 over-crossing of I-505, while not technically in Winters, is a major constraint for any bicyclist entering or leaving Winters. The over-crossing is narrow and does not provide adequate width for bicyclists.
- The Railroad Avenue vehicle bridge, which crosses Putah Creek, is also a narrow structure requiring bicyclists to share travel lanes with vehicles.
- Like streets in all cities and towns, there is some debris and gravel thrown by vehicles onto the right side of streets occasionally forcing bicyclists to ride in travel lanes.
- Another common phenomenon in Winters is younger bicyclists riding on the wrong side of the road, crossing at unmarked crossings, or riding at higher speeds on sidewalks. This typically points to the need to enhance education and enforcement.

These lists represent a summary and sample of opportunities and constraints in Winters, and should be updated as part of future plan revisions.

### **SECTION 3: PLAN DEVELOPMENT**

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#### **3.1 Consistency with Existing Plans**

As an element of the General Plan, the Bikeway System Master Plan has the comprehensive scope and jurisdictional authority required to coordinate and guide the provision of all Bikeway-related plans, programs, and projects. Many current planning efforts provide recommendations regarding one element or aspect of bikeway networks; the task of the Winters Bikeway System Master Plan is to ensure compatibility of all these blueprints, while attending to planning for areas of the city not already targeted by other studies. This Bikeway System Master Plan is consistent with the bike plans of the Sacramento Area Council of Governments and the Yolo-Solano Air Quality Management District. The studies or planning efforts listed below have been reviewed and consulted, studied for consistency, and where appropriate, folded into the Winters Bikeway System Master Plan:

##### **Local**

##### [Winters General Plan Policy Document \(1992 original w/ Housing Element Update 2002\)](#)

Winters' General Plan was recently amended to extend the General Plan's horizon year from 2010 to 2018 and adopted the 2008-2013 Housing Element Update. The Circulation Plan element identifies Grant Avenue and Railroad Avenue as arterial streets and points out the interconnecting streets that, if developed thoughtfully, can offer residents a safer alternative to using an automobile. In addition, aesthetically pleasing bike routes can encourage residents to bike to downtown and other local destinations—rather than using an automobile.

The General Plan emphasizes efficiency in land use and encourages pedestrian convenience and discourages the use of an automobile as a form of transportation. The Winters Bikeway System Master Plan is consistent with the goals of the General Plan.

##### [Putah Creek Nature Park Conceptual Master Plan \(2008\)](#)

This Plan identifies a paved 10-foot wide multi-use trail along the north side of Putah Creek between Railroad Street and I-505 to the east within the 100 foot setback limit from the creek; the trail's primary focus is pedestrians, but it will accommodate bicyclists as well. The trail will have connections into Winters at various locations including Creekside Way and East Street. The Plan also identifies the conversion of the historic Southern Pacific Railroad Trestle into a bikeway/pedestrian facility.

##### [Grant Avenue/S.R. 128/Russell Blvd. Complete Streets Concept Plan](#)

This Plan incorporates walkability and bikeability into one of Winters' main corridors. As discovered via community input: traffic calming mechanisms, travel lanes for bicyclists, pedestrians, and automobiles, landscape improvements, and roundabouts are encouraged in order to improve the safety and ease of travel for all roadway users. The Plan seeks to improve the overall safety, access, and mobility of the corridor by outlying a Plan that limits automobile

## Winters Bikeway System Master Plan

travel lanes, supports Class I and Class II bicycle lanes and bicycle facilities and provides aesthetically pleasing landscape and design.

### [Winters Design Guidelines \(1999\)](#)

This report encourages interconnectivity between neighborhoods for pedestrians and cyclists. It also encourages that bikeways and pedestrian paths should be incorporated throughout new residential neighborhoods to connect residential areas with schools, parks, neighborhood-serving commercial areas and transit stops. Relevant to this updated Bikeway System Master Plan is that the Winters Design Guidelines support clearly marked bicycle lanes on Grant Avenue in order to facilitate safer travel for pedestrians, bicyclists and all modes of transportation that use this busy corridor.

### [City of Winters Grant Avenue Design Guidelines \(2011\)](#)

This design guide encourages the preservation of Winters' small town charm and identifies community expectations that the development of the Grant Avenue Business and Commercial District continue to reflect the character of the community through attentive architectural, landscape and site design.

## County

### [County of Yolo Bikeway Transportation Plan \(Update 2011\)](#)

This Plan is prepared by the Yolo County Transportation Advisory Committee and is in accordance with the California Streets and Highways Code Section 891.2 and is intended to identify ways to enhance and expand the existing network of bicycle connections through efficiency and safety considerations. This plan identifies a future high priority Class II bike lane along Russell Boulevard (County Road 32) leading from Davis to Winters (or more precisely, from the County Road 93A junction to I-505). A potential Class III bike route is identified on Grant Avenue (S.R. 128) leading from Winters towards Lake Berryessa. A Class III bike route is identified leading north from Winters on County Road 29. This plan also encourages major end-of-trip developments such as bicycle parking, transport or clothes changing and storage facilities that cater to the needs of bicyclists. This is notably important for Winters since it is a prime stopping location for recreational bikers from Davis or elsewhere bicycling to recreational destinations such as Lake Berryessa. The plan discusses criteria for bicycle parking facilities and promotes coordination between county bus services and bicycle parking facilities—all taken into consideration within the Winters Bikeway System Master Plan.

## Regional

### [Sacramento Metropolitan Transportation Plan/ Sustainable Communities Strategy 2035. Sacramento Area Council of Governments \(2012\)](#)

This Plan integrates land use and transportation planning according to the regional growth pattern and land use policies to envision an equitable and inclusive transportation system. The

Sacramento Area Council of Governments strongly encourages complete streets and the development of more bicycle lanes and increased ease of access to pedestrian and bicycle friendly environments.

### **List of Relevant Studies- Environmental Clearance**

#### Winters I-505/ Grant Avenue Planning Area Traffic Analysis (March 2012)

This study identifies potential transportation impacts of modifying land use designations. “The purpose of this study is to provide an evaluation of potential development over the next 10 to 20 years so that transportation infrastructure needs can be identified and an environmental clearance can be provided.” The land use forecasts that are incorporated in the model and evaluated for cumulative conditions represent approximately 20 years of development, and are consistent with the 2035 regional forecasts developed by SACOG for the Metropolitan Plan/ Sustainable Communities Strategy.

*\*\*The projects in this plan are part of a larger vision for the Grant Avenue corridor and a list of complete studies, Environmental Impact Reports, and other environmental clearance information can be found on the city of Winters website.\*\**

### **3.2 Public Involvement/ Community Outreach**

This report is a compilation of community outreach done through the process of developing the Grant Ave/ SR 128 Complete Streets Concept Plan (Grant Ave/ SR 128 CSCP) Putah Creek Nature Park Master Plan (PCNPMP), a month-long community survey, and an open 30 day public comment period.

The Grant Ave/ SR 128 CSCP had extensive community outreach that included a series of stakeholder interviews with key decision makers and business owners along the corridor. There were also two rounds of public workshops to provide an opportunity for input and comment from the public. The planning process began in early 2010 when the project team, comprised of MIG, Inc., Caltrans, the City of Winters and Yolo County met to review existing corridor conditions and discuss previous studies and planning efforts. MIG developed a Public Involvement Plan that included outreach efforts like Stakeholder interviews and community workshops. A presentation was also made to the Winters Hispanic Advisory Committee and Community Workshops followed in February 2010 and another round on the 6<sup>th</sup> of May, 2010. Further detail can be found at:

[http://www.cityofwinters.org/community\\_dev/pdf/2011\\_Forms/WintersReport\\_FINAL.pdf](http://www.cityofwinters.org/community_dev/pdf/2011_Forms/WintersReport_FINAL.pdf)

The Putah Creek Nature Park Master Plan addresses the community’s request for a cycling course for recreational use. To support this, the Bicycle System Master Plan’s survey results indicated “exercise or recreational activity” as a main reason for using a bicycle. Public outreach meetings were held and the Winters Putah Creek Committee was formed as part of the development of the plan. The WPCC continues to meet and those meeting are open to the public.

### Survey Results

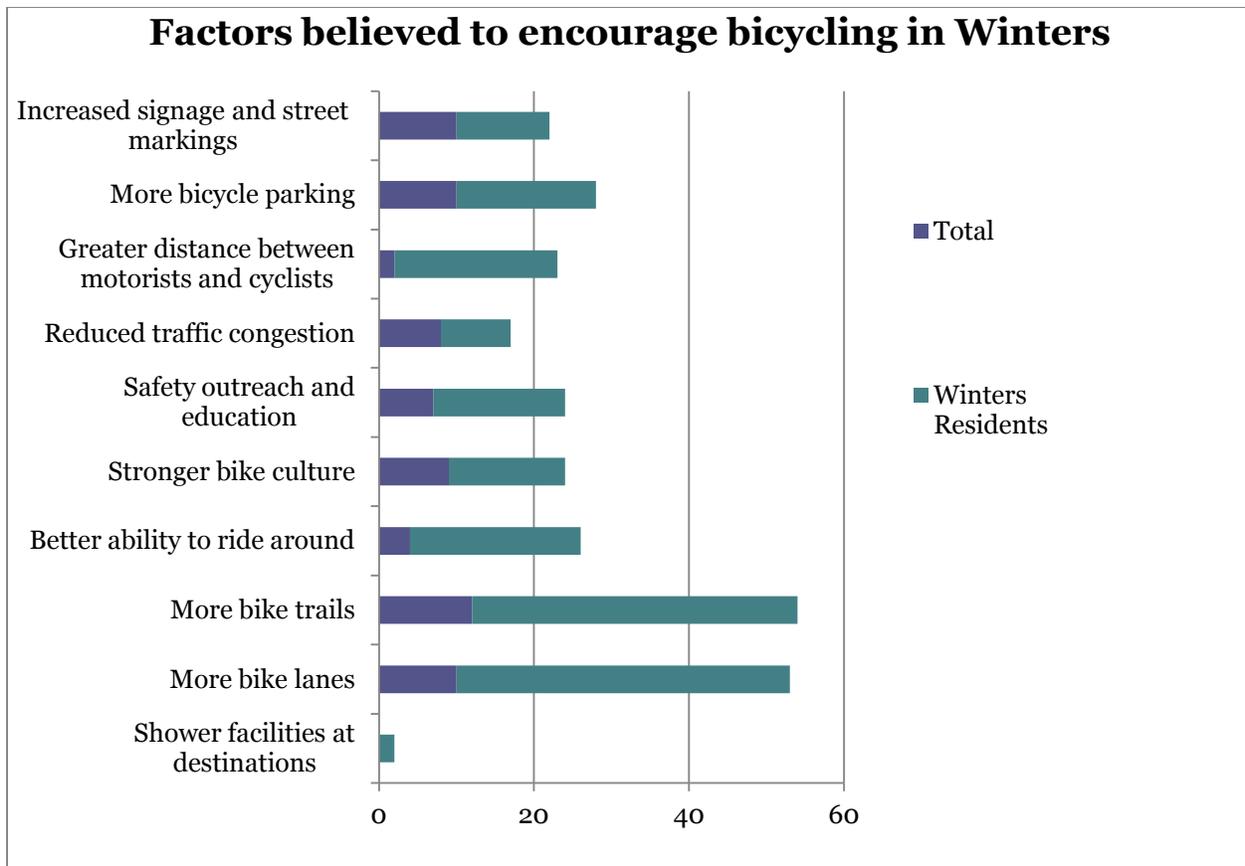
The goal of the survey was to assess the current and future expectations and hopes of the Winters community. The survey assessed mode of travel and frequency of mode use, constraints to current bikeway system, and opportunities for improvement—from the perspective of the community member. There was ample space for residents to express their unique concerns and to offer perspectives for the development of the bikeway system. Surveys were distributed online, on the city of Winters website as well as in hard copies at popular locations in the city, such as City Hall, Steady Eddy's, Winters Library, and Velo City bicycle shop.

The surveys were collected mid-January and three groups of surveyors were identified: Residents of Winters, non-Residents, and those that didn't clearly identify with a location. Those that did not reside in Winters were mostly from Davis and there was a good number from nearby communities such as Vacaville, Sacramento, Martinez, and Berkeley.

In total there were 75 surveys collected, 57 were residents of Winters, 12 from nearby communities, and six were unidentified. Most of those surveyed were in the middle aged range of 35 to 54 and the gender ratio was even with one more male (37 and 38 respectively). 93% owned a bicycle and of the 57 Winters' residents, 47% (27) used their bicycle 2 or more times per week. 79% of Winters residents rode their bicycle for exercise or recreational purposes and personal errands was the second most reason they rode their bicycle.

Weather and safety of travel routes tied for the response to a question on the dependant variables for choosing to ride a bicycle or not. The safety of bicycling around the city of Winters is a reoccurring theme throughout the survey and especially within the free response questions.

The ultimate goal of the survey was to identify opportunities to improve bikeability around the city of Winters. The following graph shows the responses to the question "Which of the following factors do you believe will most encourage bicycling in the city of Winters?"



Bike trails and lanes were identified most by Winters residents as opportunities for improvement. In addition, the respondents were given extra space to identify anything particularly important or that was not mentioned. Multiple responses identified Grant Avenue as a safety concern, especially for children getting to and from school. Education and enforcement were also of major concern.

The final question was designed to elicit responses that show current strengths and weaknesses of the bicycling system in Winters. Safety, education and infrastructure were of biggest concerns, particularly the crossing of Grant Avenue. Many expressed a desire to have a more involved **local** bicycling community.

The following is a sample of quotes gathered from the surveys:

“Great place to cycle, but the quality of the roads is not very good”

“Many of these people are making Winters a destination location, which is bringing substantial business dollars into our merchants”

“Winters is a great small town. Using bikes as transportation can help foster the sense of community that makes Winters so special. One small example would be a functional system of bike lanes, trails, and outreach to allow students that live anywhere in town to safely make trips to and from school by bike. This would cut down the traffic on Grant Ave that backs up in the mornings and take advantage of Winters flat topography and great weather to provide a healthy alternative for students while reducing traffic congestion for everyone”

## Winters Bikeway System Master Plan

### Specific recommendations:

- Start a Safe Routes to School program
- Increase education for bicyclists as well as motorists and pedestrians
- Bicycle parking at the Post Office
- Slower car speeds
- Improve crossing of Grant to Town and Country Market
- Encourage bicycle use for short trips
- Increase miles of recreational trails
- Improve connections between Valley Oak and downtown
- Better bike lanes on Grant
- Increase law enforcement

After the survey was collected, a public comment period was held for thirty days in which residents were able to access the document online as well as view printed copies at various locations around town, including City Hall. The comments from the community are addressed in the Bicycle System Master Plan.

### **SECTION 4: GOALS AND OBJECTIVES**

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The following goals and objectives are intended to guide bikeway planning, design, and implementation. This section was developed to provide specific direction for implementing the Bikeway System Master Plan. These goals will help set tangible goals with measurable objectives and offer complementary policies to guide the implementation of the Bikeway System Master Plan. Over time, the Plan seeks to provide for and encourage the development of an integrated system of bikeway facilities that allow for safety and convenience for all its users. In addition, these goals help to provide better air quality, efficient use of energy resources, reduced traffic congestion, and improved public health.

#### **Goal I—Planning & Guidance**

Plan for the development of bikeway facilities and programs so they may serve as a viable alternative to the automobile.

#### **Objective I**

*Develop a tool to plan, design, and implement a bikeway system in Winters and ensure maintenance of both existing and new bicycling facilities.*

#### **Implementation Measures**

- 1.1 Develop and adopt a Bikeway System Master Plan which identifies existing and future needs, and provides specific recommendations for facilities and programs over the next 6 years.
- 1.2 Update the Plan regularly (every two to five years, as needed).
- 1.3 Ensure that the Plan is consistent with all existing city, regional, state and federal policy documents, and encourage consistency between the Plan and other General Plan elements.
- 1.4 Develop detailed implementation information on each recommended segment, including length, classification, adjacent traffic volumes and speeds, environmental impact, activity centers served, cost, and overall feasibility.
- 1.5 Develop prototype cross sections and plans for the design of bikeways that meet state and federal standards.
- 1.6 Require that all bikeways conform to design standards contained in the latest version of the American Association of Highway and Transportation Officials (AASHTO), the Highway Design Manual, Chapter 1000: Bikeway Planning and Design, Caltrans, or unless otherwise established by the City of Winters.
- 1.7 Use and supplement design guidelines to outline development standards for bike lanes paths to encourage a safe and inviting environment.

- 1.8 Identify the top five (5) bikeway improvements to be completed in the short to mid-term (primary system) based on a variety of objective and subjective criteria, including number of activity centers served, closure of critical gaps, immediate safety hazards, existing bikeway use, and input from the public and staff.

### **Goal II—Community Involvement**

Involve the Community in the planning and implementation process of the Bikeway System.

#### **Objective II**

*Encourage public participation through local coordination with City Staff*

#### **Implementation Measures**

- 2.1 Identify a staff member whose responsibility is to (a) provide support to the public with regards to bicycle and pedestrian interests, (b) act as a liaison to the city, (c) act as a liaison to local bicyclists, the media, and the community in general, (d) complete funding applications, and (e) provide inter-departmental coordination.
- 2.2 Engage with local stakeholders through public workshops and public commenting periods on bike plan-related documents, ordinances, design guidelines, and programs.

### **Goal III—Encouragement**

Encourage a community culture that supports the use of bicycling as a major mode of transportation throughout the city.

#### **Objective III**

*In addition to encouraging a bicycling community, the city should encourage bicycling by providing the appropriate bicycling infrastructure such as parking, signage, and lane markings.*

#### **Implementation Measures**

- 3.1 Develop and update a bikeway map for public distribution that shows existing and recommended bikeway routes.
- 3.2 Sponsor annual bikeway, running, and hiking events such as Bike to Work Day and adult safety courses in conjunction with regional efforts.
- 3.3 Promote use of bikeways as safe and convenient alternative mode of transportation.
- 3.4 Where appropriate, install traffic calming devices such as traffic roundabouts (Walnut Lane/Grant Avenue and other appropriate locations), channelization, pedestrian refuge islands, T-intersections, modified design for travel lanes, and reduction in street widths

## Winters Bikeway System Master Plan

where significant through traffic impacts on low-density residential areas. These devices should only be installed where desired by residents and where demonstrated need exists and where compatible with access needs of emergency vehicles. Installation priority should consider equity between different neighborhoods.

- 3.5 Where appropriate, consider the addition of bicycle facilities such as storage, parking, or bike stations.
- 3.6 The city will create incentives for use of alternative modes of transportation during review of new development projects.

### **Goal IV—Integration & Connectivity**

Establish a well-connected bikeways system that is well-integrated with other modes of transportation and other alternative modes of transportation.

#### **Objective IV**

*Support multi-modal transportation by integrating bicycling infrastructure into City's existing transportation network*

#### **Implementation Measures**

- 4.1 Encourage development concepts (such as mixed use projects) that have as a goal the reduction of the dependency of the automobile for short commute, shopping, and recreational trips.
- 4.2 Consider opportunities for including bikeway lanes on collectors where width of the street, traffic volumes, and service to major activity centers are appropriate.
- 4.3 Create connections between bike lanes, pedestrian nodes, and other transportation nodes.
- 4.4 Develop a commuter system which provides direct routes between residential neighborhoods and regional employment centers, multi-modal terminals and schools.
- 4.5 Ensure that the citywide system serves all multi-modal facilities in Winters.
- 4.6 Develop adequate and appropriately located bikeway parking to meet demand.
- 4.7 Consider requiring transit fleets to be equipped with bike racks or bike storage capacity

### **Goal V—Maintenance & Improvement of Existing System**

Maximize efficient use of existing resources in Winters to improve safety and security of walking and bicycling.

#### **Objective V**

Improve the City’s existing bicycling network to address gaps in interregional and local bicycle and pedestrian routes.

### **Implementation Measures**

- 5.1 Fix barriers that are potentially dangerous or inconvenient to the pedestrian or bicyclist.
- 5.2 Identify existing and proposed bike paths, lanes, and routes, and develop a citywide system to maximize use of extent feasible
- 5.3 Identify existing bikeway education programs and target future expansion of bicycling infrastructure
- 5.4 Encourage commercial development to provide bike racks near entrances for employees and customers
- 5.5 Develop a bikeway network which balances the need for directness with concerns for safety and user convenience. Where needed, develop a dual system which serves both the experienced and inexperienced bicyclist, and separates bicyclists, pedestrians, and other recreational users.
- 5.6 Work with local and regional transit agencies to install bike lockers and racks where possible, and to maintain bike carriers on buses.
- 5.7 Improve the existing system to account for barriers to fill the gaps between interregional and local bicycle and pedestrian routes.
- 5.8 Encourage Caltrans to provide pedestrian/bikeway crossings at appropriate locations across Grant Avenue (S.R. 128). In cases where new development would benefit from such crossings, the private development may be requested/required to participate in the cost of the crossing.

### **Goal VI—Quality of Life**

Create a convenient and safe bikeway system that aims to reduce vehicle congestion, improve air quality and improve individual physical fitness.

#### **Objective VI**

*Develop a citywide bikeway system which meets the needs of commuter and recreational users through strategic facility placement and upkeep of existing and future bicycle facilities that encourages bicycling and walking as the main modes of transportation.*

### **Implementation Measures**

- 6.1 Encourage the use of existing natural and manmade corridors such as creeks, railroad corridors, and other corridors for future bike path alignments.
- 6.2 Develop a recreational system which uses lower traffic volume streets, off-street bike paths, and serves regional historic and natural destinations
- 6.3 Develop a citywide system that is no further than one (1) mile from any residential neighborhood in Winters, and provides opportunities for local connections to the citywide system

### **Goal VII—Safety and Education**

#### **Objective VII**

*To provide outreach and safety education to the community.*

#### **Implementation Measures**

- 7.1 Monitor bikeway related accident levels annually, and target a 40-50% reduction on a per capita basis over the next twenty (20) years.
- 7.2 Develop a comprehensive bikeway safety education program that is taught to all school children in Winters.
- 7.3 Incorporate bikeway safety curriculum into existing motorist education and training
- 7.4 Local streets shall be posted at a maximum speed of 25 miles per hour, except where a lower speed is dictated by safety and allowable by law.
- 7.5 Coordinate with the Winters Police Department to determine strategies of education and enforcement.
- 7.6 Develop a system for identifying, evaluating, reporting and responding to maintenance and safety problems on the existing bikeway system.
- 7.7 Develop education and maintenance programs which may be adopted by local jurisdictions.

### **Goal VIII—Implementation**

#### **Objective VIII**

*To follow through and complete the projects listed in this Master Plan, in a timely manner.*

### **Implementation Measures**

- 8.1 Examine the adopted land use elements to determine areas of potential growth and development in the city. Be aware of development projects that are submitted for review and examine possible impacts these developments might have along existing and proposed bikeway corridors, and require dedication of land and development of project when feasible.
- 8.2 Develop policies for new developments which ensure that the needs of non-motorized users are incorporated into new subdivisions, including providing access points to existing and proposed bikeway facilities, on-street bikeway facilities for bicyclists, and proper roadway crossings where new streets will cross existing and proposed bikeways.
- 8.3 Travel Demand Management (TDM) programs for employment sites of more than 20 employees may be considered as a condition of project approval to mitigate traffic impacts. Voluntary TDM programs for all employers should be encouraged.
- 8.4 Require all new developments to provide curb and sidewalks on both sides of the street, except where prohibited by topography or safety considerations. Attention to sidewalk and parkway improvements should be prioritized in the Capital Improvement Program.
- 8.5 Enforce existing requirements for property owners to properly maintain sidewalks on their property.

### **Goal IX—Funding**

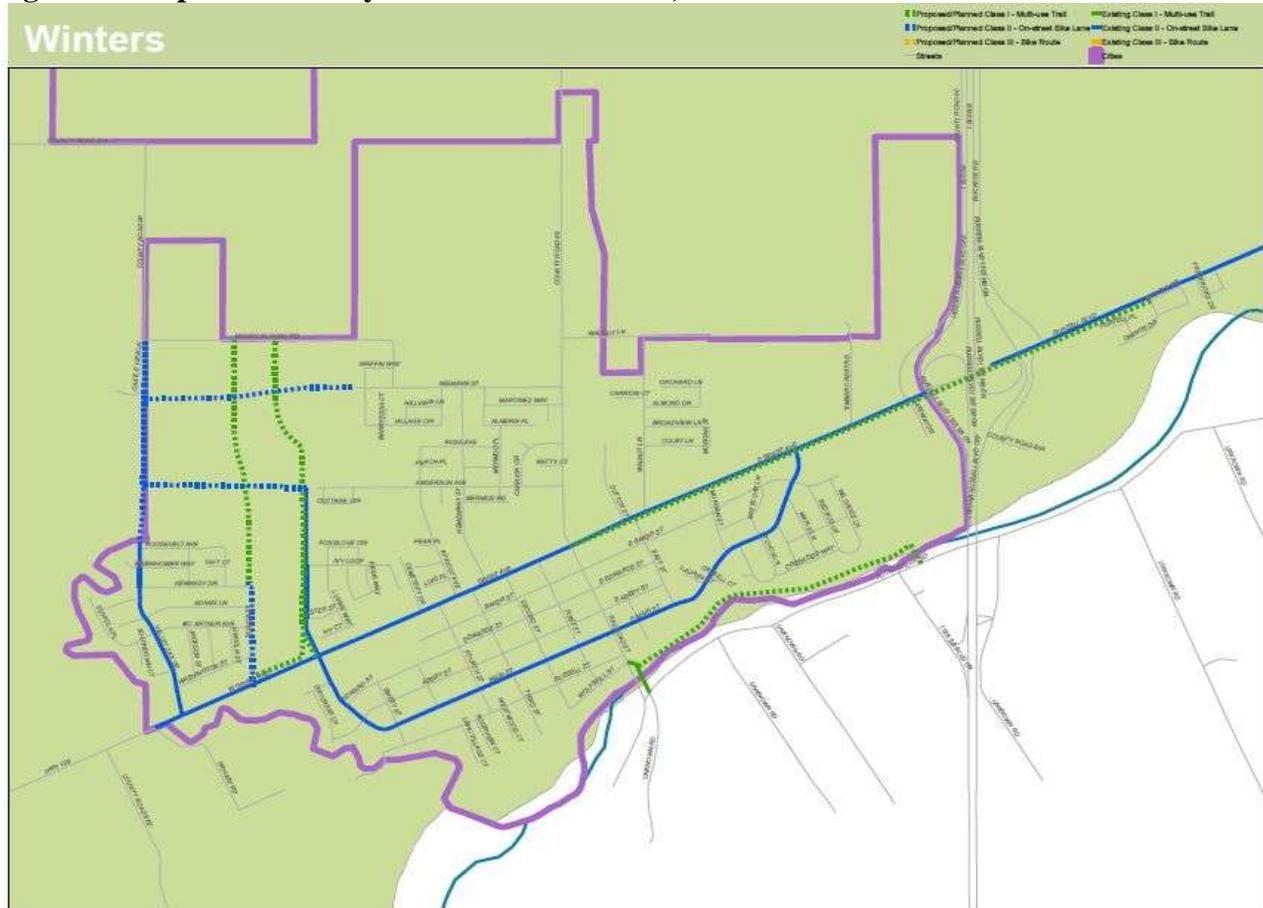
- 9.1 Identify current regional, state, and federal funding programs, along with specific funding requirements and deadlines.
- 9.2 Encourage multi-jurisdictional funding applications.
- 9.3 Develop a prioritized list of improvements along with detailed cost estimates, and identify appropriate funding sources for each proposal.
- 9.4 Include bikeway improvements in the City's Capital Improvement Plans and Master Plans.
- 9.5 Recommend bike improvements or a donation into a transportation improvement fund for all major residential development projects with 100 new dwelling units or more.

## SECTION 5: PROPOSED BIKEWAY PROJECTS AND SYSTEM

### 5.1 Key Objectives of the Bicycle Network

The recommended bikeway system consists of a system of routes connecting residential neighborhoods in Winters with the schools, parks, Community Center, library, downtown, and other destinations. The proposed system and existing bicycle network are shown in Figure 7.

Figure 7: Proposed Bikeway Network for Winters, CA



The top five (5) fundable projects were selected by staff based on the orientation of funding programs and the planning criteria outlined in the Master Plan (coverage, connectivity, user groups, implementation, local input, funding sources). These projects, in priority order, are:

- 1) **SR 128 from East Main Street to I-505 Interchange—Class I/II bike lanes and pedestrian facilities**
- 2) **Bike/ Pedestrian Upgrade—SR 128/ Grant Ave. from Railroad Avenue to Main Street**
- 3) **SR 128 from the I-505 Interchange to El Rio Villa-Yolo Housing**
- 4) **Class I Trail—Putah Creek Pedestrian and Bike Bridge**
- 5) **Class I—West Section of Main Street**

These five projects were chosen as a priority because they meet the immediate needs of Winters by providing connectivity to the city's activity centers and larger community. Each project is presented on its own project sheet, which provides key information on the proposal including cost and location. The project sheets are designed to be used as a direct resource and addendum to funding applications.

### **1) Bike/Pedestrian Upgrade—SR128 from East Main Street to I-505 Interchange—Class I/II bike lanes and pedestrian facilities**

This section of State Route 128 between East Main Street and the I-505 Interchange is posted for vehicles traveling at 45 mph. The roadway is currently two lanes but is expected to be widened to four lanes and is part of the Complete Streets Concept Plan. This route is seen as the main entrance into Winters, with traffic entering the City from the east on SR128 and from north and south bound I-505. Additionally, traffic flows through this corridor to access the recreation area of Lake Berryessa. Bicyclists regularly use this route although there is not a defined bike lane. Bicyclists include those who are residents of Yolo Housing, just east of the I-505 interchange and recreational cyclists coming into town from Davis. To address the heavy and multiple types of usage of this section of SR128, the Complete Streets Concept Plan calls for the construction of both Class I and Class II Bicycle and Pedestrian Facilities.

Segment Distance: **about 0.46 Miles**

Estimated Cost: **\$50,000**

### **2) Bike/Pedestrian Upgrade—SR128/Grant Avenue from Railroad Avenue to East Main Street**

This section of State Route 128 between Railroad Avenue and the I-505 Interchange is posted for vehicles traveling at 40 mph from East Main and transitioning down to 30 mph just before the traffic signal at Railroad Avenue and SR128. The roadway is planned to stay two lanes as part of the Complete Streets Concept Plan. This route brings people to one of the main intersections in Winters with traffic entering the City from the east and west on SR128 and using Railroad Avenue to access the downtown. Winters High School, the Bobbie Greenwood Pool and Winters Community Library are located near the intersection of Railroad Avenue and SR128. Bicyclists regularly use this route to access the downtown, high school, community swimming pool and community library, along with the only grocery store in town and medical facilities that are located along this corridor. This corridor is also the site of a proposed retail development that will generate additional bicycle traffic and require supporting infrastructure. Bicyclists using this corridor include citizens of Winters and the residents of Yolo Housing, as well, and recreational cyclists coming into town from Davis. The Complete Streets Concept Plan calls for the construction of both Class I and Class II Bicycle and Pedestrian Facilities along this corridor.

Segment Distance: **About 0.6 Miles**

Estimated Cost: **\$60,000**

### 3) Bike/Pedestrian Upgrade- SR128 from the I-505 Interchange to El Rio Villa—Yolo Housing—Bike and Pedestrian Facilities

Although this area is located outside of Winters' city limits, upgrading these bicycling facilities is a high priority. This interchange is a major access point into the City of Winters for residents of the Yolo Housing Authority's El Rio Villa complex. Bike/Pedestrian upgrades are necessary to provide safe access for people commuting into the City, as well as for recreational cyclists riding along SR 128.

Segment Distance: **About 0.7 Miles**

Estimated Cost: **\$560,000**

### 4) Class I Trail—Putah Creek Pedestrian and Bike Bridge

Constructing a trail and bike bridge along scenic Putah Creek between I-505 and Railroad Avenue benefits both Winters residents and visitors. This trail and bridge would further extend an existing trail into a two mile loop and help provide a safe recreation area. The trail will also assist residents of the city's south east neighborhoods access the downtown core area by bike or walking without traveling on or crossing major streets. Long term expansion goals for this trail consists of expansion to the El Rio Villa housing complex.

Estimated Cost: **\$850,000**

### 5) Class I—West Section of Main Street

The west section of Main Street has seen the most recent residential development within the City and it is expected that it will be the location of the next major residential development. The Public Safety Facility is located along this corridor and a sports and linear park are also planned. As future development occur, this section of Main Street will continue past Winters Middle School (WMS), the Shirley Rominger Intermediate School (SRIS) through to Neimann Street and beyond to eventually become part of the Main Street loop in the City. Extending the western portion of Main Street and adding a Class I bicycle path will allow residents to access the Public Safety Facility, the future park and playfields and the two schools safely. While WMS and SRIS are not only used during the school day, they serve as the site of many afterschool and weekend programs.

Segment Distance: **About 0.6 Miles**

Estimated Cost: **\$550,000**

## 5.2 Criteria for Bicycle Route Selection and Proposed Level of Improvement

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

There is an established methodology for selecting a bikeway system for any community. The primary method is to receive input from the local bicycling community and local staff who are familiar with the best routes and existing constraints and opportunities. Input can be received through a variety of means, but typically is through the public workshop format. Surveys of bicyclists and the community as a whole can also serve a valuable role in this process as well.

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

1. Existing Bicycling Patterns
  - a. Connectivity
2. Traffic volumes and travel speeds
3. Amount of side friction (driveways, side streets)
4. Curb-to-curb width
5. Pavement condition
6. Access from residential areas
7. Number of destinations served
  - a. Schools
  - b. Parks
  - c. Employment centers
  - d. Multi-modal terminals
8. Topography
9. Integration into the regional system
10. Adjacent land use
11. On-street parking
12. Accident data and safety concerns
13. Existing bottlenecks or constraints
14. Existing opportunities such as planned roadway improvements

The Winters bikeway system was relatively easy to develop because of the small size of the community, and the street grid pattern which offered several distinct through corridors which connected residential areas with activity centers such as downtown, schools, and parks. The bikeway plan is also aided through subdivision planning, which incorporates bike lanes into its circulation network, and the Complete Streets Plan which addresses key bike and pedestrian needs along the city's busiest corridor.

Once a bikeway system has been identified, the greatest challenge is to identify the segments that will offer the greatest benefit to bicyclists in the next five years. Aside from the criteria used in developing the system as a whole, selection of these top projects is based on (a) cost and construction feasibility given existing traffic, safety, and environmental constraints, (b) need and benefit, and (c) strength of the project as measured by specific funding criteria.

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

**Table 3:  
SACOG Project List for Winters, CA**

Project Type	Project Location	Segment	Existing Plan	Est. Cost
Class I Trail	Yolo County/City of Winters	From Yolo County Housing authority into the City of Winters- class I pedestrian/bicycle facility to provide connectivity		TBD
Pedestrian Upgrade	Grant Avenue. (SR 128) /Morgan St. Intersection	Pedestrian circulation & safety improvements	Morgan Street Area Circulation Study	\$250,000
Pedestrian Upgrade	Winters	New sidewalks on: Edwards St., Grant Ave., & Hemenway St.		\$188,506
Pedestrian Upgrade	Winters	Pedestrian improvements at multiple intersections: Railroad Ave./Main St. Railroad Ave./Abbey St. E. Main St./Elliot St. Main St./First St. Main St./Second St.	City of Winters Downtown Master Plan	\$500,000
Class I Trail	Winters	Putah Creek Pedestrian and Bike Bridge	Putah Creek Park Master Plan	\$850,000
Pedestrian Upgrade	Winters	Railroad Avenue to East Main Street	City of Winters Complete Streets- Grant Ave. Corridor Plan	\$600,000
Bike/ Pedestrian Upgrade	Winters	SR 128 from East Main Street to I-505 Interchange- Class I/II bike lanes and pedestrian facilities.	City of Winters Complete Streets- Grant Ave. Corridor Plan	TBD
Bike/ Pedestrian Upgrade	Winters	SR 128/Grant Ave from Railroad Ave. to East Main Street- Sidewalk/Class I/II Bike Improvements	City of Winters Complete Streets- Grant Ave. Corridor Plan	TBD
Bike/ Pedestrian Upgrade	Winters	SR 128 from the I-505 Interchange to El Rio Villa-Yolo Housing- Bike and Pedestrian Facilities	City of Winters Complete Streets- Grant Ave. Corridor Plan	TBD
Pedestrian Upgrade	Winters	Roundabout at Walnut Ln. and other locations and Pedestrian Facilities	City of Winters Complete Streets- Grant Ave. Corridor Plan	\$550,000
Class I Trail	Winters	West section of Main Street	City of Winters Grant Ave Corridor Plan	\$550,000
<b>TOTAL</b> (does not reflect those projects with costs to be determined)				<b>\$3,988,506</b>

### 5.3 Bicycle Parking and Other Support Facilities

While bike racks are provided at local schools in Winters, the rest of the city lacks reliable, safe and secure bicycle parking. Concern of theft or vandalism is a major impediment to bicycle riding. To encourage people to ride their bicycle for transportation, the city needs to make high quality bike parking readily available.

High quality bicycle parking facilities offer at least two points of contact to secure a bike and prevent it from tipping over. Bicycle parking may consist of standard bike racks, covered lockers, and corrals.

## Winters Bikeway System Master Plan

The City of Winters should look to improve the quality and quantity of bicycle parking facilities as a strategy to improve bicycle ridership. The following actions and standards are possible ways to improve the availability of bicycle parking in the city.

### **Standard 1:**

Bike racks and lockers should be provided at all public destinations, including the bus stops, community center, parks, schools, and City Hall. All bicycle parking should be in a safe, secure, covered area (if possible). Commuter locations should provide secure indoor parking, covered bicycle corrals, or bicycle lockers. A program to fund and install these facilities should be started immediately as a joint-agency project in Winters .

### **Standard 2:**

A program to ensure the availability of bicycle corrals at all elementary, intermediate, middle, and high schools in Winters should be undertaken. These simple enclosed facilities are locked from the beginning to the end of school, and address the theft and vandalism concerns of students.

### **Multi-modal Facilities**

Yolo Bus, which provides bus service to Yolo County cities and communities, has a number of bicycle carriers on its buses. Winters is served by Yolo Bus every day and the buses that travel to the City frequently contain bicycle carriers. No new facilities are planned at this time.

## SECTION 6: BICYCLE FACILITY DESIGN GUIDELINES

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### 6.1 Design and Performance Standards

This section provides detail on the recommended design and operating standards for the Winters Bikeway System, along with implementation guidelines for on-street and off-street facilities.

#### **Bicycle Design Standards and Classifications**

National design standards for bikeways have been developed by the American Association of Highway and Transportation Officials (AASHTO) and the California Department of Transportation (Caltrans). The Caltrans *Highway Design Manual, Chapter 1000: Bikeway Planning and Design* serves as the official design standard for all bicycle facilities in California. Design standards in Chapter 1000 fall into two categories, mandatory and advisory. Caltrans advises that all standards in Chapter 1000 be followed, which also provides a measure of design immunity to the city. Not all possible design options are shown in Chapter 1000. For example, intersections, ramp entrances, rural roads and a variety of pathway locations are not specified in the Caltrans *Highway Design Manual*. The National Association of City Transportation Officials (NACTO) in 2011 came out with the *Urban Bikeway Design Guide* as a guidance tool for non-standard bicycle treatments. Although this guide has not been formally adopted, many cities use it as supplementary information to innovative bicycle infrastructure. It is possible to receive an experimental design permit from the Federal Highway Administration to install things not necessarily mentioned in the Federal Highway Association's *Manual on Uniform Traffic Control Devices*. More information can be found at:

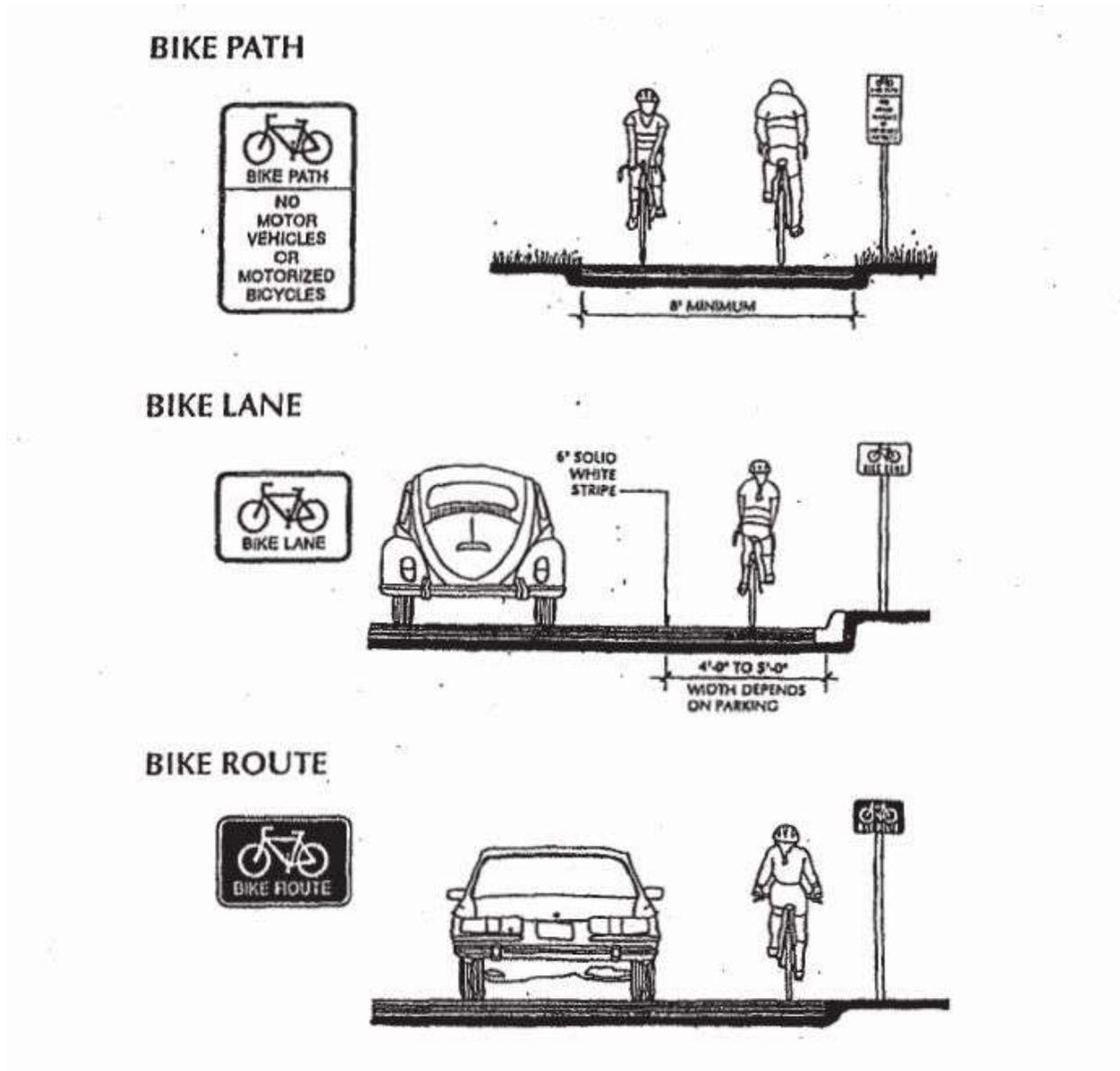
[http://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/guidance/design\\_guidance/mutcd\\_bike.cfm](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/mutcd_bike.cfm).

#### **Key Operating and Design Definitions**

<b><i>Bicycle</i></b>	A device upon which any person may ride, propelled exclusively by human power through a belt, chain, or gears, and having either two or three wheels in tandem or tricycle arrangement.
<b><i>Class I Bikeway</i></b>	Variouly called a <i>bike path</i> or multi-use trail. Provides for bicycle travel on a paved right-of-way completely separated from any street or highway.
<b><i>Class II Bikeway</i></b>	Referred to as a <i>bike lane</i> . Provides a striped lane for one-way travel on a street or highway.
<b><i>Class III Bikeway</i></b>	Referred to as a <i>bike route</i> . Provides for shared use with pedestrian or motor vehicle traffic.

The following tables specify the requirements for Classes I, II, and III.

Figure 8:  
Bike Paths, Lanes and Routes



**Table 4:  
Class I Bicycle Path Specifications**

		Thickness	
Pavement Type:	Recycled Asphalt(1)	3"	7.5 cm
	Asphalt(1)	3"	7.5 cm
	Concrete	3"	7.5 cm
Sub-base:	Granite	4-6"	10-15 cm
	Gravel	4-6"	10-15 cm
Shoulders:	Decomposed Granite	4-6"	5-10 cm
<hr/>			
Width:			
	Minimum	8'	2.5 cm
	Preferred	12'	3.5 cm
Shoulders:		2'-3'	75 cm – 1 m
Lateral Clearance		2'-3'	75 cm – 1 m
Vertical Clearance		8'	2.5 m
	W/Equestrians	12'	3.5 m
Striping (solid yellow line)		4"	8 cm
Signing		see MUTCD	
Cross Slope		2%	
Min. Separation from Roadway(2)		5'	
Design Speed		15-20 mph	
Maximum Superelevation		12%	
Maximum Grades		5%	
Barrier Posts		5' min. spacing	

(1) May be unsuitable for bike paths located in stream channels because of asphalt oils.

(2) Unless physical barrier provided.

Source: Caltrans Highways Design Manual, Chapter 1000

**Table 5:  
Class II Bicycle Lane Specifications**

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Minimum Widths	Adjacent Parking	5'	1.6 m
	No Parking(1)	4'	1.25 m
	Combination Parking Lane(2)	11' – 12'	3.4 – 3.6 m
Striping	6" solid white stripe (outside)		
	4" solid white stripe (inside)		
Signing	R81 Bike Lane sign		
Beginning of all bike lanes			
Far side of all arterial crossings			
Major change of directions			
Maximum ½ mile intervals			
Pavement Markings	Bike Lane		Far side of intersection
	Directional Arrow		Far side of intersection
Dashed Lines	200' from intersection		

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(1) Minimum of 3' between stripe and gutter joint.

(2) Rolled curb, 11'; vertical 12'.

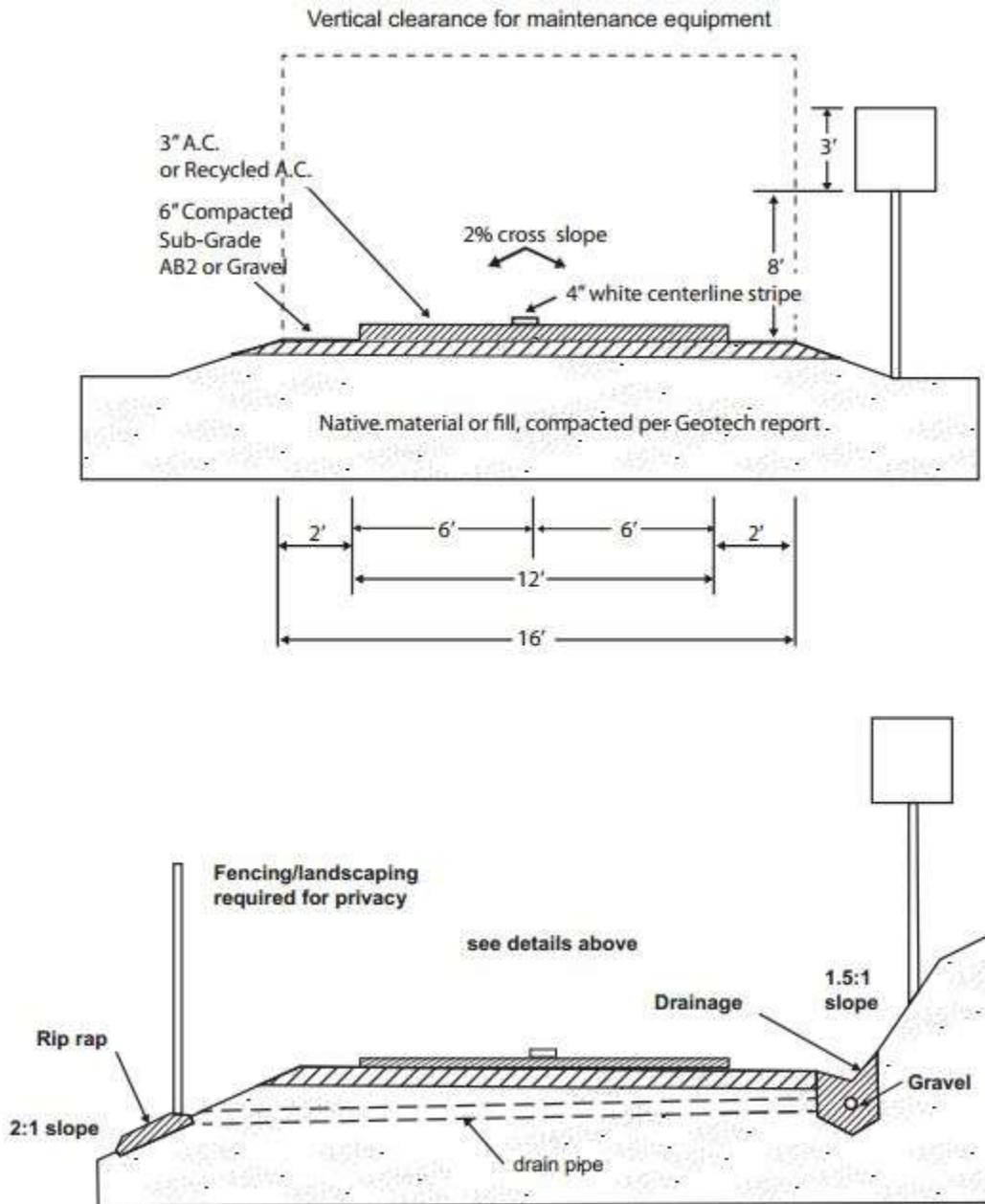
Source: Caltrans, Highway Design Manual, Chapter 1000, MUTCD.

### 6.2 General Design Recommendations

- A. All Class I bike paths should generally conform to the design recommendations in Table 4 and Figure 9
- B. All Class II bike paths should generally conform to the design recommendations in Table 5 and Figure 11.
- C. Multi-use trails and unpaved facilities that serve primarily a recreation rather than a transportation function and will not be funded with federal transportation dollars may not need to be designed to Caltrans standards.
- D. Class I bike path crossings of roadways require preliminary design review. A prototype design is presented in Figure 10. Generally speaking, bike paths that cross roadways with ADTs over 20,000 vehicles will require signalization or grade separation. No bike paths or multi-use trails are proposed to cross Grant Avenue (S.R. 128) in Winters which represents the only street that is close to these volumes.
- E. Landscaping should generally be low water, native vegetation.
- F. Lighting should be provided where the bike path will be used by commuters.
- G. Barriers at pathway entrances should be clearly marked with reflectors and ADA accessible (minimum 5 feet clearance).
- H. Bike path construction should take into account impacts of maintenance and emergency vehicles on shoulders and vertical requirements.
- I. Provide 2 feet wide unpaved shoulders for pedestrians/runners, or separate tread way where feasible. Direct pedestrians to right side of pathway with signing and stenciling.
- J. Provide adequate trailhead parking and other facilities such as restrooms, drinking fountains at appropriate locations.
- K. Sidewalk bike paths or pathways parallel to roadways should be discouraged, especially where there is heavy pedestrian traffic or numerous curb cuts, driveways, or side streets. Pathways may be located next to existing roadways if there is a minimum 5 feet setback or physical barrier.
- L. Intersection and interchange treatment. Caltrans provides recommended intersection treatments in Chapter 1000 including bike lane “pockets” and signal loop detectors. The Department of Public Works should develop a protocol for the application of these recommendations, so that improvements can be funded and made as part of regular improvement projects. Figure 11 and Figure 13 provides details for recommended intersection treatments.
- M. Bike lane pockets (minimum 4 feet wide) between right turn lanes and through lanes should be provided wherever available width allows, and right turn volumes exceed 150 motor vehicles/hour.

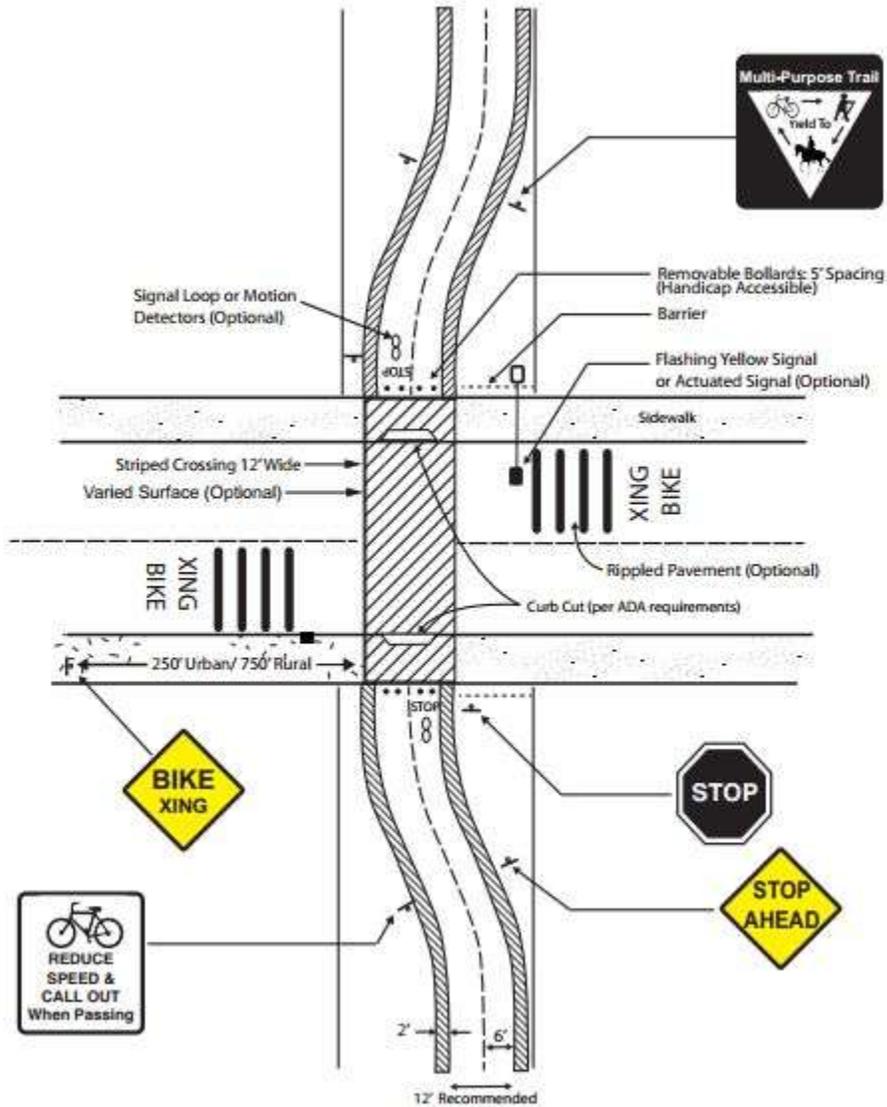
6.3 Bike Lanes

**Figure 9:  
Class I Bicycle Path Cross Section**

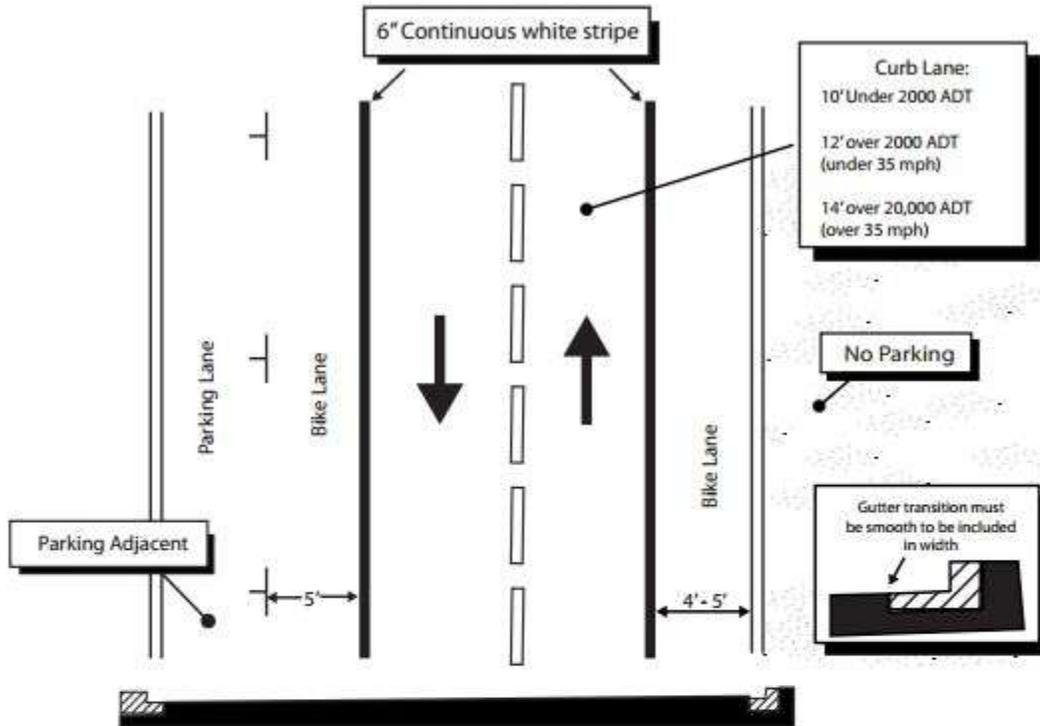


6.4 Signage and Markings

**Figure 10:**  
**Class I Bicycle Path Crossing Prototype**



**Figure 11:  
Class II Bike Lane Cross Section**

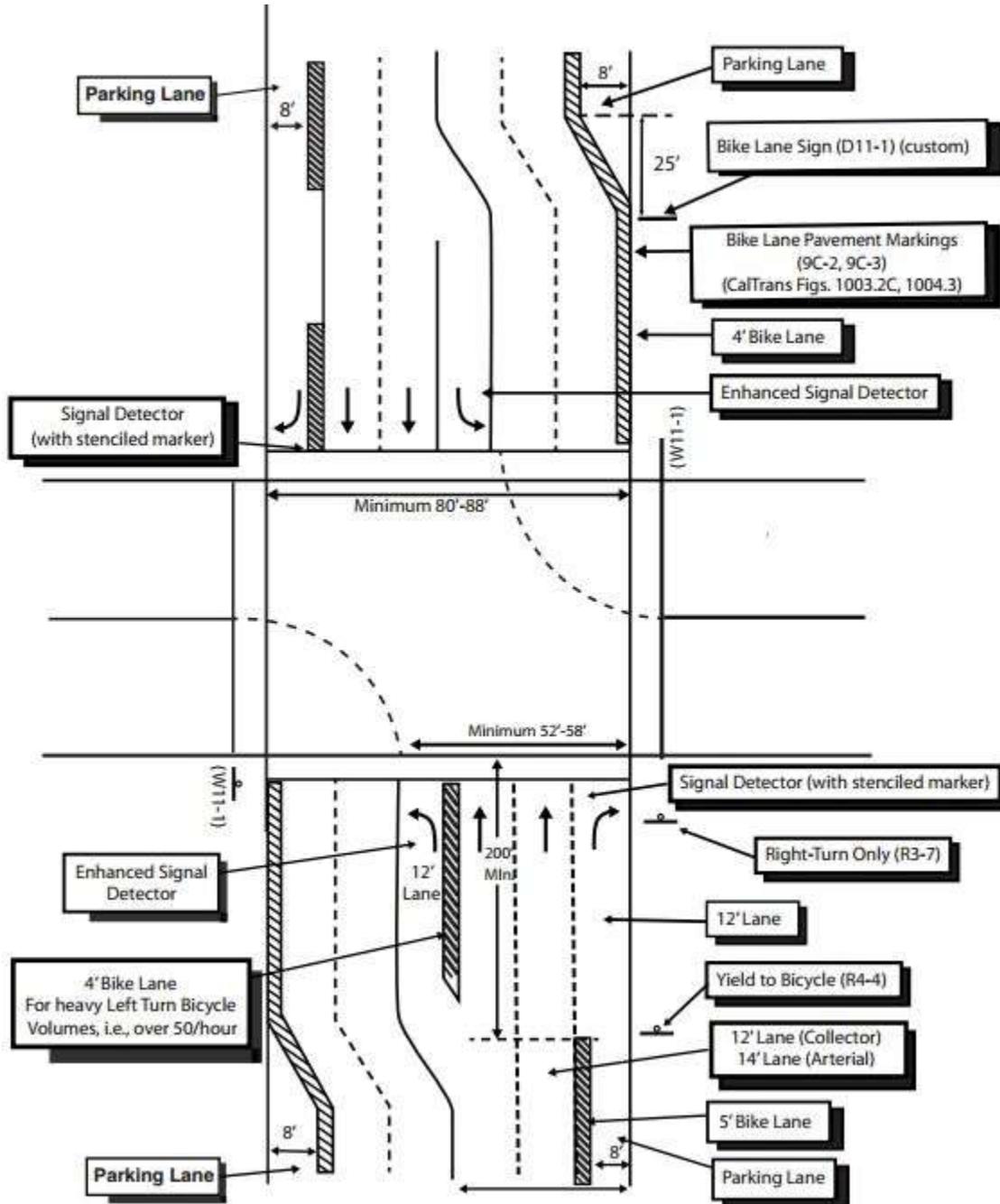


Minimum Street Widths to Accommodate Bike Lanes									
	2-Lanes/Parking			4-Lanes/Parking			6-Lanes/Parking		
	0	1	2	0	1	2	0	1	2
> 2,000	28'	35'	44'	48'	56'	62'	N/A	N/A	N/A
2,000 - 20,000 ADT	32'	41'	50'	56'	65'	74'	80'	89'	98'
20,000 + ADT Under 35 MPH	32'	41'	50'	56'	65'	74'	80'	89'	98'
20,000 + ADT Over 35 MPH	36'	45'	54'	60'	69'	78'	84'	93'	102'

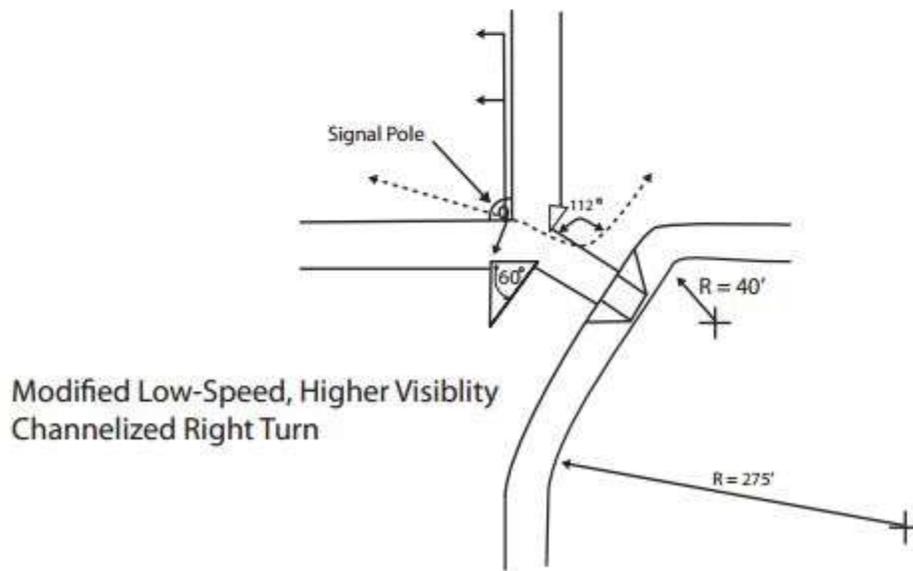
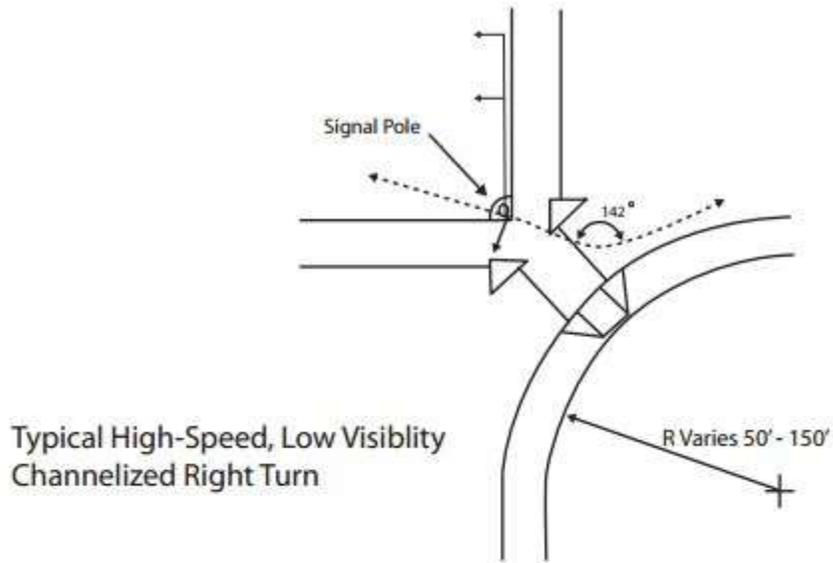
Note: Assumes curb to curb with smooth gutter transition. Assumes no medians.

6.5 Treatments at Intersections

Figure 12:  
Bike Lane Intersection Design



**Figure 13:  
Recommended Right Turn Channelization**



**6.6 On-Street Bikeway Implementation Steps**

The translation of a bikeway system map to actual improvements in the field is generally under the purview of the City’s Department of Public Works (DPW). Aside from meeting specific roadway standards for motor vehicle traffic, the Department of Public Works must consider on-street parking, drainage, pedestrian movement, signals, traffic volumes and speeds, roadway capacity and level of service, mixture of trucks, maintenance, among a variety of items.

One goal of the Bikeway System Master Plan is to enhance bicycling conditions on the entire City street system. The following implementation steps are recommended for each proposed corridor, which may have roadway conditions (lane width, traffic volumes, etc.) that vary every block.

**Perform a Preliminary Design Study**

A preliminary design study of the top priority bikeway corridors is included in this plan. The recommendations must be reviewed and approved by the DPW, collecting the following information for review: (a) as-built plans (if available), (b) curb-to-curb widths, (c) total public right-of-way width, (d) lane configuration, (e) location of all surface utilities, (f) ADT volumes, and (g) posted speeds and average speeds. Some of this data collection work has been conducted as part of this plan.

**Install Bike Lanes Where Feasible**

Where an entire corridor has an existing curb lane of at least 17 feet and ADT volumes over 2,000 vehicles per day, select a Class II bike lane treatment. Streets with volumes under 2,000 vehicles per day do not require bike lanes and may be signed as Class III bike routes. Bike lanes must be able to be installed at minimum lengths of one half (½) mile, otherwise Class III bike route treatments should be selected. Where curb lanes are less than 17 feet, examine existing striping and on-street parking. Travel and parking lane standards are shown in Table 6 below.

**Table 6:  
Actions to Install Bike Lanes  
(subject to approval of City Engineer)**

1. Review current ADT and peak hour traffic volumes: eliminate unneeded travel lanes based on long term traffic volumes.
2. Review current turning movements. Remove continuous median turn lanes where turning movements are low.
3. Review current on-street parking. Consider the removal of on-street parking when peak demand is less than 20%.
4. Reduce all travel lanes to 12 feet. Where ADTs are between 5,000 and 10,000 ADT, consider reducing lanes to 11 feet. Where ADTs are under 5,000 vehicles, consider reducing travel lanes to 10 feet.
5. Reduce median turn lanes to 12 feet on arterials, 11 feet on collectors.

**Table 6:  
Actions to Install Bike Lanes  
(subject to approval of City Engineer)**

6. Complete bike lane striping and signing plan.
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**Install Class III Bike Route**

Where Class II bike lanes cannot be installed after the steps described above, or where ADT volumes are under 2,000 vehicles per day, a Class III route should be installed. Caltrans describes Class III bike routes as providing a continuous bikeway system on corridors where bike lanes are either not feasible or required. The decision to sign a bicycle route should be based on the advisability of encouraging bicycle travel in the corridor, based on existing usage by bicycles, comparative directness and comfort of the route compared to other alternative corridors, lower traffic volumes and speeds, wider curb lanes, presence of intersection control measures, a higher level of maintenance, surface imperfections or irregularities removed, and/or lack of on-street parking. While Caltrans only identifies signing for bike routes, maximizing the width of the curb lane is considered an essential element of this plan. Minimum curb lane widths are described in the Federal Highway Administration document “Selecting Roadway Design Treatments to Accommodate Bicycles” and in Table 7 below.

**Table 7:  
Actions to Install Class III Bike Routes  
(subject to approval by City Engineer)**

1. Review steps described in Table 1 for bike lanes concerning eliminating or reducing travel and parking lanes.
2. Provide a minimum of 12 feet curb lane on all local and collector streets with adequate sight distance, an average mix of truck/bus traffic, average speeds under 30 mph, and ADTs under 10,000 vehicles per day (vpd).
3. Provide a minimum 14 feet wide curb lane on all local and collector streets with adequate sight distance, an average mix of truck/bus traffic, average speeds under 40 mph, and ADTs over 10,000 vpd.
4. Provide a minimum of a 15 feet wide curb lane on all collector and arterial streets with adequate sight distance, an average mix of truck/bus traffic, average speeds over 40 mph, and ADTs over 10,000 vpd.

Where bike lanes or bike routes that meet the curb lane standards identified in Table cannot be met, an alternate route for less experienced bicyclists needs to be identified. The city may consider changing the primary route altogether to a street with less traffic, lower speeds, and/or more right-of-way.

**6.7 Signage and Markings**

All bikeway signing in Winters should conform to the signing identified in the Caltrans Traffic Manual and/or the Manual on Uniform Traffic Control Devices (MUTCD). These documents give specific information on the type and location of signing for the primary bike system. A list of bikeway signs from Caltrans and the MUTCD are shown in the Table 8 and typical signing for

a school commute corridor is shown in Figure 15. A typical bike route sign is shown in Figure 16.

**Table 8:  
Recommended Signing and Marking**

Item	Location	Color	MUTCD Designation
No Motor Vehicles	Trail entrances		R5-3
Use Ped Signal/Yield to Peds	At crosswalks; where Sidewalks are being used		R9-5 R9-6
Bike Lane Ahead: Right Lane Bikes Only	At beginning of bike lanes		R3-16 R3-17
STOP, YIELD	At trail intersections with Roads & Coastal Rail Trails	Red	R1-1 R1-2
Bicycle Crossing	For motorists at trail crossings		W11-1
Bike Lane	At the far side of all arterial Intersections		D11-1
Hazardous Condition	Slippery or rough pavement		W8-10
Turns and Curves	At turns and curves which exceed 20 mph design specifications		W1-1,2 W1-4,5 W1-6
Trail Intersections	At trail intersections where no STOP or YIELD required, or sight lines limited		W2-1, W2-2 W2-3, W2-4,W2-5
STOP Ahead	Where STOP sign is obscured		W3-1
Signal Ahead	Where signal is obscured		W3-3
Bikeway Narrows	Where bikeway width narrows or is below 8'		W5-4
Downgrade	Where sustained bikeway gradient is above 5%		W7-5

## Winters Bikeway System Master Plan

Pedestrian Crossing	Where pedestrian walkway crosses trail	W11A-2
Railroad Crossing	Where trail crosses railway tracks at grade	W10-1
Directional Signs	At intersections where access to Major destinations is available	D1-1b(r/l) D1-1(c)
Right Lane Must Turn Right	Where bike lanes ends before Intersection	R3-7 R4-4
Coastal Rail Trail	Trail logo: at all trail entrances, major intersections, major access points	n/a
Trail Regulations	All trail entrances	n/a
Multi-purpose Trail: Bikes Yield to Pedestrians	All trail entrances	n/a
Bikes Reduce Speed & Call Out Before Passing	Every 2,000 feet	n/a
Please Stay On Trail Caution: Storm Damaged Trail	In environmentally sensitive areas Storm damaged locations	n/a n/a
Trail Closed: No Entry Until Made Accessible & Safe for Public Use	Where trail or access points closed due to hazardous conditions	n/a
Speed Limit Signs	Near trail entrances: where speed Limits should be reduced from 20 mph	n/a
Trail Curfew 10PM – 5AM	Based on local ordinance	n/a



Figure 15:  
Bike Route Sign



**Figure 16:  
Numbered Bike Route Sign**





**6.8 Maintenance**

The total annual maintenance cost of the primary bikeway system is estimated to be \$6,895 when it is fully implemented. All of the maintenance costs are associated with the proposed Putah Creek Pathway, as bike lanes and routes are assumed to be maintained as part of routine roadway maintenance. Class I bike path maintenance costs are based on \$10,335 per mile, which covers labor, supplies, and amortized equipment costs for weekly trash removal, monthly sweeping, and bi-annual resurfacing and repair patrols.

**Table 9:  
Bikeway Maintenance Check List**

<b>Item</b>	<b>Frequency</b>
Sign replacement/repair	1 – 3 years
Pavement marking replacement	1 – 3 years
Tree, shrub & grass trimming/fertilizing	5 months – 1 year
Pavement sealing/potholes	5 – 15 years (1)
Clean drainage system	1 year
Pavement sweeping	Weekly – monthly/as needed
Shoulder and grass mowing	Weekly/as needed
Trash disposal	Weekly/as needed
Lighting replacement/repair	1 year
Graffiti removal	Weekly – monthly/as needed
Maintain furniture	1 year
Fountain/restroom cleaning/repair	Weekly – monthly/as needed
Pruning	1 – 4 years
Bridge/tunnel inspection	1 year
Remove fallen trees	As needed
Weed control	Monthly/as needed
Remove snow and ice	Weekly/as needed
Maintain emergency telephones, CCTV	1 year
Maintain irrigation lines	1 year
Irrigate/water plants	Weekly – monthly/as needed

(1) Annually in areas with snow.  
Source: *Trails for the 21<sup>st</sup> Century, 1993.*

## **SECTION VII: EDUCATION and ENFORCEMENT**

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### **7.1 Community and Employer Outreach**

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

#### **Bicycle Donation Program**

A fleet of lender bicycles available to employees to use as a commute alternative has proved successful in Portland and other U.S. cities. The bicycle may be purchased new or obtained from police auctions, repaired, painted and engraved with ID numbers, and made available free of charge to employees. Depending on demand, bicycles may be made available through reservations or on a rotating basis. The bicycles themselves should be lower-end heavy-duty bicycles that have minimal re-sale value. Employer's responsibilities would be limited to an annual maintenance inspection and repairs as necessary. The objective of the program is to encourage employees to try bicycling to work as an alternative, without making a major investment. Employers may wish to allow bicycle commuters to leave 15 minutes early from work, or some other type of incentive to encourage use of the bicycles.

#### **Bicycle Clunker and Parts Program, Bicycle Repair Program**

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

### **Bicycle Facilities Map**

Work with the Yolo-Solano Air Quality Management District, Parks & Recreation, the School District, Chamber of Commerce, and local businesses to produce bicycle/walking map that shows existing and recommended touring and commuting bicycle routes, access to regional bike routes, historic walking tours, and school commute routes.

### **Community Adoption**

Programs to have local businesses and organizations “adopt” a pathway such as the Putah Creek Pathway have proven effective around the country, similar to the adoption of segments of the Interstate Highway System. Supporters would be identified by small signs located along the pathway, acknowledging their contribution. Support would be in the form of an annual commitment to pay for the routine maintenance of the pathway, which in general costs about \$10,335 per mile. This program may be administered by the Department of Public Works or other groups.

### **Bike Fairs and Races**

The City is well positioned to capitalize on the growing interest in on-road and off-road bicycle races and criterions. Given the City’s proximity to major bicycling centers such as Davis and location on existing major bicycling routes, the market for such events would be tremendous. Events would need to be sponsored by local businesses, and involve some promotion, insurance, and development of adequate circuits for all levels of riders. It is not unusual for these events to draw up to 1,000 riders, which could bring off-season activity into the City.

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

### **Employer Incentives**

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

### 7.2 **Bicycle and Pedestrian Safety Education Programs**

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

#### **Education**

The Winters Joint Unified School District, Police Department, and the Department of Public Works have a history of trying to improve safety conditions for bicyclists and pedestrians. Despite these efforts, the lack of education for both bicyclists, especially younger students, is a leading cause of accidents. For example, the most common type of reported bicycle accident in California involves a younger person (between 8 and 16 years of age) riding on the wrong side of the road in the evening hours. Studies of accident locations around California consistently show the greatest concentration of accidents is directly adjacent to elementary, middle, and high schools. Many less-experienced adult bicyclists are unsure how to negotiate intersections and make turns on city streets.

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

Existing education programs in schools are generally taught once a year to 3rd, 4th, and 5th graders. Curriculum is generally derived from established programs developed by groups such as the California State Automobile Association, and taught by members of the Winters Police Department. Budget cuts, demands on students’ time, and liability concerns limit the extent of bicycle education to school children. Formal adult bicycle education is currently non-existent.

#### **Expand Current Education Programs**

Existing educational programs in Winters schools should be expanded and supported by a secure, regular funding source. A joint City/School District Safety Committee should be formed consisting of appointed parents, teachers, administrators, police, and public works staff whose task it is to identify problems and solutions, ensure implementation, and submit recommendations to the School Board or City Council.

#### **Develop New Educational Program Materials and Curriculum.**

Education materials should be expanded to promote the benefits of bicycling, the need for education and safety improvements, the most recent educational tools available in the country (including the use of low-cost safety videos), and directives to parents on the proper school drop-off procedure for their children. Educational pamphlets for children should be made more

## Winters Bikeway System Master Plan

readable. Incentive programs to reward good behavior should be developed. Educational programs, and especially on-bike training, should be expanded to more grades and for more hours per year. Education curriculum should, at a minimum, cover the following lessons:

- On-bike training or bicycle "rodeos"
- How to adjust and maintain a bicycle
- Night riding (clothes, lights)
- Rules of the road
- Riding on sidewalks
- How to negotiate intersections
- Riding defensively
- Use of hand signals

A standard safety handbook format should be developed incorporating the best elements of those currently in use, and made available to each school on computer disks so they may be customized as needed. Each school should develop a circulation map of the campus and immediate environs to include in the handbooks, clearly showing the preferred circulation and parking patterns and explaining in text the reason behind the recommendations. This circulation map should also be a permanent feature in all school newsletters. Bicycle helmet subsidy programs are available in California, and should be used to provide low-cost approved helmets for all school children who ride bicycles.

### **Develop an Adult Education Program**

Establish an adult bicycle education program through the Public Works Department, or other City departments that (a) teaches adults how to ride defensively, (b) how to ride on a variety of city streets, and (c) encourages adults to feel more confident to ride to work or for recreation. Work with local bicycling groups who could provide the training expertise, and possibly lead organized bicycle training sessions, tours and rides.

### **Educate Motorists**

Educate motorists about the rights and characteristics of bicyclists through a variety of means including: (a) making bicycle safety a part of traffic school curriculum in Winters, (b) producing a brochure on bicycle safety and laws for public distribution, (c) enforcing existing traffic laws for both motorists and bicycles, (d) sending an official letter to the Department of Motor Vehicles recommending the inclusion of bicycle laws in the driver license exam, and (e) install signs that read "Share the Road" with a bicycle symbol at least every 1,000 feet along all routes of the proposed primary system where bike lanes are not feasible, travel lanes are under 14 feet wide, and ADTs exceed 20,000.

### 7.3 Other Safety Improvements

In addition to the education actions listed above and the proposed bicycle and pedestrian system improvements, the following miscellaneous actions address a variety of needs and deficiencies.

#### **Pedestrian Crossings**

Pedestrian crossings are generally provided with crosswalks, warning signs, lighting, signals, and/or pavement treatments. Standards for the design, operation, and installation of pedestrian crossings have been developed by a variety of organizations such as Caltrans and AASHTO. The type and location of crossing improvements is often based on an evaluation of pedestrian volumes, spacing between crossings, traffic volumes, accident patterns, and other information. There has been a recent trend nationwide of removing unprotected mid-block crossings based on the notion that it gives pedestrians a false sense of security and leads to a higher accident rate.

The City should adopt minimum thresholds for pedestrian facilities that are applied city-wide. This includes minimum green time at signalized intersections based on street width, minimum distances between crosswalks on collectors and arterials, minimum sight clearance (including on-street parking restrictions), and minimum lighting standards.

#### **School Commute Routes**

Identifying and improving routes for children to walk or bicycle to school is one of the most cost effective means of reducing AM traffic congestion and addressing existing safety problems. Most effective school commute programs are joint efforts of the school district and city, with parent organizations adding an important element.

#### **Develop School Commute Route Improvement Plan**

Develop a tool that can be used to evaluate safety conditions on school commute corridors to determine if conditions are within acceptable bounds. This can be done using state or City accident data, surveys of parents on their school commute habits, surveys of students who walk or ride to school, and other sources. Develop specific thresholds by which meaningful comparisons can be made.

Develop a toolbox of measures that can be implemented by the school district and City to address safety problems. This may include maps of preferred school commute routes, warning signs, enhanced education, additional crossing guards, signal treatments (longer cycles, pedestrian activated buttons, etc.), enhanced visibility at key locations (lighting, landscaping abatement), crosswalks, bike lanes, and other measures.

**SECTION 8: IMPLEMENTATION STRATEGY**

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**8.1 Ranking and Phasing of Improvements**

The recommended improvements and programs are expected to be developed over the 20-year lifespan of the plan, from 2012 through 2032. The actual phasing of projects is directly linked to the availability of funding, which in turn is related to overall economic conditions in Winters, California, and the United States. Funding is also related to local, regional, state, and federal policy and the amount of funding that is made available to bicycle and pedestrian projects. Implementation is also expected to occur through local initiatives and possible use of impact fees, zoning requirements/bonuses, and/or tax increment financing.

The top projects were selected as part of the recently adopted “Complete Streets” plan for the City’s busiest thoroughfare, Grant Ave.

Placing bike lanes along roadways that are being reconstructed represents one of the most cost effective strategies for the City, and one that will be pursued on the Grant, Railroad, and Moody Slough Roadway projects to be constructed or re-constructed as part of future development. The incremental cost of providing bike lanes or other features is nominal on most roadway projects, and in fact may already be included but simply identified as a “shoulder” rather than a bike lane. Table 10 presents a list of scheduled roadway improvement projects in Winters.

**Table 10:  
Scheduled Roadway Construction Projects**

Roadway Project	Year Scheduled
Grant/I-505 Widening	2012
Railroad Avenue Widening	2014
Moody Slough Road Construction	2018

**8.2 Cost Breakdown**

Once these proposed projects get closer towards implementation a breakdown of the recommended projects, along with phasing, responsibility, funding sources, and total development cost will be created. It is important to note that while many of the projects can be funded with federal, state, and regional transportation, safety, and/or air quality grants, others are recreational in nature and must be funded by local or private sources.

These proposed improvements are scheduled to be implemented over the next 10 years, or as funding is available. It also presents a ‘best case’ scenario for Winters, providing a network of bicycle facilities within the next ten years. Some of the more expensive projects may take longer to implement.

### 8.3 Funding

There are a variety of potential funding sources including local, state, regional, and federal funding programs that can be used to construct the proposed bicycle and pedestrian improvements. Many of the federal, state, and regional programs are competitive, and involve the completion of extensive applications with clear documentation of the project need, costs, and benefits. Local funding for bicycle projects typically comes from Transportation Development Act (TDA) funding, which is prorated to each community based on population. Funding for many of the programs listed in Table 3 would need to be funded either with TDA, general fund (staff time), or possibly private grants. Table 11 presents a summary of available funding along with timing, criteria, and funding agency.

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**Table 11:  
Summary of Funding Programs**

Funding Programs	Modes (Bicycle, Pedestrian-walkways, trails)	Trip Types (Commute/Transportation, Recreational)	Project Types (Construction, Non-construction, Both)
<b>Federal Funding</b>			
STP	Both	Transportation	Both
Transportation Enhancement Activities (MAP-21)	Both	Transportation	Construction
CMAQ (MAP-21)	Both	Transportation	Both
National Highway System (NHS)	Both	Transportation	Both
Federal Lands Highway Funds	Both	Transportation	Construction
Scenic Byways Program	Both	Transportation	Construction (Including planning design & development)
Bridge Repair & Replacement	Bicycle	Transportation	Construction
National Recreation Trails Fund	Both	Both	Both
Highway Safety Program	Both	Transportation	Non-Construction
Highway Safety & Development	Pedestrian	Transportation	Non-Construction
Recreational & Public Purposes Act	Both	Both (Primarily Recreational)	Construction
Schools & Roads Grants to States + sR25	Both	Transportation	Construction
Section 3 Mass Transit Capital Grants	Both	Transportation	Both
<b>State Funding</b>			
California Bikeways Act	Bikes	Transportation	Construction
Environmental Enhancement & Mitigation Program	Both	Transportation	Construction
Flexible Congestion Relief	Both	Transportation	Construction
Habitat Conservation Fund Grant Program	Both	Both	Construction
Kapiloff Land Bank Funds	Both	Transportation	Construction (Including land acquisition)
Land & Water Conservation Fund	Both	Both	Construction (Including land acquisition)
Mello-Roos Community Facilities Districts	Both	Both	Both
Local Transportation Fund (LTF) TDA Article 3	Both	Transportation	Both
<b>SACOG Funding</b>			
Community Design	Both	Both	Both
Bike/Pedestrian Program Funding	Both	Both	Both
<b>Local Funding</b>			
YSAQMD	Both	Both	Both

### **Federal**

#### *Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21)*

While Winters may have an uphill battle in securing federal dollars, the area is located near Sacramento and Davis – both well-known bicycling areas. It will be critical to get the local state assemblyperson and senator briefed on these projects and working with Caltrans and the California Transportation Commission for these projects.

#### *Surface Transportation Program (STP)*

This federal program has been defined by the Federal Highway Bill from the ISTEA through the latest adopted bill MAP-21. These funds may be used for roads, bridges, transit capital, and bicycle/pedestrian projects. Eligible bicycle projects include bicycle facilities; parking facilities; and bike racks.

#### *Transportation Alternatives (TA)*

Formerly called the Transportation Enhancement (TE) program, TA funds are allocated to eligible projects that are associated with automobile alternative transportation projects. These funds are allocated through the State Transportation Improvement Program—a 2 year programming cycle.

#### *Congestion Mitigation and Air Quality Program (CMAQ)*

CMAQ funds are directed to transportation projects and programs that contribute to the attainment or maintenance of National Ambient Air Quality Standards in non-attainment or air quality maintenance areas for ozone, carbon monoxide or particulate matter under provisions for the Federal Clean Air Act.

### **State**

#### *TDA Article III (SB 821)*

Transportation Development Act (TDA) Article III funds are state block grants awarded annually to local jurisdictions for bicycle and pedestrian projects in California. These funds originate from the state gasoline tax and are distributed to local jurisdictions based on population.

#### *Bicycle Transportation Account*

The state Bicycle Transportation Account (BTA) is an annual grant program available to cities and counties for funding bicycle projects that improve safety and convenience for bicycle commuters. For the 2013/2014 funding cycle, BTA will provide \$7.2 million to cities and counties.

#### *Safe Routes to School*

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This program aims to increase the number of children who walk or bicycle to and from school by funding projects that remove the barriers that currently prevent students from doing so.

It was widely expressed by the community of Winters that crossing Grant Avenue is one of the greatest barriers for children to bike and walk to school. The community was concerned not only about the danger of crossing an arterial with insufficient marked crosswalks but also the lack of education and awareness for both the students and the motorists. This funding program can be a useful resource to tackle both sides of this equation.

For more information go to: <http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm>

### **Regional**

The Yolo-Solano Air Quality Management District is a major potential source of funding for bicycle and pedestrian programs. The grants are generally in the \$10,000 to \$80,000 range and are highly competitive based on a cost-benefit formula developed by the District. Funding priorities also change annually with the District, between bicycle and other projects such as transit.

### **Local**

#### *New Construction*

Future road widening and construction projects are one means of providing bike lanes. To ensure that roadway construction projects provide bike lanes where needed, it is important that the review process meets the standards and guidelines presented in this master plan and the City's Circulation Element.

#### *Impact Fees*

Another potential local source of funding are developer impact fees, typically ties to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- and off-site bikeway improvements which will encourage residents to bicycle rather than drive. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit.

#### *Mello Roos*

Bike paths, lanes, and pedestrian facilities can be funded as part of a local assessment or benefit district. Defining the boundaries of the benefit district may be difficult unless the facility is part of a larger parks and recreation or public infrastructure program with broad community benefits and support.

#### *Other*

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

**8.4 Financing**

Proposed improvements and programs to be developed over the next 10 years in Winters have been analyzed to determine the annual financing requirements, and to allow the City to budget its resources and target funding applications. It is important to note that the majority of funding is expected to be derived from federal sources. These funding sources are extremely competitive, and require a combination of sound applications, local support, and lobbying on the regional and state level. The financing sequence outlined in Table 11 provides a template for future funding applications and local allocations; unsuccessful applications will be “rolled-over” to the next year on this schedule.

For the 2002 update the City of Winters had striped Main Street, sections of East Main Street, and Valley Oak Drive for Class II bike lanes in the period of 2000-2001. The striping work was combined with overlay work that was occurring on some of the street segments. A grant through the Caltrans Bicycle Transportation Account funded a significant portion of the Class II striping for Main Street and Valley Oak Drive. It is estimated that the City spent \$5000 of its own funds (Gas Tax receipts, Transportation Development Act monies, etc.) for the Class II striping. The following table shows the most recent bicycle and pedestrian improvement projects, their cost, and the year completed.

**Table 12:  
Financing Past Projects**

<b>Name</b>	<b>Price</b>	<b>Year Completed</b>
Railroad Trestle Bridge	\$800,000	2006
North Bank Putah Creek Parkway	\$1.6 Million	Estimated completion January 2013
Grant Avenue Sidewalk	\$400,000	May 2012
Hemenway Street	\$600,000	January 2009